

Energy Resources Quarterly Board Update 2020 Q2

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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 Mid-C flat market price for 2020 has dropped \$7.47/MWh from \$28.30/MWh at budget to the current forecast of \$20.83/MWh. Our hedging program has price locked in for most of our portfolio so there is not much impact to 2020 NWR.
- The Mid-C flat market prices for 2022-2025 have dropped between \$4.00 - \$5.00/MWh.
- Numerous NW Utilities looking to purchase renewables and capacity products.
- The District's 2020 Net Wholesale Revenue forecast and other energy-related revenues is \$84.0 million, which is \$0.7 million below budget.

Energy Resource Team is monitoring major changes in the western power market

- **Resource Adequacy**

Northwest Power Pool resource adequacy program is moving into final design (scheduled completion early 2021)

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

Many utilities have joined CAISO Energy Imbalance Market (EIM) for within hour products (about 4% of trades)

CAISO is proposing to expand EIM to the day-ahead market (Extended Day-ahead Market or EDAM). We are closely watching governance proposals.

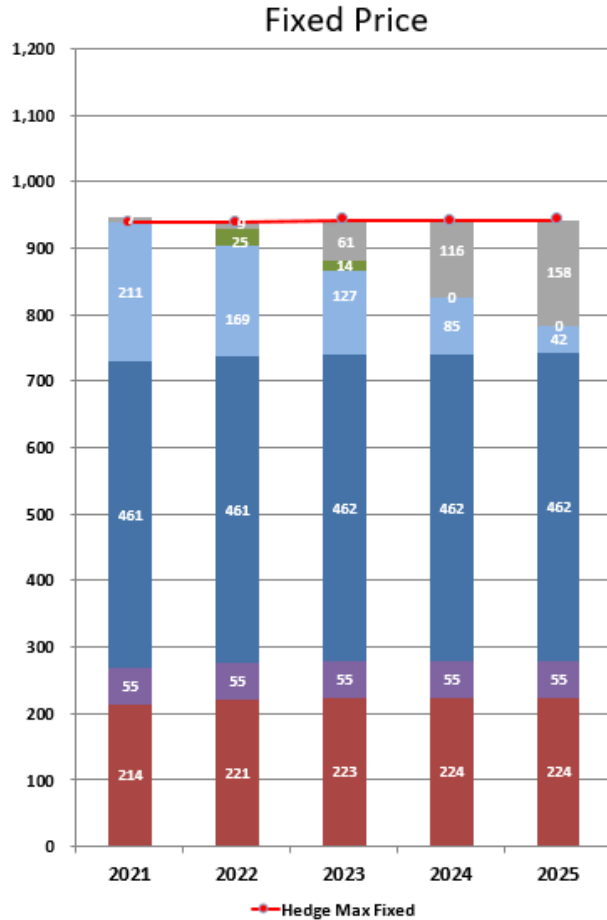
- **State carbon policies**

Rule-making on WA Clean Energy Transformation Act (CETA) continues

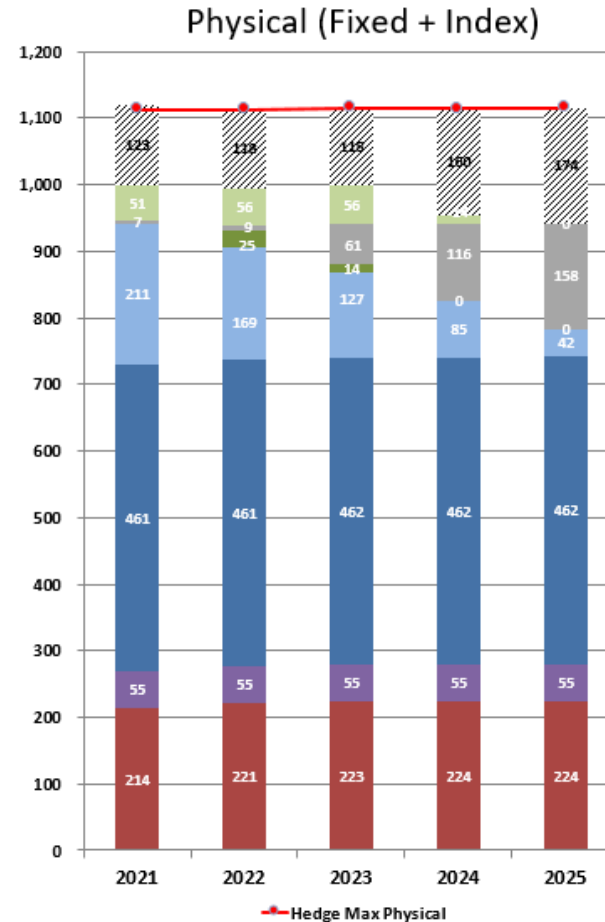
- **New products and services** ₄



District's energy commitments (average MW)



