



**Energy Resources Quarterly Board Update**  
4th Quarter 2018 • February 4, 2019



# **ENERGY PLANNING & TRADING**

2018 Q4

## **Portfolio Overview**

## **Operations and Planning**

- » Snowpack, Streamflow and Pricing update
- » Net Wholesale Revenue Forecast update

## **Market Update**

## **Energy Efficiency Update**

# KEY MESSAGE POINTS

The District's 2018 Net Wholesale Revenue and other energy-related revenues for 2018 were \$134.2 million, which is \$17.8 million above budget.

Specified source energy sales contributed \$4.9 million to Net Wholesale Revenue, which is \$1.2 million higher than budget.

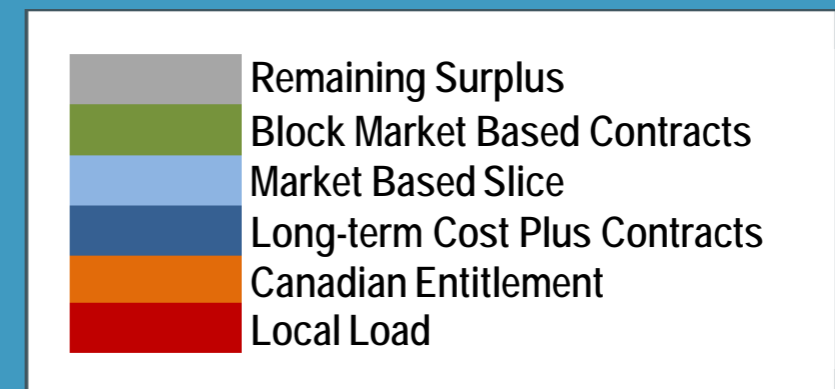
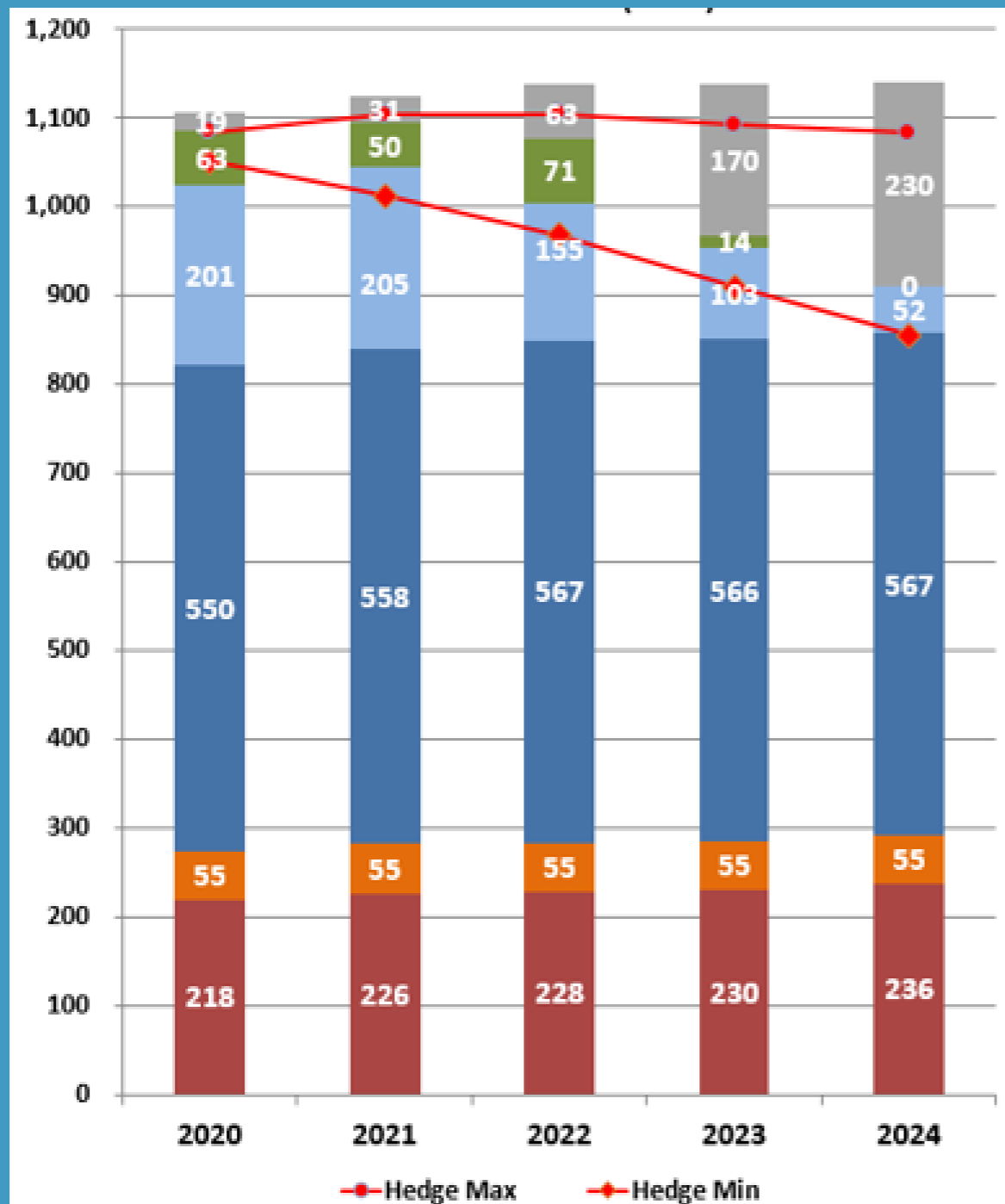
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Installation of LED streetlights is 70% complete, work continues in Wenatchee and Cashmere.

