

# Energy Resources Quarterly Board Update 2021 Q3

November 15, 2021

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Resources

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# Why We're Here

- Portfolio overview
- Operations and planning
  - » Pricing update
  - » Net wholesale revenue forecast update
- Market update

# Key points

- The District's 2021 forecasted net wholesale revenue of \$67.2M closely matches the budget for the year. After adding in other energy related revenue, the forecast is \$106.6 million and \$29.1 million higher than budget
- Western Resource Adequacy Program (WRAP) continues to progress on schedule
- Continued momentum for Western Regional Transmission Organization (RTO) options

# Major changes in the western power market

## Western Resource Adequacy Program (WRAP)

- Northwest Power Pool detailed design phase completed. Stakeholder input underway on detailed design.
- The interim resource adequacy program is in effect for Winter 2021 - 2022. The interim program was used in late June and also in late July during extreme heat wave.
- Evaluating potential impacts on portfolio and marketing strategy

## Short term markets (within hour → real-time → day ahead)

- Work continues on the CAISO Extended Day-Ahead Market (EDAM) enhancements initiative. A workshop is being held in November to restart the initiative.
- Southwest Power Pool (SPP) announced they will be working on Markets+ include day-ahead, real time and transmission. Information session in November.

# WRAP Governance

- Overall governance is by a reformed, independent NWPP Board of Directors
- Participants Committee has authority to approve proposals for submission to Board (subject to appeal)
- Open stakeholder process involving program participants, industry stakeholders, state representatives, and public input

# Major changes in the western power market

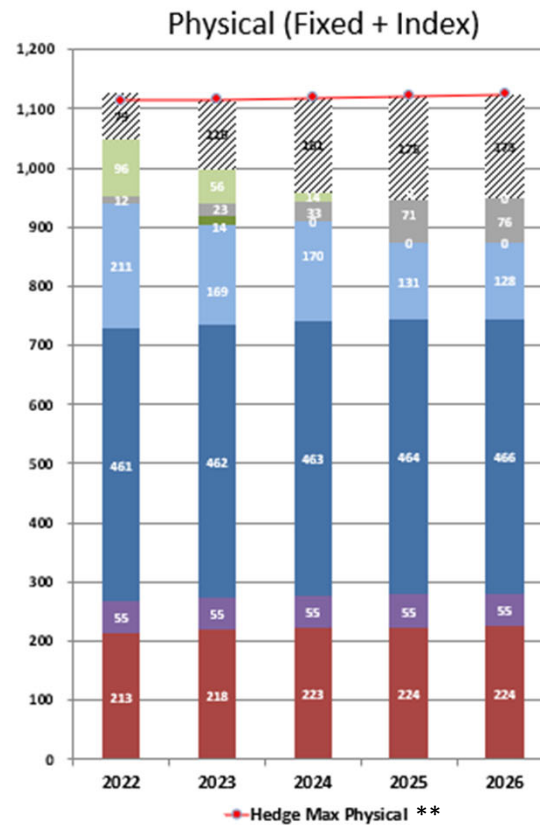
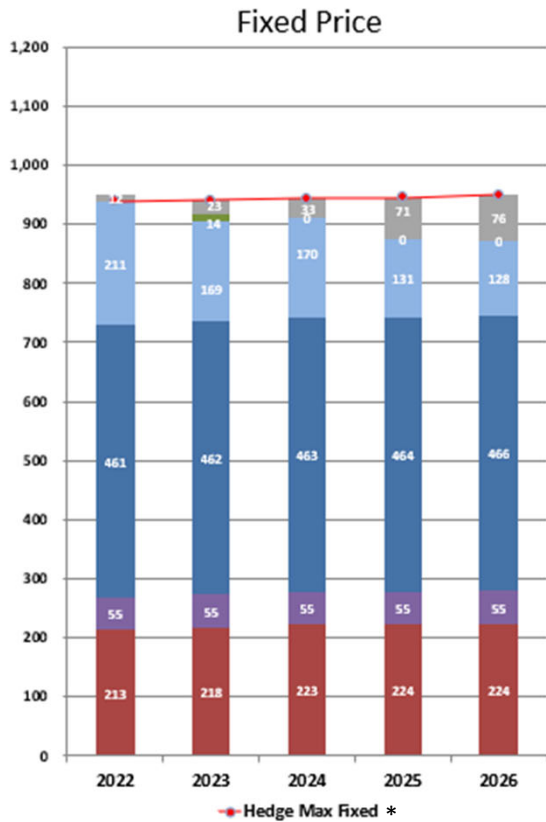
## State carbon policies

- Clean Energy Transformation Act (CETA) rulemaking efforts are ongoing
  - Clean Energy Implementation Plan (CEIP) to be submitted to Commerce by Jan. 1, 2022
- CEIP and IRP schedule with the Board of Commissioners:
  - Oct. 18 Study Session – Introduce CEIP
  - Dec 6 – Present final draft CEIP and IRP
  - Dec. 20 – Public Hearing – Approval of Draft CEIP and IRP by resolution
- Cap and Invest — Department of Ecology recently initiated rulemaking

## New products and services

- Southwest Power Pool began offering Western Energy Imbalance Service (WEIS) on Feb. 1, 2021

