

2016
Integrated Resource Plan
(IRP)

Initial Portfolio Analysis Results

May 16, 2016

Board and Public Process – 2016

May 16 - No Board Action Requested Today
Initial Portfolio Analysis results

June 6 (tentative)
Finalized Portfolio Analysis and Final Draft IRP document

June 20 (tentative)
Final Draft IRP for Board Approval
(Resolution to be presented)

Prior to September 1
Submit Final IRP to Department of Commerce

Today's presentation

- IRP Because...
- Topics
- Load Forecast
- District's Eligible Renewable Resources
- Conservation
- District Portfolio Costs
- District Net Generation and Load Forecasts
- Portfolio: Scenario Results

IRP Because...

- District is required under RCW 19.280: Electric Utility Resource Plans
- Helps assess how different portfolio strategies manage risk exposures such as:
 - Resource Mix (primarily hydro variability)
 - Load growth
 - Production Costs
- Document shared consensus on known facts and projections
- Conclusions assist in identifying and developing new/existing resources, technologies, and infrastructure

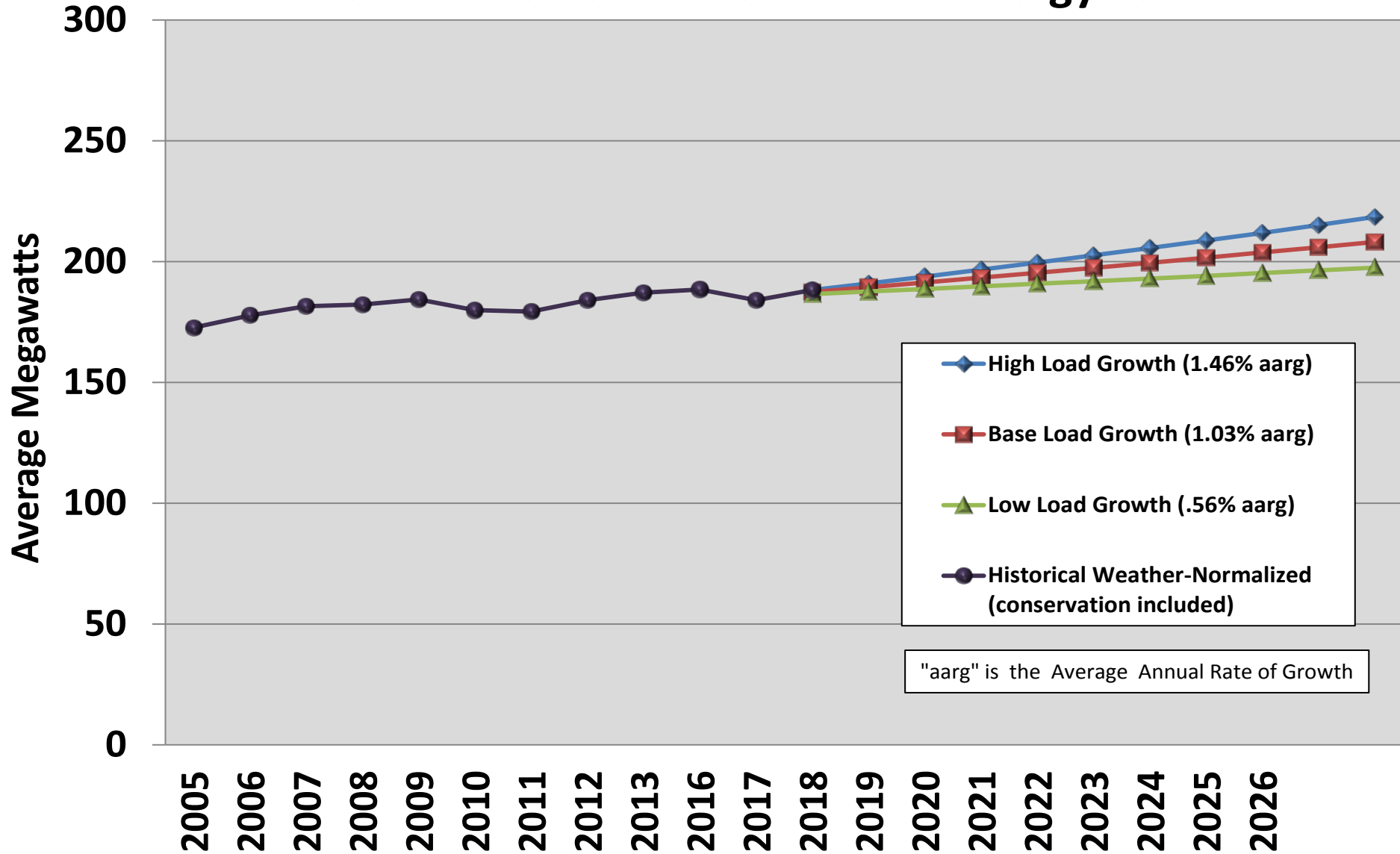
Topics of Continued Focus

- Renewable Portfolio Standard (RCW 19.285)
- Resource Adequacy
- Climate Impacts to Loads and Resources
- Energy Imbalance Market (EIM)
- Hydro Cost of Production
- Hedging Strategy
- Any other new topics?

Load Forecast

- Total Sector Sales – Residential, Commercial, Industrial & all “Other” (plus losses) for 2016-2026 (rates are before the effects of conservation)
 - Low – 0.56% average annual rate of growth (0.90% in 2014)
 - Base – 1.03% average annual rate of growth (1.27% in 2014)
 - High – 1.46% average annual rate of growth (2.29% in 2014)
- District’s Historical Load Growth
 - 2005-2015 – approx. 1.25%
 - 2005-2015 – approx. 0.65% (after the effects of cumulative conservation)
- Region-wide load forecasts from Seventh Power Plan (2015-2035)
- (rates are before the effects of conservation)
 - Low - 0.5%
 - High - 1.0%

Historical and Forecasted Annual Energy Load



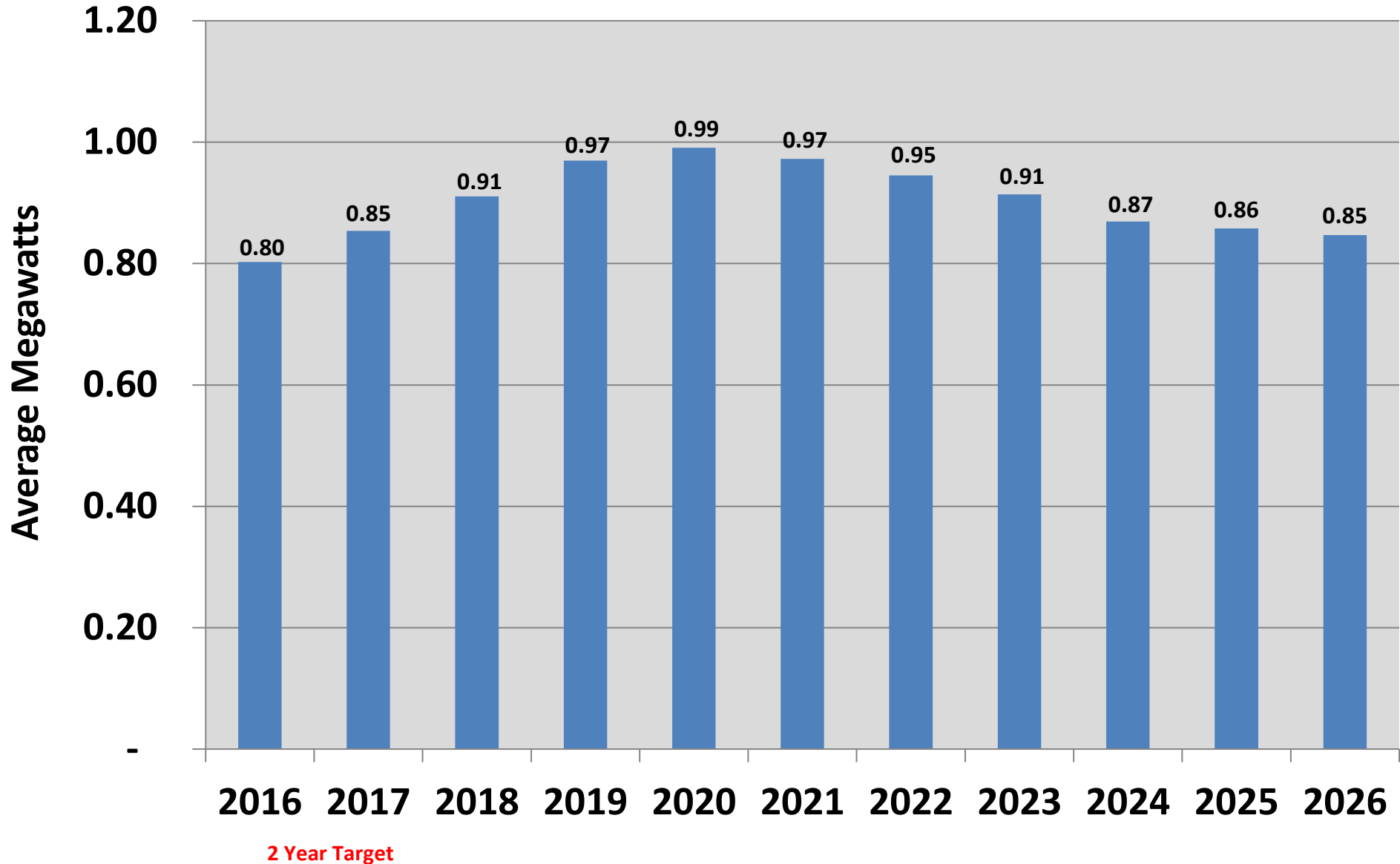
"aarg" is the Average Annual Rate of Growth