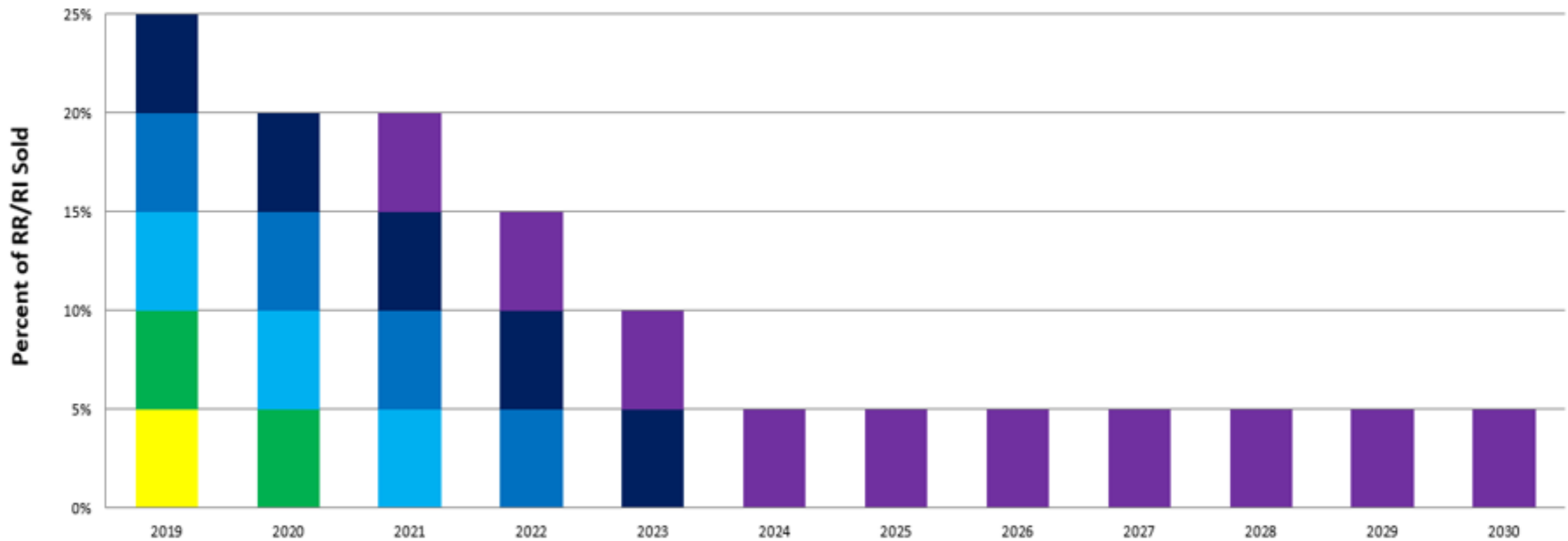
# **Energy Resource Team is monitoring major changes in the western power market**