# District's energy commitments (Average MW)

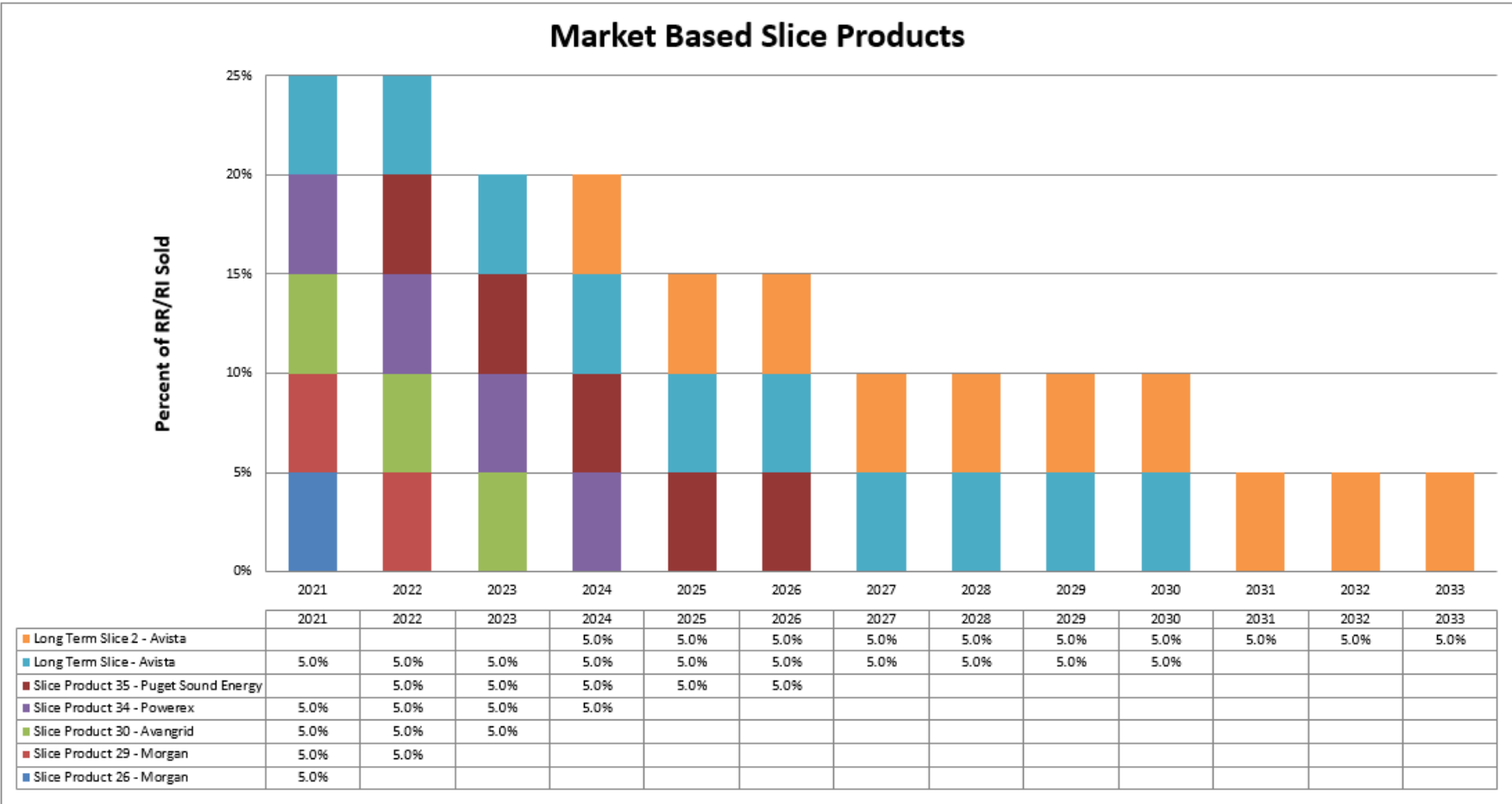


Note: The graphs represent the limits contained in resolution 20-14439 approved by the Board on March 23, 2020.

