BEFORE THE

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION, **Complainant,** **v.** **CASCADIA WATER, LLC,** **Respondent.**	**DOCKET UW-240151**

WATER CONSUMER ADVOCATES OF WASHINGTON, INTERVENOR

November 20, 2024

Direct Exhibit of Blaine C. Gilles

NWN 2023 Annual Report

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NW Natural
HOLDINGS™

165

LEGACY AND Leadership

2023 ANNUAL REPORT

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CEO David H. Anderson in front of NW Natural Holdings' history exhibit at our Portland, Oregon headquarters.

To Our Shareholders

You're reading our 2023 Annual Report just a few months after we celebrated our 165th anniversary. Since our founding in 1859 and our very first days as a gas light company that illuminated the streets of Portland, Oregon, we have continued to hold to our Pacific Northwest ethos of respecting the beauty of our region, supporting its dynamic and diverse economy, and helping the communities we serve grow and thrive.

I'm proud to say we had a tremendous year again in 2023. We grew our customer base at our gas and water utilities, we began operation of our second renewable natural gas (RNG) facility under the landmark Oregon Senate Bill 98, we continued to study hydrogen technologies for the benefit of our gas utility customers, and we entered the water and wastewater operations and maintenance business.

We also increased dividends for the 68th consecutive year, one of only three companies on the NYSE with this outstanding record. For the 20th time, we scored in the top two in the West by J.D. Power's Gas Utility Residential Customer Satisfaction study, and we were recognized for the third year in a row by Ethisphere as one of the World's Most Ethical Companies®.

I'm proud to work with employees who together advance NW Natural Holdings' dedication to integrity, safety, caring, service ethic, and environmental stewardship. What started 165 years ago with lighting those downtown streets, has grown into three thriving businesses that provide essential gas and water utility services and renewable energy for a variety of customers.

Corporate Profile

NW NATURAL HOLDINGS (NYSE: NWN) is headquartered in Portland, Oregon, and has been doing business for 165 years. It owns a natural gas distribution company (NW Natural), water and wastewater utilities (NW Natural Water), a renewable fuels business (NW Natural Renewables), and other business interests.

2024 WORLD'S MOST ETHICAL COMPANIES® ETHISPHERE™
3-TIME HONOREE

[1] "World's Most Ethical Companies" and "Ethisphere" names and marks are registered trademarks of Ethisphere LLC

2023 Highlights

NW Natural HOLDINGS™

- Reported record net income in 2023 of $93.9 million or $2.59 per share, compared to $86.3 million or $2.54 per share for 2022.
- Added over 15,000 gas and water utility connections in the last 12 months for a combined growth rate of 1.8% as of December 31, 2023.
- Increased dividends paid for the 68th consecutive year, in the top three of the longest records on the NYSE.
- Recognized by Ethisphere for the third year in a row as one of the World's Most Ethical Companies®.[1]

NW Natural®

Gas Utility Growth and Service

- Ranked second in the West for large gas utilities and scored among the top 10 utilities nationwide in the annual J.D. Power Gas Utility Residential Customer Satisfaction Study.
- Recognized by Escalent's Brand Trust Index as a Cogent Syndicated 2023 Most Trusted Utility Brand.
- Invested more than $315 million in our gas utility infrastructure system. This included projects to support safety, reliability, growth, and investments in technology.
- Filed a NW Natural general rate case in Oregon requesting an increase to revenue requirement of $154.9 million to recover investments in our system, increased operational expenses due to the effects of inflation, and an updated depreciation study.
- On track to meet or exceed our voluntary carbon savings goal of 30% by 2035.[2]
- Began operation of our second RNG facility under the landmark Oregon Senate Bill 98.
- Continue to explore hydrogen technologies including a 20% hydrogen blend test at our Sherwood operations and training center.

NW Natural WATER™

Water & Wastewater Utility Growth and Service

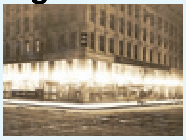
- Acquired four water and wastewater utilities and had healthy organic growth resulting in a 12.7% increase in our customer base.
- Completed three rate cases in two states to update rates for investments to support clean, safe water service.
- Entered the operations and maintenance services business and now support nearly 20,000 connections.

NW Natural RENEWABLES™

Renewable Fuels

- Completed construction on two RNG facilities we're investing in through a partnership with EDL. Testing and commissioning of the facilities is underway.

[2] Voluntary emissions savings goal equivalent to 30% of the carbon emissions from our sales customers gas use and company operations in 2015.



1860s

Lighting the streets of a booming frontier.

1950s

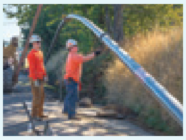
Expansion of natural gas into homes.

1960s

Rapid growth throughout the northwest.

2000s

Focusing on environmental stewardship—rate decoupling and first carbon offset program.



2010s

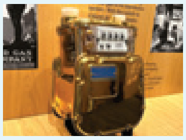
Replaced known bare steel and cast iron pipes resulting in one of the most modern gas systems in the country.

Founded a water and wastewater utility company.

2020s

Launched a competitive renewables business.

Completed gas utility's first renewable natural gas facilities and hydrogen pilots.



2023

Leads in customer service—for the 20th year, NW Natural scored in the top two in the West by J.D. Power's Gas Utility Residential Customer Satisfaction study.

2024

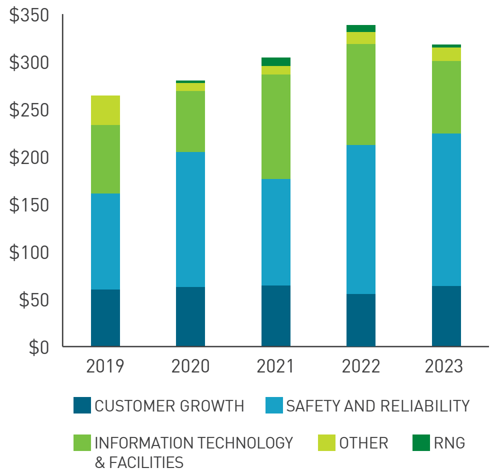
Celebrated our 165th birthday and added our 800,000th gas utility customer.

Recognized for the third year in a row by Ethisphere as one of the World's Most Ethical Companies®[1]

NW Natural®

Natural Gas Utility

CAPITAL EXPENDITURES
(in millions)



Total investment in capital expenditures during 2023 was $317 million on an accrual basis and includes cloud-based software.

Safety Is Our Greatest Responsibility

Safety is at the center of everything we do—it is our greatest responsibility to customers, employees, and the communities we serve.

Related to customers, proactive field visits help us prevent safety issues across our service territory, and our 24/7 emergency response system allows us to quickly dispatch responders to damage and odor calls.

Keeping our employees healthy and injury free is critical to safety. Journey to Zero, our on-the-job safety initiative, delivered excellent results in its fourth year, with a 4% decrease in workplace injuries, a 29% decrease in days away or restricted time rate (DART) due to workplace injury or illness, and a 15% increase in near-miss reporting (good-catch rate) from last year. The last four years were among the best for safety performance in over 20 years.

Central to our responsibility to customers is maintaining a safe system. With no known cast iron or bare steel pipe in our system, we are proud to operate one of the most modern distribution systems in the nation safely and reliably. But we're not stopping there—by the end of 2023, we had inspected about 2.5 times the amount of pipeline required by PHMSA safety regulators.

In 2023, we invested more than $315 million in our natural gas infrastructure to support safety, system reliability, growth, and improvements. Those investments included system reinforcement projects, maintaining our valuable storage facilities, renovations at several of our service centers including seismic upgrades, and critical upgrades related to information technology to ensure we can continue serving our customers well into the future.

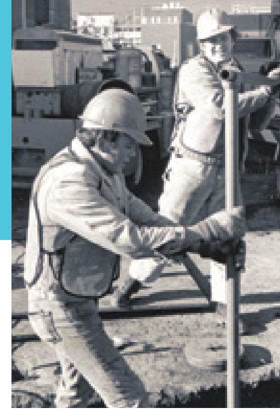
Natural gas crew, 2008.

GAS SYSTEM PROVIDES ESSENTIAL ENERGY DURING WINTER EVENT

Recently, we were reminded of the importance of the natural gas system and the value of planning and investing for reliability on those coldest winter days. Starting January 13, 2024, a winter storm brought several days of frigid temperatures, severe wind, snow, and ice to the Pacific Northwest and resulted in a record-breaking weekend for our gas system. On Saturday, January 13, we provided a record amount of energy to customers—about double the average volume we typically provide on a winter day. Our Mist gas storage facility delivered a new record volume to customers as well, and the facility provided essential support for the entire region's energy system throughout the event.

Our employees rose to the occasion and our system performed well—when our region needed it most. Providing reliable energy on the coldest winter days is the result of disciplined investments in the system over many decades.

Crew performing hydrogen testing at our Sherwood facility.



Tying off line, 1985.

Customer Growth & Service Achievements

Despite interest rates putting a damper on the national and local housing market, NW Natural added 4,800 new customers during the 12 months ended December 31, 2023. In our region, we continue to see low unemployment rates, and single-family housing permits have begun to pick up.

Our service scores were unwavering in 2023—a testament to our 165-year legacy of focusing on customers. In 2023, we were honored that our customers ranked NW Natural second in the West among large gas utilities in the annual J.D. Power Gas Utility Residential Customer Satisfaction Study. It's the 20th consecutive year we've ranked in the top two in the West. NW Natural also ranked 10th in the nation out of 85 large gas utilities and finished first among Western peers in the customer satisfaction categories for safety and reliability, price, and corporate citizenship.

NW Natural's showing in the J.D. Power survey caps a year during which the utility was also recognized by Escalent's Brand Trust Index as a Cogent Syndicated 2023 Most Trusted Utility Brand.

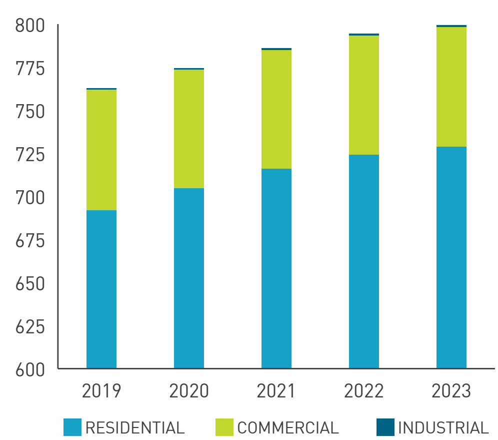
Rates & Regulation

At the end of the year, we filed a general rate case in Oregon, requesting a $154.9 million increase to recover investments to support our gas system's reliability and resilience, maintain our storage facilities, and our continued focus on technology upgrades. The filing includes the effects of inflation on operating costs and an updated depreciation study. NW Natural's filing will be reviewed by the Oregon Public Utility Commission (OPUC) and other stakeholders. The process is anticipated to take up to 10 months with new rates expected to take effect November 1, 2024.

We carefully considered this rate case filing and the effect on customers' bills. The good news is that the average Oregon residential customer saw a 9% drop in their rates beginning November 2023. On top of that, Oregon customers received a bill credit totaling $29 million in early 2024. Over the last 20 years, we've credited customers' bills with cumulative savings of over $250 million. Despite inflation and more than $3 billion of investment in the system, customers are paying 7% less for their natural gas bill this winter than they did 15 years ago.

While we need to continue investing to ensure a safe and reliable system, we'll be unrelenting in our focus to provide affordable energy and efficient operations for our customers.

GAS UTILITY CUSTOMERS AT YEAR-END
(in thousands)



We added 4,800 new customers in 2023, and now serve 800,000 customers.

We believe NW Natural has an important role to play in helping our region move to a lower-carbon, renewable energy future in a more resilient and affordable way.

The Dakota City RNG Facility is the second facility under Senate Bill 98 and was completed in 2023.

Decarbonization

We believe NW Natural has an important role to play in helping our region move to a lower-carbon, renewable energy future in a more resilient and affordable way. Today, NW Natural has one of the tightest systems in the nation, and we use that modern system to deliver 50% more energy than any other utility in Oregon. On the coldest winter days, like during the January 2024 winter event, our system provides about twice as much energy to our residential customers than the electric system in Portland, Oregon. Natural gas use in our customers' homes and businesses accounts for just under 7% of Oregon's annual greenhouse gas emissions.[3] We're working to reduce that number even further. Since we launched our Low Carbon Pathway in 2016, we've made steady progress toward our voluntary goal of 30% carbon savings by 2035. As of 2023, we remained on track to meet or exceed this goal.

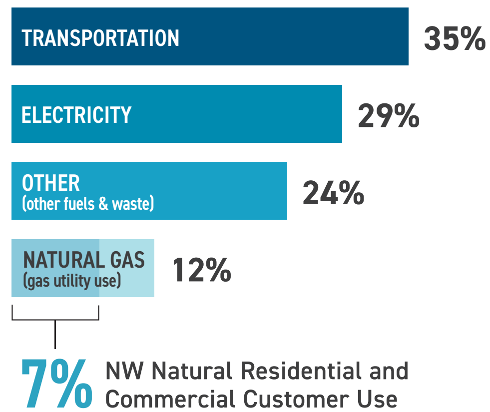
To thrive in a lower-carbon future, we are investing in a number of decarbonization measures including energy-efficiency technologies and education, renewable energy, carbon offsets, and carbon capture. We believe replacing conventional natural gas over time with lower-carbon alternatives like RNG and hydrogen is central to achieving that vision while supporting the reliability of the energy system serving our communities.

For the third year in a row, RNG was part of our energy resource stack and we've begun recovering costs from Oregon customers through Oregon Senate Bill 98. This groundbreaking Oregon legislation enables us to procure and invest in RNG and hydrogen on behalf of our customers. In April 2023, our second RNG facility with Tyson Foods began operations, and recently, we announced that we signed agreements with WM (Waste Management) that provide NW Natural exclusive rights to build an RNG facility at WM's landfill in East Wenatchee, Washington. We anticipate the facility could come online in late 2025, providing a 20-year supply of RNG once constructed.

At the same time, we're working on several hydrogen pilots with partners in the U.S. and Europe. Our engineering team successfully completed hydrogen blend testing of 20% at our Sherwood operations and training center in 2023. Our team is also looking at new carbon capture and sequestration technologies and ground source heat pump systems with natural gas backup—all ways to support peak heating needs while reducing emissions.

Compressor flywheel, 1938.

OREGON GREENHOUSE GAS EMISSIONS BY SECTOR



Source: Oregon DEQ In-Boundary GHG Inventory preliminary 2021 data.

We're not alone in our drive to incorporate renewables into the gas system. One example is Denmark, which is already delivering 40% RNG in its system and is working towards meeting 75% of its gas demand from RNG by 2030 and 100% by 2034. We hope to emulate Denmark's decarbonization success at NW Natural—it's why we visited the country and spoke with energy and policy leaders there last summer.

For 165 years NW Natural has grown alongside our communities to meet the energy needs of our customers. We welcome the advancement of renewable energy and technologies that supports a climate-conscious future. Our modern storage and delivery system can incorporate renewable energy to benefit our customers, communities, and the environment.

[3] NW Natural sales load data from the Oregon Department of Environmental Quality In-Boundary Greenhouse Gas Inventory, preliminary 2021 data.

NW Natural WATER™

Water & Wastewater Utilities

In 2023, our water and wastewater utilities saw extraordinary growth in a number of areas. Through our disciplined strategy, we closed four new utilities acquisitions, most notably expanding into a high-growth, major Phoenix, Arizona suburb. We also increased our investment in the largest privately-owned water utility in Oregon. In 2023, NW Natural Water added 10,400 customers for an overall growth rate of 12.7% and an organic growth rate of 2.0%.

Sunriver wastewater treatment plant ribbon cutting.

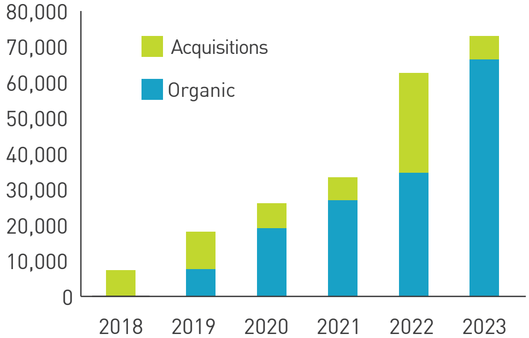
As with our other businesses, safety is our highest priority. Last year, we continued to invest in safety, system reliability and information technology with spend totaling over $37 million. We focused on cultivating transparent and productive relationships with regulators, and constructive general rate cases. In 2023, we completed three rate cases in Idaho and Oregon to recover essential investments in these systems.

What began in 2017 has grown into a meaningful business through more than 30 acquisitions. Today, NW Natural Water is one of the 20 largest privately-owned water utilities in the United States based on customer count. There is no short cut to consolidating a fragmented sector. We are committed to this business and believe in the diversification and long-term earnings opportunity.

Last year, we entered the operations and maintenance services business to support water and wastewater systems and to complement our utility strategy. We are working to create value by leveraging shared personnel, technology, and expertise to help deliver clean, reliable water at a reasonable cost to customers. The formation of this business expanded NW Natural Water's footprint by 20,000 connections and is a strong platform that has the potential to be scalable in the coming years.

Natural gas comes to Coos Bay, 2004.

WATER & WASTEWATER UTILITY CUSTOMERS AT YEAR-END



We added over 10,400 new customers in 2023, and now serve over 73,000 customers.

Our main focus is working toward a portfolio of RNG projects that generate stable, growing income and cash flows.

Our most recent business is NW Natural Renewables, which focuses on providing cost-effective solutions to the production and supply of low- to no-carbon fuels, to help a variety of sectors decarbonize using existing waste streams and renewable energy sources. We view the RNG market as a natural extension of our sustainability efforts and believe it offers a broader set of opportunities to lead beyond our service territory. Our objective is to establish a business with steady cash flows through long-term, fixed-price contracts that are in keeping with our low-risk business strategy and profile.

That's why our first two RNG facilities with EDL, a leading global producer of low-carbon distributed energy, and the related offtakes are ideal as they provide steady earnings and cash flows once the facilities are deemed commercially operational. In 2023, construction was completed on the two facilities designed to convert landfill waste gasses to RNG. Our partners report they have identified solutions to a technical issue with the conditioning equipment and we expect the facilities to be online in 2024. NW Natural Renewables has contracted to invest approximately $50 million total and obtain a 20-year supply of renewable natural gas produced by the facilities once they're commercially operational. Separately, Renewables has executed offtake agreements to sell RNG supplies to investment-grade counterparties under long-term, primarily fixed-price contracts.

NW Natural biogas team, 1985.

Limestone RNG Facility that NW Natural Renewables is investing in.

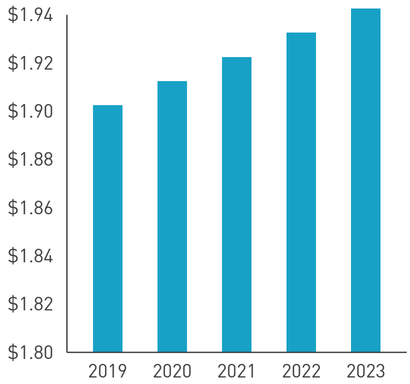
In 2023, I saw our three businesses grow and mature, and I am eager to join with our employees to guide it far into the future. We're honored to have served our communities for 165 years, and I thank you for your trust in our company. We're excited to celebrate our legacy and lead our industries forward.

All of us at NW Natural Holdings are grateful for your confidence. Thank you.

David H. Anderson

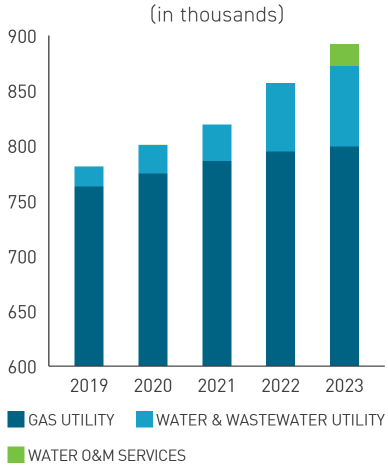
David H. Anderson
Chief Executive Officer

DIVIDENDS PAID PER SHARE ($)



The current indicated annual dividend is $1.95 per share. Future dividends are subject to Board of Director discretion and approval. Annual dividends paid per share in 2023 increased for the 68th consecutive year.

TOTAL CUSTOMERS SERVING AT YEAR-END
(in thousands)



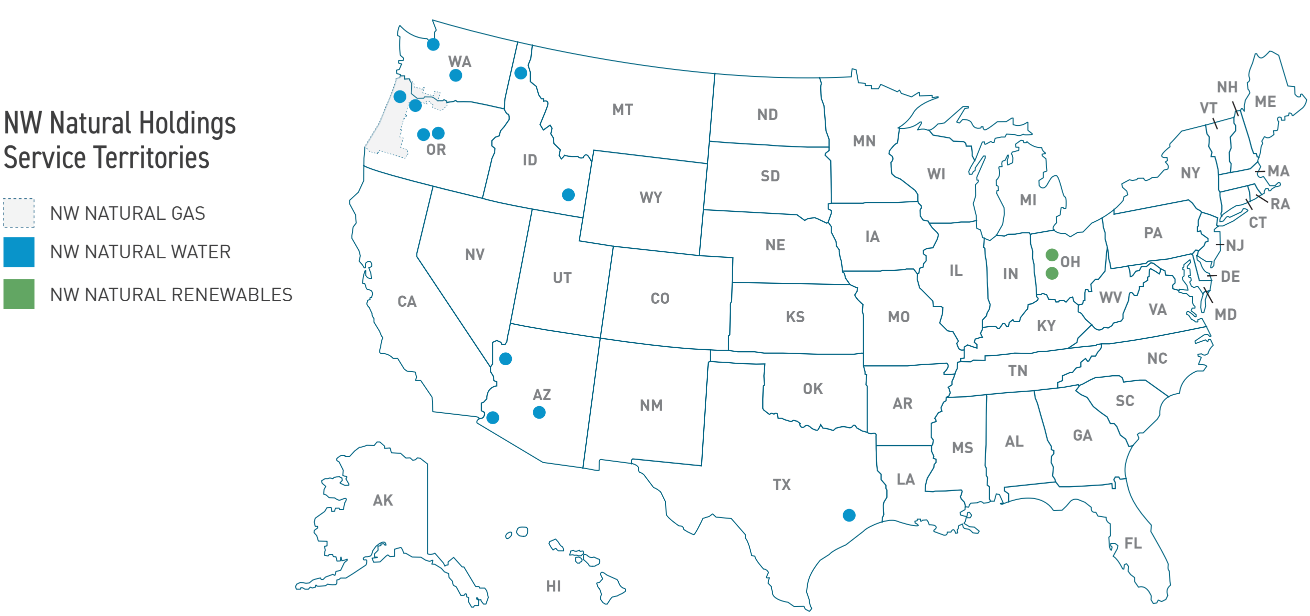
We added 35,000 new customers in 2023, and now serve nearly 900,000 customers.

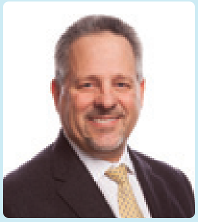
Financial Overview

	2023	2022
KEY HIGHLIGHTS		
Consolidated financial facts ($000):		
Operating revenues	1,197,475	1,037,353
Net income	93,868	86,303
Financial ratios (%):		
Return on average common equity	7.6	8.2
Capital structure[1] at year-end:		
Long-term debt	55.1	53.2
Common stock equity	44.9	46.8
COMMON STOCK		
Shareholder data (000):		
Average shares outstanding–diluted	36,265	33,984
Year-end shares outstanding	37,631	35,525
Per share data ($):		
Diluted earnings	2.59	2.54
Dividends paid	1.94	1.93
Book value at year-end	34.12	33.09
Market value at year-end	38.94	47.59
NATURAL GAS DISTRIBUTION OPERATING HIGHLIGHTS		
Gas deliveries (000 therms)	1,206,674	1,252,337
Margin[2] ($000)	575,008	505,875
Degree days	2,480	2,712
Customers at year-end	799,250	794,497
Employees at year-end	1,214	1,149
WATER OPERATING HIGHLIGHTS		
Utility customers at year-end	73,021	62,592
O&M service customers at year-end	19,900	0
Employees at year-end	161	105
DIVIDENDS PAID ON COMMON STOCK (per share)		
Payment date		
February	0.4850	0.4825
May	0.4850	0.4825
August	0.4850	0.4825
November	0.4875	0.4850
Total dividends paid	1.9425	1.9325

[1] Includes current maturities of long-term debt and excludes short-term debt.
[2] References to the margin refer to natural gas distribution segment.

NW Natural Holdings Service Territories



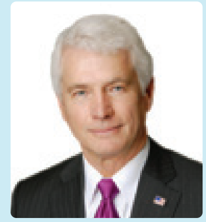


DAVID H. ANDERSON
Chief Executive Officer,
NW Natural Holdings
and NW Natural

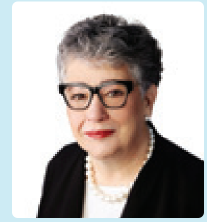
TIMOTHY P. BOYLE
President and Chief Executive
Officer and Chairman of the Board,
Columbia Sportswear Company

MONICA ENAND
Founder and Former Chief
Executive Officer, Zapproved

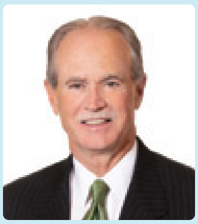
KAREN LEE
Chief Executive Officer of
Plymouth Housing



HON. DAVID K. MCCURDY
Former President and CEO of
the American Gas Association

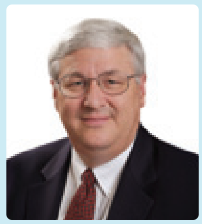


SANDRA MCDONOUGH
Former President and CEO of
Oregon Business & Industry

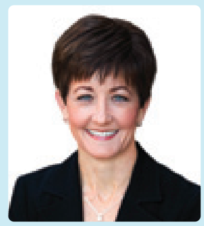


NATHAN I. PARTAIN
Former President and Co-Chief
Investment Officer of Duff & Phelps
Investment Management Co.

JANE L. PEVERETT
Former President and Chief
Executive Officer, British Columbia
Transmission Corporation

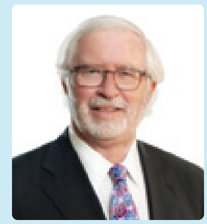


KENNETH THRASHER
Former Chairman of the Board,
Compli Corporation



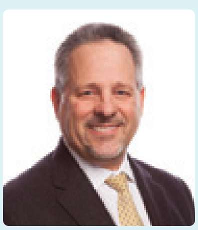
MALIA H. WASSON
Chair of the Board, NW Natural
Holdings and NW Natural;
Chief Executive Officer,
Sand Creek Advisors

CHARLES A. WILHOITE
Managing Director, Willamette
Management Associates,
a Citizens Company



STEVEN E. WYNNE
Independent Director,
NW Natural and Former Executive
Vice President, Moda, Inc.

NW NATURAL HOLDINGS AND ITS SUBSIDIARIES LEADERSHIP



DAVID H. ANDERSON [1,2]
Chief Executive Officer

ANNA CHITTUM [4]
President,
NW Natural Renewables

JAMES DOWNING [2]
Vice President and
Chief Information Officer

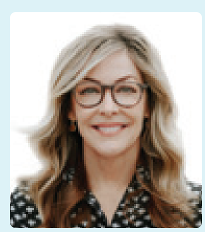
SHAWN M. FILIPPI [1,2,3,4]
Vice President, Chief Compliance
Officer and Corporate Secretary

JOSEPH S. KARNEY [2]
Vice President Engineering
and Utility Operations

ZACHARY D. KRAVITZ [2]
Vice President,
Rates and Regulatory

JUSTIN B. PALFREYMAN [1,2,3]
President NW Natural Holdings,
NW Natural, and NW Natural Water

MELINDA ROGERS [2]
Vice President, Chief Human
Resources and Diversity Officer



KIMBERLY RUSH [2]
Senior Vice President and
Chief Operating Officer

MARDILYN SAATHOFF [1,2]
Senior Vice President,
Regulation and General Counsel

DAVID WEBER [2]
Vice President, Gas Supply
and Utility Support Services

KATHRYN WILLIAMS [2]
Vice President, Chief Public Affairs
and Sustainability Officer

BRODY J. WILSON [1,2,3,4]
Chief Financial Officer (Interim),
Vice President, Chief Accounting
Officer and Treasurer

[1] NW Natural Holdings Officer
[2] NW Natural Officer
[3] NW Natural Water Officer
[4] NW Natural Renewables Officer

Notice of Annual Meeting

The 2024 Annual Meeting of Shareholders is scheduled to be held at 2 p.m., Thursday, May 23, 2024. We are expecting to conduct an entirely virtual Annual Meeting. A meeting notice and proxy statement describing our plans for conducting the meeting will be sent to all shareholders who hold shares as of the record date, April 4, 2024. Such plans may be supplemented or revised as appropriate.

Dividend reinvestment and direct stock purchase plan

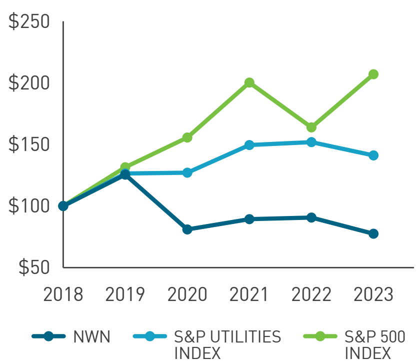
Participants may make an initial investment in company stock and common shareholders of record may reinvest all or part of their dividends in additional shares under the company's plan. Cash purchases may also be made. Participants in the plan bear the cost of brokerage fees and commissions for shares purchased on the open market to fulfill purchases under the plan. A prospectus will be sent upon request.

Scheduled dividend payment dates

Subject to Board approval, the following dates are scheduled for dividend payment:

February 15, 2024
May 15, 2024
August 15, 2024
November 15, 2024

COMPARISON OF FIVE-YEAR CUMULATIVE TOTAL RETURN
(Based on $100 invested on 12/31/2018)



Total shareholder return (annualized) over the five years ending December 31, 2023 for NW Natural Holdings was -5.0%, compared to Standard & Poor's (S&P) Utilities Index return of 7.1%, and the S&P 500 Index return of 15.7%.

Certifications

The Chief Executive Officer certified to the NYSE on June 23, 2023, that as of that date, he was not aware of any violation by the company of NYSE's corporate governance listing standards, and the company had filed with the Securities and Exchange Commission (SEC), as exhibits 31.3 and 31.4 to its Annual Report on Form 10-K for the year ended Dec. 31, 2022, the certificates of the Chief Executive Officer and the Chief Financial Officer of the company certifying the quality of the company's public disclosure. For the year ended Dec. 31, 2023, the certificates of the Chief Executive Officer and Chief Financial Officer are attached as exhibits 31.3 and 31.4 to the Form 10-K included in this Annual Report.

Contact the NW Natural Holdings Board

Concerns may be directed to the nonmanagement directors by writing to:

Northwest Natural Holding Company
Board of Directors
c/o Corporate Secretary
250 SW Taylor Street
Portland, OR 97204

Forward-looking statements

This report contains forward-looking statements that generally can be identified by words such as "anticipates," "assumes," "continues," "could," "intends," "plans," "seeks," "believes," "estimates," "expects," "will" and similar references to future periods. Examples of forward-looking statements include, but are not limited to, statements regarding the following: plans, goals, strategies, commitments, success, opportunities, dividends, earnings, financial value, financial results, future events, performance, stability, continuation of past practices, future demand or preference for gas, strategic goals and visions, environmental initiatives, decarbonization and role of natural gas and the gas delivery system, including competitive renewable natural gas strategy and results, decarbonization goals and timelines, energy efficiency measures, use of renewables, carbon emissions, targets and savings, renewable natural gas or hydrogen purchases, projects, investments or other renewable initiatives, including the construction of and production by RNG facilities, procurement of renewable natural gas or hydrogen for customers, technology and policy innovations, customer rates and service, competitive position, revenues, customer and business growth, capital expenditures, system and infrastructure investments, emergency preparedness and response, technology investments and upgrades, system reliability, safety and implementation of safety initiatives, system and operational resiliency, weather, performance and service during weather events, operational expenses, business continuity, environmental stewardship, regulatory proceedings and actions including, but not limited to, our rate cases and the timing and results thereof, rate recovery, effects of regulatory mechanisms, the global, national and local economies, geopolitical factors, business development and new business initiatives, water, wastewater and water services acquisitions, partnerships, investment strategies, planned acquisitions and integration thereof, likelihood and success associated with any transaction, operating plans and implementation, system modernization and efficiency, diversity, equity and inclusion initiatives, and effects of legislation or changes in laws or regulations, including but not limited to carbon and renewable natural gas and hydrogen regulations are forward-looking statements within the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. NW Natural's actual results could differ materially from those anticipated in these forward-looking statements as a result of risks and uncertainties, including those described in the attached report on Form 10-K. For a more complete description of these risks and uncertainties, please refer to our filings with the SEC on Forms 10-K and 10-Q.

Request for publications

The following publications may be obtained without charge by contacting the Corporate Secretary at NW Natural's address: Annual Report; Form 10-K; Form 10-Q; Form 8-Ks; Corporate Governance Standards; Director Independence Standards; Code of Ethics; and Board Committee Charters. These publications, as well as other filings made with the SEC, are also available on our website at nwnaturalholdings.com. Our SEC filings are also available through the SEC's website (sec.gov).

NW Natural HOLDINGS™

PRODUCED BY NW NATURAL'S CORPORATE COMMUNICATIONS

FRONT COVER: meter reader, 1938; gas lamps Peoples Market & Grocery Co., 1917; Gasco truck,1934; meter readers, 1947; Gasco billing department, 1922; Albany office,1953; gas fireplace floor display, 1966; Newport LNG tank construction, 1974; Tualatin meter testing, 1974; field employee, 1987; Central Facility construction site, 1991; construction employee, 2018.

BACK COVER: Gasco Gresham store, 1930; Northwest Natural Gas Company, 1961; Northwest Natural Gas Company headquarters, 1968; Northwest Natural Gas Company headquarters, 1982; NW Natural Holdings headquarters, 2020.

PHOTO CREDITS: DALE HEADRICK - cover: construction employee; page 3: pipe replacement, 165th birthday celebration; page 5: hydrogen testing; page 8: Sunriver wastewater treatment plant ribbon cutting.
JASON QUIGLEY - page 2: David Anderson at historical exhibit.

PRINTING: Donnelley Financial Solutions

Form 10-K

Annual Report

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2023

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from ___________ to___________

Northwest Natural Holding Company	Northwest Natural Gas Company
Commission file number 1-38681	Commission file number 1-15973
NW Natural HOLDINGS™	NW Natural®
NORTHWEST NATURAL HOLDING COMPANY	**NORTHWEST NATURAL GAS COMPANY**
(Exact name of registrant as specified in its charter)	(Exact name of registrant as specified in its charter)
Oregon (State or other jurisdiction of incorporation or organization)	**Oregon** (State or other jurisdiction of incorporation or organization)
82-4710680 (I.R.S. Employer Identification No.)	**93-0256722** (I.R.S. Employer Identification No.)
250 S.W. Taylor Street Portland Oregon (Address of principal executive offices)	**250 S.W. Taylor Street Portland Oregon** (Address of principal executive offices)
97204 (Zip Code)	**97204** (Zip Code)
Registrant's telephone number, including area code: **(503) 226-4211**	Registrant's telephone number, including area code: **(503) 226-4211**

Securities registered pursuant to Section 12(b) of the Act:

Registrant	Title of each class	Trading Symbol	Name of each exchange on which registered
Northwest Natural Holding Company	Common Stock	NWN	New York Stock Exchange
Northwest Natural Gas Company	None	None	None

Securities registered pursuant to Section 12(g) of the Act: None.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

NORTHWEST NATURAL HOLDING COMPANY Yes ☒ No ☐ NORTHWEST NATURAL GAS COMPANY Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

NORTHWEST NATURAL HOLDING COMPANY Yes ☐ No ☒ NORTHWEST NATURAL GAS COMPANY Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

NORTHWEST NATURAL HOLDING COMPANY Yes ☒ No ☐ NORTHWEST NATURAL GAS COMPANY Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

NORTHWEST NATURAL HOLDING COMPANY Yes ☒ No ☐ NORTHWEST NATURAL GAS COMPANY Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

NORTHWEST NATURAL HOLDING COMPANY		NORTHWEST NATURAL GAS COMPANY	
Large Accelerated Filer	☒	Large Accelerated Filer	☐
Accelerated Filer	☐	Accelerated Filer	☐
Non-accelerated Filer	☐	Non-accelerated Filer	☒
Smaller Reporting Company	☐	Smaller Reporting Company	☐
Emerging Growth Company	☐	Emerging Growth Company	☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report.

NORTHWEST NATURAL HOLDING COMPANY Yes ☒ No ☐ NORTHWEST NATURAL GAS COMPANY Yes ☐ No ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements.

NORTHWEST NATURAL HOLDING COMPANY Yes ☐ No ☒ NORTHWEST NATURAL GAS COMPANY Yes ☐ No ☒

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b).

NORTHWEST NATURAL HOLDING COMPANY Yes ☐ No ☒ NORTHWEST NATURAL GAS COMPANY Yes ☐ No ☒

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act).

NORTHWEST NATURAL HOLDING COMPANY Yes ☐ No ☒ NORTHWEST NATURAL GAS COMPANY Yes ☐ No ☒

As of the end of the second quarter of 2023, the aggregate market value of the shares of Common Stock of Northwest Natural Holding Company (based upon the closing price of these shares on the New York Stock Exchange on June 30, 2023) held by non-affiliates was $1,534,376,401.

At February 14, 2024, 37,676,740 shares of Northwest Natural Holding Company's Common Stock (the only class of Common Stock) were outstanding. All shares of Northwest Natural Gas Company's Common Stock (the only class of Common Stock) outstanding were held by Northwest Natural Holding Company.

This combined Form 10-K is separately filed by Northwest Natural Holding Company and Northwest Natural Gas Company. Information contained in this document relating to Northwest Natural Gas Company is filed by Northwest Natural Holding Company and separately by Northwest Natural Gas Company. Northwest Natural Gas Company makes no representation as to information relating to Northwest Natural Holding Company or its subsidiaries, except as it may relate to Northwest Natural Gas Company and its subsidiaries.

Northwest Natural Gas Company meets the conditions set forth in General Instruction (I)(1)(a) and (b) of Form 10-K and is therefore filing this report with the reduced disclosure format.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of Northwest Natural Holding Company's Proxy Statement, to be filed in connection with the 2024 Annual Meeting of Shareholders, are incorporated by reference in Part III.

TABLE OF CONTENTS

ACC	Arizona Corporation Commission; the entity that regulates NW Holdings' regulated water and wastewater businesses in Arizona with respect to rates and terms of service, among other matters
AFUDC	Allowance for Funds Used During Construction
AOCI / AOCL	Accumulated Other Comprehensive Income (Loss)
ASC	Accounting Standards Codification
ASU	Accounting Standards Update as issued by the FASB
Average Weather	The 25-year average of heating degree days based on temperatures established in our last Oregon general rate case
Bcf	Billion cubic feet, a volumetric measure of natural gas, where one Bcf is roughly equal to 10 million therms
CAP	Compliance Assurance Process with the Internal Revenue Service
CCA	Climate Commitment Act enacted by the State of Washington
CNG	Compressed Natural Gas
CODM	Chief Operating Decision Maker, which for accounting purposes is defined as an individual or group of individuals responsible for the allocation of resources and assessing the performance of the entity's business units
Core NGD Customers	Residential, commercial, and industrial customers receiving firm service from the Natural Gas Distribution business
Cost of Gas	The delivered cost of natural gas sold to customers, including the cost of gas purchased, gas storage costs, gas reserves costs, gas commodity derivative contracts, pipeline demand costs, seasonal demand cost balancing adjustments, renewable natural gas and its attributes, including renewable thermal certificate costs, and regulatory gas cost deferrals
CPP	Climate Protection Program established by the Environmental Quality Commission of the Oregon Department of Environmental Quality
Decoupling	A natural gas billing rate mechanism, also referred to as a conservation tariff, which is designed to allow a utility to encourage residential and small commercial customers to conserve energy
Degree Day	The number of degrees that the average outdoor temperature falls below or exceeds a base value in a given period of time
Demand Cost	A component in NGD customer rates representing the cost of securing firm pipeline capacity, whether the capacity is used or not
ECRM	Environmental Cost Recovery Mechanism, a billing rate mechanism for recovering prudently incurred environmental site remediation costs allocable to Washington customers through NGD customer billings
Energy Corp	Northwest Energy Corporation, a wholly-owned subsidiary of Northwest Natural Gas Company
EPA	Environmental Protection Agency
EPS	Earnings per share
ESPP	Employee Stock Purchase Plan
FASB	Financial Accounting Standards Board
FERC	Federal Energy Regulatory Commission; the entity regulating interstate storage services offered by the Mist gas storage facility
Firm Service	Natural gas service offered to customers under contracts or rate schedules that will not be disrupted to meet the needs of other customers
FMBs	First Mortgage Bonds
General Rate Case	A periodic filing with state or federal regulators to establish billing rates for utility customers
GHG	Greenhouse gases
Interruptible Service	Natural gas service offered to customers (usually large commercial or industrial users) under contracts or rate schedules that allow for interruptions when necessary to meet the needs of firm service customers
Interstate Storage Services	The portion of the Mist gas storage facility not used to serve NGD customers, instead serving utilities, third-party marketers, and electric generators
IPUC	Public Utility Commission of Idaho; the entity that regulates NW Holdings' regulated water businesses in Idaho with respect to rates and terms of service, among other matters
IRA	Inflation Reduction Act of 2022
IRP	Integrated Resource Plan
KB	Kelso-Beaver Pipeline, of which 10% is owned by KB Pipeline Company, a subsidiary of NNG Financial Corporation

LIBOR	London Interbank Offered Rate
LNG	Liquefied Natural Gas, the cryogenic liquid form of natural gas. To reach a liquid form at atmospheric pressure, natural gas must be cooled to approximately negative 260 degrees Fahrenheit
LTIP	Long Term Incentive Plan
Moody's	Moody's Investors Service, Inc., credit rating agency
NAV	Net Asset Value
NGD	Natural Gas Distribution, a segment of Northwest Natural Holding Company and Northwest Natural Gas Company that provides regulated natural gas distribution services to residential, commercial, and industrial customers in Oregon and Southwest Washington
NGD Margin	A financial measure used by NW Natural's CODM consisting of NGD operating revenues less the associated cost of gas, revenue taxes, and environmental recoveries
NNG Financial	NNG Financial Corporation, a wholly-owned subsidiary of NW Holdings
NW Holdings	Northwest Natural Holding Company
NW Natural	Northwest Natural Gas Company, a wholly-owned subsidiary of NW Holdings
NW Natural Renewables	NW Natural Renewables Holdings, LLC, a wholly-owned subsidiary of NW Holdings
NWN Energy	NW Natural Energy, LLC, a wholly-owned subsidiary of NW Holdings
NWN Gas Reserves	NWN Gas Reserves LLC, a wholly-owned subsidiary of Energy Corp
NWN Gas Storage	NW Natural Gas Storage, LLC, a wholly-owned subsidiary of NWN Energy
NWN Water	NW Natural Water Company, LLC, a wholly-owned subsidiary of NW Holdings
ODEQ	Oregon Department of Environmental Quality
OPEIU	Office and Professional Employees International Union Local No. 11, AFL-CIO, the Union which represents NW Natural's bargaining unit employees
OPUC	Public Utility Commission of Oregon; the entity that regulates our Oregon natural gas and regulated water businesses with respect to rates and terms of service, among other matters; the OPUC also regulates the Mist gas storage facility's intrastate storage services
PGA	Purchased Gas Adjustment, a regulatory mechanism primarily used to adjust natural gas customer rates to reflect changes in the forecasted cost of gas and differences between forecasted and actual gas costs from the prior year
PHMSA	U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration
PUCT	Public Utility Commission of Texas; the entity that regulates NW Holdings' regulated water and wastewater businesses in Texas with respect to rates and terms of service, among other matters
RNG	Renewable Natural Gas, a source of natural gas derived from organic materials which may be captured, refined, and distributed on natural gas pipeline systems
RNG Hold Co	NW Natural RNG Holding Company, LLC, a wholly-owned subsidiary of Northwest Natural Gas Company
ROE	Return on Equity, a measure of corporate profitability, calculated as net income or loss divided by average common equity. Authorized ROE refers to the equity rate approved by a regulatory agency for use in determining utility revenue requirements
ROR	Rate of Return, a measure of return on utility rate base. Authorized ROR refers to the rate of return approved by a regulatory agency and is generally discussed in the context of ROE and capital structure
RSU	Restricted Stock Unit
RTC	Renewable Thermal Certificate
S&P	Standard & Poor's Financial Services LLC, a credit rating agency and a subsidiary of S&P Global Inc.
Sales Service	Service provided whereby a customer purchases both natural gas commodity supply and transportation from the NGD business
SEC	U.S. Securities and Exchange Commission
SOFR	Secured Overnight Financing Rate
SRRM	Site Remediation and Recovery Mechanism, a billing rate mechanism for recovering prudently incurred environmental site remediation costs allocable to Oregon through NGD customer billings, subject to an earnings test
Therm	The basic unit of natural gas measurement, equal to one hundred thousand British thermal units
Transportation Service	Service provided whereby a customer purchases natural gas directly from a supplier but pays the utility to transport the gas over its distribution system to the customer’s facility
TSA	Transportation Security Administration
U.S. GAAP	Accounting principles generally accepted in the United States of America

WARM	An Oregon billing rate mechanism applied to natural gas residential and commercial customers to adjust for temperature variances from average weather
WUTC	Washington Utilities and Transportation Commission, the entity that regulates our Washington natural gas and regulated water businesses with respect to rates and terms of service, among other matters

FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements within the meaning of the U.S. Private Securities Litigation Reform Act of 1995, which are subject to the safe harbors created by such Act. Forward-looking statements can be identified by words such as anticipates, assumes, may, intends, plans, projects, seeks, should, believes, estimates, expects, will, could, and similar references (including the negatives thereof) to future periods, although not all forward-looking statements contain these words. Examples of forward-looking statements include, but are not limited to, statements regarding the following:

- plans, projections and predictions;
- objectives, goals, visions or strategies;
- assumptions, generalizations and estimates;
- ongoing continuation of past practices or patterns;
- future events or performance;
- trends;
- risks;
- uncertainties;
- timing and cyclicality;
- economic conditions, including impacts of inflation and interest rates, bank failure, recessionary risk, and general economic uncertainty;
- earnings and dividends;
- capital expenditures and allocation;
- capital markets or access to capital;
- capital or organizational structure;
- matters related to climate change and our role in decarbonization or a low-carbon future;
- renewable natural gas, environmental attributes related thereto, and hydrogen;
- our strategy to reduce greenhouse gas emissions and the efficacy of communicating that strategy to shareholders, investors, stakeholders and communities;
- the policies and priorities of the current presidential administration and U.S. Congress;
- the policies and priorities of the officials elected in the 2024 presidential and congressional elections;
- growth;
- customer rates;
- pandemic and related illness or quarantine and economic conditions related thereto or resulting therefrom;
- labor relations and workforce succession;
- commodity costs;
- desirability and cost competitiveness of natural gas;
- gas reserves;
- operational performance and costs;
- energy policy, infrastructure and preferences;
- public policy approach and involvement;
- efficacy of derivatives and hedges;
- liquidity, financial positions, and planned securities issuances;
- valuations;
- project and program development, expansion, or investment;
- business development efforts, including new business lines such as unregulated renewable natural gas, and acquisitions and integration thereof;
- implementation and execution of our water strategy;
- pipeline capacity, demand, location, and reliability;
- adequacy of property rights and operations center development;
- technology implementation and cybersecurity practices;
- competition;
- procurement and development of gas (including renewable natural gas) and water supplies;
- estimated expenditures, supply chain and third party availability and impairment;
- supply chain disruptions;
- costs of compliance, and our ability to include those costs in rates;
- customers bypassing our infrastructure;
- credit exposures and credit ratings or changes in credit ratings;
- uncollectible account amounts;
- rate or regulatory outcomes, recovery or refunds, and the availability of public utility commissions to take action;

- impacts or changes of executive orders, laws, rules and regulations, or legal challenges related thereto, including the Inflation Reduction Act or other energy climate related legislation;
- tax liabilities or refunds, including effects of tax legislation;
- levels and pricing of gas storage contracts and gas storage markets;
- outcomes, timing and effects of potential claims, litigation, regulatory actions, and other administrative matters;
- projected obligations, expectations and treatment with respect to, and the impact of new legislation on, retirement plans;
- international, federal, state, and local efforts to regulate, in a variety of ways, greenhouse gas emissions, and the effects of those efforts;
- geopolitical factors, including the ongoing conflicts in Europe and the Middle East;
- availability, adequacy, and shift in mix, of gas and water supplies;
- effects of new or anticipated changes in critical accounting policies or estimates;
- approval and adequacy of regulatory deferrals;
- effects and efficacy of regulatory mechanisms; and
- environmental, regulatory, litigation and insurance costs and recoveries, and timing thereof.

Forward-looking statements are based on our current expectations and assumptions regarding our business, the economy, and other future conditions. Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks, and changes in circumstances that are difficult to predict. Our actual results may differ materially from those contemplated by the forward-looking statements. We therefore caution you against relying on any of these forward-looking statements. They are neither statements of historical fact nor guarantees or assurances of future performance. Important factors that could cause actual results to differ materially from those in the forward-looking statements are discussed at Item 1A "*Risk Factors*" of Part I and Item 7 and Item 7A, "*Management's Discussion and Analysis of Financial Condition and Results of Operations*" and "*Quantitative and Qualitative Disclosures about Market Risk*", respectively, of Part II of this report.

Any forward-looking statement made in this report speaks only as of the date on which it is made. Factors or events that could cause actual results to differ may emerge from time to time, and it is not possible for us to predict all of them. We undertake no obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by law.

PART I

FILING FORMAT

This annual report on Form 10-K is a combined report being filed by two separate registrants: Northwest Natural Holding Company (NW Holdings), and Northwest Natural Gas Company (NW Natural). Except where the content clearly indicates otherwise, any reference in the report to "we," "us" or "our" is to the consolidated entity of NW Holdings and all of its subsidiaries, including NW Natural, which is a distinct SEC registrant that is a wholly-owned subsidiary of NW Holdings. Each of NW Holdings' subsidiaries is a separate legal entity with its own assets and liabilities. Information contained herein relating to any individual registrant or its subsidiaries is filed by such registrant on its own behalf. Each registrant makes representations only as to itself and its subsidiaries and makes no other representation whatsoever as to any other company.

Item 8 in this Annual Report on Form 10-K includes separate financial statements (i.e. balance sheets, statements of comprehensive income, statements of cash flows, and statements of equity) for NW Holdings and NW Natural, in that order. References in this discussion to the "Notes" are to the Notes to the Consolidated Financial Statements in Item 8 of this report. The Notes to the Consolidated Financial Statements are presented on a combined basis for both entities except where expressly noted otherwise. All Items other than Item 8 are combined for the reporting companies.

ITEM 1. BUSINESS

OVERVIEW

NW Holdings is a holding company headquartered in Portland, Oregon and owns NW Natural, NW Natural Water Company, LLC (NWN Water), NW Natural Renewables Holdings, LLC, a non-regulated subsidiary established to pursue non-regulated renewable natural gas activities, and other businesses and activities. NW Natural is NW Holdings’ largest subsidiary.

NW Natural distributes natural gas to residential, commercial, and industrial customers in Oregon and southwest Washington. NW Natural and its predecessors have supplied gas service to the public since 1859, was incorporated in Oregon in 1910, and began doing business as NW Natural in 1997. NW Natural's natural gas distribution activities are reported in the natural gas distribution (NGD) segment. All other business activities, including certain gas storage activities, water and wastewater businesses, non-regulated renewable natural gas activities and other investments and activities are aggregated and reported as "other" at their respective registrant.

Our mission is to provide safe, reliable and affordable utility services and renewable energy in a sustainable way to better the lives of the communities we serve. We support our mission by following our core values of service ethic, integrity, safety, caring, and environmental stewardship.

NATURAL GAS DISTRIBUTION (NGD) SEGMENT

Both NW Holdings and NW Natural have one reportable segment, the NGD segment, which is operated by NW Natural. NGD provides natural gas service through approximately 799,000 meters in Oregon and southwest Washington. Approximately 88% of customers are located in Oregon and 12% are located in southwest Washington.

NW Natural has been allocated an exclusive service territory by the Oregon Public Utility Commission (OPUC) and Washington Utilities and Transportation Commission (WUTC), which includes the major population centers in western Oregon, including the Portland metropolitan area, most of the Willamette Valley, the Coastal area from Astoria to Coos Bay, and portions of Washington along the Columbia River. Major businesses located in NW Natural's service territory include retail, manufacturing, and high-technology industries.

Customers
The NGD business serves residential, commercial, and industrial customers with no individual customer accounting for more than 10% of NW Natural's or NW Holdings' revenues. On an annual basis, residential and commercial customers typically account for approximately 60% of NGD volumes delivered and approximately 90% of NGD margin. Industrial and other customers largely account for the remaining volumes and margin.

The following table presents summary meter information for the NGD segment as of December 31, 2023:

	Number of Meters	% of Volumes	% of Margin
Residential	728,915	38 %	65 %
Commercial	69,273	23 %	24 %
Industrial	1,062	39 %	6 %
Other[1]	N/A	N/A	5 %
Total	799,250	100 %	100 %

(1) NGD margin is also affected by other items, including miscellaneous revenues, gains or losses from NW Natural's gas cost incentive sharing mechanism, other margin adjustments, and other regulated services.

Generally, residential and commercial customers purchase both their natural gas commodity (gas sales) and natural gas delivery services from the NGD business. Industrial and some large commercial customers also purchase transportation, but may buy the gas commodity either from NW Natural or directly from a third-party gas marketer or supplier. Gas commodity cost is primarily a pass-through cost to customers; therefore, profit margins are not significantly affected by an industrial customer's decision to purchase gas from NW Natural or from third parties. Industrial and large commercial customers may also select between firm and interruptible service levels, with firm services generally providing higher profit margins compared to interruptible services.

To help manage gas supplies, tariffs are designed to provide some certainty regarding industrial and commercial customers' volumes by requiring an annual service election, special rates or possible restrictions for changes between elections.

We estimate natural gas was in approximately 63% of single-family residential homes in NW Natural's service territory in 2023. Customer growth in our region comes mainly from the following sources: single-family housing, both new construction and conversions; multifamily housing new construction; and commercial buildings, both new construction and conversions. Single-family new construction has consistently been our largest source of growth. Continued customer growth is closely tied to consumer preference for natural gas, the comparative price of natural gas to electricity and fuel oil, regulations and building codes permitting the use of natural gas in new construction and conversions, and the economic health of our service territory.

Competitive Conditions

In its service areas, the NGD business has no direct competition from other natural gas distributors. However, it competes with other forms of energy in each customer class. This competition among energy suppliers is based on price, efficiency, reliability, performance, preference, perceptions, market conditions, building codes, technology, federal, state, and local energy policy, and environmental impacts.

For residential and small to mid-size commercial customers, the NGD business competes primarily with providers of electricity, fuel oil, and propane.

In the industrial and large commercial markets, the NGD business competes with all forms of energy, including competition from wholesale natural gas marketers. In addition, large industrial customers could bypass NW Natural's natural gas distribution system by installing their own direct pipeline connection to the interstate pipeline system. NW Natural has designed custom transportation service agreements with several large industrial customers to provide transportation service rates that are competitive with the customer’s costs of installing their own pipeline.

Seasonality of Business

The NGD business is seasonal in nature due to higher gas usage by residential and commercial customers during the cold winter heating months. Other categories of customers experience similar seasonality in their usage but to a lesser extent.

Regulation and Rates

The NGD business is subject to regulation by the OPUC and WUTC. These regulatory agencies authorize rates and allow recovery mechanisms to provide the opportunity to recover prudently incurred capital and operating costs from customers, while also earning a reasonable return on investment for investors. In addition, the OPUC and WUTC also regulate the system of accounts and issuance of securities by NW Natural.

NW Natural files general rate cases and rate tariff requests periodically with the OPUC and WUTC to establish approved rates, an authorized return on equity (ROE), an overall rate of return (ROR) on rate base, an authorized capital structure, and other revenue/cost deferral and recovery mechanisms.

NW Natural is also regulated by the Federal Energy Regulatory Commission (FERC). Under NW Natural's Mist interstate storage certificate with FERC, NW Natural is required to file either a petition for rate approval or a cost and revenue study every five years to change or justify maintaining the existing rates for the interstate storage service.

For further discussion on our most recent general rate cases, see Part II, Item 7, "Results of Operations—Regulatory Matters—*Regulation and Rates*."

Gas Supply

NW Natural strives to secure sufficient, reliable supplies of natural gas to meet the needs of customers at the lowest reasonable cost, while maintaining price stability, managing gas purchase costs prudently and supporting our core value of environmental stewardship. This is accomplished through a comprehensive strategy focused on the following items:

- **Reliability** - ensuring gas resource portfolios are sufficient to satisfy customer requirements under extreme cold weather conditions;
- **Diverse Supply** - providing diversity of supply sources;
- **Diverse Contracts** - maintaining a variety of contract durations, types, and counterparties;
- **Cost Management and Recovery** - employing prudent gas cost management strategies; and
- **Environmental Stewardship** - striving to reduce the carbon content and environmental impacts of the energy we deliver.

Reliability

To support system reliability, the NGD business has developed a risk-based methodology in which it uses a planning standard to serve the highest firm sales demand day in any year with 99% certainty.

The projected maximum design day firm NGD customer sales is approximately 10 million therms. Of this total, the NGD business is currently capable of meeting approximately 50% of the requirements with gas from storage located within or adjacent to its service territory, while the remaining supply requirements would come from gas purchases under firm gas purchase contracts and recall agreements.

NW Natural segments transportation capacity, which is a natural gas transportation mechanism under which a shipper can leverage its firm pipeline transportation capacity by separating it into multiple segments with alternate delivery routes. The reliability of service on these alternate routes will vary depending on the constraints of the pipeline system. For those segments with acceptable reliability, segmentation provides a shipper with increased flexibility and potential cost savings compared to traditional pipeline service. The NGD business relies on segmentation of firm pipeline transportation capacity that flows from Stanfield, Oregon to various points south of Molalla, Oregon.

We believe gas supplies would be sufficient to meet existing NGD firm customer demand in the event of maximum design day weather conditions.

The following table shows the sources of supply projected to be used to satisfy the design day sales for the 2023-24 winter heating season:

Therms in millions	Therms	Percent
Sources of NGD supply:		
Firm supply purchases	3.4	34 %
Mist underground storage (NGD only)	3.1	30 %
Company-owned LNG storage	1.9	19 %
Off-system storage contract	0.5	5 %
Pipeline segmentation capacity	0.6	6 %
Recall agreements	0.4	4 %
Peak day citygate deliveries	0.2	2 %
Total	10.1	100 %

The OPUC and WUTC have Integrated Resource Planning (IRP) processes in which utilities define different future scenarios and corresponding resource and compliance strategies in an effort to evaluate supply and demand resource and compliance requirements, consider uncertainties in the planning process and the need for flexibility to respond to changes, and establish a plan for providing reliable service while meeting carbon compliance obligations within frameworks that emphasize least cost and risk.

NW Natural generally files a full IRP biennially for Oregon and Washington with the OPUC and the WUTC, respectively, and files updates in Oregon between filings. The OPUC acknowledges NW Natural's action plan, whereas the WUTC provides notice that the IRP has met the requirements of the Washington Administrative Code. OPUC acknowledgment of the IRP does not constitute ratemaking approval of any specific resource acquisition strategy or expenditure. For additional information see Part II, Item 7, "Results of Operations—*Regulatory Matters*."

Diversity of Supply Sources

NW Natural purchases gas supplies primarily from the Alberta and British Columbia provinces of Canada and multiple receipt points in the U.S. Rocky Mountains to protect against regional supply disruptions and to take advantage of price differentials. For 2023, 59% of gas supply came from Canada, with the balance primarily coming from the U.S. Rocky Mountain region. The extraction of shale gas has increased the availability of gas supplies throughout North America. We believe gas supplies available in the western United States and Canada are adequate to serve NGD customer requirements for the foreseeable future. NW Natural continues to evaluate the long-term supply mix based on projections of gas production and pricing in the U.S. Rocky Mountain region as well as other regions in North America.

NW Natural supplements firm gas supply purchases with gas withdrawals from gas storage facilities, including underground reservoirs and LNG storage facilities. Storage facilities are generally injected with natural gas during the off-peak months in the spring and summer, and the gas is withdrawn for use during peak demand months in the winter.

The following table presents the storage facilities available for NGD business supply:

	Maximum Daily Deliverability (therms in millions)	Designed Storage Capacity (Bcf)
Gas Storage Facilities		
Owned Facility		
Mist, Oregon (Mist Facility)(1)	3.1	11.7
Mist, Oregon (North Mist Facility)(2)	1.3	4.1
Contracted Facility		
Jackson Prairie, Washington(3)	0.5	1.1
LNG Facilities		
Owned Facilities		
Newport, Oregon	0.6	1.0
Portland, Oregon	1.3	0.6
Total	6.8	18.5

(1) The Mist gas storage facility has a total maximum daily deliverability of 5.1 million therms and a total designed storage capacity of about 17.5 Bcf, of which 3.1 million therms of daily deliverability and 11.7 Bcf of storage capacity are reserved for NGD business customers.
(2) The North Mist facility is contracted to exclusively serve Portland General Electric, a local electric utility, and may not be used to serve other NGD customers. See "*North Mist Gas Storage Facility*" below for more information.
(3) The storage facility is located near Chehalis, Washington and is contracted from Northwest Pipeline, a subsidiary of The Williams Companies.

The Mist facility serves NGD segment customers and is also used for non-NGD purposes, primarily for contracts with gas storage customers, including utilities, third-party marketers, and electric generators. Under regulatory agreements with the OPUC and WUTC, gas storage at Mist can be developed in advance of NGD customer needs but is subject to recall when needed to serve such customers as their demand increases. When storage capacity is recalled for NGD purposes it becomes part of the NGD segment. In 2023, the NGD business did not recall additional deliverability or associated storage capacity to serve customer needs. The North Mist facility is contracted for the exclusive use of Portland General Electric, a local electric utility, and may not be used to serve other NGD customers. See "*North Mist Gas Storage Facility*" below.

Diverse Contract Durations and Types
NW Natural has a diverse portfolio of short-, medium-, and long-term firm gas supply contracts and a variety of contract types including firm and interruptible supplies as well as supplemental supplies from gas storage facilities.

The majority of our gas supply contracts include year-round, winter-only, summer-only, and monthly baseload supplies, and daily spot purchases. We also maintain options to call on additional daily supplies during the winter heating season.

During 2023, a total of 875 million therms were purchased under contracts with durations as follows:

Contract Duration (primary term)	Percent of Purchases
Long-term (one year or longer)	24 %
Short-term (more than one month, less than one year)	51
Spot (one month or less)	25
Total	100 %

During 2023, there was one supplier that provided 10% or more of the NGD business gas supply requirements. No other individual supplier provided 10% or more of the NGD business gas supply requirements.

Gas Cost Management
The cost of gas sold to NGD customers primarily consists of the following items, which are included in annual Purchased Gas Adjustment (PGA) rates: gas purchases from suppliers; charges from pipeline companies to transport gas to our distribution system; gas storage costs; gas reserves costs; gas commodity derivative contracts; and renewable natural gas and its attributes,

including renewable thermal certificates. We expect that costs to comply with Washington's Climate Commitment Act (CCA) and any similar program that may be enacted in our service territory will be included in the cost of gas.

The NGD business employs a number of strategies to mitigate the cost of gas sold to customers. The primary strategies for managing gas commodity price risk include:

- negotiating fixed prices directly with gas suppliers;
- negotiating financial derivative contracts that: (1) effectively convert floating index prices in physical gas supply contracts to fixed prices (referred to as commodity price swaps); or (2) effectively set a ceiling or floor price, or both, on floating index priced physical supply contracts (referred to as commodity price options such as calls, puts, and collars);
- buying physical gas supplies at a set price and injecting the gas into storage for price stability and to minimize pipeline capacity demand costs; and
- investing in gas reserves for longer term price stability. See Note 13 for additional information about our gas reserves.

NW Natural also contracts with an independent energy marketing company to capture opportunities regarding storage and pipeline capacity when those assets are not serving the needs of NGD business customers. Asset management activities provide opportunities for cost of gas savings for customers and incremental revenues for NW Natural through regulatory incentive-sharing mechanisms. These activities, net of the amount shared, are included in other for segment reporting purposes.

