CASCADE NATURAL GAS CORPORATION®
A Subsidiary of MDU Resources Group, Inc.

In the Community to Serve®

8113 W. GRANDRIDGE BLVD., KENNEWICK, WASHINGTON 99336-7166
TELEPHONE 509-734-4500 FACSIMILE 509-737-7166
www.cngc.com

February 14, 2013

Filing Center
Washington Utilities and Transportation Commission
1300 Evergreen Park Drive, SW
Olympia, WA 98504

RE: Cascade Natural Gas Corporation's 2012 Integrated Resource Plan Presentation – UG112165

Attention Filing Center:

Please find the enclosed Cascade Natural Gas Corporation 2012 Integrated Resource Plan Power Point presentation for the Thursday, February 21, 2013 recessed open meeting at 1:30 PM.

If you have any questions regarding this filing, please contact Mark Sellers-Vaughn at (509) 734-4589.

Sincerely,

Michael Parvinen
Director, Regulatory Affairs

Cascade Natural Gas

2012 Integrated Resource Plan Overview

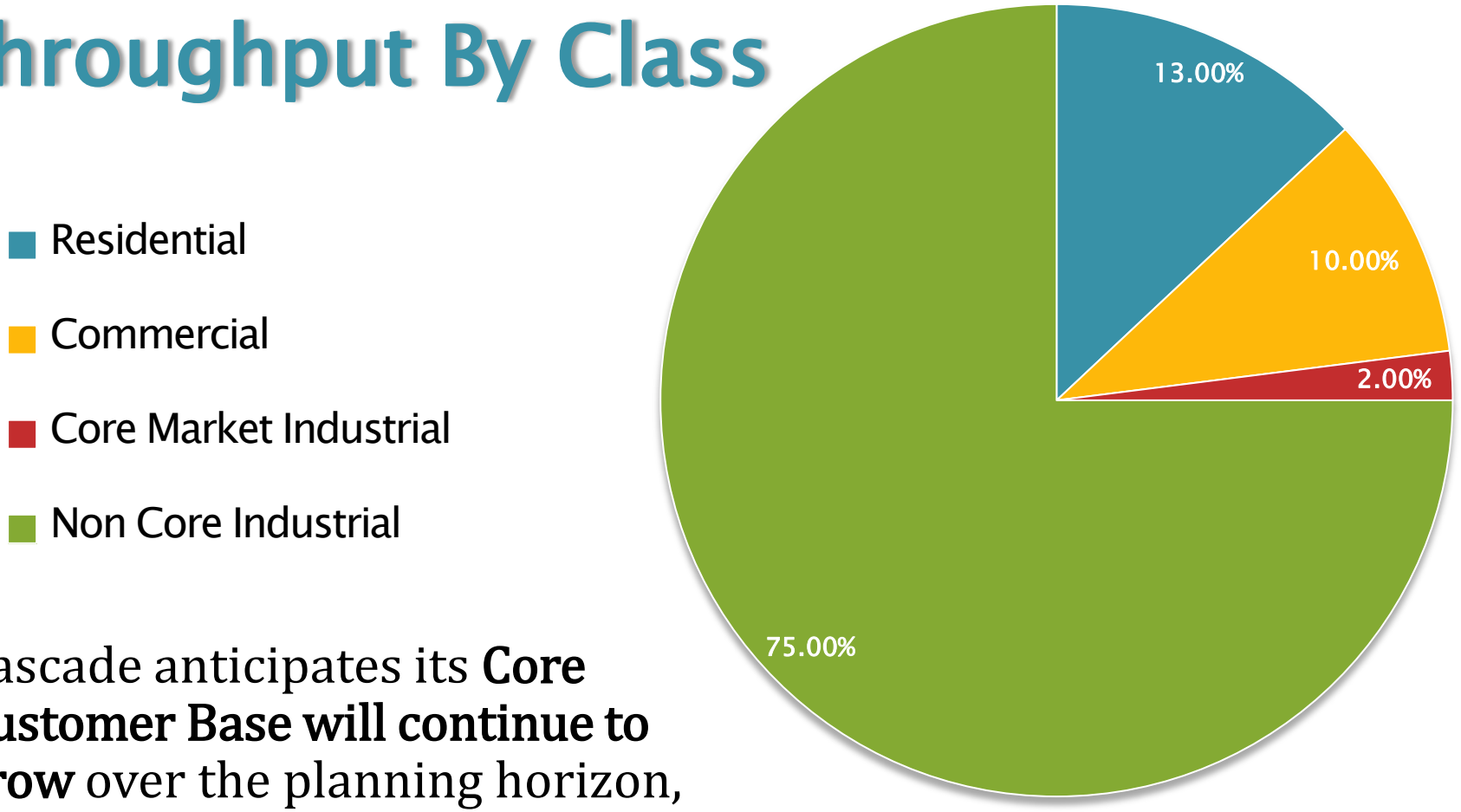
February 21, 2013
WUTC Presentation
Olympia, Washington

Overview

- Introductions ☑
- **2012 IRP**
  - **Demand Forecast**
  - Distribution System Enhancements
  - Demand Side Resources
  - Supply Side Resources
  - Resource Integration

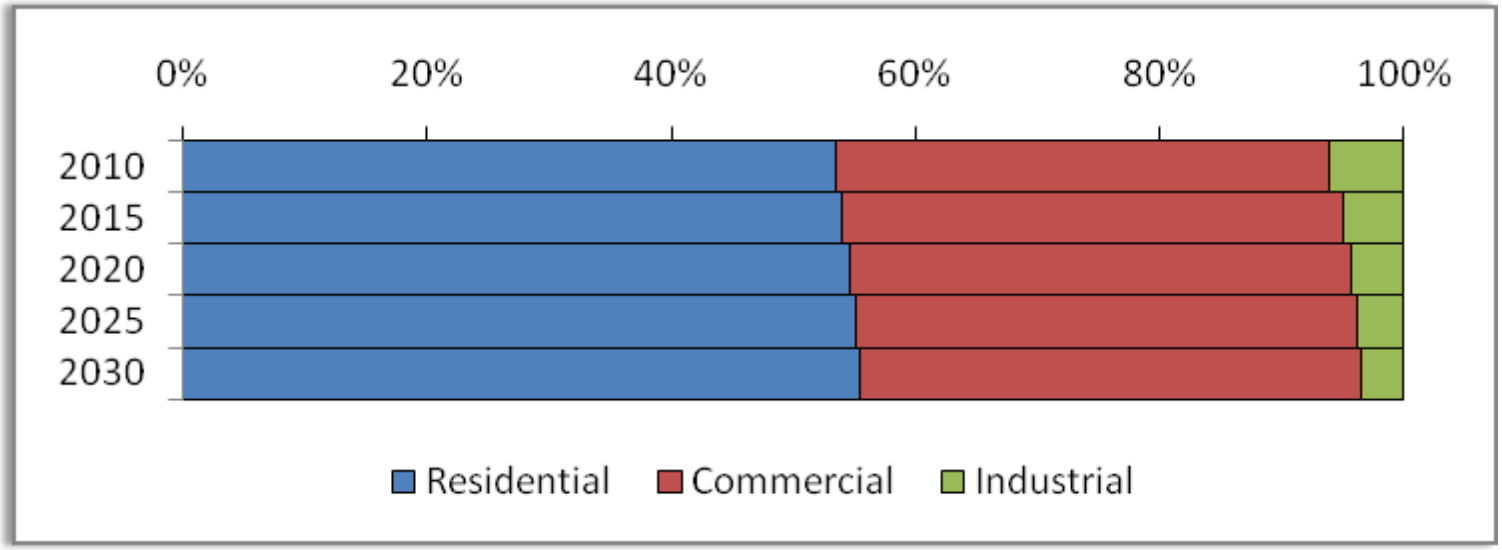
Two-Year Action Plan: Action Items will be noted throughout.

