

# Energy Resources Quarterly Board Update 2021 Q4

March 7, 2022

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# Why We're Here

- 2021 net wholesale revenue forecast update
- Western Power Markets update
- Operations and planning
  - Portfolio overview
  - Pricing update

# Key points

- The District's 2021 actual net wholesale revenue was \$66M and was \$1M below budget. After adding in other energy related revenue, the actual revenue is \$146 million and \$37 million higher than budget
- Western Resource Adequacy Program (WRAP) continues to progress on schedule
- Western Market momentum continues in West
  - CAISO EDAM
  - SPP Markets+

## 2021 NWR and Other Energy-Related Revenue

(amounts in millions)

	Budget	Actual [1]	Variance
<b>Net Wholesale Revenue (NWR)</b>			
Energy Sales/Purchases	\$ 59.9	\$ 60.0	\$ 0.0
Specified Source Premium	\$ 7.2	\$ 6.0	\$ (1.2)
Renewables- Bundled	\$ 0.2	\$ 0.2	\$ 0.0
<b>NWR Sub-total [2]</b>	<b>\$ 67.3</b>	<b>\$ 66.2</b>	<b>\$ (1.1)</b>
<b>Other Energy-Related Revenue</b>			
LT Power Contract- Retained Surplus	\$ -	\$ 32.7	\$ 32.7
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	\$ 0.4	\$ 0.3
Real-Time Revenue	\$ 7.0	\$ 11.6	\$ 4.6
<b>Other Energy-Related Sub-total</b>	<b>\$ 10.2</b>	<b>\$ 48.0</b>	<b>\$ 37.8</b>
<b>NWR and Other Energy-Related Revenue</b>	<b>\$ 77.5</b>	<b>\$ 114.2</b>	<b>\$ 36.7</b>

[1] 2021 forecast based on unaudited actuals. Numbers may vary slightly due to rounding differences.

[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.

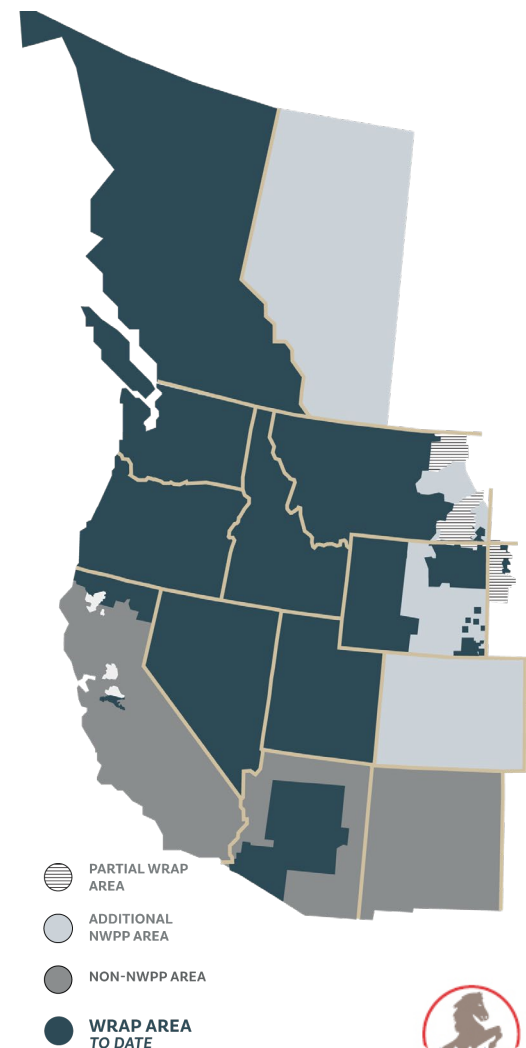
# Major changes in the western power market