Gas Cost Recovery

Mechanisms for gas cost recovery are designed to be fair and reasonable, with an appropriate balance between the interests of customers and NW Natural. In general, natural gas distribution rates are designed to recover the costs of, but not to earn a return on, the gas commodity sold. Risks associated with gas cost recovery are minimized by resetting customer rates annually through the PGA and aligning customer and shareholder interests through the use of sharing, weather normalization, and conservation mechanisms in Oregon. See Part II, Item 7, "Results of Operations—*Regulatory Matters*" and "Results of Operations—Business Segment—Natural Gas Distribution Operations—*Cost of Gas*".

Environmental Stewardship

Part of our gas supply strategy is working to reduce the carbon content and the environmental impacts of the energy we deliver. To that end, NW Natural developed and implemented an emissions screening tool that uses Environmental Protection Agency (EPA) data to calculate the relative emissions intensity of gas producer operations and prioritize purchases from lower emitting producers. In 2019, we began using this emissions intensity screening tool alongside other purchasing criteria such as price, credit worthiness and geographic diversity. We view this as a cost-neutral way to reduce carbon emissions associated with our natural gas supply.

NW Natural is focused on taking steps to lower its emissions on behalf of customers by purchasing environmental attributes that are generated by the production of renewable natural gas (RNG). Under Oregon Senate Bill 98, NW Natural can purchase RNG or invest in RNG facilities, which generate these environmental attributes known as Renewable Thermal Certificates (RTCs). In 2019, the Washington State legislature also passed a bill supporting RNG procurement, House Bill 1257. The RTCs work like renewable energy certificates, or RECs, used in electricity markets. RTCs are verified and certified by the Midwest Renewable Energy Tracking System (M-RETS). The M-RETS Renewable Thermal Tracking System issues one RTC for every dekatherm of RNG injected into the gas system. NW Natural enters into contracts for the purchase of RNG and RTCs either through periodic request for proposals or through formal offerings or informal requests. See Part II, Item 7, "Results of Operations—*Regulatory Matters*".

In addition to purchases of RNG, NW Natural is currently piloting a hydrogen blend in pipelines serving its Sherwood Operations and Training Center. NW Natural has tested a blend of 15% hydrogen and is now testing a blend of 20% hydrogen at that location. Additionally, NW Natural is focused on developing several hydrogen pilots for industrial and commercial customers to support their decarbonization goals.

NW Natural is subject to the requirements of the Washington CCA cap-and-invest program, and could be subject to additional programs currently under consideration in Oregon. NW Natural has modeled pathways to compliance with the CCA in its most recent IRP. While costs associated with each possible compliance pathway differ, we intend to pursue recovery of the costs associated with these programs in rates.

Transportation of Gas Supplies

NW Natural's gas distribution system is reliant on a single, bi-directional interstate transmission pipeline to bring gas supplies into the natural gas distribution system. Although dependent on a single pipeline, the pipeline's gas flows into the Portland metropolitan market from two directions: (1) the north, which brings supplies from the British Columbia and Alberta supply basins; and (2) the east, which brings supplies from Alberta as well as the U.S. Rocky Mountain supply basins.

NW Natural incurs monthly demand charges related to firm pipeline transportation contracts. These contracts have expiration dates ranging from 2024 to 2061. The largest pipeline agreements are with Northwest Pipeline. NW Natural actively works with

Northwest Pipeline and others to renew contracts in advance of expiration to ensure gas transportation capacity is sufficient to meet customer needs.

Rates for interstate pipeline transportation services are established by FERC within the U.S. and by Canadian authorities for services on Canadian pipelines.

Gas Distribution

Safety and the protection of employees, customers, and our communities are, and will remain, top priorities. NW Natural constructs, operates, and maintains its pipeline distribution system and storage operations with the goal of ensuring natural gas is delivered and stored safely, reliably, and efficiently.

NW Natural has one of the most modern distribution systems in the country with no identified cast iron pipe or bare steel main. Since the 1980s, NW Natural has taken a proactive approach to replacement programs and partnered with the OPUC and WUTC on progressive regulation to further safety and reliability efforts for the distribution system. In the past, NW Natural had a cost recovery program in Oregon that encompassed programs for cast iron replacement, bare steel replacement, transmission integrity management, and distribution integrity management programs as appropriate.

Natural gas distribution businesses are likely to be subject to greater federal and state regulation in the future. Additional operating and safety regulations from the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) are currently under development. In May 2023, PHMSA issued a notice of proposed rulemaking: Gas Pipeline Leak Detection and Repair. The proposed rulemaking includes congressional mandates from the PIPES (Protecting our Infrastructure of Pipelines and Enhancing Safety) Act of 2020 to reduce methane emissions from new and existing gas transmission, distribution, gathering, underground storage, and LNG facilities. In September 2023, PHMSA issued a notice of proposed rulemaking: Safety of Gas Distribution Pipelines and Other Pipeline Safety Initiatives. The proposed rulemaking requires operators to update distribution integrity management programs, emergency response plans, operations and maintenance manuals, and other safety practices.

North Mist Gas Storage Facility

The North Mist gas storage facility began operations in 2019. The North Mist facility provides long-term, no-notice underground gas storage service and is dedicated solely to Portland General Electric (PGE) under a 30-year contract with options to extend up to an additional 50 years upon mutual agreement of the parties. PGE uses the facility to fuel its gas-fired electric power generation facilities.

North Mist includes a reservoir providing 4.1 Bcf of available storage, a compressor station with a contractual capacity of 120,000 dekatherms of gas deliverability per day, no-notice service that can be drawn on rapidly, and a 13-mile pipeline to connect to PGE's Port Westward gas plants in Clatskanie, Oregon.

The facility is included in rate base under an established tariff schedule with revenues recognized consistent with the schedule. Billing rates are updated annually to the forecasted depreciable asset level and forecasted operating expenses.

While there are additional expansion opportunities in the Mist storage field, any expansion would be based on market demand, cost effectiveness, available financing, receipt of future permits, and other rights.

OTHER

Certain businesses and activities of NW Holdings and NW Natural are aggregated and reported as other for segment reporting purposes.

NW Natural

The following businesses and activities are aggregated and reported as other under NW Natural, a wholly-owned subsidiary of NW Holdings:

- 5.8 Bcf of the Mist gas storage facility contracted to other utilities, third-party marketers, and electric generators;
- natural gas asset management activities; and
- appliance retail center operations.

Mist Gas Storage

The Mist gas storage facility began operations in 1989. It is a 17.5 Bcf facility with 11.7 Bcf used to provide gas storage for the NGD business. The remaining 5.8 Bcf of the facility is contracted with other utilities, third-party marketers, and electric generators with these results reported in other.

The overall facility consists of seven depleted natural gas reservoirs, 21 injection and withdrawal wells, a compressor station, dehydration and control equipment, gathering lines, and other related facilities. The capacity at Mist provides multi-cycle gas storage services to customers in the interstate and intrastate markets. The interstate storage services are offered under a limited jurisdiction blanket certificate issued by FERC. Under NW Natural's interstate storage certificate with FERC, NW Natural is required to file either a petition for rate approval or a cost and revenue study every five years to change or justify maintaining the existing rates for the interstate storage service. Intrastate firm storage services in Oregon are offered under an OPUC-approved rate schedule as an optional service to certain eligible customers. Gas storage revenues from the 5.8 Bcf are derived primarily from firm service customers who provide energy-related services, including natural gas distribution, electric generation, and energy marketing. The Mist facility benefits from limited competition as there are few storage facilities in the Pacific Northwest region. Therefore, NW Natural has the ability to acquire high-value, multi-year contracts.

Asset Management Activities

NW Natural contracts with an independent energy marketing company to provide asset management services, primarily through the use of natural gas commodity exchange agreements and natural gas pipeline capacity release transactions. The results of these activities are included in other, except for the asset management revenues allocated to NGD business customers pursuant to regulatory agreements, which are reported in the NGD segment.

NW Holdings

These include the following businesses and activities aggregated under NW Holdings:

- NW Natural Water Company, LLC (NWN Water) and its water and wastewater utility operations and water services business;
- NWN Water's equity investment in Avion Water Company, Inc.;
- NW Natural Renewables Holdings, LLC and its non-regulated renewable natural gas activities;
- a minority interest in the Kelso-Beaver Pipeline held by our wholly-owned subsidiary NNG Financial Corporation (NNG Financial); and
- holding company and corporate activities, including business development activities, as well as adjustments made in consolidation.

NW Natural Water

NWN Water currently serves an estimated 180,000 people through approximately 73,000 water and wastewater connections across five states. NWN Water continues to grow though customer additions within or near its service territories, and continues to pursue acquisitions. See further discussion about the status of water general rate cases in Part II, Item 7, "Results of Operations —Regulatory Matters—*Water and Wastewater Utilities*."

The water and wastewater utilities primarily serve residential and commercial customers. Water distribution operations are seasonal in nature with peak demand generally during warmer summer months, while wastewater is less seasonally affected. Entities generally operate in exclusive service territories with no direct competitors. Water distribution customer rates are regulated by state utility commissions while the wastewater businesses we own consist of some state regulated systems and some systems that are not rate regulated by utility commissions.

NWN Water launched its services business in April 2023. This business provides operations and maintenance services to water and wastewater system owners and works to create value by leveraging shared personnel, technology and expertise to support delivery of clean, reliable water at a reasonable cost. Today, NWN Water provides operations and maintenance services to nearly 20,000 connections.

NW Natural Renewables

NW Natural Renewables is an unregulated subsidiary of NW Natural Holdings established to pursue unregulated renewable natural gas activities. In September 2021, a subsidiary of NW Natural Renewables, NW Natural Ohio Renewable Energy, LLC (Ohio Renewables) and a subsidiary of EDL, a global producer of sustainable distributed energy, executed agreements to partially fund two production facilities that are designed to convert landfill waste gases to RNG (EDL Facilities). The EDL Facilities have been constructed, and testing and commissioning of these facilities is underway, but has been delayed. Upon each EDL Facility achieving full commercial operations, Ohio Renewables is committed to make cash payments of approximately $25 million for each facility to partially fund the infrastructure required to condition biogas. Alongside these development agreements, Ohio Renewables and a subsidiary of EDL executed agreements for Ohio Renewables to purchase up to an annual specified amount of RNG produced by the EDL Facilities over a 20-year period. The agreements provide that either party may terminate the agreements and related transactions with respect to the subject facility if it does not reach commercial operations and the funding does not close by December 31, 2023, provided the terminating party has not failed to fulfill its obligations under such agreements, including with respect to achieving commercial operations.

Ohio Renewables has contracted to sell RNG produced by the EDL Facilities up to certain specified volumes in each of calendar years 2024 through 2026 to an investment-grade counterparty. Ohio Renewables additionally has contracted to sell a fixed-volume amount of RNG under a long-term agreement with an investment-grade utility beginning in 2025 and extending through 2042.

Properties and Facilities
NW Natural owns, or previously owned, properties and facilities that are currently being investigated that may require environmental remediation and are subject to federal, state, and local laws and regulations related to environmental matters. These laws and regulations may require expenditures over a long time frame to address certain environmental impacts. Estimates of liabilities for environmental costs are difficult to determine with precision because of the various factors that can affect their ultimate disposition. These factors include, but are not limited to, the following:

- the complexity of the site;
- changes in environmental laws and regulations at the federal, state, and local levels;
- the number of regulatory agencies or other parties involved;
- new technology that renders previous technology obsolete, or experience with existing technology that proves ineffective;
- the level of remediation required;
- variations between the estimated and actual period of time that must be dedicated to respond to an environmentally-contaminated site; and
- the application of environmental laws that impose joint and several liabilities on all potentially responsible parties.

NW Natural has received recovery of a portion of such environmental costs through insurance proceeds, seeks the remainder of such costs through customer rates, and believes recovery of these costs is probable. In both Oregon and Washington, NW Natural has mechanisms to recover expenses. Oregon recoveries are subject to an earnings test. See Part II, Item 7, "Results of Operations—Regulatory Matters—Rate Mechanisms—*Environmental Cost Deferral and Recovery*", and Note 2 and Note 17 of the Consolidated Financial Statements in Item 8 of this report for more information.

Greenhouse Gas Matters
For information concerning greenhouse gas matters, see Part II, Item 7, "Results of Operations—Environmental Regulation and Legislation Matters."

HUMAN CAPITAL

Our core values of integrity, safety, caring, service ethic, and environmental stewardship guide how we engage with customers, stakeholders, shareholders, and communities. We actively work to foster these values in our employee culture and to nurture an inclusive and equitable environment that provides opportunities, prioritizes health and safety, encourages respect and trust, and supports growth and learning. We aim to recruit and retain employees who share our core values and reflect our communities.

Employees
At December 31, 2023, our workforce consisted of the following:

NW Natural:	
Unionized employees[(1)]	614
Non-unionized employees	600
Total NW Natural	1,214
Other Entities:	
Water and wastewater company employees	161
Other	5
Total other entities	166
Total Employees	1,380

(1) Members of the Office and Professional Employees International Union (OPEIU) Local No. 11, AFL-CIO.

NW Natural's labor agreement with members of OPEIU covers wages, benefits, and working conditions. In November 2019, NW Natural's unionized employees ratified a collective bargaining agreement that took effect on December 1, 2019 and extends to May 31, 2024, and thereafter from year to year unless either party serves notice of its intent to negotiate modifications to the collective bargaining agreement. In September 2023, OPEIU provided a notice of intent to negotiate, and negotiations are currently underway. During calendar year 2023, NW Natural did not incur any work stoppages (strikes or lockouts), and therefore, experienced zero idle days for the year.

Certain subsidiaries may receive services from employees of other subsidiaries. Those services are generally charged to the entity receiving those services. When such services involve regulated entities, those entities receiving services are generally charged rates pursuant to shared services agreements that are filed with the applicable state regulatory commission, as applicable.

Safety
Safety is one of our greatest responsibilities to employees. In managing the business, we strive to foster a safety culture focused on prevention, open communication, collaboration, and a strong service and safety ethic. We believe employee safety is critical to our success. A portion of executives' compensation is tied to achieving our identified safety metrics, and our Board of Directors regularly reviews company safety metrics and receives reports on matters of health and safety. NW Natural's health and safety policies and procedures are designed to comply with all applicable regulations, but we also work to go beyond compliance by striving to incorporate information we learn from benchmarking, peer reviews, and industry best practices.

As part of our commitment to employee health and safety, we maintain regular training programs, emergency preparedness procedures, and training and procedures to identify hazards and handle high-risk emergency situations. Employees complete classroom instruction and hands-on, scenario-based training at our training town facility in Oregon that allows employees to experience realistic situations in a controlled environment. We also host natural gas safety training events for first responders, which are designed to prepare those first responders and NW Natural field employees to deliver an integrated, seamless response in the event of an emergency that involves or affects the natural gas system. We also implemented a new learning management system that went live in early 2021 and provides more efficiency and flexibility in how we train.

Employee Benefits and Support
To attract employees and meet the needs of our workforce, NW Natural strives to offer competitive compensation and benefits packages to employees. The benefits package options vary depending on type of employee and date of hire. NW Natural continuously looks for ways to support employees' work-life balance and well-being and this is reflected in physical, mental and financial wellness programs to meet the needs of our employees and help them care for their families. Benefits available to employees during 2023 included, among others: healthcare and other insurance coverages, wellness resources, retirement and savings plans, paid time off programs, and flexible and hybrid work schedules, where possible, employee resource groups, and culture and community-focused resources and opportunities, and employee recognition programs and discounts.

Talent Attraction and Development
In order to implement our business strategy and serve our customers, we depend upon our continuing ability to attract and retain diverse, talented professionals and a technically skilled workforce, and being able to transfer the knowledge and expertise of our workforce to new and increasingly diverse employees as our older workforce retires. A significant portion of our workforce is currently eligible or will reach retirement eligibility within the next five years, and therefore, we are focused on efforts to attract, train, and retain appropriately qualified and skilled workers to prevent loss of institutional knowledge or skills gaps.

NW Natural seeks to provide its employees with growth and development opportunities through programs designed to build skills and relationships. These programs currently include: (i) a culturally relevant mentoring program that creates opportunities for career growth by building relationships; (ii) a tuition assistance program for qualified educational pursuits; (iii) an internal class that provides participants with a big-picture understanding of the industry and company operations, equipping them to see how they contribute to NW Natural's success and identify opportunities for career growth; (iv) internal and external continuing educational courses relevant to areas of expertise; and (v) ongoing management and leadership training programs.

We regularly monitor employee engagement and satisfaction through a variety of tools, including our annual engagement survey that is designed to enable company leaders to gather valuable feedback and guidance from employees.

Diversity, Equity and Inclusion
We have a longstanding commitment to creating a diverse and inclusive culture that reflects and supports the communities we serve, and believe a diverse, equitable, and inclusive workforce at all levels contributes to long-term success. Our efforts in recruiting, promoting, and retaining diverse talent, building inclusive teams, and creating a culture that embraces differences are at the core of our workforce strategy. To attract diverse candidates, we work with community partners to help promote awareness of job opportunities within diverse communities.

We have employee-led groups that develop programs and activities that build awareness around issues important to their co-workers, families, customers, and our community. Groups include the Diversity, Equity & Inclusion Council, Women's Network, African American, Rainbow Alliance (LGBTQ+), Veterans, Somos Unidos (Latinx), Asian American, and Neurodiversity employee resource groups, Wellness Advisory Committee, and Sustainability and Equity Engagement Team. We also continue to emphasize diversity, equity and inclusion values through employee training and education, including expanded diversity training as part of new hire onboarding and other diversity, equity, and inclusion education that occurs throughout the year. An area of focus going forward is to understand and increase awareness of internal systems and structures that could limit representation and equity for underrepresented employees. To that end, we are working toward revising and refocusing new manager and new hire training to include implicit bias, diversity, equity and inclusion, and anti-racism education.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

For information concerning executive officers, see Part III, Item 10.

NW Holdings and NW Natural file annual, quarterly and current reports and other information with the Securities and Exchange Commission (SEC). The SEC maintains an Internet site where reports, proxy statements, and other information filed can be read, copied, and requested online at its website (www.sec.gov). In addition, we make available, free of charge, on our website (www.nwnaturalholdings.com), our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) and proxy materials filed under Section 14 of the Securities Exchange Act of 1934, as amended (Exchange Act), as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. We intend to use our website as a means of disclosing material non-public information and for complying with our disclosure obligations under Regulation FD. Accordingly, investors should monitor our website, in addition to following our press releases, SEC filings and public conference calls and webcasts. We have included our website address as an inactive textual reference only. Information contained on our website is not incorporated by reference into this annual report on Form 10-K.

NW Holdings and NW Natural have adopted a Code of Ethics for all employees, officers, and directors that is available on our website. We intend to disclose revisions and amendments to, and any waivers from, the Code of Ethics for officers and directors on our website. Our Corporate Governance Standards, Director Independence Standards, charters of each of the committees of the Board of Directors, and additional information about NW Holdings and NW Natural are also available at the website. Copies of these documents may be requested, at no cost, by writing or calling Shareholder Services, Northwest Natural Holding Company, 250 S.W. Taylor Street, Portland, Oregon 97204, telephone 503-220-2402.

ITEM 1A. RISK FACTORS

NW Holdings' and NW Natural's business and financial results are subject to a number of risks and uncertainties, many of which are not within our control, which could adversely affect our business, financial condition, and results of operations. Additional risks and uncertainties that are not currently known to us or that are not currently believed by us to be material may also harm our businesses, financial condition, and results of operations. When considering any investment in NW Holdings' or NW Natural's securities, investors should carefully consider the following information, as well as information contained in the caption "Forward-Looking Statements", Item 7A, and our other documents filed with the SEC. This list is not exhaustive and the order of presentation does not reflect management's determination of priority or likelihood. Additionally, our listing of risk factors that primarily affects one of our businesses does not mean that such risk factor is inapplicable to our other businesses.

Legal, Regulatory and Legislative Risks

REGULATORY RISK. *Regulation of NW Holdings' and NW Natural's regulated businesses, including changes in the regulatory environment, failure of regulatory authorities to approve rates which provide for timely recovery of costs and an adequate return on invested capital, or an unfavorable outcome in regulatory proceedings may adversely impact NW Holdings' and NW Natural's financial condition and results of operations.*

The OPUC and WUTC have general regulatory authority over NW Natural's gas business in Oregon and Washington. NW Holdings' regulated water utility businesses are generally regulated by the public utility commission in the state in which a water business is located. These public utility commissions have broad regulatory authority, including: the rates charged to customers; authorized rates of return on rate base, including ROE; the amounts and types of securities that may be issued by our regulated utility companies, like NW Natural; services our regulated utility companies provide and the manner in which they provide them; the nature of investments our utility companies make; deferral and recovery of various expenses, including, but not limited to, pipeline replacement, environmental remediation and compliance costs, capital, information technology and other investments, commodity hedging expense, and certain employee benefit expenses such as pension costs; transactions with affiliated interests; regulatory adjustment mechanisms such as weather adjustment mechanisms, and other matters. The OPUC also regulates actions investors may take with respect to our utility companies, NW Natural and NW Holdings. Similarly, FERC has regulatory authority over NW Natural's interstate storage services. Expansion of our businesses generally results in regulation by other regulatory authorities. For example, certain of NW Holdings' water companies are regulated in Idaho, Texas and Arizona.

The costs that are deemed recoverable in rates and prices regulators allow us to charge for regulated utility service, and the maximum FERC-approved rates FERC authorizes us to charge for interstate storage and related transportation services, are the most significant factors affecting both NW Natural's and NW Holdings' financial position, results of operations and liquidity. State utility regulators have the authority to disallow recovery of costs they find imprudently incurred or otherwise disallowed, and rates that regulators allow may be insufficient for recovery of costs we incur. We expect to continue to make expenditures to expand, improve and safely operate our gas and water utility distribution and gas storage systems, and to work toward decarbonizing our gas systems. Regulators can deny recovery of those costs. Furthermore, while each applicable state regulator has established an authorized rate of return for our regulated utility businesses, we may not be able to achieve the earnings level authorized. Moreover, in the normal course of business we may place assets in service or incur higher than expected levels of operating expense before rate cases can be filed to recover those costs (this is commonly referred to as regulatory lag). The failure of any regulatory commission to approve requested rate increases on a timely basis to recover costs or to allow an adequate return could adversely impact NW Holdings' or NW Natural's financial condition, results of operations and liquidity.

As companies with regulated utility businesses, we frequently have dockets open with our regulators, including a general rate case filed with the OPUC in December 2023. The regulatory proceedings for these dockets typically involve multiple parties, including governmental agencies, consumer, environmental, and other advocacy groups, and other third parties. Each party advocates for the interests that they represent, which may include lower rates, additional regulatory oversight over the company, limitations on growth or phasing out of the gas system, decisions that favor electrification, or advancing other interests. We cannot predict the timing or outcome of these proceedings, or the effects of those outcomes on NW Holdings' and NW Natural's results of operations and financial condition.

REGULATION, COMPLIANCE AND TAXING AUTHORITY RISK. *NW Holdings and NW Natural are subject to governmental regulation, and compliance with local, state and federal requirements, including taxing requirements, and unforeseen changes in or interpretations of such requirements could affect NW Holdings' or NW Natural's financial condition and results of operations.*

NW Holdings and NW Natural are subject to regulation by federal, state and local governmental authorities. We are required to comply with a variety of laws and regulations and to obtain authorizations, permits, approvals and certificates from governmental agencies in various aspects of our business. Significant changes in federal, state, or local governmental leadership can accelerate or amplify changes in existing laws or regulations, or the manner in which they are interpreted or enforced. For instance, the 2020 United States Presidential election resulted in leadership changes in many federal administrative agencies and resulted in a wide range of new policies, executive orders, rules, initiatives and other changes to fiscal, tax, regulation, environmental, climate and other federal policies, many of which have components that affect the energy sector. The 2024 presidential and congressional elections may result in additional significant changes that may impact NW Natural and NW Holdings. Similarly, we could continue to face significant legislative, regulatory and other policy changes at the state level or in the local jurisdictions in which we operate. In addition, foreign governments may implement changes to their policies, in response to changes to U.S. policy or otherwise. Although we cannot predict the impact, if any, of these changes to our businesses, they could adversely affect NW Holdings' or NW Natural's financial condition and results of operations. Until we know what policy changes are made and how those changes impact our businesses and the business of our competitors over the long term, we will not know if, overall, we will benefit from them or will be negatively affected by them.

We cannot predict changes in laws, regulations, interpretations or enforcement or the impact of such changes. Additionally, any failure to comply with existing or new laws and regulations could result in fines, penalties or injunctive measures. For example, under the Energy Policy Act of 2005, the FERC has civil authority under the Natural Gas Act to impose penalties for current violations of over $1.5 million per day for each violation. In addition, as the regulatory environment for our businesses increases in complexity, the risk of inadvertent noncompliance may also increase. Changes in regulations, the imposition of additional regulations, and the failure to comply with laws and regulations could negatively influence NW Holdings' or NW Natural's operating environment and results of operations. There is uncertainty as to how our regulators will reflect the impact of the legislation and other government regulation in rates. The resulting ratemaking treatment may negatively affect NW Holdings' or NW Natural's financial condition and results of operations.

Additionally, changes in federal, state, local or foreign tax laws and their related regulations, or differing interpretations or enforcement of applicable law by a federal, state, local or foreign taxing authority, could result in substantial cost to us and negatively affect our results of operations. Tax law and its related regulations and case law are inherently complex and dynamic. Disputes over interpretations of tax laws may be settled with the taxing authority in examination, through programs like the Compliance Assurance Process (CAP), upon appeal or through litigation. Our judgments may include reserves for potential adverse outcomes regarding tax positions that have been or plan to be taken that may be subject to challenge by taxing authorities. Changes in laws, regulations or adverse judgments and the inherent difficulty in quantifying potential tax effects of business decisions may negatively affect NW Holdings' or NW Natural's financial condition and results of operations.

Furthermore, certain tax assets and liabilities, such as deferred tax assets and regulatory tax assets and liabilities, are recognized or recorded by NW Holdings or NW Natural based on certain assumptions and determinations made based on available evidence, such as projected future taxable income, tax-planning strategies, and results of recent operations. If these assumptions and determinations prove to be incorrect, the recorded results may not be realized, which may negatively impact the financial results of NW Holdings and NW Natural.

REPUTATIONAL RISKS. *To the extent that customers, legislators, or regulators have or develop a negative opinion of our businesses, NW Holdings' and NW Natural's financial position, results of operations and cash flows could be adversely affected.*

A number of factors can affect customers', legislators', regulators', and other third parties' perception of us or our business including: service interruptions or safety concerns due to failures of equipment or facilities or from other causes, and our ability to promptly respond to such failures; our ability to safeguard sensitive customer information; the timing and magnitude of rate increases; and volatility of rates. Customers', legislators', and regulators' opinions of us can also be affected by media coverage, including social media, which may include information, whether factual or not, that could damage the perception of natural gas, our brand, or our reputation.

Although we believe that natural gas serves an important role in helping our region reduce GHG emissions and move to a resilient lower-carbon energy system, certain advocacy groups have opposed the use of natural gas as a fuel source altogether and have pursued policies that limit, restrict, or impose additional costs on, the use of natural gas in a variety of contexts.

Concerns raised about the use of natural gas include the potential for natural gas explosions or delivery disruptions, methane leakage along production, transportation and delivery systems, and end-use equipment, and contribution of natural gas energy use to GHG emission levels and global warming. Similarly, concerns have also been raised regarding the use of RNG or hydrogen in place of conventional natural gas. In addition, studies and claims by advocacy groups contend that there are detrimental indoor public health effects associated with the use of natural gas, which may also impact public perception. Shifts in public sentiment due to these concerns or others that may be raised may impact further legislative initiatives, regulatory actions, and litigation, as well as behaviors and perceptions of customers, investors, lawmakers, and regulators.

If customers, legislators, regulators, or other third parties have or develop a negative opinion of us and our services, or of natural gas as an energy source generally, this could make it more difficult for us to achieve policy, legislative or regulatory outcomes supportive of our business. Negative opinions could also result in reduced customer growth, sales volumes reductions, increased use of other sources of energy, or difficulties in accessing capital markets. Any of these consequences could adversely affect NW Holdings' or NW Natural's financial position, results of operations and cash flows.

REGULATORY ACCOUNTING RISK. *In the future, NW Holdings or NW Natural may no longer meet the criteria for continued application of regulatory accounting practices for all or a portion of our regulated operations.*

If we can no longer apply regulatory accounting, we could be required to write off our regulatory assets and precluded from the future deferral of costs not recovered through rates at the time such amounts are incurred, even if we are expected to recover these amounts from customers in the future.

Public Health Risk

PUBLIC HEALTH RISK. *Public health threats, such as coronavirus (COVID-19) and the resulting economic conditions, or the emergence of other epidemic or pandemic crises, could materially and adversely affect NW Holdings' and NW Natural's business, results of operations, or financial condition.*

Public health threats, such as resurgences or mutations of COVID-19, could adversely affect our business by, among other things:

- impacting the health, safety, productivity and availability of our employees and contractors;
- disrupting our access to capital markets or increasing costs of capital affecting our liquidity in the future;
- reducing demand for natural gas, particularly from commercial and industrial customers that are suffering slow-downs or ultimately close completely due to pandemic effects;
- reducing customer growth and new meter additions due to less economic, construction or conversion activity;
- limiting our ability to collect on overdue accounts or disconnect gas service for nonpayment, beyond an amount or period of time acceptable to us;
- increasing our operating costs for emergency supplies, personal protective equipment, cleaning services and supplies, remote technology and other specific needs;
- impacting our capital expenditures if construction activities are suspended or delayed;
- sickening or causing a mandatory quarantine of a large percentage of our workforce, or key workgroups with specialized skill sets, impairing our ability to perform key business functions or execute our business continuity plans;
- impacting our or our contractors' or suppliers' ability to recruit and retain qualified personnel or otherwise impairing the functioning of our supply chain or ability to rely on third parties or business partners;
- adversely affecting the asset values of NW Natural's defined benefit pension plan or causing a failure to maintain sustained growth in pension investments over time, increasing our contribution requirements;
- limiting, delaying or curtailing entirely, public utility commissions' ability to approve or authorize applications or other requests we may make with respect to our regulated businesses;
- increasing volatility in the price of natural gas; and
- creating additional cybersecurity vulnerabilities due to ongoing heavy reliance on remote working.

The ultimate long-term impact of public health threats, such as the resurgence of COVID-19 or other pandemics, on our business cannot be predicted and will depend on factors beyond our knowledge or control, including economic effects, actions taken to mitigate its effects, and the extent to which normal economic and operating conditions can continue. Any of these factors could have an adverse effect on our business, outlook, financial condition, and results of operations and cash flows, which could be significant.

Growth and Strategic Risks

STRATEGIC TRANSACTION RISK. *NW Holdings' and NW Natural's ability to successfully complete strategic transactions is subject to significant risks, which could adversely affect NW Holdings' or NW Natural's financial condition, results of operations, and cash flows.*

From time to time, NW Holdings and NW Natural have pursued and may continue to pursue strategic transactions including mergers, acquisitions, combinations, divestitures, joint ventures, business development projects or other strategic transactions, including, but not limited to, investments in RNG projects on a regulated basis by NW Natural and on a non-regulated basis by NW Holdings, as well as acquisitions by NW Holdings in the water, wastewater and water services, or in the gas or other utility sectors. Any such transactions involve substantial risks, including the following:

- such transactions that are contracted for may fail to close for a variety of reasons;
- the result of such transactions may not produce revenues, earnings or cash flow at anticipated levels, which could, among other things, result in the impairment of any investments or goodwill associated with such transactions;
- acquired businesses or assets could have environmental, permitting, or other problems for which contractual protections prove inadequate;
- there may be difficulties in integration or higher than expected operation costs of new businesses;
- there may exist liabilities that were not disclosed to us, that exceed our estimates, or for which our rights to indemnification from the seller are limited;
- we may be unable to obtain the necessary regulatory or governmental approvals to close a transaction or receive approvals granted subject to terms that are unacceptable to us;
- we may be unable to achieve the anticipated regulatory treatment of any such transaction as part of the transaction approval or subsequent to closing the transaction; or
- we may be unable to avoid a disposition of assets for a price that is less than the book value of those assets.

One or more of these risks could affect NW Holdings' and NW Natural's financial condition, results of operations, and cash flows.

BUSINESS DEVELOPMENT RISK. *NW Holdings' and NW Natural's business development projects may not be successful or may encounter unanticipated obstacles, costs, changes or delays that could result in a project being unsuccessful or becoming impaired, which could negatively impact NW Holdings' or NW Natural's financial condition, results of operations and cash flows.*

Business development projects involve many risks. We are currently engaged in several business development projects, including, but not limited to, several water, wastewater, water services and RNG projects, non-regulated investments in RNG projects, and purchasing, marketing and reselling of RNG and its associated attributes. We may also engage in other business development projects such as investments in additional long-term gas reserves, CNG refueling stations, power to gas, power generation, hydrogen projects, carbon capture projects or other similar projects. Our business development activities are subject to uncertainties and changed circumstances and may not reach the scale expected, be successful or perform as anticipated. Additionally, we may not be able to obtain required governmental permits and approvals to complete our projects in a cost-efficient or timely manner, potentially resulting in delays or abandonment of the projects. We could also experience issues such as: technological challenges; ineffective scalability; failure to achieve expected outcomes; unsuccessful business models; startup and construction delays; construction cost overruns; disputes with contractors; the inability to negotiate acceptable agreements such as rights-of-way, easements, construction, gas supply or other material contracts; changes in customer demand, perception or commitment; public opposition to projects; marketing risk and changes in market regulation, behavior or prices, market volatility or unavailability, including markets for RNG and its associated attributes or other environmental attributes; the inability to receive expected tax or regulatory treatment; and operating cost increases. Additionally, we may be unable to finance our business development projects at acceptable costs or within a scheduled time frame necessary for completing the project. Any of the foregoing risks, if realized, could result in business development efforts failing to produce expected financial results and the project investment becoming impaired, and such failure or impairment could have an adverse effect on NW Holdings' or NW Natural's financial condition and results of operations.

JOINT PARTNER RISK. *Investing in business development projects through partnerships, joint ventures or other business arrangements affects our ability to manage certain risks and could adversely impact NW Holdings' or NW Natural's financial condition, results of operations and cash flows.*

We use joint ventures and other business arrangements to manage and diversify the risks of certain development projects and investments, including NW Natural's gas reserves agreements, certain RNG projects, and certain of NW Holdings' subsidiaries' unregulated RNG projects and water platform investments. For example, in 2020, NW Natural began a partnership with BioCarbN to invest up to an estimated $38 million in four separate RNG development projects that access biogas derived from water treatment at Tyson Foods' processing plants, subject to approval by all parties. NW Holdings or NW Natural currently has and may further acquire or develop part-ownership interests in other projects in the future, including but not limited to, natural gas, water, wastewater, water services, RNG, or hydrogen projects. Under these arrangements, we may not be able to fully direct the management and policies of the business relationships, and other participants in those relationships may act contrary to our interests, including making operational decisions that could negatively affect our costs and liabilities. In addition, other participants may withdraw from the project, divest important assets, become financially distressed or bankrupt, be subject to additional regulatory or legal requirements, or have economic or other business interests or goals that are inconsistent with ours. We have in the past and may in the future become involved in disputes with our business partners, which could result in additional cost or divert management's attention.

NW Natural's gas reserves arrangements, which operate as a hedge backed by physical gas supplies, involve a number of risks, including: gas production that is significantly less than the expected volumes, or no gas volumes; operating costs that are higher than expected; inherent risks of gas production, including disruption to operations or a complete shut-in of the field; and one or more participants in one of these gas reserves arrangements becoming financially insolvent or acting contrary to NW Natural's interests. For example, Jonah Energy, the counterparty in NW Natural's gas reserves arrangement, no longer maintains any company credit ratings. Although NW Natural intends to continue monitoring Jonah Energy's financial condition and take appropriate actions to preserve NW Natural's interests, it does not control Jonah Energy's financial condition or continued performance under the gas reserves arrangement. The cost of the original gas reserves venture is currently included in customer rates and additional wells under that arrangement are recovered at specific costs, the occurrence of one or more of these risks could affect NW Natural's ability to recover this hedge in rates. Further, new gas reserves arrangements have not been approved for inclusion in rates, and regulators may ultimately determine to not include all or a portion of future transactions in rates. The realization of any of these situations could adversely impact NW Holdings' or NW Natural's financial condition, results of operations and cash flows.

CUSTOMER GROWTH RISK. *NW Holdings' and NW Natural's NGD margin, earnings and cash flow may be negatively affected if we are unable to sustain customer growth rates in our NGD segment.*

NW Natural's NGD margins and earnings growth have largely depended upon the sustained growth of its residential and commercial customer base due, in part, to the new construction housing market, conversions of customers to natural gas from other energy sources and growing commercial use of natural gas. Building codes recently enacted and others under consideration in our territory may have the effect of reducing our natural gas customer growth rate. For example, effective February 1, 2021, building codes in Washington state require new residential homes to achieve higher levels of energy efficiency based on specified carbon emissions assumptions, which calculate electric appliances to have lower on-site GHG emissions than comparable gas appliances. This increases the cost of new home construction incorporating natural gas depending on a number of factors including home size, equipment configurations, and building envelope measures. Additionally, the Washington State Building Code Council (SBCC) voted in April 2022 to include updates in the state commercial building energy code that are expected to restrict or eliminate the use of gas space and water heating in new commercial construction. In November 2022, the SBCC voted to include updates to the state residential building energy code that restrict the use of gas space and water heating in residential construction, with certain exceptions including for natural gas-fired heat pumps and hybrid fuel systems. The SBCC commercial and residential rules were expected to become effective July 1, 2023, but the SBCC delayed implementation and has taken steps to modify those rules. The timeline for implementation of the modified rules, if any, is March, 2024 unless the legislature delays, rejects, or amends the new rules. Certain jurisdictions in Oregon and the State of Oregon are considering similar measures. While we expect these types of codes to be subject to legal challenge, and the new modified SBCC rules are currently subject to legal challenges, we cannot predict the outcome of any such challenge. Insufficient customer growth, for economic, political, public perception, policy, or other reasons could adversely affect NW Holdings' or NW Natural's utility margin, earnings and cash flows.

RISK OF COMPETITION. *Our NGD business is subject to increased competition which could negatively affect NW Holdings' or NW Natural's results of operations.*

In the residential and commercial markets, NW Natural's NGD business competes primarily with suppliers of electricity, fuel oil, and propane. In the industrial market, NW Natural competes with suppliers of all forms of energy. Competition among these forms of energy is based on price, efficiency, reliability, performance, market conditions, technology, federal, state and local governmental regulation, actual and perceived environmental impacts, and public perception. Technological improvements such as electric heat pumps, batteries or other alternative technologies, or building code or other regulations or restrictions affecting the cost or ability to use certain gas appliances, could erode NW Natural's competitive advantage. If natural gas prices are high relative to other energy sources, or if the cost, environmental impact or public perception of such other energy sources improves relative to natural gas, it may negatively affect NW Natural's ability to secure new customers or retain our existing customers, which could have a negative impact on our customer growth rate and NW Holdings' and NW Natural's results of operations.

Our natural gas storage operations compete primarily with other storage facilities and pipelines. Increased competition in the natural gas storage business could reduce the demand for our natural gas storage services, drive prices down for our storage business, and adversely affect our ability to renew or replace existing contracts at rates sufficient to maintain current revenues and cash flows, which could adversely affect NW Holdings' and NW Natural's financial condition, results of operations and cash flows.

Operational Risks

OPERATING RISK. *Transporting and storing gas and liquid fuels and distributing gas and liquid fuels and, water and wastewater involves numerous risks that may result in accidents and other operating risks and costs, some or all of which may not be fully covered by insurance, and which could adversely affect NW Holdings' or NW Natural's financial condition, results of operations and cash flows.*

NW Holdings and NW Natural are subject to all of the risks and hazards inherent in the businesses of gas and liquid transmission, distribution and storage, water distribution, and water and wastewater services including:

- earthquakes, wildfires, floods, storms, landslides and other severe weather incidents and natural hazards;
- leaks or losses of gases or liquids, or contamination of gases or liquids by chemicals or compounds, as a result of the malfunction of equipment or facilities or otherwise;
- operator errors or damages from third parties;
- negative performance by our storage reservoirs, facilities, or wells that could cause us to fail to meet expected or forecasted operational levels or contractual commitments to our customers or other third parties;
- problems maintaining, or the malfunction of, pipelines, biodigester facilities, wellbores and related equipment and facilities that form a part of the infrastructure that is critical to the operation of our facilities;

- presence of chemicals or other compounds in the gases or liquids we deliver that could adversely affect the performance of the system or end-use equipment;
- collapse of underground storage reservoirs;
- inadequate supplies of RNG, natural gas or water or contamination of water supplies;
- operating costs that are substantially higher than expected;
- supply chain disruptions, including unexpected price increases, or supply restrictions beyond the control of our suppliers;
- migration of gas through faults in the rock or to some area of the reservoir where existing wells cannot drain the gas effectively, resulting in loss of the gas;
- blowouts (uncontrolled escapes of gas from a pipeline or well) or other accidents, fires and explosions; and
- risks and hazards inherent in the drilling operations associated with the development of gas storage facilities, and wells.

For example, TC Pipelines, LP (TC Pipelines) has identified the presence of a chemical substance, dithiazine, at several facilities on the system of its subsidiary, Gas Transmission Northwest (GTN), and those of some upstream and downstream connecting pipeline facilities. A portion of NW Natural's gas supplies from Canada are transported on GTN's pipelines. TC Pipelines reports that dithiazine can drop out of gas streams in a powdery form at some points of pressure reduction (for example, at a regulator), and that in incidents where a sufficient quantity of the material accumulates in certain places, improper functioning of equipment can occur, which can result in increased preventative and corrective action costs. While NW Natural has not detected significant quantities of dithiazine on its system to date, we continue to monitor and could discover increased levels of dithiazine or other compounds on NW Natural's system that could affect the performance of the system or end-use equipment.

These and other operational risks could result in disruption of service, personal injury or loss of human life, damage to and destruction of property and equipment, pollution or other environmental damage, breaches of our contractual commitments, and may result in curtailment or suspension of operations, which in turn could lead to significant costs and lost revenues. Further, because our pipeline, storage and distribution facilities are in or near populated areas, including residential areas, commercial business centers, and industrial sites, any loss of human life or adverse financial outcomes resulting from such events could be significant. We could be subject to lawsuits, claims, and criminal and civil enforcement actions. Additionally, we may not be able to maintain the level or types of insurance we desire, and the insurance coverage we do obtain may contain large deductibles or fail to cover certain hazards or cover all potential losses. The occurrence of any operating risks not covered by insurance could adversely affect NW Holdings' or NW Natural's financial condition, results of operations and cash flows.

SAFETY REGULATION RISK. *NW Holdings and NW Natural may experience increased federal, state and local regulation of the safety of our systems and operations, which could adversely affect NW Holdings' or NW Natural's operating costs and financial results.*

The safety and protection of the public, our customers and our employees is and will remain our top priority. We are committed to consistently monitoring, maintaining, and upgrading our distribution systems and storage operations to ensure that RNG, natural gas and water is acquired, stored and delivered safely, reliably and efficiently. Natural gas operators are subject to robust, ongoing federal, state and local regulatory oversight, which intensifies in response to incidents. For example, the 2020 Protecting our Infrastructure of Pipelines and Enhancing Safety Act (PIPES Act) prompted PHSMA to issue three new rulemakings impacting transmission lines, gathering lines, and valve automation in response to past incidents in other parts of the country. Proposed rules issued in 2023 by PHMSA include regulations related to the detection and repair of leaks and safety of gas distribution pipelines.

In addition, our workplaces are subject to the requirements of the Department of Transportation, through the Federal Motor Carrier Safety Administration, and the Occupational Safety and Health Administration, as well as state and local statutes and regulations that regulate the protection of the health and safety of workers. The failure to comply with these requirements or general industry standards, including keeping adequate records or preventing occupational injuries or exposure, could expose us to civil or criminal liability, enforcement actions, and regulatory fines and penalties that may not be recoverable through our rates and could have a material adverse effect on our business, financial condition, results of operations and cash flows.

We intend to work diligently with industry associations and federal and state regulators to comply with these regulations and other new laws. We expect there to be increased costs associated with compliance, and those costs could be significant. If these costs are not recoverable in our customer rates, they could have a negative impact on NW Holdings' and NW Natural's operating costs and financial results.

RELIANCE ON THIRD PARTIES TO SUPPLY OR OPTIMIZE NATURAL GAS, RNG AND ENVIRONMENTAL ATTRIBUTES OR CREDITS RISK. *NW Natural relies on third parties to supply or optimize natural gas, RNG, storage or pipeline capacity, and environmental attributes or credits in its NGD segment, and limitations on NW Natural's ability to obtain supplies, engage in effective optimization, or failure to receive expected supplies, could have an adverse impact on NW Holdings' or NW Natural's financial results.*

NW Natural's ability to secure natural gas, RNG and environmental attributes or credits depends upon its ability to purchase and receive delivery of them from third parties. NW Natural, and in some cases its suppliers, does not have control over the availability of natural gas, RNG or environmental attributes or credits, competition for those supplies, disruptions in those supplies, priority allocations on transmission pipelines, markets for those supplies, or pricing and other terms related to such supplies. Additionally, third parties on whom NW Natural relies may fail to deliver supplies for which it has contracted. For example, in October, 2018, a 36-inch pipeline near Prince George, British Columbia owned by Enbridge ruptured, disrupting natural gas flows from Canada into Washington while the ruptured pipeline and an adjacent pipeline were assessed and the ruptured pipeline was repaired. Once repaired, pressurization levels for those pipelines were reduced for a significant period of time for assessment and testing. If NW Natural is unable or limited in its ability to obtain natural gas, RNG or environmental attributes or credits from its current suppliers or new sources, it may not be able to meet customers' gas requirements or regulatory or compliance requirements, and would likely incur costs associated with actions necessary to mitigate service disruptions or regulatory compliance, which could significantly and negatively impact NW Holdings’ and NW Natural’s results of operations.

NW Natural also contracts with an independent energy marketing company to provide asset management services regarding storage and pipeline capacity when those assets are not serving the needs of NGD business customers. We may not be able to fully direct these transactions, or the counterparty to these arrangements may act contrary to our interests, become financially distressed or have economic or other business interests or goals that are inconsistent with ours. Failure to effectively optimize our assets could result in a negative impact on NW Holdings' and NW Natural’s financial condition, revenues and results of operations.

SINGLE TRANSPORTATION PIPELINE RISK. *NW Natural relies on a single pipeline company for the transportation of gas to its service territory, a disruption, limitation, or inadequacy of which could adversely impact its ability to meet customers’ gas requirements, which could significantly and negatively impact NW Holdings’ and NW Natural’s results of operations.*

NW Natural’s distribution system is directly connected to a single interstate pipeline, which is owned and operated by Northwest Pipeline. The pipeline’s gas flows are bi-directional, transporting gas into the Portland metropolitan market from two directions: (1) the north, which brings supplies from the British Columbia and Alberta supply basins; and (2) the east, which brings supplies from the Alberta and the U.S. Rocky Mountain supply basins. If there is a rupture or inadequate capacity in, or supplies to maintain adequate pressures in, the pipeline, NW Natural may not be able to meet its customers’ gas requirements and we would likely incur costs associated with actions necessary to mitigate service disruptions, both of which could significantly and negatively impact NW Holdings’ and NW Natural’s results of operations.

THIRD PARTY PIPELINE RISK. *NW Natural’s gas storage business depends on third-party pipelines that connect our storage facilities to interstate pipelines, the failure or unavailability of which could adversely affect NW Holdings’ or NW Natural’s financial condition, results of operations and cash flows.*

Our gas storage facilities are reliant on the continued operation of a third-party pipeline and other facilities that provide delivery options to and from our storage facilities. Because we do not own all of these pipelines, their operations are not within our control. If the third-party pipeline to which we are connected were to become unavailable for current or future withdrawals or injections of natural gas due to repairs, damage to the infrastructure, lack of capacity or other reasons, our ability to operate efficiently and satisfy our customers’ needs could be compromised, thereby potentially having an adverse impact on NW Holdings’ or NW Natural’s financial condition, results of operations and cash flows.

WORKFORCE RISK. *NW Holdings’ and NW Natural’s businesses are heavily dependent on being able to attract and retain qualified employees and maintain a competitive cost structure with market-based salaries and employee benefits, and workforce disruptions could adversely affect NW Holdings’ or NW Natural’s operations and results.*

NW Holdings’ and NW Natural’s ability to implement our business strategy and serve our customers is dependent upon our continuing ability to attract and retain diverse, talented professionals and a technically skilled workforce, and being able to transfer the knowledge and expertise of our workforce to new and increasingly diverse employees as our largely older workforce retires. A significant portion of our workforce is currently eligible or will reach retirement eligibility within the next five years, which will require that we attract, train and retain skilled workers to prevent loss of institutional knowledge or skills gaps. We face competition for qualified personnel with specific skillsets. This competition may result in increased pressure on wages or other challenges in recruiting or retaining personnel. Without an appropriately skilled workforce, our ability to provide quality service and meet our regulatory requirements will be challenged and this could negatively impact NW Holdings' and NW Natural’s earnings. Additionally, approximately half of NW Natural workers are represented by the OPEIU Local No. 11 AFL-CIO and are covered by a collective bargaining agreement that extends to May 31, 2024. Disputes with the union representing NW Natural employees over terms and conditions of their agreement, or failure to timely and effectively renegotiate the agreement upon its expiration, could result in instability in our labor relationship or other labor disruptions or work stoppages that could impact the timely delivery of gas and other services from our utility and storage facilities, which could strain relationships with customers and state regulators and cause a loss of revenues. The collective bargaining agreements may also limit our flexibility in dealing with NW Natural’s workforce, and the ability to change work rules and practices and implement other efficiency-related improvements to successfully compete in today’s challenging marketplace, which may negatively affect NW Holdings’ and NW Natural’s financial condition and results of operations.

Environmental Risks

ENVIRONMENTAL LIABILITY RISK. *Certain of NW Natural's, and possibly NW Holdings', properties and facilities may pose environmental risks requiring remediation, the costs of which are difficult to estimate and which could adversely affect NW Holdings' and NW Natural's financial condition, results of operations, and cash flows.*

NW Natural owns, or previously owned, properties that require environmental remediation or other action. NW Holdings or NW Natural may now, or in the future, own other properties that require environmental remediation or other action. NW Natural and NW Holdings accrue all material loss contingencies relating to these properties. A regulatory asset at NW Natural has been recorded for estimated costs pursuant to a deferral order from the OPUC and WUTC. In addition to maintaining regulatory deferrals, NW Natural settled with most of its historical liability insurers for only a portion of the costs it has incurred to date and expects to incur in the future. To the extent amounts NW Natural recovered from insurance are inadequate and it is unable to recover these deferred costs in utility customer rates, NW Natural would be required to reduce its regulatory assets which would result in a charge to earnings in the year in which regulatory assets are reduced. In addition, in Oregon, the OPUC approved the SRRM, which limits recovery of deferred amounts to those amounts which satisfy an annual prudence review and an earnings test that requires NW Natural to contribute additional amounts toward environmental remediation costs above approximately $10 million in years in which NW Natural earns above its authorized ROE. To the extent NW Natural earns more than its authorized ROE in a year, it would be required to cover environmental expenses greater than the $10 million with those earnings that exceed its authorized ROE. The OPUC ordered a review of the SRRM in 2018 or when we obtain greater certainty of environmental costs, whichever occurred first. We submitted information for review in 2018, and believe we could be subject to further review. Similarly, in October 2019, the WUTC authorized an ECRM, which allows for recovery of certain past deferred and future prudently incurred remediation costs allocable to Washington through application of insurance proceeds and collections from customers, subject to an annual prudence determination. These ongoing prudence reviews, or with respect to the SRRM, the earnings test, or the periodic review could reduce the amounts NW Natural is allowed to recover, and could adversely affect NW Holdings' or NW Natural's financial condition, results of operations and cash flows.

Moreover, we may have disputes with regulators and other parties as to the severity of particular environmental matters, what remediation efforts are appropriate, whether natural resources were damaged, and the portion of the costs or claims NW Natural or NW Holdings should bear. We cannot predict with certainty the amount or timing of future expenditures related to environmental investigations, remediation or other action, the portions of these costs allocable to NW Natural or NW Holdings, or disputes or litigation arising in relation thereto.

Environmental liability estimates are based on current remediation technology, industry experience gained at similar sites, an assessment of probable level of responsibility, and the financial condition of other potentially responsible parties. However, it is difficult to estimate such costs due to uncertainties surrounding the course of environmental remediation, the preliminary nature of certain site investigations, natural recovery of the site, unavoidable limitations associated with environmental investigations and remedial technologies, evolving science, and the application of environmental laws that impose joint and several liabilities on all potentially responsible parties. These uncertainties and disputes arising therefrom could lead to further adversarial administrative proceedings or litigation, with associated costs and uncertain outcomes, all of which could adversely affect NW Holdings' or NW Natural's financial condition, results of operations and cash flows.

ENVIRONMENTAL REGULATION COMPLIANCE RISK. *NW Holdings and NW Natural are subject to environmental regulations, compliance with which or failure to comply with, could adversely affect our operations or financial results.*

NW Holdings and NW Natural are subject to laws, regulations and other legal requirements enacted or adopted by federal, state and local governmental authorities relating to protection of the environment, including those legal requirements that govern discharges of substances into the air and water, the management and disposal of hazardous substances and waste, groundwater quality and availability, plant and wildlife protection, the emitting of greenhouse gases, and other aspects of environmental regulation. For example, our natural gas operations are subject to reporting requirements to a number of governmental authorities including, but not limited to, the Environmental Protection Agency (EPA), the Oregon Department of Environmental Quality (ODEQ), and the Washington State Department of Ecology regarding greenhouse gas emissions. We are also required to reduce emissions of GHGs over time in accordance with the Washington Climate Commitment Act. These and other current and future additional environmental regulations at the local, state or national level could result in increased compliance costs or additional operating restrictions, which may or may not be recoverable in customer rates, through insurance or otherwise. If these costs are not recoverable, or if these regulations reduce the desirability, availability, or cost-competitiveness of natural gas, they could have an adverse effect on NW Holdings' or NW Natural's operations or financial condition. Furthermore, failure to comply with such laws or regulations could subject us to possible enforcement actions, financial liability or litigation, any of which could adversely affect NW Holdings' or NW Natural's financial condition and results of operations.

GLOBAL CLIMATE CHANGE RISK. *Our businesses may be subject to physical risks associated with climate change, all of which could adversely affect NW Holdings' or NW Natural's financial condition, results of operations and cash flows.*

Climate change may cause physical risks, including an increase in sea level, intensified storms, water scarcity, wildfire susceptibility and intensity and changes in weather conditions, such as changes in precipitation, average temperatures and extreme wind or other extreme weather events or climate conditions. Moreover, a significant portion of the nation's gas infrastructure is located in areas susceptible to storm damage that could be aggravated by wetland and barrier island erosion, which could give rise to gas supply interruptions and price spikes.

These and other physical changes could result in disruptions to natural gas production and transportation systems potentially increasing the cost of gas and affecting our natural gas businesses' ability to procure or transport gas to meet customer demand. These changes could also affect our distribution systems resulting in increased maintenance and capital costs, disruption of service, regulatory actions and lower customer satisfaction. Similar disruptions could occur in NW Holdings' water utility and unregulated RNG businesses. Additionally, to the extent that climate change adversely impacts the economic health or weather conditions of our service territory directly, it could adversely impact customer demand or our customers' ability to pay. Such physical risks could have an adverse effect on NW Holdings' or NW Natural's financial condition, results of operations, and cash flows.

PUBLIC PERCEPTION AND POLICY RISK. *Changes in public sentiment or public policy with respect to natural gas, including through local, state or federal laws or legislation or other regulation (including ballot initiatives, executive orders or regulatory codes) or litigation, could adversely affect NW Holdings' or NW Natural's financial condition, results of operations and cash flows.*

There are a number of international, federal, state, and local legislative, legal, regulatory and other initiatives being proposed and adopted in an attempt to measure, control or limit the effects of global warming and climate change, including greenhouse gas (GHG) emissions such as carbon dioxide, nitrous oxide, and methane. Legislation or other forms of public policy or regulation that aim to reduce GHG emissions at the federal, state, or local level have and could continue to take a variety of forms including, but not limited to, GHG emissions limits, reporting requirements, carbon taxes, requirements to purchase carbon credits, building codes, increased efficiency standards, additional charges to fund energy efficiency activities or other regulatory actions, and incentives or mandates to conserve energy, or use renewable energy sources. Federal, state, or local governments may provide tax advantages and other subsidies to support alternative energy sources, withdraw funding from fossil fuel sources, mandate the use of specific fuels or technologies, prohibit the use of natural gas, or promote research into new technologies to reduce the cost and increase the scalability of alternative energy sources. In 2021, the United States rejoined the Paris Agreement on Climate Change, and the United States Presidential administration has issued executive orders aimed at reducing GHG emissions, has declared climate change a national security priority, and continues to consider a wide range of policies, executive orders, rules, legislation and other initiatives to address climate change. For example, the Inflation Reduction Act of 2022 (IRA), was signed into law in August 2022 and includes a number of energy and climate related provisions including funding for the EPA to improve GHG reporting and enforcement, as well as a methane fee applicable to activities associated with gas production and processing facilities, transmission pipelines and certain storage facilities. The U.S. Congress may also pass federal climate change legislation in the future. Additionally, other federal agencies have taken or are expected to take actions related to climate change. For example, in March 2022, the Securities and Exchange Commission (SEC) proposed new rules relating to the disclosure of a range of climate-related matters, PHMSA has prepared regulations and other actions to limit methane emissions and the Commodities Futures Trading Commission (CFTC) has indicated it intends to take actions related to oversight of climate-related financial risks as pertinent to the derivatives and underlying commodities markets. Similarly, other federal agencies and regulations, including but not limited to the Consumer Products Safety Commission, the U.S. Department of Treasury, Federal Acquisitions Regulations, and others have indicated impending actions related to regulation related to climate change.

At the state level, the State of Washington has enacted the Climate Commitment Act (CCA), which establishes a comprehensive program that provides an overall limit for GHG emissions from major sources in the state that began on January 1, 2023 and declines yearly to 95% below 1990 levels by 2050. NW Natural is currently subject to the CCA. Similarly, in Oregon, in March 2020, the Oregon Governor issued an executive order (EO) establishing GHG emissions reduction goals and directing state agencies and commissions (including the ODEQ and the OPUC) to facilitate such GHG emission goals. In December 2021, the ODEQ concluded its process and issued final cap and reduce rules for the Climate Protection Program (CPP), which initially became effective January 1, 2022 and outlined GHG emissions reduction goals of 50% by 2035 and 90% by 2050 from a 2017-2019 baseline. The CPP was subsequently invalidated by the Oregon Court of Appeals in December 2023. Although NW Natural is not currently subject to the compliance requirements of the CPP, the ODEQ has stated that it intends to promulgate new rules covering GHG emissions, and we cannot predict the timing, scope or impact of such rules. We further expect that there will be additional efforts to address climate change in the 2024 legislative sessions in both Oregon and Washington and we cannot predict whether the legislatures will pass any climate related legislation and the potential impact any such legislation may have on the Company. In addition, the State of Washington is in the process of implementing, and the State of Oregon and some local jurisdictions are considering, building codes that could have the effect of disfavoring or disallowing natural gas in residential or commercial new construction or conversions, including locations within our service territory, such the City of Eugene. A number of local and county jurisdictions are also proposing or passing renewable energy resolutions, green tariffs or other measures in an effort to accelerate renewable energy goals.

Such current or future legislation, regulation or other initiatives (including executive orders, ballot initiatives or ordinances) could impose on our natural gas businesses operational requirements or restrictions, additional charges to fund energy efficiency initiatives, or levy a tax based on carbon content. In addition, certain jurisdictions, including San Francisco, Seattle, and New York have enacted measures to ban or discourage the use of new natural gas hookups in residential or other buildings. Other jurisdictions, including several in our service territory, such as the city of Milwaukie, have considered or are currently considering similar restrictions or other measures discouraging the use of natural gas, such as limitations or bans on the use of natural gas in new construction, requiring the conversion of buildings to electric heat, or adopting policies or incentives to encourage the use of electricity in lieu of natural gas. Such restrictions could adversely impact customer growth or usage and could adversely impact our ability to recover costs and maintain reasonable customer rates. In addition, certain states, cities, local jurisdictions and private parties have initiated lawsuits against companies related to climate change impacts, GHG emissions or climate-related disclosures. While NW Natural has not been subject to such litigation to date, such climate-related claims or actions could be costly to defend and could negatively impact our business, reputation, financial condition, and results of operations.

NW Natural believes natural gas has an important role in moving the Pacific Northwest to a lower carbon future, and to that end is developing programs and measures to reduce carbon emissions. However, NW Natural's efforts may not happen quickly enough to keep pace with legislation or other regulation, legal changes or public sentiment, or may be more costly or not be as effective as expected. Any of these initiatives, or our unsuccessful response to them, could result in us incurring additional costs to comply with the imposed policies, regulations, restrictions or programs, provide a cost or other competitive advantage to energy sources other than natural gas, reduce demand for natural gas, restrict our customer growth, impose costs or restrictions on end users of natural gas, impact the prices we charge our customers, increase the likelihood of litigation, impose increased costs on us associated with the adoption of new infrastructure and technology to respond to such requirements which may or may not be recoverable in customer rates, and could negatively impact public perception of our services or products that negatively diminishes the value of our brand, all of which could adversely affect NW Holdings' or NW Natural's business operations, financial condition and results of operations.

Business Continuity and Technology Risks

BUSINESS CONTINUITY RISK. *NW Holdings and NW Natural may be adversely impacted by local or national disasters, political unrest, terrorist activities, cyber-attacks or data breaches, and other extreme events to which we may not be able to promptly respond, which could adversely affect NW Holdings' or NW Natural's operations or financial condition.*

Local or national disasters, political unrest, terrorist activities, cyber-attacks and data breaches, power outages, and other extreme events are a threat to our assets and operations. Companies in critical infrastructure industries face a heightened risk due to being the target of, and having heightened exposure to, acts of terrorism or sabotage, including physical and security breaches of our physical infrastructure and information technology or operational technology systems in the form of cyber-attacks or other forms of attacks. These attacks could, among other things, target or impact our technology or mechanical systems that operate our distribution, transmission or storage facilities and result in a disruption in our operations, damage to our system and inability to meet customer requirements. In addition, the threat of terrorist activities could lead to increased economic instability and volatility in the price of RNG, natural gas or other necessary commodities that could affect our operations. Threatened or actual national disasters or terrorist activities may also disrupt capital or bank markets and our ability to raise capital or obtain debt financing, or impact our suppliers or our customers directly. Local disaster or civil unrest could result in disruption of our infrastructure or facilities, or part of our workforce being unable to operate or maintain our infrastructure or perform other tasks necessary to conduct our business. A slow or inadequate response to events may have an adverse impact on our operations and earnings. We may not be able to maintain sufficient insurance to cover all risks associated with local and national disasters, terrorist activities, cyber-attacks and other attacks or events. Additionally, large scale natural disasters or terrorist attacks could destabilize the insurance industry making the insurance we do have unavailable, which could increase the risk that an event could adversely affect NW Holdings' or NW Natural's operations or financial results.

RELIANCE ON TECHNOLOGY RISK. *NW Holdings' and NW Natural's efforts to integrate, consolidate and streamline each of their operations has resulted in increased reliance on technology, the failure of which could adversely affect NW Holdings' or NW Natural's financial condition and results of operations.*

NW Holdings and NW Natural have undertaken, and will continue to undertake, a variety of initiatives to integrate, standardize, centralize and streamline operations. These efforts have resulted in greater reliance on technological tools such as, at NW Natural: an enterprise resource planning system, technology associated with gas operations, a digital dispatch system, an automated meter reading system, a web-based ordering and tracking system, and other similar technological tools and initiatives. Our future success will depend, in part, on our ability to anticipate and adapt to technological changes in a cost-effective manner and to offer, on a timely basis, services that meet customer demands and evolving industry standards. New technologies may emerge that could be superior to, or may not be compatible with, some of our existing technologies, and may require us to make significant expenditures to remain competitive. We continue to implement technology to improve our business processes and customer interactions. In addition, our various existing information technology systems require periodic modifications, upgrades and/or replacement. For example, NW Natural has recently implemented upgrades to its SAP system and intends to replace its customer information system in the near future.

There are various risks associated with these systems in addition to upgrades and replacements, including hardware and software failure, communications failure, data distortion or destruction, unauthorized access to data, misuse of proprietary or confidential data, unauthorized control through electronic means, programming mistakes and other inadvertent errors or deliberate human acts. In addition, we are dependent on a continuing flow of important components and appropriately skilled individuals to maintain and upgrade our information technology systems. Our suppliers have faced disruptions due to COVID-19 and may face additional production or import delays due to natural disasters, strikes, lock-outs, political unrest, pandemics or other such circumstances. Technology services provided by third-parties also could be disrupted due to events and circumstances beyond our control which could adversely impact our business, financial condition and results of operations.