Throughput By Class



Cascade anticipates its **Core Customer Base will continue to grow** over the planning horizon, with annual throughput anticipated to increase **between 1.4% and 1.7% per year.**

Demand Forecast Summary



Period	Residential	Commercial	Industrial	System
2012 – 2016	1.71%	1.68%	-3.22%	1.48%
2016 – 2021	1.78%	1.81%	-1.85%	1.66%
2021 – 2026	1.74%	1.83%	-1.06%	1.68%
2026 – 2031	1.50%	1.59%	-1.24%	1.46%
2011 – 2032	1.68%	1.73%	-1.84%	1.57%

Load Growth

Period	Low	Mid	High
2012	283,932,383	286,788,868	291,939,616
2015	295,597,286	298,466,314	308,687,192
2020	319,153,471	325,533,737	340,056,362
2025	344,689,388	355,125,887	374,822,128
2032	375,092,795	*391,691,339*	420,630,155
Deviation	*(16,598,544)*		*28,938,816*

Peak Day Forecast:

To ensure satisfaction of core customer demand on the coldest days

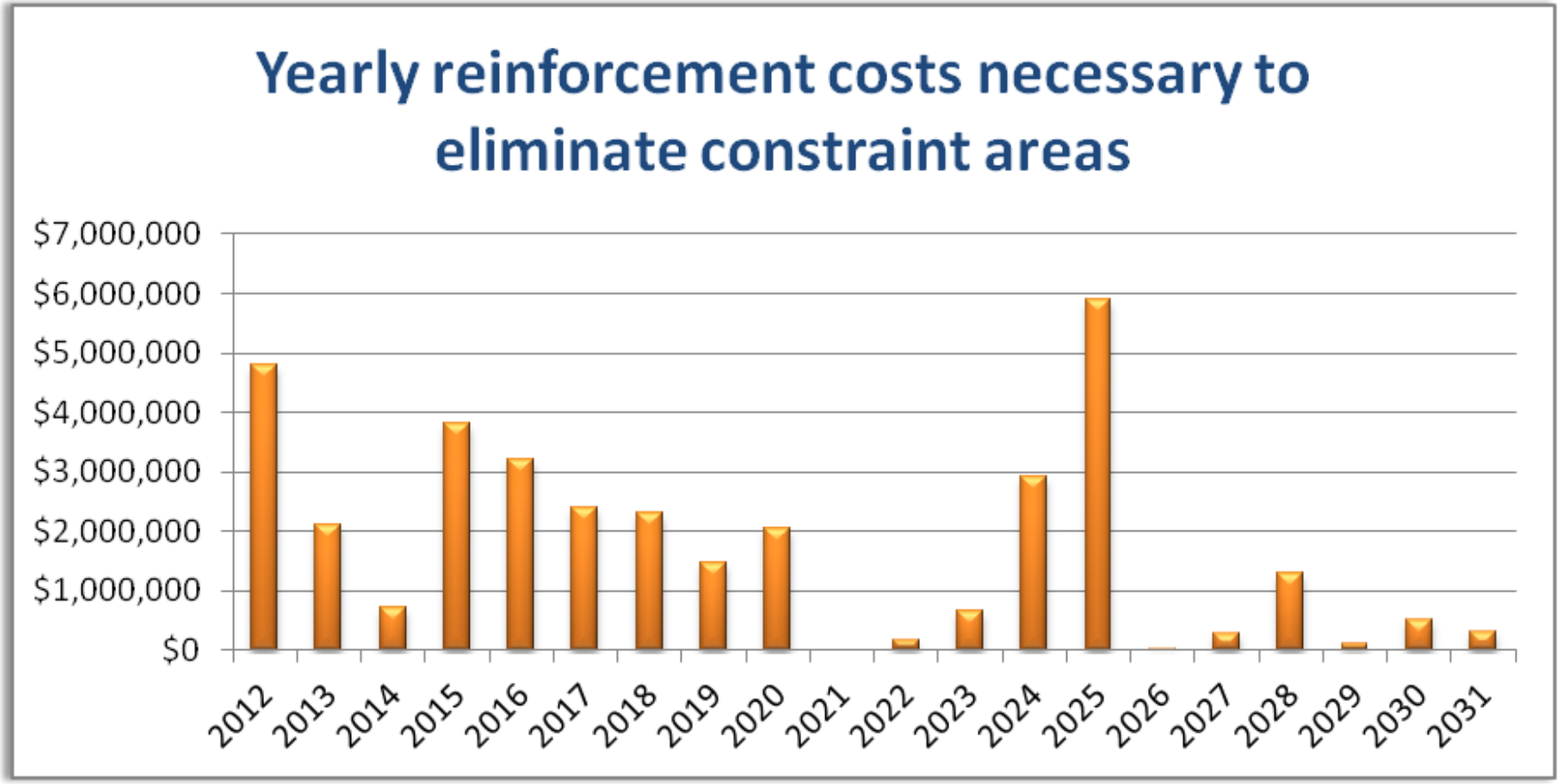
- Developed in conjunction with annual basis load forecasts.
- Enable Cascade to make prudent distribution system and peak capacity planning decisions to fulfill our responsibility to provide heating under all but force majeure conditions.
- Method:
  - Historically, Cascade developed peak day forecasts based on a 65 HDD day (0°F) to reflect the coldest day in Cascade's 60-year weather history.
  - In 2008, Cascade's IRP changed this practice to reflect the coldest day during the past 30 years. This record is held by December 21, 1990 at 61 HDDs.
  - The peak day forecast is developed by adjusting the therm usage on the coldest day in recent history (January 5, 2004 at 56 HDD) upwards to an estimate of what therm usage would have been had that day been 61 HDD.
  - Therm usage is applied to each district and escalated into the future at the forecasted therm usage annual growth rate.
- This method rests on the assumption that core market load shape does not significantly change throughout the forecast horizon.
- Cascade believes the peak day forecast conservatively overestimates peak day usage because the base forecast does not explicitly include future conservation measures implemented by customers that would act to increase energy efficiency and reduce daytime therm usage.

Overview

- Introductions ☑
- 2012 IRP
  - Demand Forecast ☑
  - **Distribution System Enhancements**
  - Demand Side Resources
  - Supply Side Resources
  - Resource Integration

Two-Year Action Plan: Action Items will be noted throughout.

Distribution System Enhancements



Total costs over the planning horizon: ***$35,061,361.***

Overview

- Introductions ☑
- 2012 IRP
  - Demand Forecast ☑
  - Distribution System Enhancements ☑
  - **Demand Side Resources** ⇦
  - Supply Side Resources
  - Resource Integration

Two-Year Action Plan: Action Items will be noted throughout.

Key Updates to DSM Section of 2012 IRP

- Demand Side Management Section in 2012 IRP Includes:
  - Updates to analysis of code changes, standards and other "outside determinants of customer usage," and continued monitoring of Washington Energy Strategy. (Action Item 2)
  - Inclusion of DSM Portfolio updates that took place since the last planning cycle.
  - Inclusion of separate targets parsed out for CY13 and CY14 in addition to the Estimated Achievable Therm Savings Table in 6-6. Inclusion of estimated budget range for 2013/2014.
  - Updates to conservation potential extrapolated from Stellar/Ecotope study performed for ETO and expanded to the Company in 2006 & 2008.
    - Therm targets were adjusted commensurate with levelized cost assumption in Stellar/Ecotope study for the $.65 threshold. Adjustments were also made to account for savings achievements from prior program years.
    - A comprehensive Washington focused update will be made to the Company's potential assessment in time for the next IRP planning cycle. Updates will include revised cost screens in light of changes to avoided costs in Appendix H.