## Western Resource Adequacy Program (WRAP)

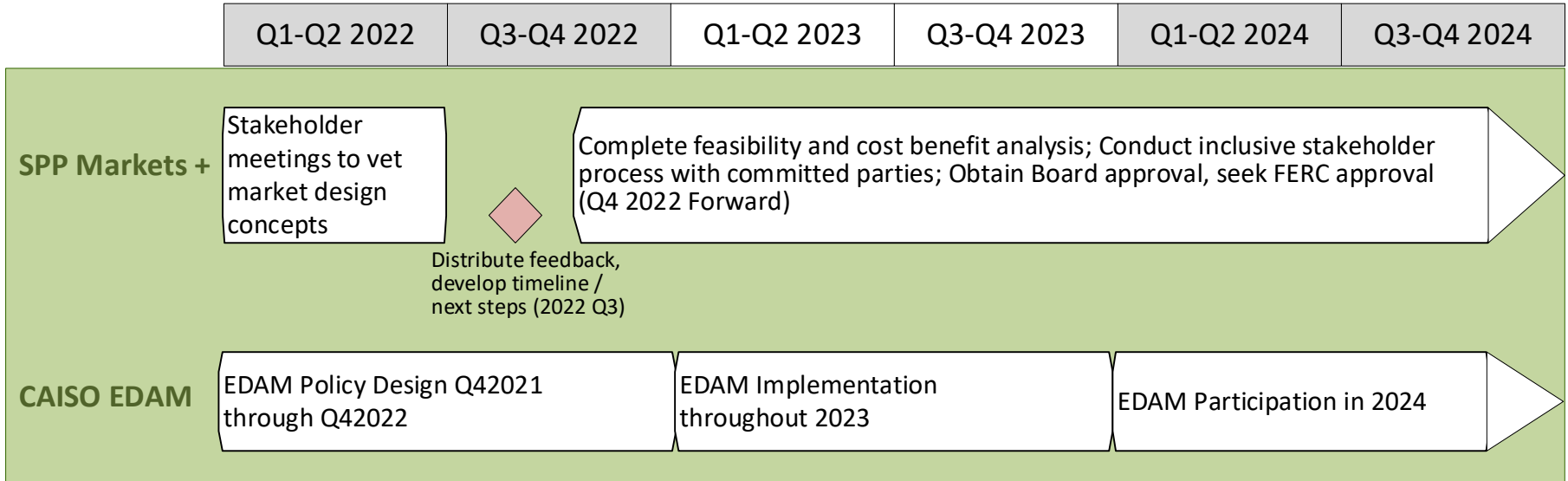
- Northwest Power Pool is now the Western Power Pool (WPP) to account for WRAP's expansion across much of the west
- WPP detailed design phase completed. Stakeholder input underway on detailed design.
- The interim resource adequacy program is in effect for Winter 2021 - 2022. The interim program was used in late June and 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 CAISO Extended Day-Ahead Market (EDAM) initiative. CAISO aiming for 2024 go-live.
- Southwest Power Pool (SPP) and stakeholders developing "Markets+" (new day-ahead + real time market offering). SPP aiming for 2024 go-live.



# Markets timelines & details



## Working Groups/Teams

CAISO EDAM	SPP Markets+
Resource Sufficiency Evaluation	Governance Design
GHG Accounting	Market Products and Price Formation
Transmission Availability	Transmission Availability