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

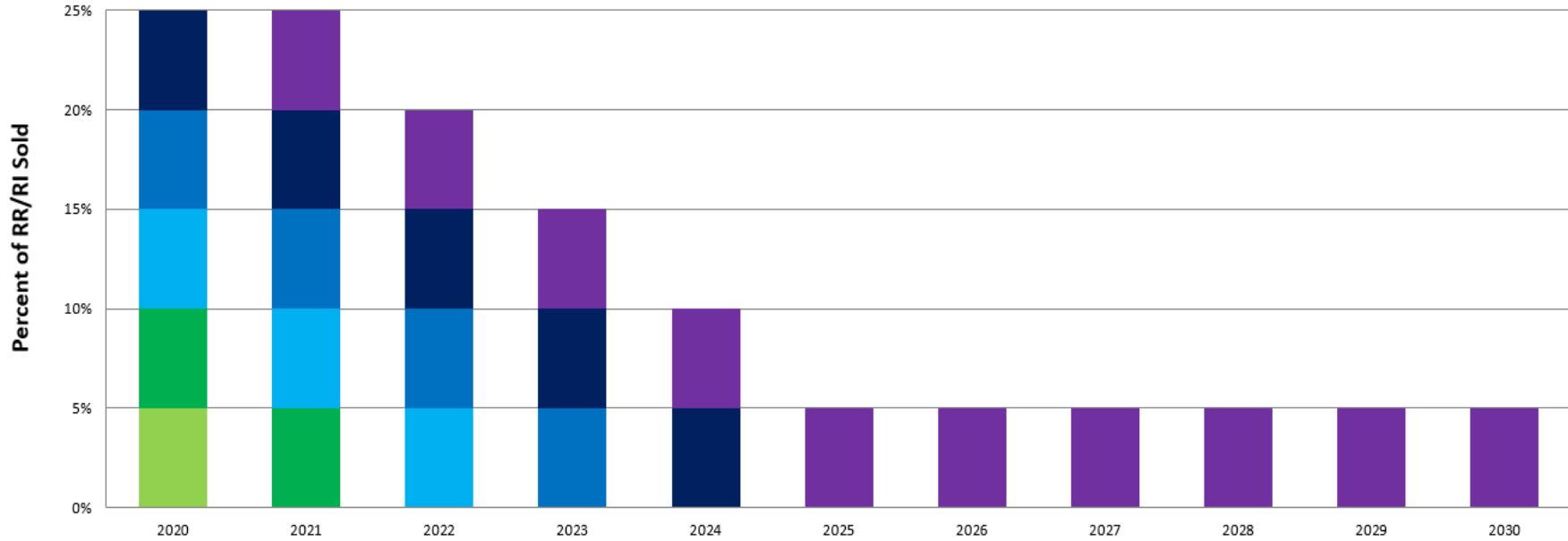
Note: The graphs represent the new limits contained in resolution 20-14439 approved by the Board on March 23, 2020.