Any modifications, upgrades, system maintenance or replacements subject us to inherent costs and risks, including potential disruption of our internal control structure, substantial capital expenditures, additional administrative and operating expenses, retention of sufficiently skilled personnel to implement and operate the new systems, and other risks and costs of delays or difficulties in transitioning to new systems or of integrating new systems into our current systems. In addition, the difficulties with implementing new technology systems may cause disruptions in our business operations and have an adverse effect on our business and operations, if not anticipated and appropriately mitigated. There is also risk that we may not be able to recover all costs associated with projects to improve our technological capabilities, which may adversely affect NW Holdings' or NW Natural's financial condition and results of operations.

CYBERSECURITY RISK. *NW Holdings' and NW Natural's status as an infrastructure services provider coupled with its reliance on technology could result in a security breach which could adversely affect NW Holdings' or NW Natural's financial condition and results of operations.*

Although we take precautions to protect our technology systems and are not aware of any material security breaches to date, there is no guarantee that the procedures we have implemented to protect against unauthorized access to secured data and systems, including our operational technology and information technology systems, are adequate to safeguard against all security breaches or other cyberattacks. Additionally, the facilities and systems of clients, suppliers and third-party service providers also could be vulnerable to cyber risks and attacks, and such third party systems may be interconnected to our systems. Therefore, an event caused by cyberattacks or other malicious act at an interconnected third party could impact our business and facilities similarly. As these potential cyber security attacks become more common and sophisticated, we could be required to incur costs to strengthen our systems or maintain insurance coverage against potential losses. Moreover, a variety of regulatory agencies are increasingly focused on cybersecurity risks, and specifically in critical infrastructure sectors. For example, the Transportation Security Administration (TSA) has published security directives and is currently in the process of implementing formal rules mandating cybersecurity actions for critical pipeline owners and operators. Failure to meet the requirements of these directives or other cybersecurity regulations could result in fines or other penalties. We are continuing to evaluate the potential costs of implementation of these directives, and there is no assurance that we will be able to continue to recover in rates costs associated with such compliance.

In addition, our businesses could experience breaches of security pertaining to sensitive customer, employee, and vendor information maintained by us in the normal course of business, which could adversely affect our reputation, diminish customer confidence, disrupt operations, materially increase the costs we incur to protect against these risks, and subject us to possible financial liability or increased regulation or litigation. All of these risks could adversely affect NW Holdings' or NW Natural's financial condition and results of operations.

Financial and Economic Risks

HOLDING COMPANY DIVIDEND RISK. *As a holding company, NW Holdings depends on its operating subsidiaries, including NW Natural, to meet financial obligations and the ability of NW Holdings to pay dividends on its common stock is dependent on the receipt of dividends and other payments from its subsidiaries, including NW Natural.*

As a holding company, NW Holdings' only significant assets are the stock and membership interests of its operating subsidiaries, which at this time is primarily NW Natural. NW Holdings' direct and indirect subsidiaries are separate and distinct legal entities, managed by their own boards of directors, and have no obligation to pay any amounts to their respective shareholders, whether through dividends, loans or other payments. The ability of these companies to pay dividends or make other distributions on their common stock is subject to, among other things: their results of operations, net income, cash flows and financial condition, as well as the success of their business strategies and general economic and competitive conditions; the prior rights of holders of existing and future debt securities and any future preferred stock issued by those companies; and any applicable legal restrictions.

In addition, the ability of NW Holdings' subsidiaries to pay upstream dividends and make other distributions is subject to applicable state law and regulatory restrictions. Under the OPUC and WUTC regulatory approvals for the holding company formation, if NW Natural ceases to comply with credit and capital structure requirements approved by the OPUC and WUTC, it will not, with limited exceptions, be permitted to pay dividends to NW Holdings. Under the OPUC and WUTC orders authorizing the holding company reorganization, NW Natural may not pay dividends or make distributions to NW Holdings if NW Natural's credit ratings and common equity levels fall below specified ratings and levels. If NW Natural's long-term secured credit ratings are below A- for S&P and A3 for Moody's, dividends may be issued so long as NW Natural's common equity is 45% or above. If NW Natural's long-term secured credit ratings are below BBB for S&P and Baa2 for Moody's, dividends may be issued so long as NW Natural's common equity is 46% or above. Dividends may not be issued if NW Natural's long-term secured credit ratings fall to BB+ or below for S&P or Ba1 or below for Moody's, or if NW Natural's common equity is below 44%. The ratio is measured using common equity and long-term debt excluding imputed debt or debt-like lease obligations, and is determined on a preceding or projected 13-month basis.

EMPLOYEE BENEFIT RISK. *The cost of providing pension and postretirement healthcare benefits is subject to changes in pension assets and liabilities, changing employee demographics and changing actuarial assumptions, which may have an adverse effect on NW Holdings' or NW Natural's financial condition, results of operations and cash flows.*

Until NW Natural closed the pension plans to new hires, which for non-union employees was in 2006 and for union employees was in 2009, it provided pension plans and postretirement healthcare benefits to eligible full-time utility employees and retirees. Approximately 28% of NW Natural's current utility employees were hired prior to these dates, and therefore remain eligible for these plans. Other businesses we acquire may also have pension plans. The costs to NW Natural, or the other applicable businesses we may acquire, for providing such benefits is subject to change in the market value of the pension assets, changes in employee demographics including longer life expectancies, increases in healthcare costs, current and future legislative changes, and various actuarial calculations and assumptions. The actuarial assumptions used to calculate our future pension and postretirement healthcare expenses may differ materially from actual results due to significant market fluctuations and changing withdrawal rates, wage rates, interest rates and other factors. These differences may result in an adverse impact on the amount of pension contributions, pension expense or other postretirement benefit costs recorded in future periods. Sustained declines in equity markets and reductions in bond rates may have a material adverse effect on the value of the pension fund assets and liabilities. In these circumstances, NW Natural may be required to recognize increased contributions and pension expense earlier than it had planned to the extent that the value of pension assets is less than the total anticipated liability under the plans, which could have a negative impact on NW Holdings' and NW Natural's financial condition, results of operations and cash flows.

HEDGING RISK. *NW Holdings' and NW Natural's risk management policies and hedging activities cannot eliminate the risk of commodity price movements and other financial market risks, and hedging activities may expose us to additional liabilities for which rate recovery may be disallowed, which could result in an adverse impact on NW Holdings' and NW Natural's operating revenues, costs, derivative assets and liabilities and operating cash flows.*

NW Natural's gas purchasing requirements expose us to risks of commodity price movements, while NW Holdings' and NW Natural's use of debt and equity financing exposes us to interest rate, liquidity and other financial market risks. We attempt to manage these exposures with both financial and physical hedging mechanisms, including NW Natural's gas reserves transactions which are hedges backed by physical gas supplies and interest rate hedging arrangements at NW Holdings and NWN Water. While we have risk management procedures for hedging in place, they may not always work as planned and cannot entirely eliminate the risks associated with hedging. Additionally, our hedging activities may cause us to incur additional expenses to obtain the hedge. We do not hedge our entire interest rate or commodity cost exposure, and the unhedged exposure will vary over time. Gains or losses experienced through NW Natural's hedging activities, including carrying costs, generally flow through NW Natural's PGA mechanism or are recovered in future general rate cases. However, the hedge transactions NW Natural enters into for utility purposes are subject to a prudence review by the OPUC and WUTC, and, if found imprudent, those expenses may be, and have been previously, disallowed, which could have an adverse effect on NW Holdings' or NW Natural's financial condition and results of operations.

In addition, our actual business requirements and available resources may vary from forecasts, which are used as the basis for hedging decisions and could cause our exposure to be more or less than anticipated. Moreover, if NW Natural's derivative instruments and hedging transactions do not qualify for regulatory deferral or hedge accounting treatment under U.S. GAAP, NW Holdings' or NW Natural's results of operations and financial condition could be adversely affected.

NW Holdings and NW Natural also have credit and performance exposure to derivative counterparties. Counterparties owing NW Holdings, NW Natural or their respective subsidiaries money, physical natural gas, RNG or environmental attributes could breach their obligations. Should the counterparties to these arrangements fail to perform, we may be forced to enter into alternative arrangements to meet our normal business requirements. In that event, NW Holdings' or NW Natural's financial results could be adversely affected. Additionally, under most of NW Natural's hedging arrangements, a downgrade of its senior unsecured long-term debt credit rating could allow its counterparties to require NW Natural to post cash, a letter of credit or other form of collateral, which would expose NW Natural to additional costs and may trigger significant increases in borrowing from its credit facilities or equity contribution needs from NW Holdings, if the credit rating downgrade is below investment grade. Further, based on current interpretations, each of NW Holdings, NW Natural and NWN Water is not considered a "swap dealer" or "major swap participant" in 2023, so we are exempt from certain requirements under the Dodd-Frank Act. If we are unable to claim this exemption, we could be subject to higher costs for our derivatives activities, and such higher costs could have a negative impact on NW Holdings' and NW Natural's operating costs and financial results.

GAS PRICE RISK. *Higher natural gas commodity prices and volatility in the price of gas may adversely affect NW Natural's NGD business, whereas lower gas price volatility may adversely affect NW Natural's gas storage business, negatively affecting NW Holdings' and NW Natural's results of operations and cash flows.*

The cost of natural gas is affected by a variety of factors, including weather, changes in demand, the level of production and availability of natural gas supplies, transportation constraints, availability and cost of pipeline capacity, federal, state and local energy and environmental policy, regulation and legislation, natural disasters and other catastrophic events, national and worldwide economic and political conditions, and the price and availability of alternative fuels. In 2022 and 2023 there was increased pricing and volatility in the current and forward gas markets. At NW Natural, the cost we pay for natural gas is generally passed through to customers through an annual PGA rate adjustment. If gas prices were to increase significantly and remain higher, it could raise the cost of energy to NW Natural's customers, potentially causing those customers to conserve or switch to alternate sources of energy. Sustained significant price increases could also cause new home builders and commercial developers to select alternative energy sources. Decreases in the volume of gas NW Natural sells could reduce NW Holdings or

NW Natural's earnings, and a decline in customers could slow growth in future earnings. Additionally, notwithstanding NW Natural's current rate structure, higher gas costs could result in increased pressure on the OPUC or the WUTC to seek other means to reduce NW Natural's rates, which also could adversely affect NW Holdings' and NW Natural's results of operations and cash flows.

Temporary gas price increases can also adversely affect NW Holdings' and NW Natural's operating cash flows, liquidity and results of operations because a portion (10% or 20%) of any difference between the estimated average PGA gas cost in rates and the actual average gas cost incurred is recognized as current income or expense.

Temporary or sustained higher gas prices may also cause NW Natural to experience an increase in short-term debt and temporarily reduce liquidity because it pays suppliers for gas when it is purchased, which can be in advance of when these costs are recovered through rates. Significant increases in the price of gas can also slow collection efforts as customers experience increased difficulty in paying their higher energy bills, leading to higher than normal delinquent accounts receivable resulting in greater expense associated with collection efforts and increased bad debt expense.

INABILITY TO ACCESS CAPITAL MARKET RISK. *NW Holdings' or NW Natural's inability to access capital, or significant increases in the cost of capital, could adversely affect NW Holdings' or NW Natural's financial condition and results of operations.*

NW Holdings' and NW Natural's ability to obtain adequate and cost effective short-term and long-term financing depends on maintaining investment grade credit profiles, perceptions of our business in capital markets, and the existence of liquid and stable financial markets. NW Holdings relies on access to equity, debt, and bank markets to finance equity contributions to subsidiaries and other business requirements. NW Natural relies on access to capital and bank markets, including commercial paper and bond markets, to finance its operations, construction expenditures and other business requirements, and to refinance maturing debt that cannot be funded entirely by internal cash flows. Disruptions in capital markets, including but not limited to, pandemics, political unrest, inflationary pressures, recessionary pressures, or rising interest rates could adversely affect our ability to access short-term and long-term financing or refinance maturing indebtedness. Our access to funds under committed credit facilities, which are currently provided by a number of banks, is dependent on the ability of the participating banks to meet their funding commitments. Those banks may not be able to meet their funding commitments if they experience shortages of capital and liquidity. Disruptions in the bank or capital financing markets as a result of economic uncertainty, changing or increased regulation of the financial sector, or failure of major financial institutions, or disruptions in credit markets, could adversely affect NW Holdings' and NW Natural's access to capital and negatively impact our ability to run our businesses, achieve NW Natural's authorized rate of return, and make strategic investments.

Furthermore, recent trends toward investments that are perceived to be "green" or "sustainable" could shift capital away from, or increase the cost of capital for, our natural gas business. We believe our business is an important component of a low carbon future and are striving to decarbonize our systems. Nevertheless, perceptions in the financial markets could differ or outpace our decarbonization progress and result in a shift funding away from, or limit or restrict certain forms of funding for, natural gas businesses.

NW Natural is currently rated by S&P and Moody's and a negative change in its credit ratings, particularly below investment grade, could adversely affect its cost of borrowing and access to sources of liquidity and capital. Such a downgrade could further limit its access to borrowing under available credit lines. Additionally, downgrades in its current credit ratings below investment grade could cause additional delays in NW Natural's ability to access the capital markets while it seeks supplemental state regulatory approval, which could hamper its ability to access credit markets on a timely basis. NW Holdings' credit profile is largely supported by NW Natural's credit ratings and any negative change in NW Natural's credit ratings would likely negatively impact NW Holdings' access to sources of liquidity and capital and cost of borrowing. A credit downgrade to NW Natural, or resulting negative impact on NW Holdings, could also require additional support in the form of letters of credit, cash or other forms of collateral and otherwise adversely affect NW Holdings' or NW Natural's financial condition and results of operations.

IMPAIRMENT OF LONG-LIVED ASSETS OR GOODWILL RISK. *Impairments of the value of long-lived assets or goodwill could have a material effect on NW Holdings' or NW Natural's financial condition, or results of operations.*

NW Holdings and NW Natural review the carrying value of long-lived assets other than goodwill whenever events or changes in circumstances indicate the carrying amount of the assets might not be recoverable. The determination of recoverability is based on the undiscounted net cash flows expected to result from the operation of such assets. Projected cash flows depend on the future operating costs and projected revenues associated with the asset.

We review the carrying value of goodwill annually or whenever events or changes in circumstances indicate that such carrying value may not be recoverable. A goodwill impairment analysis begins with a qualitative analysis of events and circumstances. If the qualitative assessment indicates that the carrying value may be at risk, we will perform a quantitative assessment and recognize a goodwill impairment for any amount in which the fair value of a reporting unit exceeds its fair value. NW Holdings' total goodwill was $163.3 million as of December 31, 2023 and $149.3 million as of December 31, 2022. All of our goodwill is related to water and wastewater acquisitions. There have been no impairments recognized for the water and wastewater acquisitions to date. Any impairment charge taken with respect to our long-lived assets or goodwill could be material and could have a material effect on NW Holdings' or NW Natural's financial condition and results of operations.

CUSTOMER CONSERVATION RISK. *Customers' conservation efforts may have a negative impact on NW Holdings and NW Natural's revenues.*

An increasing national focus on energy conservation, including improved building practices and appliance efficiencies may result in increased energy conservation by customers. This can decrease NW Natural's sales of natural gas and adversely affect NW Holdings' or NW Natural's results of operations because revenues are collected mostly through volumetric rates, based on the amount of gas sold. In Oregon, NW Natural has a conservation tariff which is designed to recover lost utility margin due to declines in residential and small commercial customers' consumption. However, NW Natural does not have a conservation tariff in Washington that provides it this margin protection on sales to customers in that state. Similar conservation risks exist for water utilities. Customers' conservation efforts may have a negative impact on NW Holdings' and NW Natural's financial condition, revenues and results of operations.

ECONOMIC RISK. *Changes in the economy and in the financial markets may have a negative impact on our financial condition and results of operations.*

If an economic slowdown occurs, our financial condition, results of operations, and cash flows could be adversely affected. Moreover, fluctuations and uncertainties in the economy make it challenging for us to accurately forecast and plan future business activities and to identify risks that may affect our business, financial condition, and operating results. Changes in economic activity in our markets and in global financial markets can result lower demand for energy, increased incidence of customers' inability to pay or delay in paying utility bills or increase in customer bankruptcies, less new housing construction or fewer conversions to natural gas, higher levels of residential foreclosures or vacancies, uncertainty regarding energy prices and the capital and commodity markets, increased credit risk and supply chain uncertainty. We are evaluating and monitoring current economic conditions, which include but are not limited to: inflation, interest rates and rising commodity costs, recessionary pressures, banking environment and risk of further bank failure, heightened cybersecurity awareness, geopolitical uncertainty, including the ongoing conflicts in Europe and the Middle East, and supply chain disruptions. These and other macroeconomic conditions may adversely impact the markets in which we operate and could cause the local, national or global economy to enter a period of recession. We cannot predict the timing, strength, or duration of any future economic slowdown or recession. If the economy or the markets in which we operate decline from present levels, it may have an adverse effect on our business, financial condition, and results of operations.

WEATHER RISK. *Warmer than average weather may have a negative impact on our revenues and results of operations.*

We are exposed to weather risk in our natural gas business, primarily at NW Natural. A majority of NW Natural's gas volume is driven by gas sales to space heating residential and small commercial customers during the winter heating season. Current NW Natural rates are based on an assumption of average weather. Warmer than average weather typically results in lower gas sales. Colder weather typically results in higher gas sales. Although the effects of warmer or colder weather on utility margin in Oregon are expected to be mitigated through the operation of NW Natural's weather normalization mechanism, weather variations from normal could adversely affect utility margin because NW Natural may be required to purchase more or less gas at spot rates, which may be higher or lower than the rates assumed in its PGA. Additionally, extreme weather events, such as those that occurred in February 2021 and January 2024 can result in the purchase of higher levels of gas at significantly higher spot rates. Also, a portion of NW Natural's Oregon residential and commercial customers (usually less than 10%) have opted out of the weather normalization mechanism, and approximately 12% of its customers are located in Washington where it does not have a weather normalization mechanism. These effects could have an adverse effect on NW Holdings' and NW Natural's financial condition, results of operations and cash flows.

Water Business Risks

WATER SECTOR BUSINESS. *NW Holdings' water, wastewater and water services businesses are subject to a number of risks in addition to the risks described above.*

Although the water businesses are not currently expected to materially contribute to the results of operations of NW Holdings, these businesses are subject to risks, in addition to those described above, including:

- contamination of water supplies, including water provided to customers with naturally occurring or human-made substances or other hazardous materials, or disruptions to water treatment processes;
- interruptions in water supplies and service, weather conditions, natural disasters and droughts;
- insufficient water supplies, limitations on or disputes with respect to water rights or supplies, or the inability to secure water rights or supplies at a reasonable cost;
- disruptions to the wastewater collection and treatment process;
- reliance on third parties for water supplies and transportation of such water supplies;
- the ability to attract and retain customers to our water services business and competition for customers' business;
- conservation efforts by customers;
- regulatory and legal requirements, including environmental, health and safety laws and regulations;
- operational risks, including customer and employee safety; and
- the outcome of rate cases and other regulatory proceedings.

Significant losses, liabilities or impairments arising from these businesses may adversely affect NW Holdings' financial position or results of operations.

INVESTMENT RISK. *NW Holdings' expectations with respect to the financial results of its investments in water, wastewater and water services operations are based on various assumptions and beliefs that may not prove accurate, resulting in failures or delays in achieving expected returns or performance.*

NW Holdings' expansion into the water sector is an important component of its growth strategy. Although NW Holdings expects its water and wastewater utility operations and water services businesses will result in various benefits, including expanding customer bases, providing investment opportunities through infrastructure development and enhancing regulatory relationships within the local communities served, NW Holdings may not be able to realize these or other benefits. Achieving the anticipated benefits is subject to a number of uncertainties, including whether the businesses acquired can be operated in the manner intended and whether costs to finance the acquisitions and investments will be consistent with expectations, as well as whether investments in the water sector can reach scale in a reasonable period of time. Events outside of our control, including but not limited to regulatory changes or developments, could adversely affect our ability to realize the anticipated benefits from building NW Holdings' water platform. The integration of newly acquired water businesses, particularly over noncontiguous geographic regions, may be unpredictable, subject to delays or changed circumstances, and such businesses may not perform in accordance with our expectations. In addition, anticipated costs, level of management's attention and internal resources to achieve the integration of or operate the acquired businesses may differ significantly from our current estimates resulting in failures or delays in achieving expected returns or performance. We have previously acquired, and from time to time may make further investments in unregulated businesses on the water platform, including wastewater and water services businesses, which may result in additional uncertainty or volatility of earnings from these businesses. If NW Holdings' expectations regarding the financial results of its investments in water operations prove to be inaccurate, it may adversely affect NW Holdings' financial position or results of operations.

Non-Regulated RNG Risks

INVESTMENT RISK. *NW Holdings' expectations with respect to the financial results of its investments in non-regulated RNG investments are based on various assumptions and beliefs that may not prove accurate, resulting in failures or delays in achieving expected returns.*

NW Holdings' expansion into the non-regulated RNG business is an important component of its growth strategy. Although NW Holdings expects this expansion will result in various benefits, including providing cost-effective solutions to decarbonize the utility, commercial, industrial and transportation sectors, NW Holdings may not be able to realize these or other benefits. Achieving the anticipated benefits is subject to a number of uncertainties, including whether the investments can be made at an expected scale, whether the investments can be monetized in the manner intended, and whether costs to finance the investments will be consistent with expectations. Events outside of our control, including but not limited to market or regulatory changes or developments, could adversely affect our ability to realize the anticipated benefits from building NW Holdings' non-regulated RNG platform. The establishment and growth of a non-regulated RNG business may be unpredictable, subject to uncertainties or changed circumstances, and such business may not perform in accordance with our expectations. In addition, anticipated costs, level of management's attention and internal resources to achieve the integration of the acquired investments may differ significantly from our current estimates resulting in failures or delays in achieving expected returns or performance. As part of our business model, we may purchase RNG from third parties in a variety of structures, including on a volumes-produced basis. Conversely, we may sell RNG in a variety of structures, including on a fixed-volume basis. This model could result in a mismatch between our purchased RNG portfolio and RNG volumes we have contracted to sell at any one time, which could result in our obligation to procure additional RNG at then-market prices or to pay damages to satisfy RNG sales contracts to which we are a party, which amounts could be significant. For example, the RNG purchase contract between Ohio Renewables and a subsidiary of EDL is on a volumes-produced basis, whereas Ohio Renewables' contract for the sale of RNG from 2025 through 2042 is a fixed-volume contract. We could additionally experience technological challenges; ineffective scalability or inability to achieve production volumes consistent with our expectations and marketing arrangements; construction delays or cost overruns; disputes with third party business partners; risks related to markets for RNG and its associated attributes (including changes in market regulation, behavior, or prices); the inability to receive expected tax or regulatory treatment; unsuccessful business models; or unexpected operating costs. If NW Holdings' expectations regarding the financial results of its investments in non-regulated RNG prove to be inaccurate, it may adversely affect NW Holdings' financial position or results of operations.

RENEWABLES BUSINESS RISK. *NW Natural Renewables is an unregulated subsidiary of NW Holdings established to pursue unregulated renewable natural gas activities. These activities are subject to a number of risks in addition to the risks described above.*

Our Renewables business is subject to risks, in addition to those described above, including:

- unpredictable production levels or performance or gas quality below expected levels, which may impact our ability to accept or deliver RNG under our contractual agreements;
- construction risks or delays, including due to inclement weather, supply chain or labor disruptions or otherwise;
- cost overruns and the need to commit more capital than initially budgeted as a result of environmental, construction, technological or other complications;
- weather conditions;
- changes in energy commodity prices, including pricing of, and volatility in markets for, RNG and its associated attributes;
- equipment failure, difficulties or delays in repairing or replacing equipment, technical difficulties or otherwise higher than expected operating costs;

- regulatory, policy, and legal requirements, including environmental, health and safety laws and regulations or regulations that may impact the value of RNG and its associated attributes or our ability to deliver RNG in the manner contemplated under our contractual arrangements;
- changes to laws or policies that may reduce demand for, or desirability of, RNG or its associated attributes;
- reliance on third parties, including for pipeline interconnection and for a sufficient supply of waste for conversion to RNG;
- catastrophic events such as fires, explosions, earthquakes, droughts, acts of terrorism and other force majeure events that may impact the Renewables business, its customers, suppliers, or other business partners; and
- failures or delays in obtaining necessary land rights, permits, approvals or other consents required to construct and operate projects.

Significant losses, liabilities or impairments arising from these businesses may adversely affect NW Holdings' financial position or results of operations.

ITEM 1B. UNRESOLVED STAFF COMMENTS

We have no unresolved staff comments.

ITEM 1C. CYBERSECURITY

Processes of Addressing Cybersecurity Threats

Cybersecurity is critical to our business. As an energy infrastructure company, we face a variety of cybersecurity threats that range from attacks common to most industries, such as ransomware and denial-of-service, to attacks from more advanced and persistent, highly organized adversaries, including nation state actors, that target critical infrastructure sectors. We recognize the critical importance of maintaining the safety and security of our systems and data and have a holistic process for overseeing and managing cybersecurity and related risks. The process is supported by management and overseen by our board of directors.

One of the tools used by management and our Board of Directors in managing business risks is an annual enterprise risk management (ERM) assessment to identify and manage key existing and emerging risks our company faces. Our ERM process is designed to identify significant risks relevant to the company and assess the characteristics and circumstances of the risks to identify both the potential impacts to our company of a particular risk and the velocity with which the risk may manifest. Cybersecurity is among the risks identified in our ERM assessment and has been embedded in the Company’s operating procedures, internal controls and information systems.

In addition to our overall ERM process, we have developed and implemented a cybersecurity risk management program and processes intended to detect, assess, manage, and develop resiliency against material risks from cybersecurity threats. Our cybersecurity program utilizes a risk-based approach and includes written cybersecurity and information technology processes and procedures, including a cybersecurity incident response plan that involves procedures for responding to cybersecurity incidents. We design and assess our program informed by various cybersecurity frameworks, such as the National Institute of Standards and Technology (NIST) and leverage a widely-adopted risk assessment model to identify, measure and prioritize cybersecurity and technology risks. The goal of our program is to prevent, identify, escalate, investigate, resolve and recover from identified incidents and security incidents in a timely manner.

Our cybersecurity program also incorporates intelligence sharing capabilities about emerging threats within the utility industry and other industries through collaboration with peer companies and specialized consultants and advisors, public-private partnerships with government intelligence agencies, including the FBI, CISA, and the Department of Energy Office of Cybersecurity, Energy Security and Emergency Response, and geopolitical briefings. We also leverage third-party benchmarking, the results from regular internal and third-party audits, technology partner resources, threat intelligence feeds, and other similar resources to inform our cybersecurity processes and allocate resources.

Beginning in May 2021, the Department of Homeland Security’s (DHS) Transportation Security Administration (TSA) released two directives, with several updates, applicable to certain owners and operators of pipeline facilities, including NW Natural. These directives cumulatively required owners and operators to implement cybersecurity incident reporting to the DHS, designate two cybersecurity coordinators, and perform a gap assessment of current entity cybersecurity practices against certain voluntary TSA security guidelines and report relevant results and proposed mitigation to applicable DHS agencies; implement a significant number of specified cyber security controls and processes; and clarifying Operational Technology (OT) scope and providing a risk- and outcome-based framework. We made significant additional and accelerated investments in cybersecurity in response to the TSA directives.

Our cybersecurity program has several fundamental tenants, including security governance, cybersecurity risk management, compliance, defensibility, zero-trust architecture and cloud security. We utilize multilayered defenses and continuous monitoring with data analytics to detect anomalies and search for cyber threats in our system.

Key components of our cybersecurity risk management program include:

- risk assessments designed to help identify cybersecurity risks to our critical systems, information, services, and our broader technology environment;
- the use of external service providers with specific expertise, where appropriate, to assess, test or otherwise assist with aspects of our security processes;
- cybersecurity awareness training of our employees, incident response personnel and senior management, as well as periodic experiential learning through “phishing simulations”;
- segmentation of, and back-ups for, certain of our sensitive systems and data;
- third-party cyber risk management process for vendors including, among other things, a security assessment, contracting program, and ongoing monitoring for vendors based on their risk profile;
- physical security around our sensitive infrastructure and cybersystems.

In accordance with our program and processes, we regularly assess risks from cybersecurity and technology threats and monitor our information systems for potential vulnerabilities. We conduct regular reviews and tests of our information security program and also utilize audits by our internal audit team and third-party consultants, table-top exercises, penetration and vulnerability testing, data recovery testing, simulations, and other exercises to evaluate the effectiveness of our information security program and improve our security measures and planning. We are continuously working to evolve our oversight processes to mature how we identify and manage cybersecurity risks, and we perform periodic maturity assessments to measure our progress.

As a regulated energy infrastructure company, for decades we have used an incident command system (ICS) as a standardized approach to the command, control and coordination of a variety of emergency situations. In the event of emergencies, including cybersecurity events, we stand up an Incident Command Team to respond to the emergency. We exercise and train the ICT for a variety of emergencies, including, cyber events on a regular basis.

At this time, we have not identified any risks from known previous cybersecurity incidents, that have materially affected or are reasonably likely to materially affect us, including our operations, business strategy, results of operations or financial condition. With a majority of our business in energy and infrastructure, we face sophisticated and rapidly evolving attempts to overcome our security measures and protections. The occurrence of both intentional and unintentional incidents could occur in the future. We face certain ongoing risks from cybersecurity threats that, if realized, are reasonably likely to materially affect us, including our operations, business strategy, results of operations, or financial condition. See Item 1A, "Risk Factors” above for additional information on risks related to our business, including for example risks related to cyber attacks, information and system breaches, and technology disruptions and failures, our reliance on technology.

Cybersecurity Governance

Our Board considers cybersecurity risk as part of its risk oversight function and has delegated oversight of cybersecurity and other information technology risks to the Audit Committee. The Audit Committee oversees management’s implementation of the cybersecurity risk management program.

The Audit Committee receives regular reports from management on our cybersecurity risks. Additionally, management updates the Audit Committee as necessary, regarding any cybersecurity incidents. The Audit Committee reports to the full Board regarding the Audit Committee’s areas of oversight, including those related to cybersecurity. The full Board also receives briefings from management on our cybersecurity risk management program periodically. Additionally, our Board receives presentations on cybersecurity topics from our IT management team or external experts as part of the Board’s ongoing education.

Our management team, including our Cybersecurity management team, has primary responsibility for our overall cybersecurity risk management program, and supervises both our internal cybersecurity personnel and our retained external cybersecurity consultants. Our Cybersecurity management team has been led, since 2017, by our Vice President, Chief Information Officer, who also functions as our Chief Information Security Officer and reports to our CEO. Mr. Downing has an extensive career of 29 years in information technology services in the energy sector, including at WorleyParsons, British Petroleum and Schlumberger. He holds a degree in Information Systems as well as a Masters of Business Administration.

Mr. Downing is supported by Mr. Carlson, our Director of Cybersecurity and Compliance, and his team. Mr. Carlson has 24 years of experience in information technology focused on highly regulated sectors including energy, government, and insurance. He holds a bachelor’s degree in Information Technology, and master’s degrees in Information Assurance and Business Administration. The remainder of our team is comprised of cybersecurity professionals with broad experience and expertise, including in cybersecurity, threat assessments and detection, mitigation technologies, cybersecurity training, incident response, cyber forensics, insider threats and regulatory compliance. Collectively our team has certifications from various organizations such as American Society for Industrial Security, AXELOS, Cloud Security Alliance, Information Systems Audit and Control Association, International Information System Security Certification Consortium and SANS Institute.

Our cybersecurity and compliance team regularly collects data on cybersecurity threats and risk areas, monitors our systems, and conducts testing to assess our processes and procedures and the threat landscape. The CIO receives regular updates on cybersecurity matters, results of mitigation efforts and cybersecurity incident response and remediation.

In the event of an incident, we intend to utilize our ICT and follow our detailed incident program and processes, which outlines the steps to be followed from incident detection to mitigation, recovery and notification, including notifying relevant functional areas, as well as senior leadership and the Board, as appropriate.

ITEM 2. PROPERTIES

NW Natural's Natural Gas Distribution Properties
NW Natural's natural gas pipeline system consists of approximately 14,300 miles of distribution mains, approximately 700 miles of transmission mains and approximately 10,300 miles of service lines located in its territory in Oregon and southwest Washington. In addition, the pipeline system includes service regulators and meters, as well as district regulators and metering stations. Natural gas pipelines are located in public rights-of-way pursuant to franchise agreements, ordinances, or other legal rights, or on lands of others pursuant to easements obtained from the owners of such lands. NW Natural also holds permits for the crossing of numerous railroads, navigable waterways and smaller tributaries throughout our entire service territory.

NW Natural owns service building facilities in Portland, Oregon, as well as various satellite service centers, garages, warehouses, and other buildings necessary and useful in the conduct of its business. Resource centers are maintained on owned or leased premises at convenient points in the distribution system to provide service within NW Natural's service territory.

NW Natural commenced a 20-year lease in March 2020 for a headquarters and operations center in Portland, Oregon.

NW Natural's Mortgage and Deed of Trust (Mortgage) is a first mortgage lien on certain gas properties owned from time to time by NW Natural, including substantially all of the property constituting NW Natural's natural gas distribution plant balances.

These properties are used in the NGD segment.

NW Natural's Natural Gas Storage Properties
NW Natural holds leases and other property interests in approximately 12,000 net acres of underground natural gas storage in Oregon and easements and other property interests related to pipelines associated with these facilities. NW Natural owns rights to depleted gas reservoirs near Mist, Oregon that are continuing to be developed and operated as underground gas storage facilities. NW Natural also holds all future storage rights in certain other areas of the Mist gas field in Oregon in addition to other leases and property interests.

NW Natural owns LNG storage facilities in Portland and near Newport, Oregon.

A portion of these properties are used in the NGD segment.

NWN Water's Distribution Properties
NWN Water owns and maintains water distribution pipes, storage, wells and other infrastructure and wastewater treatment facilities, and holds related leases and other property interests in Oregon, Washington, Idaho, Texas and Arizona. Pipelines are located in municipal streets or alleys pursuant to franchise or occupation ordinances, in county roads or state highways pursuant to agreements or permits granted pursuant to statute, or on lands of others pursuant to easements obtained from the owners of such lands. These properties are used by entities that are aggregated and reported as other under NW Holdings.

We consider all of our properties currently used in our operations, both owned and leased, to be well maintained, in good operating condition, and, along with planned additions, adequate for our present and foreseeable future needs.

ITEM 3. LEGAL PROCEEDINGS

Other than the proceedings disclosed in Note 17, we have only nonmaterial litigation in the ordinary course of business.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

NW Holdings' common stock is listed and trades on the New York Stock Exchange under the symbol NWN.

There is no established public trading market for NW Natural's common stock.

As of February 14, 2024, there were 4,060 holders of record of NW Holdings' common stock and NW Holdings was the sole holder of NW Natural's common stock.

The following table provides information about purchases of NW Holdings' equity securities that are registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended, during the quarter ended December 31, 2023:

Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs[1]	Maximum Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs[1]
Balance forward			2,124,528	$ 16,732,648
10/01/23-10/31/23	—	$ —	—	—
11/01/23-11/30/23	—	$ —	—	—
12/01/23-12/31/23	—	$ —	—	—
Total	—		2,124,528	$ 16,732,648

(1) During the quarter ended December 31, 2023, no shares of NW Holdings common stock were repurchased pursuant to the NW Holdings Board of Directors-approved share repurchase program. Effective August 3, 2022, we received NW Holdings Board approval to extend the repurchase program. Such authorization will continue until the program is used, terminated or replaced. For more information on this program, see Note 5.

ITEM 6. RESERVED

Not applicable.

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following is management's assessment of NW Holdings' and NW Natural's financial condition, including the principal factors that affect results of operations. The discussion covers the years ended December 31, 2023, 2022, and 2021 and refers to the consolidated results of NW Holdings, the substantial majority of which consist of the operating results of NW Natural. When significant activity exists at NW Holdings that does not exist at NW Natural, additional disclosure has been provided. References in this discussion to "Notes" are to the Notes to the Consolidated Financial Statements in Item 8 of this report.

NW Natural's natural gas distribution activities are reported in the natural gas distribution (NGD) segment. The NGD segment also includes NWN Gas Reserves, which is a wholly-owned subsidiary of Energy Corp, the NGD-portion of NW Natural's Mist storage facility in Oregon, and NW Natural RNG Holding Company, LLC. NW Natural RNG Holding Company, LLC holds investments in Lexington Renewable Energy, LLC and Dakota City Renewable Energy LLC, which are accounted for under the equity method. Other activities aggregated and reported as other at NW Natural include the non-NGD storage activity at Mist as well as asset management services and the appliance retail center operations. Other activities aggregated and reported as other at NW Holdings include NNG Financial's investment in Kelso-Beaver Pipeline (KB Pipeline); NW Natural Renewables Holdings, LLC and its non-regulated renewable natural gas activities; and NWN Water, which through itself or its subsidiaries, owns and continues to pursue investments in the water, wastewater, and water services sectors. See Note 4 for further discussion of our business segment and other, as well as our direct and indirect wholly-owned subsidiaries.

NON-GAAP FINANCIAL MEASURES. In addition to presenting the results of operations and earnings amounts in total, certain financial measures are expressed in cents per share, which are non-GAAP financial measures. All references in this section to earnings per share (EPS) are on the basis of diluted shares. We use such non-GAAP financial measures to analyze our financial performance because we believe they provide useful information to our investors, analysts, and creditors in evaluating our financial condition and results of operations. Our non-GAAP financial measures should not be considered a substitute for, or superior to, measures calculated in accordance with U.S. GAAP. Moreover, these non-GAAP financial measures have limitations in that they do not reflect all the items associated with the operations of the business as determined in accordance with GAAP. Other companies may calculate similarly titled non-GAAP financial measures differently than how such measures are calculated in this report, limiting the usefulness of those measures for comparative purposes. A reconciliation of each non-GAAP financial measure to the most directly comparable GAAP financial measure is provided below.

	2023	2022	2021
Diluted EPS - Total[1]	$ 2.59	$ 2.54	$ 2.56
Diluted EPS - NGD segment[2]	2.59	2.34	2.24
Diluted EPS - NW Holdings - other[2]	—	0.20	0.32

[1] Total Diluted EPS is equal to the sum of Diluted EPS - NGD segment and Diluted EPS - NW Holdings – other.
[2] Non-GAAP financial measure

NW Holdings' financial results and highlights for the year include:
- Reported net income of $93.9 million or $2.59 per share (diluted) for 2023 compared to $86.3 million or $2.54 per share (diluted) in the prior year
- Added over 15,000 gas and water utility connections in the last 12 months for a combined growth rate of 1.8% as of December 31, 2023 mainly driven by strong water acquisitions and combined organic growth;
- Invested $327.3 million in natural gas and water utility systems to support growth, enhance reliability and resiliency, and upgrade technology;
- Scored second in the West among large utilities in the 2023 J.D. Power Gas Utility Residential Customer Satisfaction Study, making this the 20th consecutive year customers have ranked NW Natural among the top two utilities;
- Filed an Oregon general rate case for NW Natural requesting a $154.9 million revenue requirement increase to support system investments and cost increases;
- Closed four water utility acquisitions in 2023, launched our water services business and continued to increase our investment in the largest privately owned water utility in Oregon; and
- Increased our dividend for the 68th consecutive year to an annual indicated dividend rate of $1.95 per share.

Key financial highlights for NW Holdings include:

	2023		2022		2021	
In millions	Amount	Per Share	Amount	Per Share	Amount	Per Share
Consolidated net income	$ 93.9	$ 2.59	$ 86.3	$ 2.54	$ 78.7	$ 2.56

Key financial highlights for NW Natural include:

	2023	2022	2021
In millions	Amount	Amount	Amount
Consolidated net income	$ 104.7	$ 91.6	$ 81.2
Natural gas distribution margin	575.0	505.9	479.8

2023 COMPARED TO 2022. Consolidated net income increased $13.2 million at NW Natural primarily due to the following factors:
- $69.1 million increase in NGD segment margin driven by new rates in Oregon and Washington, actual gas prices that were lower than what was estimated in the 2022-2023 PGA, amortization of deferred balances (which is mostly offset in operations and maintenance expenses and interest expense), and customer growth; and
- $15.8 million increase in other income, net primarily due to interest income from invested cash and the equity portion of AFUDC, and lower pension costs; partially offset by
- $39.8 million increase in operations and maintenance expenses due to higher payroll costs, higher contract labor, the amortization of deferred balances (which is mostly offset in revenues), information technology costs and amortization expense related to cloud computing arrangements;
- $14.3 million increase in interest expense, net primarily due to higher long-term debt balances;
- $6.5 million increase in depreciation expense due to additional capital investments;
- $4.8 million increase in general taxes primarily driven by higher property and payroll taxes; and
- $4.6 million increase in income tax expense due to higher pre-tax income.

Consolidated net income increased $7.6 million at NW Holdings primarily due to the following factors:
- $13.2 million increase in consolidated net income at NW Natural as discussed above; partially offset by
- $5.6 million decrease in other net income primarily reflecting higher interest expense at the holding and water companies.

2022 COMPARED TO 2021. Consolidated net income increased $10.4 million at NW Natural primarily due to the following factors:
- $26.1 million increase in NGD segment margin driven by new rates in Oregon and Washington, customer growth, and amortization of deferred balances; and
- $12.3 million increase in other income, net primarily due to lower pension costs; partially offset by
- $16.0 million increase in operations and maintenance expenses due to higher contract labor, amortization expense related to cloud computing arrangements, information technology costs, and professional service fees;
- $3.3 million increase in interest expense primarily due to higher long-term debt balances and higher interest rates;
- $2.7 million increase in income tax expense due to an increase in pre-tax income;
- $2.5 million increase in depreciation expense due to additional capital investments; and
- $2.0 million increase in general taxes primarily driven by higher property taxes.

Consolidated net income increased $7.6 million at NW Holdings primarily due to the following factors:
- $10.4 million increase in consolidated net income at NW Natural as discussed above; partially offset by
- $2.8 million decrease in other net income primarily reflecting higher interest expense at the holding company.

Diluted EPS for NW Holdings decreased $0.02 per share primarily due to a common share issuance on April 1, 2022 and share issuances through NW Holdings' at-the-market program, partially offset by an increase in consolidated net income.

CURRENT ECONOMIC CONDITIONS. We continuously review and monitor current economic conditions, which include but are not limited to: inflation and interest rates, supply chain disruptions, and other regulatory, physical or cyber related risks impacting our business. We have experienced higher material and labor costs as a result of inflation as well as increased interest costs from higher rates over the past year. We also continue to experience long lead times on certain materials, including meter parts, microchips, semi-conductors, and IT equipment. However, through advanced planning, carrying additional levels of inventory, diversifying our vendors, and making contingency plans to address risks, we are striving to mitigate supply chain risks. We have maintained enhanced cybersecurity monitoring, assessments, and third-party penetration tests in response to reports that cybersecurity attacks have increased and may continue to increase.

NW Holdings and NW Natural continue to monitor interest rates and financing options for all of its businesses. Interest rates increased in 2022 and 2023 resulting from actions taken by the U.S. Federal Reserve to increase short-term rates as inflation was elevated. NW Natural generally recovers interest expense on its long-term debt through its authorized cost of capital. Certain working capital items, such as the cost of gas, are deferred and accrue interest in Oregon and Washington. Additionally, short-term debt is incorporated in the capital structure in Washington. NW Natural Water's regulated water and wastewater utilities generally recover interest expense from long-term debt through their respective authorized cost of capital.

DIVIDENDS

NW Holdings dividend highlights include:

Per common share	2023	2022	2021
Dividends paid	$ 1.9425	$ 1.9325	$ 1.9225

In January 2024, the Board of Directors of NW Holdings declared a quarterly dividend on NW Holdings common stock of $0.4875 per share, payable on February 15, 2024, to shareholders of record on January 31, 2024, reflecting an indicated annual dividend rate of $1.95 per share.

See "Financial Condition - *Liquidity and Capital Resources*" for more information regarding the NW Holdings and NW Natural dividend policies and regulatory conditions on NW Natural dividends to its parent, NW Holdings.

RESULTS OF OPERATIONS

Regulatory Matters

Regulation and Rates

NATURAL GAS DISTRIBUTION. NW Natural's natural gas distribution business is subject to regulation by the OPUC and WUTC with respect to, among other matters, rates and terms of service, systems of accounts, and issuances of securities by NW Natural. In 2023, approximately 88% of NGD customers were located in Oregon, with the remaining 12% in Washington. Earnings and cash flows from natural gas distribution operations are largely determined by rates set in general rate cases and other proceedings in Oregon and Washington. They are also affected by weather, the local economies in Oregon and Washington, the pace of customer growth in the residential, commercial, and industrial markets, federal, state and local energy, policy, customer preferences and NW Natural's ability to remain price competitive, control expenses, and obtain reasonable and timely regulatory recovery of its natural gas distribution-related costs, including operating expenses and investment costs in plant and other regulatory assets. See "*Most Recent Completed Rate Cases*" below.

MIST INTERSTATE GAS STORAGE. NW Natural's interstate storage activity at Mist is subject to regulation by the OPUC, WUTC, and the Federal Energy Regulatory Commission (FERC) with respect to, among other matters, rates and terms of service. The OPUC also regulates intrastate storage services at Mist, while FERC regulates interstate storage services at Mist. The FERC uses a maximum cost of service model which allows for gas storage prices to be set at or below the cost of service as approved by FERC in our last regulatory filing. The OPUC Schedule 80 rates are tied to the FERC rates, and are updated whenever NW Natural modifies FERC maximum rates. See "*Most Recent Completed Rate Cases*" below.

OTHER. The wholly-owned regulated water businesses of NWN Water, a wholly-owned subsidiary of NW Holdings, are subject to regulation by the utility commissions in the states in which they are located, which currently includes Oregon, Washington, Arizona, Idaho, and Texas. The wholly-owned regulated wastewater businesses of NWN Water are subject to regulation by the utility commissions in the states in which they are located, which currently includes Texas and Arizona.

Most Recent Completed Rate Cases

OREGON. On October 24, 2022, the OPUC issued an order for rates effective November 1, 2022, which authorized a return on equity (ROE) of 9.4%, a cost of capital of 6.836%, and a capital structure of 50% common equity and 50% long-term debt. After adjustments provided in the order, the order increased the revenue requirement by $59.4 million, and included a rate base of $1.76 billion, or an increase of $320 million since the last rate case. The OPUC also ordered an adjustment to NW Natural's current line extension allowance methodology to a five times margin approach (which for an average residential customer is currently approximately $2,300), declining to four times margin on November 1, 2023, and three times margin on November 1, 2024. The OPUC further ordered that the costs NW Natural sought to recover related to its Lexington RNG project were reasonable and prudently incurred under Senate Bill 98 and adopted an automatic adjustment clause that allows for NW Natural's RNG project costs to be added to rates annually on November 1st.

From November 1, 2020 through October 31, 2022, the OPUC authorized rates to customers based on an ROE of 9.4% and a cost of capital of 6.965% with a capital structure of 50% common equity and 50% long-term debt. The OPUC also authorized NW Natural to recover the expense associated with the Oregon Corporate Activity Tax (CAT) as a component of base rates.

WASHINGTON. On October 21, 2021, the WUTC issued an order concluding NW Natural's general rate case filed in December 2020 (WUTC Order). The WUTC Order provides for an annual revenue requirement increase over two years, consisting of a 6.4% or $5.0 million increase in the first year beginning November 1, 2021 (Year One), and up to a 3.5% or $3.0 million increase in the second year beginning November 1, 2022 (Year Two). The increase is based on the following assumptions:

- Cost of capital of 6.814%; and
- Average rate base of $194.7 million, an increase of $20.9 million since the last rate case for capital expenditures already expended at the time of filing, with an additional expected $31.2 million increase in Year One, and an additional expected $21.4 million increase in Year Two, with the increases in Year One and Year Two relating to expected capital expenditures in those years.

The WUTC Order does not specify the underlying inputs to the cost of capital, including capital structure and return on equity. New rates authorized by the WUTC Order were effective November 1, 2021. In September 2023, NW Natural received a letter of compliance from the WUTC acknowledging that the Year Two rates are no longer subject to review and refund.

From November 1, 2019 through October 31, 2021, the WUTC authorized rates to customers based on an ROE of 9.4% and an overall rate of return of 7.161% with a capital structure of 50.0% long-term debt, 1.0% short-term debt, and 49.0% common equity. The WUTC also authorized the recovery of environmental remediation expenses allocable to Washington customers through an Environmental Cost Recovery Mechanism (ECRM) and directed NW Natural to provide federal tax reform benefits to customers. See "Rate Mechanisms - Environmental Cost Deferral and Recovery - *Washington ECRM*" below.

FERC. NW Natural is required under its Mist interstate storage certificate authority and rate approval orders to file every five years either a petition for rate approval or a cost and revenue study to change or justify maintaining the existing rates for its interstate storage services. NW Natural filed a rate petition with the FERC in August 2023 and the revised rates were effective beginning September 1, 2023.

NW Natural continuously evaluates the need for rate cases in its jurisdictions.

Regulatory Proceeding Updates

2024 OREGON RATE CASE. On December 29, 2023, NW Natural filed a request for a general rate increase with the OPUC. The filing includes a requested $154.9 million annual revenue requirement increase based upon the following assumptions or requests:

- Capital structure of 50% long-term debt and 50% equity;
- Return on equity of 10.1%;
- Cost of capital of 7.406%; and
- Average rate base of $2.14 billion.

The filing includes effects of inflation, an updated depreciation study, and an increase in average rate base of $381 million compared to the last rate case for several long-planned investments by NW Natural including the following:

- Supporting reinforcement, safety and reliability of NW Natural's distribution systems and operating facilities;
- Upgrading technology to, among other things, further modernize NW Natural's information technology infrastructure, enhance cybersecurity protections, and modernize metering infrastructure; and
- Investing in components of NW Natural's Mist and liquified natural gas storage facilities, which support service during winter heating months.

NW Natural's filing will be reviewed by the OPUC and other stakeholders. The process is anticipated to take up to 10 months with new rates expected to take effect November 1, 2024.

Rate Mechanisms

During 2023 and 2022, NW Natural's key approved rates and recovery mechanisms for each service area included:

	Oregon		Washington	
	2022 Rate Case (effective 11/1/2022)	2020 Rate Case (effective 11/1/2020)	2021 Rate Case (effective 11/1/2021)	2019 Rate Case (effective 11/1/2019)
Authorized Rate Structure:				
Return on Equity	9.4%	9.4%	**	9.4%
Rate of Return	6.8%	7.0%	6.8%	7.2%
Debt/Equity Ratio	50%/50%	50%/50%	**	51%/49%
Key Regulatory Mechanisms:				
Purchased Gas Adjustment (PGA)	X	X	X	X
Gas Cost Incentive Sharing	X	X		
Decoupling	X	X		
Weather Normalization (WARM)	X	X		
RNG Automatic Adjustment Clause	X			
Environmental Cost Recovery	X	X	X	X
Interstate Storage and Asset Management Sharing	X	X	X	X

** The WUTC Order does not specify the underlying inputs to the cost of capital, including capital structure and return on equity.

Annually, or more often if circumstances warrant, NW Natural reviews all regulatory assets for recoverability. If NW Natural should determine all or a portion of these regulatory assets no longer meet the criteria for continued application of regulatory accounting, then NW Natural would be required to write-off the net unrecoverable balances against earnings in the period such a determination was made.

PURCHASED GAS ADJUSTMENT. Rate changes are established for NW Natural each year under purchased gas adjustment (PGA) mechanisms in Oregon and Washington to reflect changes in the expected cost of natural gas commodity purchases. The PGA filings include costs for gas purchases, gas commodity derivative contracts, gas storage costs, gas reserves costs, pipeline demand costs, renewable natural gas and its environmental attributes, including renewable thermal certificates, and temporary rate adjustments, which amortize balances of deferred regulatory accounts.

Included in the 2022-23 PGA, the OPUC and WUTC approved a new customer rate mitigation program to address higher gas costs, which includes a temporary bill credit for NW Natural’s residential customers from November 2022 to March 2023, with deferral of the temporary bill credit to be recovered in warmer months when customers typically see lower bills. As of December 31, 2023, the amount deferred to a regulatory asset related to the bill credit that remains to be collected from customers was approximately $5.3 million. The residual balance is scheduled to be collected from customers in the 2023-24 PGA year.

In September 2023, NW Natural filed its annual PGAs and received OPUC and WUTC approval in October 2023. PGA rate changes were effective November 1, 2023. Rates may vary between states due to different rate structures, rate mechanisms and hedging policies.

Each year, NW Natural hedges gas prices on a portion of NW Natural's annual sales requirement based on normal weather, including both physical and financial hedges. NW Natural entered the 2023-24 gas year with total forecasted sales volume hedged at approximately 82%, including 66% in financial hedges and 16% in physical gas supplies. The total hedged was approximately 85% in Oregon and 55% in Washington.

For the subsequent two gas years, NW Natural was hedged in total between 20% and 39% for annual requirements, which consists of between 22% and 42% in Oregon and 0% and 13% in Washington. Hedge levels are subject to change based on actual load volumes, which depend to a certain extent on weather, economic conditions, and gas reserve production. Also, gas storage inventory levels may increase or decrease with storage expansion, changes in storage contracts with third parties, variations in the heat content of the gas, and/or storage recall by NW Natural. Gas purchases and hedges entered into for the upcoming PGA year will be included in the Company’s PGA filings in Oregon and Washington.

Under the current PGA mechanism in Oregon, there is an incentive sharing provision whereby NW Natural is required to select each year an 80% deferral or a 90% deferral of higher or lower actual gas costs compared to estimated PGA prices, such that the impact on NW Natural's current earnings from the incentive sharing is either 20% or 10% of the difference between actual and estimated gas costs, respectively. For the 2023-24 and 2022-23 gas years, NW Natural selected the 90% deferral option.

Under the Washington PGA mechanism, NW Natural defers 100% of the higher or lower actual gas costs, and those gas cost differences are passed on to customers through the annual PGA rate adjustment.

CLIMATE COMMITMENT ACT. Washington has enacted the Climate Commitment Act (CCA), which establishes a comprehensive program that includes an overall limit for GHG emissions from major sources in the state that declines yearly. The program began January 1, 2023. In December 2023, the WUTC approved a CCA cost recovery mechanism with a rate effective date of January 1, 2024. Under this mechanism, NW Natural recovers CCA costs and will defer any difference between forecasted and actual costs in the following year. Additionally, under the approved tariff, proceeds from the sale of allowances, which is required under the CCA, would be used to offset CCA compliance costs for low-income customers. Any remaining proceeds would benefit other customers through fixed bill credits or use in other carbon reduction programs.

Additionally in December 2023, the WUTC approved a request to modify NW Natural's CCA deferral to allow for the recovery of interest from customers based on the actual cash paid for purchases of allowances, less proceeds received from the sale of allowances.

EARNINGS TEST REVIEW. NW Natural is subject to an annual earnings review in Oregon to determine if the NGD business is earning above its authorized ROE threshold. If NGD business earnings exceed a specific ROE level, then 33% of the amount above that level is required to be deferred or refunded to customers. Under this provision, if NW Natural selects the 80% deferral gas cost option, then NW Natural retains all earnings up to 150 basis points above the currently authorized ROE. If NW Natural selects the 90% deferral option, then it retains all earnings up to 100 basis points above the currently authorized ROE. For the 2022-23 and 2023-24 gas years, NW Natural selected the 90% deferral option. The ROE threshold is subject to adjustment annually based on movements in long-term interest rates. For calendar years 2021, 2022, and 2023, the ROE threshold was 10.40% in all periods. There were no refunds required for 2021 and 2022. NW Natural does not expect a refund for 2023 based on results, and anticipates filing its 2023 earnings test in May 2024.

GAS RESERVES. In 2011, the OPUC approved the Encana gas reserves transaction to provide long-term gas price protection for NGD business customers and determined costs under the agreement would be recovered on an ongoing basis through the annual PGA mechanism. Gas produced from NW Natural's interests is sold at then prevailing market prices, and revenues from such sales, net of associated operating and production costs and amortization, are included in cost of gas. The cost of gas, including a carrying cost for the rate base investment made under the original agreement, is included in NW Natural's annual Oregon PGA filing, which allows NW Natural to recover these costs through customer rates. The net investment under the original agreement earns a rate of return.

In 2014, NW Natural amended the original gas reserves agreement in response to Encana's sale of its interest in the Jonah field located in Wyoming to Jonah Energy. Under the amended agreement with Jonah Energy, NW Natural has the option to invest in additional wells on a well-by-well basis with drilling costs and resulting gas volumes shared at the amended proportionate working interest for each well in which NW Natural invests. Volumes produced from the additional wells drilled after the amended agreement are included in NW Natural's Oregon PGA at a fixed rate of $0.4725 per therm. NW Natural has not participated in additional wells since 2014.

DECOUPLING. In Oregon, NW Natural has a decoupling mechanism. Decoupling is intended to break the link between revenue and the quantity of gas consumed by customers, removing any financial incentive to discourage customers' efforts to conserve energy. The Order in the 2020 Oregon general rate case also approved of extending NW Natural's decoupling calculation for the months of November and May to the month of April. This mechanism employs a use-per-customer decoupling calculation, which adjusts margin revenues to account for the difference between actual and expected customer volumes. The margin adjustment resulting from differences between actual and expected volumes under the decoupling component is recorded to a deferral account, which is included in the annual PGA filing. The Oregon decoupling baseline usage per customer was reset in the 2020 Oregon general rate case.

WARM. In Oregon, NW Natural has an approved weather normalization mechanism (WARM), which is applied to residential and small commercial customer bills. This mechanism is designed to help stabilize the collection of fixed costs by adjusting residential and small commercial customer billings based on temperature variances from average weather, with rate decreases when the weather is colder than average and rate increases when the weather is warmer than average. The mechanism is applied to bills from December through mid-May of each heating season. The mechanism adjusts the margin component of customers' rates to reflect average weather, which uses the 25-year average temperature for each day of the billing period. Daily average temperatures and 25-year average temperatures are based on a set point temperature of 59 degrees Fahrenheit for residential customers and 58 degrees Fahrenheit for commercial customers. The collections of any unbilled WARM amounts due to tariff caps and floors are deferred and earn a carrying charge until collected, or returned, in the PGA the following year. Residential and small commercial customers in Oregon are allowed to opt out of the weather normalization mechanism, and as of December 31, 2023, 7% of total eligible customers had opted out. NW Natural does not have a weather normalization mechanism approved for Washington customers, which account for about 12% of total customers. See "Business Segment—*Natural Gas Distribution*" below.

INDUSTRIAL TARIFFS. The OPUC and WUTC have approved tariffs covering NGD service to major industrial customers, which are intended to give NW Natural certainty in the level of gas supplies needed to serve this customer group. The approved terms include, among other things, an annual election period, special pricing provisions for out-of-cycle changes, and a requirement that industrial customers complete the term of their service election under NW Natural's annual PGA tariff.

ENVIRONMENTAL COST DEFERRAL AND RECOVERY. NW Natural has authorizations in Oregon and Washington to defer costs related to remediation of properties that are owned or were previously owned by NW Natural. In Oregon, a Site Remediation and Recovery Mechanism (SRRM) is currently in place to recover prudently incurred costs allocable to Oregon customers, subject to an earnings test. Effective beginning November 1, 2019, the WUTC authorized an Environmental Cost Recovery Mechanism (ECRM) for recovery of prudently incurred costs allocable to Washington customers.

Oregon SRRM

Under the Oregon SRRM collection process, there are three types of deferred environmental remediation expense:

- Pre-review - This class of costs represents remediation spend that has not yet been deemed prudent by the OPUC. Carrying costs on these remediation expenses are recorded at NW Natural's authorized cost of capital. NW Natural anticipates the prudence review for annual costs and approval of the earnings test prescribed by the OPUC to occur by the third quarter of the following year.
- Post-review - This class of costs represents remediation spend that has been deemed prudent and allowed after applying the earnings test, but is not yet included in amortization. NW Natural earns a carrying cost on these amounts at a rate equal to the five-year treasury rate plus 100 basis points.
- Amortization - This class of costs represents amounts included in current customer rates for collection and is calculated as one-fifth of the post-review deferred balance. NW Natural earns a carrying cost equal to the amortization rate determined annually by the OPUC, which approximates a short-term borrowing rate. NW Natural included $9.6 million and $6.8 million of deferred remediation expense approved by the OPUC for collection during the 2023-24 and 2022-23 PGA years, respectively.

In addition, the SRRM also provides for the annual collection of $5.0 million from Oregon customers through a tariff rider. As it collects amounts from customers, NW Natural recognizes these collections as revenue net of any earnings test adjustments and separately amortizes an equal and offsetting amount of the deferred regulatory asset balance through the environmental remediation operating expense line shown separately in the operating expenses section of the Consolidated Statements of Comprehensive Income (Loss). See Note 17 for more information on our environmental matters.

The SRRM earnings test is an annual review of adjusted NGD ROE compared to authorized NGD ROE. To apply the earnings test NW Natural must first determine what if any costs are subject to the test through the following calculation:

Annual spend
Less: $5.0 million base rate rider
Prior year carry-over[(1)]
$5.0 million insurance + interest on insurance
Total deferred annual spend subject to earnings test
Less: over-earnings adjustment, if any
Add: deferred interest on annual spend[(2)]
Total amount transferred to post-review

(1) Prior year carry-over results when the prior year amount transferred to post-review is negative. The negative amount is carried over to offset annual spend in the following year.
(2) Deferred interest is added to annual spend to the extent the spend is recoverable.

To the extent the NGD business earns at or below its authorized ROE as defined in the SRRM, the total amount transferred to post-review is recoverable through the SRRM. To the extent more than authorized ROE is earned in a year, the amount transferred to post-review would be reduced by those earnings that exceed its authorized ROE. For 2023, NW Natural has performed this test, which is anticipated to be submitted to the OPUC in May 2024. No earnings test adjustment is expected for 2023.

Washington ECRM

The ECRM established by the WUTC order effective November 1, 2019 permits NW Natural’s recovery of environmental remediation expenses allocable to Washington customers. These expenses represent 3.32% of costs associated with remediation of sites that historically served both Oregon and Washington customers. The order allows for recovery of past deferred and future prudently incurred remediation costs allocable to Washington through application of insurance proceeds and collections from customers. Prudently incurred costs that were deferred from the initial deferral authorization in February 2011 through June 2019 were fully offset with insurance proceeds, with any remaining insurance proceeds to be amortized over a 10.5 year period. On an annual basis, NW Natural will file for a prudence determination and a request to recover remediation expenditures in excess of insurance amortizations in the following year's customer rates. After insurance proceeds are fully amortized, if in a particular year the request to collect deferred amounts exceeds one percent of Washington normalized revenues, then the excess will be collected over three years with interest.

INTERSTATE STORAGE AND ASSET MANAGEMENT SHARING. On an annual basis, NW Natural credits amounts to Oregon and Washington customers as part of a regulatory incentive sharing mechanism related to net revenues earned from Mist gas storage for assets developed in advance of utility customer needs, and asset management revenues. In January 2024, the OPUC approved the annual 2024 bill credit for Oregon customers' share of interstate storage and asset management activities totaling approximately $20.6 million, which was credited to customers' bills in February 2024. This includes revenue generated for the November 2022 through October 2023 PGA year. Credits are given to customers in Washington as reductions in rates through the annual PGA filing in November.

During the first quarter of 2023, NW Natural refunded an interstate storage and asset management sharing credit of approximately $23.5 million to Oregon customers. Commercial and industrial customers in Oregon received this credit in February 2023, which totaled approximately $10.5 million. Residential customers in Oregon received this credit as a reduction to the temporary rate mitigation adjustment in 2023, and totaled approximately $13.0 million.

The following table presents the credits to NGD customers:

In millions	2023	2022	2021
Oregon	$ 23.5	$ 41.1	$ 9.1
Washington	2.9	1.5	3.1

COVID-19 DEFERRAL DOCKETS. During 2020, Oregon and Washington approved our applications to defer certain COVID-19 related costs. Costs that may be recoverable include, but are not limited to, the following: personal protective equipment, cleaning supplies and services, bad debt expense, financing costs to secure liquidity, and certain lost revenue, net of offsetting direct expense reductions associated with COVID-19. As part of the 2022 Oregon general rate case, NW Natural received approval from the OPUC to recover the 2020 and 2021 COVID-19 deferral totaling $10.9 million beginning November 1, 2022 over a two-year period. NW Natural is authorized to recover the 2022 COVID-19 deferral totaling $6.5 million beginning November 1, 2023 through October 31, 2024. In addition, approximately $2.3 million of forgone late fee revenue will be recognized over the same time period as the 2022 COVID-19 deferral. Beginning January 2023, NW Natural is no longer deferring any COVID-19 related costs in Oregon. NW Natural expects to recover its COVID-19 deferrals in Washington in a future proceeding.

LOW INCOME DISCOUNT TARIFFS.