\*Hedge Max Fixed = stress water generation

\*\*Hedge Max Physical = stress water generation + 175 aMW

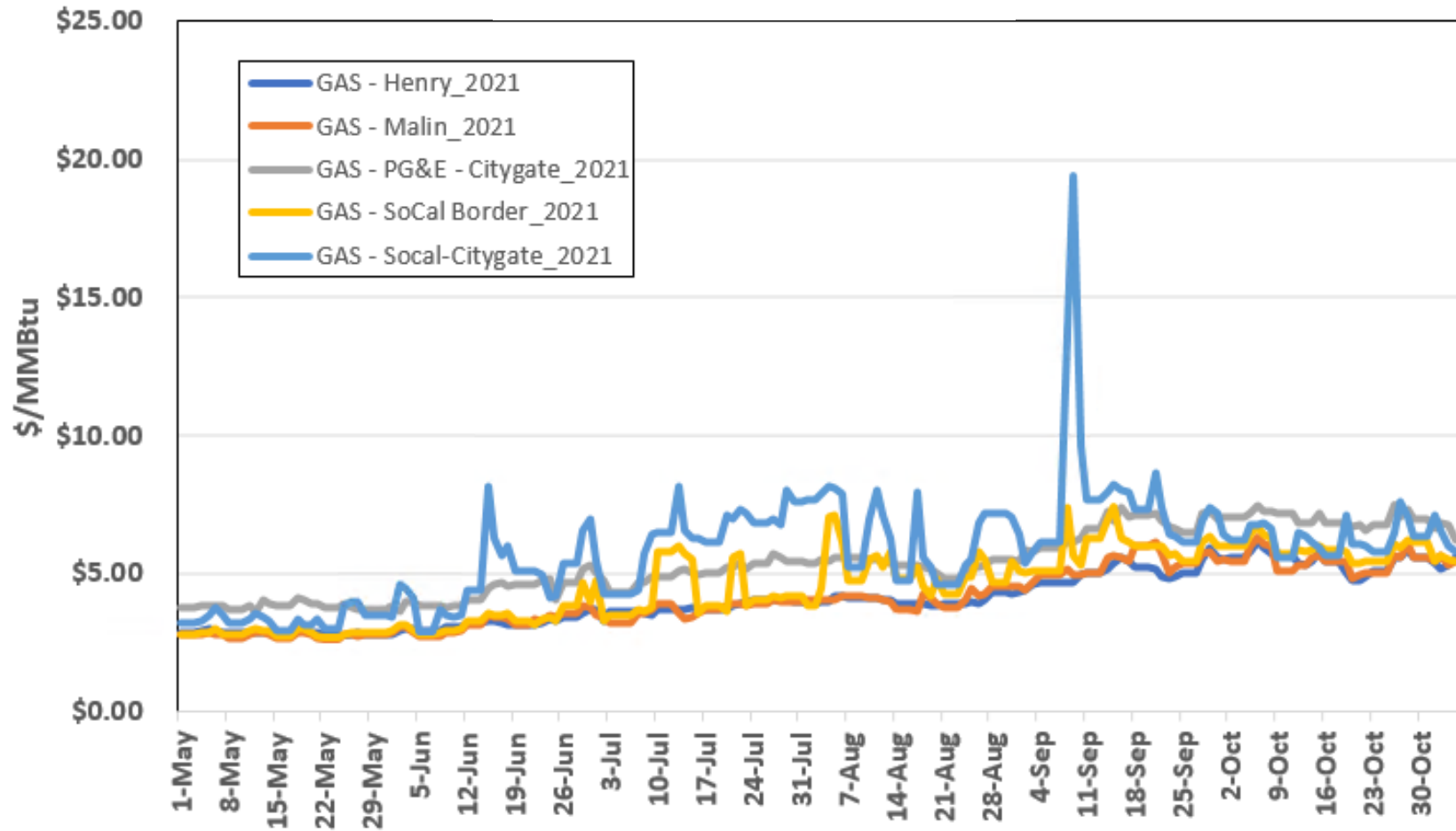
# Market-based slice contracts





# 2021 Daily Natural Gas Prices

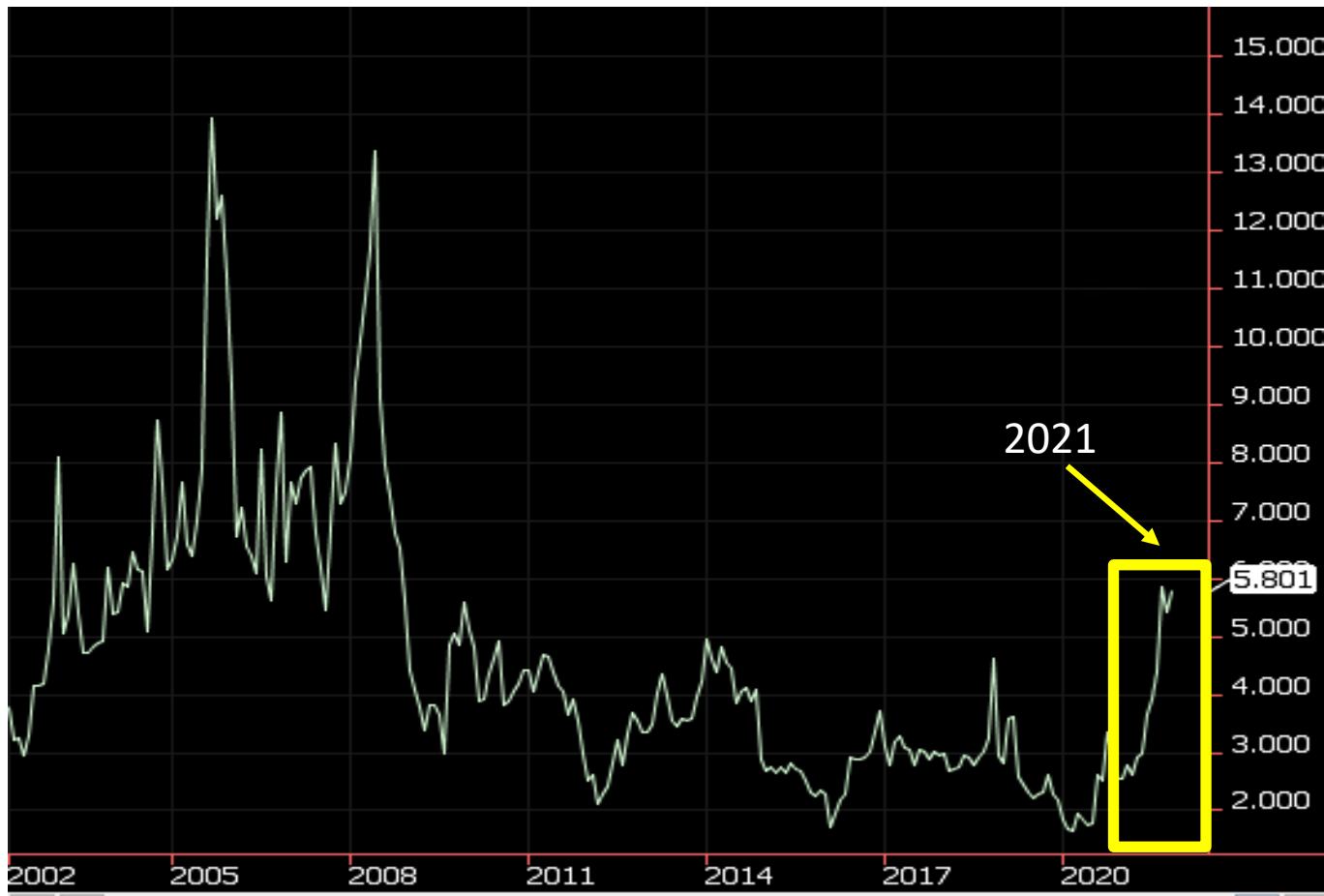
May 1<sup>st</sup> – Nov 4<sup>th</sup>  
at selected hubs