*Hedge Max Fixed = stress water generation

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

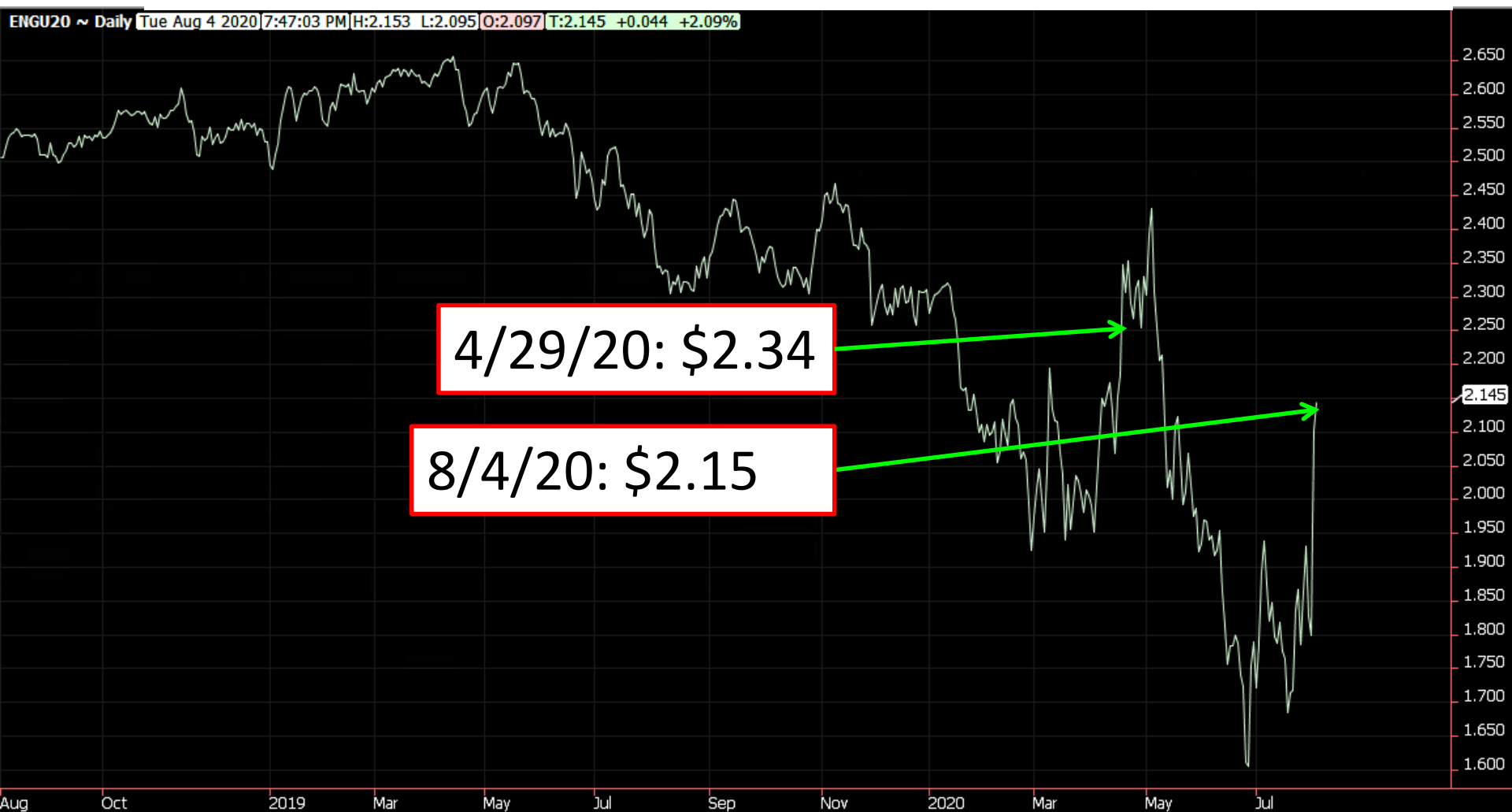
Market-based slice contracts

Current Market Position - Market Based Slice Products



	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Long Term Slice - Avista		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Slice Product 34 - Powerex	5.0%	5.0%	5.0%	5.0%	5.0%						
Slice Product 30 - Avangrid	5.0%	5.0%	5.0%	5.0%							
Slice Product 29 - Morgan	5.0%	5.0%	5.0%								
Slice Product 26 - Morgan	5.0%	5.0%									
Slice Product 22 - Avista	5.0%										