Outside Determinants to Customer Usage

- Cascade has remained active in monitoring external developments at the state and national level which carry potential impacts to customer usage within our service territory.
  - Code Changes: Proposed mandatory 90%+ furnaces, suspended in 2013
  - WA PTCS duct sealing + furnace combo for existing homes in WA code changed to mandatory duct *testing*
  - PTCS sealing in new homes mandatory per code but anticipate that Energy Star will adjust accordingly. Currently code is more stringent in smaller homes but Energy Star standard still higher standard in new homes due to size, etc.

- Additional Energy Standards and Updates
  - Building forecast by Northwest Power and Conservation Council, by 2030 WA state energy code will have influenced half of all bldg construction.
  - Ultimate design, breadth & impacts of any climate change legislation remain unknown.

Impacts of Washington's Climate Change Challenge

- Cascade has continued to monitor the progress of the Challenge as it pertains to the Utility.
  - Dec 2011 Department of Commerce released its most recent energy strategy- 2012 Washington State Energy Strategy
    - Provides a long-term plan and subsequent action items
      - 3 main goals include:
        - More efficient system of transportation
        - Broader approach to EE in bldgs
        - A more diverse supply portfolio through distributed energy
      - Regarding the 2nd goal, the strategy seeks to
        - Make it easier for property owners to identify most effective EE improvements
        - Enable financing of improvements
        - Build consumer confidence in value of EE projects
    - Increased promotion of energy improvements and financing options would likely influence cost and availability of natural gas conservation equipment and technologies in WA.
    - Increase in technologies and eventual carbon adders could positively influence cost effectiveness of NG conservation efforts.

- Additional Energy Standards and Updates
  - Ultimate design, breadth & impacts of any climate change legislation remain unknown.

Washington Program Cost Effectiveness and Emerging Technologies

- Cascade engages in a regular review of the measure-mix within its conservation portfolio.
  - Measures are added, removed, replaced, or modified when it is determined that new technologies of equal or greater cost-effectiveness are available to the market.
    - the emergence of a high-performance natural gas conservation technology will only have positive energy-savings impacts if customers are willing to pay the initial higher costs associated with the measures
    - Many measures have strong gas savings potential, but do not start out cost-effective initially
    - Looking at emerging technologies if/where appropriate
- In Spring of 2012, Cascade submitted program changes based on internal analysis and updates to our portfolio
    - Added: .91 EF Tankless Water Heater, Commercial Energy Star and CEE 3 & 6 Pan Gas Steamers, FSTC Qualified Double Rack Ovens; Energy Star dishwashers
    - Replaced: .62 EF water heaters with .64, domestic tankless w/h with Energy Star tankless incentive
    - Modified: Incremental cost and therm savings for EE condensing boilers, adjusted standards, costs and savings data and reduced the incentive for commercial gas convection ovens, adjusted standards, incremental cost and savings data and reduced incentive for EE commercial infrared gas griddles.
- Cost Effectiveness
  - Based on Stellar/Ecotope Study, but comprehensive updates/reassessment to be made before next planning cycle due to changes in avoided costs and evolving technologies
  - Changes to program administration and rebate offerings planned in Q2 of 2013.

Action Item 5

Revised Potential Assessment for 2014

- Purpose: To develop a Washington-focused, revised potential assessment to better understand the Company's conservation potential in light of changing technologies and declining avoided costs.
  - Study will allow more direct linkage between Company's conservation potential and on-the-ground program offerings
  - Updates will include revised cost screens in light of changes to avoided costs in Appendix H.
  - An EM&V component will be provided as part of the study, per the input of our Conservation Advisory Group
- On January 15, 2013 the Company convened a meeting of its Conservation Advisory Group to discuss the revised potential assessment study.
  - RFP circulated to potential candidates on Jan 18, 2013
  - Due date for proposals is Friday, February 22
  - Evaluator will be selected based on cost-effectiveness and quality of proposal
  - Regular updates will be provided to the CAG throughout the potential assessment process
  - Findings from this study will inform the Company's 2014 Integrated Resources Plan as well as future program offerings.

Overview

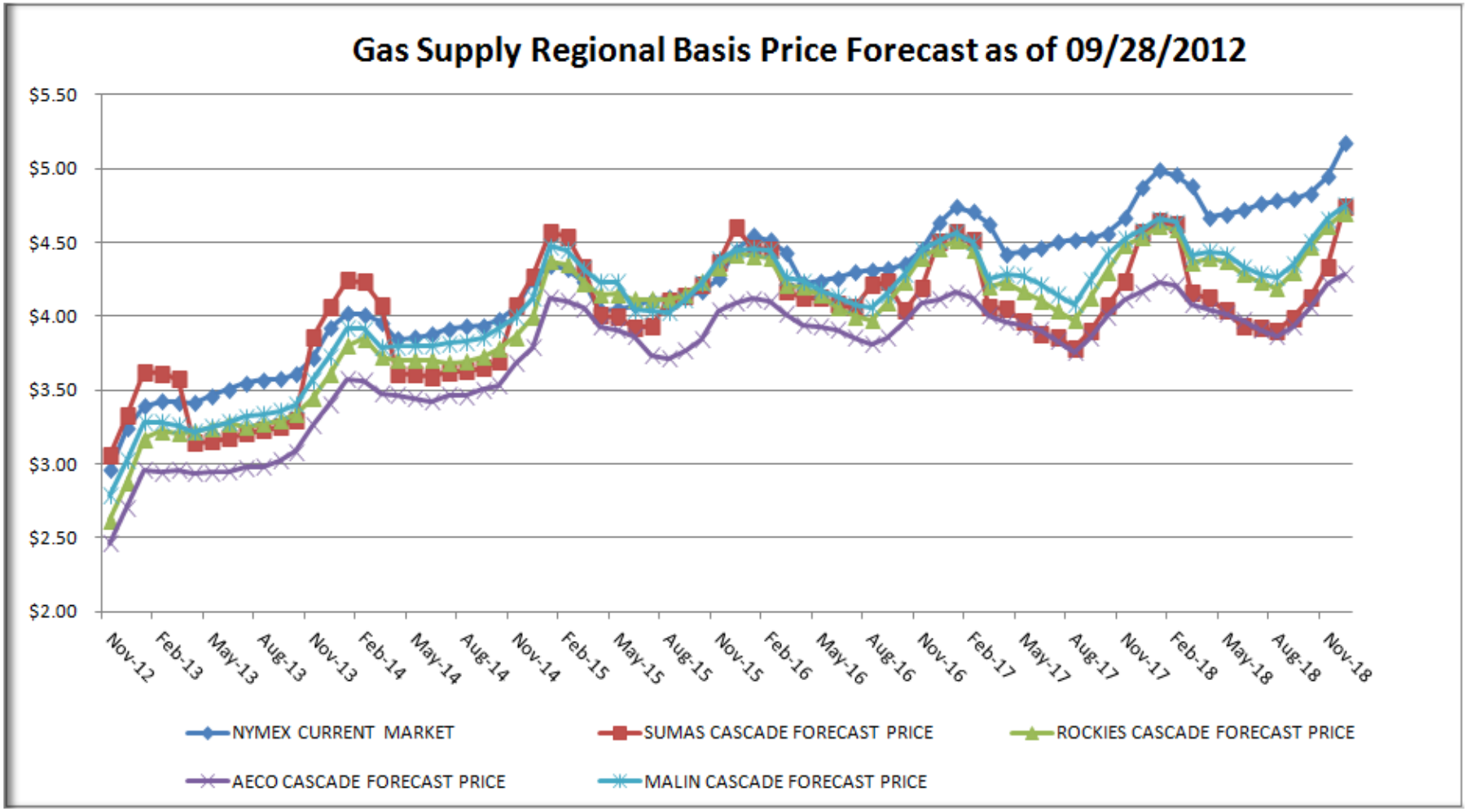
- Introductions ☑
- 2012 IRP
  - Demand Forecast ☑
  - Distribution System Enhancements ☑
  - Demand Side Resources ☑
  - **Supply Side Resources** ⬎
  - Resource Integration

Two-Year Action Plan: Action Items will be noted throughout.