# Dec 2021 Henry Hub natural gas

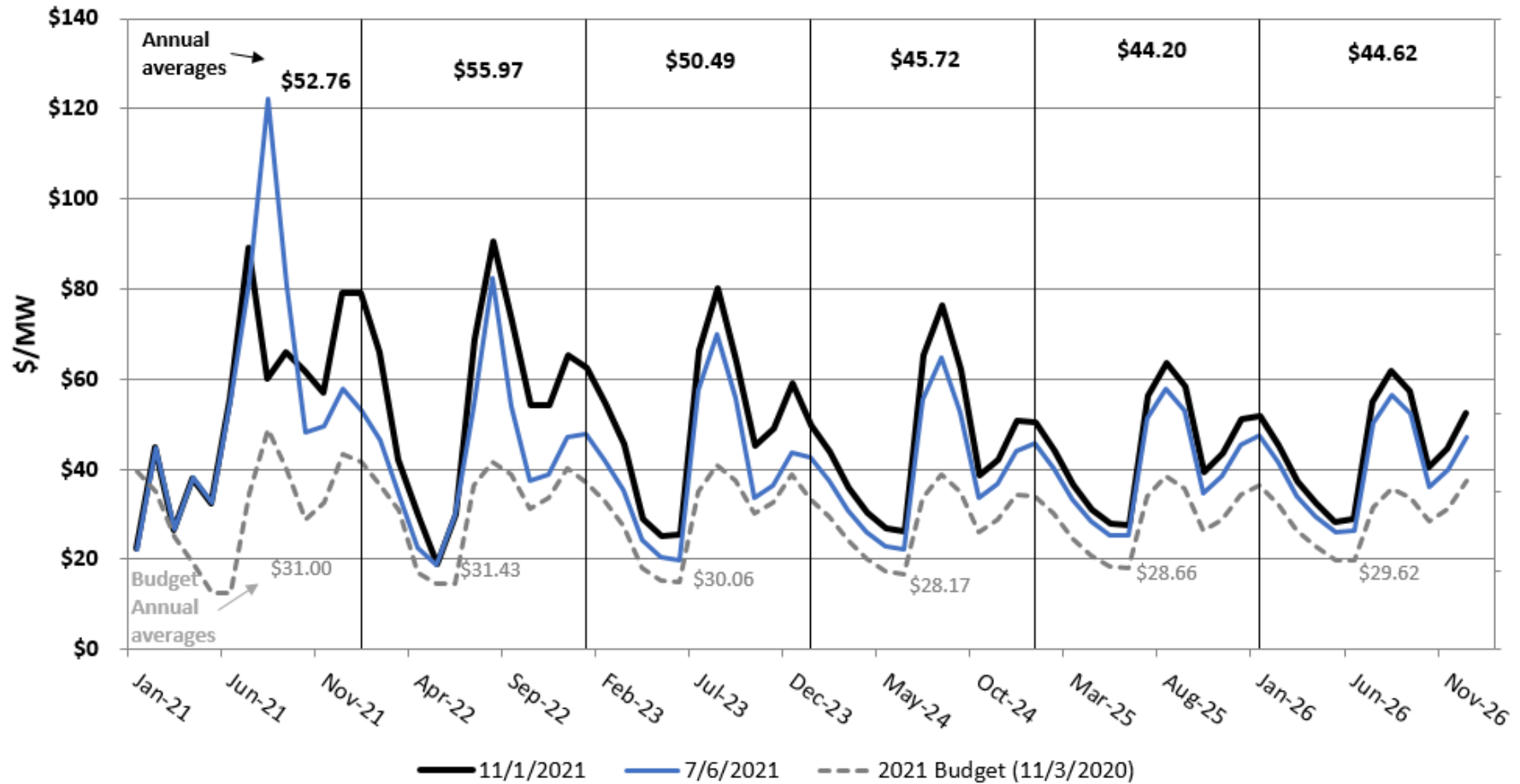


# Dec. 2021 Henry Hub natural gas (price history since 2002)



# MIDC forward price curve

MIDC Flat Forward Price Curve  
(ICE DA index prices for previous months)



## 2021 NWR and Other Energy-Related Revenue

(amounts in millions)

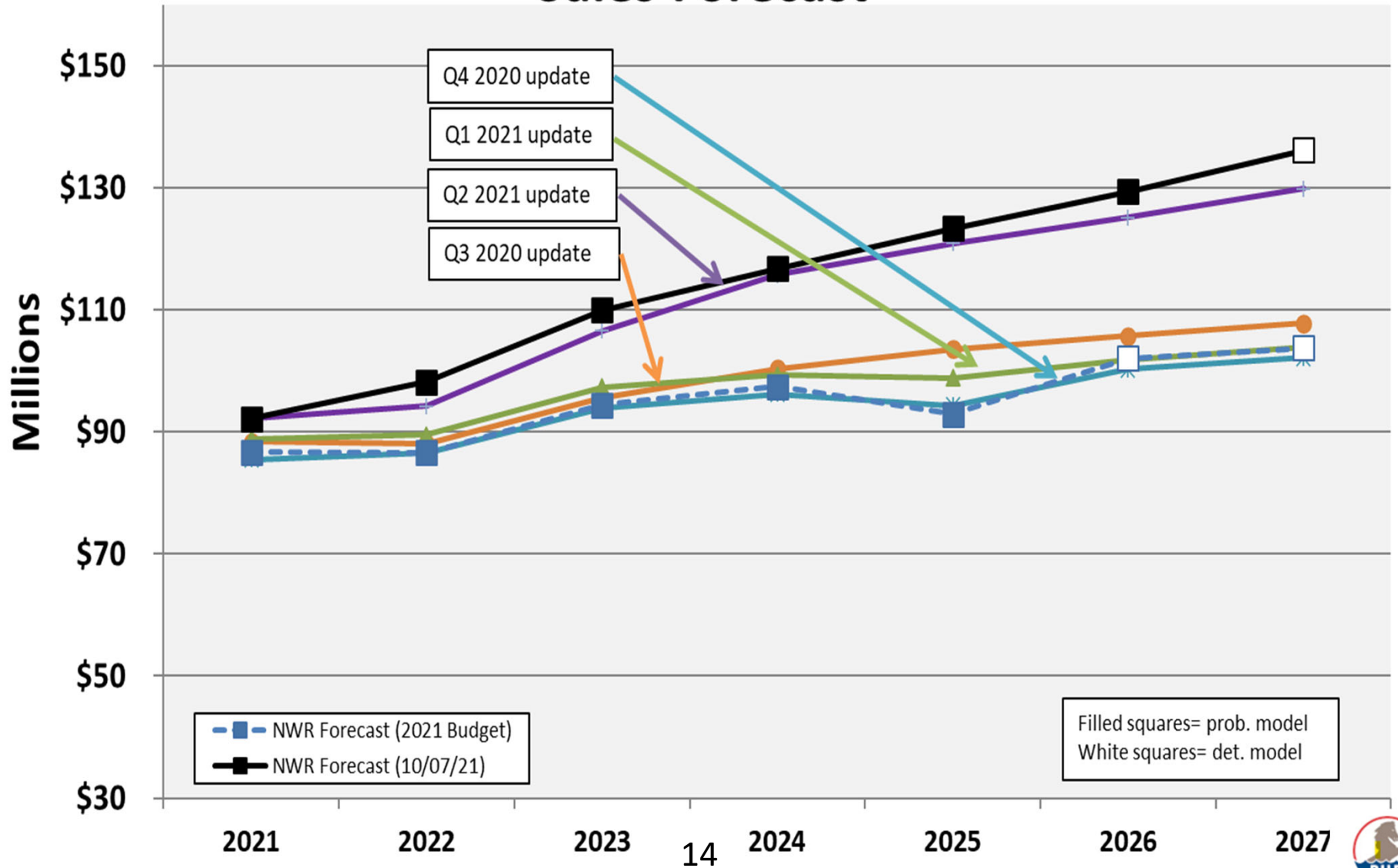
	Budget	Forecast [1]	Variance
<b>Net Wholesale Revenue (NWR)</b>			
Energy Sales/Purchases	\$ 59.9	\$ 59.8	\$ (0.1)
Specified Source Premium	\$ 7.2	\$ 7.2	\$ -
Renewables- Bundled	\$ 0.2	\$ 0.2	\$ 0.0
<b>NWR Sub-total [2]</b>	<b>\$ 67.3</b>	<b>\$ 67.2</b>	<b>\$ (0.1)</b>
<b>Other Energy-Related Revenue</b>			
LT Power Contract- Retained Surplus	\$ -	\$ 25.7	\$ 25.7
LT Power Contract- Admin Fees	\$ 2.4	\$ 2.4	\$ -
Frequency Response & Load Shedding	\$ 0.5	\$ 0.8	\$ 0.2
Other [3]	\$ 0.2	\$ 0.2	\$ -
Renewables- Unbundled	\$ 0.1	\$ 0.2	\$ 0.1
Real-Time Revenue	\$ 7.0	\$ 10.2	\$ 3.2
<b>Other Energy-Related Sub-total</b>	<b>\$ 10.2</b>	<b>\$ 39.4</b>	<b>\$ 29.2</b>
<b>NWR and Other Energy-Related Revenue</b>	<b>\$ 77.5</b>	<b>\$ 106.6</b>	<b>\$ 29.1</b>