September 2020 Henry Hub natural gas

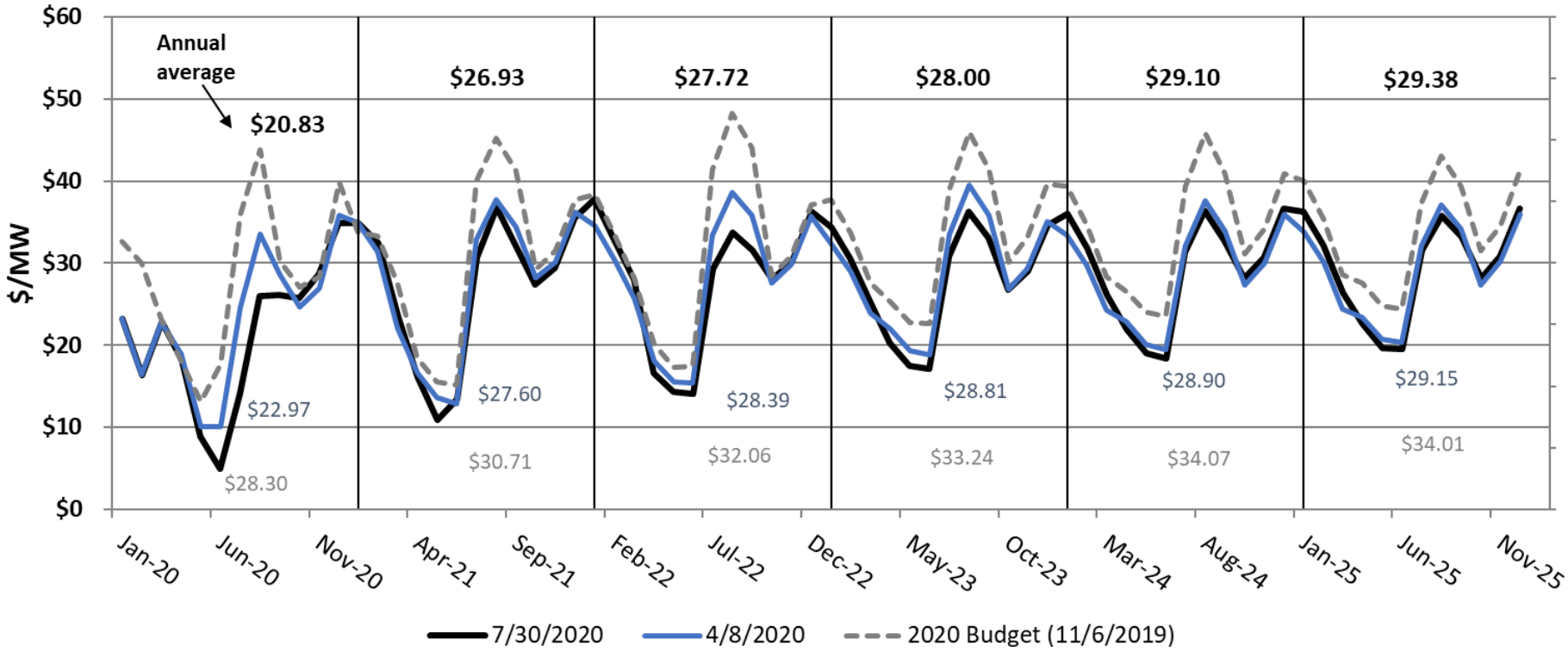


September 2020 Henry Hub natural gas contract (price history since 2002)



MIDC forward price curve

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



2020 NWR and Other Energy-Related Revenue

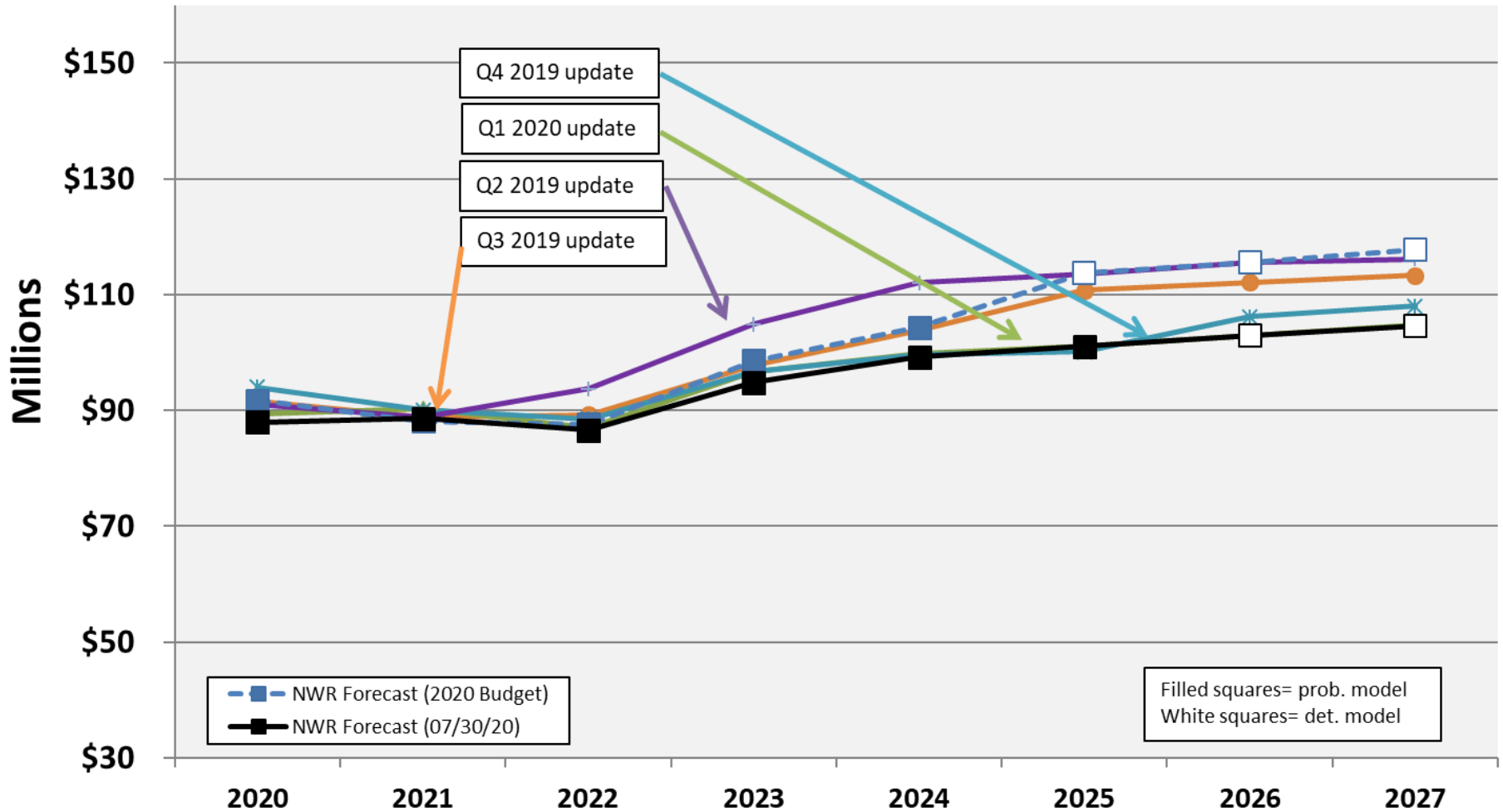
(amounts in millions)