District's Eligible Renewable Resources

- Based upon current base load forecast (net of conservation), the amount of renewable resources required will be approximately:
 - 17-18 aMW (9% of retail load) in 2016-2019
 - 29-30 aMW (15% of retail load) in 2020-2026
- District plans on meeting renewable requirements with incremental hydropower throughout the planning period.
- District uses a Hydro Optimization Model to calculate its qualified incremental hydropower under average water conditions. In 2012 and 2014, the District utilized an advisory opinion process to confirm incremental hydropower from both Rocky Reach and Rock Island as qualified under the RPS.

10-Year Conservation Targets

Source : 2015 District Conservation Potential Assessment



Conservation Activities

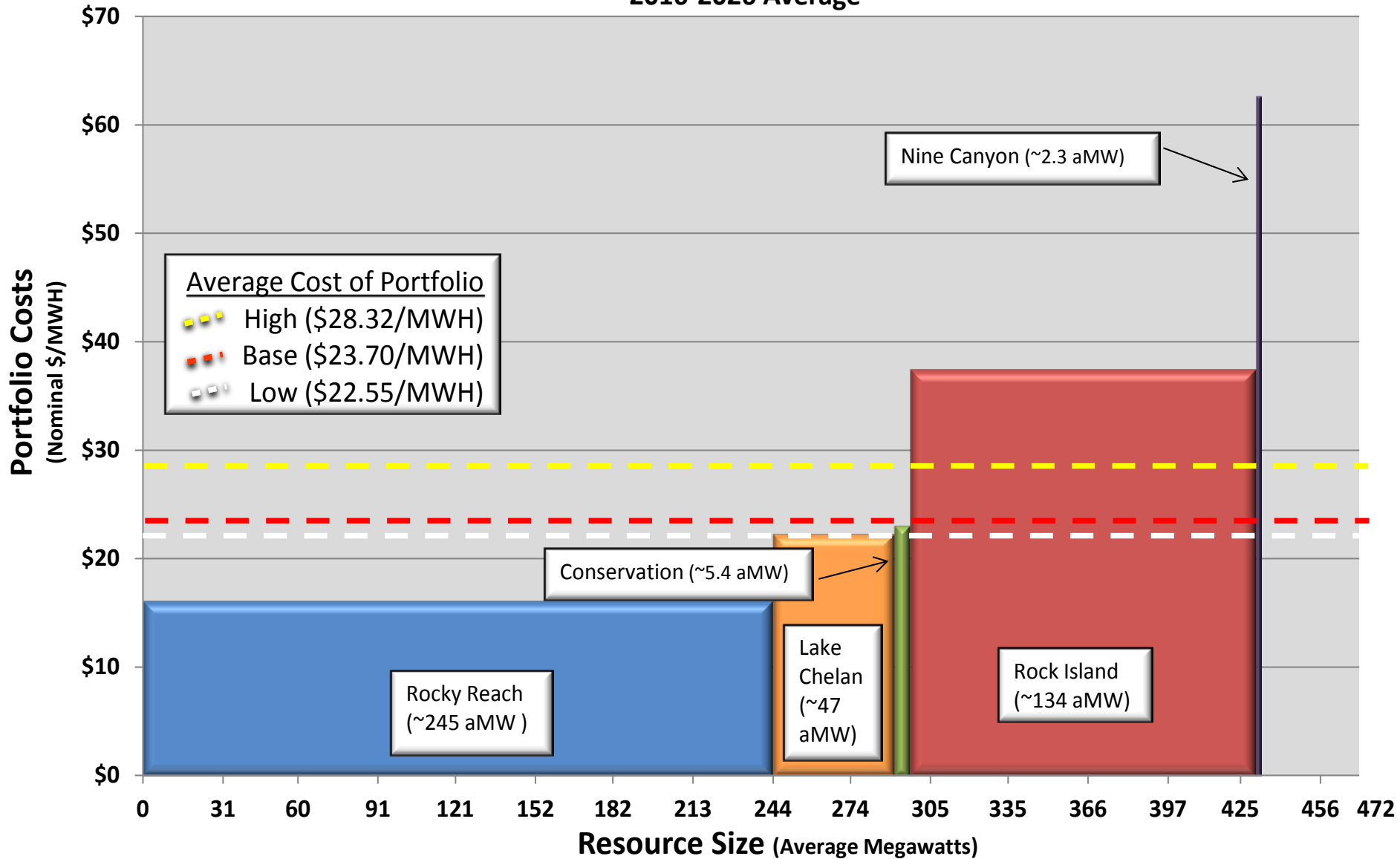
- Updated 10-year plan and two-year compliance target
 - 9.09 aMW
 - 1.65 aMW
- Plan and compliance target set using Conservation Potential Assessment (CPA)
- Staff is actively working to acquire conservation in excess of 2-year compliance target.