[1] 2021 forecast based on Jan-Sep unaudited actuals and Oct-Dec estimates (10/7/21 NWR forecast).

[2] NWR includes PWX specified source sale/full requirements purchase and transmission pass through costs.

[3] Other includes scheduling & admin fees and the sale of reserves.

# Net Wholesale Revenue + Off System End-Use Sales Forecast



# Market info

## Regional Transmission Organization (RTO) Momentum Continues in the West

- Oregon Senate Bill (SB) 589 requires study on RTO
- Colorado SB 72 and Nevada SB 448 require utilities in their states to join an RTO by 2030
- FERC Chairman Richard Glick: "the time is right for the states, the region's utilities and other key stakeholders to form one or more Western RTOs"
- CEO of Tri-State Generation and Transmission Association, Duane Highley "for our consumers to enjoy the benefits of scale and to integrate more renewable energy into the grid, we need one or more regional transmission organizations (RTO) in the West"

# Western Initiatives

	Shared Transmission Planning	Single Transmission Service Provider	Single Transmission Operator	Single Balancing Authority Area	Common Resource Adequacy Standard	Market Operator: Day-Ahead	Market Operator: Real-Time
Traditional RTO/ISO	✓	✓	✓	✓	✓	✓	✓
<u>IndeGo</u> 1995 - 1998	✓	✓	✓	✓			
<u>RTO West/Grid West</u> 2000 - 2006	✓	✓	✓	✓		✓	
<u>NWPP MC Initiative</u> 2012 - 2016							✓
<u>CAISO EIM</u> 2014 - Present							✓
<u>PacifiCorp as CAISO PTO</u> 2015 - 2018	✓	✓	✓	✓	✓	✓	✓
<u>Mountain West</u> 2013 - 2018	✓	✓	✓	✓	✓	✓	✓
<u>SPP WEIS</u> 2019 - Present							✓



# Summary

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# Questions?