	Budget		Forecast [1]		Variance
Net Wholesale Revenue (NWR)					
Energy Sales/Purchases	\$	65.1	\$	64.8	\$ (0.3)
Specified Source Premium	\$	8.2	\$	7.9	\$ (0.3)
Renewables- Bundled	\$	0.9	\$	0.9	\$ (0.0)
NWR Sub-total	\$	74.1	\$	73.5	\$ (0.6)
Other Energy-Related Revenue					
LT Power Contract- Retained Surplus	\$	-	\$	-	\$ -
LT Power Contract- Admin Fees	\$	2.2	\$	2.2	\$ -
Frequency Response & Load Shedding	\$	0.9	\$	0.9	\$ -
Other [2]	\$	0.3	\$	0.3	\$ 0.0
Renewables- Unbundled	\$	0.1	\$	0.0	\$ (0.0)
Real-Time Revenue	\$	7.0	\$	6.9	\$ (0.1)
Other Energy-Related Sub-total	\$	10.5	\$	10.4	\$ (0.1)
NWR and Other Energy-Related Revenue	\$	84.7	\$	84.0	\$ (0.7)

[1] 2020 forecast based on preliminary Jan-Jun unaudited actuals and Jul-Dec estimates (7/08/20 NWR forecast).

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

Net Wholesale Revenue + Off System End-Use Sales Forecast



Market info

Most powerful US battery system charges up in CA

- 62.5-MW (planned 250-MW) phase of Gateway came online Jun 9
- 1-hour storage to start, increasing to 3- hours in 2021 and to 4-hours later
- If all energy storage projects seeking 2020 interconnection remain on track, roughly 930 MW could be online by year end
- “...need close to 15,000 MW and maybe more, across all duration of storage,” Steve Berberich, CEO of the CAISO
- CCA’s exploring variety of tech to deliver at least 8 hours of discharge

Forward Price Models for NW Energy

- Avista 2020 IRP 21-28 \$22.17/MWh
- Puget 2019 IRP 21-28 \$21.25/MWh

Upcoming and Recent NW Utility RFPs

- Avista 120 aMW of Renewables starting in ~2024, 15 to 20 yr. term
- Puget 200 MW of Capacity in 2024. Up to 2000 MW of capacity in 2040 . Attributes consistent with CETA. >4yr. Term.
- Pacificorp 1800 MW of solar with 595MW of battery, 1900 MW of wind by 2023 consistent with IRP. 15-30 yr. term

CCA power purchases up 37.8% on year in Q1 2020 as sellers flock to market

- 16.4 million MWh sold in Q1 2020
- 1 million -> 5.5 million -> 11.9 million -> 16.4 million (2017-2020)
- TEA is top supplier with 3.8 million MWh
- Clean Power Alliance and East Bay Community Energy are largest purchasers

Summary

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Questions?