# Major changes in the western power market

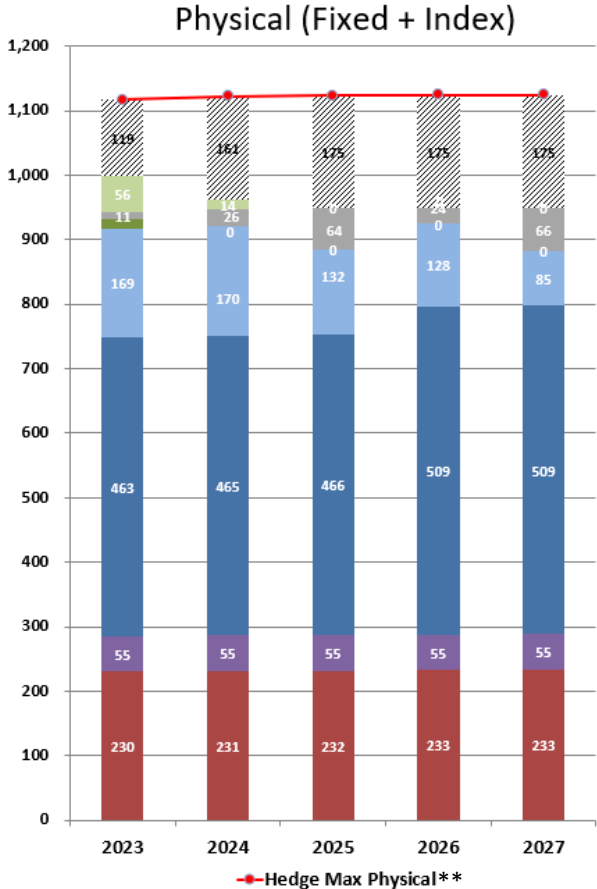
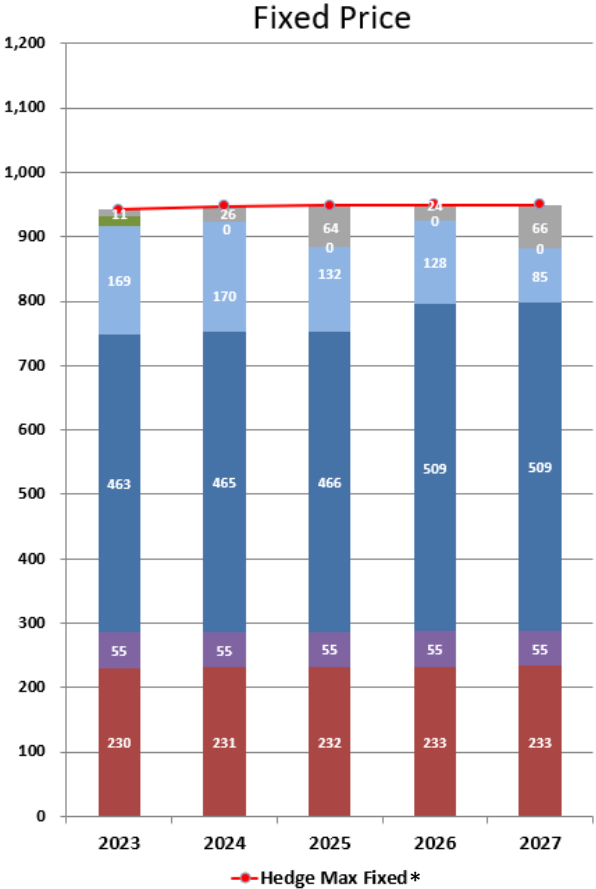
## State carbon policies

- Clean Energy Transformation Act (CETA) rulemaking efforts are ongoing
  - Commerce rules debate over identifying resources in IRP hourly analysis requirement
- Cap and Invest
  - Department of Ecology rulemaking ongoing, program starts 2023

## New products and services

- Southwest Power Pool Western Energy Imbalance Service (WEIS) new members - Xcel Energy-Colorado, Platte River Power Authority and Black Hills Colorado Electric plan in 2023
- CAISO EIM new members BPA, Avista, and Tacoma Power in 2022

# 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.

- Available to Sell at Fixed Price
- Fixed Price Block Contracts
- Fixed Price Slice
- Long-term Cost Plus Slice
- Canadian Entitlement
- Local Load

- Available to Sell at Index Price
- Available to Sell at Fixed Price
- Index Price Block Contracts (Includes Off-System End-Use)
- Fixed Price Block Contracts
- Fixed Price Slice
- Long-term Cost Plus Slice
- Canadian Entitlement
- Local Load

