

BEFORE THE  
WASHINGTON UTILITIES & TRANSPORTATION COMMISSION

UG-\_\_  
GENERAL RATE APPLICATION  
OF  
NORTHWEST NATURAL GAS COMPANY

December 31, 2018

**Direct Exhibit of Ronald J. Amen**

**COST OF SERVICE STUDY**

**Exh. RJA-3**

Northwest Natural Gas Company  
12 Months Ended September 30, 2018

Functionalized and Classified Rate Base and Revenue Requirement, and Unit Costs by Customer Class

		<u>Functional Rate Base</u>						
Line	Description	TOTAL	Schedule 1	Schedule 2	Schedule 3	Schedule 27	Schedule 41	Schedule 42
			General Sales Service	Residential Sales Service	Basic Firm Sales Service	Residential Heating Dry Out	Non-Residential Sales & Transport	Lg. Vol. Non-Res. Sales and Transport
1	<b>Storage</b>							
2	Demand	\$ 17,758,967	\$ 51,638	\$ 12,562,202	\$ 3,890,377	\$ 149,014	\$ 721,942	\$ 383,794
3	Energy	\$ 1,832,015	\$ 4,825	\$ 1,072,446	\$ 354,161	\$ 11,895	\$ 98,611	\$ 290,077
4	Customer	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
5	Subtotal	\$ 19,590,983	\$ 56,462	\$ 13,634,648	\$ 4,244,539	\$ 160,909	\$ 820,553	\$ 673,871
6	<b>Transmission</b>							
7	Demand	\$ 6,654,297	\$ 18,900	\$ 4,321,680	\$ 1,396,299	\$ 46,780	\$ 325,876	\$ 544,762
8	Energy	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
9	Customer	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
10	Subtotal	\$ 6,654,297	\$ 18,900	\$ 4,321,680	\$ 1,396,299	\$ 46,780	\$ 325,876	\$ 544,762
11	<b>Distribution</b>							
12	Demand	\$ 106,439,299	\$ 309,334	\$ 70,658,184	\$ 22,846,568	\$ 764,448	\$ 5,107,041	\$ 6,753,725
13	Energy	\$ (82)	\$ (0)	\$ (43)	\$ (15)	\$ (0)	\$ (5)	\$ (18)
14	Customer	\$ 53,794,445	\$ 546,037	\$ 44,436,514	\$ 7,127,067	\$ 723,535	\$ 456,099	\$ 505,193
15	Subtotal	\$ 160,233,663	\$ 855,371	\$ 115,094,654	\$ 29,973,620	\$ 1,487,982	\$ 5,563,135	\$ 7,258,900
16	<b>Total</b>							
17	Demand	\$ 130,852,564	\$ 379,872	\$ 87,542,066	\$ 28,133,244	\$ 960,242	\$ 6,154,858	\$ 7,682,281
18	Energy	\$ 1,831,934	\$ 4,824	\$ 1,072,402	\$ 354,146	\$ 11,895	\$ 98,607	\$ 290,059
19	Customer	\$ 53,794,445	\$ 546,037	\$ 44,436,514	\$ 7,127,067	\$ 723,535	\$ 456,099	\$ 505,193
20	<b>Total Rate Base</b>	\$ 186,478,943	\$ 930,734	\$ 133,050,982	\$ 35,614,457	\$ 1,695,672	\$ 6,709,564	\$ 8,477,533

Northwest Natural Gas Company  
12 Months Ended September 30, 2018

Functionalized and Classified Rate Base and Revenue Requirement, and Unit Costs by Customer Class