Modeling Assumptions

- Current operations of generating facilities (i.e., fish spill, forced outage rates, etc.)
- Hydro generation includes the effects of encroachments, Canadian Entitlement Allocations and;
- Executed long and short-term slice contracts
- Conservation aMW by year from 2015 Conservation Potential Assessment
- Nine Canyon based on historical generation
- Load forecasts varied by scenario
- Current resource cost projections (Hydro costs varied by scenario)

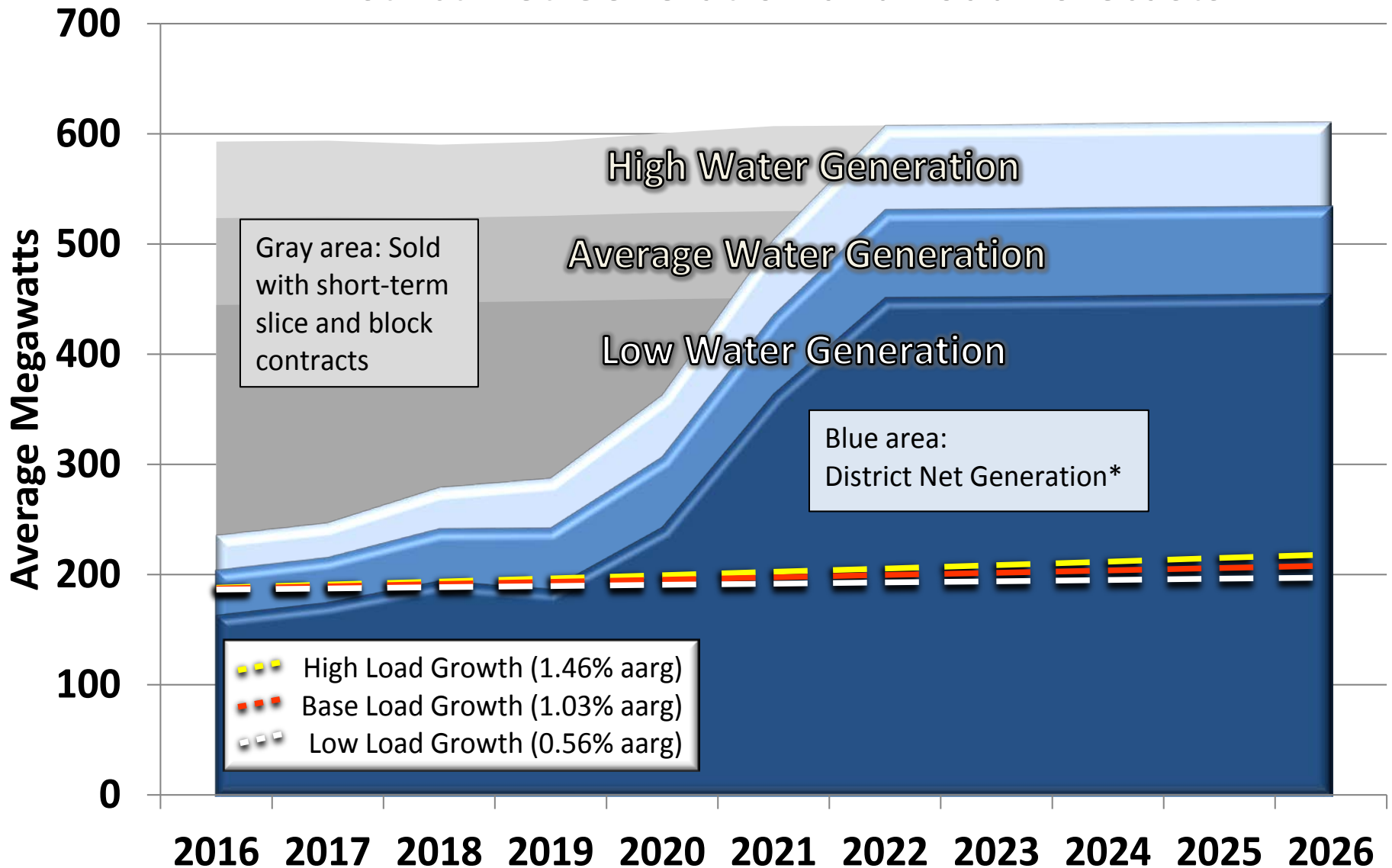
District Portfolio Costs

2016-2026 Average



Hydro generation includes the effects of encroachments, Canadian Entitlement Allocations, other contractual obligations including long-term power purchaser contracts and short-term hedging strategy slice contracts

District Net Generation and Load Forecasts



*Hydro generation includes the effects of encroachments, Canadian Entitlement Allocations, other contractual obligations including long-term power purchaser contracts, short-term hedging strategy slice contracts and block sales

Portfolio: Scenario Results

- Load/Resource Balance
 - Low, Base and High levels of Hydro Generation stressed with various stream flows
 - Low, Base and High Load Growth forecasts
 - Expected to be able to serve retail load without new power supply
 - Conservation resources decreased some since 2014 to 0.90 aMW (2016-2026)
- Service Reliability
 - Meets Council’s voluntary loss of load probability standard
 - Potential slice or other hedging strategy contract amounts would be reduced before service reliability jeopardized