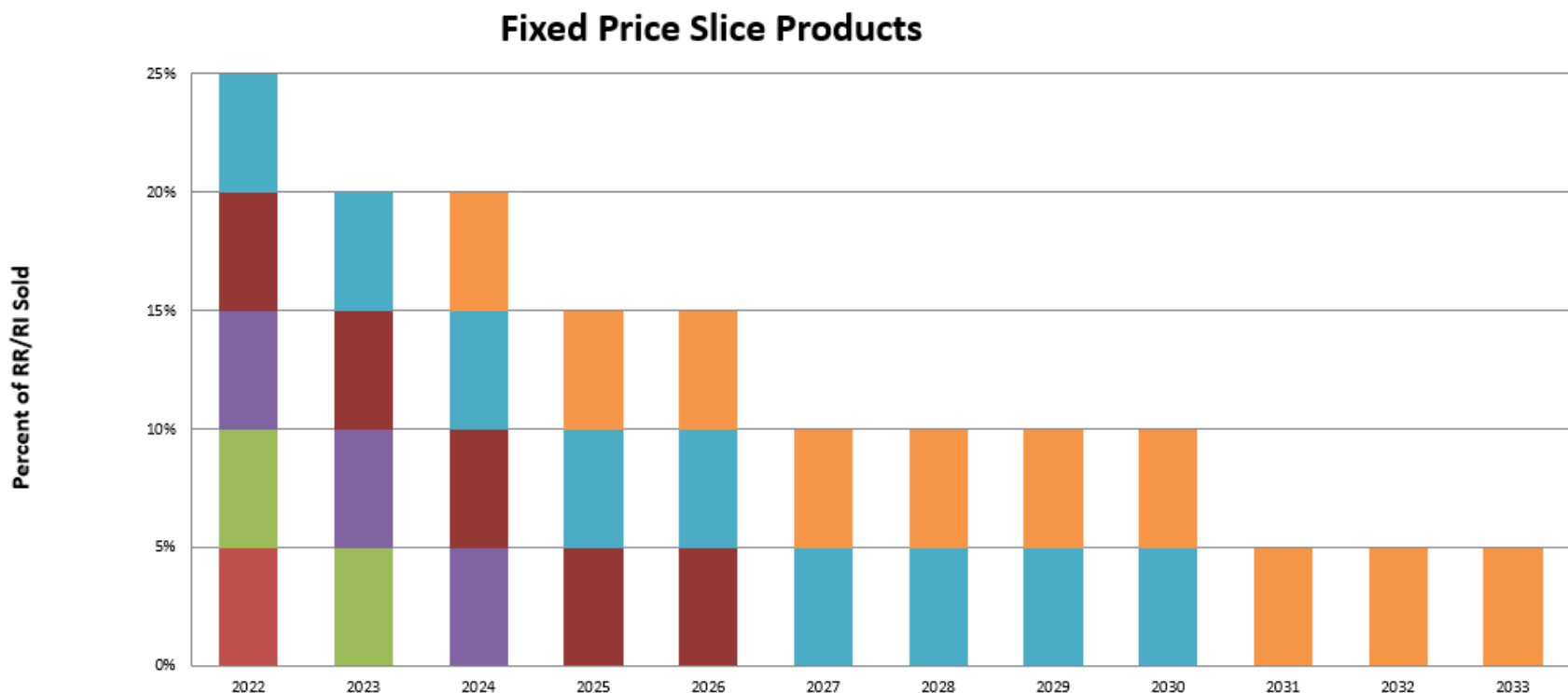
\*Hedge Max Fixed = stress water generation