Oregon

In July 2022, NW Natural received approval from the OPUC for an income-qualifying residential bill discount program. The income threshold for program participation is at or below 60 percent of Oregon state median income (SMI). The program provides a bill discount for income-qualifying residential customers at four discount tier levels based on household income compared to SMI, with higher discounts given for lower income levels. Participating customers can self-certify their income and household size to qualify for the program directly with NW Natural or their local Community Action Agency. The program was available for qualifying customers starting November 1, 2022. Costs for the bill discount program include simultaneous recovery from all customers. Costs for the bill discount program, inclusive of start-up and administrative costs of the program, are recoverable in rates. The amount deferred to a regulatory asset as of December 31, 2023 was $3.6 million.

	Total Household Income	**Bill Discount Percentage**
Tier 0	At or below 15% SMI	40%
Tier 1	16% - 30% of SMI	25%
Tier 2	31% - 45% of SMI	20%
Tier 3	46% - 60% of SMI	15%

Washington

In December 2023, NW Natural received approval from the WUTC for an income-qualifying residential bill discount program. The program was available for qualifying customers starting January 1, 2024. The Washington program is similar to the Oregon program, with the exception of the discount tier levels shown below. The income threshold for the Washington program participation is based on the greater of area median income (AMI) or federal poverty level (FPL).

	Total Household Income	**Bill Discount Percentage**
Tier 0	At or below 60% FPL	80%
Tier 1	61% - 120% of FPL	40%
Tier 2	121% - 150% of FPL	20%
Tier 3	Greater of 80% AMI or 151% - 200% of FPL	15%

RENEWABLE NATURAL GAS AND AUTOMATIC ADJUSTMENT CLAUSE. On June 19, 2019, the Oregon legislature passed Senate Bill 98 (SB 98), which enables natural gas utilities to procure or develop RNG on behalf of their Oregon customers. The bill was signed into law by the governor in July 2019, and subsequently, the OPUC adopted final rules in July 2020.

SB 98 and the rules outline the following parameters for the RNG program including: setting voluntary goals for adding as much as 30% renewable natural gas into the state's pipeline system by 2050; enabling gas utilities to invest in and own the cleaning and conditioning equipment required to bring raw biogas and landfill gas up to pipeline quality, as well as the facilities to connect to the local gas distribution system; and allowing up to 5% of a utility's revenue requirement to be used to cover the incremental cost or investment in renewable natural gas infrastructure.

Further, the law supports all forms of renewable natural gas including renewable hydrogen, which is made from excess wind, solar and hydro power. Renewable hydrogen can be used for the transportation system, industrial use, or blended into the natural gas pipeline system.

Pursuant to the 2022 Oregon general rate case, the OPUC ordered that the costs NW Natural sought to recover related to its investment in Lexington Renewables Energy, LLC were reasonable and prudently incurred under SB 98. Furthermore, the OPUC approved an automatic adjustment clause that allows for NW Natural's investments in RNG projects, including operating costs, to be added to rates annually on November 1st, following a prudence review. The RNG recovery mechanism allows NW Natural to defer for recovery or credit the differences between the forecasted and actual costs of the RNG projects, subject to an earnings test that includes deadbands at 50 basis points below and above NW Natural's authorized ROE. For 2023, NW Natural has performed this test, which is anticipated to be submitted to the OPUC in May 2024. No earnings test adjustment is expected for 2023. For RNG procurement contracts, NW Natural seeks recovery of the costs in the PGA and other filings, subject to a prudence review.

In February 2023, NW Natural filed a request to include its investment in Dakota City Renewable Energy LLC in the approved RNG mechanism effective November 1, 2023. In October 2023, the OPUC approved an all-party settlement that deems the investment to be prudent and allows NW Natural to begin recovering the investment costs and expenses of the facility. The RNG facility began production in April 2023. Under the RNG mechanism, expenses incurred prior to the rate effective date are not recoverable under this rate mechanism. Additionally, recovery is subject to the earnings test requirements under the RNG recovery mechanism discussed above. The Dakota City investment is subject to a production risk-sharing mechanism based on the expected per unit of production. NW Natural is required to share 25% of the costs above this threshold.

INTEGRATED RESOURCE PLAN (IRP). NW Natural generally files a full IRP biennially for Oregon and Washington with the OPUC and WUTC, respectively. NW Natural jointly filed its 2022 IRP for both Oregon and Washington on September 23, 2022. The 2022 IRP outlines scenarios of future requirements based on a range of inputs that would provide the least-cost and least-risk resources to meet future demand and environmental compliance obligations. With respect to IRPs generally, the WUTC issues letters of compliance and Oregon acknowledges the IRP. In August 2023, NW Natural received a letter of compliance from the WUTC acknowledging the 2022 IRP.

The OPUC issued their order on NW Natural's 2022 IRP in August 2023. The OPUC acknowledged key system investments including the Portland LNG cold box project and the Forest Grove reinforcement project. The OPUC declined at that time to acknowledge certain elements related to long-term analysis and selection of resources and suggested that NW Natural work with interested parties to develop and refine modeling related to these open items.

The development of an IRP filing is an extensive and complex process that engages multiple stakeholders in an effort to build a robust and commonly understood analysis. The final product is intended to provide a long-term outlook of the supply-side and demand-side resource requirements for reliable and low cost natural gas service while also meeting NW Natural's environmental compliance requirements. The IRP examines and analyzes uncertainties in the planning process, including potential changes in governmental and regulatory policies. The CCA that was passed in Washington is an example of a new policy that resulted in compliance requirements that need to be included in the planning process.

PIPELINE SECURITY. In May and July 2021, the Department of Homeland Security's (DHS) Transportation Security Administration (TSA) released two security directives applicable to certain owners and operators of natural gas pipeline facilities (including local distribution companies). The first directive require owners and operators to implement cybersecurity incident reporting to the DHS, designate a cybersecurity coordinator, and perform a gap assessment of current entity cybersecurity practices against certain voluntary TSA security guidelines and report relevant results and proposed mitigation to applicable DHS agencies. The second directive requires entities to implement a significant number of specified cybersecurity controls and processes. The TSA released a third directive renewing the second directive as well as clarifying Operational Technology (OT) scope and providing a risk- and outcome-based framework. The third directive is effective until July 2023 and will expire in July 2024. The TSA is in the process of formulating regulations with the aim of rendering the security directives permanent. NW Natural is currently evaluating and implementing the security directives and related deliverables. NW Natural frequently updates the TSA on its progress on achieving the security directives.

NW Natural filed requests with the OPUC and WUTC to defer the costs associated with complying with the TSA's security directives. As of December 31, 2023, NW Natural has invested approximately $44.2 million in information and operational technology. A majority of the capital investment was included in rate base starting November 1, 2022 in Oregon.

NW Natural continues to evaluate the potential effect of these directives on our operations and facilities, as well as the potential total cost of implementation, and will continue to monitor for any clarifications or amendments to these directives. We may seek to request recovery from customers of any additional costs incurred to the extent that incremental expenses and capital expenditures are incurred in the future.

ERP UPGRADE. In the fourth quarter of 2020, NW Natural filed requests to defer expenses pertaining to a project to upgrade the existing enterprise resource planning (ERP) system with the OPUC and WUTC. A stipulation supported by all parties in the Oregon docket was filed and approved by the OPUC in the third quarter of 2021. Under the settlement agreement, NW Natural will recover 100% of costs incurred up to the $8.55 million estimate of Oregon-allocated costs provided in the docket. Approval of the Washington deferral was resolved as part of the most recent general rate case. NW Natural placed its new ERP system into service in September 2022. On November 1, 2022, NW Natural began recovering all expenses deferred and accruing interest over a 10-year period.

WATER AND WASTEWATER UTILITIES. NWN Water currently serves an estimated 180,000 people through approximately 73,000 connections across five states. We continued to expand our water and wastewater utility business during 2023.

- In the first quarter of 2023, NWN Water signed a purchase agreement for a water utility with approximately 1,450 connections in Arizona. The purchase agreement was approved by the ACC in September 2023 and the acquisition closed in the fourth quarter of 2023.
- In the second quarter of 2023, NWN Water signed a purchase agreement for a water and wastewater business with approximately 2,150 connections in Oregon. The purchase agreement was approved by the OPUC in October 2023 and the acquisition closed in the fourth quarter of 2023.
- In the second quarter of 2023, NWN Water increased its ownership stake in Avion Water Company, Inc.
- In the fourth quarter of 2023, NWN Water acquired a water utility with approximately 2,400 connections in Arizona.

For our regulated water utilities, we have been executing general rate cases.

- In February 2023, Salmon Valley Water Company filed a general rate case with the OPUC with new rates effective September 1, 2023.
- In May 2023, Falls Water Company filed a general rate case with the IPUC with new rates effective December 15, 2023.
- In October 2023, Foothills Utilities filed a general rate case with the ACC and requested rates to go into effect no later than November 30, 2024.

Environmental Regulation and Legislation Matters

There is a growing international and domestic focus on climate change and the contribution of GHG emissions, most notably methane and carbon dioxide, to climate change. In response, there are increasing efforts at the international, federal, state, and local level to regulate GHG emissions. Legislation or other forms of regulation could take a variety of forms including, but not limited to, GHG emissions limits, reporting requirements, carbon taxes, requirements to purchase carbon credits, building codes, increased efficiency standards, additional charges to fund energy efficiency activities or other regulatory actions, incentives or mandates to conserve energy or use renewable energy sources, tax advantages and other subsidies to support alternative energy sources, a reduction in rate recovery for construction costs related to the installation of new customer services or other new infrastructure investments, mandates for the use of specific fuels or technologies, bans on specific fuels or technologies, or promotion of research into new technologies to reduce the cost and increase the scalability of alternative energy sources. These efforts could include legislation, legislative proposals, directed government funding, or new regulations at the federal, state, and local level, as well as private party litigation related to GHG emissions or regulation thereof. We recognize certain of our businesses, including our natural gas business, are likely to be affected by current or future regulation seeking to limit GHG emissions.

International

In early 2021, the U.S. rejoined the Paris Agreement on Climate, which establishes non-binding targets to reduce GHG emissions from both developed and developing nations. Under the Paris Agreement, signatory countries are expected to submit their nationally determined contributions to curb GHG emissions and meet the agreed temperature objectives every five years. On April 22, 2021, the United States federal administration announced the U.S. nationally determined contribution to achieve a fifty to fifty-two percent reduction from 2005 levels in economy-wide net GHG emissions by 2030.

Federal

President Biden’s administration has issued executive orders directing agencies to conduct a general review of regulations and executive actions related to the environment and reestablished a framework for considering the social cost of carbon as part of certain agency cost-benefit analyses for new regulations. President Biden’s administration continues to consider a wide range of additional policies, executive orders, rules, legislation, and other initiatives to address climate change.

The Inflation Reduction Act of 2022 (IRA) was signed into law in August 2022 and includes several climate and energy provisions. The IRA is expected to provide significant funding through grants, tax credits, and investments to support various initiatives including manufacturing, renewable energy production and consumption, transportation electrification and climate-smart agriculture. The IRA includes tax credits for RNG, hydrogen, carbon capture projects and geothermal heat pumps, among other investments. The IRA also includes funding for the EPA to improve GHG reporting and enforcement, as well as a methane fee applicable to activities associated with gas production and processing facilities, transmission pipelines and certain storage facilities, creates a new corporate alternative minimum tax of 15 percent that applies to corporations with average annual financial statement income in excess of one billion dollars, and creates a new 1 percent excise tax on the net stock repurchases by public companies. Guidance from several federal agencies is pending regarding various aspects of the IRA and the manner in which it will be implemented. We continue to assess effects of the IRA that are relevant to our businesses, and will continue to do so as it is implemented. The U.S. Congress may also pass federal climate change legislation in the future. We cannot predict when or if Congress will pass such legislation and in what form.

In addition, the EPA regulates GHG emissions pursuant to the Clean Air Act. For example, the EPA requires the annual reporting of GHG emissions from certain industries, specified emission sources, and facilities. Under this reporting rule, local natural gas distribution companies like NW Natural are required to report system throughput to the EPA on an annual basis. The EPA also has required additional GHG reporting regulations to which NW Natural is subject, requiring the annual reporting of fugitive emissions from operations. Other federal regulatory agencies, including the U.S. Department of Energy, are beginning to address matters related to GHG emissions that may include changes in their regulatory oversight approach, policies and rules.

Other federal agencies have taken or are expected to take actions related to climate change. For example, in March 2022, the Securities and Exchange Commission (SEC) proposed new rules relating to the disclosure of a range of climate-related matters, PHMSA is expected to prepare regulations and other actions to limit methane emissions, the Commodities Futures Trading Commission (CFTC) has indicated it intends to take actions related to oversight of climate-related financial risks as pertinent to the derivatives and underlying commodities markets. Similarly, other federal agencies and regulations, including but not limited to , the U.S. Department of Treasury, Federal Acquisitions Regulations, and others have indicated impending regulatory actions related to climate change. To the extent these agencies adopt final rules as proposed or in modified form, we or our customers could incur increased costs. These could include internal costs as well as external costs such as the cost of independent experts to provide attestation reports on our GHG emissions data and increased audit costs.

<u>Washington State</u>
In 2023, Washington comprised approximately 11% of NW Natural's revenues, as well as 2% and 14% of new meters from commercial and residential customers, respectively. Effective February 1, 2021, building codes in Washington state require new residential homes to achieve higher levels of energy efficiency based on specified carbon emissions assumptions, which calculate electric appliances to have lower on-site GHG emissions than comparable gas appliances. This increases the cost of new home construction incorporating natural gas depending on a number of factors including home size, equipment configurations, and building envelope measures. Additionally, the Washington State Building Code Council (SBCC) voted in April 2022 to include updates in the state commercial building energy code that would restrict or eliminate the use of gas space and water heating in new commercial construction. In November 2022, the SBCC voted to include updates to the state residential building energy code that are expected to restrict the use of gas space and water heating in residential construction, with certain exceptions including for natural gas-fired heat pumps and hybrid fuel systems. The SBCC commercial and residential rules were expected to become effective July 1, 2023, but the SBCC delayed implementation and has modified those rules. The expected timeline for implementation of the modified rules, if any, is March, 2024 unless the legislature delays, rejects or amends the new rules. The new modified rules are currently subject to legal challenge by a number of companies and organizations and are likely to be subject to additional legal challenge.

Washington has also enacted the CCA, which establishes a comprehensive program that includes an overall limit for GHG emissions from major sources in the state that declines yearly beginning January 1, 2023, resulting in an overall reduction of GHG emissions to 95% below 1990 levels by 2050. The Washington Department of Ecology has adopted rules to create a cap-and-invest program, under which entities, including natural gas and electric utilities, large manufacturing facilities, and transportation and other fuel providers, which are subject to the CCA must either reduce their emissions, purchase qualifying offsets (including RNG) or obtain allowances to cover any remaining emissions. NW Natural is subject to the CCA, has received an order authorizing deferral of CCA costs from the WUTC, and is currently recovering CCA compliance costs in rates.

<u>Oregon</u>
On March 10, 2020, the governor of Oregon issued an executive order (EO) establishing GHG emissions reduction goals of at least 45% below 1990 emission levels by 2035 and at least 80% below 1990 emission levels by 2050 and directed state agencies and commissions to facilitate such GHG emission goals targeting a variety of sources and industries. Although the EO does not specifically direct actions of natural gas distribution businesses, the OPUC is directed to prioritize proceedings and activities that advance decarbonization in the utility sector, mitigate the energy burden experienced by utility customers and ensure system reliability and resource adequacy. The EO also directs other state agencies, including the Oregon Department of Environmental Quality (ODEQ), to cap and reduce GHG emissions from transportation fuels and all other liquid and gaseous fuels, including natural gas, adopt building energy efficiency goals for new building construction, reduce methane gas emissions from landfills and food waste, and submit a proposal for adoption of state goals for carbon sequestration and storage by Oregon's forest, wetlands and agricultural lands. The OPUC is also charged with carrying out the EO to the extent it is consistent with its statutory authority and duties, and to focus on equitable impacts to low-income customers under its current statutory authority.

In December 2021, the ODEQ concluded its rulemaking process and issued final cap and reduce rules for its Climate Protection Program (CPP), which became effective in January of 2022. The CPP outlines GHG emissions reduction goals of 50% by 2035 and 90% by 2050 from a 2017-2019 baseline. The ODEQ rules were held invalid on procedural grounds by the Oregon Court of Appeals in December 2023. In January, 2024, ODEQ announced that it would not appeal the Oregon Court of Appeals' decision, but that it would re-engage in a rulemaking process and it expects the new rulemaking to take approximately 12 months. NW Natural received an order from the OPUC authorizing deferral of CPP compliance costs for the initial rule and intended to pursue inclusion of those compliance costs in rates and we are in the process of determining treatment given the CPP is invalid. We would expect to take the same actions with respect to any subsequently adopted ODEQ rules.

Local Jurisdictions and Other Advocacy

In addition to legislative activities at the state level, advocacy groups have indicated a willingness to pursue municipal ordinances and ballot measures or other local activities. Some local and county governments in the United States also have been proposing or passing renewable energy resolutions, restrictions, taxes, or fees seeking to accelerate climate action goals. A number of cities across the country, and several in our service territory are taking action or currently considering actions such as limitations or bans on the use of natural gas in new construction or otherwise. For example, in February 2023, the Eugene City Council passed an ordinance that prohibits the use of natural gas in low rise residential buildings beginning with permits submitted after June of 2023. That ordinance was initially referred to the voters on the November 2023 ballot and was subsequently rescinded by the Eugene City Council. In connection with its recission of the ordinance, the City Council directed the Eugene City Manager to develop a plan to address GHG emissions and align incentives around GHG emissions. Similarly, some jurisdictions and advocates are seeking to ban the use of natural gas and certain natural gas appliances inside homes and contend that there are detrimental indoor health effects associated with the use of natural gas.

NW Natural is actively engaged with federal, state and local policymakers, consumers, customers, small businesses and other business coalitions, economic development practitioners, and other advocates in our service territory and is working with these communities to communicate the role that direct use natural gas, and in the coming years, RNG and hydrogen, can play in pursuing more effective policies to reduce GHGs while supporting reliability, resiliency, energy choice, equity, and energy affordability.

NW Natural Decarbonization Initiatives and Compliance Actions

Our customers are currently paying less for their natural gas today than they did 15 years ago. We expect that compliance with any form of regulation of GHG emissions, including the CCA in Washington or any similar program adopted in Oregon, as well as voluntary actions under SB 98 or otherwise, will require additional resources and legislative or regulatory tools, and will increase costs. The developing and changing implementation guidance for the CCA and new rulemaking process for an Oregon carbon reduction program under the Oregon EO, evolving carbon credit markets and other regulatory tool options, decades-long timeframes for compliance, likely changing and evolving laws and energy policy, and evolving technological advancements, all make it difficult to accurately predict long-term tools for and costs of compliance. In September 2022, NW Natural filed its integrated resource plans (IRPs) with the OPUC and WUTC. Those IRPs comprehensively evaluate resource options available to serve NW Natural's customers' energy, capacity and environmental compliance needs, and are an informative component of the resources selected for compliance with the CCA and any subsequently developed Oregon program. While we model compliance with the CCA and any similar program in our IRPs, the expected costs of compliance are uncertain and subject to significant change. We are currently including costs of compliance with the CCA in rates. Costs to comply currently are increasing non-low income residential bills by approximately 12% to 38%.

These projected customer bill impacts of the CCA are estimates, are likely to increase beyond the first compliance period, and are subject to change as these laws are implemented and compliance begins. The costs are also likely to vary significantly based on forecasting assumptions related to permitted levels of rate recovery, available technologies and equipment, weather patterns and gas usage, customer growth or attrition, allocation of fixed costs among classes of customers, energy efficiency levels, availability, use and cost of renewables, feasibility of broad-scale hydrogen in the natural gas system, and a number of other assumptions used in the complex analysis of integrated resource planning.

We are not currently able to quantify the extent to which limitations on natural gas use, or declining line extension allowances provided in rates to cover construction costs for new services, will affect new meter additions, or to what extent carbon compliance costs included in rates will affect the competitiveness of our business and the demand for natural gas service. All of these developments could negatively affect our gas utility customer growth. However, at the same time natural gas utilities will be subject to GHG emissions regulation, we expect that other energy source providers will be subject to similar, or in some cases stricter or more rapid, compliance requirements that are likely to affect their cost and competitiveness relative to natural gas as well. For example, President Biden has announced his intention to have a carbon-free electricity sector by 2035, 15 years before the target date of the CCA. In June 2021, the State of Oregon enacted HB 2021, a clean electricity bill that requires the state's two largest investor-owned electric utilities and retail electricity service suppliers to reduce GHG emissions associated with electricity sold to Oregon customers to 100 percent below baseline levels by 2040 with interim steps, including an 80 percent reduction by 2030 and 90 percent reduction by 2035. This bill does not replace the separate renewable portfolio standards previously established in Oregon, which sets requirements for how much of the electricity used in Oregon must come from renewable resources. In Washington, SB 5116, the Clean Energy Transformation Act, requires all electric utilities in Washington to transition to carbon-neutral electricity by 2030 and to 100 percent carbon-free electricity by 2045. We expect compliance with these and other laws will increase the cost of energy for electric customers in our service territory. We are not able to determine at this time whether increased electricity costs will make natural gas use more or less competitive on a relative basis.

We expect these and other trends to drive innovation of, and demand for, technological developments and innovative new products that reduce GHG emissions. Research and development are occurring across the energy sector, including in the gas sector with work being conducted on gas heat pumps, higher efficiency water and space heating appliances including hybrid systems, carbon capture utilization and storage developments, continued development of technologies related to RNG, and various forms of hydrogen for different applications, among others.

NW Natural continues to take proactive steps in seeking to reduce GHG emissions in our region and we diligently communicate with local, state, and federal governments and communities about those steps. NW Natural has been a leader among gas utilities in innovative programs. Notable programs have included a decoupling rate structure designed to weaken the link between revenue and gas consumption by customers adopted in 2007, and establishment of a voluntary Smart Energy carbon offset program for customers established in 2007, and removal of all known cast iron and bare steel to create one of the tightest and most modern distribution systems in the country. We continue to believe that NW Natural has an important role in providing affordable and equitable energy to the communities we serve. NW Natural is an important provider of energy to families and businesses in Oregon and southwest Washington. Natural gas sales to our residential and commercial customers account for approximately 7% of Oregon's GHG emissions according to the 2021 data from the State of Oregon Department of Environmental Quality In-Boundary GHG Inventory. We intend to continue to provide this necessary energy to our communities with the goal of using our modern pipeline system to help the Pacific Northwest transition to a cleaner energy future.

In 2016, NW Natural initiated a multi-pronged, multi-year strategy to accelerate and deliver greater GHG emission reductions in the communities we serve. Key components of this strategy include customer energy efficiency, continued adoption of NW Natural's voluntary Smart Energy carbon offset program, and seeking to incorporate RNG and hydrogen into our gas supply. RNG is produced from organic materials including food, agricultural and forestry waste, wastewater, or landfills. We believe RNG has the potential to significantly reduce net GHG emissions because methane that would otherwise be released to the atmosphere can be captured from these organic materials as they decompose and then conditioned to pipeline quality and distributed into our existing system. In 2019, Oregon Senate Bill 98 (SB 98) was signed into law enabling NW Natural to procure RNG on behalf of customers and provided voluntary targets that would allow us to make qualified investments and purchase RNG from third parties.

Under SB 98, NW Natural is actively working to procure RNG supply for customers and increase the amount of RNG on our system and is also exploring the development of renewable hydrogen through power to gas. To that end, in 2020 and 2021, NW Natural announced several agreements and investments to procure RNG for its customers. For example, NW Natural began a partnership with BioCarbN to invest up to an estimated $38 million in four separate RNG development projects that will access biogas derived from water treatment at Tyson Foods' processing plants, subject to approval by all parties. The first project was commissioned in early 2022 and the second was commissioned in April 2023. To date, NW Natural has signed agreements with options to purchase or develop RNG for utility customers totaling about 3% of NW Natural's annual sales volume in Oregon.

Business Segment - Natural Gas Distribution (NGD)

NGD margin results are primarily affected by customer growth, revenues from rate-base additions, and, to a certain extent, by changes in delivered volumes due to weather and customers' gas usage patterns. In Oregon, NW Natural has a conservation tariff (also called the decoupling mechanism), which adjusts margin up or down each month through a deferred regulatory accounting adjustment designed to offset changes resulting from increases or decreases in average use by residential and commercial customers. NW Natural also has a weather normalization tariff in Oregon, WARM, which adjusts customer bills up or down to offset changes in margin resulting from above- or below-average temperatures during the winter heating season. Residential and commercial customers in Oregon are allowed to opt out of the weather normalization mechanism, and as of December 31, 2023, approximately 7% of total eligible customers had opted out. NW Natural does not have a weather normalization mechanism approved for Washington customers, which account for about 12% of total customers. The decoupling and WARM mechanisms are designed to reduce, but not eliminate, the volatility of customer bills and natural gas distribution revenue. See "Regulatory Matters—*Rate Mechanisms*" above. In addition to NW Natural's local gas distribution business, the NGD segment also includes the portion of the Mist underground storage facility used to serve NGD customers, the North Mist gas storage expansion, NWN Gas Reserves, which is a wholly owned subsidiary of Energy Corp., and NW Natural RNG Holding Company, LLC.

The NGD business is primarily seasonal in nature due to higher gas usage by residential and commercial customers during the cold winter heating months. Other categories of customers experience seasonality in their usage but to a lesser extent. Seasonality affects the comparability of the results of operations of the NGD business across quarters but not across years.

NGD segment highlights include:

Dollars and therms in millions, except EPS data	2023	2022	2021
NGD net income	$ 94.0	$ 79.7	$ 69.0
Diluted EPS - NGD segment	$ 2.59	$ 2.34	$ 2.24
Gas sold and delivered (in therms)	1,207	1,252	1,185
NGD margin(1)	$ 575.0	$ 505.9	$ 479.8

(1) See Natural Gas Distribution Margin Table below for additional detail.

2023 COMPARED TO 2022. NGD net income was $94.0 million in 2023 compared to $79.7 million in 2022. The primary factors contributing to the increase in NGD net income were as follows:

- $69.1 million increase in NGD margin primarily due to:
  - $47.5 million increase due to new customer rates in Oregon and Washington that went into effect November 1, 2022;
  - $9.4 million increase due to actual gas prices that were lower than what was estimated in the 2022-2023 PGA;
  - $9.2 million increase due to the amortization of deferred balances primarily related to COVID-19, cybersecurity, and ERP upgrades (which is mostly offset in operations and maintenance expenses and interest expense; and
  - $4.6 million increase driven by customer growth; partially offset by
  - $2.4 million decrease due to warmer than average weather for customers not covered under the weather normalization mechanism.
- $15.8 million increase in other income, net driven by interest income from invested cash and the equity portion of AFUDC, and lower pension costs; partially offset by
- $40.0 million increase in NGD operations and maintenance expenses due to higher payroll costs, higher contract labor, the amortization of deferred balances (which is mostly offset in revenues), information technology costs and amortization expense related to cloud computing arrangements;
- $14.3 million increase in interest expense primarily due to higher long-term debt balances;
- $6.5 million increase in depreciation expense due to additional capital investments in the distribution system, including several significant information technology projects that were placed into service in September 2022; and
- $4.9 million higher income tax expense reflecting higher pre-tax income.

Total natural gas sold and delivered in 2023 decreased 4% over 2022 primarily due to 8% warmer than average weather in 2023 compared to 1% colder than average weather in 2022.

2022 COMPARED TO 2021. NGD net income was $79.7 million in 2022 compared to $69.0 million in 2021. The primary factors contributing to the increase in NGD net income were as follows:

- $26.1 million increase in NGD margin primarily due to:
  - $14.9 million increase due to new customer rates from the 2022 Oregon and 2021 Washington rate cases that went into effect November 1, 2022;
  - $6.1 million increase driven by customer growth;
  - $3.0 million increase due to higher usage from colder comparative weather from customers that are not decoupled, net of the loss from the Oregon gas cost incentive sharing mechanism;
  - $2.9 million increase due to the amortization of deferred balances primarily related to COVID-19, cybersecurity, and ERP upgrades; and
- $12.1 million increase in other income, net primarily due to lower pension non-service costs and interest income from the equity portion of AFUDC; partially offset by
- $16.7 million increase in NGD operations and maintenance expenses due to higher contract labor, amortization expense related to cloud computing arrangements, professional service fees, and information technology costs;
- $3.4 million increase in interest expense primarily due to higher long-term debt balances and higher interest rates, partially offset by higher AFUDC debt interest income;
- $2.9 million higher income tax expense reflecting higher pre-tax income; and
- $2.4 million increase in depreciation expense as we continue to invest in our natural gas utility system and facilities.

Total natural gas sold and delivered in 2022 increased 6% over 2021 primarily due to 1% colder than average weather in 2022 compared to 12% warmer than average weather in 2021.

NATURAL GAS DISTRIBUTION MARGIN TABLE. The following table summarizes the composition of NGD gas volumes, revenues, and cost of sales:

In thousands, except degree day and customer data	2023	2022	2021	Favorable (Unfavorable) 2023 vs. 2022	Favorable (Unfavorable) 2022 vs. 2021
NGD volumes (therms):					
Residential and commercial sales	735,755	766,592	703,054	(30,837)	63,538
Industrial sales and transportation	470,919	485,745	481,721	(14,826)	4,024
Total NGD volumes sold and delivered	1,206,674	1,252,337	1,184,775	(45,663)	67,562
Operating revenues:					
Residential and commercial sales	$1,015,072	$ 881,370	$ 730,794	$ 133,702	$ 150,576
Industrial sales and transportation	97,886	86,810	65,299	11,076	21,511
Other distribution revenues	4,540	1,944	1,707	2,596	237
Other regulated services	18,902	19,628	19,087	(726)	541
Total operating revenues	1,136,400	989,752	816,887	146,648	172,865
Less: Cost of gas	500,061	429,861	292,538	(70,200)	(137,323)
Less: Environmental remediation expense	12,899	12,389	9,938	(510)	(2,451)
Less: Revenue taxes	48,432	41,627	34,600	(6,805)	(7,027)
NGD margin	$ 575,008	$ 505,875	$ 479,811	$ 69,133	$ 26,064
NGD margin[1]					
Residential and commercial sales	$ 512,479	$ 455,686	$ 430,295	$ 56,793	$ 25,391
Industrial sales and transportation	34,748	33,543	32,182	1,205	1,361
Gain (loss) from gas cost incentive sharing	4,459	(4,917)	(3,381)	9,376	(1,536)
Other margin	4,426	1,943	1,633	2,483	310
Other regulated services	18,896	19,620	19,082	(724)	538
NGD margin	$ 575,008	$ 505,875	$ 479,811	$ 69,133	$ 26,064
Degree days[2]					
Average[3]	2,686	2,686	2,692	—	(6)
Actual	2,480	2,712	2,378	(9)%	14 %
Percent (warmer) colder than average weather	(8)%	1 %	(12)%		
NGD meters - end of period:					
Residential meters	728,915	724,287	715,958	4,628	8,329
Commercial meters	69,273	69,139	68,961	134	178
Industrial meters	1,062	1,071	978	(9)	93
Total number of meters	799,250	794,497	785,897	4,753	8,600
NGD meter growth:					
Residential meters	0.6 %	1.2 %			
Commercial meters	0.2 %	0.3 %			
Industrial meters	(0.8)%	9.5 %			
Total meter growth	0.6 %	1.1 %			

(1) Amounts reported as NGD margin for each category of meters are operating revenues less cost of gas, environmental remediation expense and revenue taxes.

(2) Heating degree days are units of measure reflecting temperature-sensitive consumption of natural gas, calculated by subtracting the average of a day's high and low temperatures from 59 degrees Fahrenheit.

(3) Average weather represents the 25-year average of heating degree days. Beginning November 1, 2022, average weather is calculated over the period June 1, 1996 through May 31, 2021, as determined in NW Natural's 2022 Oregon general rate case. From November 1, 2020 through October 31, 2022, average weather was calculated over the period June 1, 1994 through May 31, 2019, as determined in NW Natural's 2020 Oregon general rate case.

Residential and Commercial Sales

The primary factors that impact results of operations in the residential and commercial markets are customer growth, seasonal weather patterns, energy prices, competition from other energy sources, and economic conditions in our service areas. The impact of weather on margin is significantly reduced through NW Natural's weather normalization mechanism in Oregon; approximately 81% of NW Natural's total customers are covered under this mechanism. The remaining customers either opt out of the mechanism or are located in Washington, which does not have a similar mechanism in place. For more information on the weather mechanism, see "Regulatory Matters—Rate Mechanisms—*WARM*" above.

NGD residential and commercial sales highlights include:

In millions	2023	2022	2021
Volumes (therms):			
Residential sales	455.7	478.1	445.6
Commercial sales	280.1	288.5	257.5
Total volumes	735.8	766.6	703.1
Operating revenues:			
Residential sales	$ 685.5	$ 595.0	$ 506.2
Commercial sales	329.6	286.4	224.6
Total operating revenues	$ 1,015.1	$ 881.4	$ 730.8
NGD Margin:			
Residential margin	$ 371.3	$ 328.2	$ 312.5
Commercial margin	141.2	127.5	117.8
Total NGD margin	$ 512.5	$ 455.7	$ 430.3

2023 COMPARED TO 2022. NGD residential and commercial operating revenue increased $133.7 million and NGD margin increased $56.8 million compared to the prior year. The increase was primarily driven by new customer rates in Oregon and Washington that took effect on November 1, 2022 and 0.6% growth in residential customer meters. Sales volumes decreased 30.8 million therms, or 4%, due to lower usage driven by comparatively warmer weather.

2022 COMPARED TO 2021. The increase of $150.6 million in total NGD residential and commercial operating revenue and $25.4 million in NGD margin were primarily the result of new customer rates in Oregon and Washington that took effect on November 1, 2022, 1.2% growth in residential customer meters, and higher usage from colder comparative weather from customers that are not decoupled. Sales volumes increased 63.5 million therms, or 9%, primarily due to higher usage driven by comparatively colder weather.

Industrial Sales and Transportation

Industrial customers have the option of purchasing sales or transportation services. Under the sales service, the customer buys the gas commodity from NW Natural. Under the transportation service, the customer buys the gas commodity directly from a third-party gas marketer or supplier. The NGD gas commodity cost is primarily a pass-through cost to customers; therefore, NGD profit margins are not materially affected by an industrial customer's decision to purchase gas from third parties. Industrial and large commercial customers may also select between firm and interruptible service options, with firm services generally providing higher profit margins compared to interruptible services. To help manage gas supplies, industrial tariffs are designed to provide some certainty regarding industrial customers' volumes by requiring an annual service election which becomes effective November 1, special charges for changes between elections, and in some cases, a minimum or maximum volume requirement before changing options.

NGD industrial sales and transportation highlights include:

In millions	2023	2022	2021
Volumes (therms):			
Firm and interruptible sales	102.3	104.4	90.8
Firm and interruptible transportation	368.6	381.3	390.9
Total volumes	470.9	485.7	481.7
NGD Margin:			
Firm and interruptible sales	$ 14.1	$ 13.6	$ 12.6
Firm and interruptible transportation	20.6	19.9	19.6
Total NGD margin	$ 34.7	$ 33.5	$ 32.2

2023 COMPARED TO 2022. NGD industrial sales and transportation margin increased $1.2 million compared to the prior year primarily driven by new rates in Oregon and Washington that took effect on November 1, 2022, partially offset by lower sales volumes. Sales volumes decreased 14.8 million therms, or 3%, primarily due to lower usage from multiple customers, most notably in the primary metals, pulp and paper, glass, stone and clay, and chemical manufacturing industries.

2022 COMPARED TO 2021. NGD total industrial sales and transportation volumes increased 4.0 million therms, or 1%, primarily due to higher usage from multiple customers, most notably in the light manufacturing, primary metals, and electric manufacturing industries, partially offset by lower usage from customers in the plastic manufacturing industry. NGD margin increased $1.3 million primarily driven by new rates in Oregon and Washington that took effect on November 1, 2022.

Other Regulated Services Margin

Other Regulated Services primarily consist of lease revenues from NW Natural's North Mist storage facility as well as other lease revenues for compressed natural gas assets. See Note 7 for more information regarding North Mist expansion lease accounting.

Other regulated services margin highlights include:

In millions		2023		2022		2021
North Mist storage services	$	18.6	$	19.4	$	18.9
Other services		0.3		0.2		0.2
Total other regulated services	$	18.9	$	19.6	$	19.1

2023 COMPARED TO 2022. Other regulated services margin decreased $0.7 million compared to the prior year due to lower depreciation rates for the North Mist facility beginning November 1, 2022.

2022 COMPARED TO 2021. Other regulated services margin increased $0.5 million due to an increase in storage service revenue from the North Mist facility.

Cost of Gas

Cost of gas as reported by the NGD segment includes gas purchases, gas storage costs, gas commodity derivatives contracts, pipeline demand costs, seasonal demand cost balancing adjustments, renewable natural gas and its attributes, including renewable thermal certificates, regulatory gas cost deferrals, gas reserves costs, and company gas use. The OPUC and WUTC generally require natural gas commodity costs to be billed to customers at the actual cost incurred, or expected to be incurred. Customer rates are set each year so that if cost estimates were met the NGD business would not earn a profit or incur a loss on gas commodity purchases; however, in Oregon we have the incentive sharing mechanism described under "Regulatory Matters—Rate Mechanisms—*Purchased Gas Adjustment*" above. In addition to the PGA incentive sharing mechanism, gains and losses from hedge contracts entered into after annual PGA rates are effective for Oregon customers are also required to be shared and therefore may impact net income. Further, NW Natural also has a regulatory agreement whereby it earns a rate of return on its investment in the gas reserves acquired under the original agreement with Encana and includes gas from the amended gas reserves agreement at a fixed rate of $0.4725 per therm, which are also reflected in NGD margin. See "Application of Critical Accounting Policies and Estimates—*Derivative Instruments and Hedging Activities*" below.

Cost of gas highlights include:

In millions, except where indicated		2023		2022		2021
Cost of gas	$	500.1	$	429.9	$	292.5
Volumes sold (therms)(1)		838.1		871.0		793.9
Average cost of gas (cents per therm)	$	0.60	$	0.49	$	0.37
Gain (loss) from gas cost incentive sharing(2)	$	4.5	$	(4.9)	$	(3.4)

(1) This calculation excludes volumes delivered to industrial transportation customers.
(2) For a discussion of the gas cost incentive sharing mechanism, see "Regulatory Matters—Rate Mechanisms—*Purchased Gas Adjustment*" above.

2023 COMPARED TO 2022. Cost of gas increased $70.2 million, or 16%, primarily due to a 21% increase in the average cost of gas with these higher gas costs embedded in the 2022-2023 PGA. Volumes sold decreased 32.9 million, or 4%, due to lower usage from customers driven by comparatively warmer weather.

2022 COMPARED TO 2021. Cost of gas increased $137.4 million, or 47%, primarily due to a 32% increase in the average cost of gas with the majority of these higher gas costs embedded in the PGA. The remaining increase in cost of gas is primarily the result of a 10% increase in volumes sold, driven by customer growth and comparatively colder weather.

Other

Other activities aggregated and reported as other at NW Holdings include NNG Financial's investment in Kelso-Beaver Pipeline (KB Pipeline); NW Natural Renewables Holdings, LLC and its non-regulated renewable natural gas activities; NWN Water, which owns and continues to pursue investments in the water, wastewater and water services sectors; and NWN Water's investment in

Avion Water Company, Inc. (Avion Water). Other activities aggregated and reported as other at NW Natural include the non-NGD storage activity at Mist as well as asset management services and the appliance retail center operations. See Note 4 for further discussion of our business segment and other, as well as our direct and indirect wholly-owned subsidiaries. See Note 13 for information on our Avion Water investment.

At Mist, NW Natural provides gas storage services to customers in the interstate and intrastate markets using storage capacity that has been developed in advance of NGD customers' requirements. Pre-tax income from gas storage at Mist and asset management services is subject to revenue sharing with NGD customers. Under this regulatory incentive sharing mechanism, NW Natural retains 80% of pre-tax income from Mist gas storage services and asset management services when the underlying costs of the capacity being used are not included in NGD business rates. The remaining 20% is credited to a deferred regulatory account for credit to NGD customers. To the extent that the capacity used is included in NGD rates, NW Natural retains 10% of pre-tax income from such storage and asset management services and 90% is credited to NGD business customers.

The following table presents the results of activities aggregated and reported as other for both NW Holdings and NW Natural:

In millions, except EPS data	2023	2022	2021
NW Natural other - net income	$ 10.7	$ 11.9	$ 12.2
Other NW Holdings activity	(10.9)	(5.3)	(2.5)
NW Holdings other - net income (loss)	$ (0.2)	$ 6.6	$ 9.7
Diluted earnings per share - NW Holdings - other	$ —	$ 0.20	$ 0.32

2023 COMPARED TO 2022. Other net income decreased $6.8 million and $1.2 million at NW Holdings and NW Natural, respectively. The decrease at NW Natural was primarily due to lower sales at the appliance retail center. The decrease at NW Holdings was driven by higher interest expense at the holding and water companies, partially offset by a gain recognized from a settlement agreement.

2022 COMPARED TO 2021. Other net income decreased $3.1 million and $0.3 million at NW Holdings and NW Natural, respectively. The decrease at NW Holdings was driven by the decrease at NW Natural, higher interest expense at the holding company, and costs associated with non-regulated renewable natural gas activities.

Consolidated Operations

Operations and Maintenance

Operations and maintenance highlights include:

In millions	2023	2022	2021
NW Natural	$ 244.7	$ 204.8	$ 188.8
Other NW Holdings operations and maintenance	29.1	19.9	15.4
NW Holdings	$ 273.8	$ 224.7	$ 204.2

2023 COMPARED TO 2022. Operations and maintenance expense increased $39.8 million at NW Natural primarily due to the following:

- $10.6 million increase related to higher payroll costs;
- $7.9 million increase in contract labor for safety and reliability and support for information technology system upgrades;
- $7.7 million increase due to the amortization of deferred balances (which is mostly offset in revenues) primarily related to COVID-19, cybersecurity and information technology system upgrades;
- $6.0 million increase in information technology licensing costs and maintenance;
- $5.4 million increase in amortization expense related to cloud computing arrangements; and
- $1.9 million increase in bad debt expense.

Operations and maintenance expense increased $49.1 million at NW Holdings primarily due to the following:

- $39.8 million increase in operations and maintenance expense at NW Natural as discussed above; and
- $9.3 million increase in other NW Holdings operations and maintenance expense primarily due to costs associated with recently acquired water and wastewater subsidiaries and business development costs at the holding company.

2022 COMPARED TO 2021. Operations and maintenance expense increased $16.0 million for NW Natural primarily due to the following:

- $6.0 million increase in contract labor for safety and reliability and contracted support for information technology system upgrades;
- $4.1 million increase in amortization expense related to cloud computing arrangements;
- $3.0 million increase in information technology maintenance and support; and
- $2.0 million increase in professional service fees.

Operations and maintenance expense increased $20.5 million for NW Holdings primarily due to the following:

- $16.0 million increase in operations and maintenance expense at NW Natural as discussed above; and
- $4.5 million increase in other NW Holdings operations and maintenance expense primarily due to costs associated with water and wastewater subsidiaries and non-regulated renewable natural gas activities.

Depreciation

Depreciation highlights include:

In millions	2023	2022	2021
NW Natural	$ 119.5	$ 113.0	$ 110.5
Other NW Holdings depreciation	6.1	3.7	3.0
NW Holdings	$ 125.6	$ 116.7	$ 113.5

2023 COMPARED TO 2022. Depreciation expense increased $6.5 million for NW Natural, primarily due to additional capital investments in the distribution system, such as installing new mains and services and replacing regulating equipment, as well as upgrading and improving the transmission system for mains. In addition, NW Natural placed several significant information technology projects into service in September 2022 and continued to invest in information technology projects in 2023.

Depreciation expense increased $8.9 million for NW Holdings, primarily due to a $2.4 million increase in other NW Holdings depreciation related to water and wastewater subsidiaries and a $6.5 million increase at NW Natural as discussed above.

2022 COMPARED TO 2021. Depreciation expense increased $2.5 million for NW Natural, primarily due to additional capital investments in the distribution system, Mist storage, and information technology systems, as well as renovation and construction of resource and operations service centers. The increase was partially offset by the amortization of cloud computing arrangements, which are recorded within operations and maintenance expenses beginning in 2022.

Depreciation expense increased $3.2 million for NW Holdings, primarily due to a $0.7 million increase in other NW Holdings depreciation related to water and wastewater subsidiaries and a $2.5 million increase at NW Natural as discussed above.

Other Income (Expense), Net

Other income (expense), net highlights include:

In millions	2023	2022	2021
NW Natural total other income (expense), net	$ 15.4	$ (0.4)	$ (12.7)
Other NW Holdings activity	2.5	1.6	0.1
NW Holdings total other income (expense), net	$ 17.9	$ 1.2	$ (12.6)

Other income (expense), net primarily consists of regulatory interest, pension and other postretirement non-service costs, gains from company-owned life insurance, interest income and donations.

2023 COMPARED TO 2022. Other income, net increased $15.8 million at NW Natural primarily due to $5.5 million of interest income from invested cash, $4.1 million from higher equity AFUDC interest income, and $5.8 million of lower pension costs. Costs related to our defined benefit pension plan for 2023 decreased compared to the prior year due to a decrease in amortization of actuarial losses.

Other income, net increased $16.7 million at NW Holdings driven by the increase at NW Natural discussed above and a $2.7 million gain recognized from a settlement agreement with a third party to settle outstanding receivables, partially offset by contributions to fund community outreach initiatives at NW Holdings.

2022 COMPARED TO 2021. Other expense, net decreased $12.3 million at NW Natural primarily due to lower pension non-service costs and interest income from the equity portion of AFUDC. Costs related to our defined benefit pension plan in 2022 decreased compared to the prior year due to changes in assumptions and gains on plan assets.

Other income, net increased $13.8 million at NW Holdings driven by the change at NW Natural discussed above, in addition to earnings from Avion Water.

Interest Expense, Net

Interest expense, net highlights include:

In millions		2023		2022		2021
NW Natural	$	60.6	$	46.3	$	43.0
Other NW Holdings interest expense		16.0		6.9		1.5
NW Holdings	$	76.6	$	53.2	$	44.5

2023 COMPARED TO 2022. Interest expense, net, increased $14.3 million at NW Natural primarily due to higher interest expense on a higher level of long-term debt, partially offset by a lower level of short-term debt.

Interest expense, net, increased $23.3 million at NW Holdings due to the increase at NW Natural discussed above and higher interest expense on a higher level of long-term debt at NW Holdings and NWN Water.

2022 COMPARED TO 2021. Interest expense, net, increased $3.3 million at NW Natural primarily due to a higher interest rate on a lower commercial paper balance and higher interest rates and a higher level of long-term debt, partially offset by higher AFUDC debt interest income.

Interest expense, net, increased $8.7 million at NW Holdings primarily due to the increase at NW Natural discussed above and higher interest expense on the credit facility and long-term debt at NW Holdings as a result of higher balances and higher interest rates.

Income Tax Expense

NW Holdings income tax expense highlights include:

In millions		2023		2022		2021
Income tax expense	$	32.4	$	29.1	$	27.4
Effective tax rate		25.6 %		25.2 %		25.8 %

NW Natural income tax expense highlights include:

In millions		2023		2022		2021
Income tax expense	$	35.7	$	31.0	$	28.3
Effective tax rate		25.4 %		25.3 %		25.9 %

2023 COMPARED TO 2022. The effective tax rate increased 0.4% and 0.1% at NW Holdings and NW Natural, respectively. The increase in the effective tax rate is primarily due to higher pre-tax income in the current period compared to the prior year.

2022 COMPARED TO 2021. The effective tax rate decreased 0.6 percentage points at both NW Holdings and NW Natural. The decrease in the effective tax rate is primarily due to lower income tax amortization of the 2020 Oregon Corporate Activity Tax (CAT) in 2022, which was subject to regulatory deferral when it became effective on January 1, 2020 and then amortized in income tax expense as recovery began in late 2020, 2021, and 2022.

FINANCIAL CONDITION

Capital Structure

NW Holdings' long-term goal is to maintain a strong and balanced consolidated capital structure. NW Natural targets a regulatory capital structure of 50% common equity and 50% long-term debt, which is consistent with approved regulatory allocations in Oregon, which has an allocation of 50% common equity and 50% long-term debt without recognition of short-term debt, and Washington, which has an allocation of 50% long-term debt, 1% short-term debt, and 49% common equity.

When additional capital is required, debt or equity securities are issued depending on both the target capital structure and market conditions. These sources of capital are also used to fund long-term debt retirements and short-term commercial paper maturities. See "*Liquidity and Capital Resources*" below and Note 9. Achieving our target capital structure and maintaining sufficient liquidity to meet operating requirements is necessary to maintain attractive credit ratings and provide access to the capital markets at reasonable costs.

NW Holdings' consolidated capital structure, excluding short-term debt, was as follows:

	December 31,	
	2023	2022
Common equity	44.9 %	46.8 %
Long-term debt (including current maturities)	55.1	53.2
Total	100.0 %	100.0 %

NW Natural's consolidated capital structure, excluding short-term debt, was as follows:

	December 31,	
	2023	2022
Common equity	47.5 %	51.4 %
Long-term debt (including current maturities)	52.5	48.6
Total	100.0 %	100.0 %

As of December 31, 2023 and 2022, NW Holdings' consolidated capital structure included common equity of 43.5% and 42.4%, long-term debt of 48.3% and 45.0%, and short-term debt including current maturities of long-term debt of 8.2% and 12.6%, respectively. As of December 31, 2023 and 2022, NW Natural's consolidated capital structure included common equity of 47.2% and 47.9%, long-term debt of 52.2% and 41.6%, and short-term debt including current maturities of long-term debt of 0.6% and 10.5%, respectively.

During 2023, NW Natural's capital structure changed primarily due to the issuance of long-term debt and capital contributions from NW Holdings. NW Holdings' capital structure changed primarily due to the issuance of long-term debt and common stock at NW Holdings. See further discussion below in "Cash Flows — *Financing Activities*".

Liquidity and Capital Resources

At December 31, 2023 and December 31, 2022, NW Holdings had approximately $32.9 million and $29.3 million, and NW Natural had approximately $19.8 million and $13.0 million, of cash and cash equivalents, respectively. In order to maintain sufficient liquidity during periods when capital markets are volatile, NW Holdings and NW Natural may elect to maintain higher cash balances and add short-term borrowing capacity. NW Holdings and NW Natural may also pre-fund their respective capital expenditures when long-term fixed rate environments are attractive. NW Holdings and NW Natural expect to have ample liquidity in the form of cash on hand and from operations and available credit capacity under credit facilities to support funding needs.

ATM Equity Program

In August 2021, NW Holdings initiated an at-the-market (ATM) equity program by entering into an equity distribution agreement under which NW Holdings may issue and sell from time to time shares of common stock, no par value, having an aggregate gross sales price of up to $200 million. NW Holdings is under no obligation to offer and sell common stock under the ATM equity program, which expires in August 2024. Any shares of common stock offered under the ATM equity program are registered on NW Holdings' universal shelf registration statement filed with the SEC. During the year ended December 31, 2023, NW Holdings issued and sold 1,646,325 shares of common stock pursuant to the ATM equity program resulting in cash proceeds of $66.4 million, net of fees and commissions paid to agents of $1.2 million. As of December 31, 2023, NW Holdings had $43.5 million of equity available for issuance under the program.

NW Holdings

For NW Holdings, short-term liquidity is primarily provided by cash balances, dividends from its operating subsidiaries, in particular NW Natural, available cash from a multi-year credit facility, and short-term credit facilities. NW Holdings also has a universal shelf registration statement filed with the SEC for the issuance of debt and equity securities, which it used to sell long-term unsecured notes that are due to close in early March 2024. NW Holdings long-term debt and equity issuances are primarily used to provide equity contributions to NW Holdings' operating subsidiaries for operating and capital expenditures and other corporate purposes. NW Natural also has a universal shelf registration statement filed with the SEC for the issuance of debt securities. From 2024 through 2026, we estimate NW Holdings' and NW Natural's combined incremental capital needs to be in the range of $500 million to $575 million. NW Holdings' issuance of securities is not subject to regulation by state public utility commissions, but the dividends from NW Natural to NW Holdings are subject to regulatory ring-fencing provisions. NW Holdings guarantees the debt of its wholly-owned subsidiary, NWN Water. See "*Long-Term Debt*" below for more information regarding NWN Water debt.

As part of the ring-fencing conditions agreed upon with the OPUC and WUTC in connection with the holding company reorganization, NW Natural may not pay dividends or make distributions to NW Holdings if NW Natural's credit ratings and common equity ratio, defined as the ratio of equity to long-term debt, fall below specified levels. If NW Natural's long-term secured credit ratings are below A- for S&P and A3 for Moody's, dividends may be issued so long as NW Natural's common equity ratio is 45% or more. If NW Natural's long-term secured credit ratings are below BBB for S&P and Baa2 for Moody's, dividends may be issued so long as NW Natural's common equity ratio is 46% or more. Dividends may not be issued if NW Natural's long-term secured credit ratings are BB+ or below for S&P or Ba1 or below for Moody's, or if NW Natural's common]equity ratio is below 44%, where the ratio is measured using common equity and long-term debt excluding imputed debt or debt-like lease obligations. In each case, common equity ratios are determined based on a preceding or projected 13-month average. In addition, there are certain OPUC notice requirements for dividends in excess of 5% of NW Natural's retained earnings.

Additionally, if NW Natural's common equity (excluding goodwill and equity associated with non-regulated assets), on a preceding or projected 13-month average basis, is less than 46% of NW Natural's capital structure, NW Natural is required to notify the OPUC, and if the common equity ratio falls below 44%, file a plan with the OPUC to restore its equity ratio to 44%. This condition is designed to ensure NW Natural continues to be adequately capitalized under the holding company structure. Under the WUTC order, the average common equity ratio must not exceed 56%.

At December 31, 2023 and 2022, NW Natural satisfied the ring-fencing provisions described above.

Based on several factors, including current cash reserves, committed credit facilities, its ability to receive dividends from its operating subsidiaries, in particular NW Natural, a contracted issuance of long-term debt in March 2024, and an expected ability to issue long-term debt and equity securities in the capital markets, NW Holdings believes its liquidity is sufficient to meet anticipated near-term cash requirements, including all contractual obligations, investing, and financing activities as discussed in "*Cash Flows*" below.

NW HOLDINGS DIVIDENDS. Quarterly dividends have been paid on common stock each year since NW Holdings' predecessor's stock was first issued to the public in 1951. Annual common stock dividend payments per share, adjusted for stock splits, have increased each year since 1956. The declarations and amount of future dividends to shareholders will depend upon earnings, cash flows, financial condition, NW Natural's ability to pay dividends to NW Holdings and other factors. The amount and timing of dividends payable on common stock is at the sole discretion of the NW Holdings Board of Directors.

NW Natural

For the NGD business segment, short-term borrowing requirements typically peak during colder winter months when the NGD business borrows money to cover the lag between natural gas purchases and bill collections from customers. Short-term liquidity for the NGD business is primarily provided by cash balances, internal cash flow from operations, proceeds from the sale of commercial paper notes, as well as available cash from multi-year credit facilities, short-term credit facilities, company-owned life insurance policies, the sale of long-term debt, and equity contributions from NW Holdings. NW Natural's long-term debt and contributions from NW Holdings are primarily used to finance NGD capital expenditures, refinance maturing debt, and provide temporary funding for other general corporate purposes of the NGD business.

Based on its current debt ratings (see "*Credit Ratings*" below), NW Natural has been able to issue commercial paper and long-term debt at attractive rates. In the event NW Natural is not able to issue new long-term debt due to adverse market conditions or other reasons, NW Natural expects that near-term liquidity needs can be met using internal cash flows, issuing commercial paper, receiving equity contributions from NW Holdings, or drawing upon a committed credit facility. NW Natural also has a universal shelf registration statement filed with the SEC for the issuance of secured and unsecured debt securities.

In the event senior unsecured long-term debt ratings are downgraded, or outstanding derivative positions exceed a certain credit threshold, counterparties under derivative contracts could require NW Natural to post cash, a letter of credit, or other forms of collateral, which could expose NW Natural to additional cash requirements and may trigger increases in short-term borrowings while in a net loss position. NW Natural was not required to post collateral at December 31, 2023. See Note 15 below.

Other items that may have a significant impact on NW Natural's liquidity and capital resources include NW Natural's pension contribution requirements and environmental expenditures.

PENSION CONTRIBUTIONS. NW Natural expects to make contributions to its company-sponsored defined benefit plan, which is closed to new employees, over the next several years under applicable laws and regulations. See "Application of Critical Accounting Policies—*Pensions and Postretirement Benefits*" below and Note 10 for more information.

ENVIRONMENTAL EXPENDITURES. NW Natural expects to continue using cash resources to fund environmental liabilities for future environmental remediation or action. NW Natural has authorizations in Oregon and Washington to defer costs related to remediation of properties that are owned or were previously owned by NW Natural. In Oregon, a Site Remediation and Recovery Mechanism (SRRM) is currently in place to recover prudently incurred costs allocable to Oregon customers, subject to an earnings test. On October 21, 2019 the WUTC authorized an Environmental Cost Recovery Mechanism (ECRM) for recovery of prudently incurred costs allocable to Washington customers beginning November 1, 2019. See Note 17 and "Results of Operations—Regulatory Matters—*Environmental Cost Deferral and Recovery*" above.

Based on several factors, including current credit ratings, NW Natural's commercial paper program, current cash reserves, committed credit facilities, and an expected ability to issue long-term debt and receive equity contributions from NW Holdings, NW Natural believes its liquidity is sufficient to meet anticipated near-term cash requirements, including all contractual obligations, and investing and financing activities as discussed in "*Cash Flows*" below.

NW NATURAL DIVIDENDS. The declarations and amount of future dividends to NW Holdings will depend upon earnings, cash flows, financial condition, the satisfaction of OPUC and WUTC regulatory ring-fencing restrictions, and other factors. The amount and timing of dividends payable on common stock is subject to approval of the NW Natural Board of Directors.

Gas and Pipeline Capacity Purchase Agreements

NW Natural has signed agreements providing for the reservation of firm pipeline capacity under which it is required to make monthly payments for contracted capacity. The pricing component of the monthly payment is established, subject to change, by U.S. or Canadian regulatory bodies, or is established directly with private counterparties, as applicable. In addition, NW Natural has entered into long-term agreements to release firm pipeline capacity. NW Natural also enters into short-term and long-term gas purchase agreements. Refer to Note 16 for gas and pipeline capacity purchase commitments.

NW Natural Renewables is an unregulated subsidiary of NW Natural Holdings established to pursue unregulated renewable natural gas activities. In September 2021, a subsidiary of NW Natural Renewables, Ohio Renewables, and a subsidiary of EDL, a global producer of sustainable distributed energy, executed agreements to partially fund two production facilities that are designed to convert landfill waste gases to RNG (EDL Facilities). The EDL Facilities have been constructed, and testing and commissioning of these facilities is underway, but has been delayed. Upon each of the EDL Facilities achieving full commercial operations, Ohio Renewables is committed to make cash payments of approximately $25 million per facility to partially fund the infrastructure required to condition biogas. Alongside these development agreements, Ohio Renewables and the subsidiary of EDL executed agreements for Ohio Renewables to purchase up to an annual specified amount of RNG produced by the EDL Facilities over a 20-year period. Upon commencement of commercial operations, we currently estimate the amount of RNG purchases based on prices and quantities specified in the agreements to be as follows: approximately $6.2 million in 2024, $21.0 million in 2025, $21.0 million in 2026, $27.3 million in 2027, $27.3 million in 2028 and $579.7 million thereafter.

Ohio Renewables has contracted to sell RNG produced by the EDL Facilities up to certain specified volumes in each of calendar years 2024 through 2026 to an investment-grade counterparty. We currently estimate RNG volumes to be sold pursuant to this agreement to be approximately 3,540,000 MMbtu over the life of the agreement, provided that such amounts of RNG are produced by the EDL Facilities during that period.

Ohio Renewables additionally has contracted to sell a fixed-volume amount of RNG under a long-term agreement with an investment-grade utility beginning in 2025 and extending through 2042. Amounts to be delivered under this agreement are estimated to be 112,500 MMbtu in 2025, 375,000 MMbtu in 2026, 1,950,000 MMbtu annually in 2027 through 2034, and 2,775,000 MMbtu annually in years 2035 through 2042. Under the current contract, if less than 75% of the contracted volumes of RNG are not delivered on an annual basis, Ohio Renewables is obligated to pay the per MMbtu price for volumes between the amount delivered and 75% of the contracted volumes on an annual basis.

Other Purchase Agreements

Other purchase commitments primarily consist of remaining balances under existing purchase orders and gas storage agreements. At December 31, 2023, the amount due over the duration of the purchase agreements totaled $35.4 million. Except for these certain purchase commitments, NW Holdings and NW Natural have no material off-balance sheet financing arrangements.

Short-Term Debt

The primary source of short-term liquidity for NW Holdings is cash balances, dividends from its operating subsidiaries, in particular NW Natural, available cash from a multi-year credit facility, and short-term credit facilities it may enter into from time to time.

The primary source of short-term liquidity for NW Natural is from the sale of commercial paper, available cash from a multi-year credit facility, and short-term credit facilities it may enter into from time to time. In addition to issuing commercial paper or entering into bank loans to meet working capital requirements, including seasonal requirements to finance gas purchases and accounts receivable, short-term debt may also be used to temporarily fund capital requirements. For NW Natural, commercial paper and bank loans are periodically refinanced through the sale of long-term debt or equity contributions from NW Holdings. Commercial paper, when outstanding, is sold through two commercial banks under an issuing and paying agency agreement and is supported by one or more unsecured revolving credit facilities. See “Credit Agreements” below.

At December 31, 2023 and 2022, NW Natural's short-term debt consisted of the following:

	December 31, 2023		December 31, 2022	
In millions	Balance Outstanding	Weighted Average Interest Rate[1]	Balance Outstanding	Weighted Average Interest Rate[1]
NW Natural:				
Commercial paper	$ 16.8	5.5 %	$ 170.2	4.6 %
Other (NW Holdings):				
Credit agreement	73.0	6.4 %	88.0	5.3 %
NW Holdings	$ 89.8		$ 258.2	

(1) Weighted average interest rate on outstanding short-term debt

Credit Agreements

NW Holdings

NW Holdings has a $200 million sustainability-linked credit agreement, with a feature that allows it to request increases in the total commitment amount, up to a maximum of $300 million. The maturity date of the agreement is November 3, 2026, with available extensions of commitments for two additional one-year periods, subject to lender approval.

All lenders under the NW Holdings credit agreement are major financial institutions with committed balances and investment grade credit ratings as of December 31, 2023 as follows:

In millions Lender rating, by category	Loan Commitment
AA/Aa	$ 200
Total	$ 200

Based on credit market conditions, it is possible one or more lending commitments could be unavailable to NW Holdings if the lender defaulted due to lack of funds or insolvency; however, NW Holdings does not believe this risk to be imminent due to the lenders' strong investment-grade credit ratings. There was $73.0 million and $88.0 million of outstanding balances under the NW Holdings agreement at December 31, 2023 and 2022, respectively.

The NW Holdings credit agreement permits the issuance of letters of credit in an aggregate amount of up to $40 million. The principal amount of borrowings under the credit agreement is due and payable on the maturity date. The credit agreement requires NW Holdings to maintain a consolidated indebtedness to total capitalization ratio of 70% or less. Failure to comply with this covenant would entitle the lenders to terminate their lending commitments and accelerate the maturity of all amounts outstanding. NW Holdings was in compliance with this covenant at December 31, 2023 and 2022, with consolidated indebtedness to total capitalization ratios of 56.5% and 57.6%, respectively.

The NW Holdings credit agreement also requires NW Holdings to maintain debt ratings (which are defined by a formula using NW Natural's credit ratings in the event NW Holdings does not have a credit rating) with Standard & Poor's (S&P) and Moody's Investors Service, Inc. (Moody’s) and notify the lenders of any change in its senior unsecured debt ratings or senior secured debt ratings, as applicable, by such rating agencies. A change in NW Holdings' debt ratings by S&P or Moody’s is not an event of default, nor is the maintenance of a specific minimum level of debt rating a condition of drawing upon the credit agreement. Rather, interest rates on any loans outstanding under the credit agreements are tied to debt ratings and therefore, a change in the debt rating would increase or decrease the cost of any loans under the credit agreements when ratings are changed. NW Holdings maintains a credit rating with S&P of A+ and does not currently maintain ratings with Moody's.

Interest charges on the NW Holdings credit agreement were indexed to the London Interbank Offered Rate (LIBOR) through January 31, 2023. The agreement was amended to replace LIBOR with the secured overnight financing rate (SOFR) beginning February 2023. The SOFR is subject to a 10 basis point spread adjustment. The NW Holdings credit agreement also includes a mechanism that can increase or decrease the undrawn interest rate by up to 1 basis point and undrawn interest rate by up to 5 basis points in accordance with NW Holdings’ independently verified achievement of quantifiable metrics related to two goals—one related to carbon savings and one related to in-line inspections of NW Natural’s transmission pipeline. Performance against these metrics is designed to be assessed annually with pricing adjustments, if any, resetting off of primary pricing annually and not cumulatively.