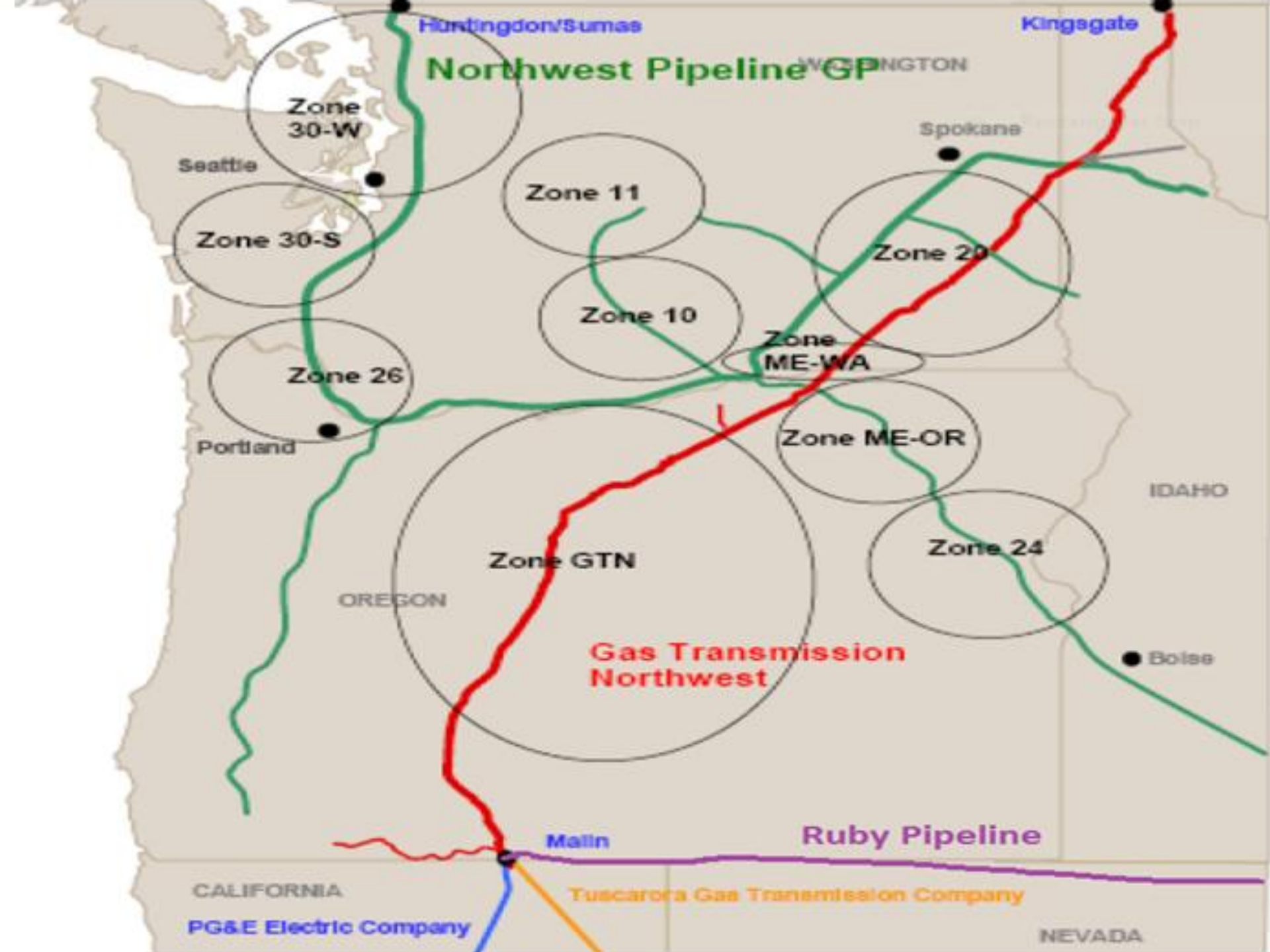
GSOC & Risk Management

- In the 2010 IRP, Cascade reported forward price curves for natural gas had stabilized and a combination of factors (contango market and economic outlook) led the Company to modify its hedging strategy for the near-term (2009/10 & 2010/11 periods), to hedge less supplies and leave more at the market.
- The Company's current gas hedging strategy is to hedge 40% of the contracted physical supplies of Year One, 30% of Year Two and 15% of Year Three. Depending on market conditions, the strategy allows for the ratchets to increase to 75%, 50% and 30%, respectively, provided current market information supports moving to a higher level.
- Today, as prices have remained low, Cascade has reduced the number of financial swaps in our portfolio.