- Environmental Impacts
 - District’s hydro and wind resources **do not** emit air pollutants
 - District is purchaser of “market mix” during certain hours

Chelan PUD IRP Website

<http://www.chelanpud.org/environment/operating-responsibly/integrated-resource-plan>



CHELAN COUNTY

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MY PUD SERVICES

HYDROPOWER

PARKS AND RECREATION

ENVIRONMENT

LEARNING CENTER

ABOUT US

Operating Responsibly

Fish and Wildlife

Habitat Conservation Plans

Web Links



Read RCW 19.280

Related Documents



2014 IRP Progress Report

2012 IRP Document

2010 IRP Progress Report

2008 IRP Document

[Home](#) / [Environment](#) / [Operating Responsibly](#) / [Integrated Resource Plan](#)

Integrated Resource Plan

Chelan County PUD is preparing its 2016 Integrated Resource Plan (IRP) as required by state law, RCW 19.280.

The 2016 IRP outlines the sources of power needed to supply PUD customers through 2026. It describes the mix of resources from generation, conservation and efficiency that will meet current and projected needs at the lowest reasonable cost and risk to the utility and its customer-owners.

The 2016 IRP will be submitted to the Washington State Department of Commerce before the Sept. 1, 2016, deadline.

Public meetings on the IRP are scheduled as shown below (with links to presentations and meeting notices).

[Send comments to contactus@chelanpud.org](mailto:contactus@chelanpud.org)

Public Meetings/Hearing - 2016

June 20, 2016, final hearing 1 p.m.

June 6, 2016 board presentation, 10 a.m.

May 16, 2016, board presentation, 10 a.m.