NW Holdings had no letters of credit issued and outstanding at December 31, 2023 and 2022.

NW Natural

NW Natural has a sustainability-linked multi-year credit agreement for unsecured revolving loans totaling $400 million, with a feature that allows NW Natural to request increases in the total commitment amount, up to a maximum of $600 million. The maturity date of the agreement is November 3, 2026 with an available extension of commitments for two additional one-year periods, subject to lender approval.

All lenders under the NW Natural credit agreement are major financial institutions with committed balances and investment grade credit ratings as of December 31, 2023 as follows:

In millions Lender rating, by category	Loan Commitment
AA/Aa	$ 400
Total	$ 400

Based on credit market conditions, it is possible one or more lending commitments could be unavailable to NW Natural if the lender defaulted due to lack of funds or insolvency; however, NW Natural does not believe this risk to be imminent due to the lenders' strong investment-grade credit ratings.

The NW Natural credit agreement permits the issuance of letters of credit in an aggregate amount of up to $60 million. The principal amount of borrowings under the credit agreement is due and payable on the maturity date. There were no outstanding balances under this credit agreement at December 31, 2023 or 2022. The credit agreement requires NW Natural to maintain a consolidated indebtedness to total capitalization ratio of 70% or less. Failure to comply with this covenant would entitle the lenders to terminate their lending commitments and accelerate the maturity of all amounts outstanding. NW Natural was in compliance with this covenant at December 31, 2023 and 2022, with consolidated indebtedness to total capitalization ratios of 52.8% and 52.1%, respectively.

The NW Natural credit agreement also requires NW Natural to maintain credit ratings with S&P and Moody’s and notify the lenders of any change in NW Natural's senior unsecured debt ratings or senior secured debt ratings, as applicable, by such rating agencies. A change in NW Natural's debt ratings by S&P or Moody’s is not an event of default, nor is the maintenance of a specific minimum level of debt rating a condition of drawing upon the credit agreement. Rather, interest rates on any loans outstanding under the credit agreement are tied to debt ratings and therefore, a change in the debt rating would increase or decrease the cost of any loans under the credit agreement when ratings are changed. See "*Credit Ratings*" below.

Interest charges on the NW Natural credit agreement were indexed to the LIBOR through January 31, 2023. The agreement was amended to replace LIBOR with the SOFR beginning February 2023. The SOFR is subject to a 10 basis point spread adjustment. The NW Natural credit agreement also includes a mechanism that can increase or decrease the undrawn interest rate by up to 1 basis point and undrawn interest rate by up to 5 basis points in accordance with NW Natural’s independently verified achievement of quantifiable metrics related to two goals—one related to carbon savings and one related to in-line inspections of NW Natural’s transmission pipeline. Performance against these metrics is designed to be assessed annually with pricing adjustments, if any, resetting off of primary pricing annually and not cumulatively.

NW Natural had one letter of credit outstanding at December 31, 2023 and no letters of credit outstanding at December 31, 2022. In December 2023, NW Natural issued a $15 million letter of credit through its existing credit agreement, which expired January 5, 2024.

Letters of Credit Facility

In January 2024, NW Natural entered into an Uncommitted Letter of Credit and Reimbursement Agreement (LC Reimbursement Agreement), pursuant to which NW Natural agreed to reimburse each Lender acting as an issuing bank (Issuing Bank) thereunder for disbursements in respect of letters of credit (Letters of Credit) issued pursuant to the LC Reimbursement Agreement from time to time. The Company expects to use Letters of Credit issued under the facility created by the LC Reimbursement Agreement (LC Facility) primarily to support its participation in Washington Climate Commitment Act cap-and-invest program auctions.

Although there is no expressly stated maximum amount of Letters of Credit that can be issued or outstanding under the LC Facility, under current regulatory authority from the OPUC, the aggregate sum of Letters of Credit outstanding and available to be drawn under the LC Reimbursement Agreement may not exceed $100 million at any one time. The Issuing Banks have no commitment to issue Letters of Credit under the LC Facility and will have the discretion to limit and condition the terms for the issuance of Letters of Credit (including maximum face amounts) in their sole discretion.

The LC Reimbursement Agreement requires NW Natural to maintain certain ratings with S&P and Moody’s. NW Natural must also notify the Administrative Agent and Lenders of any change in the S&P or Moody’s Ratings, although any such change is not an event of default.

The LC Reimbursement Agreement prohibits NW Natural from permitting Consolidated Indebtedness to be greater than 70% of Total Capitalization, each as defined therein and calculated as of the end of each fiscal quarter of NW Natural. Failure to comply with this financial covenant would constitute an Event of Default under the LC Reimbursement Agreement. The occurrence of this or any other Event of Default would entitle the Administrative Agent to require cash collateral for the LC Exposure, as defined in the LC Reimbursement Agreement, and to exercise all other rights and remedies available to it and the Lenders under the Credit Documents, as defined in the LC Reimbursement Agreement, and under applicable law.

Credit Ratings

NW Natural's credit ratings are a factor of liquidity, potentially affecting access to the capital markets including the commercial paper market. NW Natural's credit ratings also have an impact on the cost of funds, and may have an impact on the need to post collateral under financial derivative contracts.

The following table summarizes NW Natural's current credit ratings:

	S&P	Moody's
Commercial paper (short-term debt)	A-1	P-2
Senior secured (long-term debt)	AA-	A2
Senior unsecured (long-term debt)	n/a	Baa1
Corporate credit rating	A+	n/a
Ratings outlook	Negative	Stable

In October 2023, S&P revised NW Natural’s ratings outlook from “stable” to “negative.” Also in October 2023, S&P initiated a rating on NW Holdings of A+ with a negative outlook.

The above credit ratings and ratings outlook are dependent upon a number of factors, both qualitative and quantitative, and are subject to change at any time. The disclosure of or reference to these credit ratings is not a recommendation to buy, sell or hold NW Holdings or NW Natural securities. Each rating should be evaluated independently of any other rating.

As part of the ring-fencing conditions agreed upon with the OPUC and WUTC, NW Holdings and NW Natural are required to maintain separate credit ratings, long-term debt ratings, and preferred stock ratings, if any.

Long-Term Debt

Note Purchase Agreement

In December 2023, NW Holdings entered into a Note Purchase Agreement between NW Holdings and the institutional investors named as purchasers therein. The Note Purchase Agreement provides for the issuance of (i) $100.0 million aggregate principal amount of NW Holdings’ 5.78% Senior Notes, Series A, due March 7, 2028 (5.78% Notes) and (ii) $50.0 million aggregate principal amount of NW Holdings’ 5.84% Senior Notes, Series B, due March 7, 2029 (5.84% Notes) in reliance on an exemption from registration under Section 4(a)(2) of the Securities Act of 1933, as amended. The 5.78% Notes and the 5.84% Notes are expected to be issued on or about March 7, 2024, pursuant to the Note Purchase Agreement. The proceeds from the Note Purchase Agreement are expected to be used to refinance $150.0 million of existing term loans at NW Holdings and NWN Water.

The 5.78% Notes will bear interest at the rate of 5.78% per annum, payable semi-annually on March 7 and September 7 of each year, commencing September 9, 2024, and will mature on March 7, 2028. NW Holdings may, at its option, prepay at any time all, or from time to time any part of, the outstanding 5.78% Notes at a price equal to 100% of the principal amount thereof, plus a “make-whole” premium and accrued and unpaid interest thereon to the date of prepayment; provided, however, in the case of a partial prepayment, NW Holdings must prepay at least 5% of the aggregate principal amount of the 5.78% Notes outstanding. At any time on or after February 7, 2028, NW Holdings may, at its option, prepay all or any part of the 5.78% Notes at 100% of the principal amount thereof, plus accrued and unpaid interest thereon to the date of prepayment, but without the payment of a “make-whole” premium, so long as there is no Default or Event of Default under the Note Purchase Agreement.

The 5.84% Bonds will bear interest at the rate of 5.84% per annum, payable semi-annually on March 7 and September 7 of each year, commencing September 9, 2024, and will mature on March 7, 2029. NW Holdings may, at its option, prepay at any time all, or from time to time any part of, the outstanding 5.84% Notes at a price equal to 100% of the principal amount thereof, plus a “make-whole” premium and accrued and unpaid interest thereon to the date of prepayment; provided, however, in the case of a partial prepayment, NW Holdings must prepay at least 5% of the aggregate principal amount of the 5.84% Notes outstanding. At any time on or after February 7, 2029, NW Holdings may, at its option, prepay all or any part of the 5.84% Notes at 100% of the principal amount thereof, plus accrued and unpaid interest thereon to the date of prepayment, but without the payment of a “make-whole” premium, so long as there is no Default or Event of Default under the Note Purchase Agreement.

Issuance of Long-Term Debt

In August 2023, NW Natural issued and sold $80.0 million aggregate principal amount of its FMBs, 5.18% Series and $50.0 million aggregate principal amount of its FMBs, 5.23% Series. The 5.18% Bonds bear interest at the rate of 5.18% per annum, payable semi-annually on February 4 and August 4 of each year, commencing February 4, 2024, and will mature on August 4, 2034. The 5.23% Bonds bear interest at the rate of 5.23% per annum, payable semi-annually on February 4 and August 4 of each year, commencing February 4, 2024, and will mature on August 4, 2038.

In March 2023, NW Natural issued and sold $100.0 million aggregate principal amount of 5.75% Secured Medium-Term Notes, Series B due 2033 (the Notes). The Notes bear interest at the rate of 5.75% per annum, payable semi-annually on March 15 and September 15 of each year.

In January 2023, NW Natural issued and sold $100.0 million aggregate principal amount of its FMBs, 5.43% Series due January 2053. The 5.43% Bonds bear interest at the rate of 5.43% per annum, payable semi-annually on January 6 and July 6 of each year, commencing July 6, 2023, and will mature on January 6, 2053.

Interest Rate Swap Agreements
NW Holdings and NWN Water entered into interest rate swap agreements with major financial institutions that effectively convert variable-rate debt to a fixed rate. Interest payments made between the effective date and expiration date are hedged by the swap agreements. The notional amount, effective date, expiration date and benchmark rate of the swap agreements are shown in the table below:

In millions	Notional Amount	Effective Date	Expiration Date	Fixed Rate
NW Holdings	$ 100.0	1/17/2023	3/15/2024	4.7 %
NWN Water	$ 55.0	1/19/2023	6/10/2026	3.8 %

Retirement of Long-Term Debt
The following NW Natural debentures were retired in the periods indicated:

	Year Ended December 31,		
In millions	2023	2022	2021
NW Natural First Mortgage Bonds:			
3.542% Series due 2023	$ 50	$ —	$ —
5.620% Series due 2023	40	—	—
9.050% Series due 2021	—	—	10
3.176% Series due 2021	—	—	50
Total	$ 90	$ —	$ 60

In June 2019, NWN Water entered into a two-year term loan agreement for $35.0 million. The loan was repaid in June 2021 upon its maturity date.

Maturities and Interest on Long-Term Debt

Maturities and payment of interest on long-term debt for each of the annual periods through December 31, 2028 and thereafter are as follows:

In millions	Long-term debt maturities	Interest on long-term debt
NW Natural:		
2024	$ —	$ 63.2
2025	30.0	62.9
2026	55.0	60.9
2027	64.7	57.7
2028	10.0	54.8
Thereafter	1,215.0	826.7
NW Natural Total	1,374.7	1,126.2
Other NW Holdings:		
2024	150.9	4.9
2025	0.8	2.7
2026	55.8	1.3
2027	0.9	0.1
2028	0.9	0.1
Thereafter	2.3	0.3
Other NW Holdings Total	211.6	9.4
NW Holdings:		
2024	150.9	68.1
2025	30.8	65.6
2026	110.8	62.2
2027	65.6	57.8
2028	10.9	54.9
Thereafter	1,217.3	827.0
NW Holdings Total	$ 1,586.3	$ 1,135.6

Bankruptcy Ring-fencing Restrictions

As part of the ring-fencing conditions agreed upon with the OPUC and WUTC, NW Natural is required to have one director who is independent from NW Natural management and from NW Holdings and to issue one share of NW Natural preferred stock to an independent third party. NW Natural was in compliance with both of these ring-fencing provisions as of December 31, 2023 and 2022. NW Natural may file a voluntary petition for bankruptcy only if approved unanimously by the Board of Directors of NW Natural, including the independent director, and by the holder of the preferred share.

Cash Flows

Operating Activities

Changes in our operating cash flows are primarily affected by net income or loss, changes in working capital requirements, and other cash and non-cash adjustments to operating results.

In millions	2023	2022	2021
NW Natural cash provided by operating activities	$ 281.9	$ 145.2	$ 141.5
NW Holdings cash provided by operating activities	279.9	147.7	160.4

2023 COMPARED TO 2022. The significant factors contributing to the $136.7 million increase at NW Natural cash flow provided by operating activities were as follows:

- $126.6 million decrease in accounts receivable due to colder weather in December 2022;
- $40.0 million decrease in net deferred gas costs due to the recovery of higher priced gas in 2022;
- $30.6 million decrease in asset optimization revenue sharing bill credits; and
- $19.9 million increase due to a compliance obligation related to the Washington CCA; partially offset by
- $64.9 million decrease in accounts payable resulting from payments of higher priced gas purchased in December 2022; and
- $22.3 million decrease in the decoupling mechanism.

The $132.3 million increase in cash provided by operating activities at NW Holdings was primarily driven by the factors discussed above.

2022 COMPARED TO 2021. The significant factors contributing to the $3.7 million increase at NW Natural cash flow provided by operating activities were as follows:
- $52.9 million increase in net deferred gas costs as the actual cost of gas during the year ended December 31, 2022 was higher than the rate embedded in the PGA. In addition, for the year ended December 31, 2021, actual gas costs were 21% above the PGA rate due to the 2021 cold weather event; and
- $12.6 million increase in accounts payable primarily due to a larger volume of gas purchased and the higher cost of gas; partially offset by
- $32.0 million increase in asset optimization revenue sharing bill credits to customers due to the 2021 cold weather event; and
- $32.1 million increase in accounts receivable and accrued unbilled revenue resulting from higher balances due to colder weather.

The $12.7 million decrease in NW Holdings cash flow provided by operating activities were driven by the above factors affecting NW Natural, in addition to lower prepaid income taxes in 2022 compared to 2021.

During the years ended December 31, 2023 and 2022, NW Natural did not make any cash contributions to its qualified defined benefit pension plan, compared to $9.6 million in 2021. The American Rescue Plan, which was signed into law on March 11, 2021, includes a provision for pension relief that extends the amortization period for required contributions from 7 to 15 years and provides for the stabilization of interest rates used to calculate future required contributions. The amount and timing of future contributions will depend on market interest rates and investment returns on the plans' assets. See Note 10.

NW Holdings and NW Natural have lease and purchase commitments relating to our operating activities that are financed with cash flows from operations. For information on cash flow requirements related to leases and other purchase commitments, see Note 7 and Note 16.

Investing Activities

In millions		2023		2022		2021
NW Natural cash used in investing activities	$	(290.5)	$	(320.3)	$	(275.7)
NW Holdings cash used in investing activities		(335.5)		(435.5)		(300.1)

2023 COMPARED TO 2022. Cash used in investing activities decreased $29.8 million at NW Natural and $100.0 million at NW Holdings, respectively. The decrease at NW Natural is primarily driven by a decrease in capital expenditures related to two significant information technology projects that were placed into service in the prior year.

The decrease in cash used in investing activities at NW Holdings is driven by lower capital expenditures at NW Natural and less cash used for water and wastewater acquisitions.

2022 COMPARED TO 2021. Cash used in investing activities increased $44.6 million at NW Natural and $135.4 million at NW Holdings, respectively. The increase at NW Natural is primarily driven by an increase in capital expenditures of $40.4 million. The increase at NW Holdings is driven by the increase at NW Natural and $94.3 million in cash paid for water and wastewater acquisitions.

NW Natural capital expenditures for 2024 are expected to be in the range of $350 million to $400 million and for the five-year period from 2024 to 2028 are expected to range from $1.4 billion to $1.6 billion. NW Natural Water is expected to invest approximately $40 million in 2024 related to maintenance capital expenditures for water and wastewater utilities owned as of December 31, 2023, and for the five-year period from 2024 to 2028 capital expenditures are expected to invest approximately $120 million to $140 million.

The timing and amount of the core capital expenditures and projects for 2024 and the next five years could change based on regulation, growth, and cost estimates. Additional investments in our infrastructure during and after 2024 that are not incorporated in the estimates provided above will depend largely on additional regulations, growth, and expansion opportunities. Required funds for the investments are expected to be internally generated or financed with long-term debt or equity, as appropriate.

Financing Activities

In millions		2023		2022		2021
NW Natural cash provided by financing activities	$	20.4	$	178.9	$	139.3
NW Holdings cash provided by financing activities		64.2		301.6		131.4

2023 COMPARED TO 2022. Cash provided by financing activities decreased $158.5 million at NW Natural attributable to lower cash contributions from NW Holdings and the retirement of short and long-term debt, partially offset by an increase in long-term debt issuances.

Cash provided by financing activities decreased $237.4 million at NW Holdings attributable to lower proceeds from common stock issuances and the retirement of short and long-term debt, partially offset by an increase in long-term debt issuances.

2022 COMPARED TO 2021. Cash provided by financing activities increased $39.6 million at NW Natural primarily driven by $63.4 million in capital contributions by NW Holdings, partially offset by changes in debt.

Cash provided by financing activities increased $170.2 million at NW Holdings primarily due to cash proceeds of $191.1 million from the issuance of common stock and the ATM equity program, partially offset by changes in debt.

Pension Cost and Funding Status of Qualified Retirement Plans

NW Natural's pension costs are determined in accordance with accounting standards for compensation and retirement benefits. See “Application of Critical Accounting Policies and Estimates – *Pensions and Postretirement Benefits*” below. Pension benefit for NW Natural's qualified defined benefit plan, which is allocated between operations and maintenance expenses and capital expenditures, totaled $2.4 million in 2023, a change of $7.8 million from 2022. The fair market value of pension assets in this plan increased to $283.4 million at December 31, 2023 from $280.3 million at December 31, 2022. The increase was due to a gain on plan assets of $28.8 million, partially offset by benefit payments of $25.7 million.

Contributions made to NW Natural's company-sponsored qualified defined benefit pension plan are based on actuarial assumptions and estimates, tax regulations, and funding requirements under federal law. The qualified defined benefit pension plan was underfunded by $109.2 million at December 31, 2023. The American Rescue Plan, which was signed into law on March 11, 2021, includes a provision for pension relief that extends the amortization period for required contributions from 7 to 15 years and provides for the stabilization of interest rates used to calculate future required contributions. As a result, NW Natural did not make any plan contributions during 2023. The amount and timing of future contributions will depend on market interest rates and investment returns on the plan's assets. See Note 10 for information regarding employer contributions and estimated future benefit payments and other pension disclosures.

Contingent Liabilities

Loss contingencies are recorded as liabilities when it is probable that a liability has been incurred and the amount of the loss is reasonably estimable in accordance with accounting standards for contingencies. See “Application of Critical Accounting Policies and Estimates—*Environmental Contingencies*” below. At December 31, 2023, NW Natural's total estimated liability related to environmental sites was $121.6 million. See Note 17 and "Results of Operations—Regulatory Matters—Rate Mechanisms—*Environmental Cost Deferral and Recovery*" above.

NW Holdings is not currently party to any direct claims or litigation, though in the future it may be subject to claims and litigation arising in the ordinary course of business.

New Accounting Pronouncements

For a description of recent accounting pronouncements that may have an impact on our financial condition, results of operations, or cash flows, see Note 2.

APPLICATION OF CRITICAL ACCOUNTING POLICIES AND ESTIMATES

In preparing financial statements in accordance with U.S. GAAP, management exercises judgment to assess the potential outcomes and related accounting impacts in the selection and application of accounting principles, including making estimates and assumptions that affect reported amounts of assets, liabilities, revenues, expenses, and related disclosures in the financial statements. Management considers critical accounting policies to be those which are most important to the representation of financial condition and results of operations and which require management’s most difficult and subjective or complex judgments, including accounting estimates that could result in materially different amounts if reported under different conditions or used different assumptions. Our most critical estimates and judgments for both NW Holdings and NW Natural include accounting for:

- regulatory accounting;
- revenue recognition;
- derivative instruments and hedging activities;
- pensions and postretirement benefits;
- income taxes;
- environmental contingencies; and
- impairment of long-lived assets and goodwill.

Management has discussed its current estimates and judgments used in the application of critical accounting policies with the Audit Committees of the Boards of NW Holdings and NW Natural. Within the context of critical accounting policies and estimates, management is not aware of any reasonably likely events or circumstances that would result in materially different amounts being reported.

Regulatory Accounting

The NGD segment is regulated by the OPUC and WUTC, which establish the rates designed to recover specific costs of providing regulatory services, and, to a certain extent, set forth special accounting treatment for certain regulatory transactions for which NW Natural records regulatory assets and liabilities. In general, the same accounting principles as non-regulated companies reporting under U.S. GAAP are used. However, authoritative guidance for regulated operations (regulatory accounting) requires different accounting treatment for regulated companies to show the effects of such regulation. For example, NW Natural accounts for the cost of gas using a PGA deferral and cost recovery mechanism, which is submitted for approval annually to the OPUC and WUTC. See "Results of Operations—Regulatory Matters—Rate Mechanisms—*Purchased Gas Adjustment*" above. There are other expenses and revenues that the OPUC or WUTC may require NW Natural to defer for recovery or refund in future periods. Regulatory accounting requires NW Natural to account for these types of deferred expenses (or deferred revenues) as regulatory assets (or regulatory liabilities) on the balance sheet. When the recovery of these regulatory assets from, or refund of regulatory liabilities to, customers is approved, NW Natural recognizes the expense or revenue on the income statement at the same time the adjustment to amounts is included in rates charged to customers.

The conditions that must be satisfied to adopt the accounting policies and practices of regulatory accounting include:
- an independent regulator sets rates;
- the regulator sets the rates to cover specific costs of delivering service; and
- the service territory lacks competitive pressures to reduce rates below the rates set by the regulator.

Because NW Natural's NGD operations satisfy all three conditions, NW Natural continues to apply regulatory accounting to NGD operations. Future accounting changes, regulatory changes, or changes in the competitive environment could require NW Natural to discontinue the application of regulatory accounting for some or all of our regulated businesses. This would require the write-off of those regulatory assets and liabilities that would no longer be probable of recovery from or refund to customers.

Based on current accounting and regulatory competitive conditions, NW Natural believes it is reasonable to expect continued application of regulatory accounting for NGD activities. Further, it is reasonable to expect the recovery or refund of NW Natural's regulatory assets and liabilities at December 31, 2023 through future customer rates. If it is determined that all or a portion of these regulatory assets or liabilities no longer meet the criteria for continued application of regulatory accounting, then NW Natural would be required to write-off the net unrecoverable balances against earnings in the period such determination is made. The net balance in regulatory asset and liability accounts was a net liability of $268.2 million and a net liability of $479.3 million as of December 31, 2023 and 2022, respectively. See Note 2 for more detail on regulatory balances.

Revenue Recognition

Revenues, which are derived primarily from the sale, transportation, and storage of natural gas, are recognized upon the delivery of gas commodity or services rendered to customers.

Accrued Unbilled Revenue

For a description of the policy regarding accrued unbilled revenue, most of which relates to the NGD business at NW Natural, see Note 2. The following table presents changes in key metrics if the estimated percentage of unbilled volume at December 31 was adjusted up or down by 1%:

	2023	
In millions	Up 1%	Down 1%
Unbilled revenue increase (decrease)(1)	$ 1.2	$ (1.2)
Margin increase (decrease)(1)	0.2	(0.2)
Net income before tax increase (decrease)(1)	0.1	(0.1)

(1) Includes impact of regulatory mechanisms including decoupling mechanism and excludes the impact of unbilled revenue from water services.

Derivative Instruments and Hedging Activities

NW Holdings and NW Natural have financial derivative policies that set forth guidelines for using financial derivative instruments to support prudent risk management strategies. These policies specifically prohibit the use of derivatives for speculative purposes. Financial derivative contracts are utilized to hedge most of our natural gas sale requirements. These contracts include swaps, options, and combinations of option contracts. NW Natural primarily uses these derivative financial instruments to manage commodity price variability. A small portion of NW Natural's derivative hedging strategy involves foreign currency exchange contracts.

Derivative instruments are recorded on the balance sheet at fair value. If certain regulatory conditions are met, then the derivative instrument fair value is recorded together with an offsetting entry to a regulatory asset or liability account pursuant to regulatory accounting, and no unrealized gain or loss is recognized in current income or loss. See "*Regulatory Accounting*" above for additional information. The gain or loss from the fair value of a derivative instrument subject to regulatory deferral is included in the recovery from, or refund to, NGD business customers in future periods. If a derivative contract is not subject to regulatory deferral, then the accounting treatment for unrealized gains and losses is recorded in accordance with accounting standards for derivatives and hedging which is either in current income or loss or in accumulated other comprehensive income or loss (AOCI or AOCL). Derivative contracts outstanding at December 31, 2023, 2022 and 2021 were measured at fair value using models or other market accepted valuation methodologies derived from observable market data. Estimates of fair value may change significantly from period-to-period depending on market conditions, notional amounts, and prices. These changes may have an impact on results of operations, but the impact would generally be mitigated due to the majority of derivative activities being subject to regulatory deferral treatment. For more information on derivative activity and associated regulatory treatment, see Note 2 and Note 15.

The following table summarizes the amount of gains realized from commodity price transactions for the last three years:

In millions	2023	2022	2021
NGD business net gain on commodity swaps	$ 125.5	$ 107.8	$ 50.9

Realized gains and losses from commodity hedges shown above were recorded in cost of gas and were, or will be, included in annual PGA rates.

NW Holdings and NWN Water also use financial derivatives to hedge interest rate risk in the form of pay-fixed interest rate swaps. Unrealized gains and losses related to these interest rate swap agreements qualify for cash flow hedge accounting and are recorded in AOCI on the consolidated balance sheet.

Pensions and Postretirement Benefits

NW Natural maintains a qualified non-contributory defined benefit pension plan, non-qualified supplemental pension plans for eligible executive officers and certain key employees, and other postretirement employee benefit plans covering certain non-union employees. NW Natural also has a qualified defined contribution plan (Retirement K Savings Plan) for all eligible employees. Only the qualified defined benefit pension plan and Retirement K Savings Plan have plan assets, which are held in qualified trusts to fund the respective retirement benefits. The qualified defined benefit retirement plan for union and non-union employees was closed to new participants several years ago. Non-union and union employees hired or re-hired after December 31, 2006 and 2009, respectively, and employees of certain NW Holdings subsidiaries are provided an enhanced Retirement K Savings Plan benefit. The postretirement Welfare Benefit Plan for non-union employees was also closed to new participants several years ago.

Net periodic pension and postretirement benefit costs (retirement benefit costs) and projected benefit obligations (benefit obligations) are determined using a number of key assumptions, including discount rates, rate of compensation increases, retirement ages, mortality rates and an expected long-term return on plan assets. See Note 10.

The vested benefit obligation for the defined benefit pension plan is the actuarial present value of the vested benefits to which the employee is entitled based on the employee's expected date of separation or retirement based on valuation assumptions.

Accounting standards also require balance sheet recognition of unamortized actuarial gains and losses and prior service costs in AOCI or AOCL, net of tax. However, the retirement benefit costs related to qualified defined benefit pension and postretirement benefit plans are generally recovered in rates charged to NGD customers, which are set based on accounting standards for pensions and postretirement benefit expenses. As such, NW Natural received approval from the OPUC to recognize the unamortized actuarial gains and losses and prior service costs as a regulatory asset or regulatory liability based on expected rate recovery, rather than including it as AOCI or AOCL under common equity. See "*Regulatory Accounting"* above and Note 2, "*Industry Regulation.*"

A number of factors, as discussed above, are considered in developing pension and postretirement benefit assumptions. For the December 31, 2023 measurement date, NW Natural reviewed and updated:

- the weighted-average discount rate assumptions for pensions decreased from 5.18% for 2022 to 4.98% for 2023, and the weighted-average discount rate assumptions for other postretirement benefits decreased from 5.19% for 2022 to 4.98% for 2023. The new rate assumptions were determined for each plan based on a matching of benchmark interest rates to the estimated cash flows, which reflect the timing and amount of future benefit payments. Benchmark interest rates are drawn from the FTSE Above Median Curve, which consists of high quality bonds rated AA- or higher by S&P or Aa3 or higher by Moody's;
- the expected annual rate of future compensation is separately determined for bargaining unit and non-bargaining unit employees. The rate assumption ranges from 3.2% to 4.6% in 2024, 4.7% to 5.8% in 2025 and 4.0% to 4.7% thereafter;
- the expected long-term return on qualified defined benefit plan assets remained the same at 7.50% in 2022 and 2023; and
- other key assumptions, which were based on actual plan experience and actuarial recommendations.

At December 31, 2023, the net pension liability (benefit obligations less market value of plan assets) for the defined benefit pension plan increased $7.9 million compared to 2022. The increase in the net pension liability is primarily due to the $11.0

million increase to the pension benefit obligation, partially offset by the $3.1 million increase in plan assets. The liability for non-qualified plans increased $1.0 million and the liability for other postretirement benefits increased $1.6 million in 2023.

The expected long-term rate of return on assets is based on a forward-looking capital markets model along with the defined benefit pension plan current and target asset allocation. The model inputs are based on future expected long-term total returns and historical volatilities for various asset classes, along with their historical correlations. The model considers current investment-grade yields for fixed income investments, and the same plus a risk premium for riskier assets such as common stocks.

NW Natural believes its pension assumptions are appropriate based on plan design and an assessment of market conditions. The following shows the sensitivity of retirement benefit costs and benefit obligations to changes in certain actuarial assumptions:

Dollars in millions	Change in Assumption	Impact on 2023 Retirement Benefit Costs	Impact on Retirement Benefit Obligations at Dec. 31, 2023
Discount rate:	(0.25)%		
Qualified defined benefit plans		$ (0.2)	$ 10.8
Non-qualified plans		—	0.1
Other postretirement benefits		—	0.5
Expected long-term return on plan assets:	(0.25)%		
Qualified defined benefit plans		0.9	N/A

Income Taxes

Valuation Allowances

Deferred tax assets are recognized to the extent that these assets are believed to be more likely than not to be realized. In making such a determination, available positive and negative evidence is considered, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. NW Holdings and NW Natural have determined that all recorded deferred tax assets are more likely than not to be realized as of December 31, 2023. See Note 11.

Uncertain Tax Benefits

The calculation of tax liabilities involves dealing with uncertainties in the application of complex tax laws and regulations in the jurisdictions in which we operate. A tax benefit from a material uncertain tax position will only be recognized when it is more likely than not that the position, or some portion thereof, will be sustained upon examination, including resolution of any related appeals or litigation processes, on the basis of the technical merits. NW Holdings and NW Natural participate in the Compliance Assurance Process (CAP) with the Internal Revenue Service (IRS). Under the CAP program companies work with the IRS to identify and resolve material tax matters before the federal income tax return is filed each year. No reserves for uncertain tax benefits were recorded during 2023, 2022, or 2021. See Note 11.

Tax Legislation

When significant proposed or enacted changes in income tax rules occur, we consider whether there may be a material impact to our financial position, results of operations, cash flows, or whether the changes could materially affect existing assumptions used in making estimates of tax related balances.

The final tangible property regulations applicable to all taxpayers were issued on September 13, 2013 and were generally effective for taxable years beginning on or after January 1, 2014. In April 2023, the IRS published Revenue Procedure 2023-15 that provides a safe harbor method of income tax accounting for determining when expenditures for natural gas transmission and distribution property must be capitalized or are allowable as repair deductions. We continue to evaluate this new safe harbor but do not believe that the safe harbor method is materially different from NW Natural's current repairs methodology or that this additional guidance will have a material effect on our financial statements.

Regulatory Matters

Regulatory tax assets and liabilities are recorded to the extent it is probable they will be recoverable from, or refunded to, customers in the future. At December 31, 2023 and 2022, NW Natural had net regulatory income tax assets of $8.0 million and $10.2 million, respectively, representing future rate recovery of deferred tax liabilities resulting from differences in NGD plant financial statement and tax bases and NGD plant removal costs. These regulatory assets are currently being recovered through customer rates. At December 31, 2023 and 2022, regulatory income tax assets of $4.9 million and $2.9 million, respectively, were recorded by NW Natural, representing probable future rate recovery of deferred tax liabilities resulting from the equity portion of AFUDC.

At December 31, 2023 and 2022, regulatory liability balances, representing the estimated net benefit to NGD customers resulting from the change in deferred taxes as a result of the Tax Cut and Jobs Act (TCJA), of $174.2 million and $181.4 million, respectively, were recorded by NW Natural. These balances include a gross up for income taxes of $46.1 million and $4[illegible].0 million, respectively.

Environmental Contingencies

Environmental liabilities are accounted for in accordance with accounting standards under the loss contingency guidance when it is probable that a liability has been incurred and the amount of the loss is reasonably estimable. Amounts recorded for environmental contingencies take numerous factors into consideration, including, among other variables, changes in enacted laws, regulatory orders, estimated remediation costs, interest rates, insurance proceeds, participation by other parties, timing of payments, and the input of legal counsel and third-party experts. Accordingly, changes in any of these variables or other factual circumstances could have a material impact on the amounts recorded for our environmental liabilities. For a complete discussion of environmental accounting policies refer to Note 2. For a discussion of current environmental sites and liabilities refer to Note 17. In addition, for information regarding the regulatory treatment of these costs and NW Natural's regulatory recovery mechanism, see "Results of Operations—Regulatory Matters—Rate Mechanisms—*Environmental Cost Deferral and Recovery*" above.

Impairment of Long-Lived Assets and Goodwill

Long-Lived Assets

We review the carrying value of long-lived assets whenever events or changes in circumstances indicate the carrying amount of the assets might not be recoverable. Factors that would necessitate an impairment assessment of long-lived assets include a significant adverse change in the extent or manner in which the asset is used, a significant adverse change in legal factors or business climate that could affect the value of the asset, or a significant decline in the observable market value or expected future cash flows of the asset, among others.

When such factors are present, we assess the recoverability by determining whether the carrying value of the asset will be recovered through expected future cash flows. An asset is determined to be impaired when the carrying value of the asset exceeds the expected undiscounted future cash flows from the use and eventual disposition of the asset. If an impairment is indicated, we record an impairment loss for the difference between the carrying value and the fair value of the long-lived assets. Fair value is estimated using appropriate valuation methodologies, which may include an estimate of discounted cash flows.

Goodwill and Business Combinations

In a business combination, goodwill is initially measured as any excess of the acquisition-date fair value of the consideration transferred over the acquisition-date fair value of the net identifiable assets acquired.

The carrying value of goodwill is reviewed annually during the fourth quarter, or whenever events or changes in circumstance indicate that such carrying values may not be recoverable.

NW Holdings' policy for goodwill assessments begins with a qualitative analysis in which events and circumstances are evaluated, including macroeconomic conditions, industry and market conditions, regulatory environments, and the overall financial performance of the reporting unit. If the qualitative assessment indicates that the carrying value may be at risk of recoverability, a quantitative evaluation is performed to measure the carrying value against the fair value of the reporting unit. This evaluation may involve the assessment of future cash flows and other subjective factors for which uncertainty exists and could impact the estimation of future cash flows. These factors include, but are not limited to, the amount and timing of future cash flows, future growth rates, and the discount rate. Unforeseen events and changes in circumstances or market conditions could adversely affect these estimates, which could result in an impairment charge. A qualitative assessment was performed during the fourth quarter of 2023 which indicated a quantitative assessment was not required; thus, no goodwill impairment was recorded. See Note 2 and Note 14 for additional information.

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at fair value at the acquisition date, and the fair value of any non-controlling interest in the acquiree. Acquisition-related costs are expensed as incurred. When NW Natural acquires a business, it assesses the financial assets acquired and liabilities assumed for appropriate classification and designation in accordance with the contractual terms, economic circumstances and pertinent conditions as of the acquisition date. When there is substantial judgment or uncertainty around the fair value of acquired assets, we may engage a third party expert to assist in determining the fair values of certain assets or liabilities.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

NW Holdings and NW Natural are exposed to various forms of market risk including commodity supply risk, commodity price risk, interest rate risk, foreign currency risk, credit risk and weather risk. The following describes NW Holdings' and NW Natural's exposure to these risks, as applicable.

Commodity Supply Risk

NW Natural enters into spot, short-term, and long-term natural gas supply contracts, along with associated pipeline transportation contracts, to manage commodity supply risk. NW Natural has arranged for physical delivery of an adequate supply of gas, including gas in its Mist storage facility and other off-system storage facilities, to meet expected requirements of core NGD customers. NW Natural's long-term gas supply contracts are primarily index-based and subject to monthly re-pricing, a strategy that is intended to substantially mitigate credit exposure to physical gas counterparties. Absolute notional amounts under physical gas contracts related to open positions on derivative instruments were 572 million therms and 463 million therms as of December 31, 2023 and 2022, respectively.

Commodity Price Risk

Natural gas commodity prices are subject to market fluctuations due to unpredictable factors including weather, pipeline transportation congestion, drilling technologies, market speculation, and other factors that affect supply and demand. Commodity price risk is primarily hedged with financial swaps, storage and physical gas reserves from a long-term investment in working interests in gas leases operated by Jonah Energy. These hedges are generally included in NW Natural's annual PGA filing for recovery, subject to a regulatory prudence review. Notional amounts under financial derivative contracts were $405.7 million and $359.5 million as of December 31, 2023 and 2022, respectively. The fair value of financial swaps, based on market prices at December 31, 2023, was an unrealized loss of $115.5 million, which would result in cash outflows of $89.6 million in 2024, $22.9 million in 2025, and $3.0 million in 2026.

Interest Rate Risk

NW Holdings and NW Natural are exposed to interest rate risk primarily associated with debt financing needed to fund capital requirements, including future contractual obligations and maturities of long-term and short-term debt. Interest rate risk is primarily managed through the issuance of fixed-rate debt with varying maturities. NW Holdings and NW Natural may also enter into financial derivative instruments, including interest rate swaps, options and other hedging instruments, to manage and mitigate interest rate exposure. NW Holdings and NWN Water entered into interest rate swaps transactions for a total notional amount of $155 million to manage variable interest rate risk in December 2022. Unrealized gains related to these interest rate swap agreements totaled $0.2 million and $0.1 million, net of tax, as of December 31, 2023 and 2022, respectively.

Foreign Currency Risk

The costs of certain pipeline fees are subject to changes in the value of the Canadian currency in relation to the U.S. currency. Foreign currency forward contracts are used to hedge against fluctuations in exchange rates for NW Natural's commodity-related demand and reservation charges paid in Canadian dollars. Notional amounts under foreign currency forward contracts were $11.9 million and $7.6 million as of December 31, 2023 and 2022, respectively. If all of the foreign currency forward contracts had been settled on December 31, 2023, a gain of $0.2 million would have been realized. See Note 15.

Credit Risk

Credit Exposure to Natural Gas Suppliers

Certain gas suppliers have either relatively low credit ratings or are not rated by major credit rating agencies. To manage this supply risk, NW Natural purchases gas from a number of different suppliers at liquid exchange points. NW Natural evaluates and monitors suppliers’ creditworthiness and maintains the ability to require additional financial assurances, including deposits, letters of credit, or surety bonds, in case a supplier defaults. In the event of a supplier’s failure to deliver contracted volumes of gas, the NGD business would need to replace those volumes at prevailing market prices, which may be higher or lower than the original transaction prices. NW Natural expects these costs would be subject to its PGA sharing mechanism discussed above. Since most of NW Natural's commodity supply contracts are priced at the daily or monthly market index price tied to liquid exchange points, and NW Natural has adequate storage flexibility, NW Natural believes it is unlikely a supplier default would have a material adverse effect on its financial condition or results of operations.

Credit Exposure to Financial Derivative Counterparties

NW Natural did not have any credit exposure related to commodity swap contracts based on the estimated fair value at December 31, 2023. NW Natural does not have credit exposure to financial commodity swap derivative counterparties when forward gas prices are lower than our hedge prices, which was the case with all financial commodity swap counterparties at December 31, 2023. NW Natural’s credit exposure also includes interest rate swap and foreign exchange forward counterparties, neither of which were significant at December 31, 2023. NW Natural's financial derivatives policy requires counterparties to have at least an investment-grade credit rating at the time the derivative instrument is entered into and specific limits on the notional amount and duration based on each counterparty’s credit rating. NW Natural actively monitors and manages derivative credit exposure and places counterparties on hold for trading purposes or requires cash collateral, letters of credit, or guarantees as circumstances warrant.

The following table summarizes NW Natural's overall financial swap and option credit exposure, based on estimated fair value, and the corresponding counterparty credit ratings. The table uses credit ratings from S&P and Moody's, reflecting the higher of the S&P or Moody's rating or a middle rating if the entity is split-rated with more than one rating level difference:

	Financial Derivative Position by Credit Rating Unrealized Fair Value Gain (Loss)	
In millions	2023	2022
AA/Aa	$ (100.7)	$ 77.9
A/A	(14.8)	72.7
Total	$ (115.5)	$ 150.6

In most cases, NW Natural also mitigates the credit risk of financial derivatives by having master netting arrangements with counterparties which provide for making or receiving net cash settlements. Transactions of the same type in the same currency that have settlement on the same day with a single counterparty are netted and a single payment is delivered or received depending on which party is due funds.

Additionally, NW Natural has master contracts in place with each derivative counterparty, most of which include provisions for posting or calling for collateral. Generally, NW Natural can obtain cash or marketable securities as collateral with one day's notice. Various collateral management strategies are used to reduce liquidity risk. The collateral provisions vary by counterparty but are not expected to result in the significant posting of collateral, if any. NW Natural has performed stress tests on the gas portfolio and concluded the liquidity risk from collateral calls is not material. Derivative credit exposure is primarily with investment grade counterparties rated AA-/Aa3 or higher. Contracts are diversified across counterparties, business types and countries to reduce credit and liquidity risk.

At December 31, 2023, financial derivative commodity credit risk on a volumetric basis was geographically concentrated 24% in the United States and 76% in Canada, based on counterparties' location. At December 31, 2022, financial derivative commodity credit risk on a volumetric basis was geographically concentrated 28% in the United States and 71% in Canada with our counterparties.

<u>Credit Exposure to Insurance Companies</u>
Credit exposure to insurance companies for loss or damage claims could be material. NW Holdings and NW Natural regularly monitor the financial condition of insurance companies who provide general liability insurance policy coverage to NW Holdings, NW Natural, their predecessors, and their subsidiaries.

Weather Risk

NW Natural has a weather normalization mechanism in Oregon; however, it is exposed to weather risk primarily from NGD business operations. A large percentage of NGD margin is volume driven, and current rates are based on an assumption of average weather. NW Natural's weather normalization mechanism in Oregon is for residential and small commercial customers, which is intended to stabilize the recovery of NGD business fixed costs and reduce fluctuations in customers' bills due to colder or warmer than average weather. Customers in Oregon are allowed to opt out of the weather normalization mechanism. As of December 31, 2023, approximately 7% of Oregon customers had opted out. In addition to the Oregon customers opting out, Washington residential and commercial customers account for approximately 12% of our total customer base and are not covered by weather normalization. The combination of Oregon and Washington customers not covered by a weather normalization mechanism is 19% of all residential and commercial customers. See "Results of Operations—Regulatory Matters—Rate Mechanisms—*WARM*" above.

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Supplemental Schedules Omitted

All other schedules are omitted because of the absence of the conditions under which they are required or because the required information is included elsewhere in the financial statements.

NW HOLDINGS MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

NW Holdings management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) or 15d-15(f) under the Securities Exchange Act of 1934, as amended. NW Holdings' internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America (U.S. GAAP). NW Holdings' internal control over financial reporting includes those policies and procedures that:

(i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions involving company assets;

(ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of financial statements in accordance with U.S. GAAP, and that receipts and expenditures are being made only in accordance with authorizations of management and the NW Holdings Board of Directors; and

(iii) provide reasonable assurance regarding prevention or timely detection of the unauthorized acquisition, use, or disposition of NW Holdings' assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements or fraud. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

NW Holdings management assessed the effectiveness of NW Holdings' internal control over financial reporting as of December 31, 2023. In making this assessment, NW Holdings management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework* (2013).

Based on NW Holdings management's assessment and those criteria, NW Holdings management has concluded that it maintained effective internal control over financial reporting as of December 31, 2023.

The effectiveness of internal control over financial reporting as of December 31, 2023 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears in this annual report.

/s/ David H. Anderson
David H. Anderson
Chief Executive Officer

/s/ Brody J. Wilson
Brody J. Wilson
Chief Financial Officer, Chief Accounting Officer, Vice President, Treasurer

February 23, 2024

NW NATURAL MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

NW Natural management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) or 15d-15(f) under the Securities Exchange Act of 1934, as amended. NW Natural's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States of America (U.S. GAAP). NW Natural's internal control over financial reporting includes those policies and procedures that:

(i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions involving company assets;

(ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of financial statements in accordance with U.S. GAAP, and that receipts and expenditures are being made only in accordance with authorizations of management and the NW Natural Board of Directors; and

(iii) provide reasonable assurance regarding prevention or timely detection of the unauthorized acquisition, use, or disposition of NW Natural's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements or fraud. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

NW Natural management assessed the effectiveness of NW Natural's internal control over financial reporting as of December 31, 2023. In making this assessment, NW Natural management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework* (2013).

Based on NW Natural management's assessment and those criteria, NW Natural management has concluded that it maintained effective internal control over financial reporting as of December 31, 2023.

/s/ David H. Anderson
David H. Anderson
Chief Executive Officer

/s/ Brody J. Wilson
Brody J. Wilson
Chief Financial Officer, Chief Accounting Officer, Vice President, Treasurer

February 23, 2024

To the Board of Directors and Shareholders of Northwest Natural Holding Company

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Northwest Natural Holding Company and its subsidiaries (the “Company”) as of December 31, 2023 and 2022, and the related consolidated statements of comprehensive income (loss), of shareholders' equity and of cash flows for each of the three years in the period ended December 31, 2023, including the related notes and financial statement schedules listed in the accompanying index (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2023, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2023 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2023, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Report on Internal Control Over Financial Reporting. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Accounting for the Effects of Regulatory Matters

As described in Note 2 to the consolidated financial statements, there were $511.7 million of regulatory assets and $780.9 million of regulatory liabilities as of December 31, 2023. The Company’s principal business is to operate as a holding company for Northwest Natural Gas Company (“NW Natural”) and its other subsidiaries. NW Natural's principal business is the distribution of natural gas, which is regulated; the accounting records and practices of the regulated businesses conform to the requirements and uniform system of accounts prescribed by regulatory authorities. Customer rates are regulated and have approved cost-based rates which are intended to allow the Company to earn a return on invested capital. As disclosed by management, regulatory accounting requires management to account for deferred expenses (or deferred revenues) as regulatory assets (or regulatory liabilities) on the balance sheet. When the recovery of these regulatory assets from, or refund of regulatory liabilities to, customers is approved, management recognizes the expense or revenue on the income statement at the same time the adjustment to amounts is included in rates charged to customers.

The principal considerations for our determination that performing procedures relating to the Company’s accounting for the effects of regulatory matters is a critical audit matter are the high degree of auditor effort in performing procedures and evaluating audit evidence related to the recovery of regulatory assets and the settlement of regulatory liabilities.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management’s assessment of rates cases and other proceedings, including the probability of recovery of regulatory assets and the settlement of regulatory liabilities and related accounting and disclosure impacts. These procedures also included, among others (i) evaluating the reasonableness of management’s assessment regarding the probability of recovery of regulatory assets and settlement of regulatory liabilities, (ii) evaluating the sufficiency of the disclosures in the consolidated financial statements, and (iii) testing, on a sample basis, the regulatory assets and liabilities, including those subject to rate cases and other proceedings, by considering the provisions and formulas outlined in rate orders, other regulatory correspondence, and the application of relevant regulatory precedents.

/s/ PricewaterhouseCoopers LLP
Portland, Oregon
February 23, 2024

We have served as the Company’s auditor since 1997.

To the Board of Directors and Shareholder of Northwest Natural Gas Company:

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Northwest Natural Gas Company and its subsidiaries (the “Company”) as of December 31, 2023 and 2022, and the related consolidated statements of comprehensive income (loss), of shareholder's equity and of cash flows for each of the three years in the period ended December 31, 2023, including the related notes and financial statement schedule listed in the accompanying index (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2023 and 2022, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2023 in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits of these consolidated financial statements in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Accounting for the Effects of Regulatory Matters

As described in Note 2 to the consolidated financial statements, there were $511.7 million of regulatory assets and $779.9 million of regulatory liabilities as of December 31, 2023. The Company’s principal business is the distribution of natural gas, which is regulated; the accounting records and practices of the regulated businesses conform to the requirements and uniform system of accounts prescribed by regulatory authorities. Customer rates are regulated and have approved cost-based rates which are intended to allow the Company to earn a return on invested capital.As disclosed by management, regulatory accounting requires management to account for deferred expenses (or deferred revenues) as regulatory assets (or regulatory liabilities) on the balance sheet. When the recovery of these regulatory assets from, or refund of regulatory liabilities to, customers is approved, management recognizes the expense or revenue on the income statement at the same time the adjustment to amounts is included in rates charged to customers.

The principal considerations for our determination that performing procedures relating to the Company’s accounting for the effects of regulatory matters is a critical audit matter are the high degree of auditor effort in performing audit procedures and evaluating audit evidence obtained related to the recovery of regulatory assets and the settlement of regulatory liabilities.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management’s assessment of rates cases and other proceedings, including the probability of recovery of regulatory assets and the settlement of regulatory liabilities and related accounting and disclosure impacts. These procedures also included, among others (i) evaluating the reasonableness of management’s assessment regarding the probability of recovery of regulatory assets and settlement of regulatory liabilities, (ii) evaluating the sufficiency of the disclosures in the consolidated financial statements, and (iii) testing, on a sample basis, the regulatory assets and liabilities, including those subject to rate cases and other proceedings, by considering the provisions and formulas outlined in rate orders, other regulatory correspondence, and the application of relevant regulatory precedents.

/s/ PricewaterhouseCoopers LLP
Portland, Oregon
February 23, 2024

We have served as the Company's auditor since 1997.

NORTHWEST NATURAL HOLDING COMPANY
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

In thousands, except per share data	Year Ended December 31, 2023	2022	2021
Operating revenues	$1,197,475	$1,037,353	$ 860,400
Operating expenses:			
Cost of gas	499,837	429,635	292,314
Operations and maintenance	273,766	224,667	204,227
Environmental remediation	12,899	12,389	9,938
General taxes	46,248	41,031	38,633
Revenue taxes	48,671	41,826	34,740
Depreciation	125,581	116,707	113,534
Other operating expenses	5,532	3,621	3,897
Total operating expenses	1,012,534	869,876	697,283
Income from operations	184,941	167,477	163,117
Other income (expense), net	17,855	1,203	(12,559)
Interest expense, net	76,566	53,247	44,486
Income before income taxes	126,230	115,433	106,072
Income tax expense	32,362	29,130	27,406
Net income	93,868	86,303	78,666
Other comprehensive income (loss):			
Change in employee benefit plan liability, net of taxes of $443 for 2023, $(1,511) for 2022, and $(219) for 2021	(1,233)	4,195	593
Amortization of non-qualified employee benefit plan liability, net of taxes of $(148) for 2023, $(286) for 2022, and $(320) for 2021	410	795	905
Unrealized gain on interest rate swaps, net of taxes of $(21) for 2023 and $(47) for 2022	59	129	—
Comprehensive income	$ 93,104	$ 91,422	$ 80,164
Average common shares outstanding:			
Basic	36,213	33,934	30,702
Diluted	36,265	33,984	30,752
Earnings per share of common stock:			
Basic	$ 2.59	$ 2.54	$ 2.56
Diluted	2.59	2.54	2.56

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL HOLDING COMPANY
CONSOLIDATED BALANCE SHEETS

	As of December 31,	
In thousands	2023	2022
Assets:		
Current assets:		
Cash and cash equivalents	$ 32,920	$ 29,270
Accounts receivable	121,341	168,906
Accrued unbilled revenue	83,138	89,048
Allowance for uncollectible accounts	(3,455)	(3,296)
Regulatory assets	178,270	117,491
Derivative instruments	11,380	194,412
Inventories	112,571	87,096
Other current assets	65,275	61,286
Total current assets	601,440	744,213
Non-current assets:		
Property, plant, and equipment	4,556,609	4,261,566
Less: Accumulated depreciation	1,198,555	1,147,166
Total property, plant, and equipment, net	3,358,054	3,114,400
Regulatory assets	333,443	340,432
Derivative instruments	431	5,045
Other investments	102,951	95,704
Operating lease right of use asset, net	71,308	73,429
Assets under sales-type leases	129,882	134,302
Goodwill	163,344	149,283
Other non-current assets	106,239	91,518
Total non-current assets	4,265,652	4,004,113
Total assets	$ 4,867,092	$ 4,748,326

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL HOLDING COMPANY
CONSOLIDATED BALANCE SHEETS

	As of December 31,	
In thousands, except share information	2023	2022
Liabilities and equity:		
Current liabilities:		
Short-term debt	$ 89,780	$ 258,200
Current maturities of long-term debt	150,865	90,697
Accounts payable	145,361	180,667
Taxes accrued	15,454	15,625
Interest accrued	15,836	10,169
Regulatory liabilities	84,962	248,582
Derivative instruments	98,661	28,728
Operating lease liabilities	2,333	1,514
Other current liabilities	93,626	64,552
Total current liabilities	696,878	898,734
Long-term debt	1,425,435	1,246,167
Deferred credits and other non-current liabilities:		
Deferred tax liabilities	382,673	366,022
Regulatory liabilities	695,896	689,578
Pension and other postretirement benefit liabilities	158,116	149,143
Derivative instruments	28,055	20,838
Operating lease liabilities	77,167	78,965
Other non-current liabilities	119,034	123,438
Total deferred credits and other non-current liabilities	1,460,941	1,427,984
Commitments and contingencies (see Note 16 and Note 17)		
Equity:		
Common stock - no par value; authorized 100,000,000 shares; issued and outstanding 37,631,212 and 35,524,590 at December 31, 2023 and 2022, respectively	890,976	805,253
Retained earnings	399,911	376,473
Accumulated other comprehensive loss	(7,049)	(6,285)
Total equity	1,283,838	1,175,441
Total liabilities and equity	$ 4,867,092	$ 4,748,326

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL HOLDING COMPANY
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

In thousands	Common Stock	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Equity
Balance at December 31, 2020	$ 565,112	$ 336,523	$ (12,902)	$ 888,733
Comprehensive income (loss)	—	78,666	1,498	80,164
Dividends on common stock, $1.92 per share	—	(59,410)	—	(59,410)
Stock-based compensation	3,615	—	—	3,615
Shares issued pursuant to equity based plans	4,543	—	—	4,543
Issuance of common stock, net of issuance costs	17,501	—	—	17,501
Balance at December 31, 2021	590,771	355,779	(11,404)	935,146
Comprehensive income (loss)	—	86,303	5,119	91,422
Dividends on common stock, $1.93 per share	—	(65,609)	—	(65,609)
Stock-based compensation	3,228	—	—	3,228
Shares issued pursuant to equity based plans	2,978	—	—	2,978
Issuance of common stock, net of issuance costs	208,276	—	—	208,276
Balance at December 31, 2022	805,253	376,473	(6,285)	1,175,441
Comprehensive income (loss)	—	93,868	(764)	93,104
Dividends on common stock, $1.94 per share	—	(70,430)	—	(70,430)
Shares issued in connection with business combinations	12,884	—	—	12,884
Stock-based compensation	3,598	—	—	3,598
Shares issued pursuant to equity based plans	2,328	—	—	2,328
Issuance of common stock, net of issuance costs	66,913	—	—	66,913
Balance at December 31, 2023	$ 890,976	$ 399,911	$ (7,049)	$ 1,283,838

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL HOLDING COMPANY
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
In thousands	2023	2022	2021
Operating activities:			
Net income	$ 93,868	$ 86,303	$ 78,666
Adjustments to reconcile net income to cash provided by operations:			
Depreciation	125,581	116,707	113,534
Regulatory amortization of gas reserves	3,217	5,589	13,897
Deferred income taxes	8,966	17,410	14,617
Qualified defined benefit pension plan (benefit) expense	(2,430)	5,351	16,556
Contributions to qualified defined benefit pension plans	—	—	(9,590)
Deferred environmental expenditures, net	(26,052)	(18,160)	(18,187)
Environmental remediation expense	12,899	12,389	9,938
Asset optimization revenue sharing bill credits	(10,471)	(41,102)	(9,053)
Other	22,972	21,558	20,622
Changes in assets and liabilities:			
Receivables, net	50,977	(76,454)	(44,128)
Inventories	(24,105)	(29,269)	(14,571)
Income and other taxes	(1,246)	6,908	3,292
Accounts payable	(39,958)	24,508	12,118
Deferred gas costs	52,371	12,334	(40,541)
Asset optimization revenue sharing	22,637	28,937	44,458
Decoupling mechanism	(11,415)	10,922	(5,206)
Cloud-based software	(16,307)	(23,908)	(7,407)
Other, net	18,445	(12,351)	(18,662)
Cash provided by operating activities	279,949	147,672	160,353
Investing activities:			
Capital expenditures	(327,347)	(338,602)	(293,892)
Acquisitions, net of cash acquired	(7,533)	(94,279)	(1,289)
Purchase of equity method investment	(1,000)	(1,000)	(14,450)
Proceeds from sale of equity method investment	—	—	7,000
Other	383	(1,579)	2,508
Cash used in investing activities	(335,497)	(435,460)	(300,123)

	Year Ended December 31,		
	2023	2022	2021
Financing activities:			
Proceeds from common stock issued, net	66,495	208,561	17,501
Long-term debt issued	330,000	290,000	185,000
Long-term debt retired	(90,000)	—	(95,000)
Proceeds from term loan due within one year	—	—	100,000
Repayment of term loan	—	—	(100,000)
Repayments of commercial paper, maturities greater than three months	—	—	(195,025)
Changes in other short-term debt, net	(168,540)	(131,300)	280,000
Cash dividend payments on common stock	(67,340)	(62,771)	(55,919)
Payment of financing fees	(2,200)	(912)	(3,899)
Other	(4,207)	(1,946)	(1,222)
Cash provided by financing activities	64,208	301,632	131,436
Increase (decrease) in cash, cash equivalents and restricted cash	8,660	13,844	(8,334)
Cash, cash equivalents and restricted cash, beginning of period	40,964	27,120	35,454
Cash, cash equivalents and restricted cash, end of period	$ 49,624	$ 40,964	$ 27,120
Supplemental disclosure of cash flow information:			
Interest paid, net of capitalization	$ 80,197	$ 50,823	$ 43,719
Income taxes paid, net of refunds	24,263	2,779	10,555
Non-cash activities:			
Shares issued in connection with business combinations	$ 12,884	$ —	$ —
Debt assumed in connection with business combinations	3,131	—	—

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL GAS COMPANY

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

In thousands	Year Ended December 31, 2023	2022	2021
Operating revenues	$1,158,623	$1,014,339	$ 843,057
Operating expenses:			
Cost of gas	500,061	429,861	292,538
Operations and maintenance	244,669	204,845	188,762
Environmental remediation	12,899	12,389	9,938
General taxes	44,980	40,151	38,150
Revenue taxes	48,432	41,627	34,600
Depreciation	119,514	112,957	110,504
Other operating expenses	2,423	3,135	3,332
Total operating expenses	972,978	844,965	677,824
Income from operations	185,645	169,374	165,233
Other income (expense), net	15,358	(436)	(12,745)
Interest expense, net	60,594	46,338	42,983
Income before income taxes	140,409	122,600	109,505
Income tax expense	35,672	31,036	28,333
Net income	104,737	91,564	81,172
Other comprehensive income (loss):			
Change in employee benefit plan liability, net of taxes of $443 for 2023, $(1,511) for 2022, and $(219) for 2021	(1,233)	4,195	593
Amortization of non-qualified employee benefit plan liability, net of taxes of $(148) for 2023, $(286) for 2022, and $(320) for 2021	410	795	905
Comprehensive income	$ 103,914	$ 96,554	$ 82,670

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL GAS COMPANY
CONSOLIDATED BALANCE SHEETS

	As of December 31,	
In thousands	2023	2022
Assets:		
Current assets:		
Cash and cash equivalents	$ 19,841	$ 12,977
Accounts receivable	117,216	165,607
Accrued unbilled revenue	81,524	87,482
Receivables from affiliates	824	634
Allowance for uncollectible accounts	(3,228)	(3,079)
Regulatory assets	178,270	117,491
Derivative instruments	11,184	194,236
Inventories	110,855	86,207
Other current assets	60,138	57,269
Total current assets	576,624	718,824
Non-current assets:		
Property, plant, and equipment	4,393,759	4,148,547
Less: Accumulated depreciation	1,181,962	1,137,231
Total property, plant, and equipment, net	3,211,797	3,011,316
Regulatory assets	333,418	340,407
Derivative instruments	373	5,045
Other investments	86,145	80,110
Operating lease right of use asset, net	70,728	72,720
Assets under sales-type leases	129,882	134,302
Other non-current assets	102,410	89,994
Total non-current assets	3,934,753	3,733,894
Total assets	$ 4,511,377	$ 4,452,718

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL GAS COMPANY
CONSOLIDATED BALANCE SHEETS

In thousands	As of December 31, 2023	2022
Liabilities and equity:		
Current liabilities:		
Short-term debt	$ 16,780	$ 170,200
Current maturities of long-term debt	—	89,942
Accounts payable	138,111	177,590
Payables to affiliates	14,850	9,175
Taxes accrued	15,293	15,426
Interest accrued	15,111	8,900
Regulatory liabilities	84,912	248,553
Derivative instruments	98,661	28,728
Operating lease liabilities	2,128	1,363
Other current liabilities	89,371	62,019
Total current liabilities	475,217	811,896
Long-term debt	1,364,732	1,035,935
Deferred credits and other non-current liabilities:		
Deferred tax liabilities	371,867	362,353
Regulatory liabilities	694,947	688,599
Pension and other postretirement benefit liabilities	158,116	149,143
Derivative instruments	28,055	20,838
Operating lease liabilities	76,757	78,345
Other non-current liabilities	109,066	114,527
Total deferred credits and other non-current liabilities	1,438,808	1,413,805
Commitments and contingencies (see Note 16 and Note 17)		
Equity:		
Common stock	644,903	614,903
Retained earnings	594,954	582,593
Accumulated other comprehensive loss	(7,237)	(6,414)
Total equity	1,232,620	1,191,082
Total liabilities and equity	$ 4,511,377	$ 4,452,718

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL GAS COMPANY

CONSOLIDATED STATEMENTS OF SHAREHOLDER'S EQUITY

In thousands	Common Stock	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Equity
Balance at December 31, 2020	$ 319,506	$ 528,580	$ (12,902)	$ 835,184
Comprehensive income (loss)	—	81,172	1,498	82,670
Dividends on common stock	—	(56,056)	—	(56,056)
Capital contribution from parent	116,009	—	—	116,009
Balance at December 31, 2021	435,515	553,696	(11,404)	977,807
Comprehensive income (loss)	—	91,564	4,990	96,554
Dividends on common stock	—	(62,667)	—	(62,667)
Capital contributions from parent	179,388	—	—	179,388
Balance at December 31, 2022	614,903	582,593	(6,414)	1,191,082
Comprehensive income (loss)	—	104,737	(823)	103,914
Dividends on common stock	—	(92,376)	—	(92,376)
Capital contributions from parent	30,000	—	—	30,000
Balance at December 31, 2023	$ 644,903	$ 594,954	$ (7,237)	$ 1,232,620

See Notes to Consolidated Financial Statements

NORTHWEST NATURAL GAS COMPANY
CONSOLIDATED STATEMENTS OF CASH FLOWS

In thousands	Year Ended December 31, 2023	2022	2021
Operating activities:			
Net income	$ 104,737	$ 91,564	$ 81,172
Adjustments to reconcile net income to cash provided by operations:			
Depreciation	119,514	112,957	110,504
Regulatory amortization of gas reserves	3,217	5,589	13,897
Deferred income taxes	2,855	16,288	13,223
Qualified defined benefit pension plan (benefit) expense	(2,430)	5,351	16,556
Contributions to qualified defined benefit pension plans	—	—	(9,590)
Deferred environmental expenditures, net	(26,052)	(18,160)	(18,187)
Environmental remediation expense	12,899	12,389	9,938
Asset optimization revenue sharing bill credits	(10,471)	(41,102)	(9,053)
Other	22,341	20,448	18,517
Changes in assets and liabilities:			
Receivables, net	51,391	(75,177)	(43,030)
Inventories	(23,884)	(28,890)	(14,427)
Income and other taxes	4,124	6,729	(10,405)
Accounts payable	(43,531)	21,375	8,728
Deferred gas costs	52,371	12,334	(40,541)
Asset optimization revenue sharing	22,637	28,937	44,458
Decoupling mechanism	(11,415)	10,922	(5,206)
Cloud-based software	(16,307)	(23,908)	(7,407)
Other, net	19,872	(12,455)	(17,653)
Cash provided by operating activities	281,868	145,191	141,494
Investing activities:			
Capital expenditures	(290,845)	(318,686)	(278,237)
Other	384	(1,579)	2,508
Cash used in investing activities	(290,461)	(320,265)	(275,729)
Financing activities:			
Long-term debt issued	330,000	140,000	130,000
Long-term debt retired	(90,000)	—	(60,000)
Proceeds from term loan due within one year	—	—	100,000
Repayment of term loan	—	—	(100,000)
Repayment of commercial paper, maturities greater than three months	—	—	(195,025)
Changes in other short-term debt, net	(153,420)	(75,300)	209,000
Cash contributions received from parent	30,000	179,388	116,009
Cash dividend payments on common stock	(92,376)	(62,667)	(56,056)
Payment of financing fees	(2,080)	(843)	(2,818)
Other	(1,682)	(1,665)	(1,782)
Cash provided by financing activities	20,442	178,913	139,328
Increase in cash, cash equivalents and restricted cash	11,849	3,839	5,093
Cash, cash equivalents and restricted cash, beginning of period	24,671	20,832	15,739
Cash, cash equivalents and restricted cash, end of period	$ 36,520	$ 24,671	$ 20,832
Supplemental disclosure of cash flow information:			
Interest paid, net of capitalization	$ 64,054	$ 44,813	$ 42,395
Income taxes paid, net of refunds	27,745	5,990	26,451

See Notes to Consolidated Financial Statements

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. ORGANIZATION AND PRINCIPLES OF CONSOLIDATION

The accompanying consolidated financial statements represent the respective, consolidated financial results of NW Holdings and NW Natural and all respective companies that each registrant directly or indirectly controls, either through majority ownership or otherwise. This is a combined report of NW Holdings and NW Natural, which includes separate consolidated financial statements for each registrant.