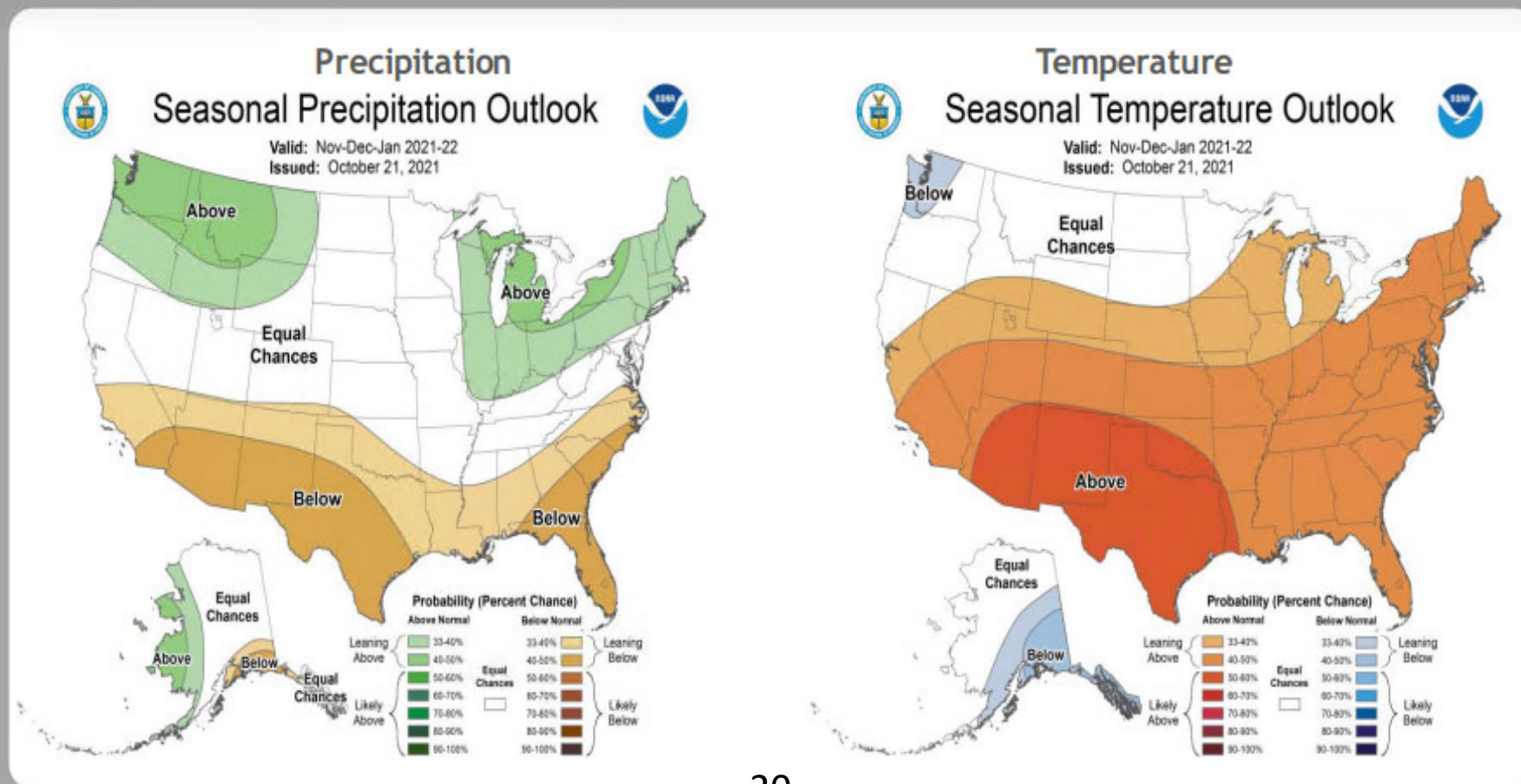
# Appendix

Supplemental Information not part of public presentation

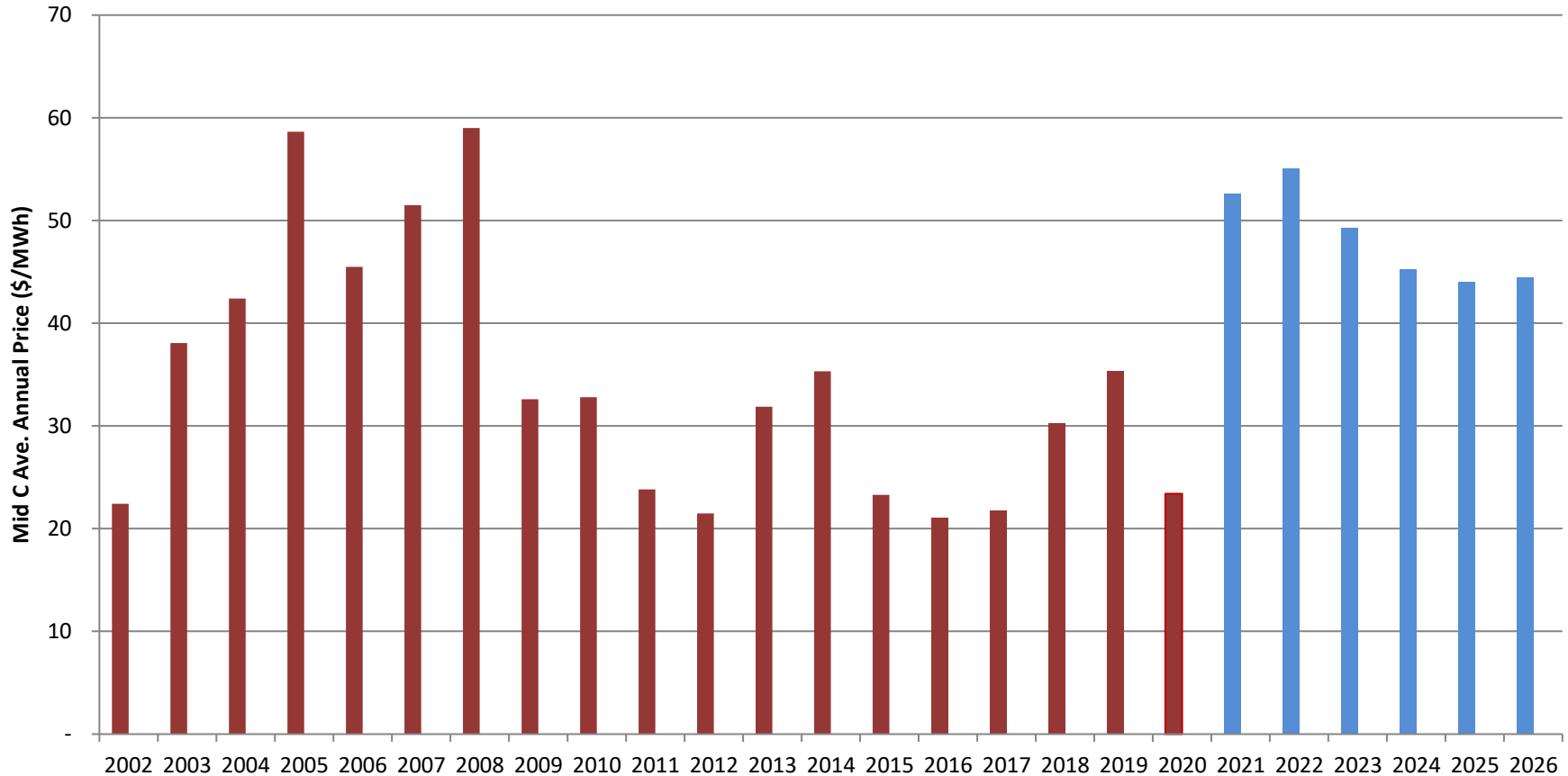
# U. S. Seasonal Outlooks

November 2021 - January 2022

The seasonal outlooks combine the effects of long-term trends, soil moisture, and, when appropriate, ENSO.



# MIDC flat annual Wholesale Electricity prices



**Red** = Historical prices  
**Blue** = Forward price curve

# Canadian October-December forecasts

Temperature & precipitation deterministic forecasts

## Precipitation

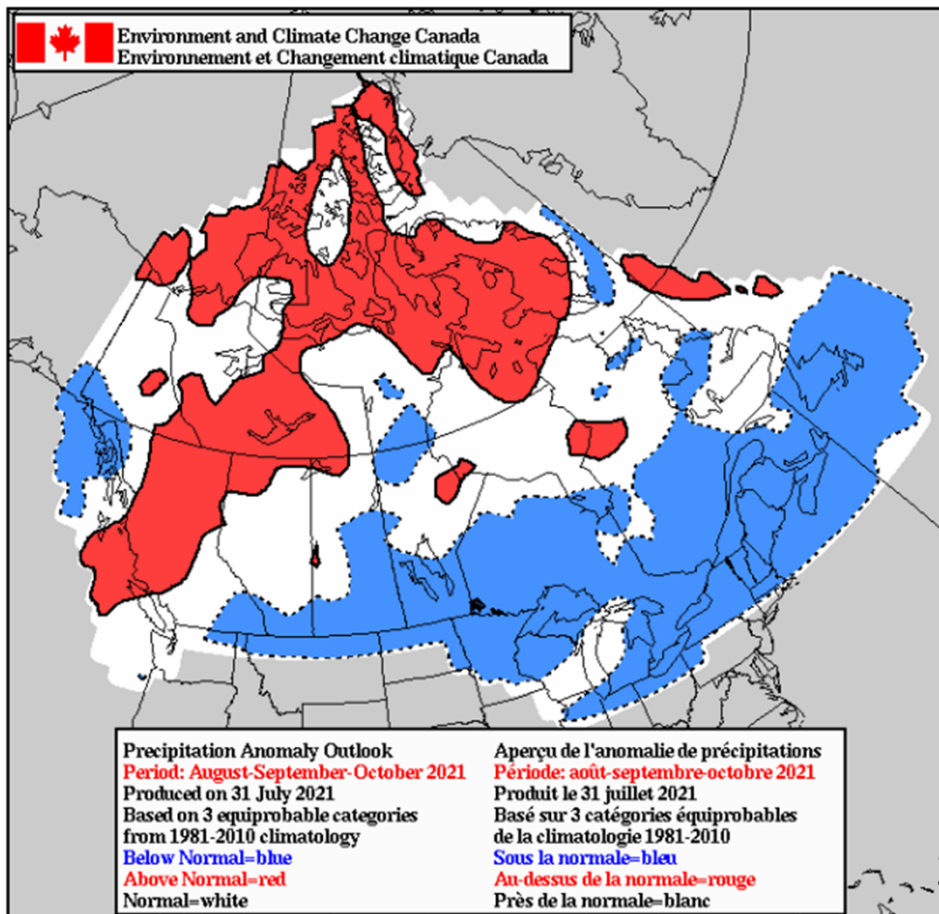
Red = Above (wetter)