		<u>Functional Revenue Requirement</u>						
Line	Description	TOTAL	Schedule 1	Schedule 2	Schedule 3	Schedule 27	Schedule 41	Schedule 42
			General Sales Service	Residential Sales Service	Basic Firm Sales Service	Residential Heating Dry Out	Non-Residential Sales & Transport	Lg. Vol. Non-Res. Sales and Transport
1	<b>Storage</b>							
2	Demand	\$ 3,752,984	\$ 12,459	\$ 2,693,250	\$ 788,490	\$ 34,817	\$ 146,578	\$ 77,390
3	Energy	\$ 163,721	\$ 500	\$ 98,226	\$ 30,297	\$ 1,222	\$ 8,450	\$ 25,027
4	Customer	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
5	Subtotal	\$ 3,916,705	\$ 12,959	\$ 2,791,476	\$ 818,786	\$ 36,039	\$ 155,029	\$ 102,416
6	<b>Transmission</b>							
7	Demand	\$ 911,138	\$ 2,962	\$ 603,481	\$ 183,185	\$ 7,289	\$ 42,753	\$ 71,469
8	Energy	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
9	Customer	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
10	Subtotal	\$ 911,138	\$ 2,962	\$ 603,481	\$ 183,185	\$ 7,289	\$ 42,753	\$ 71,469
11	<b>Distribution</b>							
12	Demand	\$ 19,416,675	\$ 64,310	\$ 13,149,076	\$ 4,005,278	\$ 158,058	\$ 891,610	\$ 1,148,344
13	Energy	\$ 656	\$ 2	\$ 359	\$ 116	\$ 4	\$ 35	\$ 140
14	Customer	\$ 25,943,186	\$ 255,660	\$ 21,226,821	\$ 3,146,662	\$ 301,075	\$ 376,517	\$ 636,451
15	Subtotal	\$ 45,360,518	\$ 319,971	\$ 34,376,257	\$ 7,152,055	\$ 459,137	\$ 1,268,162	\$ 1,784,934
16	<b>Total</b>							
17	Demand	\$ 24,080,798	\$ 79,731	\$ 16,445,808	\$ 4,976,953	\$ 200,163	\$ 1,080,941	\$ 1,297,202
18	Energy	\$ 164,378	\$ 501	\$ 98,585	\$ 30,412	\$ 1,227	\$ 8,486	\$ 25,167
19	Customer	\$ 25,943,186	\$ 255,660	\$ 21,226,821	\$ 3,146,662	\$ 301,075	\$ 376,517	\$ 636,451
20	<b>Total Revenue Requirement</b>	\$ 50,188,361	\$ 335,892	\$ 37,771,215	\$ 8,154,027	\$ 502,465	\$ 1,465,943	\$ 1,958,820

Northwest Natural Gas Company  
12 Months Ended September 30, 2018

Functionalized and Classified Rate Base and Revenue Requirement, and Unit Costs by Customer Class

		<u>Unit Costs</u>							
Line	Description	TOTAL	Schedule 1	Schedule 2	Schedule 3	Schedule 27	Schedule 41	Schedule 42	
			General Sales Service	Residential Sales Service	Basic Firm Sales Service	Residential Heating Dry Out	Non-Residential Sales & Transport	Lg. Vol. Non-Res. Sales and Transport	
1	<b>Storage</b>								
2	Demand	\$ 0.33856	\$ 0.38298	\$ 0.35317	\$ 0.32583	\$ 0.41681	\$ 0.28320	\$ 0.19082	
3	Energy	\$ 0.00173	\$ 0.00207	\$ 0.00196	\$ 0.00174	\$ 0.00236	\$ 0.00159	\$ 0.00119	
4	Customer	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
5	<b>Transmission</b>								
6	Demand	\$ 0.08220	\$ 0.09105	\$ 0.07914	\$ 0.07570	\$ 0.08726	\$ 0.08260	\$ 0.17623	
7	Energy	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
8	Customer	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
9	<b>Distribution</b>								
10	Demand	\$ 1.75161	\$ 1.97683	\$ 1.72426	\$ 1.65513	\$ 1.89219	\$ 1.72262	\$ 2.83154	
11	Energy	\$ 0.00001	\$ 0.00001	\$ 0.00001	\$ 0.00001	\$ 0.00001	\$ 0.00001	\$ 0.00001	
12	Customer	\$ 26.20	\$ 23.74	\$ 23.70	\$ 43.45	\$ 31.90	\$ 261.29	\$ 1,169.95	
13	<b>Total</b>								
14	Demand (per peak day therm per month)	\$ 2.17236	\$ 2.45086	\$ 2.15656	\$ 2.05666	\$ 2.39626	\$ 2.08842	\$ 3.19859	
15	Energy (per therm)	\$ 0.00174	\$ 0.00208	\$ 0.00196	\$ 0.00175	\$ 0.00237	\$ 0.00160	\$ 0.00120	
16	Customer (per customer per month)	\$ 26.20	\$ 23.74	\$ 23.70	\$ 43.45	\$ 31.90	\$ 261.29	\$ 1,169.95	
17	<b>BILLING DETERMINANTS</b>								
18	Demand	Design_Day	923,755	2,711	635,495	201,660	6,961	43,132	33,796
19	Energy	Throughput	94,596,549	241,034	50,173,169	17,370,933	517,111	5,299,750	20,994,553
20	Customer	Cust_Average	82,527	897	74,644	6,034	787	120	45