NW Natural's regulated natural gas distribution activities are reported in the natural gas distribution (NGD) segment. The NGD segment is NW Natural's core operating business and serves residential, commercial, and industrial customers in Oregon and southwest Washington. The NGD segment is the only reportable segment for NW Holdings and NW Natural. All other activities, water, wastewater and water services businesses, and other investments are aggregated and reported as other at their respective registrant.

NW Holdings and NW Natural consolidate all entities in which they have a controlling financial interest. Investments in corporate joint ventures and partnerships that NW Holdings does not directly or indirectly control, and for which it is not the primary beneficiary, include NNG Financial's investment in Kelso-Beaver Pipeline and NWN Water's investment in Avion Water Company, Inc., which are accounted for under the equity method. NW Natural RNG Holding Company, LLC holds investments in Lexington Renewable Energy, LLC and Dakota City Renewable Energy LLC, which are also accounted for under the equity method. See Note 13 for activity related to equity method investments. NW Holdings and its direct and indirect subsidiaries are collectively referred to herein as NW Holdings, and NW Natural and its direct and indirect subsidiaries are collectively referred to herein as NW Natural. The consolidated financial statements of NW Holdings and NW Natural are presented after elimination of all intercompany balances and transactions.

Notes to the consolidated financial statements reflect the activity of continuing operations for both NW Holdings and NW Natural for all periods presented, unless otherwise noted. Certain reclassifications have been made to conform prior period information to the current presentation. The reclassifications did not have a material effect on our consolidated financial statements.

2. SIGNIFICANT ACCOUNTING POLICIES

Use of Estimates

The preparation of financial statements in conformity with generally accepted accounting principles in the United States of America (U.S. GAAP) requires management to make estimates and assumptions that affect reported amounts in the consolidated financial statements and accompanying notes. Actual amounts could differ from those estimates, and changes would most likely be reported in future periods. Management believes the estimates and assumptions used are reasonable.

Industry Regulation

NW Holdings' principal business is to operate as a holding company for NW Natural and its other subsidiaries. NW Natural's principal business is the distribution of natural gas, which is regulated by the OPUC and WUTC. NW Natural also has natural gas storage services, which are regulated by the FERC, and to a certain extent by the OPUC and WUTC. Additionally, certain of NW Holdings' subsidiaries own water businesses, which are regulated by the public utility commission in the state in which the water utility is located, which is currently Oregon, Washington, Idaho, Texas and Arizona. Wastewater businesses, to the extent they are regulated, are generally regulated by the public utility commissions in the state in which the wastewater utility is located, which is currently Texas and Arizona. Accounting records and practices of the regulated businesses conform to the requirements and uniform system of accounts prescribed by these regulatory authorities in accordance with U.S. GAAP. The businesses in which customer rates are regulated have approved cost-based rates which are intended to allow such businesses to earn a reasonable return on invested capital.

In applying regulatory accounting principles, NW Holdings and NW Natural capitalize or defer certain costs and revenues as regulatory assets and liabilities pursuant to orders of the applicable state public utility commission, which provide for the recovery of revenues or expenses from, or refunds to, utility customers in future periods, including a return or a carrying charge in certain cases.

Amounts NW Natural deferred as regulatory assets and liabilities were as follows:

In thousands	Regulatory Assets 2023	Regulatory Assets 2022
NW Natural:		
Current:		
Unrealized loss on derivatives(1)	$ 98,661	$ 28,728
Gas costs	9,301	61,223
Environmental costs(2)	9,950	7,392
Decoupling(3)	2,288	—
Pension balancing(4)	7,131	7,131
Income taxes	2,208	2,208
Washington Climate Commitment Act compliance	20,537	—
COVID-19 deferrals and expenses, net	9,685	789
Other(5)	18,509	10,020
Total current	$ 178,270	$ 117,491
Non-current:		
Unrealized loss on derivatives(1)	$ 28,055	$ 20,838
Pension balancing(4)	27,460	32,997
Income taxes	10,731	10,943
Pension and other postretirement benefit liabilities	114,010	101,413
Environmental costs(2)	118,619	104,253
Gas costs	1,917	22,355
Decoupling(3)	1,017	—
COVID-19 deferrals and expenses, net	1,080	14,555
Other(5)	30,529	33,053
Total non-current	333,418	340,407
Other (NW Holdings)	25	25
Total non-current -NW Holdings	$ 333,443	$ 340,432

In thousands	Regulatory Liabilities 2023	Regulatory Liabilities 2022
NW Natural:		
Current:		
Gas costs	$ 6,375	$ 4,121
Unrealized gain on derivatives(1)	11,184	194,236
Decoupling(3)	7,612	14,026
Income taxes(6)	4,726	7,166
Asset optimization revenue sharing	31,583	26,368
Washington Climate Commitment Act proceeds	17,199	—
Other(5)	6,233	2,636
Total current - NW Natural	84,912	248,553
Other (NW Holdings)	50	29
Total current - NW Holdings	$ 84,962	$ 248,582
Non-current:		
Gas costs	$ 8,556	$ 12,644
Unrealized gain on derivatives(1)	373	5,045
Decoupling(3)	2,118	3,814
Income taxes(6)	169,485	174,212
Accrued asset removal costs(7)	496,235	467,742
Asset optimization revenue sharing	2,325	8,401
Other(5)	15,855	16,741
Total non-current - NW Natural	694,947	688,599
Other (NW Holdings)	949	979
Total non-current -NW Holdings	$ 695,896	$ 689,578

(1) Unrealized gains or losses on derivatives are non-cash items and, therefore, do not earn a rate of return or a carrying charge. These amounts are recoverable through natural gas distribution rates as part of the annual Purchased Gas Adjustment (PGA) mechanism when realized at settlement.
(2) Refer to the Environmental Cost Deferral and Recovery table in Note 17 for a description of environmental costs.
(3) This deferral represents the margin adjustment resulting from differences between actual and expected volumes.
(4) Balance represents deferred net periodic benefit costs as approved by the OPUC.
(5) Balances consist of deferrals and amortizations under approved regulatory mechanisms and typically earn a rate of return or carrying charge.
(6) Balance represents excess deferred income tax benefits subject to regulatory flow-through. See Note 11.
(7) Estimated costs of removal on certain regulated properties are collected through rates. See "Accounting Policies—*Plant, Property, and Accrued Asset Removal Costs*" below.

The amortization period for NW Natural's regulatory assets and liabilities ranges from less than one year to an indeterminable period. Regulatory deferrals for gas costs payable are generally amortized over 12 months beginning each November 1 following the gas contract year during which the deferred gas costs are recorded. Similarly, most other regulatory deferred accounts are amortized over 12 months. However, certain regulatory account balances, such as income taxes, environmental costs, pension liabilities, and accrued asset removal costs, are large and tend to be amortized over longer periods once NW Natural has agreed upon an amortization period with the respective regulatory agency.

We believe all costs incurred and deferred at December 31, 2023 are prudent. All regulatory assets are reviewed annually for recoverability, or more often if circumstances warrant. If we should determine that all or a portion of these regulatory assets no longer meet the criteria for continued application of regulatory accounting, then NW Holdings and NW Natural would be required to write-off the net unrecoverable balances in the period such determination is made.

Regulatory interest income of $6.5 million and $7.0 million and regulatory interest expense of $2.9 million and $2.0 million was recognized within other income (expense), net for the years ended December 31, 2023 and 2022, respectively.

Environmental Regulatory Accounting

See Note 17 for information about the SRRM and OPUC orders regarding implementation.

New Accounting Standards

NW Natural and NW Holdings consider the applicability and impact of all accounting standards updates (ASUs) issued by the Financial Accounting Standards Board (FASB). ASUs not listed below were assessed and determined to be either not applicable or are expected to have minimal impact on consolidated financial position or results of operations.

Recently Issued Accounting Pronouncements

JOINT VENTURE FORMATIONS. In August 2023, the FASB issued ASU 2023-05, which requires a joint venture to initially measure all contributions received upon its formation at fair value. The standard is effective for all joint venture entities with a formation date on or after January 1, 2025, with early adoption permitted. The adoption of this standard is not anticipated to have a material impact on our results of operations, liquidity or capital resources.

SEGMENT REPORTING. In November 2023, the FASB issued ASU 2023-07, which requires additional disclosures about significant segment expenses. The disclosures are required beginning with our annual report for the year ending December 31, 2024. The adoption of this standard is not anticipated to have a material impact on our results of operations, liquidity or capital resources.

IMPROVEMENTS TO INCOME TAX DISCLOSURES. In December 2023, the FASB issued ASU 2023-09, which requires additional disclosures about income taxes. The disclosures are required beginning with our annual report for the year ending December 31, 2025. The adoption of this standard is not anticipated to have a material impact on our results of operations, liquidity or capital resources.

Recent Securities and Exchange Commission (SEC) Final Rules

RECOVERY OF ERRONEOUSLY AWARDED COMPENSATION. In October 2022, the SEC adopted the final rule under SEC Release No. 33-11126, Listing Standards for Recovery of Erroneously Awarded Compensation, which directs the national securities exchanges and associations that list securities to establish listing standards requiring each issuer to develop and implement a clawback policy to recoup incentive-based compensation erroneously awarded to executive officers. The policy is included as an exhibit to our annual report for the year ending December 31, 2023.

INSIDER TRADING ARRANGEMENTS. In December 2022, the SEC adopted the final rule under SEC Release No. 33-11138, Insider Trading Arrangements and Related Disclosures, which requires new disclosures regarding insider trading policies and procedures, the use of certain insider trading plans and director and executive compensation regarding equity compensation awards made close in time to disclosure of material nonpublic information. The policy will be included as an exhibit to our annual report for the year ending December 31, 2024.

CYBERSECURITY DISCLOSURES. In July 2023, the SEC issued a final rule under SEC Release No. 33-11216, Cybersecurity Risk Management, Strategy, Governance, and Incident Disclosure, which requires new disclosures regarding material cybersecurity incidents and require periodic disclosures about registrant's processes to assess, identify, and manage material cybersecurity risks, management's role in assessing and managing material cybersecurity risks, and the board of directors' oversight of cybersecurity risks. The disclosures were required beginning with our annual report for the year ending December 31, 2023.

Accounting Policies

The accounting policies discussed below apply to both NW Holdings and NW Natural.

Plant, Property, and Accrued Asset Removal Costs

Plant and property are stated at cost, including capitalized labor, materials, and overhead. In accordance with regulatory accounting standards, the cost of acquiring and constructing long-lived plant and property generally includes an allowance for funds used during construction (AFUDC) or capitalized interest. AFUDC represents the regulatory financing cost incurred when debt and equity funds are used for construction (see "*AFUDC*" below). When constructed assets are subject to market-based rates rather than cost-based rates, the financing costs incurred during construction are included in capitalized interest in accordance with U.S. GAAP, not as regulatory financing costs under AFUDC.

In accordance with long-standing regulatory treatment, our depreciation rates consist of three components: one based on the average service life of the asset, a second based on the estimated salvage value of the asset, and a third based on the asset's estimated cost of removal. We collect, through rates, the estimated cost of removal on certain regulated properties through depreciation expense, with a corresponding offset to accumulated depreciation. These removal costs are non-legal obligations as defined by regulatory accounting guidance. Therefore, we have included these costs as non-current regulatory liabilities rather than as accumulated depreciation on our consolidated balance sheets. In the rate setting process, the liability for removal costs is treated as a reduction to the net rate base on which the NGD business has the opportunity to earn its allowed rate of return.

The costs of NGD plant retired or otherwise disposed of are removed from NGD plant and charged to accumulated depreciation for recovery or refund through future rates. Gains from the sale of regulated assets are generally deferred and refunded to customers. For assets not related to NGD, we record a gain or loss upon the disposal of the property, and the gain or loss is recorded in operating income or loss in the consolidated statements of comprehensive income.

The provision for depreciation of NGD property, plant, and equipment is recorded under the group method on a straight-line basis with rates computed in accordance with depreciation studies approved by regulatory authorities. The weighted-average depreciation rate for NGD assets in service was approximately 3.0% for 2023, 2022 and 2021, reflecting the approximate weighted-average economic life of the property. This includes 2023 weighted-average depreciation rates for the following asset categories: 2.5% for transmission and distribution plant, 2.2% for gas storage facilities, 6.7% for general plant, and 5.3% for intangible and other fixed assets.

AFUDC. Certain additions to NGD plant include AFUDC, which represents the net cost of debt and equity funds used during construction. AFUDC is calculated using actual interest rates for debt and authorized rates for ROE, if applicable. If short-term debt balances are less than the total balance of construction work in progress, then a composite AFUDC rate is used to represent interest on all debt funds, shown as a reduction to interest charges, and on ROE funds, shown as other income. While cash is not immediately recognized from recording AFUDC, it is realized in future years through rate recovery resulting from the higher NGD cost of service. Our composite AFUDC rate was 7.5% in 2023, 2.8% in 2022, and 0.7% in 2021.

IMPAIRMENT OF LONG-LIVED ASSETS. We review the carrying value of long-lived assets whenever events or changes in circumstances indicate the carrying amount of the assets may not be recoverable. Factors that would necessitate an impairment assessment of long-lived assets include a significant adverse change in the extent or manner in which the asset is used, a significant adverse change in legal factors or business climate that could affect the value of the asset, or a significant decline in the observable market value or expected future cash flows of the asset, among others.

When such factors are present, we assess the recoverability by determining whether the carrying value of the asset will be recovered through expected future cash flows. An asset is determined to be impaired when the carrying value of the asset exceeds the expected undiscounted future cash flows from the use and eventual disposition of the asset. If an impairment is indicated, we record an impairment loss for the difference between the carrying value and the fair value of the long-lived assets. Fair value is estimated using appropriate valuation methodologies, which may include an estimate of discounted cash flows.

Cash and Cash Equivalents

Cash and cash equivalents include cash on hand plus highly liquid investment accounts with original maturity dates of three months or less. These investments are readily convertible to cash with fair value approximating cost.

At December 31, 2023, NW Holdings had outstanding checks of $7.5 million, substantially all of which is recorded at NW Natural, and at December 31, 2022, NW Holdings had $5.8 million outstanding checks. These balances are included in accounts payable in the NW Holdings and NW Natural balance sheets.

Restricted Cash

Restricted cash is primarily comprised of funds from public purpose charges for programs that assist low-income customers with bill payments or energy efficiency. These balances are included in other current assets in the NW Holdings and NW Natural balance sheets. There were no transfers between restricted cash and cash and cash equivalents during the years ended December 31, 2023 and 2022.

The following table provides a reconciliation of the cash, cash equivalents and restricted cash balances at NW Holdings as of December 31, 2023 and 2022:

	December 31,	
In thousands	2023	2022
Cash and cash equivalents	$ 32,920	$ 29,270
Restricted cash included in other current assets	16,704	11,694
Cash, cash equivalents and restricted cash	$ 49,624	$ 40,964

The following table provides a reconciliation of the cash, cash equivalents and restricted cash balances at NW Natural as of December 31, 2023 and 2022:

	December 31,	
In thousands	2023	2022
Cash and cash equivalents	$ 19,841	$ 12,977
Restricted cash included in other current assets	16,679	11,694
Cash, cash equivalents and restricted cash	$ 36,520	$ 24,671

Revenue Recognition and Accrued Unbilled Revenue

Revenues, derived primarily from the sale and transportation of natural gas, are recognized upon delivery of gas or water, or service to customers. Revenues include accruals for gas or water delivered but not yet billed to customers based on estimates of deliveries from meter reading dates to month end (accrued unbilled revenue). Accrued unbilled revenue is dependent upon a number of factors that require management's judgment, including total natural gas receipts and deliveries, customer use of natural gas or water by billing cycle, and weather factors. Accrued unbilled revenue is reversed the following month when actual billings occur. NW Holdings' accrued unbilled revenue at December 31, 2023 and 2022 was $83.1 million and $89.0 million, respectively, substantially all of which is accrued unbilled revenue at NW Natural.

Revenues not related to NGD are derived primarily from Interstate Storage Services, asset management activities at the Mist gas storage facility, and other investments and business activities. At the Mist underground storage facility, revenues are primarily firm service revenues in the form of fixed monthly reservation charges. In addition, we also have asset management service revenue from an independent energy marketing company that optimizes commodity, storage, and pipeline capacity release transactions. Under this agreement, guaranteed asset management revenue is recognized using a straight-line, pro-rata methodology over the term of each contract. Revenues earned above the guaranteed amount are recognized as they are earned.

Revenue Taxes

Revenue-based taxes are primarily franchise taxes, which are collected from customers and remitted to taxing authorities. Revenue taxes are included in operating expenses in the statements of comprehensive income for NW Holdings and NW Natural. Revenue taxes at NW Holdings were $48.7 million, $41.8 million, and $34.7 million for 2023, 2022, and 2021, respectively.

Accounts Receivable and Allowance for Uncollectible Accounts

Accounts receivable consist primarily of amounts due for natural gas sales and transportation services to NGD customers, plus amounts due for gas storage services. NW Holdings and NW Natural establish allowances for uncollectible accounts (allowance) for trade receivables, including accrued unbilled revenue, based on the aging of receivables, collection experience of past due account balances including payment plans, and historical trends of write-offs as a percent of revenues. A specific allowance is established and recorded for large individual customer receivables when amounts are identified as unlikely to be partially or fully recovered. Inactive accounts are written-off against the allowance after they are 120 days past due or when deemed uncollectible. Differences between the estimated allowance and actual write-offs will occur based on a number of factors, including changes in economic conditions, customer creditworthiness, and natural gas prices. The allowance for uncollectible accounts is adjusted quarterly, as necessary, based on information currently available.

ALLOWANCE FOR TRADE RECEIVABLES. The payment term of our NGD receivables is generally 15 days. For these short-term receivables, it is not expected that forecasted economic conditions would significantly affect the loss estimates under stable economic conditions. For extreme situations like a financial crisis, natural disaster, and the economic slowdown caused by the COVID-19 pandemic, we enhanced our review and analysis.

For the residential and commercial uncollectible provision, we primarily followed our standard methodology, which includes assessing historical write-off trends and current information on delinquent accounts. Beginning October 1, 2022, new collection rules from the OPUC applied to residential and commercial customers. This included enhanced protections for low-income customers, a return to pre-pandemic time payment arrangements terms, revised disconnection rules during the heating season, and other items. As a result of these Oregon rule changes and our recent collection process experience, we augmented our provision review for accounts in the following categories: closed or inactive accounts aged less than 120 days, accounts on payment plans, and all other open accounts not on payment plans. For industrial accounts, we continue to assess the provision on an account-by-account basis with specific reserves taken as necessary. NW Natural will continue to closely monitor and evaluate our accounts receivable and the provision for uncollectible accounts.

The following table presents the activity related to the NW Holdings provision for uncollectible accounts by pool, substantially all of which is related to NW Natural's accounts receivable:

	As of December 31, 2022	Year ended December 31, 2023		As of December 31, 2023
In thousands	Beginning Balance	Provision recorded, net of adjustments	Write-offs recognized, net of recoveries	Ending Balance
Allowance for uncollectible accounts:				
Residential	$ 2,155	$ 2,743	$ (2,501)	$ 2,397
Commercial	400	454	(353)	501
Industrial	188	(122)	(1)	65
Accrued unbilled and other	336	47	(118)	265
Total NW Natural	3,079	3,122	(2,973)	3,228
Other - NW Holdings	217	10	—	227
Total NW Holdings	$ 3,296	$ 3,132	$ (2,973)	$ 3,455

ALLOWANCE FOR NET INVESTMENTS IN SALES-TYPE LEASES. NW Natural currently holds two net investments in sales-type leases, with substantially all of the net investment balance related to the North Mist natural gas storage agreement with Portland General Electric (PGE) which is billed under an OPUC-approved rate schedule. See Note 7 for more information on the North Mist lease. Due to the nature of this service, PGE may recover the costs of the lease through general rate cases. Therefore, we expect the risk of loss due to the credit of this lessee to be remote. As such, no allowance for uncollectibility was recorded for our sales-type lease receivables. NW Natural will continue monitoring the credit health of the lessees and the overall economic environment, including the economic factors closely tied to the financial health of our current and future lessees.

Inventories

NGD gas inventories, which consist of natural gas in storage for NGD customers, are stated at the lower of weighted-average cost or net realizable value. The regulatory treatment of these inventories provides for cost recovery in customer rates. NGD gas inventories injected into storage are priced in inventory based on actual purchase costs, and those withdrawn from storage are charged to cost of gas during the period they are withdrawn at the weighted-average inventory cost.

Gas storage inventories mainly consist of natural gas received as fuel-in-kind from storage customers. Gas storage inventories are valued at the lower of average cost or net realizable value. Cushion gas is not included in inventory balances, is recorded at original cost, and is classified as a long-term plant asset.

Materials and supplies inventories consist of inventories both related to and unrelated to NGD and are stated at the lower of average cost or net realizable value.

NW Natural's NGD and gas storage inventories totaled $47.2 million and $61.9 million at December 31, 2023 and 2022, respectively. At December 31, 2023 and 2022, NW Holdings' materials and supplies inventories, which are comprised primarily of NW Natural's materials and supplies, totaled $25.6 million and $23.5 million, respectively.

During 2023 and 2022, NW Natural entered into certain agreements to purchase renewable thermal certificates (RTCs). RTCs are initially recorded at cost and subsequently assessed for impairment based on the lower-of-cost or market model. NW Natural's RTCs inventory totaled $0.5 million and $1.7 million at December 31, 2023 and 2022, respectively.

Greenhouse Gas Allowances

NW Natural is subject to greenhouse gas (GHG) emission reduction requirements under the Washington Climate Commitment Act (CCA) regulations and is likely to be subject to GHG emission reductions under a separate program in Oregon upon conclusion of the new ODEQ rulemaking. The new rulemaking was commenced upon the judicial invalidation of the prior rules promulgated by the ODEQ and is expected to take approximately 12 months.

Under Washington's CCA, emission reduction compliance mechanisms include: 1) allowances distributed at no cost by the state, 2) purchasing allowances at state-run auctions or secondary markets, 3) purchasing carbon offsets, and 4) supplying alternative gaseous fuels, such as renewable natural gas and hydrogen.

NW Natural will account for all purchased Washington allowances as inventory at the lower of cost or market. Any compliance instruments or allowances that are acquired through government allocations at no cost will be accounted for as inventory at no cost. As of December 31, 2023, NW Natural had $39.3 million of emissions allowances for compliance in Washington recorded as inventory.

The CCA allows for the sale of compliance instruments or allowances, and as a result, should NW Natural sell these it will recognize revenue when title to the instrument or allowance is transferred to a counterparty, and NW Natural will recognize expense at the time of recognition of the related sale. In September and December 2023, NW Natural consigned no-cost allowances to Washington auctions and received $10.0 million and $7.1 million, respectively, in cash, which proceeds were recorded as a regulatory liability for the benefit of customers.

We measure the compliance obligation, which is based on emissions, at the carrying value of inventory held plus the fair value of any additional emission allowances NW Natural would need to purchase to satisfy the obligations. Under the Washington program, NW Natural has recognized a $19.9 million liability as of December 31, 2023. We expect that the costs to comply with the Washington program will be recovered from utility customers through rates. As a result, NW Natural recognized $20.5 million of deferred costs as of December 31, 2023.

Gas Reserves

Gas reserves are payments to acquire and produce natural gas reserves. Gas reserves are stated at cost, adjusted for regulatory amortization, with the associated deferred tax benefits recorded as liabilities on the balance sheet. The current portion is calculated based on expected gas deliveries within the next fiscal year. NW Natural recognizes regulatory amortization of this asset on a volumetric basis calculated using the estimated gas reserves and the estimated therms extracted and sold each month. The amortization of gas reserves is recorded to cost of gas along with gas production revenues and production costs. See Note 13.

Derivatives

NW Natural's derivatives are measured at fair value and recognized as either assets or liabilities on the balance sheet. Changes in the fair value of the derivatives are recognized in earnings unless specific regulatory or hedge accounting criteria are met. Accounting for derivatives and hedges provides an exception for contracts intended for normal purchases and normal sales for which physical delivery is probable. In addition, certain derivative contracts are approved by regulatory authorities for recovery or refund through customer rates. Accordingly, the changes in fair value of these approved contracts are deferred as regulatory assets or liabilities pursuant to regulatory accounting principles. NW Natural's financial derivatives generally qualify for deferral under regulatory accounting. NW Natural's index-priced physical derivative contracts also qualify for regulatory deferral accounting treatment.

Derivative contracts entered into for NGD requirements after the annual PGA rate has been set and maturing during the PGA year are subject to the PGA incentive sharing mechanism. In Oregon, NW Natural participates in a PGA sharing mechanism under which it is required to select either an 80% or 90% deferral of higher or lower gas costs such that the impact on current earnings from the gas cost sharing is either 20% or 10% of gas cost differences compared to PGA prices, respectively. For each of the PGA years in Oregon beginning November 1, 2023, 2022, and 2021, NW Natural selected the 90% deferral of gas cost differences. In Washington, 100% of the differences between the PGA prices and actual gas costs are deferred. See Note 15.

NW Holdings and NW Natural have financial derivative policies that set forth guidelines for using selected derivative products to support prudent risk management strategies within designated parameters. NW Natural's objective for using derivatives is to decrease the volatility of gas prices, interest rates, and cash flows without speculative risk. The use of derivatives is permitted only after the risk exposures have been identified, are determined to exceed acceptable tolerance levels, and are determined necessary to support normal business activities. NW Natural does not enter into derivative instruments for trading purposes. All commodity and foreign exchange derivatives are currently held at NW Natural, and interest rate swaps are held at NW Holdings and NWN Water.

Fair Value

In accordance with fair value accounting, we use the following fair value hierarchy for determining inputs for our debt, pension plan assets, and derivative fair value measurements:

- Level 1: Valuation is based on quoted prices for identical instruments traded in active markets;
- Level 2: Valuation is based on quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market; and
- Level 3: Valuation is generated from model-based techniques that use significant assumptions not observable in the market. These unobservable assumptions reflect our own estimates of assumptions market participants would use in valuing the asset or liability.

In addition, the fair value for certain pension trust investments is determined using Net Asset Value per share (NAV) as a practical expedient, and therefore they are not classified within the fair value hierarchy. These investments primarily consist of institutional investment products.

When developing fair value measurements, it is our policy to use quoted market prices whenever available or to maximize the use of observable inputs and minimize the use of unobservable inputs when quoted market prices are not available. Fair values are primarily developed using industry-standard models that consider various inputs including: (a) quoted future prices for commodities; (b) forward currency prices; (c) time value; (d) volatility factors; (e) current market and contractual prices for underlying instruments; (f) market interest rates and yield curves; (g) credit spreads; and (h) other relevant economic measures. NW Natural considers liquid points for natural gas hedging to be those points for which there are regularly published prices in a nationally recognized publication or where the instruments are traded on an exchange.

Goodwill and Business Combinations

NW Holdings, through its wholly-owned subsidiary NWN Water and NWN Water's wholly-owned subsidiaries, has completed various acquisitions that resulted in the recognition of goodwill. Goodwill is measured as the excess of the acquisition-date fair value of the consideration transferred over the acquisition-date fair value of the net identifiable assets assumed. Adjustments are recorded during the measurement period to finalize the allocation of the purchase price. The carrying value of goodwill is reviewed annually during the fourth quarter, or whenever events or changes in circumstance indicate that such carrying values may not be recoverable. The goodwill assessment policy begins with a qualitative analysis in which events and circumstances are evaluated, including macroeconomic conditions, industry and market conditions, regulatory environments, and overall financial performance of the reporting unit. If the qualitative assessment indicates that the carrying value may be at risk of recoverability, a quantitative evaluation is performed to measure the carrying value of the goodwill against the fair value of the reporting unit. The reporting unit is determined primarily based on current operating segments and the level of review provided by the Chief Operating Decision Maker (CODM) and/or segment management on the operating segment's financial results. Reporting units are evaluated periodically for changes in the corporate environment.

As of December 31, 2023 and 2022, NW Holdings had goodwill of $163.3 million and $149.3 million, respectively. All of NW Holdings' goodwill was acquired through the business combinations completed by NWN Water and its wholly-owned subsidiaries. No impairment charges were recorded as a result of the fourth quarter goodwill impairment assessment.

Business combinations are accounted for using the acquisition method. The cost of an acquisition is measured as the aggregate of the consideration transferred, measured at fair value at the acquisition date, and the fair value of any non-controlling interest in the acquiree. Acquisition-related costs are expensed as incurred. When NW Natural acquires a business, it assesses the financial assets acquired and liabilities assumed for appropriate classification and designation in accordance with the contractual terms, economic circumstances and pertinent conditions as of the acquisition date. When there is substantial judgment or uncertainty around the fair value of acquired assets, we may engage a third party expert to assist in determining the fair values of certain assets or liabilities.

Income Taxes

We account for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, deferred tax assets and liabilities are determined on the basis of the differences between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the enactment date period unless, for NW Natural, a regulatory order specifies deferral of the effect of the change in tax rates over a longer period of time.

For NW Natural, deferred income tax assets and liabilities are also recognized for temporary differences where the deferred income tax benefits or expenses have previously been flowed through in the ratemaking process of the NGD business. Regulatory tax assets and liabilities are recorded on these deferred tax assets and liabilities to the extent it is believed they will be recoverable from or refunded to customers in future rates.

Investment tax credits associated with rate regulated plant additions are deferred for financial statement purposes and amortized over the estimated useful lives of the related plant.

NW Holdings files consolidated or combined income tax returns that include NW Natural. Income tax expense is allocated on a separate company basis incorporating certain consolidated return considerations. Subsidiary income taxes payable or receivable are generally settled with NW Holdings, the common agent for income tax matters.

Interest and penalties related to unrecognized tax benefits, if any, are recognized within income tax expense and accrued interest and penalties are recognized within the related tax liability line in the consolidated balance sheets. No accrued interest or penalties for uncertain tax benefits have been recorded. See Note 11.

Environmental Contingencies
Loss contingencies are recorded as liabilities when it is probable a liability has been incurred and the amount of the loss is reasonably estimable in accordance with accounting standards for contingencies. Estimating probable losses requires an analysis of uncertainties that often depend upon judgments about potential actions by third parties. Accruals for loss contingencies are recorded based on an analysis of potential results.

With respect to environmental liabilities and related costs, estimates are developed based on a review of information available from numerous sources, including completed studies and site specific negotiations. NW Natural's policy is to accrue the full amount of such liability when information is sufficient to reasonably estimate the amount of probable liability. When information is not available to reasonably estimate the probable liability, or when only the range of probable liabilities can be estimated and no amount within the range is more likely than another, it is our policy to accrue at the low end of the range. Accordingly, due to numerous uncertainties surrounding the course of environmental remediation and the preliminary nature of several site investigations, in some cases, it may not be possible to reasonably estimate the high end of the range of possible loss. In those cases, the nature of the potential loss and the fact that the high end of the range cannot be reasonably estimated is disclosed. See Note 17.

Unconsolidated Affiliates
NW Holdings, NW Natural and NWN Water have equity interests in businesses which we account for under the equity method as we do not exercise control of the major operating and financial policies. The business transactions with our equity method investments are not significant. We regularly assess the profitability and valuation of our investments for any potential impairment. See Note 13.

Cloud Computing Arrangements
Implementation costs associated with its cloud computing arrangements are capitalized consistent with costs capitalized for internal-use software. Capitalized implementation costs are included in other assets in the consolidated balance sheets. The implementation costs are amortized over the term of the related hosting agreement, including renewal periods that are reasonably certain to be exercised. Amortization expense of implementation costs are recorded as operations and maintenance expenses in the consolidated statements of comprehensive income. The implementation costs are included within operating activities in the consolidated statements of cash flows.

Subsequent Events
We monitor significant events occurring after the balance sheet date and prior to the issuance of the financial statements to determine the impacts, if any, of events on the financial statements to be issued.

3. EARNINGS PER SHARE

Basic earnings or loss per share are computed using NW Holdings' net income or loss and the weighted average number of common shares outstanding for each period presented. Diluted earnings per share are computed in the same manner, except using the weighted average number of common shares outstanding plus the effects of the assumed exercise of stock options and the payment of estimated stock awards from other stock-based compensation plans that are outstanding at the end of each period presented. Anti-dilutive stock awards are excluded from the calculation of diluted earnings or loss per common share.

NW Holdings' diluted earnings or loss per share are calculated as follows:

In thousands, except per share data	2023	2022	2021
Net income	$ 93,868	$ 86,303	$ 78,666
Average common shares outstanding - basic	36,213	33,934	30,702
Additional shares for stock-based compensation plans (See Note 8)	52	50	50
Average common shares outstanding - diluted	36,265	33,984	30,752
Earnings per share of common stock:			
Basic	$ 2.59	$ 2.54	$ 2.56
Diluted	2.59	2.54	2.56
Additional information:			
Anti-dilutive shares	1	2	7

We primarily operate in one reportable business segment, which is NW Natural's local gas distribution business and is referred to as the NGD segment. NW Natural and NW Holdings also have investments and business activities not specifically related to the NGD segment, which are aggregated and reported as other and described below for each entity.

No individual customer accounts for over 10% of NW Holdings' or NW Natural's operating revenues.

Natural Gas Distribution

NW Natural's local gas distribution segment (NGD) is a regulated utility principally engaged in the purchase, sale, and delivery of natural gas and related services to customers in Oregon and southwest Washington. The NGD business is responsible for building and maintaining a safe and reliable pipeline distribution system, purchasing sufficient gas supplies from producers and marketers, contracting for firm and interruptible transportation of gas over interstate pipelines to bring gas from the supply basins into its service territory, and re-selling the gas to customers subject to rates, terms, and conditions approved by the OPUC or WUTC. NGD also includes taking customer-owned gas and transporting it from interstate pipeline connections, or city gates, to the customers' end-use facilities for a fee, which is approved by the OPUC or WUTC. Approximately 88% of NGD customers are located in Oregon and 12% in Washington. On an annual basis, residential and commercial customers typically account for around 60% of total NGD volumes delivered and around 90% of NGD margin. Industrial customers largely account for the remaining volumes and NGD margin. A small amount of the margin is also derived from miscellaneous services, gains or losses from an incentive gas cost sharing mechanism, and other service fees.

Industrial sectors served by the NGD business include: pulp, paper, and other forest products; the manufacture of electronic, electrochemical and electrometallurgical products; the processing of farm and food products; the production of various mineral products; metal fabrication and casting; the production of machine tools, machinery, and textiles; the manufacture of asphalt, concrete, and rubber; printing and publishing; nurseries; and government and educational institutions.

In addition to NW Natural's local gas distribution business, the NGD segment also includes the portion of the Mist underground storage facility used to serve NGD customers, North Mist gas storage, NWN Gas Reserves, which is a wholly-owned subsidiary of Energy Corp, and NW Natural RNG Holding Company, LLC, a holding company established to invest in the development and procurement of regulated renewable natural gas for NW Natural.

NW Natural

NW Natural's activities in Other include Interstate Storage Services and third-party asset management services for the Mist facility in Oregon, appliance retail center operations, and corporate operating and non-operating revenues and expenses that cannot be allocated to NGD operations.

Earnings from Interstate Storage Services assets are primarily related to firm storage capacity revenues. Earnings from the Mist facility also include revenue, net of amounts shared with NGD customers, from management of NGD assets at Mist and upstream pipeline capacity when not needed to serve NGD customers. Under the Oregon sharing mechanism, NW Natural retains 80% of the pre-tax income from these services when the costs of the capacity were not included in NGD rates, or 10% of the pre-tax income when the costs have been included in these rates. The remaining 20% and 90%, respectively, are recorded to a deferred regulatory account for crediting back to NGD customers.

NW Holdings

NW Holdings' activities in Other include all remaining activities not associated with NW Natural, specifically NWN Water, which consolidates the water and wastewater utility operations and water services businesses; NWN Water's equity investment in Avion Water Company, Inc.; NWN Gas Storage, a wholly-owned subsidiary of NWN Energy; other pipeline assets in NNG Financial; and NW Natural Renewables Holdings, LLC and its non-regulated renewable natural gas activities. Other also includes corporate revenues and expenses that cannot be allocated to other operations, including certain business development activities.

Segment Information Summary

Inter-segment transactions were immaterial for the periods presented. The following table presents summary financial information concerning the reportable segment and other operations.

In thousands	NGD	Other (NW Natural)	NW Natural	Other (NW Holdings)	NW Holdings
2023					
Operating revenues	$ 1,136,400	$ 22,223	$ 1,158,623	$ 38,852	$ 1,197,475
Depreciation	118,417	1,097	119,514	6,067	125,581
Income (loss) from operations	170,591	15,054	185,645	(704)	184,941
Net income (loss)	94,042	10,695	104,737	(10,869)	93,868
Capital expenditures	285,998	4,847	290,845	36,502	327,347
Total assets at December 31, 2023	4,458,117	53,260	4,511,377	355,715	4,867,092
2022					
Operating revenues	$ 989,752	$ 24,587	$ 1,014,339	$ 23,014	$ 1,037,353
Depreciation	111,871	1,086	112,957	3,750	116,707
Income (loss) from operations	152,839	16,535	169,374	(1,897)	167,477
Net income (loss)	79,690	11,874	91,564	(5,261)	86,303
Capital expenditures	315,979	2,707	318,686	19,916	338,602
Total assets at December 31, 2022	4,392,699	60,019	4,452,718	295,608	4,748,326
2021					
Operating revenues	$ 816,887	$ 26,170	$ 843,057	$ 17,343	$ 860,400
Depreciation	109,475	1,029	110,504	3,030	113,534
Income (loss) from operations	147,902	17,331	165,233	(2,116)	163,117
Net income (loss)	68,988	12,184	81,172	(2,506)	78,666
Capital expenditures	275,267	2,970	278,237	15,655	293,892
Total assets at December 31, 2021	3,846,112	52,260	3,898,372	166,232	4,064,604

Natural Gas Distribution Margin

NGD margin is the primary financial measure used by the CODM, consisting of NGD operating revenues, reduced by the associated cost of gas, environmental remediation expense, and revenue taxes. The cost of gas purchased for NGD customers is generally a pass-through cost in the amount of revenues billed to regulated NGD customers. Environmental remediation expense represents collections received from customers through environmental recovery mechanisms in Oregon and Washington as well as adjustments for the Oregon environmental earnings test when applicable. This is offset by environmental remediation expense presented in operating expenses. Revenue taxes are collected from NGD customers and remitted to taxing authorities. The collections from customers are offset by the expense recognition of the obligation to the taxing authority. By subtracting cost of gas, environmental remediation expense, and revenue taxes from NGD operating revenues, NGD margin provides a key metric used by the CODM in assessing the performance of the NGD segment.

The following table presents additional segment information concerning NGD margin:

In thousands	2023	2022	2021
NGD margin calculation:			
NGD operating revenues	$ 1,117,498	$ 970,124	$ 797,800
Other regulated services	18,902	19,628	19,087
Total NGD operating revenues	1,136,400	989,752	816,887
Less: NGD cost of gas	500,061	429,861	292,538
Environmental remediation expense	12,899	12,389	9,938
Revenue taxes	48,432	41,627	34,600
NGD margin	$ 575,008	$ 505,875	$ 479,811

5. COMMON STOCK

As of December 31, 2023 and 2022, NW Holdings had 100 million shares of common stock authorized. As of December 31, 2023, NW Holdings had 306,757 shares reserved for issuance of common stock under the Employee Stock Purchase Plan (ESPP) and 325,201 shares reserved for issuance under the Dividend Reinvestment and Direct Stock Purchase Plan (DRPP). At NW Holdings' election, shares sold through the DRPP may be purchased in the open market or through original issuance of shares reserved for issuance under the DRPP.

In August 2021, NW Holdings initiated an at-the-market (ATM) equity program by entering into an equity distribution agreement under which NW Holdings may issue and sell from time to time shares of common stock, no par value, having an aggregate gross sales price of up to $200 million. NW Holdings is under no obligation to offer and sell common stock under the ATM equity program, which expires in August 2024. Any shares of common stock offered under the ATM equity program are registered on

NW Holdings' universal shelf registration statement filed with the SEC. During the year ended December 31, 2023, NW Holdings issued and sold 1,646,325 shares of common stock pursuant to the ATM equity program resulting in cash proceeds of $66.4 million, net of fees and commissions paid to agents of $1.2 million. As of December 31, 2023, NW Holdings had $43.5 million of equity available for issuance under the program. The ATM equity program was initiated to raise funds for general corporate purposes, including equity contributions to NW Holdings' subsidiaries, NW Natural and NW Natural Water. Contributions to NW Natural and NW Natural Water will be used for general corporate purposes.

Stock Repurchase Program

NW Holdings has a share repurchase program under which it may purchase its common shares on the open market or through privately negotiated transactions. NW Holdings currently has Board authorization to repurchase up to an aggregate of the greater of 2.8 million shares or $100 million. No shares of common stock were repurchased pursuant to this program during the year ended December 31, 2023. Since the plan's inception in 2000 under NW Natural, a total of 2.1 million shares have been repurchased at a total cost of $83.3 million.

The following table summarizes the changes in the number of shares of NW Holdings' common stock issued and outstanding:

In thousands	Shares
Balance, December 31, 2020	30,589
Sales to employees under ESPP	48
Stock-based compensation	49
Equity issuance	376
Sales to shareholders under DRPP	67
Balance, December 31, 2021	31,129
Sales to employees under ESPP	36
Stock-based compensation	42
Equity issuance	4,257
Sales to shareholders under DRPP	61
Balance, December 31, 2022	35,525
Sales to employees under ESPP	13
Stock-based compensation	39
Equity issuance	1,658
Sales to shareholders under DRPP	69
Shares issued in connection with business combinations	327
Balance, December 31, 2023	37,631

6. REVENUE

The following table presents disaggregated revenue from continuing operations:

	Year ended December 31, 2023				
In thousands	NGD	Other (NW Natural)	NW Natural	Other (NW Holdings)	NW Holdings
Natural gas sales	$ 1,109,223	$ —	$ 1,109,223	$ —	$ 1,109,223
Gas storage revenue, net	—	12,041	12,041	—	12,041
Asset management revenue, net	—	5,942	5,942	—	5,942
Appliance retail center revenue	—	4,240	4,240	—	4,240
Other revenue	2,929	—	2,929	38,852	41,781
Revenue from contracts with customers	1,112,152	22,223	1,134,375	38,852	1,173,227
Alternative revenue	8,198	—	8,198	—	8,198
Leasing revenue	16,050	—	16,050	—	16,050
Total operating revenues	$ 1,136,400	$ 22,223	$ 1,158,623	$ 38,852	$ 1,197,475

In thousands	Year ended December 31, 2022 NGD	Other (NW Natural)	NW Natural	Other (NW Holdings)	NW Holdings
Natural gas sales	$ 989,654	$ —	$ 989,654	$ —	$ 989,654
Gas storage revenue, net	—	11,792	11,792	—	11,792
Asset management revenue, net	—	6,965	6,965	—	6,965
Appliance retail center revenue	—	5,830	5,830	—	5,830
Other revenue	2,510	—	2,510	23,014	25,524
Revenue from contracts with customers	992,164	24,587	1,016,751	23,014	1,039,765
Alternative revenue	(19,605)	—	(19,605)	—	(19,605)
Leasing revenue	17,193	—	17,193	—	17,193
Total operating revenues	$ 989,752	$ 24,587	$ 1,014,339	$ 23,014	$ 1,037,353

In thousands	Year ended December 31, 2021 NGD	Other (NW Natural)	NW Natural	Other (NW Holdings)	NW Holdings
Natural gas sales	$ 783,027	$ —	$ 783,027	$ —	$ 783,027
Gas storage revenue, net	—	10,830	10,830	—	10,830
Asset management revenue, net	—	9,387	9,387	—	9,387
Appliance retail center revenue	—	5,953	5,953	—	5,953
Other revenue	1,615	—	1,615	17,343	18,958
Revenue from contracts with customers	784,642	26,170	810,812	17,343	828,155
Alternative revenue	14,694	—	14,694	—	14,694
Leasing revenue	17,551	—	17,551	—	17,551
Total operating revenues	$ 816,887	$ 26,170	$ 843,057	$ 17,343	$ 860,400

NW Natural's revenue represents substantially all of NW Holdings' revenue and is recognized for both registrants when the obligation to customers is satisfied and in the amount expected to be received in exchange for transferring goods or providing services. Revenue from contracts with customers contains one performance obligation that is generally satisfied over time, using the output method based on time elapsed, due to the continuous nature of the service provided. The transaction price is determined by a set price agreed upon in the contract or dependent on regulatory tariffs. Customer accounts are settled on a monthly basis or paid at time of sale and based on historical experience. It is probable that we will collect substantially all of the consideration to which we are entitled. We evaluated the probability of collection in accordance with the current expected credit losses standard.

NW Holdings and NW Natural do not have any material contract assets, as net accounts receivable and accrued unbilled revenue balances are unconditional and only involve the passage of time until such balances are billed and collected. NW Holdings and NW Natural do not have any material contract liabilities.

Revenue taxes are included in operating revenues with an equal and offsetting expense recognized in operating expenses in the consolidated statements of comprehensive income. Revenue-based taxes are primarily franchise taxes, which are collected from NGD customers and remitted to taxing authorities.

Natural Gas Distribution

Natural Gas Sales

NW Natural's primary source of revenue is providing natural gas to customers in the NGD service territory, which includes residential, commercial, industrial and transportation customers. NGD revenue is generally recognized over time upon delivery of the gas commodity or service to the customer, and the amount of consideration received and recognized as revenue is dependent on the Oregon and Washington tariffs. Customer accounts are to be paid in full each month, and there is no right of return or warranty for services provided. Revenues include firm and interruptible sales and transportation services, franchise taxes recovered from the customer, late payment fees, service fees, and accruals for gas delivered but not yet billed (accrued unbilled revenue). The accrued unbilled revenue balance is based on estimates of deliveries during the period from the last meter reading and management judgment is required for a number of factors used in this calculation, including customer use and weather factors.

We applied the significant financing practical expedient and have not adjusted the consideration NW Natural expects to receive from NGD customers for the effects of a significant financing component as all payment arrangements are settled annually. Due to the election of the right to invoice practical expedient, we do not disclose the value of unsatisfied performance obligations.

Alternative Revenue
Weather normalization (WARM) and decoupling mechanisms are considered to be alternative revenue programs. Alternative revenue programs are considered to be contracts between NW Natural and its regulator and are excluded from revenue from contracts with customers.

Leasing Revenue
Leasing revenue primarily consists of revenues from NW Natural's North Mist Storage contract with Portland General Electric (PGE) in support of PGE's gas-fired electric power generation facilities under an initial 30-year contract with options to extend, totaling up to an additional 50 years upon mutual agreement of the parties. The facility is accounted for as a sales-type lease with regulatory accounting deferral treatment. The investment is included in rate base under an established cost-of-service tariff schedule, with revenues recognized according to the tariff schedule and as such, profit upon commencement was deferred and will be amortized over the lease term. Leasing revenue also contains rental revenue from small leases of property owned by NW Natural to third parties. The majority of these transactions are accounted for as operating leases and the revenue is recognized over the term of the lease agreement. Lease revenue is excluded from revenue from contracts with customers. See Note 7 for additional information.

NW Natural Other
Gas Storage Revenue
NW Natural's other revenue includes gas storage activity, which includes Interstate Storage Services used to store natural gas for customers. Gas storage revenue is generally recognized over time as the gas storage service is provided to the customer and the amount of consideration received and recognized as revenue is dependent on set rates defined per the storage agreements. Noncash consideration in the form of dekatherms of natural gas is received as consideration for providing gas injection services to gas storage customers. This noncash consideration is measured at fair value using the average spot rate. Customer accounts are generally paid in full each month, and there is no right of return or warranty for services provided. Revenues include firm and interruptible storage services, net of the profit sharing amount refunded to NGD customers.

Asset Management Revenue
Revenues include the optimization of storage assets and pipeline capacity and are provided net of the profit sharing amount refunded to NGD customers. Certain asset management revenues received are recognized over time using a straight-line approach over the term of each contract, and the amount of consideration received and recognized as revenue is dependent on a variable pricing model. Variable revenues earned above guaranteed amounts are estimated and recognized at the end of each period using the most likely amount approach. Additionally, other asset management revenues may be based on a fixed rate. Generally, asset management accounts are settled on a monthly basis.

As of December 31, 2023, unrecognized revenue for the fixed component of the transaction price related to gas storage and asset management revenue was approximately $78.1 million. Of this amount, approximately $19.9 million will be recognized in 2024, $19.0 million in 2025, $14.9 million in 2026, $7.4 million in 2027, and $16.9 million thereafter. The amounts presented here are calculated using current contracted rates.

Appliance Retail Center Revenue
NW Natural owns and operates an appliance store that is open to the public, where customers can purchase natural gas home appliances. Revenue from the sale of appliances is recognized at the point in time in which the appliance is transferred to the third party responsible for delivery and installation services and when the customer has legal title to the appliance. It is required that the sale be paid for in full prior to transfer of legal title. The amount of consideration received and recognized as revenue varies with changes in marketing incentives and discounts offered to customers.

NW Holdings Other
NW Holdings' primary source of other revenue is providing water and wastewater services to customers. Water and wastewater service revenue is generally recognized over time upon delivery of the water commodity or service to the customer, and the amount of consideration received and recognized as revenue is dependent on the tariffs established in the state we operate. Customer accounts are to be paid in full each month, and there is no right of return or warranty for services provided.

We applied the significant financing practical expedient and have not adjusted the consideration we expect to receive from water distribution and wastewater collection customers for the effects of a significant financing component as all payment arrangements are settled annually. Due to the election of the right to invoice practical expedient, we do not disclose the value of unsatisfied performance obligations.

Lease Revenue

Leasing revenue primarily consists of NW Natural's North Mist natural gas storage agreement with PGE which is billed under an OPUC-approved rate schedule and includes an initial 30-year term beginning May 2019 with options to extend, totaling up to an additional 50 years upon mutual agreement of the parties. Under U.S. GAAP, this agreement is classified as a sales-type lease and qualifies for regulatory accounting deferral treatment. The investment in the storage facility is included in rate base under a separately established cost-of-service tariff, with revenues recognized according to the tariff schedule. As such, the selling profit that was calculated upon commencement as part of the sale-type lease recognition was deferred and will be amortized over the lease term. Billing rates under the cost-of-service tariff will be updated annually to reflect current information including depreciable asset levels, forecasted operating expenses, and the results of regulatory proceedings, as applicable, and revenue received under this agreement is recognized as operating revenue on the consolidated statements of comprehensive income. There are no variable payments or residual value guarantees. The lease does not contain an option to purchase the underlying assets.

NW Natural also maintains a sales-type lease for specialized compressor facilities to provide high pressure compressed natural gas (CNG) services. Lease payments are outlined in an OPUC-approved rate schedule over a 10-year term. There are no variable payments or residual value guarantees. The selling profit computed upon lease commencement was not significant.

Our lessor portfolio also contains small leases of property owned by NW Natural to third parties. These transactions are accounted for as operating leases and the revenue is recognized over the term of the lease agreement.

The components of lease revenue at NW Natural were as follows:

	Year ended December 31,		
In thousands	2023	2022	2021
Lease revenue			
Operating leases	$ 76	$ 74	$ 80
Sales-type leases	15,974	17,119	17,471
Total lease revenue	$ 16,050	$ 17,193	$ 17,551

Additionally, lease revenue of $0.6 million, $0.6 million and $0.5 million was recognized for each of the years ended December 31, 2023, 2022, and 2021, respectively, related to operating leases associated with non-utility property rentals. Lease revenue related to these leases was presented in other income (expense), net on the consolidated statements of comprehensive income as it is non-operating income.

Total future minimum lease payments to be received under non-cancelable leases at December 31, 2023 are as follows:

In thousands	Operating	Sales-Type	Total
NW Natural:			
2024	$ 603	$ 15,867	$ 16,470
2025	599	15,306	15,905
2026	36	14,901	14,937
2027	22	14,521	14,543
2028	—	13,983	13,983
Thereafter	—	208,316	208,316
Total minimum lease payments	$ 1,260	282,894	$ 284,154
Less: imputed interest		153,806	
Total leases receivable		$ 129,088	
Other NW Holdings:			
2024	$ 52	$ —	$ 52
2025	53	—	53
2026	56	—	56
2027	57	—	57
2028	58	—	58
Thereafter	800	—	800
Total minimum lease payments	$ 1,076	$ —	$ 1,076
NW Holdings:			
2024	$ 655	$ 15,867	$ 16,522
2025	652	15,306	15,958
2026	92	14,901	14,993
2027	79	14,521	14,600
2028	58	13,983	14,041
Thereafter	800	208,316	209,116
Total minimum lease payments	$ 2,336	282,894	$ 285,230
Less: imputed interest		153,806	
Total leases receivable		$ 129,088	

The total leases receivable above is reported under the NGD segment and the short- and long-term portions are included within other current assets and assets under sales-type leases on the consolidated balance sheets, respectively. The total amount of unguaranteed residual assets was $5.5 million and $5.1 million at December 31, 2023 and 2022, respectively, and is included in assets under sales-type leases on the consolidated balance sheets. Additionally, under regulatory accounting, the revenues and expenses associated with these agreements are presented on the consolidated statements of comprehensive income such that their presentation aligns with similar regulated activities at NW Natural.

Lease Expense

Operating Leases

We have operating leases for land, buildings and equipment. Our primary lease is for NW Natural's headquarters and operations center. Our leases have remaining lease terms of nine months to 16 years. Many of our lease agreements include options to extend the lease, which we do not include in our minimum lease terms unless they are reasonably certain to be exercised. Short-term leases with a term of 12 months or less are not recorded on the balance sheet.

As most of our leases do not provide an implicit rate and are entered into by NW Natural, we use an estimated discount rate representing the rate we would have incurred to finance the funds necessary to purchase the leased asset and is based on information available at the lease commencement date in determining the present value of lease payments.

The components of lease expense, a portion of which is capitalized, were as follows:

	Year ended December 31, 2023		
In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Operating lease expense	$ 7,244	$ 176	$ 7,420
Short-term lease expense	925	—	925

	Year ended December 31, 2022		
In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Operating lease expense	$ 7,003	$ 31	$ 7,034
Short-term lease expense	880	—	880

	Year ended December 31, 2021		
In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Operating lease expense	$ 6,859	$ 58	$ 6,917
Short-term lease expense	1,220	—	1,220

Supplemental balance sheet information related to operating leases as of December 31, 2023 is as follows:

In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Operating lease right of use assets	$ 70,728	$ 580	$ 71,308
Operating lease liabilities - current liabilities	$ 2,128	$ 205	$ 2,333
Operating lease liabilities - non-current liabilities	76,757	410	77,167
Total operating lease liabilities	$ 78,885	$ 615	$ 79,500

Supplemental balance sheet information related to operating leases as of December 31, 2022 is as follows:

In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Operating lease right of use assets	$ 72,720	$ 709	$ 73,429
Operating lease liabilities - current liabilities	$ 1,363	$ 151	$ 1,514
Operating lease liabilities - non-current liabilities	78,345	620	78,965
Total operating lease liabilities	$ 79,708	$ 771	$ 80,479

The weighted-average remaining lease terms and weighted-average discount rates for the operating leases at NW Natural were as follows:

	2023	2022
Weighted-average remaining lease term (years)	16.2	17.2
Weighted-average discount rate	7.3 %	7.3 %

Headquarters and Operations Center Lease

NW Natural commenced a 20-year operating lease agreement in March 2020 for a new headquarters and operations center in Portland, Oregon. There is an option to extend the term of the lease for two additional periods of seven years. There is a material timing difference between the minimum lease payments and expense recognition as calculated under operating lease accounting rules. OPUC issued an order allowing us to align our expense recognition with cash payments for ratemaking purposes. We recorded the difference between the minimum lease payments and the aggregate of the imputed interest on the finance lease obligation and amortization of the right-of-use asset as a regulatory asset on our balance sheet. The balance of the regulatory asset was $8.0 million and $6.9 million as of December 31, 2023 and 2022, respectively.

Maturities of operating lease liabilities at December 31, 2023 were as follows:

In thousands	NW Natural	Other (NW Holdings)	NW Holdings
2024	$ 7,484	$ 183	$ 7,667
2025	7,362	176	7,538
2026	7,361	153	7,514
2027	7,538	107	7,645
2028	7,719	6	7,725
Thereafter	101,272	6	101,278
Total lease payments	138,736	631	139,367
Less: imputed interest	59,851	16	59,867
Total lease obligations	78,885	615	79,500
Less: current obligations	2,128	205	2,333
Long-term lease obligations	$ 76,757	$ 410	$ 77,167

As of December 31, 2023, there were no finance lease liabilities at NW Natural.

Cash Flow Information

Supplemental cash flow information related to leases was as follows:

	Year ended December 31, 2023		
In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Cash paid for amounts included in the measurement of lease liabilities			
Operating cash flows from operating leases	$ 7,434	$ 176	$ 7,610
Finance cash flows from finance leases	369	—	369
Right of use assets obtained in exchange for lease obligations			
Operating leases	$ 659	$ —	$ 659
Finance leases	369	101	470

	Year ended December 31, 2022		
In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Cash paid for amounts included in the measurement of lease liabilities			
Operating cash flows from operating leases	$ 6,993	$ 64	$ 7,057
Finance cash flows from finance leases	524	—	524
Right of use assets obtained in exchange for lease obligations			
Operating leases	$ 309	$ 668	$ 977
Finance leases	270	—	270

	Year ended December 31, 2021		
In thousands	NW Natural	Other (NW Holdings)	NW Holdings
Cash paid for amounts included in the measurement of lease liabilities			
Operating cash flows from operating leases	$ 6,840	$ 58	$ 6,898
Finance cash flows from finance leases	801	—	801
Right of use assets obtained in exchange for lease obligations			
Operating leases	$ 223	$ —	$ 223
Finance leases	314	—	314

Finance Leases

NW Natural also leases building storage spaces for use as a gas meter room in order to provide natural gas to multifamily or mixed use developments. These contracts are accounted for as finance leases and typically involve a one-time upfront payment with no remaining liability. The right of use asset for finance leases was $2.6 million and $2.3 million at December 31, 2023 and 2022, respectively.

8. STOCK-BASED COMPENSATION

Stock-based compensation plans are designed to promote stock ownership in NW Holdings by employees and officers of NW Holdings and its affiliates. These compensation plans include a Long Term Incentive Plan (LTIP) and an ESPP.

Long Term Incentive Plan

The LTIP is intended to provide a flexible, competitive compensation program for eligible officers and key employees. Under the LTIP, shares of NW Holdings common stock are authorized for equity incentive grants in the form of stock, restricted stock, restricted stock units, stock options, or performance shares. An aggregate of 1,100,000 shares were authorized for issuance as of December 31, 2023. Shares awarded under the LTIP may be purchased on the open market or issued as original shares.

Of the 1,100,000 shares of common stock authorized for LTIP awards at December 31, 2023, there were 180,755 shares available for issuance under any type of award. This assumes market, performance, and service-based grants currently outstanding are awarded at the target level. There were no outstanding grants of restricted stock or stock options under the LTIP at December 31, 2023 or 2022. The LTIP stock awards are compensatory awards for which compensation expense is based on the fair value of stock awards, with expense being recognized over the performance and vesting period of the outstanding awards. Forfeitures are recognized as they occur.

Performance Shares

LTIP performance shares incorporate a combination of market, performance, and service-based factors. The following table summarizes performance share expense information:

Dollars in thousands	Shares[1]	Expense During Award Year[2]	Total Expense for Award
Estimated award:			
2021-2023 grant[3]	40,719	$ 1,581	$ 1,581
Actual award:			
2020-2022 grant	29,472	$ 888	$ 888
2019-2021 grant	37,430	$ 1,323	$ 1,323

(1) In addition to common stock shares, a participant also receives a dividend equivalent cash payment equal to the number of shares of common stock received on the award payout multiplied by the aggregate cash dividends paid per share during the performance period.
(2) Amount represents the expense recognized in the third year of the vesting period noted above. For the 2019-2021, 2020-2022, and 2021-2023 grants, mutual understanding of the award's key terms was established in the third year of the vesting period, triggering full expense recognition in 2021, 2022, and 2023, respectively.
(3) This represents the estimated number of shares to be awarded as of December 31, 2023 as certain performance share measures have been achieved. Amounts are subject to change with final payout amounts authorized by the Board of Directors in February 2024.

The aggregate number of performance shares granted and outstanding at the target and maximum levels were as follows:

Dollars in thousands	Performance Share Awards Outstanding		2023
Performance Period	Target	Maximum	Expense
2021-23	48,030	96,060	$ 1,581
2022-24	—	—	—
2023-25	—	—	—
Total	48,030	96,060	$ 1,581

Performance share awards are based on the achievement of a three-year ROIC threshold that must be met and a cumulative EPS factor, which can be modified by a TSR factor relative to a specified peer group (2021-2023, 2022-2024, and 2023-2025 performance share awards) over the three-year performance period. The performance period allows for one of the performance factors to remain variable until the first quarter of the third year of the award period. As the performance factor will not be approved until the first quarter of 2024 and 2025, there is not a mutual understanding of the awards' key terms and conditions between NW Natural and the participants as of December 31, 2023, and therefore, no expense was recognized for the 2022-2024 and 2023-2025 performance period. NW Natural will calculate the grant date fair value and recognize expense once the final performance factor has been approved. If the target is achieved for the 2022-2024 and 2023-2025 awards, NW Holdings would grant for accounting purposes 49,100 and 52,765 shares in the first quarter of 2024 and 2025, respectively.

Compensation expense is recognized in accordance with accounting standards for stock-based compensation and calculated based on performance levels achieved and an estimated fair value using the Monte-Carlo method. Due to there not being a mutual understanding of the 2022-2024 and 2023-2025 awards' key terms and conditions as noted above, the grant date fair value has not yet been determined and no non-vested shares existed at December 31, 2023. The weighted-average grant date fair value of non-vested shares associated with the 2021-2023 awards was $49.17 per share at December 31, 2023. The weighted-average grant date fair value of shares vested during the year was $49.17 per share and there were no performance shares granted during the year and no unrecognized compensation expense for accounting purposes as of December 31, 2023.

Restricted Stock Units
In 2012, RSUs began being granted under the LTIP instead of stock options under the Restated SOP. Generally, the RSUs awarded are forfeitable and include a performance-based threshold as well as a vesting period of four years from the grant date. The majority of our RSU grants obligate NW Holdings, upon vesting, to issue the RSU holder one share of common stock. The grant may also include a cash payment equal to the total amount of dividends paid per share between the grant date and vesting date of that portion of the RSU depending on the structure of the award agreement. The fair value of an RSU is equal to the closing market price of NW Holdings' common stock on the grant date. During 2023, total RSU expense was $1.9 million compared to $2.1 million in 2022 and $2.0 million in 2021. As of December 31, 2023, there was $3.1 million of unrecognized compensation cost from grants of RSUs, which is expected to be recognized over a period extending through 2027.