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





# Fixed price slice contracts

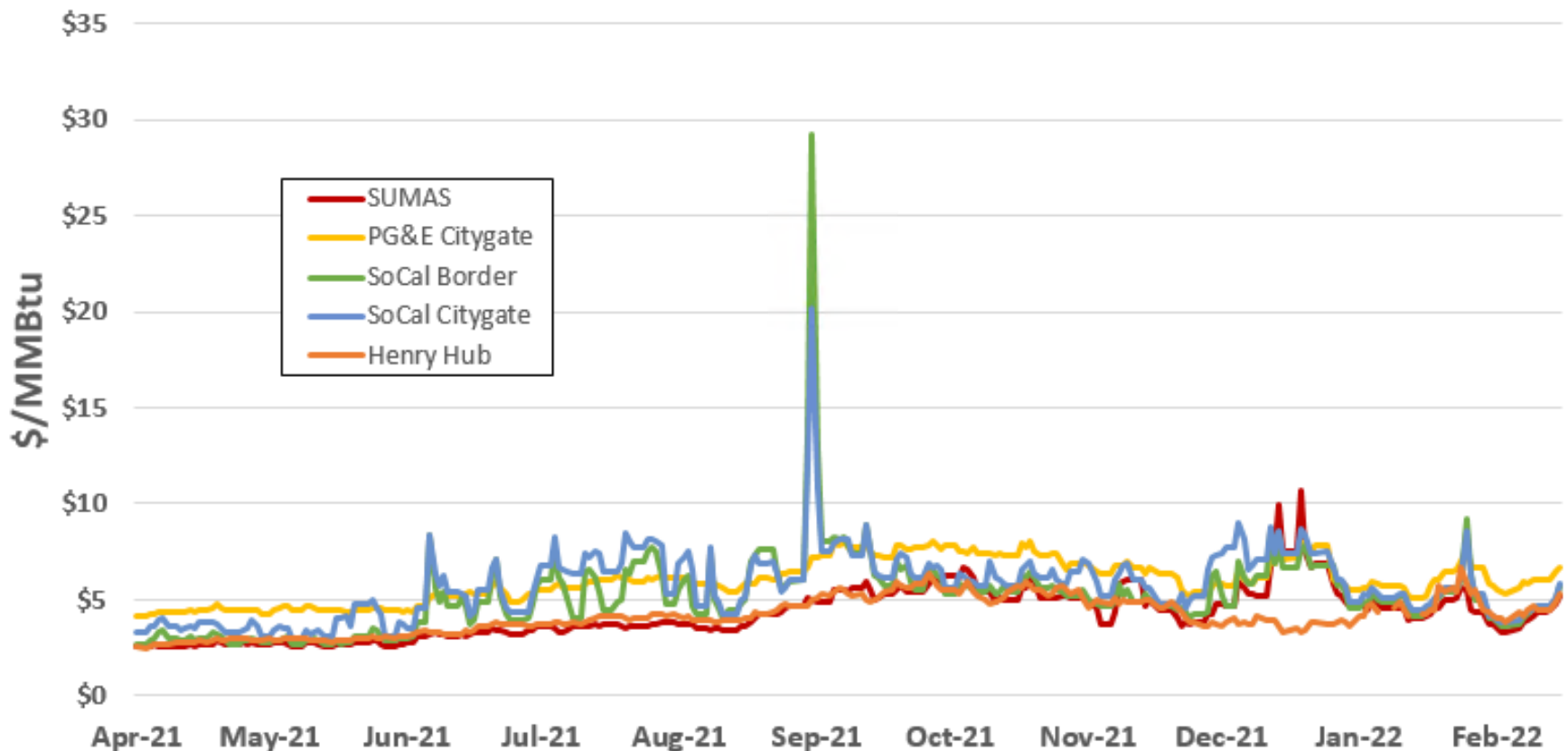


	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Long Term Slice 2 - Avista			5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Long Term Slice - Avista	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%			
Slice Product 35 - Puget Sound Energy	5.0%	5.0%	5.0%	5.0%	5.0%							
Slice Product 34 - Powerex	5.0%	5.0%	5.0%									
Slice Product 30 - Avangrid	5.0%	5.0%										
Slice Product 29 - Morgan	5.0%											