Price Picture

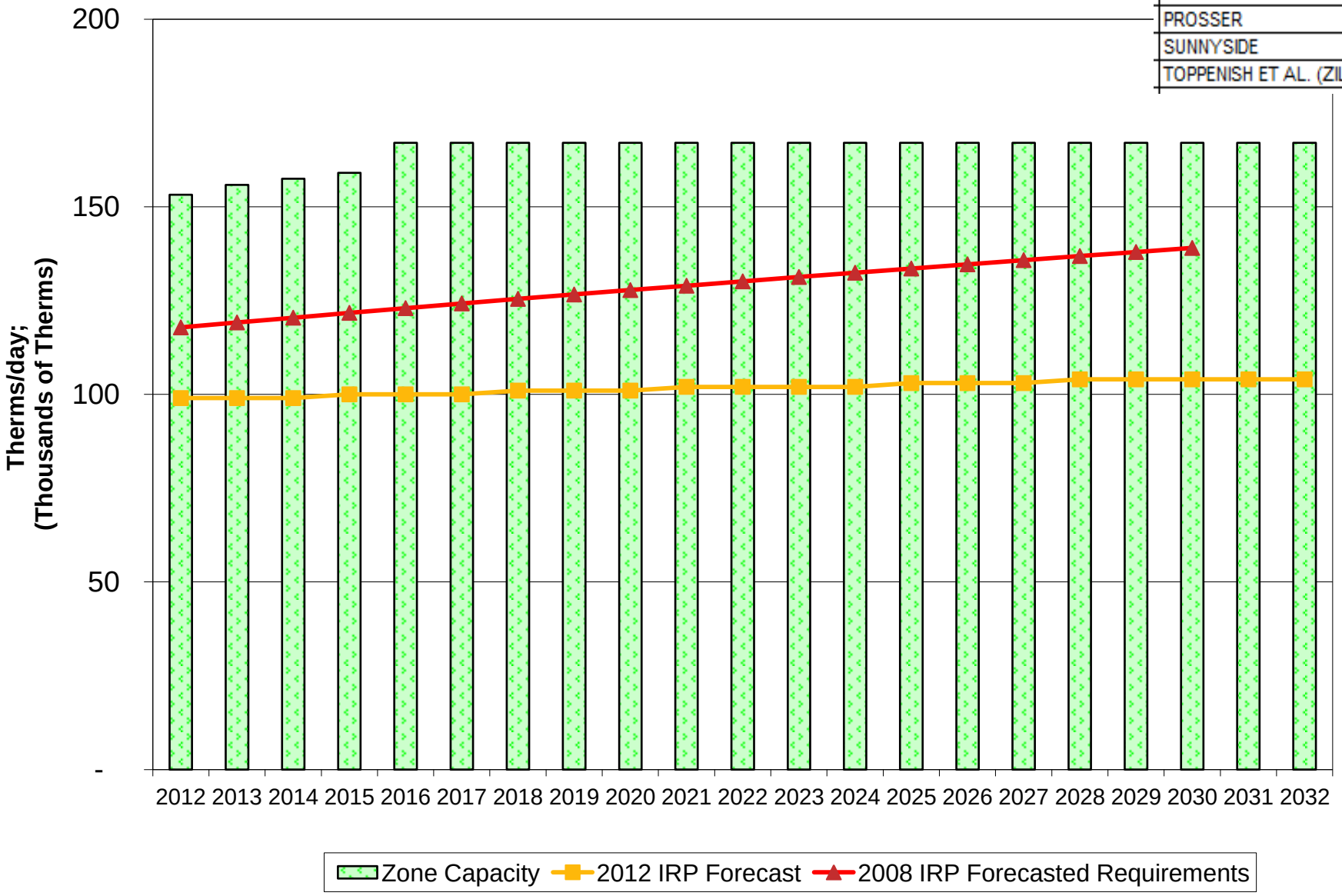


Action Items 6 & 11


Huntingdon/Sumas
Kingsgate
Northwest Pipeline GP
Zone 30-W
Seattle
Spokane
Zone 11
Zone 30-S
Zone 20
Zone 10
Zone ME-WA
Zone 26
Portland
Zone ME-OR
IDAHO
Zone GTN
Zone 24
OREGON
Gas Transmission Northwest
Boise
Malin
Ruby Pipeline
CALIFORNIA
Tuscarora Gas Transmission Company
PG&E Electric Company
NEVADA

7TH DAY ADVENTIST FARM TAP
BRULOTTE HOP RANCH
DEHANNS DAIRY FARM TAP
GRANDVIEW
LAMBERT'S HORTICULTURE
PROSSER
SUNNYSIDE
TOPPENISH ET AL. (ZILLAH)

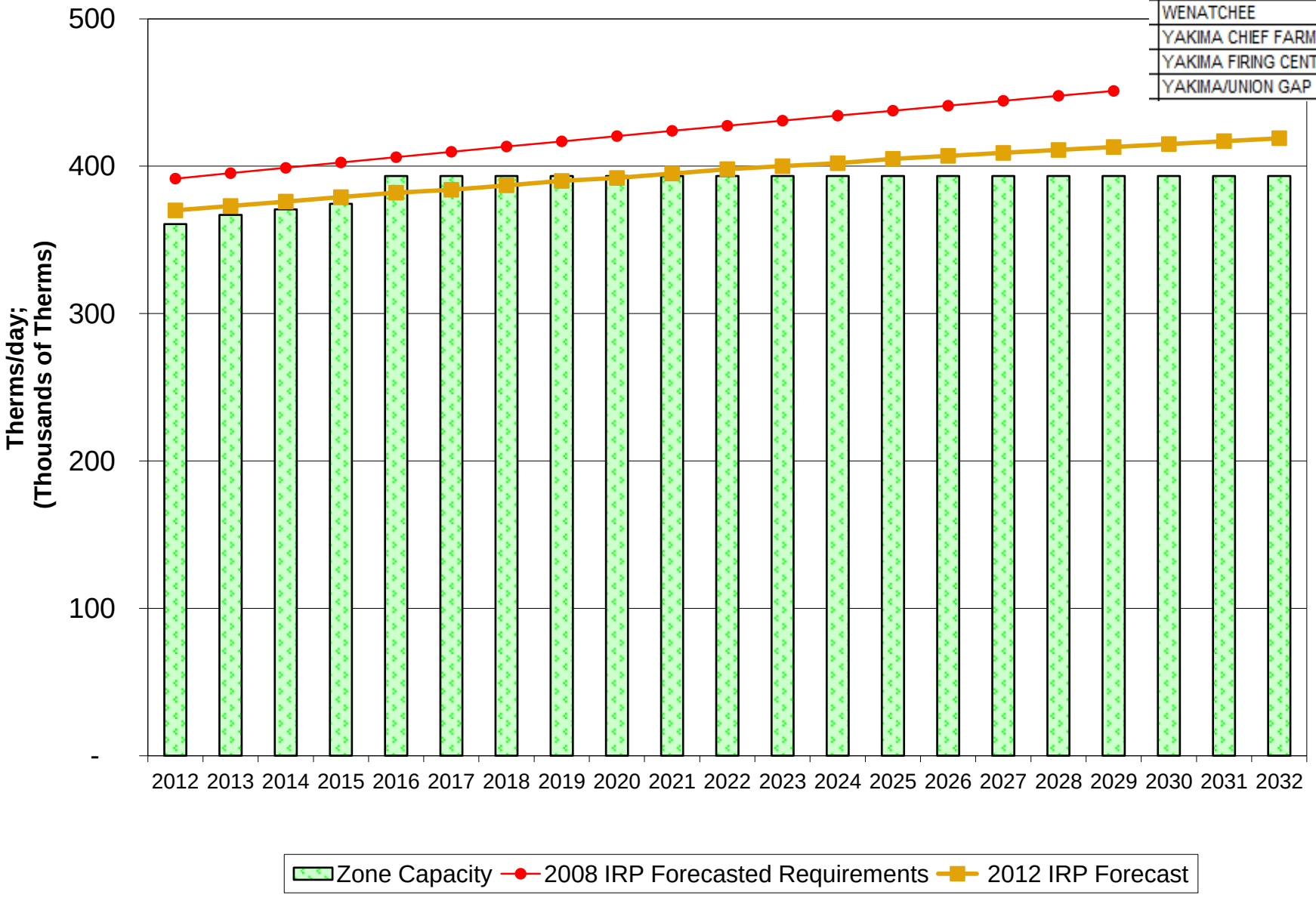
ZONE 10 Peak Day Demand & Existing Capacity Resources
Medium Load Forecast



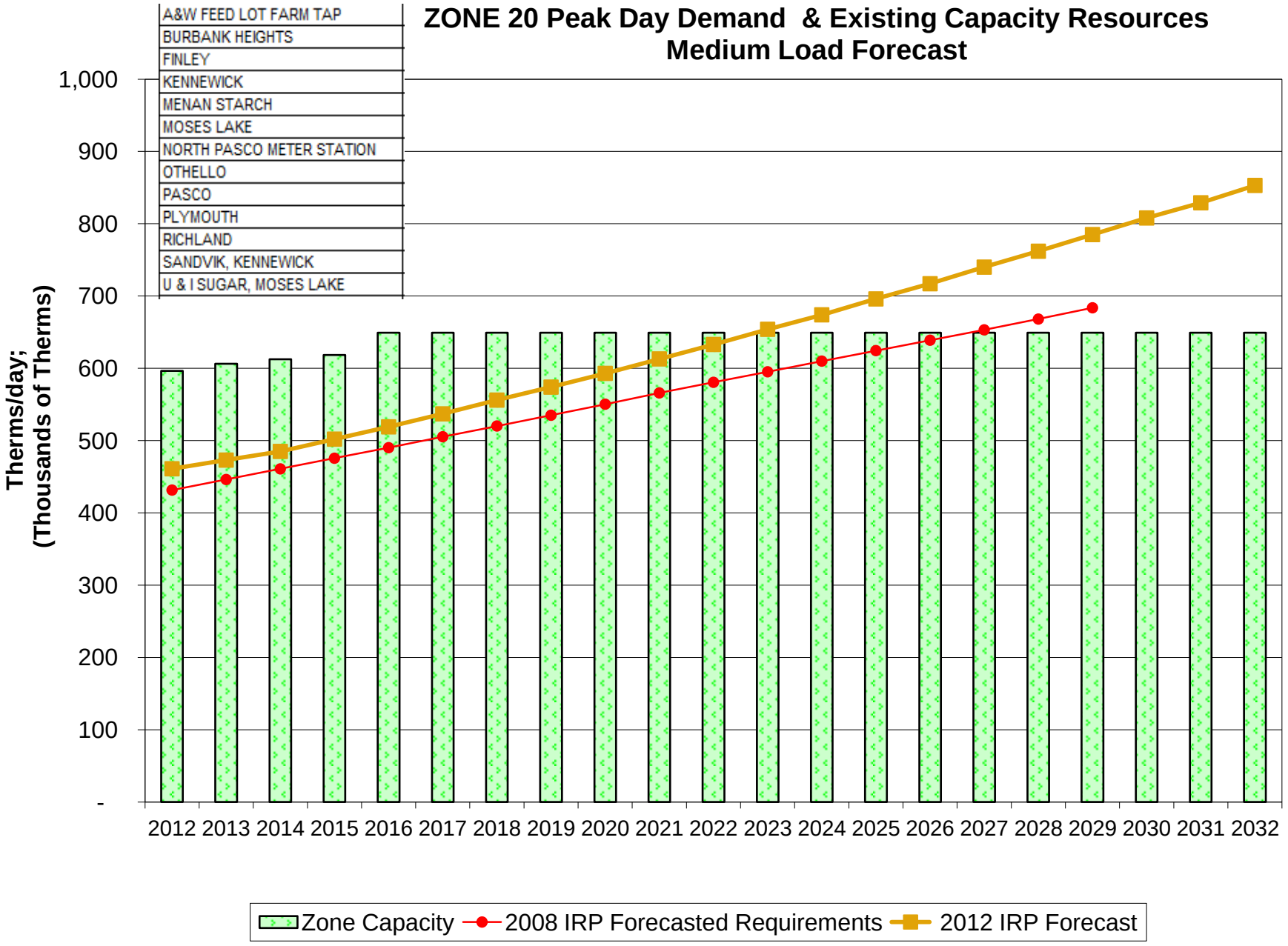
Note: NWP Capacity is net of Non-Core primary term capacity requirements