Blue = Below (drier)

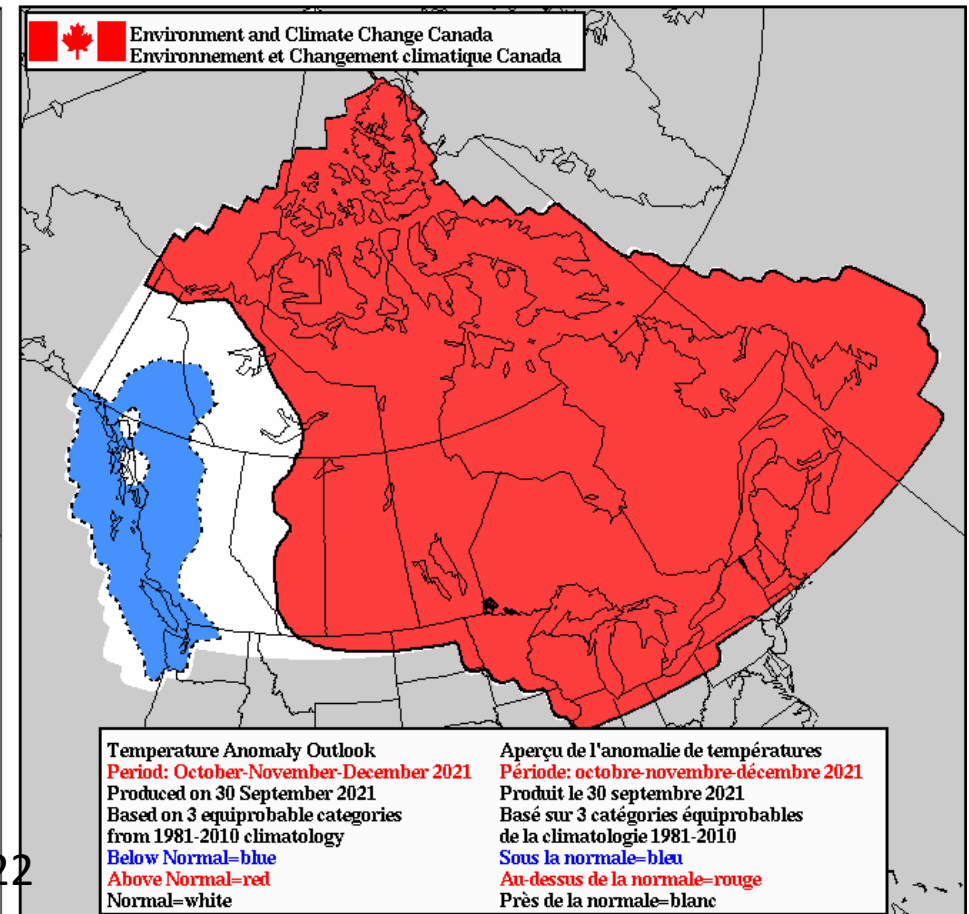
## Temperature

Red = Above (wetter)

Blue = Below (drier)