Information regarding the RSU activity is summarized as follows:

	Number of RSUs	Weighted - Average Price Per RSU
Nonvested, December 31, 2020	82,464	$ 59.40
Granted	38,160	49.16
Vested	(31,733)	60.06
Forfeited	(1,164)	46.82
Nonvested, December 31, 2021	87,727	54.87
Granted	48,212	46.50
Vested	(33,054)	55.90
Forfeited	(3,037)	56.34
Nonvested, December 31, 2022	99,848	50.44
Granted	45,532	48.24
Vested	(36,393)	56.65
Forfeited	(11,696)	49.98
Nonvested, December 31, 2023	97,291	$ 49.80

Employee Stock Purchase Plan
NW Holdings' ESPP allows employees of NW Holdings, NW Natural and certain designated subsidiaries to purchase common stock at 85% of the closing price on the trading day immediately preceding the initial offering date, which is set annually. For the 2023-2024 ESPP period, each eligible employee may purchase up to $21,224 worth of stock through payroll deductions over a period defined by the Board of Directors, with shares issued at the end of the subscription period.

Stock-Based Compensation Expense
Stock-based compensation expense is recognized as operations and maintenance expense or is capitalized as part of construction overhead at the entity at which the award recipient is employed. The following table summarizes the NW Holdings' financial statement impact, substantially all of which was recorded at NW Natural, of stock-based compensation under the LTIP and ESPP:

In thousands	2023	2022	2021
Operations and maintenance expense, for stock-based compensation	$ 3,293	$ 2,877	$ 3,272
Income tax benefit	(872)	(762)	(866)
Net stock-based compensation effect on net income	2,421	2,115	2,406
Amounts capitalized for stock-based compensation	$ 305	$ 351	$ 344

Short-Term Debt

The primary source of short-term liquidity for NW Holdings is cash balances, dividends from its operating subsidiaries, in particular NW Natural, available cash from a multi-year credit facility, and short-term credit facilities it may enter into from time to time.

The primary source of short-term liquidity for NW Natural is from the sale of commercial paper, available cash from a multi-year credit facility, and short-term credit facilities it may enter into from time to time. In addition to issuing commercial paper or entering into bank loans to meet working capital requirements, including seasonal requirements to finance gas purchases and accounts receivable, short-term debt may also be used to temporarily fund capital requirements. For NW Natural, commercial paper and bank loans are periodically refinanced through the sale of long-term debt or equity contributions from NW Holdings. Commercial paper, when outstanding, is sold through two commercial banks under an issuing and paying agency agreement and is supported by one or more unsecured revolving credit facilities. See "*Credit Agreements*" below.

At December 31, 2023 and 2022, NW Natural's short-term debt consisted of the following:

	December 31, 2023		December 31, 2022	
In millions	Balance Outstanding	Weighted Average Interest Rate[1]	Balance Outstanding	Weighted Average Interest Rate[1]
NW Natural:				
Commercial paper	$ 16.8	5.5 %	$ 170.2	4.6 %
Other (NW Holdings):				
Credit agreement	73.0	6.4 %	88.0	5.3 %
NW Holdings	$ 89.8		$ 258.2	

[1] Weighted average interest rate on outstanding short-term debt

The carrying cost of commercial paper approximates fair value using Level 2 inputs. See Note 2 for a description of the fair value hierarchy. At December 31, 2023, NW Natural's commercial paper had a maximum remaining maturity of 5 days and an average remaining maturity of 4 days.

Credit Agreements

NW Holdings

In November 2021, NW Holdings entered into an amended and restated $200.0 million credit agreement, with a feature that allows NW Holdings to request increases in the total commitment amount, up to a maximum of $300.0 million. The maturity date of the agreement is November 3, 2026, with an available extension of commitments for two additional one-year periods, subject to lender approval. Interest charges on the NW Holdings credit agreement were indexed to the London Interbank Offered Rate (LIBOR) through January 31, 2023. The agreement was amended to replace LIBOR with the secured overnight financing rate (SOFR) beginning February 2023. The SOFR is subject to a 10 basis point spread adjustment.

The NW Holdings credit agreement permits the issuance of letters of credit in an aggregate amount of up to $40.0 million. The principal amount of borrowings under the credit agreement is due and payable on the maturity date. The credit agreement requires NW Holdings to maintain a consolidated indebtedness to total capitalization ratio of 70% or less. Failure to comply with this covenant would entitle the lenders to terminate their lending commitments and accelerate the maturity of all amounts outstanding. NW Holdings was in compliance with this covenant at December 31, 2023 and 2022.

The NW Holdings credit agreement also requires NW Holdings to maintain debt ratings (which are defined by a formula using NW Natural's credit ratings in the event NW Holdings does not have a credit rating) with Standard & Poor's (S&P) and Moody's Investors Service, Inc. (Moody's) and notify the lenders of any change in its senior unsecured debt ratings or senior secured debt ratings, as applicable, by such rating agencies. A change in NW Holdings' debt ratings by S&P or Moody's is not an event of default, nor is the maintenance of a specific minimum level of debt rating a condition of drawing upon the credit agreement. Rather, interest rates on any loans outstanding under the credit agreements are tied to debt ratings and therefore, a change in the debt rating would increase or decrease the cost of any loans under the credit agreements when ratings are changed. NW Holdings maintains a credit rating with S&P of A+ and does not currently maintain ratings with Moody's.

There was $73.0 million and $88.0 million of outstanding balances under the NW Holdings agreement at December 31, 2023 and 2022, respectively. No letters of credit were issued or outstanding under the NW Holdings agreement at December 31, 2023 and 2022.

NW Natural

In November 2021, NW Natural entered into an amended and restated credit agreement for unsecured revolving loans totaling $400.0 million, with a feature that allows NW Natural to request increases in the total commitment amount, up to a maximum of $600.0 million. The maturity date of the agreement is November 3, 2026 with an available extension of commitments for two additional one-year periods, subject to lender approval. The credit agreement permits the issuance of letters of credit in an aggregate amount of up to $60.0 million. The principal amount of borrowings under the credit agreement is due and payable on the maturity date. Interest charges on the NW Natural credit agreement were indexed to the LIBOR through January 31, 2023. The agreement was amended to replace LIBOR with the SOFR beginning February 2023. The SOFR is subject to a 10 basis point spread adjustment.

NW Natural's credit agreement requires NW Natural to maintain a consolidated indebtedness to total capitalization ratio of 70% or less. Failure to comply with this covenant would entitle the lenders to terminate their lending commitments and accelerate the maturity of all amounts outstanding. NW Natural was in compliance with this covenant at December 31, 2023 and 2022.

The NW Natural credit agreement also requires NW Natural to maintain credit ratings with S&P and Moody's and notify the lenders of any change in NW Natural's senior unsecured debt ratings or senior secured debt ratings, as applicable, by such rating agencies. A change in NW Natural's debt ratings by S&P or Moody's is not an event of default, nor is the maintenance of a specific minimum level of debt rating a condition of drawing upon the credit agreement. Rather, interest rates on any loans outstanding under the credit agreement are tied to debt ratings and therefore, a change in the debt rating would increase or decrease the cost of any loans under the credit agreement when ratings are changed.

There was one letter of credit outstanding at December 31, 2023 under NW Natural's credit agreement and no letters of credit outstanding at December 31, 2022. In December 2023, NW Natural issued a $15 million letter of credit through its existing credit agreement, which expired January 5, 2024.

Letters of Credit Facility

In January 2024, NW Natural entered into an Uncommitted Letter of Credit and Reimbursement Agreement (LC Reimbursement Agreement), pursuant to which NW Natural agreed to reimburse each Lender acting as an issuing bank (Issuing Bank) thereunder for disbursements in respect of letters of credit (Letters of Credit) issued pursuant to the LC Reimbursement Agreement from time to time. The Company expects to use Letters of Credit issued under the facility created by the LC Reimbursement Agreement (LC Facility) primarily to support its participation in Washington Climate Commitment Act cap-and-invest program auctions.

Although there is no expressly stated maximum amount of Letters of Credit that can be issued or outstanding under the LC Facility, under current regulatory authority from the OPUC, the aggregate sum of Letters of Credit outstanding and available to be drawn under the LC Reimbursement Agreement may not exceed $100 million at any one time. The Issuing Banks have no commitment to issue Letters of Credit under the LC Facility and will have the discretion to limit and condition the terms for the issuance of Letters of Credit (including maximum face amounts) in their sole discretion.

The LC Reimbursement Agreement requires NW Natural to maintain certain ratings with S&P and Moody's. NW Natural must also notify the Administrative Agent and Lenders of any change in the S&P or Moody's Ratings, although any such change is not an event of default.

The LC Reimbursement Agreement prohibits NW Natural from permitting Consolidated Indebtedness to be greater than 70% of Total Capitalization, each as defined therein and calculated as of the end of each fiscal quarter of NW Natural. Failure to comply with this financial covenant would constitute an Event of Default under the LC Reimbursement Agreement. The occurrence of this or any other Event of Default would entitle the Administrative Agent to require cash collateral for the LC Exposure, as defined in the LC Reimbursement Agreement, and to exercise all other rights and remedies available to it and the Lenders under the Credit Documents, as defined in the LC Reimbursement Agreement, and under applicable law.

Long-Term Debt

At December 31, 2023 and 2022, NW Holdings long-term debt consisted of the following:

	December 31, 2023		December 31, 2022	
In millions	Balance Outstanding	Weighted Average Interest Rate[1]	Balance Outstanding	Weighted Average Interest Rate[1]
NW Natural first mortgage bonds	$ 1,374.7	4.7 %	$ 1,134.7	4.5 %
NW Holdings credit agreement	100.0	5.5 %	100.0	4.2 %
NWN Water credit agreement	50.0	5.8 %	50.0	4.2 %
NWN Water term loan	55.0	4.7 %	55.0	2.5 %
Other long-term debt	6.6		6.2	
Long-term debt, gross	1,586.3		1,345.9	
Less: unamortized debt issuance costs	10.0		9.0	
Less: current maturities	150.9		90.7	
Total long-term debt	$ 1,425.4		$ 1,246.2	

[1] Weighted average interest rate for the years ended December 31, 2023 and 2022.

NW Natural Long-Term Debt

NW Natural's issuance of First Mortgage Bonds (FMBs), which includes NW Natural's medium-term notes, under the Mortgage and Deed of Trust (Mortgage) is limited by eligible property, adjusted net earnings, and other provisions of the Mortgage. The Mortgage constitutes a first mortgage lien on certain gas properties owned from time to time by NW Natural, including substantially all of NW Natural's NGD property.

In August 2023, NW Natural issued and sold $80.0 million aggregate principal amount of its FMBs, 5.18% Series and $50.0 million aggregate principal amount of its FMBs, 5.23% Series. The 5.18% Bonds bear interest at the rate of 5.18% per annum, payable semi-annually on February 4 and August 4 of each year, commencing February 4, 2024, and will mature on August 4, 2034. The 5.23% Bonds bear interest at the rate of 5.23% per annum, payable semi-annually on February 4 and August 4 of each year, commencing February 4, 2024, and will mature on August 4, 2038.

In March 2023, NW Natural issued and sold $100.0 million aggregate principal amount of 5.75% Secured Medium-Term Notes, Series B due 2033 (the Notes). The Notes bear interest at the rate of 5.75% per annum, payable semi-annually on March 15 and September 15 of each year.

In January 2023, NW Natural issued and sold $100.0 million aggregate principal amount of its FMBs, 5.43% Series due January 2053. The 5.43% Bonds bear interest at the rate of 5.43% per annum, payable semi-annually on January 6 and July 6 of each year, commencing July 6, 2023, and will mature on January 6, 2053.

NW Holdings Note Purchase Agreement

In December 2023, NW Holdings entered into a Note Purchase Agreement between NW Holdings and the institutional investors named as purchasers therein. The Note Purchase Agreement provides for the issuance of (i) $100.0 million aggregate principal amount of NW Holdings' 5.78% Senior Notes, Series A, due March 7, 2028 (5.78% Notes) and (ii) $50.0 million aggregate principal amount of NW Holdings' 5.84% Senior Notes, Series B, due March 7, 2029 (5.84% Notes) in reliance on an exemption from registration under Section 4(a)(2) of the Securities Act of 1933, as amended. The 5.78% Notes and the 5.84% Notes are expected to be issued on or about March 7, 2024, pursuant to the Note Purchase Agreement. The proceeds from the Note Purchase Agreement are expected to be used to refinance $150.0 million of existing term loans at NW Holdings and NWN Water.

The 5.78% Notes will bear interest at the rate of 5.78% per annum, payable semi-annually on March 7 and September 7 of each year, commencing September 9, 2024, and will mature on March 7, 2028. NW Holdings may, at its option, prepay at any time all, or from time to time any part of, the outstanding 5.78% Notes at a price equal to 100% of the principal amount thereof, plus a "make-whole" premium and accrued and unpaid interest thereon to the date of prepayment; provided, however, in the case of a partial prepayment, NW Holdings must prepay at least 5% of the aggregate principal amount of the 5.78% Notes outstanding. At any time on or after February 7, 2028, NW Holdings may, at its option, prepay all or any part of the 5.78% Notes at 100% of the principal amount thereof, plus accrued and unpaid interest thereon to the date of prepayment, but without the payment of a "make-whole" premium, so long as there is no Default or Event of Default under the Note Purchase Agreement.

The 5.84% Bonds will bear interest at the rate of 5.84% per annum, payable semi-annually on March 7 and September 7 of each year, commencing September 9, 2024, and will mature on March 7, 2029. NW Holdings may, at its option, prepay at any time all, or from time to time any part of, the outstanding 5.84% Notes at a price equal to 100% of the principal amount thereof, plus a "make-whole" premium and accrued and unpaid interest thereon to the date of prepayment; provided, however, in the case of a partial prepayment, NW Holdings must prepay at least 5% of the aggregate principal amount of the 5.84% Notes outstanding. At any time on or after February 7, 2029, NW Holdings may, at its option, prepay all or any part of the 5.84% Notes at 100% of the principal amount thereof, plus accrued and unpaid interest thereon to the date of prepayment, but without the payment of a "make-whole" premium, so long as there is no Default or Event of Default under the Note Purchase Agreement.

Interest Rate Swap Agreements

NW Holdings and NWN Water entered into interest rate swap agreements with major financial institutions that effectively convert variable-rate debt to a fixed rate. Interest payments made between the effective date and expiration date are hedged by the swap agreements. The notional amount, effective date, expiration date and benchmark rate of the swap agreements are shown in the table below:

In millions	Notional Amount		Effective Date	Expiration Date	Fixed Rate
NW Holdings	$	100.0	1/17/2023	3/15/2024	4.7 %
NWN Water	$	55.0	1/19/2023	6/10/2026	3.8 %

Maturities and Outstanding Long-Term Debt

Retirement of long-term debt for each of the annual periods through December 31, 2028 and thereafter are as follows:

In thousands	NW Natural	Other (NW Holdings)	NW Holdings
2024	$ —	$ 150,868	$ 150,868
2025	30,000	824	30,824
2026	55,000	55,852	110,852
2027	64,700	881	65,581
2028	10,000	866	10,866
Thereafter	1,215,000	2,353	1,217,353
Total	$ 1,374,700	$ 211,644	$ 1,586,344

The following table presents debt outstanding at NW Natural as of December 31:

In thousands	2023	2022
NW Natural:		
First Mortgage Bonds:		
3.542% Series due 2023	$ —	$ 50,000
5.620% Series due 2023	—	40,000
7.720% Series due 2025	20,000	20,000
6.520% Series due 2025	10,000	10,000
7.050% Series due 2026	20,000	20,000
3.211% Series due 2026	35,000	35,000
7.000% Series due 2027	20,000	20,000
2.822% Series due 2027	25,000	25,000
6.650% Series due 2027	19,700	19,700
6.650% Series due 2028	10,000	10,000
3.141% Series due 2029	50,000	50,000
7.740% Series due 2030	20,000	20,000
7.850% Series due 2030	10,000	10,000
5.820% Series due 2032	30,000	30,000
5.660% Series due 2033	40,000	40,000
5.750% Series due 2033	100,000	—
5.180% Series due 2034	80,000	—
5.250% Series due 2035	10,000	10,000
5.230% Series due 2038	50,000	—
4.000% Series due 2042	50,000	50,000
4.136% Series due 2046	40,000	40,000
3.685% Series due 2047	75,000	75,000
4.110% Series due 2048	50,000	50,000
3.869% Series due 2049	90,000	90,000
3.600% Series due 2050	150,000	150,000
3.078% Series due 2051	130,000	130,000
4.780% Series due 2052	140,000	140,000
5.430% Series due 2053	100,000	—
Long-term debt, gross	1,374,700	1,134,700
Less: current maturities	—	90,000
Total long-term debt	$ 1,374,700	$ 1,044,700

Fair Value of Long-Term Debt

NW Holdings' and NW Natural's outstanding debt does not trade in active markets. The fair value of debt is estimated using the value of outstanding debt at natural gas distribution companies with similar credit ratings, terms, and remaining maturities to NW Holdings' and NW Natural's debt that actively trade in public markets. Substantially all outstanding debt at NW Holdings is comprised of NW Natural debt. These valuations are based on Level 2 inputs as defined in the fair value hierarchy. See Note 2.

The following table provides an estimate of the fair value of long-term debt, including current maturities of long-term debt, using market prices in effect on the valuation date:

In thousands	December 31, 2023	December 31, 2022
NW Natural:		
Gross long-term debt	$ 1,374,700	$ 1,134,700
Unamortized debt issuance costs	(9,968)	(8,823)
Carrying amount	1,364,732	1,125,877
Estimated fair value[1]	1,236,559	944,383
NW Holdings:		
Gross long-term debt	$ 1,586,344	$ 1,345,851
Unamortized debt issuance costs	(10,044)	(8,987)
Carrying amount	1,576,300	1,336,864
Estimated fair value[1]	1,447,941	1,148,395

[1] Estimated fair value does not include unamortized debt issuance costs.

10. PENSION AND OTHER POSTRETIREMENT BENEFIT COSTS

NW Natural maintains a qualified non-contributory defined benefit pension plan (Pension Plan) for all eligible employees, non-qualified supplemental pension plans for eligible executive officers and other key employees, and other postretirement employee benefit plans. NW Natural also has a qualified defined contribution plan (Retirement K Savings Plan) for all eligible employees. The Pension Plan and Retirement K Savings Plan have plan assets, which are held in qualified trusts to fund retirement benefits.

Effective January 1, 2007 and 2010, the Pension Plan and postretirement benefits for non-union employees and union employees, respectively, were closed to new participants. Non-union and union employees hired or re-hired after December 31, 2006 and 2009, respectively, and employees of NW Natural subsidiaries are provided an enhanced Retirement K Savings Plan benefit.

The following table provides a reconciliation of the changes in NW Natural's benefit obligations and fair value of plan assets, as applicable, for NW Natural's pension and other postretirement benefit plans, excluding the Retirement K Savings Plan, and a summary of the funded status and amounts recognized in NW Holdings' and NW Natural's consolidated balance sheets as of December 31:

	Postretirement Benefit Plans			
	Pension Benefits		Other Benefits	
In thousands	2023	2022	2023	2022
Reconciliation of change in benefit obligation:				
Obligation at January 1	$ 413,413	$ 542,618	$ 19,880	$ 27,223
Service cost	3,922	5,933	105	193
Interest cost	21,019	14,593	1,067	724
Net actuarial gain (loss)	15,066	(122,168)	2,208	(6,234)
Benefits paid	(27,970)	(27,563)	(1,793)	(2,026)
Obligation at December 31	425,450	413,413	21,467	19,880
Reconciliation of change in plan assets:				
Fair value of plan assets at January 1	280,304	399,217	—	—
Actual return on plan assets	28,841	(93,703)	—	—
Employer contributions	2,269	2,353	1,793	2,026
Benefits paid	(27,970)	(27,563)	(1,793)	(2,026)
Fair value of plan assets at December 31	283,444	280,304	—	—
Funded status at December 31	$ (142,006)	$ (133,109)	$ (21,467)	$ (19,880)

At December 31, 2023, the net liability (benefit obligations less market value of plan assets) for the Pension Plan increased $7.9 million compared to 2022. The increase in the net pension liability is primarily due to the $11.0 million increase to the pension benefit obligation, partially offset by the $3.1 million increase in plan assets. The liability for non-qualified plans increased $1.0 million, and the liability for other postretirement benefits increased $1.6 million in 2023.

NW Natural's Pension Plan had a projected benefit obligation of $392.6 million and $381.6 million at December 31, 2023 and 2022, respectively, and fair values of plan assets of $283.4 million and $280.3 million, respectively. The plan had an accumulated benefit obligation of $363.5 million and $353.4 million at December 31, 2023 and 2022, respectively.

The following table presents amounts realized through regulatory assets or in other comprehensive loss (income) for the years ended December 31:

	Regulatory Assets						Other Comprehensive Loss (Income)		
	Pension Benefits			Other Postretirement Benefits			Pension Benefits		
In thousands	2023	2022	2021	2023	2022	2021	2023	2022	2021
Net actuarial (gain) loss	$ 10,318	$ 2,833	$ (32,258)	$ 2,208	$ (6,234)	$ (688)	$ 1,630	$ (5,706)	$ (812)
Amortization of:									
Prior service credit	—	—	—	—	333	468	—	—	—
Actuarial loss	—	(11,531)	(21,250)	—	(426)	(645)	(713)	(1,081)	(1,225)
Total	$ 10,318	$ (8,698)	$ (53,508)	$ 2,208	$ (6,327)	$ (865)	$ 917	$ (6,787)	$ (2,037)

The following table presents amounts recognized in regulatory assets and accumulated other comprehensive loss (AOCL) at December 31:

	Regulatory Assets				AOCL	
	Pension Benefits		Other Postretirement Benefits		Pension Benefits	
In thousands	2023	2022	2023	2022	2023	2022
Prior service credit	$ —	$ —	$ —	$ —	$ —	$ —
Net actuarial loss (gain)	112,558	102,240	1,382	(826)	9,634	8,717
Total	$ 112,558	$ 102,240	$ 1,382	$ (826)	$ 9,634	$ 8,717

The following table presents amounts recognized by NW Holdings and NW Natural in AOCL and the changes in AOCL related to NW Natural's non-qualified employee benefit plans:

	Year ended December 31,	
In thousands	2023	2022
Beginning balance	$ (6,414)	$ (11,404)
Amounts reclassified to AOCL	(1,676)	5,706
Amounts reclassified from AOCL:		
Amortization of actuarial losses	558	1,081
Total reclassifications before tax	(1,118)	6,787
Tax benefit (expense)	295	(1,797)
Total reclassifications for the period	(823)	4,990
Ending balance	$ (7,237)	$ (6,414)

In 2024, NW Natural will amortize $5.2 million in estimated costs from regulatory assets to net periodic benefit costs.

The assumed discount rates for NW Natural's Pension Plan and other postretirement benefit plans were determined independently based on the FTSE Above Median Curve (discount rate curve), which uses high quality corporate bonds rated AA- or higher by S&P or Aa3 or higher by Moody's. The discount rate curve was applied to match the estimated cash flows in each of the plans to reflect the timing and amount of expected future benefit payments for these plans.

The assumed expected long-term rate of return on plan assets for the Pension Plan was developed using a weighted-average of the expected returns for the target asset portfolio. In developing the expected long-term rate of return assumption, consideration was given to the historical performance of each asset class in which the plan's assets are invested and the target asset allocation for plan assets.

The investment strategy and policies for Pension Plan assets held in the retirement trust fund were approved by the NW Natural Retirement Committee, which is composed of senior management with the assistance of an outside investment consultant. The policies set forth the guidelines and objectives governing the investment of plan assets. Plan assets are invested for total return with appropriate consideration for liquidity, portfolio risk, and return expectations. All investments are expected to satisfy the prudent investments rule under the Employee Retirement Income Security Act of 1974. The approved asset classes may include cash and short-term investments, fixed income, common stock and convertible securities, absolute and real return strategies, and real estate. Plan assets may be invested in separately managed accounts or in commingled or mutual funds. Investment re-balancing takes place periodically as needed, or when significant cash flows occur, in order to maintain the allocation of assets within the stated target ranges. The retirement trust fund for the Pension Plan is not currently invested in NW Holdings or NW Natural securities.

The following table presents the Pension Plan asset target allocation at December 31, 2023:

Asset Category	Target Allocation
Long government/credit	20 %
U.S. large cap equity	18
Non-U.S. equity	18
Absolute return strategies	12
U.S. small/mid cap equity	10
Real estate funds	7
High yield bonds	5
Emerging markets equity	5
Emerging market debt	5

Non-qualified supplemental defined benefit plan obligations were $32.8 million and $31.8 million at December 31, 2023 and 2022, respectively. These plans are not subject to regulatory deferral, and the changes in actuarial gains and losses, prior service costs, and transition assets or obligations are recognized in AOCL, net of tax until they are amortized as a component of net periodic benefit cost. These are unfunded, non-qualified plans with no plan assets; however, a significant portion of the obligations is indirectly funded with company and trust-owned life insurance and other assets.

Other postretirement benefit plans are unfunded plans but are subject to regulatory deferral. The actuarial gains and losses, prior service costs, and transition assets or obligations for these plans are recognized as a regulatory asset.

Net periodic benefit costs consist of service costs, interest costs, the expected returns on plan assets, and the amortization of gains and losses and prior service costs. The gains and losses are the sum of the actuarial and asset gains and losses throughout the year and are amortized over the average remaining service period of active participants. The asset gains and losses are based in part on a market-related valuation of assets. The market-related valuation reflects differences between expected returns and actual investment returns with the differences recognized over a two-year period from the year in which they occur, thereby reducing year-to-year net periodic benefit cost volatility.

The service cost component of net periodic benefit cost for NW Natural pension and other postretirement benefit plans is recognized in operations and maintenance expense in the consolidated statements of comprehensive income. The other non-service cost components are recognized in other income (expense), net in the consolidated statements of comprehensive income. The following table provides the components of net periodic benefit cost for NW Natural's pension and other postretirement benefit plans for the years ended December 31:

	Pension Benefits			Other Postretirement Benefits		
In thousands	2023	2022	2021	2023	2022	2021
Service cost	$ 3,922	$ 5,933	$ 6,981	$ 105	$ 193	$ 238
Interest cost	21,018	14,593	13,448	1,067	724	684
Expected return on plan assets	(25,723)	(25,698)	(24,232)	—	—	—
Amortization of prior service credit	—	—	—	—	(333)	(468)
Amortization of net actuarial loss	713	12,612	22,475	—	426	645
Net periodic (benefit) cost	(70)	7,440	18,672	1,172	1,010	1,099
Amount allocated to construction	(1,684)	(2,621)	(3,015)	(36)	(76)	(93)
Net periodic (benefit) cost charged to expense	(1,754)	4,819	15,657	1,136	934	1,006
Amortization of regulatory balancing account	7,131	7,131	7,131	—	—	—
Net amount charged to expense	$ 5,377	$ 11,950	$ 22,788	$ 1,136	$ 934	$ 1,006

Net periodic benefit costs are reduced by amounts capitalized to NGD plant. In addition, a certain amount of net periodic benefit costs were recorded to the regulatory balancing account, representing net periodic pension expense for the Pension Plan above the amount set in rates, as approved by the OPUC, from 2011 through October 31, 2018. Total amortization of the regulatory balancing account of $7.1 million was recognized in each of the years ended December 31, 2023 and 2022, of which $2.6 million was charged to operations and maintenance expense and $4.5 million was charged to other income (expense).

The following table provides the assumptions used in measuring periodic benefit costs and benefit obligations for the years ended December 31:

	Pension Benefits			Other Postretirement Benefits		
	2023	2022	2021	2023	2022	2021
Assumptions for net periodic benefit cost:						
Weighted-average discount rate	5.14 %	2.71 %	2.40 %	5.19 %	2.72 %	2.34 %
Rate of increase in compensation	4.00-5.00%	3.50 %	3.50 %	n/a	n/a	n/a
Expected long-term rate of return	7.50 %	7.00 %	7.25 %	n/a	n/a	n/a
Assumptions for year-end funded status:						
Weighted-average discount rate	4.98 %	5.18 %	2.71 %	4.98 %	5.19 %	2.72 %
Rate of increase in compensation[(1)]	4.00-4.73%	4.00-6.00%	3.50 %	n/a	n/a	n/a
Expected long-term rate of return	7.50 %	7.50 %	7.00 %	n/a	n/a	n/a

(1) Rate assumption ranges from 3.2% to 4.6% in 2024, 4.7% to 5.8% in 2025 and 4.0% to 4.7% thereafter.

The assumed annual increase in health care cost trend rates used in measuring other postretirement benefits as of December 31, 2023 was 6.50%. These trend rates apply to both medical and prescription drugs. Medical costs and prescription drugs are assumed to decrease gradually each year to a rate of 4.00% by 2029.

Assumed health care cost trend rates can have a significant effect on the amounts reported for the health care plans; however, other postretirement benefit plans have a cap on the amount of costs reimbursable by NW Natural.
Mortality assumptions are reviewed annually and are updated for material changes as necessary. In 2023, mortality rate assumptions remained consistent with 2022, using Pri-2012 mortality tables using scale MP-2021.

The following table provides information regarding employer contributions and benefit payments for NW Natural's Pension Plan, non-qualified pension plans, and other postretirement benefit plans for the years ended December 31, and estimated future contributions and payments:

In thousands	Pension Benefits	Other Benefits
Employer Contributions:		
2022	$ 2,353	$ 2,026
2023	2,269	1,793
2024 (estimated)	22,850	3,233
Benefit Payments:		
2021	$ 25,371	$ 2,050
2022	27,563	2,026
2023	27,970	1,793
Estimated Future Benefit Payments:		
2024	$ 27,288	$ 3,233
2025	36,313	1,652
2026	27,979	1,620
2027	28,300	1,608
2028	28,604	1,583
2029-2033	145,652	7,440

Employer Contributions to Company-Sponsored Defined Benefit Pension Plan
NW Natural makes contributions to its Pension Plan based on actuarial assumptions and estimates, tax regulations, and funding requirements under federal law. The American Rescue Plan, which was signed into law on March 11, 2021, includes a provision for pension relief that extends the amortization period for required contributions from 7 to 15 years and provides for the stabilization of interest rates used to calculate future required contributions. As a result, NW Natural made no cash contributions to its Pension Plan for 2023.

The Pension Plan was underfunded by $109.2 million at December 31, 2023. During 2024, NW Natural expects to make cash contributions of approximately $20.6 million to the Pension Plan.

Multiemployer Pension Plan
In addition to the NW Natural-sponsored Pension Plan presented above, prior to 2014 NW Natural contributed to a multiemployer pension plan for its NGD union employees known as the Western States Office and Professional Employees International Union Pension Fund (Western States Plan). That plan's employer identification number is 94-6076144. Effective December 22, 2013, NW Natural withdrew from the plan, which was a noncash transaction. Vested participants will receive all benefits accrued

through the date of withdrawal. As the plan was underfunded at the time of withdrawal, NW Natural was assessed a withdrawal liability of $8.3 million, plus interest, which requires NW Natural to pay $0.6 million each year to the plan for 20 years beginning in July 2014. The cost of the withdrawal liability was deferred to a regulatory account on the balance sheet.

Payments were $0.6 million for 2023, and as of December 31, 2023, the liability balance was $5.0 million. For 2022 and 2021, contributions to the plan were $0.6 million and $0.4 million, respectively, which was approximately 1% to 4% of the total contributions to the plan by all employer participants in those years.

Defined Contribution Plan

NW Natural's Retirement K Savings Plan is a qualified defined contribution plan under Internal Revenue Code Sections 401(a) and 401(k). NW Natural contributions totaled $10.4 million, $9.6 million, and $8.8 million for 2023, 2022, and 2021, respectively.

Deferred Compensation Plans

NW Natural's supplemental deferred compensation plans for eligible officers and senior managers are non-qualified plans. These plans are designed to enhance the retirement savings of employees and to assist them in strengthening their financial security by providing an incentive to save and invest regularly.

Fair Value

Below is a description of the valuation methodologies used for assets measured at fair value. In cases where NW Natural's Pension Plan is invested through a collective trust fund or mutual fund, the fund's market value is utilized. Market values for investments directly owned are also utilized.

U.S. EQUITY. These are non-published net asset value (NAV) assets. The non-published NAV assets consist of commingled trusts where NAV is not published but the investment can be readily disposed of at NAV or market value. The underlying investments in this asset class includes investments primarily in U.S. common stocks.

INTERNATIONAL/GLOBAL EQUITY. These are Level 1 and non-published NAV assets. The Level 1 asset is a mutual fund, and the non-published NAV assets consist of commingled trusts where the NAV/unit price is not published, but the investment can be readily disposed of at the NAV/unit price. The mutual fund has a readily determinable fair value, including a published NAV, and the commingled trusts are valued at unit price. This asset class includes investments primarily in foreign equity common stocks.

LIABILITY HEDGING. These are non-published NAV assets. The non-published NAV assets consist of commingled trusts where NAV is not published but the investment can be readily disposed of at NAV or market value. The underlying investments in this asset class include long duration fixed income investments primarily in U.S. treasuries, U.S. government agencies, municipal securities, mortgage-backed securities, asset-backed securities, as well as U.S. and international investment-grade corporate bonds.

OPPORTUNISTIC. These are non-published NAV assets. The non-published NAV assets consist of commingled trusts where NAV is not published but the investment can be readily disposed of at NAV or market value. The underlying investments in this asset class include real estate investment trust equities, high yield bonds, floating rate debt, emerging market debt and a commodity index pool.

CASH AND CASH EQUIVALENTS. These are non-published NAV assets. The non-published NAV assets represent mutual funds without published NAV's but the investment can be readily disposed of at the NAV. The mutual funds are valued at the NAV of the shares held by the plan at the valuation date.

The preceding valuation methods may produce a fair value calculation that is not indicative of net realizable value or reflective of future fair values. Although we believe these valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain investments could result in a different fair value measurement at the reporting date.

Commingled trust investments are subject to a redemption notice period of five business days. There were no unfunded commitments for Plan investments as of December 31, 2023 and 2022.

Investment securities are exposed to various financial risks including interest rate, market, and credit risks. Due to the level of risk associated with certain investment securities, it is reasonably possible that changes in the values of NW Natural's investment securities will occur in the near term and such changes could materially affect NW Natural's investment account balances and the amounts reported as plan assets available for benefit payments.

The following tables present the fair value of NW Natural's Pension Plan assets, including outstanding receivables and liabilities, of NW Natural's retirement trust fund:

In thousands	December 31, 2023				
Investments	Level 1	Level 2	Level 3	Non-Published NAV[1]	Total
US equity	$ —	$ —	$ —	$ 73,910	$ 73,910
International / Global equity	27,730	—	—	63,767	91,497
Liability hedging	—	—	—	98,408	98,408
Opportunistic	—	—	—	17,148	17,148
Cash and cash equivalents	—	—	—	2,480	2,480
Total investments	$ 27,730	$ —	$ —	$ 255,713	$ 283,443

	December 31, 2022				
Investments	Level 1	Level 2	Level 3	Non-Published NAV[1]	Total
US equity	$ —	$ —	$ —	$ 68,729	$ 68,729
International / Global equity	26,677	—	—	63,827	90,504
Liability hedging	—	—	—	94,823	94,823
Opportunistic	—	—	—	23,903	23,903
Cash and cash equivalents	—	—	—	2,345	2,345
Total investments	$ 26,677	$ —	$ —	$ 253,627	$ 280,304

	December 31,	
	2023	2022
Receivables:		
Accrued interest and dividend income	$ 10,698	$ 7,703
Total receivables	10,698	7,703
Liabilities:		
Due to broker for securities purchased	(10,698)	(7,701)
Total investment in retirement trust	$ 283,443	$ 280,306

(1) The fair value for these investments is determined using Net Asset Value per share (NAV) as of December 31, as a practical expedient, and therefore they are not classified within the fair value hierarchy. These investments primarily consist of institutional investment products, for which the NAV is generally not publicly available.

11. INCOME TAX

The following table provides a reconciliation between income taxes calculated at the statutory federal tax rate and the provision for income taxes reflected in the NW Holdings and NW Natural statements of comprehensive income or loss for December 31:

	NW Holdings			NW Natural		
Dollars in thousands	2023	2022	2021	2023	2022	2021
Income taxes at federal statutory rate	$ 26,508	$ 24,241	$ 22,275	$ 29,486	$ 25,746	$ 22,996
Increase (decrease):						
State income tax, net of federal	10,875	10,139	9,962	11,510	10,504	10,150
Differences required to be flowed-through by regulatory commissions	(3,976)	(4,748)	(4,655)	(3,972)	(4,746)	(4,738)
Other, net	(1,045)	(502)	(176)	(1,352)	(468)	(75)
Total provision for income taxes	$ 32,362	$ 29,130	$ 27,406	$ 35,672	$ 31,036	$ 28,333
Effective tax rate	25.6%	25.2%	25.8%	25.4%	25.3%	25.9%

The NW Holdings and NW Natural effective income tax rates for 2023 compared to 2022 changed primarily as a result of pre-tax income.

The NW Holdings and NW Natural effective income tax rates for 2022 compared to 2021 changed primarily due to lower income tax amortization in 2022 of the 2020 Oregon Corporate Activity Tax (CAT), which was subject to regulatory deferral when it became effective on January 1, 2020 and then amortized in income tax expense as recovery began in late 2020, 2021, and 2022.

The provision for current and deferred income taxes consists of the following at December 31:

	NW Holdings			NW Natural		
In thousands	2023	2022	2021	2023	2022	2021
Current						
Federal	$ 13,496	$ 5,172	$ 6,508	$ 20,512	$ 7,442	$ 7,570
State	9,901	6,551	6,281	12,304	7,307	7,540
Total current income taxes	23,397	11,723	12,789	32,816	14,749	15,110
Deferred						
Federal	5,100	11,124	8,289	591	10,298	7,915
State	3,865	6,283	6,328	2,265	5,989	5,308
Total deferred income taxes	8,965	17,407	14,617	2,856	16,287	13,223
Income tax provision	$ 32,362	$ 29,130	$ 27,406	$ 35,672	$ 31,036	$ 28,333

The following table summarizes the tax effect of significant items comprising NW Holdings and NW Natural's deferred income tax balances recorded at December 31:

	NW Holdings		NW Natural	
In thousands	2023	2022	2023	2022
Deferred tax liabilities:				
Plant and property	$ 350,802	$ 326,326	$ 340,042	$ 320,121
Leases receivable	35,635	36,873	35,635	36,873
Pension and postretirement obligations	24,830	22,973	24,830	22,973
Income tax regulatory asset	12,939	13,152	12,939	13,152
Lease right of use assets	21,002	21,272	20,849	21,084
Other Intangibles	528	—	—	—
Other	4,432	17,050	4,620	17,314
Total deferred income tax liabilities	450,168	437,646	438,915	431,517
Deferred income tax assets:				
Income tax regulatory liability	46,372	48,270	46,120	48,018
Lease liabilities	21,047	21,306	20,884	21,102
Other intangible assets	—	1,947	—	—
Net operating losses and credits carried forward	76	101	44	44
Total deferred income tax assets	67,495	71,624	67,048	69,164
Total net deferred income tax liabilities	$ 382,673	$ 366,022	$ 371,867	$ 362,353

At December 31, 2023 and 2022, regulatory income tax assets of $8.0 million and $10.2 million, respectively, were recorded by NW Natural, a portion of which is recorded in current assets. These regulatory income tax assets primarily represent future rate recovery of deferred tax liabilities, resulting from differences in NGD plant financial statement and tax bases and NGD plant removal costs, which were previously flowed through for rate making purposes and to take into account the additional future taxes, which will be generated by that recovery. These deferred tax liabilities, and the associated regulatory income tax assets, are currently being recovered through customer rates. At December 31, 2023 and 2022, regulatory income tax assets of $4.9 million and $2.9 million, respectively, were recorded by NW Natural, representing future recovery of deferred tax liabilities resulting from the equity portion of AFUDC.

At December 31, 2023 and 2022, deferred tax assets of $46.1 million and $48.0 million, respectively, were recorded by NW Natural representing the future income tax benefit associated with the excess deferred income tax regulatory liability recorded as a result of the lower federal corporate income tax rate provided for by the TCJA. At December 31, 2023 and 2022, regulatory liability balances representing the benefit of the change in deferred taxes as a result of the TCJA of $174.2 million and $181.4 million, respectively, were recorded by NW Natural.

NW Holdings and NW Natural assess the available positive and negative evidence to estimate if sufficient taxable income will be generated to utilize their respective existing deferred tax assets. Based upon this assessment, NW Holdings and NW Natural determined that it is more likely than not that all of their respective deferred tax assets recorded as of December 31, 2023 will be realized.

The Company estimates it has net operating loss (NOL) carryforwards of $29 thousand for federal taxes and $29 thousand for state taxes at December 31, 2023. The federal NOLs do not expire and we anticipate fully utilizing the state NOL carryforward balances before they begin to expire in 2040. California alternative minimum tax (AMT) credits of $56 thousand are also available. The AMT credits do not expire.

Uncertain tax positions are accounted for in accordance with accounting standards that require an assessment of the anticipated settlement outcome of material uncertain tax positions taken in a prior year, or planned to be taken in the current year. Until such positions are sustained, the uncertain tax benefits resulting from such positions would not be recognized. No reserves for uncertain tax positions were recorded as of December 31, 2023, 2022, or 2021.

The federal income tax returns for tax years 2019 and earlier are closed by statute. The IRS Compliance Assurance Process (CAP) examination of the 2020 and 2021 tax years have been completed. There were no material changes to these returns as filed. The 2022 and 2023 tax years are currently under IRS CAP examination. The 2024 CAP application has been filed. Under the CAP program, NW Holdings and NW Natural work with the IRS to identify and resolve material tax matters before the tax return is filed each year.

As of December 31, 2023, income tax years 2019 through 2022 remain open for examination by the States of California and Texas. Income tax years 2020 through 2022 are open for examination by the States of Arizona, Idaho, Nebraska, and Oregon.

12. PROPERTY, PLANT, AND EQUIPMENT

The following table sets forth the major classifications of property, plant, and equipment and accumulated depreciation of continuing operations at December 31:

In thousands	2023	2022
NW Natural:		
NGD plant in service	$ 4,206,455	$ 3,992,676
NGD construction work in progress	105,166	78,897
Less: Accumulated depreciation	1,159,367	1,115,690
NGD plant, net	3,152,254	2,955,883
Other plant in service	71,175	70,368
Other construction work in progress	10,963	6,606
Less: Accumulated depreciation	22,595	21,541
Other plant, net	59,543	55,433
Total property, plant, and equipment	$ 3,211,797	$ 3,011,316
Other (NW Holdings):		
Other plant in service	$ 147,040	$ 92,979
Other construction work in progress	15,810	20,040
Less: Accumulated depreciation	16,593	9,935
Other plant, net	146,257	103,084
NW Holdings:		
Total property, plant, and equipment	$ 3,358,054	$ 3,114,400
NW Natural:		
Capital expenditures in accrued liabilities	$ 24,168	$ 24,584
NW Holdings:		
Capital expenditures in accrued liabilities	$ 27,879	$ 25,318

Accumulated depreciation does not include the accumulated provision for asset removal costs of $496.2 million and $467.7 million at December 31, 2023 and 2022, respectively. These accrued asset removal costs are reflected on the balance sheet as regulatory liabilities. See Note 2.

<u>NW Holdings</u>
Other plant balances include long-lived assets associated with water and wastewater operations and non-regulated activities not held by NW Natural or its subsidiaries.

<u>NW Natural</u>
Other plant balances include non-utility gas storage assets at the Mist facility and other long-lived assets not related to NGD. The weighted average depreciation rate for NGD assets was 3.0% in 2023, 2022, and 2021. The weighted average depreciation rate for assets not related to NGD was 1.7% in 2023 and 1.8% in 2022 and 2021.

13. INVESTMENTS

Investments include gas reserves, financial investments in life insurance policies, and equity method investments. The following table summarizes other investments at December 31:

	NW Holdings		NW Natural	
In thousands	2023	2022	2023	2022
Investments in life insurance policies	$ 45,713	$ 49,358	$ 45,713	$ 49,358
Investments in gas reserves, non-current	20,893	22,970	20,893	22,970
Investments in unconsolidated affiliates	36,345	23,376	19,539	7,782
Total other investments	$ 102,951	$ 95,704	$ 86,145	$ 80,110

Investment in Life Insurance Policies

NW Natural has invested in key person life insurance contracts to provide an indirect funding vehicle for certain long-term employee and director benefit plan liabilities. The amount in the above table is reported at cash surrender value, net of policy loans.

NW Natural Gas Reserves

NW Natural has invested $188 million through the gas reserves program in the Jonah Field located in Wyoming as of December 31, 2023. Gas reserves are stated at cost, net of regulatory amortization, with the associated deferred tax benefits of $4.0 million and $5.2 million, which are recorded as liabilities in the December 31, 2023 and 2022 consolidated balance sheets, respectively. NW Natural's investment is included in NW Holdings' and NW Natural's consolidated balance sheets under other current assets and other investments (non-current portion) with the maximum loss exposure limited to the investment balance. The amount of gas reserves included in other current assets was $2.3 million and $3.4 million as of December 31, 2023 and 2022, respectively. The investment in gas reserves provides long-term price protection and acted to hedge the cost of gas for approximately 3% and 3% of NGD gas supplies for the years ended December 31, 2023 and 2022, respectively.

Investments in Unconsolidated Affiliates

In December 2021, NWN Water purchased a 37.3% ownership stake in Avion Water Company, Inc. (Avion Water), an investor-owned water utility for $14.5 million. In July 2022 and June 2023, NWN Water increased its ownership stake in Avion Water to 43.1% for an additional $1.0 million in each period. In January 2024, NWN Water increased its ownership stake in Avion Water to 45.6% for an additional $1.0 million. Avion Water operates in Bend, Oregon and the surrounding communities, serving approximately 15,000 customer connections and employing 35 people. The carrying value of the equity method investment is $8.6 million higher than the underlying equity in the net assets of the investee at December 31, 2023 due to equity method goodwill. Equity in earnings (loss) of Avion Water is included in other income (expense), net.

In 2020, NW Natural began a partnership with BioCarbN to invest in up to four separate renewable natural gas (RNG) development projects that are designed to access biogas derived from water treatment at Tyson Foods' processing plants, subject to approval by all parties. During the construction phase of the projects, NW Natural determined it is the primary beneficiary and fully consolidates each entity. In January 2022, commissioning of the first project, Lexington Renewable Energy LLC (Lexington), was completed. NW Natural determined it was no longer the primary beneficiary, deconsolidated the variable interest entity and recorded the investment in Lexington as an equity method investment. As of December 31, 2023, NW Natural had an investment balance in Lexington of $7.6 million. NW Natural's share in the earnings (loss) of Lexington is included in cost of gas.

In April 2023, commissioning of the second project, Dakota City Renewable Energy LLC (Dakota City), was completed. NW Natural determined it was no longer the primary beneficiary of Dakota City once the project was commissioned. The investment in the variable interest entity was deconsolidated and recorded as an equity method investment. NW Natural accounts for its interest in Dakota City using the equity method of accounting because NW Natural does not control but has the ability to exercise significant influence over Dakota City's operations after commissioning. There was no gain or loss recognized upon deconsolidation. NW Natural determined the fair value of the investment approximated the carrying value which was primarily comprised of cash and property, plant and equipment. As of December 31, 2023, NW Natural had an investment balance in Dakota City of $11.9 million. NW Natural's share in the earnings (loss) of Dakota City is included in cost of gas.

In January 2024, NW Natural replaced BioCarbN as manager of the Lexington and Dakota City projects.

2023 Business Combinations

During the year ended December 31, 2023, NWN Water and its subsidiaries acquired the assets of five businesses qualifying as business combinations. The aggregate fair value of the preliminary total consideration transferred for these acquisitions was $22.8 million, most of which was preliminarily allocated to property, plant, and equipment, and goodwill. These transactions align with NW Holdings' water and wastewater sector strategy as it continues to expand its water and wastewater service territories and included:

- Pedersen Family, LLC in Washington
- King Water Corporation in Washington
- Rose Valley Water Company in Arizona
- Hiland Water in Oregon
- Truxton and Cerbat in Arizona

Intangible Assets

In connection with the acquisition of King Water Corporation, NWN Water recorded long-term customer relationship intangible assets totaling $2.6 million, which will be amortized over 24 years. There was no amortization expense recognized in 2023. Projected amortization expense at NW Holdings for customer relationship intangible assets for each of the next five years is $0.1 million in each period. The amortization will change in future periods if other intangible assets are acquired, impairments are recognized or the preliminary valuations as part of our purchase price allocation is refined.

2022 Business Combinations

Far West Water & Sewer, Inc.

On October 5, 2022, NWN Water completed the acquisition of the water and wastewater utilities of Far West Water & Sewer, Inc. (Far West), which has a combined approximately 25,000 connections in Yuma, Arizona. The acquisition-date fair value of the total consideration transferred, after closing adjustments, was approximately $97.0 million, of which $88.4 million was cash consideration transferred at closing, $8.1 million was contingent consideration, and $0.5 million was deferred consideration.

The contingent consideration is an earnout payment in an amount equal to the product of (i) the amount, if any, by which the average annual System Operating Revenue for the 2026, 2027, and 2028 years exceeds $13.0 million (ii) multiplied by 4 but shall not exceed $12.0 million. As of the acquisition date, the contingent consideration had a fair value of $8.1 million and was included in other non-current liabilities. The fair value as of the acquisition date was determined using a scenario-based technique using management's best estimate of forecast revenue for the years 2026, 2027, and 2028 discounted to present value. The inputs to determine the fair value of the contingent consideration include estimated future revenue and a risk-adjusted discount rate. The fair value measurement is based on significant inputs that are not observable in the market and thus represents a fair value measurement categorized within Level 3 of the fair value hierarchy per ASC Topic 820.

The Far West acquisition met the criteria of a business combination, and as such an allocation of the consideration to the acquired net assets based on their estimated fair value as of the acquisition date was performed. In accordance with U.S. GAAP, the fair value determination involves management judgment in determining the significant estimates and assumptions used and was made using existing regulatory conditions for net assets associated with Far West. The acquisition costs were expensed as incurred.

Goodwill of $69.9 million was recognized from this acquisition. The goodwill recognized is attributable to Far West's regulated water utility service territory, experienced workforce, and the strategic benefits for both the water utility and wastewater services expected from growth in its service territory. No intangible assets aside from goodwill were recognized. The amount of goodwill that is expected to be deductible for income tax purposes is approximately $63.3 million.

The purchase price for the acquisition has been allocated to the net assets acquired as of the acquisition date and is as follows:

In thousands		December 31, 2023
Current assets	$	1,569
Property, plant and equipment		25,974
Goodwill		69,890
Non-current assets		1,077
Current liabilities		(991)
Non-current liabilities		(9,115)
Total net assets acquired	$	88,404

The amount of Far West revenues included in NW Holdings' consolidated statements of comprehensive income is $2.9 million for the year ended December 31, 2022. Earnings from Far West activities for the year ended December 31, 2022 were not material to the results of NW Holdings. Far West is referred to as Foothills Utilities following the closure of the acquisition.

Other 2022 Business Combinations
During the year ended December 31, 2022, NWN Water and its subsidiaries acquired the assets of six additional businesses qualifying as business combinations. The aggregate fair value of the consideration transferred for these acquisitions was $8.7 million, most of which was allocated to property, plant and equipment and goodwill. These transactions align with NW Holdings' water and wastewater sector strategy as it continues to expand its water and wastewater service territories and included:
- Belle Oaks Water and Sewer Co., Inc in Texas
- Northwest Water Services, LLC in Washington
- Aquarius Utilities, LLC in Washington
- Valiant Idaho, LLC (The Idaho Club - Sewer) in Idaho
- Caney Creek in Texas
- Water Necessities, Inc. and Rural Water Co. in Texas

2021 Business Combinations
During the year ended December 31, 2021, NWN Water and its subsidiaries completed four acquisitions qualifying as business combinations. The aggregate fair value of the consideration transferred for these acquisitions were not material and are not significant to NW Holdings' results of operations.

Goodwill
NW Holdings allocates goodwill to reporting units based on the expected benefit from the business combination. We perform an annual impairment assessment of goodwill at the reporting unit level, or more frequently if events and circumstances indicate that goodwill might be impaired. An impairment loss is recognized if the carrying value of a reporting unit's goodwill exceeds its fair value.

As a result of all acquisitions completed, total goodwill was $163.3 million as of December 31, 2023 and $149.3 million as of December 31, 2022. The increase in the goodwill balance was primarily due to additions associated with our acquisitions in the water and wastewater sector. All of our goodwill is related to water and wastewater acquisitions and is included in the other category for segment reporting purposes. The annual impairment assessment of goodwill occurs in the fourth quarter of each year. There have been no impairments recognized to date.

15. DERIVATIVE INSTRUMENTS

NW Natural
NW Natural enters into financial derivative contracts to hedge a portion of the NGD segment's natural gas sales requirements. These contracts include swaps, options, and option combinations. These derivative financial instruments are primarily used to manage commodity price variability. A small portion of NW Natural's derivative hedging strategy involves foreign currency forward contracts.

NW Natural enters into these financial derivatives, up to prescribed limits, primarily to hedge price variability related to term physical gas supply contracts. The foreign currency forward contracts are used to hedge the fluctuation in foreign currency exchange rates for pipeline demand charges paid in Canadian dollars.

In the normal course of business, NW Natural also enters into indexed-price physical forward natural gas commodity purchase contracts and options to meet the requirements of NGD customers. These contracts qualify for regulatory deferral accounting treatment.

Notional Amounts
The following table presents the absolute notional amounts related to open positions on NW Natural derivative instruments:

	At December 31,	
In thousands	2023	2022
Natural gas (in therms):		
Financial	948,425	852,435
Physical	571,610	463,254
Foreign exchange	$ 11,926	$ 7,617

Purchased Gas Adjustment (PGA)
Rates and hedging approaches may vary between states due to different rate structures and mechanisms. Under the PGA mechanism in Oregon, derivatives entered into by NW Natural for the procurement or hedging of natural gas for future gas years generally receive regulatory deferral accounting treatment. In general, commodity hedging for the current gas year is completed prior to the start of the gas year, and hedge prices are reflected in the weighted-average cost of gas in the PGA filing. Hedge contracts entered into after the start of the PGA period are subject to the PGA incentive sharing mechanism in Oregon. Under the PGA mechanism in Washington, NW Natural incorporates a risk-responsive hedging strategy, and receives regulatory deferral accounting treatment for its Washington gas supplies.

NW Natural entered the 2022-23 gas year with total forecasted sales volumes hedged at approximately 84%, including 67% in financial hedges and 17% in physical gas supplies. The total hedged was approximately 85% in Oregon and 79% in Washington. NW Natural entered the 2023-24 gas year with total forecasted sales volume hedged at approximately 82%, including 66% in financial hedges and 16% in physical gas supplies. The total hedged was approximately 85% in Oregon and 55% in Washington.

Unrealized and Realized Gain/Loss

The following table reflects the income statement presentation for the unrealized gains and losses from NW Natural's derivative instruments:

	December 31, 2023		December 31, 2022	
In thousands	Natural gas commodity	Foreign exchange	Natural gas commodity	Foreign exchange
Benefit (expense) to cost of gas	$ (131,833)	$ 168	$ 119,935	$ (165)
Operating revenues (expense)	—	—	—	—
Amounts deferred to regulatory accounts on balance sheet	131,833	(168)	(119,935)	165
Total gain (loss) in pre-tax earnings	$ —	$ —	$ —	$ —

Unrealized Gain/Loss

Outstanding derivative instruments related to regulated NGD operations are deferred in accordance with regulatory accounting standards. The cost of foreign currency forward and natural gas derivative contracts are recognized immediately in the cost of gas; however, costs above or below the amount embedded in the current year PGA are subject to a regulatory deferral tariff and therefore, are recorded as a regulatory asset or liability.

Realized Gain/Loss

NW Natural realized a net gain of $125.5 million and $107.8 million for the years ended December 31, 2023 and 2022, respectively, from the settlement of natural gas financial derivative contracts. Realized gains and losses offset the higher or lower cost of gas purchased, resulting in no incremental amounts to collect or refund to customers.

Credit Risk Management of Financial Derivatives Instruments

No collateral was posted with or by NW Natural counterparties as of December 31, 2023 or 2022. NW Natural attempts to minimize the potential exposure to collateral calls by diversifying counterparties and using credit limits to manage liquidity risk. Counterparties generally allow a certain credit limit threshold before requiring NW Natural to post collateral against unrealized loss positions. Given NW Natural's credit ratings, counterparty credit limits and portfolio diversification, it was not subject to collateral calls in 2023 or 2022. The collateral call exposure is set forth under credit support agreements, which generally contain credit limits. NW Natural could also be subject to collateral call exposure where it has agreed to provide adequate assurance, which is not specific as to the amount of credit limit allowed, but could potentially require additional collateral posting by NW Natural in the event of a material adverse change.

NW Natural's financial derivative instruments are subject to master netting arrangements; however, they are presented on a gross basis in the consolidated balance sheets. NW Natural and its counterparties have the ability to set-off obligations to each other under specified circumstances. Such circumstances may include a defaulting party, a credit change due to a merger affecting either party, or any other termination event.

If netted by counterparty, NW Natural's physical and financial derivative position would result in an asset of $9.0 million and a liability of $124.2 million as of December 31, 2023, and an asset of $153.3 million and a liability of $3.6 million as of December 31, 2022.

NW Natural is exposed to derivative credit and liquidity risk primarily through securing fixed-price natural gas commodity swaps and interest rate swaps with financial counterparties. NW Natural utilizes master netting arrangements with International Swaps and Derivatives Association (ISDA) contracts to minimize these risks including ISDA Credit Support Agreements with counterparties based on their credit ratings. Additionally, NW Natural uses counterparty, industry, sector and country diversification to minimize credit risk. In certain cases, NW Natural may require counterparties to post collateral, guarantees, or letters of credit to maintain its minimum credit requirement standards or for liquidity management purposes.

NW Natural's financial derivatives policy requires counterparties to have an investment-grade credit rating at the time the derivative instrument is entered into, and specifies limits on the contract amount and duration based on each counterparty's credit rating. NW Natural does not speculate in derivatives. Derivatives are used to manage NW Natural's market risk and we hedge exposure above risk tolerance limits. It is required that increases in market risk created by the use of derivatives is offset by the exposures they modify.

We actively monitor NW Natural's derivative credit exposure and place counterparties on hold for trading purposes or require other forms of credit assurance, such as letters of credit, cash collateral, or guarantees as circumstances warrant. The ongoing assessment of counterparty credit risk includes consideration of credit ratings, credit default swap spreads, bond market credit spreads, financial conditions, government actions, and market news. A Monte Carlo simulation model is used to estimate the change in credit and liquidity risk from the volatility of natural gas prices. The results of the model are used to establish trading limits. NW Natural's outstanding financial derivatives at December 31, 2023 mature by November 1, 2026.

We could become materially exposed to credit risk with one or more of our counterparties if natural gas prices experience a significant increase. If a counterparty were to become insolvent or fail to perform on its obligations, we could suffer a material loss; however, we would expect such a loss to be eligible for regulatory deferral and rate recovery, subject to a prudence review. All of our existing counterparties currently have investment-grade credit ratings.

Fair Value

In accordance with fair value accounting, NW Natural includes non-performance risk in calculating fair value adjustments. This includes a credit risk adjustment based on the credit spreads of NW Natural counterparties when in an unrealized gain position, or on NW Natural's own credit spread when it is in an unrealized loss position. The inputs in our valuation models include natural gas futures, volatility, credit default swap spreads, and interest rates. Additionally, the assessment of non-performance risk is generally derived from the credit default swap market and from bond market credit spreads. The impact of the credit risk adjustments for all financial derivatives outstanding to the fair value calculation was $0.7 million at December 31, 2023. As of December 31, 2023 and 2022, the net fair value was a liability of $115.2 million and an asset of $149.7 million, respectively, using significant other observable, or Level 2, inputs. No Level 3 inputs were used in our derivative valuations during the years ended December 31, 2023 and 2022.

NW Holdings

NW Holdings and NWN Water entered into interest rate swap agreements with major financial institutions that effectively converted variable-rate debt to a fixed rate. Interest payments made between the effective date and expiration date are hedged by the swap agreements. The notional amount, effective date, expiration date and benchmark rate of the swap agreements are shown in the table below:

In millions	Notional Amount	Effective Date	Expiration Date	Fixed Rate
NW Holdings	$ 100.0	1/17/2023	3/15/2024	4.7 %
NWN Water	$ 55.0	1/19/2023	6/10/2026	3.8 %

Unrealized gains and losses related to these interest rate swap agreements are recorded in AOCI on the consolidated balance sheet and totaled $0.2 million and $0.1 million, net of tax, as of December 31, 2023 and 2022, respectively. There were no amounts reclassified from AOCI to net income during the year ended December 31, 2023 and 2022.

16. COMMITMENTS AND CONTINGENCIES

Gas Purchase Agreements

NW Natural enters into short-term and long-term physical baseload gas purchase agreements. The majority of our gas purchase agreements include year-round, winter-only, summer-only, and monthly purchases.

Pipeline Capacity Purchase and Release Commitments

NW Natural has signed agreements providing for the reservation of firm pipeline capacity under which it is required to make monthly payments for contracted capacity. The pricing component of the monthly payment is established, subject to change, by U.S. or Canadian regulatory bodies, or is established directly with private counterparties, as applicable. In addition, NW Natural has entered into long-term agreements to release firm pipeline capacity. The parties that we release this capacity to make payments directly to the related pipelines.

The aggregate amounts of these agreements at NW Natural were as follows at December 31, 2023:

In thousands	Gas Purchase Agreements[1]	Pipeline Capacity Purchase Agreements	Pipeline Capacity Release Agreements
2024	$ 303,682	$ 78,907	$ 7,543
2025	34,457	81,114	3,455
2026	34,586	66,972	—
2027	33,830	67,123	—
2028	33,980	63,812	—
Thereafter	208,426	377,175	—
Total	648,961	735,103	10,998
Less: Amount representing interest	96,491	183,620	373
Total at present value	$ 552,470	$ 551,483	$ 10,625

(1) Gas purchase agreements include environmental attributes of RNG.

Total fixed charges under capacity purchase agreements were $87.0 million for 2023, $90.2 million for 2022, and $82.9 million for 2021, of which $8.2 million, $8.3 million, and $7.7 million, respectively, related to capacity releases which third parties paid directly to the related pipelines. In addition, per-unit charges are required to be paid based on the actual quantities shipped under the agreements. In certain take-or-pay purchase commitments, annual deficiencies may be offset by prepayments subject to recovery over a longer term if future purchases exceed the minimum annual requirements.

Leases
Refer to Note 7 for a discussion of lease commitments and contingencies.

Environmental Matters
Refer to Note 17 for a discussion of environmental commitments and contingencies.

17. ENVIRONMENTAL MATTERS

NW Natural owns, or previously owned, properties that may require environmental remediation or action. The range of loss for environmental liabilities is estimated based on current remediation technology, enacted laws and regulations, industry experience gained at similar sites, and an assessment of the probable level of involvement and financial condition of other potentially responsible parties (PRPs). When amounts are prudently expended related to site remediation of those sites described herein, NW Natural has recovery mechanisms in place to collect 96.7% of remediation costs allocable to Oregon customers and 3.3% of costs allocable to Washington customers.

These sites are subject to the remediation process prescribed by the Environmental Protection Agency (EPA) and the Oregon Department of Environmental Quality (ODEQ). The process begins with a remedial investigation (RI) to determine the nature and extent of contamination and then a risk assessment (RA) to establish whether the contamination at the site poses unacceptable risks to humans and the environment. Next, a feasibility study (FS) or an engineering evaluation/cost analysis (EE/CA) evaluates various remedial alternatives. It is at this point in the process when NW Natural is able to estimate a range of remediation costs and record a reasonable potential remediation liability, or make an adjustment to the existing liability. From this study, the regulatory agency selects a remedy and issues a Record of Decision (ROD). After a ROD is issued, NW Natural would seek to negotiate a consent decree or consent judgment for designing and implementing the remedy. NW Natural would have the ability to further refine estimates of remediation liabilities based upon an approved remedial design.

Remediation may include treatment of contaminated media such as sediment, soil and groundwater, removal and disposal of media, institutional controls such as legal restrictions on future property use, or natural recovery. Following construction of the remedy, the EPA and ODEQ also have requirements for ongoing maintenance, monitoring and other post-remediation care that may continue for many years. Where appropriate and reasonably known, NW Natural will provide for these costs in the remediation liabilities described below.