ALCOA, WENATCHEE
KAWECKI, WENATCHEE
MOXEE CITY
QUINCY
SELAH
WENATCHEE
YAKIMA CHIEF FARMS
YAKIMA FIRING CENTER
YAKIMA/UNION GAP

ZONE 11 Peak Day Demand & Existing Capacity Resources
Medium Load Forecast



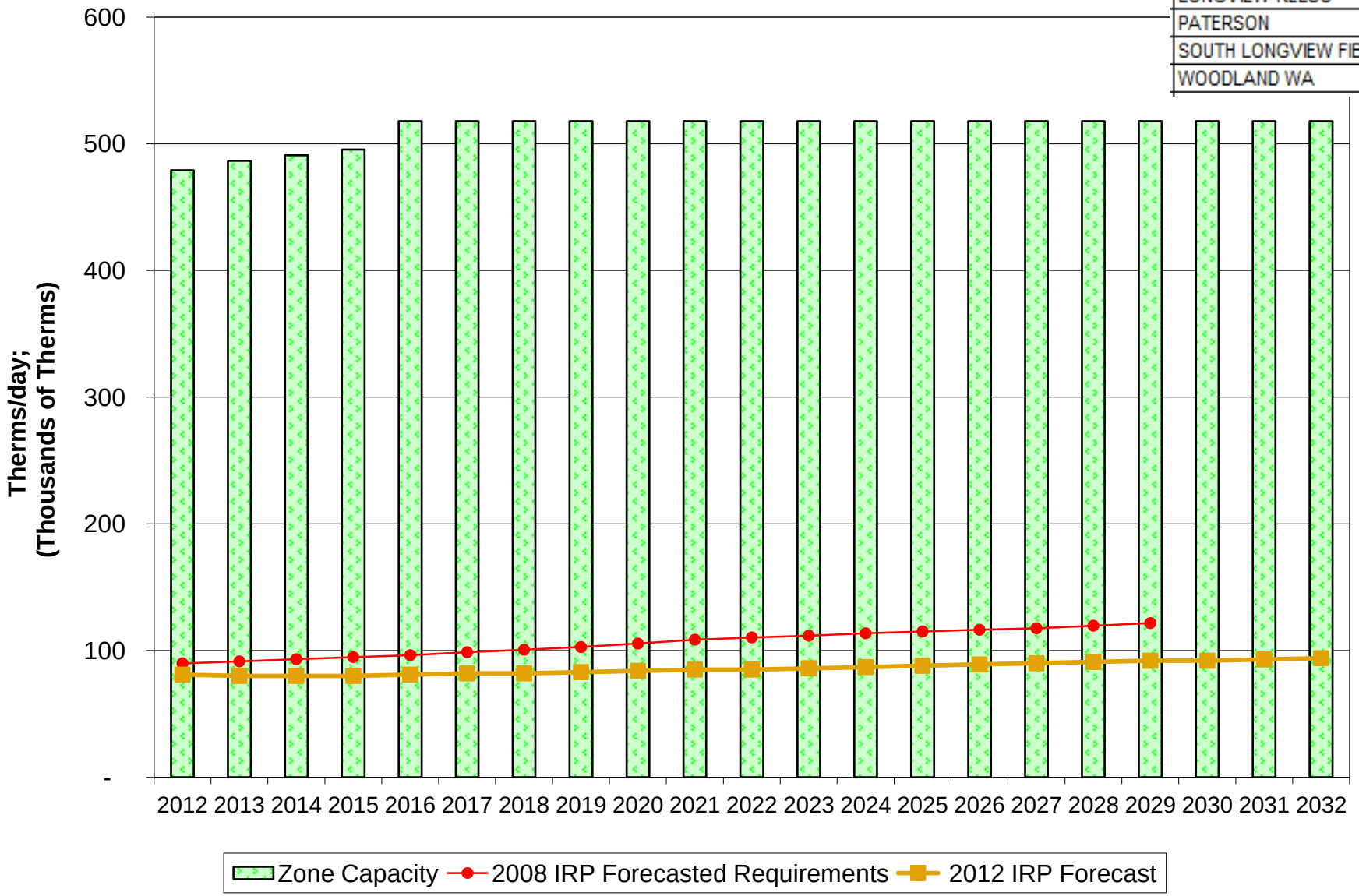
Note: NWP Capacity is net of Non-Core primary term capacity requirements



