Why We’re Here

• Portfolio Overview

• Operations and Planning
  » Pricing update
  » Net Wholesale Revenue Forecast update

• Market Update
Key points

• The District’s 2019 Net Wholesale Revenue and other energy-related revenues is $120.7 million, which is $7.7 million above budget.

• Retained surplus proceeds on long term hydro contract and real-time agreement revenues more than offset impacts from low stream flows and unit outages.
Energy Resource Team is monitoring major changes in the western power market

- **Resource Adequacy**
  
  Northwest Power Pool effort to design resource adequacy program has begun

- **Short term markets (within 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)

- **State carbon policies**
  
  Rulemaking beginning on WA Clean Energy Transformation Act (CETA)

- **New products and services**
Major transactions

• No new major transactions
District’s energy commitments (average MW)

Note: The Power Risk Management Committee (PRMC) approved an exception to policy for commitments in years 2020 through 2022 because index priced sales do not introduce price risk.

Note 2: Staff is working on a new look for this reporting. The new look will better reflect the District’s positions and risks given the changing market and carbon-free products.
Market-based slice contracts

Current Market Position - Market Based Slice Products

<table>
<thead>
<tr>
<th></th>
<th>2020</th>
<th>2021</th>
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March 2020 Henry Hub natural gas

10/23/2019: $2.40

2/5/2020: $1.86
March 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)

- Annual average: $28.51
- $28.30
- $29.89
- $31.31
- $32.39
- $33.21
- $33.63
- $28.71
- $31.31
- $32.06
- $33.24
- $34.07
- $34.01

$/MW


- 1/9/2020
- 10/3/2019
- 2020 Budget (11/6/2019)
## 2019 NWR and Other Energy-Related Revenue
(amounts in millions)

<table>
<thead>
<tr>
<th></th>
<th>Budget</th>
<th>Forecast [1]</th>
<th>Variance</th>
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<tr>
<td><strong>Net Wholesale Revenue (NWR)</strong></td>
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<td>Energy Sales</td>
<td>$94.9</td>
<td>$69.1</td>
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<td>Specified Source Premium</td>
<td>$6.7</td>
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<td>Renewables- Bundled</td>
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<td>NWR Sub-total [2]</td>
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<td><strong>Off-System End-Use Revenue</strong></td>
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<td>Off-System End-Use Sub-total</td>
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<td><strong>Other Energy-Related Revenue</strong></td>
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<td>LT Power Contract- Retained Surplus</td>
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<td>LT Power Contract- Admin Fees</td>
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<td>Frequency Response &amp; Load Shedding</td>
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<td>Renewables- Unbundled</td>
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<td>Real-Time Revenue</td>
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<td>Other Energy-Related Sub-total</td>
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<td><strong>NWR and Other Energy-Related Revenue</strong></td>
<td>$112.9</td>
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[2] NWR includes PWX specified source sale/full requirements purchase and transmission pass through costs.

[3] Off-system end-use sale includes transmission pass through costs, but not the transaction specific costs.

[4] Other includes scheduling & admin fees and the sale of reserves.
Net Wholesale Revenue + Off-System End-Use sales forecast

Net Wholesale Revenue + Off System End-Use Sales Forecast

- Q4 2019 update
- Q1 2019 update
- Q2 2019 update
- Q3 2019 update

Filled squares= prob. model
White squares= det. model

NWR Forecast (2020 Budget)
NWR Forecast (01/09/20)

Millions

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Market info

Cheap natural gas main driver of US power price declines over the last decade

- From 2008 to 2017, declining gas prices cut power prices by $7/MWh and renewables only reduced power prices by about $1.30/MWh
- Flat electricity usage and the addition of new natural gas plants also weighed on power prices
- Increased solar generation had a “disproportionally large impact” on CAISO prices
- Evidence tying increasing amounts of variable energy to higher frequencies of negative real-time prices, which contributed to significant declines in annual average prices in some areas like California.
- In some areas of the Southwest Power Pool, negative real-time prices occurred in more than 20% of the hours in 2017
Market info

SPP kicks off reliability coordination service in West

- Southwest Power Pool (SPP) on December 3 began offering reliability coordination service in the Western US
- Competing with coordination service offered by the California ISO
- Dozens western entities signed up for service
- SPP first regional transmission organization to provide RC services in both the Eastern and Western interconnections
- Scheduled to start up in February 2021
Summary

• The District’s 2019 Net Wholesale Revenue and other energy-related revenues is $120.7 million, which is $7.7 million above budget.

• Retained surplus proceeds on long term hydro contract and real-time agreement revenues more than offset impacts from low stream flows and unit outages.

Questions?