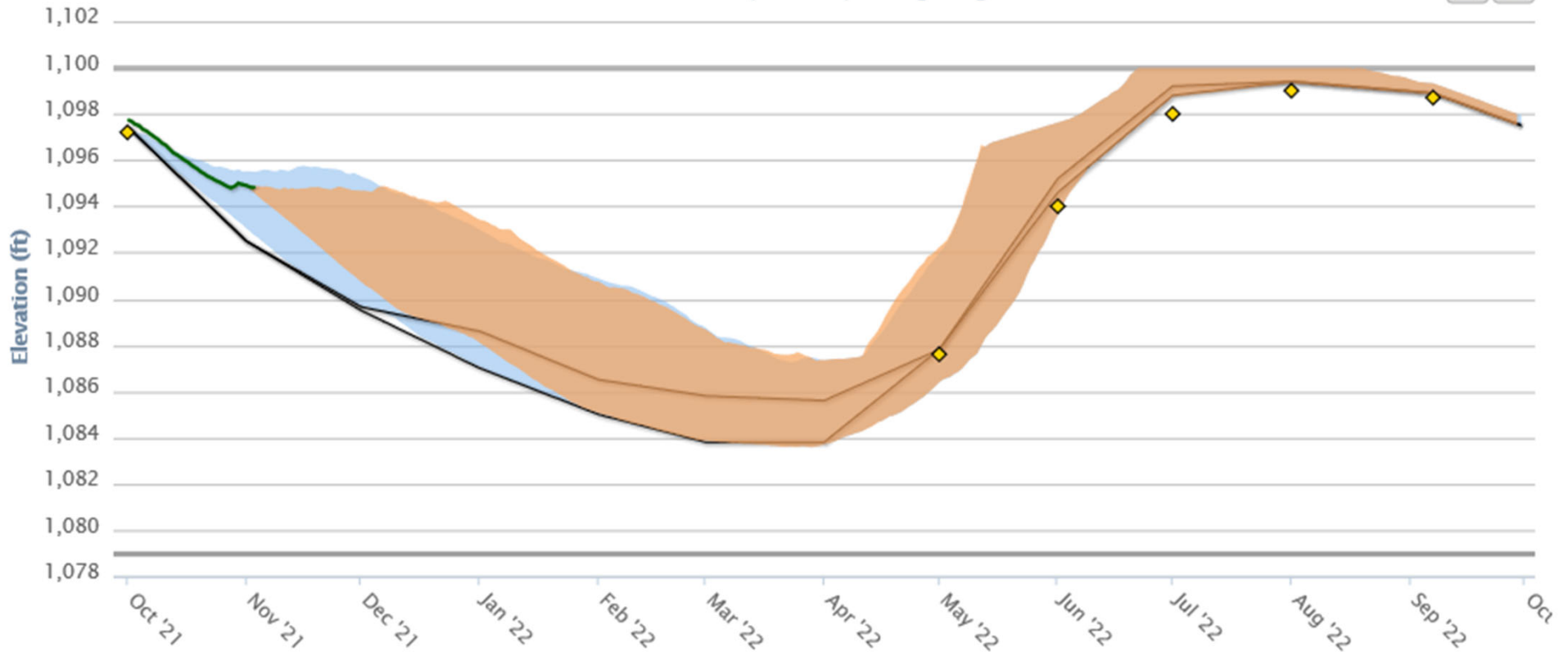


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# Lake Chelan level webpage

Chelan Lake Levels: Expected Operating Ranges



- Current Year Actual Elevation (ft)
- Previous Year Actual Elevation (ft)
- Current Forecasted Operating Range (ft)
- Current Forecasted Average Elevation (ft) (50% chance of occurring)
- October 1 Forecasted Operating Range (ft)
- October 1 Forecasted Average Elevation (ft)
- Target Curve During Dry and Average Water Years (ft)
- Target Curve During Wet Water Years (ft)
- ◆ Minimum Target Elevation



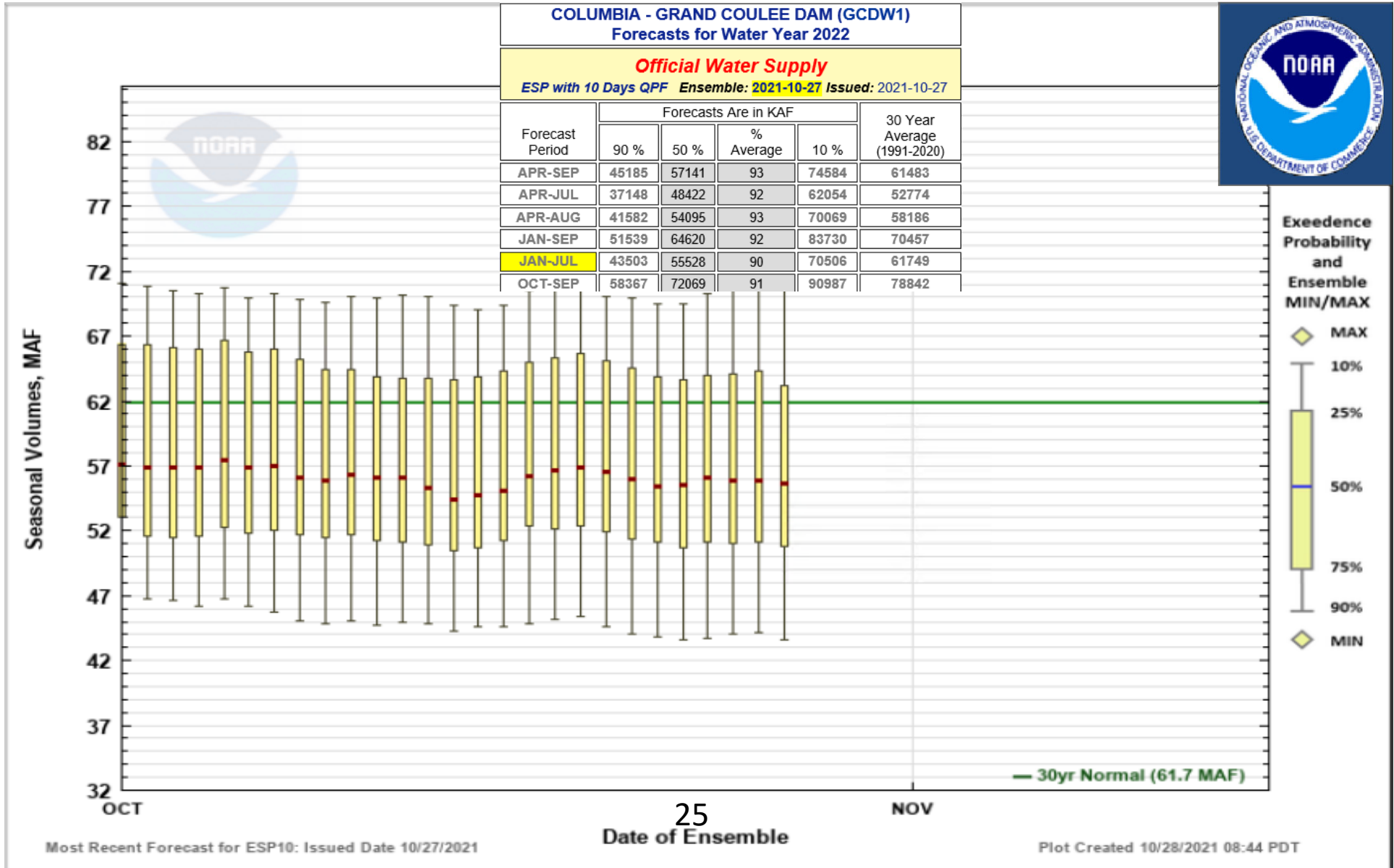
# Columbia River flow update for 2021

2021	Rocky Reach Flow (kcf)	Budget Rocky Reach Flow (kcf)	Difference from budget (kcf)	% of Budget
Jan	120	139	-19	87%
Feb	112	108	4	104%
Mar	66	89	-23	74%
Apr	78	113	-35	69%
May	121	140	-19	86%
Jun	144	178	-34	81%
Jul	111	144	-32	77%
Aug	99	114	-15	87%
Sep	58	59	-1	98%
Oct		73		
Nov		96		
Dec		107		
YTD Average	107	130	-23	83%

\* Budgeted Rocky Reach flow is 1929-2018 average



# Water Year 2021: Water Supply forecast



# Water Year 2021: Water Supply Forecast