Note: NWP Capacity is net of Non-Core primary term capacity requirements

CASTLE ROCK
GREEN CIRCLE FARM TAP
KALAMA FARM TAP
KALAMA NO. 2
LONGVIEW-KELSO
PATERSON
SOUTH LONGVIEW FIBRE
WOODLAND WA

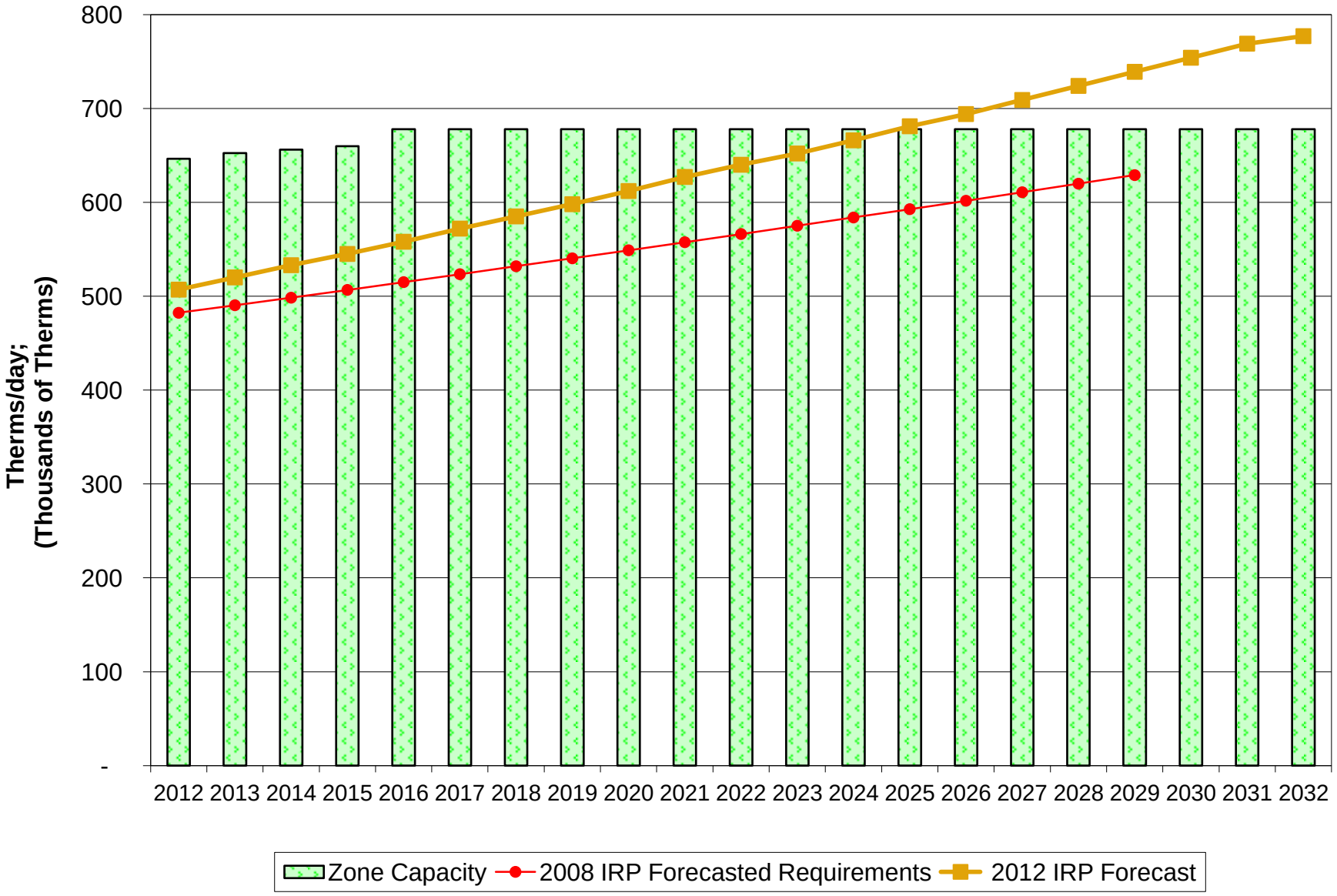
ZONE 26 Peak Day Demand & Existing Capacity Resc
Medium Load Forecast



Note: NWP Capacity is net of Non-Core primary term capacity requirements

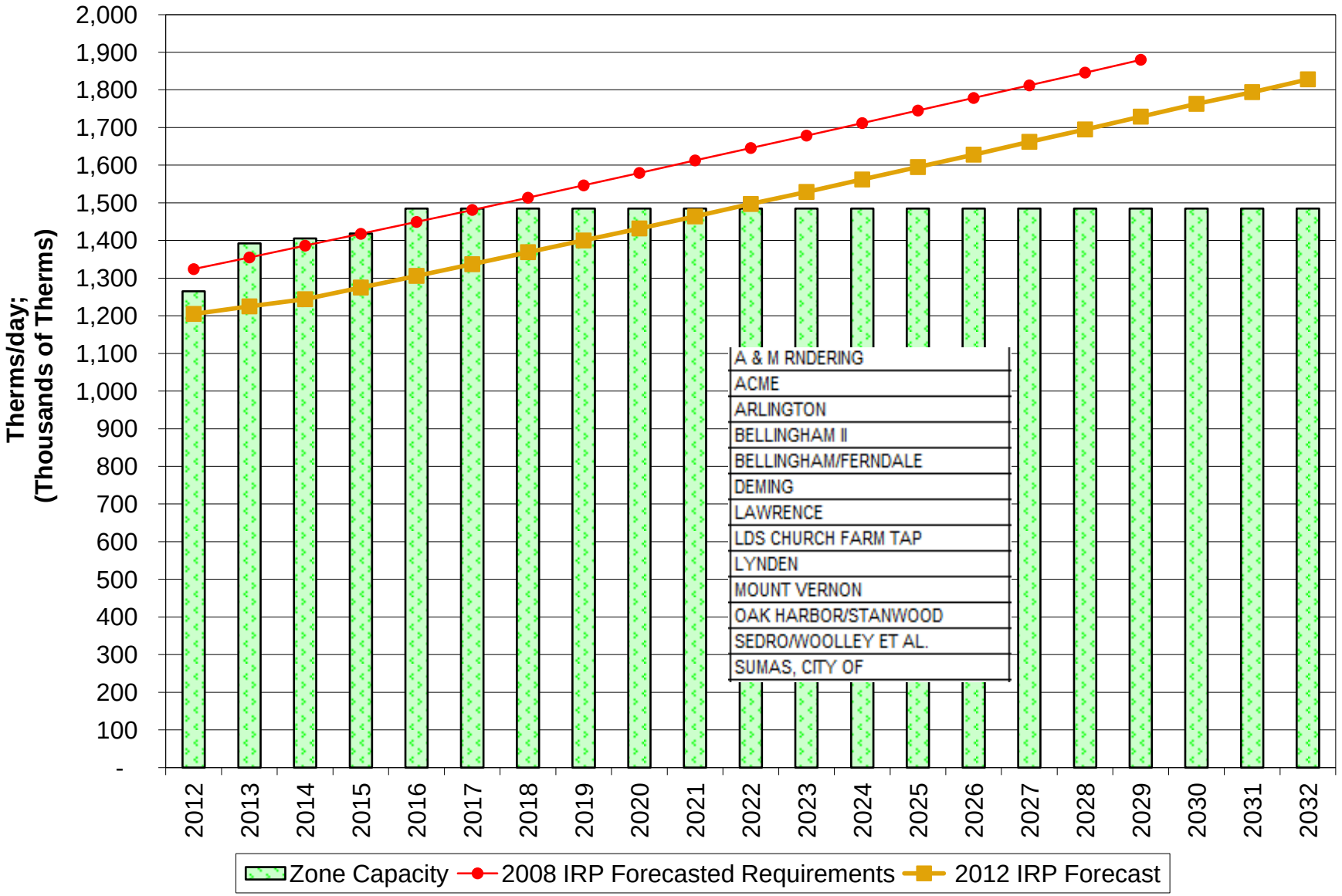
ABERDEEN/HOQUIAM/MCCLEARY
BREMERTON (SHELTON)