Due to the numerous uncertainties surrounding the course of environmental remediation and the preliminary nature of several site investigations, in some cases, NW Natural may not be able to reasonably estimate the high end of the range of possible loss. In those cases, the nature of the possible loss has been disclosed, as has the fact that the high end of the range cannot be reasonably estimated where a range of potential loss is available. Unless there is an estimate within the range of possible losses that is more likely than other cost estimates within that range, NW Natural records the liability at the low end of this range. It is likely changes in these estimates and ranges will occur throughout the remediation process for each of these sites due to the continued evaluation and clarification concerning responsibility, the complexity of environmental laws and regulations and the determination by regulators of remediation alternatives. In addition to remediation costs, NW Natural could also be subject to

Natural Resource Damages (NRD) claims. NW Natural will assess the likelihood and probability of each claim and recognize a liability if deemed appropriate. Refer to "*Other Portland Harbor*" below.

Environmental Sites

The following table summarizes information regarding liabilities related to environmental sites, which are recorded in other current liabilities and other noncurrent liabilities in NW Natural's balance sheet at December 31:

	Current Liabilities		Non-Current Liabilities	
In thousands	2023	2022	2023	2022
Portland Harbor site:				
Gasco/Siltronic Sediments	$ 12,428	$ 9,744	$ 42,550	$ 42,120
Other Portland Harbor	3,035	2,634	11,270	11,270
Gasco/Siltronic Upland site	16,304	16,067	34,235	35,457
Front Street site	687	457	939	879
Oregon Steel Mills	—	—	179	179
Total	$ 32,454	$ 28,902	$ 89,173	$ 89,905

Portland Harbor Site

The Portland Harbor is an EPA listed Superfund site that is approximately 10 miles long on the Willamette River and is adjacent to NW Natural's Gasco uplands site. NW Natural is one of over one hundred PRPs, each jointly and severally liable, at the Superfund site. In January 2017, the EPA issued its Record of Decision, which selects the remedy for the clean-up of the Portland Harbor site (Portland Harbor ROD). The Portland Harbor ROD estimates the present value total cost at approximately $1.05 billion with an accuracy between -30% and +50% of actual costs.

NW Natural's potential liability is a portion of the costs of the remedy for the entire Portland Harbor Superfund site. The cost of that remedy is expected to be allocated among more than one hundred PRPs. NW Natural is participating in a non-binding allocation process with other PRPs in an effort to resolve its potential liability. The Portland Harbor ROD does not provide any additional clarification around allocation of costs among PRPs; accordingly, NW Natural has not modified any of the recorded liabilities at this time as a result of the issuance of the Portland Harbor ROD.

NW Natural manages its liability related to the Superfund site as two distinct remediation projects, the Gasco Sediments Site and Other Portland Harbor projects.

GASCO SEDIMENTS. In 2009, NW Natural and Siltronic Corporation entered into a separate Administrative Order on Consent with the EPA to evaluate and design specific remedies for sediments adjacent to the Gasco uplands and Siltronic uplands sites. NW Natural submitted a draft EE/CA to the EPA in May 2012 to provide the estimated cost of potential remedial alternatives for this site. In March 2020, NW Natural and the EPA amended the Administrative Order on Consent to include additional remedial design activities downstream of the Gasco sediments site and in the navigation channel. Siltronic Corporation is not a party to the amended order. NW Natural is completing pre-design studies and has submitted a draft Basis of Design Report. These preliminary design steps do not include a cost estimate for cleanup. No remedial design is more likely than the EE/CA alternatives at this time, and NW Natural expects further design discussion and iteration with the EPA.

The estimated costs for the various sediment remedy alternatives in the draft EE/CA for the additional studies and design work needed before the cleanup can occur, and for regulatory oversight throughout the cleanup range from $55.0 million to $350 million. NW Natural has recorded a liability of $55.0 million for the Gasco sediment clean-up, which reflects the low end of the range. At this time, we believe sediments at the Gasco sediments site represent the largest portion of NW Natural's liability related to the Portland Harbor site discussed above.

In September 2023, the EPA approved the In Situ Stabilization and Solidification (ISS) Work Plan for the ISS field pilot study, which was successfully completed during the fall of 2023. Information obtained from the pilot study will be used to support remedial design of the Gasco sediments project.

OTHER PORTLAND HARBOR. While we believe liabilities associated with the Gasco sediments site represent NW Natural's largest exposure, there are other potential exposures associated with the Portland Harbor ROD, including NRD costs and harborwide remedial design and cleanup costs (including downstream petroleum contamination), for which allocations among the PRPs have not yet been determined.

NW Natural and other parties have signed a cooperative agreement with the Portland Harbor Natural Resource Trustee council to participate in a phased NRD assessment to estimate liabilities to support an early restoration-based settlement of NRD claims. One member of this Trustee council, the Yakama Nation, withdrew from the council in 2009, and in 2017, filed suit against NW Natural and 29 other parties seeking remedial costs and NRD assessment costs associated with the Portland Harbor site, set forth in the complaint. The complaint seeks recovery of alleged costs totaling $0.3 million in connection with the selection of a remedial action for the Portland Harbor site as well as declaratory judgment for unspecified future remedial action costs and for costs to assess the injury, loss or destruction of natural resources resulting from the release of hazardous substances at and from the Portland Harbor site. The Yakama Nation has filed two amended complaints addressing certain pleading defects and dismissing the State of Oregon. On the motion of NW Natural and certain other defendants the federal court has stayed the case pending the outcome of the non-binding allocation proceeding discussed above. NW Natural has recorded a liability for NRD claims which is at the low end of the range of the potential liability; the high end of the range cannot be reasonably estimated at this time. The NRD liability is not included in the aforementioned range of costs provided in the Portland Harbor ROD.

Gasco Uplands Site

A predecessor of NW Natural, Portland Gas and Coke Company, owned a former gas manufacturing plant that was closed in 1958 (Gasco site) and is adjacent to the Portland Harbor site described above. The Gasco site has been under investigation by NW Natural for environmental contamination under the ODEQ Voluntary Cleanup Program (VCP). It is not included in the range of remedial costs for the Portland Harbor site noted above. The Gasco site is managed in two parts, the uplands portion and the groundwater source control action.

NW Natural submitted a revised Remedial Investigation Report for the uplands to ODEQ in May 2007. In March 2015, ODEQ approved the Risk Assessment (RA) for this site, enabling commencement of work on the FS in 2016. A draft FS is currently anticipated to be submitted in 2024. NW Natural has recognized a liability for the remediation of the uplands portion of the site which is at the low end of the range of potential liability; the high end of the range cannot be reasonably estimated at this time. In October 2016, ODEQ and NW Natural agreed to amend their VCP agreement for the Gasco uplands to incorporate a portion of the Siltronic property formerly owned by Portland Gas & Coke between 1939 and 1960 into the Gasco RA and FS. Previously, NW Natural was conducting an investigation of manufactured gas plant constituents on the entire Siltronic uplands for ODEQ. Siltronic will be working with ODEQ directly on environmental impacts to the remainder of its property.

In September 2013, NW Natural completed construction of a groundwater source control system, including a water treatment station, at the Gasco site. NW Natural has estimated the cost associated with the ongoing operation of the system and has recognized a liability which is at the low end of the range of potential cost. NW Natural cannot estimate the high end of the range at this time due to the uncertainty associated with the duration of running the water treatment station, which is highly dependent on the remedy determined for both the upland portion as well as the final remedy for the Gasco sediments site.

Other Sites

In addition to those sites above, NW Natural has environmental exposures at three other sites: Central Service Center, Front Street and Oregon Steel Mills. NW Natural may have exposure at other sites that have not been identified at this time. Due to the uncertainty of the design of remediation, regulation, timing of the remediation and in the case of the Oregon Steel Mills site, pending litigation, liabilities for each of these sites have been recognized at their respective low end of the range of potential liability; the high end of the range could not be reasonably estimated at this time.

FRONT STREET SITE. The Front Street site was the former location of a gas manufacturing plant NW Natural operated (the former Portland Gas Manufacturing site, or PGM). At ODEQ's request, NW Natural conducted a sediment and source control investigation and provided findings to ODEQ. In December 2015, an FS on the former Portland Gas Manufacturing site was completed.

In July 2017, ODEQ issued the PGM ROD. The ROD specifies the selected remedy, which requires a combination of dredging, capping, treatment, and natural recovery. In addition, the selected remedy also requires institutional controls and long-term inspection and maintenance. Construction of the remedy began in July 2020 and was completed in October 2020. The first year of post-construction monitoring was completed in 2021 and demonstrated that the cap was intact and performing as designed. NW Natural has recognized an additional liability of $1.6 million for costs associated with the discovery during construction of World War II-era munitions, design costs, regulatory and permitting issues, and post-construction work.

OREGON STEEL MILLS SITE. Refer to "Legal Proceedings," below.

Environmental Cost Deferral and Recovery

NW Natural has authorizations in Oregon and Washington to defer costs related to remediation of properties that are owned or were previously owned by NW Natural. In Oregon, a Site Remediation and Recovery Mechanism (SRRM) is currently in place to recover prudently incurred costs allocable to Oregon customers, subject to an earnings test. On October 21, 2019 the WUTC authorized an Environmental Cost Recovery Mechanism (ECRM) for recovery of prudently incurred costs allocable to Washington customers beginning November 1, 2019.

The following table presents information regarding the total regulatory asset deferred as of December 31:

In thousands	2023	2022
Deferred costs and interest(1)	$ 57,758	$ 47,666
Accrued site liabilities(2)	121,575	118,763
Insurance proceeds and interest	(50,764)	(54,784)
Total regulatory asset deferral(1)	128,569	111,645
Current regulatory assets(3)	9,950	7,392
Long-term regulatory assets(3)	118,619	104,253

(1) Includes pre-review and post-review deferred costs, amounts currently in amortization, and interest, net of amounts collected from customers.

(2) Excludes 3.3% of the Front Street site liability as the OPUC only allows recovery of 96.7% of costs for those sites allocable to Oregon, including those that historically served only Oregon customers. Amounts excluded from regulatory assets were $53 thousand in 2023 and $43 thousand in 2022.

(3) Environmental costs relate to specific sites approved for regulatory deferral by the OPUC and WUTC. In Oregon, NW Natural earns a carrying charge on cash amounts paid, whereas amounts accrued but not yet paid do not earn a carrying charge until expended. It also accrues a carrying charge on insurance proceeds for amounts owed to customers. In Washington, neither the cash paid nor insurance proceeds received accrue a carrying charge. Current environmental costs represent remediation costs management expects to collect from customers in the next 12 months. Amounts included in this estimate are still subject to a prudence and earnings test review by the OPUC and do not include the $5.0 million tariff rider. The amounts allocable to Oregon are recoverable through NGD rates, subject to an earnings test. See "*Oregon SRRM*" below.

Oregon SRRM

Collections From Oregon Customers

Under the SRRM collection process, there are three types of deferred environmental remediation expense:

- Pre-review - This class of costs represents remediation spend that has not yet been deemed prudent by the OPUC. Carrying costs on these remediation expenses are recorded at NW Natural's authorized cost of capital. NW Natural anticipates the prudence review for annual costs and approval of the earnings test prescribed by the OPUC to occur by the third quarter of the following year.
- Post-review - This class of costs represents remediation spend that has been deemed prudent and allowed after applying the earnings test, but is not yet included in amortization. NW Natural earns a carrying cost on these amounts at a rate equal to the five-year treasury rate plus 100 basis points.
- Amortization - This class of costs represents amounts included in current customer rates for collection and is generally calculated as one-fifth of the post-review deferred balance. NW Natural earns a carrying cost equal to the amortization rate determined annually by the OPUC, which approximates a short-term borrowing rate.

In addition to the collection amount noted above, an order issued by the OPUC provides for the annual collection of $5.0 million from Oregon customers through a tariff rider. As NW Natural collects amounts from customers, it recognizes these collections as revenue and separately amortizes an equal and offsetting amount of its deferred regulatory asset balance through the environmental remediation operating expense line shown separately in the operating expense section of the income statement.

NW Natural received total environmental insurance proceeds of approximately $150 million as a result of settlements from litigation that was dismissed in July 2014. Under a 2015 OPUC order which established the SRRM, one-third of the Oregon allocated proceeds were applied to costs deferred through 2012 with the remaining two-thirds applied to costs at a rate of $5.0 million per year plus interest over the following 20 years. NW Natural accrues interest on the Oregon allocated insurance proceeds in the customer's favor at a rate equal to the five-year treasury rate plus 100 basis points. As of December 31, 2023, NW Natural has applied $100.7 million of insurance proceeds to prudently incurred remediation costs allocated to Oregon.

Environmental Earnings Test

To the extent NW Natural earns at or below its authorized Return on Equity (ROE) as defined by the SRRM, remediation expenses and interest in excess of the $5.0 million tariff rider and $5.0 million insurance proceeds are recoverable through the SRRM. To the extent NW Natural earns more than its authorized ROE in a year, it is required to cover environmental expenses and interest on expenses greater than the $10.0 million with those earnings that exceed its authorized ROE.

Washington ECRM

Washington Deferral

On October 21, 2019, the WUTC issued an order (WUTC Order) establishing the ECRM which allows for recovery of past deferred and future prudently incurred environmental remediation costs allocable to Washington customers through application of insurance proceeds and collections from customers. Environmental remediation expenses relating to sites that previously served both Oregon and Washington customers are allocated between states with Washington customers receiving 3.3% percent of the costs and insurance proceeds.

In accordance with the WUTC Order, insurance proceeds were fully applied to costs incurred between December 2018 and June 2019 that were deemed prudent. Remaining insurance proceeds will be amortized over a 10.5 year period ending December 31,

2029. As of December 31, 2023, approximately $3.9 million of proceeds have been applied to prudently incurred costs.

On an annual basis, NW Natural files for a prudence determination and a request to amortize costs to the extent that remediation expenses exceed the insurance amortization. After insurance proceeds are fully amortized, if in a particular year the request to collect deferred amounts exceeds one percent of Washington normalized revenues, then the excess will be collected over three years with interest.

Legal Proceedings

NW Holdings is not currently party to any direct claims or litigation, though in the future it may be subject to claims and litigation arising in the ordinary course of business.

NW Natural is subject to claims and litigation arising in the ordinary course of business, including the matters discussed above. Although the final outcome of any of these legal proceedings cannot be predicted with certainty, including the matter relating to the Oregon Steel Mills site referenced below, NW Natural and NW Holdings do not expect that the ultimate disposition of any of these matters will have a material effect on their financial condition, results of operations, or cash flows. See also Part II, Item 1, “Legal Proceedings".

Oregon Steel Mills Site

In 2004, NW Natural was served with a third-party complaint by the Port of Portland (the Port) in a Multnomah County Circuit Court case, Oregon Steel Mills, Inc. v. The Port of Portland. The Port alleges that in the 1940s and 1950s petroleum wastes generated by NW Natural's predecessor, Portland Gas & Coke Company, and 10 other third-party defendants, were disposed of in a waste oil disposal facility operated by the United States or Shaver Transportation Company on property then owned by the Port and now owned by Evraz Oregon Steel Mills. The complaint seeks contribution for unspecified past remedial action costs incurred by the Port regarding the former waste oil disposal facility as well as a declaratory judgment allocating liability for future remedial action costs. No date has been set for trial. In August 2017, the case was stayed pending the outcome of the Portland Harbor allocation process or other mediation. Although the final outcome of this proceeding cannot be predicted with certainty, NW Natural and NW Holdings do not expect the ultimate disposition of this matter will have a material effect on NW Natural's or NW Holdings' financial condition, results of operations, or cash flows.

SCHEDULE I - CONDENSED FINANCIAL INFORMATION OF NORTHWEST NATURAL HOLDING COMPANY

NORTHWEST NATURAL HOLDING COMPANY

CONDENSED STATEMENTS OF COMPREHENSIVE INCOME (PARENT COMPANY ONLY)

	Year Ended December 31,		
In thousands	2023	2022	2021
Operating expenses:			
Operations and maintenance	$ 5,145	$ 3,828	$ 4,837
Total operating expenses	5,145	3,828	4,837
Loss from operations	(5,145)	(3,828)	(4,837)
Earnings from investment in subsidiaries, net of tax	106,267	92,727	83,072
Other income (expense), net	(1,156)	60	(143)
Interest expense, net	10,022	4,967	982
Income before income taxes	89,944	83,992	77,110
Income tax benefit	(3,924)	(2,311)	(1,556)
Net income	93,868	86,303	78,666
Other comprehensive income (loss) from subsidiaries, net of tax	(868)	5,108	1,498
Unrealized gain on interest rate swap, net of tax	104	11	—
Comprehensive income	$ 93,104	$ 91,422	$ 80,164

See Notes to Condensed Financial Statements

NORTHWEST NATURAL HOLDING COMPANY
CONDENSED BALANCE SHEETS
(PARENT COMPANY ONLY)

	As of December 31,	
In thousands	2023	2022
Assets:		
Current assets:		
Cash and cash equivalents	$ 1,011	$ 7,280
Receivables from affiliates	15,596	9,967
Other current assets	4,160	2,895
Total current assets	20,767	20,142
Non-current assets:		
Investments in subsidiaries	1,456,449	1,357,599
Other investments	32	14
Deferred tax assets	513	520
Other non-current assets	367	486
Total non-current assets	1,457,361	1,358,619
Total assets	$ 1,478,128	$ 1,378,761
Liabilities and equity:		
Current liabilities:		
Short-term debt	$ 73,000	$ 88,000
Current maturities of long-term debt	99,992	—
Accounts payable	968	402
Payables to affiliates	19,897	14,665
Other current liabilities	433	295
Total current liabilities	194,290	103,362
Long-term debt	—	99,958
Total equity	1,283,838	1,175,441
Total liabilities and equity	$ 1,478,128	$ 1,378,761

See Notes to Condensed Financial Statements

NORTHWEST NATURAL HOLDING COMPANY
CONDENSED STATEMENTS OF CASH FLOWS
(PARENT COMPANY ONLY)

	Year Ended December 31,		
In thousands	2023	2022	2021
Operating activities:			
Net income	$ 93,868	$ 86,303	$ 78,666
Adjustments to reconcile net income to cash used in operations:			
Equity in earnings of subsidiaries, net of tax	(106,267)	(92,727)	(83,072)
Cash dividends received from subsidiaries	92,375	62,710	56,057
Deferred income taxes	(31)	(141)	(212)
Other	164	142	119
Changes in assets and liabilities:			
Receivables from affiliates	(5,629)	(7,787)	12,558
Income and other taxes	(491)	8,161	1,299
Accounts payable	6,314	(2,499)	3,342
Interest accrued	103	156	57
Other, net	(380)	(211)	(313)
Cash provided by operating activities	80,026	54,107	68,501
Investing activities:			
Contributions to subsidiaries	(76,310)	(241,497)	(142,405)
Return of capital from subsidiaries	3,350	—	26,000
Cash used in investing activities	(72,960)	(241,497)	(116,405)
Financing activities:			
Proceeds from common stock issued, net	66,495	208,561	17,501
Long-term debt issued	—	100,000	—
Changes in other short-term debt, net	(15,000)	(56,000)	71,000
Cash dividend payments on common stock	(67,340)	(62,771)	(55,919)
Other	2,510	4,615	4,320
Cash (used in) provided by financing activities	(13,335)	194,405	36,902
(Decrease) increase in cash and cash equivalents	(6,269)	7,015	(11,002)
Cash, cash equivalents and restricted cash, beginning of period	7,280	265	11,267
Cash, cash equivalents and restricted cash, end of period	$ 1,011	$ 7,280	$ 265

See Notes to Condensed Financial Statements

1. BASIS OF PRESENTATION

NW Holdings is an energy services holding company that conducts substantially all of its business operations through its subsidiaries, particularly NW Natural. These condensed financial statements and related footnotes have been prepared in accordance with Rule 12-04, Schedule I of Regulation S-X. These financial statements should be read in conjunction with the consolidated financial statements and notes thereto of NW Holdings included in Item 8 of this Form 10-K. NW Holdings' wholly-owned subsidiaries are recorded based upon its proportionate share of the subsidiaries' net assets (similar to presenting them on the equity method).

Equity earnings of subsidiaries including earnings from NW Natural were $106.3 million, $92.7 million, and $83.1 million for the years ended December 31, 2023, 2022, and 2021 respectively.

There were $95.7 million, $62.7 million and $82.1 million of cash dividends paid to NW Holdings from wholly-owned subsidiaries for the years ended December 31, 2023, 2022 and 2021, respectively.

2. DEBT

For information concerning NW Holdings' debt obligations, see Note 9 to the consolidated financial statements included in Item 8 of this report.

NORTHWEST NATURAL HOLDING COMPANY

SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS AND RESERVES

COLUMN A	COLUMN B	COLUMN C		COLUMN D	COLUMN E
		Additions		Deductions	
In thousands (year ended December 31)	Balance at beginning of period	Charged to costs and expenses	Charged to other accounts	Net write-offs	Balance at end of period
2023					
Reserves deducted in balance sheet from assets to which they apply:					
Allowance for uncollectible accounts	$ 3,296	$ 2,869	$ 263	$ 2,973	$ 3,455
2022					
Reserves deducted in balance sheet from assets to which they apply:					
Allowance for uncollectible accounts	$ 2,018	$ 1,081	$ 1,810	$ 1,613	$ 3,296
2021					
Reserves deducted in balance sheet from assets to which they apply:					
Allowance for uncollectible accounts	$ 3,219	$ 724	$ (219)	$ 1,706	$ 2,018

NORTHWEST NATURAL GAS COMPANY

SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS AND RESERVES

COLUMN A	COLUMN B	COLUMN C		COLUMN D	COLUMN E
		Additions		Deductions	
In thousands (year ended December 31)	Balance at beginning of period	Charged to costs and expenses	Charged to other accounts	Net write-offs	Balance at end of period
2023					
Reserves deducted in balance sheet from assets to which they apply:					
Allowance for uncollectible accounts	$ 3,079	$ 2,859	$ 263	$ 2,973	$ 3,228
2022					
Reserves deducted in balance sheet from assets to which they apply:					
Allowance for uncollectible accounts	$ 1,962	$ 920	$ 1,810	$ 1,613	$ 3,079
2021					
Reserves deducted in balance sheet from assets to which they apply:					
Allowance for uncollectible accounts	$ 3,107	$ 780	$ (219)	$ 1,706	$ 1,962

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

(a) Evaluation of Disclosure Controls and Procedures

NW Holdings and NW Natural management, under the supervision and with the participation of the Chief Executive Officer and Chief Financial Officer, completed an evaluation of the effectiveness of the design and operation of disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934, as amended (the Exchange Act)). Based upon this evaluation, the Chief Executive Officer and Chief Financial Officer of each registrant have concluded that, as of the end of the period covered by this report, disclosure controls and procedures were effective to ensure that information required to be disclosed by each such registrant and included in reports filed or submitted under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the Securities and Exchange Commission (SEC) rules and forms and that such information is accumulated and communicated to management of each registrant, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

(b) Changes in Internal Control Over Financial Reporting

NW Holdings and NW Natural management are responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in the Exchange Act Rule 13a-15(f). There have been no changes in NW Holdings' or NW Natural's internal control over financial reporting during the quarter ended December 31, 2023 that have materially affected, or are reasonably likely to materially affect, internal control over financial reporting for NW Holdings and NW Natural. The statements contained in Exhibit 31.1, Exhibit 31.2, Exhibit 31.3, and Exhibit 31.4 should be considered in light of, and read together with, the information set forth in this Item 9(a).

ITEM 9B. OTHER INFORMATION

None.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The "Information Concerning Nominees and Continuing Directors" and "Corporate Governance" contained in NW Holdings' definitive Proxy Statement for the 2024 Annual Meeting of Shareholders is hereby incorporated by reference. The following are officers of NW Natural, unless indicated otherwise.

EXECUTIVE OFFICERS

Name	Age at Dec. 31, 2023	Positions held during last five years[1]
David H. Anderson*	62	Chief Executive Officer (2023-); President and Chief Executive Officer[2] (2016-2023); Chief Operating Officer and President (2015-2016); Executive Vice President and Chief Operating Officer (2014-2015); Executive Vice President Operations and Regulation (2013-2014); Senior Vice President and Chief Financial Officer (2004-2013).
Frank H. Burkhartsmeyer*	59	Senior Vice President and Chief Financial Officer[2][3] (2017- 2023); Executive Vice President, Strategy and Business Development (2023); President and Chief Executive Officer of Renewables, Avangrid Renewables (2015-2017); Senior Vice President of Finance, Iberdrola Renewables Holdings, Inc. (2012-2015).
James R. Downing	54	Vice President and Chief Information Officer (2017-); Chief Information Officer, WorleyParsons (America's Division) (2016-2017); Executive Service Delivery Manager for SAP, British Petroleum (2011-2015).
Shawn M. Filippi*	51	Vice President, Chief Compliance Officer and Corporate Secretary[2] (2016-); Vice President and Corporate Secretary (2015-2016); Senior Legal Counsel (2011-2014); Assistant Corporate Secretary (2010-2014).
Jon G. Huddleston	61	Vice President, Engineering and Utility Operations (2018- 2023); Senior Director, Utility Operations (2014-2018); Director, Utility Operations (2013-2014); Process Director (2007-2013).
Joseph S. Karney	45	Vice President, Engineering and Utility Operations (2023-); Senior Director, Utility Operations (2021-2023); Senior Engineering Director (2019-2021); Engineering Director (2017-2019); Compliance Senior Manager (2015-2017).
Zachary D. Kravitz	40	Vice President, Rates and Regulatory (2022-); Senior Director, Rates and Regulatory (2021-2022); Director, Rates and Regulatory (2018-2021); Regulatory Attorney (2014-2018).
Justin B. Palfreyman*	45	President (2023-); President, NW Natural RNG Holding Company, LLC (2021-); Senior Vice President, Strategy and Business Development, NW Natural Gas Company (2023); Vice President, Strategy and Business Development (2017-2023); President, NW Natural Water, LLC (2018-); Vice President, Business Development (2016-2017); Director, Power, Energy and Infrastructure Group, Lazard, Freres & Co. (2009-2016).
Melinda B. Rogers	58	Vice President, Chief Human Resources and Diversity Officer (2018-); Senior Director of Human Resources (2018); Senior Manager, Organizational Effectiveness and Talent Acquisition (2015-2017); Senior Associate, Point B (2014-2015); Director, Executive Development Center, Willamette University (2011-2014).
Kimberly Heiting Rush	54	Senior Vice President and Chief Operating Officer (2023-); Senior Vice President, Operations and Chief Marketing Officer (2018-2023); Senior Vice President, Communications and Chief Marketing Officer (2018); Vice President, Communications and Chief Marketing Officer (2015-2018); Chief Marketing and Communications Officer (2013-2014); Chief Corporate Communications Officer (2011-2013).
MardiLyn Saathoff*	67	Senior Vice President, Regulation and General Counsel[2][4] (2016-); Senior Vice President and General Counsel (2015-2016); Vice President, Legal, Risk and Compliance (2013-2014); Deputy General Counsel (2010-2013); Chief Governance Officer and Corporate Secretary (2008-2014).
David A. Weber	64	Vice President, Gas Supply and Utility Support Services (2019-); President and Chief Executive Officer, NW Natural Gas Storage, LLC (2011-); President, KB Pipeline Company (2018-); Director, NWN Gas Reserves LLC (2018-); President and Chief Executive Officer, Gill Ranch Storage, LLC (2011-2020).
Kathryn M. Williams	48	Vice President, Chief Public Affairs and Sustainability Officer (2023-); Vice President, Public Affairs and Sustainability (2020-2023); Vice President, Public Affairs (2019-2020); Government and Community Affairs Director (2018-2019); State Affairs Manager, Port of Portland (2015-2018); Business and Rail Relations Manager, Port of Portland (2007-2015).
Brody J. Wilson*	44	Chief Financial Officer (Interim)[5] (2023-), Vice President, Chief Accounting Officer, and Treasurer[2] (2017-); Controller (2013-2023); Chief Financial Officer (Interim), Treasurer (Interim), and Chief Accounting Officer (2016-2017); Chief Accounting Officer, Controller and Assistant Treasurer (2016); Acting Controller (2013); Accounting Director (2012-2013).

DIRECTOR (NORTHWEST NATURAL GAS COMPANY ONLY)**		
Name	Age at Dec. 31, 2023	Positions held during last five years(1)
Steven E. Wynne**	71	Executive Vice President, Moda, Inc., a privately-held healthcare insurance company (2012-2023); Director, JELD-WEN Holding Inc. (2012-); Director, Pendleton Woolen Mills, Inc. (2013-); Director, Lone Rock Resources, Inc. (2016-); Director, FLIR Systems, Inc. (1999-2021); Director, Citifyd Inc. (2013-2019); Trustee, Willamette University (1999-); Trustee, Portland Center Stage (2012-2019); Executive Vice President, JELD-WEN, Inc. (2011-2012); President and Chief Executive Officer, SBI International, Ltd. (2004-2007); Partner, Ater Wynne LLP (2001-2002; 2003-2004); President and Chief Executive Officer, Adidas America, Inc. (1995-2000). Mr. Wynne's senior management experience with a variety of companies, board service on a number of public and private companies and longstanding legal practice in the areas of corporate finance, securities and mergers and acquisitions qualify him to provide insight and guidance in the areas of corporate governance, strategic planning, enterprise risk management, finance and operations.

* Executive Officer of Northwest Natural Holding Company and Northwest Natural Gas Company.
** Director of Northwest Natural Gas Company only (beginning 2018). All other directors of Northwest Natural Gas Company are also directors of Northwest Natural Holding Company, and information regarding all directors concurrently serving on the Board of Directors of Northwest Natural Gas Company and Northwest Natural Holding Company will be incorporated by reference to our definitive Proxy Statement for the 2024 Annual Meeting of Shareholders.
(1) Unless otherwise specified, all positions held at Northwest Natural Gas Company.
(2) Position held at Northwest Natural Holding Company (beginning March 2018) and Northwest Natural Gas Company.
(3) Mr. Burkhartsmeyer voluntarily resigned his Executive Vice President, Strategy and Business Development and Chief Financial Officer positions with NW Holdings and NW Natural effective July 28, 2023.
(4) In 2020, Ms. Saathoff's title at Northwest Natural Holding Company changed from Senior Vice President and General Counsel to Senior Vice President, Regulation and General Counsel.
(5) The Board of Directors appointed Brody J. Wilson as interim Chief Financial Officer of NW Holdings and NW Natural effective July 28, 2023.

Each executive officer serves successive annual terms and thereafter until their successors have been duly elected or until their resignation or removal in accordance with the NW Holdings or NW Natural Bylaws, as applicable. There are no family relationships among our executive officers, directors or any person chosen to become one of our officers or directors. NW Holdings and NW Natural have adopted a Code of Ethics (Code) applicable to all employees, officers, and directors that is available on our website at www.nwnaturalholdings.com. We intend to disclose on our website at www.nwnaturalholdings.com any amendments to the Code or waivers of the Code for executive officers and directors.

ITEM 11. EXECUTIVE COMPENSATION

The information concerning "Executive Compensation", "Report of the Organization and Executive Compensation Committee", and "Compensation Committee Interlocks and Insider Participation" contained in NW Holdings' definitive Proxy Statement for the 2024 Annual Meeting of Shareholders is hereby incorporated by reference. Information related to Executive Officers as of December 31, 2023 is reflected in Part III, Item 10, above.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

As of February 14, 2024, NW Holdings owned 100% of the outstanding common stock of NW Natural.

The following table sets forth information regarding compensation plans under which equity securities of NW Holdings are authorized for issuance as of December 31, 2023 (see Note 8 to the Consolidated Financial Statements):

Plan Category	(a) Number of securities to be issued upon exercise of outstanding options, warrants and rights	(b) Weighted-average exercise price of outstanding options, warrants and rights	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders:			
Long Term Incentive Plan (LTIP) [(1)(2)]	247,186	n/a	180,755
Employee Stock Purchase Plan	50,120	$ 32.06	256,637
Equity compensation plans not approved by security holders:			
Executive Deferred Compensation Plan (EDCP)[(3)]	705	n/a	n/a
Directors Deferred Compensation Plan (DDCP)[(3)]	28,849	n/a	n/a
Deferred Compensation Plan for Directors and Executives (DCP)[(4)]	210,708	n/a	n/a
Total	537,568		437,392

(1) Awards may be granted under the LTIP as Performance Share Awards, Restricted Stock Units, or stock options. Shares issued pursuant to Performance Share Awards and Restricted Stock Units under the LTIP do not include an exercise price, but are payable when the award criteria are satisfied. The number of shares shown in column (a) include 97,291 Restricted Stock Units and 149,895 Performance Share Awards, reflecting the number of shares to be issued as performance share awards under outstanding Performance Share Awards if target performance levels are achieved. If the maximum awards were paid pursuant to the Performance Share Awards outstanding at December 31, 2023, the number of shares shown in column (a) would increase by 149,895 shares, reflecting the maximum share award of 200% of target, and the number of shares shown in column (c) would decrease by the same amount of shares. No stock options or other types of award have been issued under the LTIP.

(2) The number of shares shown in column (c) includes shares that are available for future issuance under the LTIP as Restricted Stock Units or Performance Share Awards at December 31, 2023.

(3) Prior to January 1, 2005, deferred amounts were credited, at the participant's election, to either a "cash account" or a "stock account." If deferred amounts were credited to stock accounts, such accounts were credited with a number of shares of NW Natural (now NW Holdings) common stock based on the purchase price of the common stock on the next purchase date under our Dividend Reinvestment and Direct Stock Purchase Plan, and such accounts were credited with additional shares based on the deemed reinvestment of dividends. Cash accounts are credited quarterly with interest at a rate equal to Moody's Average Corporate Bond Yield plus two percentage points, subject to a 6% minimum rate. At the election of the participant, deferred balances in the stock accounts are payable after termination of Board service or employment in a lump sum, in installments over a period not to exceed 10 years in the case of the DDCP, or 15 years in the case of the EDCP, or in a combination of lump sum and installments. Amounts credited to stock accounts are payable solely in shares of common stock and cash for fractional shares, and amounts in the above table represent the aggregate number of shares credited to participant's stock accounts. We have contributed common stock to the trustee of the Umbrella Trusts such that the Umbrella Trusts hold approximately the number of shares of common stock equal to the number of shares credited to all participants' stock accounts.

(4) Effective January 1, 2005, the EDCP and DDCP were closed to new participants and replaced with the DCP. The DCP continues the basic provisions of the EDCP and DDCP under which deferred amounts are credited to either a "cash account" or a "stock account." Stock accounts represent a right to receive shares of NW Holdings common stock on a deferred basis, and such accounts are credited with additional shares based on the deemed reinvestment of dividends. Effective January 1, 2007, cash accounts are credited quarterly with interest at a rate equal to Moody's Average Corporate Bond Yield. Our obligation to pay deferred compensation in accordance with the terms of the DCP will generally become due on a predetermined date during a participant's service if elected by such participant or on retirement, death, or other termination of service, and will be paid in a lump sum or in installments of five, 10, or 15 years as elected by the participant in accordance with the terms of the DCP. Amounts credited to stock accounts are payable solely in shares of common stock and cash for fractional shares, and amounts in the above table represent the aggregate number of shares credited to participants' stock accounts. We have contributed common stock to the trustee of the Supplemental Trust such that this trust holds approximately the number of common shares equal to the number of shares credited to all participants' stock accounts. Historically, we have satisfied NW Holdings' stock contributions to the Supplemental Trust through purchases of NW Holdings stock in the open market. In 2023, the board of directors of NW Holdings authorized the original issuance of NW Holdings shares to the Supplemental Trust in satisfaction of such contributions. As of December 31, 2023, 352,307 shares remained available for issuance under current authorizations. The right of each participant in the DCP is that of a general, unsecured creditor of NW Natural.

The information captioned "Beneficial Ownership of Common Stock by Directors and Executive Officers" and "Security Ownership of Common Stock of Certain Beneficial Owners" contained in NW Holdings' definitive Proxy Statement for the 2024 Annual Meeting of Shareholders is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information captioned "Transactions with Related Persons" and "Corporate Governance" in NW Holdings' definitive Proxy Statement for the 2024 Annual Meeting of Shareholders is hereby incorporated by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

NW Holdings
The information captioned "2023 and 2022 Audit Firm Fees" in NW Holdings' definitive Proxy Statement for the 2024 Annual Meeting of Shareholders is hereby incorporated by reference.

NW Natural
The following table shows the fees and expenses of NW Natural, paid or accrued for the integrated audits of the consolidated financial statements and other services provided by NW Natural's independent registered public accounting firm, PricewaterhouseCoopers LLP, for fiscal years 2023 and 2022:

In thousands	2023	2022
Audit Fees	$ 1,540	$ 1,518
Audit-Related Fees	37	477
Tax Fees	22	23
All Other Fees	2	4
Total	$ 1,601	$ 2,022

AUDIT FEES. This category includes fees and expenses for services rendered for the integrated audit of the consolidated financial statements included in the Annual Report on Form 10-K and the review of the quarterly financial statements included in the Quarterly Reports on Form 10-Q. The integrated audit includes the review of our internal control over financial reporting in compliance with Section 404 of the Sarbanes-Oxley Act of 2002 (Sarbanes-Oxley Act). In addition, amounts include fees for services routinely provided by the auditor in connection with regulatory filings, including issuance of consents and comfort letters relating to the registration of Company securities and assistance with the review of documents filed with the SEC.

AUDIT-RELATED FEES. This category includes fees for assurance and related services that are reasonably related to the performance of the audit or review of our financial statements and internal control over financial reporting, including fees and expenses related to consultations for financial accounting and reporting, fees for EPA assurance letters, and fees for system pre-implementation assessments.

TAX FEES. This category includes fees for tax compliance, and review services rendered for NW Natural's income tax returns.

ALL OTHER FEES. This category relates to services other than those described above. The amount reflects payments for accounting research tools in each of 2023 and 2022.

PRE-APPROVAL POLICY FOR AUDIT AND NON-AUDIT SERVICES. The Audit Committee of NW Natural approved or ratified 100 percent of 2023 and 2022 services for audit, audit-related, tax services and all other fees, including audit services relating to compliance with Section 404 of the Sarbanes-Oxley Act. The chair of the Audit Committee of NW Natural is authorized to pre-approve non-audit services between meetings of the Audit Committee and must report such approvals at the next Audit Committee meeting.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as part of this report:

1. A list of all Financial Statements and Supplemental Schedules is incorporated by reference to Item 8.

2. List of Exhibits filed:

   Reference is made to the Exhibit Index commencing on page 142.

ITEM 16. FORM 10-K SUMMARY

None.

NORTHWEST NATURAL HOLDING COMPANY
NORTHWEST NATURAL GAS COMPANY

Exhibit Index to Annual Report on Form 10-K
For the Fiscal Year Ended December 31, 2023

Exhibit Number	Document
*3a.	Amended and Restated Articles of Incorporation of Northwest Natural Holding Company (incorporated by reference to Exhibit 3.1 to the Form 8-K dated October 1, 2018, File No. 1-38681).
*3b.	Amended and Restated Articles of Incorporation of Northwest Natural Gas Company (incorporated by reference to Exhibit 3b to Form 10-K for the year ended December 31, 2020).
*3c.	Amended and Restated Bylaws of Northwest Natural Holding Company (incorporated by reference to Exhibit 3.1 to the Form 10-Q for the quarter ended June 30, 2022, File No. 1-38681).
*3d.	Amended and Restated Bylaws of Northwest Natural Gas Company (incorporated by reference to Exhibit 3.2 to the Form 10-Q for the quarter ended June 30, 2022, File No. 1-38681).
*4a.	Copy of Mortgage and Deed of Trust of Northwest Natural Gas Company, dated as of July 1, 1946 (Mortgage and Deed of Trust), to Bankers Trust (to whom Deutsche Bank Trust Company Americas is the successor), Trustee (incorporated by reference to Exhibit 7(j) in File No. 2-6494); and copies of Supplemental Indentures Nos. 1 through 14 to the Mortgage and Deed of Trust, dated respectively, as of June 1, 1949, March 1, 1954, April 1, 1956, February 1, 1959, July 1, 1961, January 1, 1964, March 1, 1966, December 1, 1969, April 1, 1971, January 1, 1975, December 1, 1975, July 1, 1981, June 1, 1985 and November 1, 1985 (incorporated by reference to Exhibit 4(d) in File No. 33-1929); Supplemental Indenture No. 15 to the Mortgage and Deed of Trust, dated as of July 1, 1986 (filed as Exhibit 4(c) in File No. 33-24168); Supplemental Indentures Nos. 16, 17 and 18 to the Mortgage and Deed of Trust, dated, respectively, as of November 1, 1988, October 1, 1989 and July 1, 1990 (incorporated by reference to Exhibit 4(c) in File No. 33-40482); Supplemental Indenture No. 19 to the Mortgage and Deed of Trust, dated as of June 1, 1991 (incorporated by reference to Exhibit 4(c) in File No. 33-64014).
*4b.	Supplemental Indenture No. 20 to the Mortgage and Deed of Trust, dated as of June 1, 1993 (incorporated by reference to Exhibit 4a.(1) to Form 10-K for year ended December 31, 1993, File No. 0-00994).
*4c.	Supplemental Indenture No. 21 to the Mortgage and Deed of Trust, dated as of October 15, 2012 (incorporated by reference to Exhibit 4.1 to Form 8-K dated October 26, 2012, File No. 1-15973).
*4d.	Supplemental Indenture No. 22 to the Mortgage and Deed of Trust, dated as of November 1, 2016 (incorporated by reference to Exhibit 4.1 to Form 10-Q for the quarter ended September 30, 2016, File No. 1-15973).
*4e.	Supplemental Indenture No. 23 to the Mortgage and Deed of Trust, dated as of September 1, 2018 (incorporated by reference to Exhibit 4(a) to Form 8-K dated September 10, 2018, File No. 1-15973).
*4f.	Twenty-fourth Supplemental Indenture, providing for, among other things, First Mortgage Bonds, 4.78% Series due 2052, dated as of September 1, 2022, by and between Northwest Natural Gas Company and Deutsche Bank Trust Company Americas (incorporated by reference to Exhibit 4.1 to the Form 8-K filed September 30, 2022, file No. 1-15973).
*4g.	Twenty-fifth Supplemental Indenture, providing for, among other things, First Mortgage Bonds, 5.43% Series due 2053, dated as of December 1, 2022, by and between Northwest Natural Gas Company and Deutsche Bank Trust Company Americas (incorporated by reference to Exhibit 4.1 to Form 8-K dated December 1, 2022, File No. 1-15973).
*4h.	Twenty-sixth Supplemental Indenture, providing for, among other things, First Mortgage Bonds, 5.18% Series due 2034 and 5.23% Series due 2038, dated as of July 1, 2023, by and between Northwest Natural Gas Company and Deutsche Bank Trust Company Americas (incorporated by reference to Exhibit 4.1 to the Form 8-K filed August 7, 2023, file No. 1-15973).

*4i. Copy of Indenture, dated as of June 1, 1991, between Northwest Natural Gas Company and Bankers Trust Company (to whom Deutsche Bank Trust Company Americas is successor), Trustee, relating to Northwest Natural Gas Company's Unsecured Debt Securities (incorporated by reference to Exhibit 4(e) in File No. 33-64014).

*4j. Amended and Restated Credit Agreement, dated as of November 3, 2021, among Northwest Natural Holding Company and the lenders party thereto, with JPMorgan Chase Bank, N.A. as administrative agent and Bank of America, N.A., U.S. Bank National Association, and Wells Fargo Bank, National Association, as co-syndication agents, as amended by Amendment No.1, dated as of January 20, 2023 (incorporated by reference to Exhibit 4i to Form 10-K for 2022, File No. 1-15973).

*4k. Amended and Restated Credit Agreement, dated as of November 3, 2021, among Northwest Natural Gas Company and the lenders party thereto, with JPMorgan Chase Bank, N.A. as administrative agent and Bank of America, N.A., U.S. Bank National Association, and Wells Fargo Bank, National Association, as co-syndication agents, as amended by Amendment No. 1, dated as of January 20, 2023 (incorporated by reference to Exhibit 4j to Form 10-K for 2022, File No. 1-38681).

*4l. Credit Agreement, dated as of June 10, 2021, among NW Natural Water Company, LLC, Northwest Natural Holding Company, the lenders party thereto, and Bank of America, N.A., as administrative agent (incorporated by reference to Exhibit 4.2 to the Form 8-K filed June 14, 2021, File No. 1-38681).

*4m. Credit Agreement, dated as of June 10, 2021, among Northwest Natural Gas Company, the lenders party thereto, and U.S. Bank National Association, as administrative agent (incorporated by reference to Exhibit 4.1 to the Form 8-K filed June 14, 2021, File No. 1-15973).

*4n. Credit Agreement, dated as of September 15, 2022, among Northwest Natural Holding Company and the lenders party thereto, with U.S. Bank National Association as administrative agent (incorporated by reference to Exhibit 4.1 to the Form 8-K filed September 21, 2022, file No. 1-38681).

*4o. Credit Agreement, dated as of September 15, 2022, among NW Natural Water Company, LLC, Northwest Natural Holding Company and the lenders party thereto, with U.S. Bank National Association as administrative agent (incorporated by reference to Exhibit 4.2 to the Form 8-K filed September 21, 2022, file No. 1-38681).

*4p. Description of securities registered under Section 12 of the Exchange Act of 1934 (incorporated by reference to Exhibit 4j to Form 10-K for the year ended December 31, 2019, File No. 1-38681).

4q. Note Purchase Agreement dated December 14, 2023, between Northwest Natural Holding Company and the institutional investors named as purchasers therein.

4r. Uncommitted Letter of Credit and Reimbursement Agreement dated January 5, 2024, among Northwest Natural Gas Company, the lenders party thereto, and Canadian Imperial Bank of Commerce, New York Branch, as administrative agent.

21 Subsidiaries of Northwest Natural Holding Company.

23a. Consent of PricewaterhouseCoopers LLP - NW Holdings.

23b. Consent of PricewaterhouseCoopers LLP - NW Natural.

31.1 Certification of Principal Executive Officer of Northwest Natural Gas Company Pursuant to Rule 13a-14(a)/15d-14(a), Section 302 of the Sarbanes-Oxley Act of 2002.

31.2 Certification of Principal Financial Officer of Northwest Natural Gas Company Pursuant to Rule 13a-14(a)/15d-14(a), Section 302 of the Sarbanes-Oxley Act of 2002.

31.3 Certification of Principal Executive Officer of Northwest Natural Holding Company Pursuant to Rule 13a-14(a)/15d-14(a), Section 302 of the Sarbanes-Oxley Act of 2002.

31.4 Certification of Principal Financial Officer of Northwest Natural Holding Company Pursuant to Rule 13a-14(a)/15d-14(a), Section 302 of the Sarbanes-Oxley Act of 2002.

**32.1 Certification of Principal Executive Officer and Principal Financial Officer of Northwest Natural Gas Company Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

**32.2 Certification of Principal Executive Officer and Principal Financial Officer of Northwest Natural Holding Company Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

97 Northwest Natural Holding Company Compensation Recovery Policy, effective as of December 1, 2023.

101 The following materials formatted in Inline Extensible Business Reporting Language (Inline XBRL):
(i) Consolidated Statements of Income;
(ii) Consolidated Balance Sheets;
(iii) Consolidated Statements of Cash Flows; and
(iv) Related notes.

104 The cover page from the Company's Annual Report on Form 10-K for the year ended December 31, 2023, formatted in Inline XBRL and contained in Exhibit 101.

Executive Compensation Plans and Arrangements:

*10a. Executive Supplemental Retirement Income Plan, 2018 Restatement (incorporated herein by reference to Exhibit 10.6 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10b. Supplemental Executive Retirement Plan of Northwest Natural Gas Company, 2018 Restatement, as amended July 25, 2019 (incorporated by reference to Exhibit 10.1 to the Form 10-Q for the quarter ended June 30, 2019, File No. 1-15973).

*10c. Northwest Natural Gas Company Supplemental Trust, effective January 1, 2005, restated as of October 1, 2018 (incorporated by reference to Exhibit 10.9 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10d. Northwest Natural Gas Company Umbrella Trust for Directors, effective January 1, 1991, restated as of October 1, 2018 (incorporated by reference to Exhibit 10.11 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10e. Northwest Natural Gas Company Umbrella Trust for Executives, effective January 1, 1988, restated as of October 1, 2018 (incorporated by reference to Exhibit 10.10 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10f. Executive Deferred Compensation Plan, effective as of January 1, 1987, restated as of October 1, 2018 (incorporated by reference to Exhibit 10.4 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10g. Directors Deferred Compensation Plan, effective June 1, 1981, restated as of October 1, 2018 (incorporated by reference to Exhibit 10.5 to the Form 8-K dated October 1, 2018, File No. 1-38681).

*10h. Deferred Compensation Plan for Directors and Executives, effective January 1, 2005, restated as of September 23, 2021 (incorporated by reference to Exhibit 10.1 to the Form 10-Q for the quarter ended September 30, 2021, File No. 1-38681).

*10i. Form of Indemnity Agreement as entered into between Northwest Natural Gas Company and each director and certain executive officers (incorporated by reference to Exhibit 10.1 to Form 10-Q the quarter ended September 30, 2023, File No. 1-15973).

*10j. Form of Indemnity Agreement as entered into between Northwest Natural Holding Company and each director and certain executive officers (incorporated by reference to Exhibit 10.2 to Form 10-Q for the quarter ended September 30, 2023, File No. 1-38681).

*10k. Non-Employee Directors Stock Compensation Plan, as amended effective December 15, 2005 (incorporated by reference to Exhibit 10.2 to Form 8-K dated December 16, 2005, File No. 1-15973).

*10l. Executive Annual Incentive Plan, effective February 23, 2023 (incorporated by reference to Exhibit 10m to Form 10-K for 2022, File No. 1-15973).

10m. Executive Annual Incentive Plan, effective February 22, 2024.

*10n. Form of Change in Control Severance Agreement between Northwest Natural Gas Company and David Anderson, as amended and restated as of February 23, 2023 (incorporated by reference to Exhibit 10o to Form 10-K for 2022, File No. 1-15973).

*10o. Form of Change in Control Severance Agreement between Northwest Natural Gas Company and each executive officer (other than David Anderson), as amended and restated as of February 23, 2023 (incorporated by reference to Exhibit 10p to Form 10-K for 2022, File No. 1-15973).

*10q. Northwest Natural Gas Company Long Term Incentive Plan, as amended and restated as of October 1, 2018 (incorporated by reference to Exhibit 10.1 to Form 8-K dated October 1, 2018, File No. 1-38681).

*10r. Northwest Natural Holding Company Long Term Incentive Plan, as amended and restated as of February 23, 2023 (incorporated by reference to Exhibit 10s to Form 10-K for 2022, File No. 1-38681).

10s. Northwest Natural Holding Company Long Term Incentive Plan, as amended and restated as of February 22, 2024.

*10t. Form of Performance Share Long Term Incentive Agreement under Long Term Incentive Plan (2021-2023)(incorporated by reference to Exhibit 10w to Form 10-K for 2020, File No. 1-38681).

*10u. Form of Performance Share Long Term Incentive Agreement under Long Term Incentive Plan (2022-2024) (incorporated by reference to Exhibit 10w to Form 10-K for 2021, File No. 1-38681).

*10v. Form of Amendment to Performance Share Long Term Incentive Agreement under Long Term Incentive Plan (2021-2023) and Long Term Incentive Plan (2022-2024) (incorporated by reference to Exhibit 10w to Form 10-K for 2022, File No. 1-15973).

*10w. Form of Performance Share Long Term Incentive Agreement under Long Term Incentive Plan (2023-2025) (incorporated by reference to Exhibit 10x to Form 10-K for 2022, File No. 1-15973).

10x. Form of Performance Share Long Term Incentive Agreement under Long Term Incentive Plan (2024-2026).

*10y. Form of Consent dated December 14, 2006 entered into by each executive officer with respect to amendments to the Executive Supplemental Retirement Income Plan, the Supplemental Executive Retirement Plan and certain change in control severance agreements (incorporated by reference to Exhibit 10.1 to Form 8-K dated December 19, 2006, File No. 1-15973).

*10z. Consent to Amendment of Deferred Compensation Plan for Directors and Executives, dated February 28, 2008 entered into by each executive officer (incorporated by reference to Exhibit 10bb to Form 10-K for 2007, File No. 1-15973).

*10aa. Form of Restricted Stock Unit Award Agreement under Long Term Incentive Plan (2023) (incorporated by reference to Exhibit 10bb to Form 10-K for 2022, File No. 1-38681).

10bb. Form of Restricted Stock Unit Award Agreement under Long Term Incentive Plan (2024).

*10cc. Form of Restricted Stock Unit Award Agreement under Long Term Incentive Plan (2022) (incorporated by reference to Exhibit 10z to Form 10-K for 2021, File No. 1-38681).

*10dd. Form of Restricted Stock Unit Award Agreement under Long Term Incentive Plan (2021) (incorporated by reference to Exhibit 10z to Form 10-K for 2020, File No. 1-38681).

*10ee. Form of Restricted Stock Unit Award Agreement under Long Term Incentive Plan (2020) (incorporated by reference to Exhibit 10aa to Form 10-K for 2019, File No. 1-38681).

*10ff. Cash Retention Agreement between Northwest Natural Gas Company and an executive officer, dated as of March 1, 2018 (incorporated by reference to Exhibit 10ss to Form 10-K for 2017, File No. 1-15973).

10gg. Form of Amendment of Award Agreements, dated February 22, 2024, entered into by each executive officer.

*Incorporated by reference as indicated
**Pursuant to Item 601(b)(32)(ii) of Regulation S-K, this certificate is not being "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended.

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, each registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized. The signature for each undersigned company shall be deemed to relate only to matters having reference to such company and its subsidiaries.

NORTHWEST NATURAL HOLDING COMPANY

By: /s/ David H. Anderson
David H. Anderson
Chief Executive Officer
Date: February 23, 2024

NORTHWEST NATURAL GAS COMPANY

By: /s/ David H. Anderson
David H. Anderson
Chief Executive Officer
Date: February 23, 2024

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the date indicated. The signatures of each of the undersigned shall be deemed to relate only to matters having reference to the below named company and its subsidiaries.

NORTHWEST NATURAL HOLDING COMPANY

Signature	Title	Date
/s/ David H. Anderson David H. Anderson Chief Executive Officer	Principal Executive Officer and Director	February 23, 2024
/s/ Brody J. Wilson Brody J. Wilson Chief Financial Officer, Chief Accounting Officer, Vice President, Treasurer	Principal Financial Officer and Principal Accounting Officer	February 23, 2024
/s/ Timothy P. Boyle Timothy P. Boyle	Director	)))
/s/ Monica Enand Monica Enand	Director	)))
/s/ Karen Lee Karen Lee	Director	)))
/s/ Dave McCurdy Dave McCurdy	Director	)))
/s/ Sandra McDonough Sandra McDonough	Director	February 23, 2024))
/s/ Nathan I. Partain Nathan I. Partain	Director	)))
/s/ Jane L. Peverett Jane L. Peverett	Director	)))
/s/ Kenneth Thrasher Kenneth Thrasher	Director	)))
/s/ Malia H. Wasson Malia H. Wasson	Director	)))
/s/ Charles A. Wilhoite Charles A. Wilhoite	Director	))

Signature	Title	Date
/s/ David H. Anderson David H. Anderson Chief Executive Officer	Principal Executive Officer and Director	February 23, 2024
/s/ Brody J. Wilson Brody J. Wilson Chief Financial Officer, Chief Accounting Officer, Vice President, Treasurer	Principal Financial Officer and Principal Accounting Officer	February 23, 2024
/s/ Timothy P. Boyle Timothy P. Boyle	Director	)))
/s/ Monica Enand Monica Enand	Director	)))
/s/ Karen Lee Karen Lee	Director	)))
/s/ Dave McCurdy Dave McCurdy	Director	)))
/s/ Sandra McDonough Sandra McDonough	Director	February 23, 2024))
/s/ Nathan I. Partain Nathan I. Partain	Director	)))
/s/ Jane L. Peverett Jane L. Peverett	Director	)))
/s/ Kenneth Thrasher Kenneth Thrasher	Director	)))
/s/ Malia H. Wasson Malia H. Wasson	Director	)))
/s/ Charles A. Wilhoite Charles A. Wilhoite	Director	)))
/s/ Steven E. Wynne Steven E. Wynne	Director	))

SUBSIDIARIES OF NORTHWEST NATURAL HOLDING COMPANY

an Oregon Corporation

Name of Subsidiary	Jurisdiction Organized
Northwest Natural Gas Company (dba NW Natural)	**Oregon**
Northwest Energy Corporation[(1)]	Oregon
NWN Gas Reserves LLC[(1)]	Oregon
NW Natural RNG Holding Company, LLC[(1)]	Oregon
Lexington Renewable Energy LLC[(1)]	Delaware
Dakota City Renewable Energy LLC[(1)]	Delaware
NW Natural Energy, LLC	Oregon
NW Natural Gas Storage, LLC	Oregon
NNG Financial Corporation	Oregon
KB Pipeline Company	Oregon
NW Natural Water Company, LLC	Oregon
Salmon Valley Water Company	Oregon
NW Natural Water of Oregon, LLC	Oregon
Sunstone Water, LLC	Oregon
Sunstone Infrastructure, LLC	Oregon
Sunriver Water LLC (dba Sunriver Utilities Company)	Oregon
Sunriver Environmental LLC	Oregon
Avion Water Company, Inc.	Oregon
NW Natural Renewables Holdings, LLC	Oregon
NW Natural Ohio Renewable Energy, LLC	Oregon
NW Natural Water of Washington, LLC	Washington
Cascadia Water, LLC	Washington

Cascadia Infrastructure, LLC	Washington
Suncadia Water Company, LLC	Washington
Suncadia Environmental Company, LLC	Washington
NW Natural Water of Idaho, LLC	Idaho
Falls Water Co., Inc.	Idaho
Gem State Water Company, LLC	Idaho
Gem State Infrastructure, LLC	Idaho
NW Natural Water of Texas, LLC	Texas
Blue Topaz Water, LLC	Texas
Blue Topaz Infrastructure, LLC	Texas
T & W Water Service Company (dba Blue Topaz Utilities)	Texas
NW Natural Water of Arizona, LLC	Oregon
Foothills Water & Sewer, LLC (dba Foothills Utilities)	Arizona
Turquoise Infrastructure, LLC	Oregon
Rose Valley Water Company, Inc.	Arizona
NW Natural Water of California, LLC	Oregon
Blue Diamond Infrastructure, LLC	Oregon
NW Natural Water Services, LLC (dba King Water Company)	Oregon

(1) Subsidiary of Northwest Natural Gas Company

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-187005-01, 333-180350-01, 333-134973-01, 333-139819-01, 333-221347-01, 333-227687, 333-234539, 333-266517, 333-275346 and 333-275341) and Form S-3 (No. 333-258792) of Northwest Natural Holding Company of our report dated February 23, 2024 relating to the financial statements, financial statement schedules and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Portland, Oregon
February 23, 2024

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-214425 and 333-275344) and Form S-3 (No. 333-258792-01) of Northwest Natural Gas Company of our report dated February 23, 2024 relating to the financial statements and financial statement schedule which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Portland, Oregon
February 23, 2024

CERTIFICATION

I, David H. Anderson, certify that:

1. I have reviewed this annual report on Form 10-K for the year ended December 31, 2023 of Northwest Natural Gas Company;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: February 23, 2024

<u>/s/ David H. Anderson</u>
David H. Anderson
Chief Executive Officer

CERTIFICATION

I, Brody J. Wilson, certify that:

1. I have reviewed this annual report on Form 10-K for the year ended December 31, 2023 of Northwest Natural Gas Company;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 23, 2024

/s/ Brody J. Wilson
Brody J. Wilson
Chief Financial Officer, Vice President, Treasurer, and Chief Accounting Officer

CERTIFICATION

I, David H. Anderson, certify that:

1. I have reviewed this annual report on Form 10-K for the year ended December 31, 2023 of Northwest Natural Holding Company;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: February 23, 2024

/s/ David H. Anderson
David H. Anderson
Chief Executive Officer

CERTIFICATION

I, Brody J. Wilson, certify that:

1. I have reviewed this annual report on Form 10-K for the year ended December 31, 2023 of Northwest Natural Holding Company;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: February 23, 2024

/s/ Brody J. Wilson
Brody J. Wilson
Chief Financial Officer, Vice President, Treasurer, and Chief Accounting Officer

NORTHWEST NATURAL GAS COMPANY

Certificate Pursuant to Section 906

of Sarbanes – Oxley Act of 2002

Each of the undersigned, DAVID H. ANDERSON, Chief Executive Officer, and BRODY J. WILSON, the Chief Financial Officer, of NORTHWEST NATURAL GAS COMPANY (the Company), DOES HEREBY CERTIFY that:

1. The Company's Annual Report on Form 10-K for the year ended December 31, 2023 (the Report) fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. Information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

IN WITNESS WHEREOF, each of the undersigned has caused this instrument to be executed this twenty-third day of February 2024.

/s/ David H. Anderson
David H. Anderson
Chief Executive Officer

/s/ Brody J. Wilson
Brody J. Wilson
Chief Financial Officer, Vice President, Treasurer, and
Chief Accounting Officer

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to Northwest Natural Gas Company and will be retained by Northwest Natural Gas Company and furnished to the Securities and Exchange Commission or its staff upon request.

EXHIBIT 32.2

NORTHWEST NATURAL HOLDING COMPANY

Certificate Pursuant to Section 906
of Sarbanes – Oxley Act of 2002

Each of the undersigned, DAVID H. ANDERSON, Chief Executive Officer, and BRODY J. WILSON, the Chief Financial Officer, of NORTHWEST NATURAL HOLDING COMPANY (the Company), DOES HEREBY CERTIFY that:

1. The Company's Annual Report on Form 10-K for the year ended December 31, 2023 (the Report) fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. Information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

IN WITNESS WHEREOF, each of the undersigned has caused this instrument to be executed this twenty-third day of February 2024.

/s/ David H. Anderson
David H. Anderson
Chief Executive Officer

/s/ Brody J. Wilson
Brody J. Wilson
Chief Financial Officer, Vice President, Treasurer, and
Chief Accounting Officer

A signed original of this written statement required by Section 906 of the Sarbanes-Oxley Act of 2002 has been provided to Northwest Natural Holding Company and will be retained by Northwest Natural Holding Company and furnished to the Securities and Exchange Commission or its staff upon request.

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Investor and Shareholder Information

NIKKI SPARLEY
Director, Investor Relations
and Treasury
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Direct (503) 721-2530
nikki.sparley@nwnatural.com

CATHY CROWN
Manager, Shareholder Services
Toll free (800) 422-4012, Ext. 2402
Direct (503) 220-2402
cathy.crown@nwnatural.com

STOCK TRANSFER AGENT AND REGISTRAR

For common stock:
Equiniti Trust Company LLC
(formerly American Stock
Transfer & Trust Co)
55 Challenger Road, Floor 2
Ridgefield Park, NJ 07660
(888) 777-0321
web: astfinancial.com
email: helpast@equiniti.com

TRUSTEE AND BOND PAYING AGENT

For bond issues:
Deutsche Bank
Trust Company Americas
60 Wall Street
New York, NY 10005
(800) 735-7777

Living Our Core Values Every Day

Integrity

- Earned the prestigious distinction as one of the Ethisphere® Institute's 2024 World's Most Ethical Companies® for the third year in a row

Safety

- No cast iron or bare steel pipe in the natural gas system, making our system one of the tightest and most modern in the nation
- Laser focused on employee safety with our Journey to Zero program, which has resulted in better employee health and safety

Caring

- Helps low-income customers manage their natural gas bills through a variety of programs
- Donates time and money to local nonprofits in the areas we serve with a heightened focus on organizations that demonstrate a commitment to diversity, equity and inclusion

Service Ethic

- Consistently receive top-level customer satisfaction scores in J.D. Power and Escalent studies

Environmental Stewardship

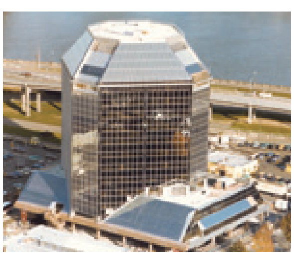
- Partners with Energy Trust of Oregon to offer natural gas customers energy-efficiency programs and services to lower use and emissions
- Supports water conservation and encourages customers to reduce water use and has installed technology to help minimize water leakage across its infrastructure

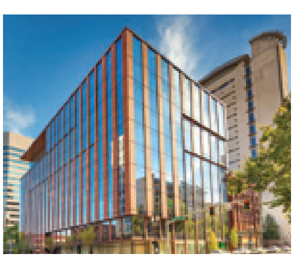
Dividend staff, 1924.

Learn more about how our values guide our work: **nwnatural.com**

NW Natural HOLDINGS™

250 SW TAYLOR STREET
PORTLAND, OREGON 97204
NWNATURALHOLDINGS.COM
NYSE: NWN





ETHISPHERE®
WORLD'S MOST
ETHICAL
COMPANIES®
2022 - 2024

Our Core Values

Integrity
Safety
Caring
Service Ethic
Environmental Stewardship

Our Mission

We provide safe, reliable and affordable utility services and renewable energy in a sustainable way to better the lives of the communities we serve.

Our Vision

Lead in service excellence, innovation and environmental stewardship by harnessing our passion for customers.

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