# Daily Natural Gas Prices

Apr 2021 – Feb 2022

Select Western Natural Gas Hubs  
Spot Prices



# Mar 2022 Henry Hub natural gas

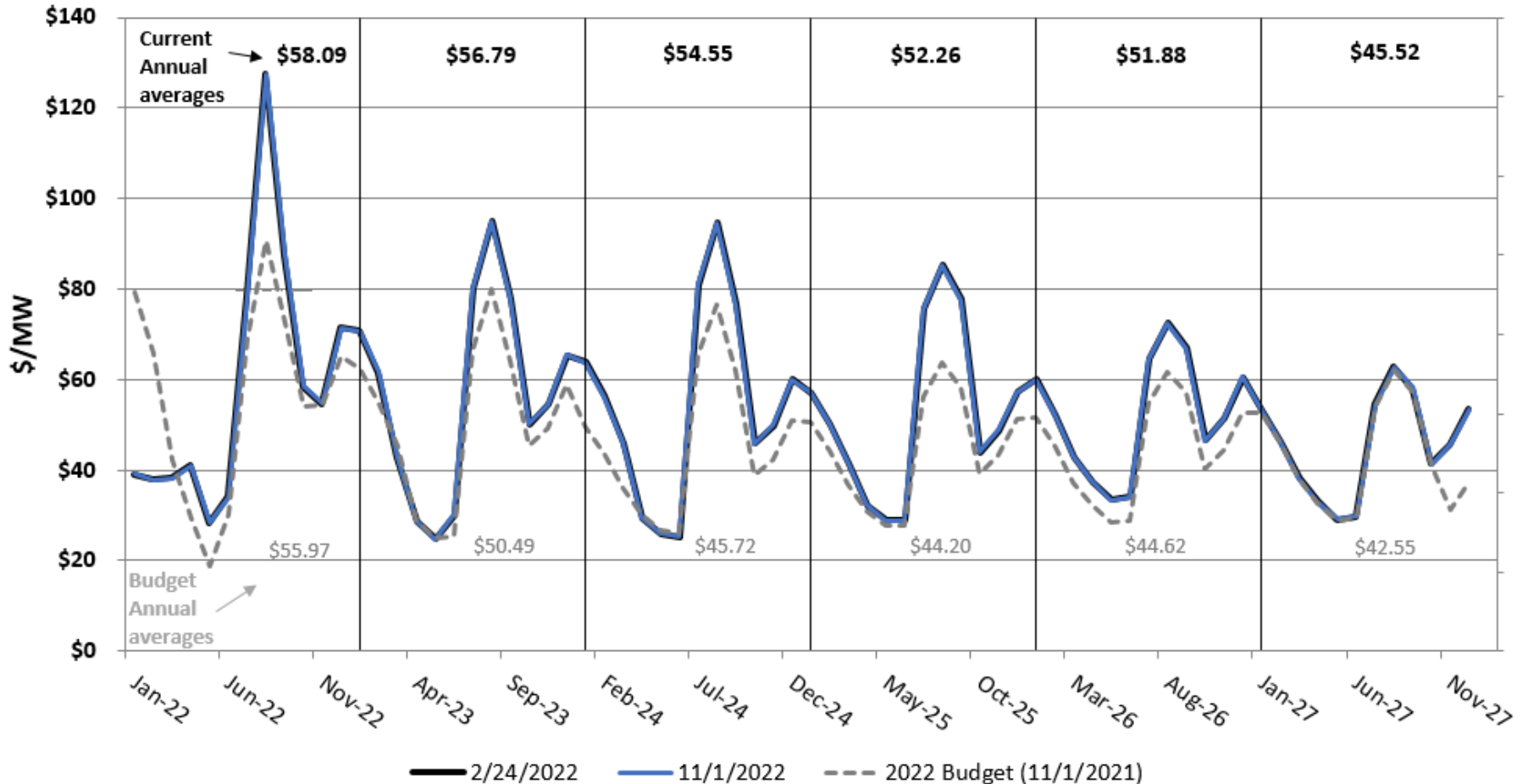


# Mar 2022 Henry Hub natural gas (price history since 2002)

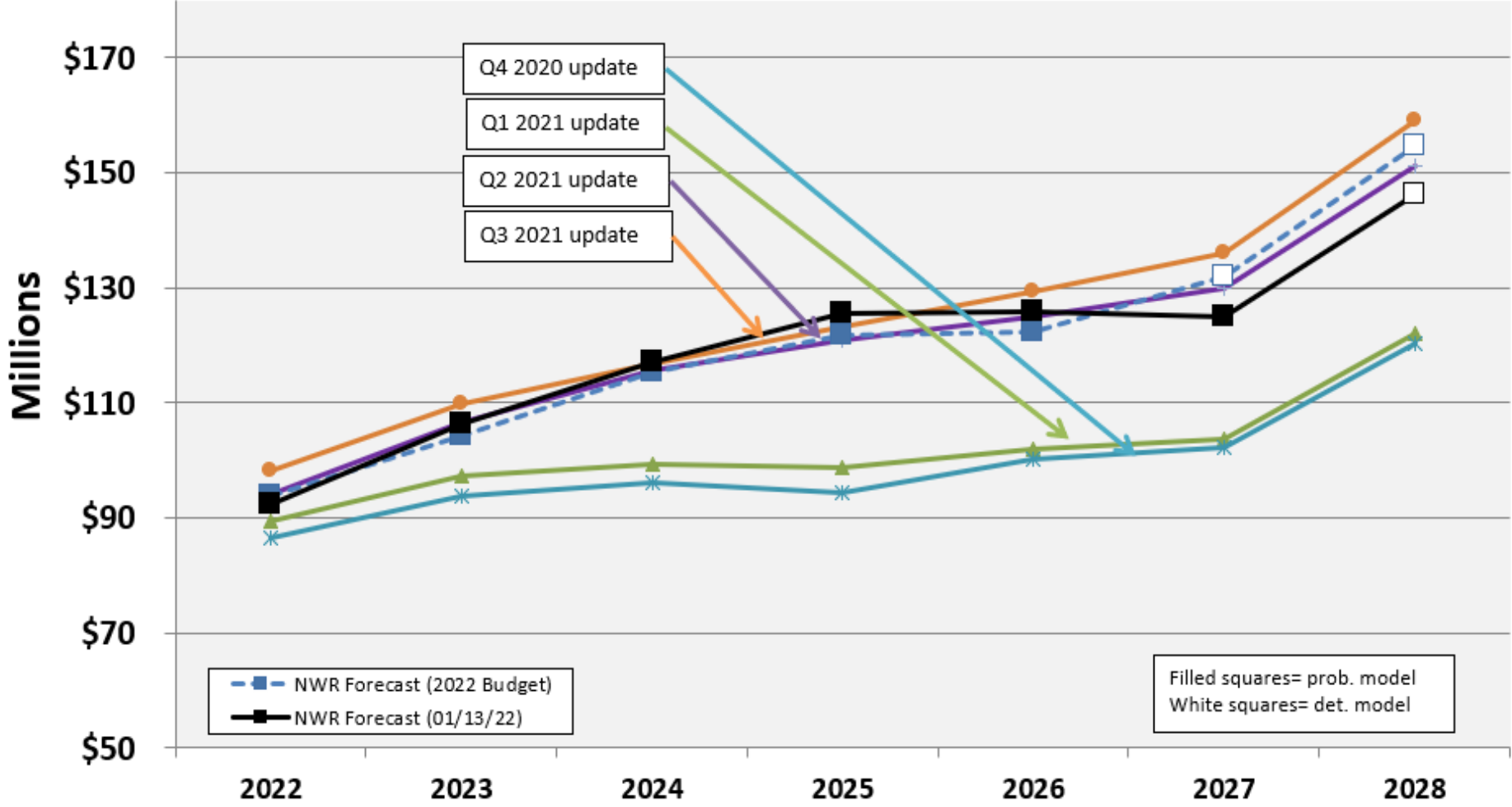


# MIDC forward price curve

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



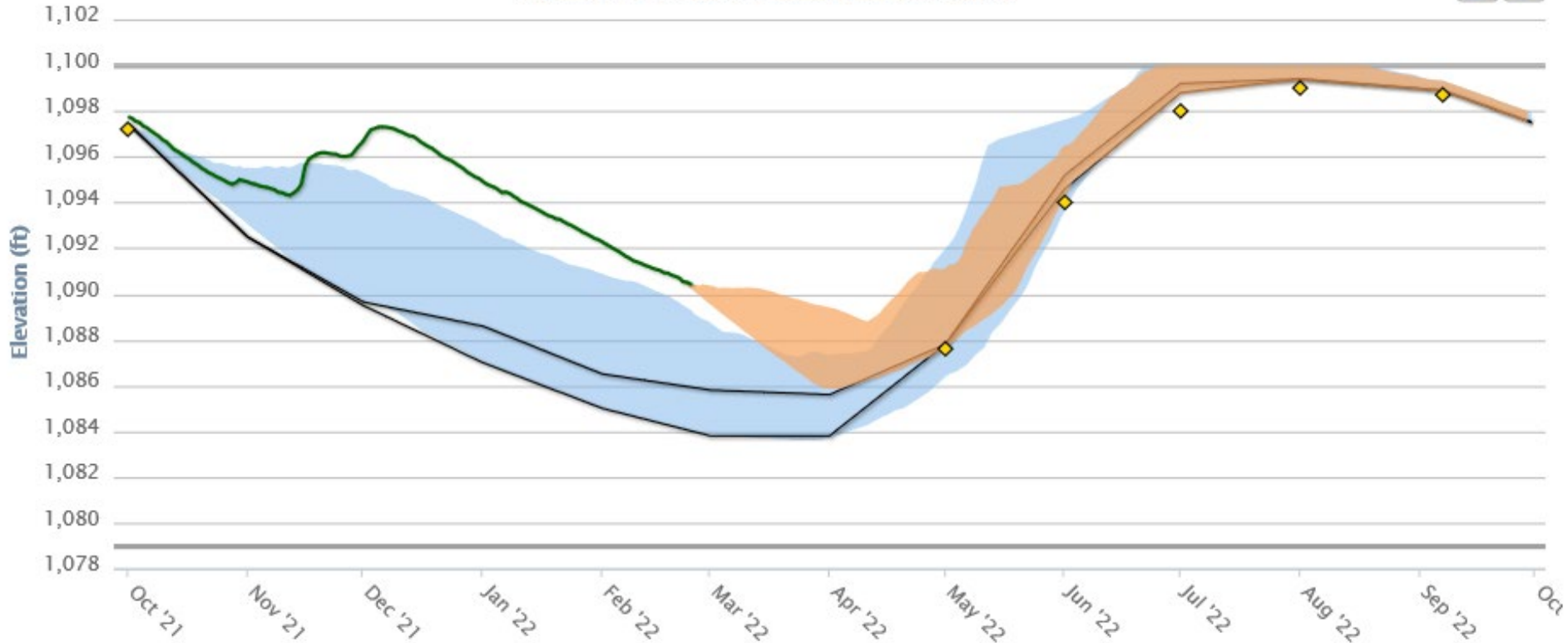
# Net Wholesale Revenue + Off System End-Use Sales Forecast



Draft - Confidential - Internal  
Purposes Only

# 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

# Water Supply Forecasts

CHELAN - LAKE CHELAN DAM (CHDW1) Forecasts for Water Year 2022					
<b>Official Water Supply</b>					
ESP with 10 Days QPF Ensemble: 2022-03-01 Issued: 2022-03-01					
Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	885	989	87	1182	1139
APR-JUL	793	885	86	1072	1029
JAN-SEP	1149	1241	94	1449	1326
JAN-JUL	1040	1177	97	1318	1217
OCT-SEP	1539	1631	107	1839	1518

COLUMBIA - GRAND COULEE DAM (GCDW1) Forecasts for Water Year 2022					
<b>Official Water Supply</b>					
ESP with 10 Days QPF Ensemble: 2022-03-01 Issued: 2022-03-01					
Forecast Period	Forecasts Are in KAF				30 Year Average (1991-2020)
	90 %	50 %	% Average	10 %	
APR-SEP	57806	63310	103	69396	61483
APR-JUL	48992	54352	103	59777	52774
APR-AUG	54273	60002	103	65227	58186
JAN-SEP	68576	74177	105	80372	70457
JAN-JUL	59334	65070	105	70771	61749
OCT-SEP	79419	85021	108	91215	78842



# Market info

Corporate renewable energy deals soared in '21, smashing previous record

- ■ **31.1 GW of green energy sold to companies**

- ■ **Tech companies, including Amazon, were top buyers**

Corporations bought a record amount of renewable energy in 2021 amid mounting investor pressure to cut carbon emissions, research firm BloombergNEF, or BNEF, said Jan. 31.

Power producers sold 31.1 GW of green energy to companies outside of the electric industry last year, a 24% increase from the previous record set in 2020, BNEF said.

The deals accounted for more than 10% of the renewable energy capacity added globally in 2021, demonstrating the impact of corporate sustainability pledges on the energy sector, BNEF said.

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# Questions?