ZONE 30-S Peak Day Demand & Existing Capacity Resources
Medium Load Forecast



Note: NWP Capacity is net of Non-Core primary term capacity requirements

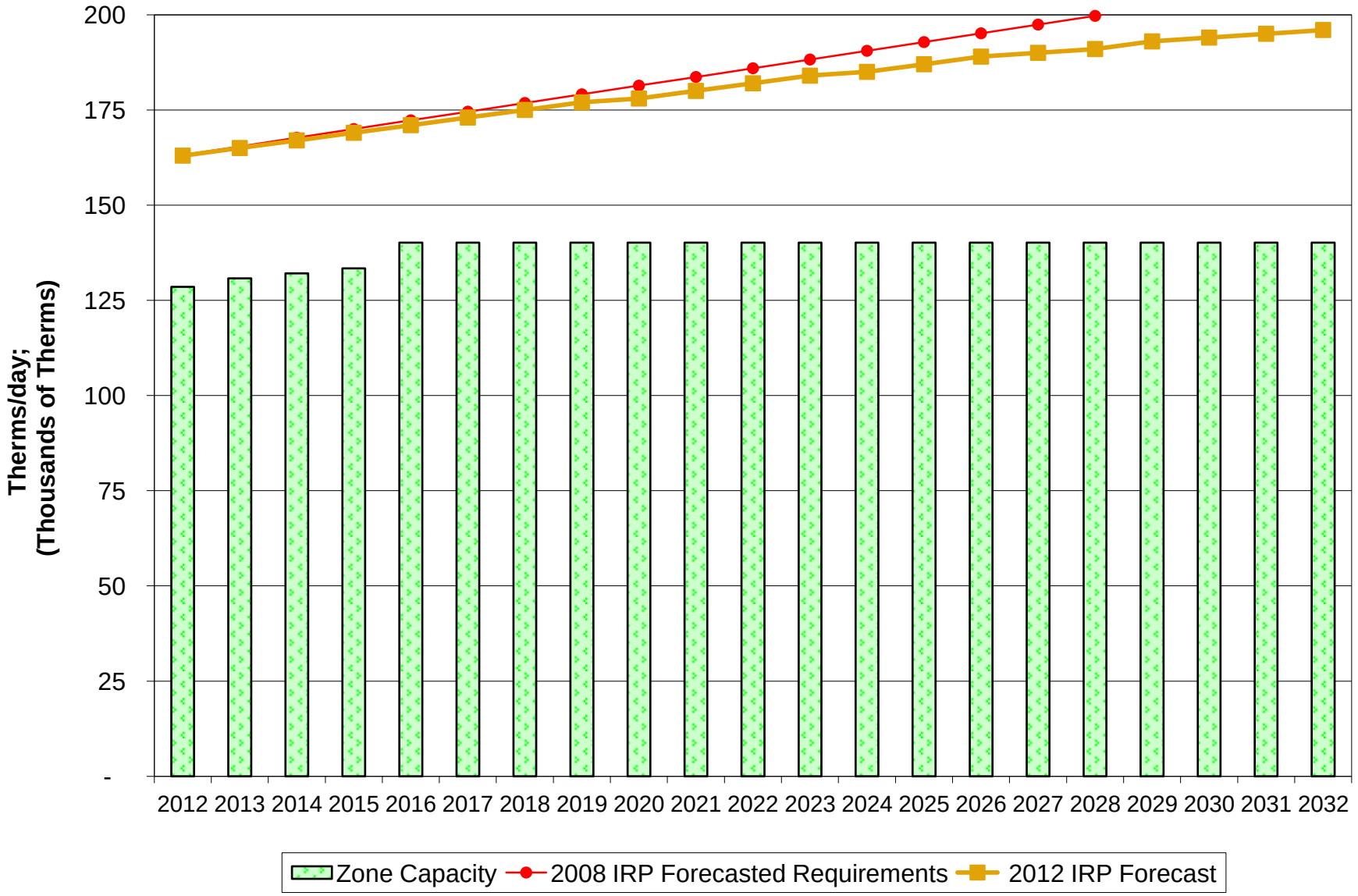
ZONE 30-W Peak Day Demand & Existing Capacity Resources
Medium Load Forecast



Note: NWP Capacity is net of Non-Core primary term capacity requirements

ZONE ME-Washington
Peak Day Demand & Existing Capacity Resources
Medium Load Forecast

UMATILLA	
WALLA WALLA	



Note: NWP Capacity is net of Non-Core primary term capacity requirements

Capacity

	2011 IRP Over / (Under) Subscribed	2021 IRP Over / (Under) Subscribed	2032 IRP Over / (Under) Subscribed
Total Zone 30	(7,125)	(39,711)	(65,353)
Total Zone 26	9,770	8,523	8,034
Total Zone 10	2,399	2,154	2,060
Total Zone 11	(8,612)	(10,594)	(8,987)
Total Zone 20	11,884	(6,229)	(15,963)
Total Zone ME	32,648	27,952	28,083
Total Zone 24	3,628	3,919	3,804
Total MDDOs	48,445	(10,131)	(44,467)

Cascade will continue to refine our specific peak day resource acquisition action plans to address anticipated capacity shortfalls. Possible solutions may be Satellite LNG, peak shaving facilities or pipeline looping to meet the growing requirements of the firm core load. Specifically, the Company will further analyze issues such as determination of project location issues and risks, project cost estimates, and construction/acquisition lead times.

Dodd-Frank Debate

- Increases transparency, matches buyers and sellers, and guarantees both sides of the transaction.

"Implementation in the coming year raises potential administrative challenges from a reporting standpoint".

- Creates a single point of potential failure.
- Government efforts to regulate the swaps market have led some traders to shift to futures exchanges.

It's unknown how the costs associated with the using clearinghouses might impact prices of natural gas in the future.

Storage Services

	Storage Capacity (therms)	Withdrawal (therms/day)
Jackson Prairie (Principle)	6,043,510	167,890
Jackson Prairie (Expansion)	3,500,000	300,000
Plymouth LNG	5,622,000	600,000
Jackson Prairie (new - 2012)	**2,812,420**	**95,770**

- Both of the Jackson Prairie facilities and Plymouth are located directly on NWP's transmission system.
- Because of that, storage withdrawal rates can be changed several times during an individual gas day to accommodate weather driven changes in core customer requirements.

LNG Likelihood

2010

- Cascade was monitoring LNG import facilities as information became available.
- If built, Cascade was attempting to determine which could be used to meet core requirements.
- Issues included cost, pipeline availability, and timing.

2012

- Proposed LNG import facilities have given way to proposed export facilities.
  - This is directly related to low gas prices and an abundant supply.
- Cascade is monitoring these activities, in particular the ***impacts to access gas supplies as they are being transported to any of the proposed LNG export facilities***, Jordan Cove and Oregon LNG.

Overview

- Introductions ☑
- 2012 IRP
  - Demand Forecast ☑
  - Distribution System Enhancements ☑
  - Demand Side Resources ☑
  - Supply Side Resources ☑
  - **Resource Integration** ⇙

Two-Year Action Plan: Action Items will be noted throughout.

20 Year Portfolio Costs NPV

SCENARIO NAME	IN $000s	AVG. COST PER THEM
As Is Scenario	$ 2,457,117	$ 0.362529
Base Case	*$ 2,457,398*	*$ 0.362902*
Mist	$ 2,459,606	$ 0.363228
Mist and Ryckman Creek	$ 2,469,211	$ 0.365308
T-South Enhancement/Southern Crossing	$ 2,475,877	$ 0.365233
Pacific Northwest Regional (NMAX, WA Expansion, Palomar)	$ 2,483,584	$ 0.366370
Incremental JP	$ 2,491,648	$ 0.367564
Pacific Connector	$ 2,491,747	$ 0.367579
T-South Enhancement/Southern Crossing with Limited Canadian	$ 2,498,265	$ 0.367875
Limited Canadian Imports	$ 2,498,317	$ 0.367882
All in Case	$ 2,511,442	$ 0.372805


Huntingdon/Sumas
Kingsgate
Bellingham
/Ferndale
WASHINGTON
Northwest
Pipeline
Mount Vernon
Oak Harbor/Stanwood
Spokane
Starr Road
Seattle
Wenatchee
Jackson Prairie
Storage
Selah
Plymouth LNG Storage
Stanfield
Interconnect
Portland
Pendleton
IDAHO
Mission
Tap
OREGON
Gas Transmission
Northwest
Boise
Malin
Turquoise
Flats
CALIFORNIA
Ruby Pipeline

Questions?

- Contact Information:
  - **Mark Sellers-Vaughn**, Manager of Supply Resource Planning & Systems 509-734-4589, Mark.Sellers-Vaughn@cngc.com
  - **Amanda Sargent**, Regulatory Analyst I
    509-734-4592, Amanda.Sargent@cngc.com
  - **Allison Spector**, Manager of Conservation Programs
    360-788-2356, Allison.Spector@cngc.com
  - **Chris Robbins**, Manager, Gas Management & Gas Control
    509-734-4588, Chris.Robbins@cngc.com
  - **Bob Morman**, Director of Gas Supply, MDU
    701-222-7870, Bob.Morman@mdu.com

CASCADE NATURAL GAS CORPORATION