- **Reliability Coordination (RC) services**
  - **California ISO (CAISO) will provide RC services starting in October 2019**
- **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)**
  - **Discussions about expanding the EIM to the day ahead market (about 40% of trades plus most term-trades less than 5 years)**
- **State carbon policies (covered by Tracy today)**
  - **Governor's - Clean Energy Standard**
  - **Carlyle's - Cap-and-trade**
- **Value of products and services changing**

# District's load/resource balance (average MW)

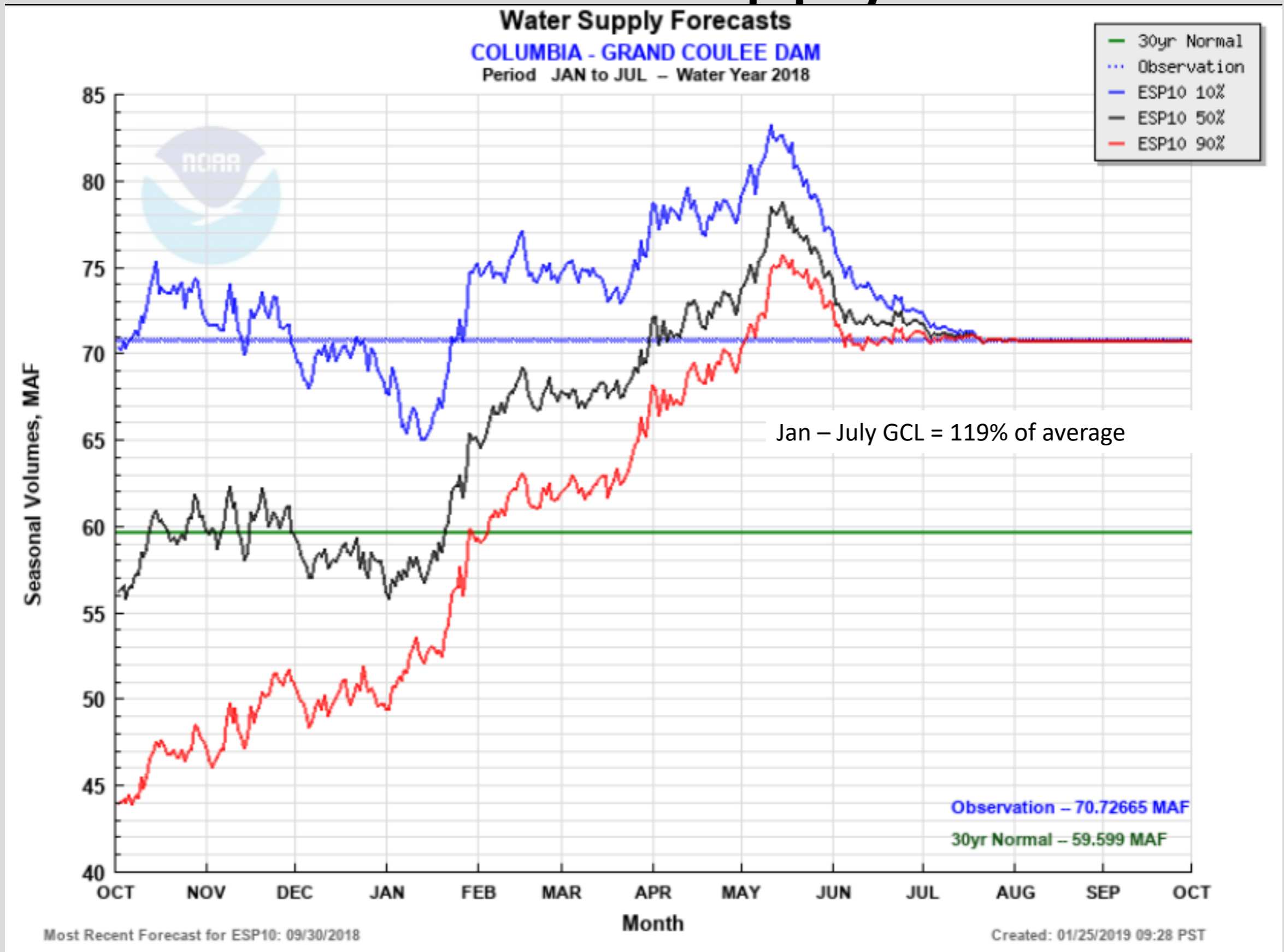


# Market Based Slice Contracts

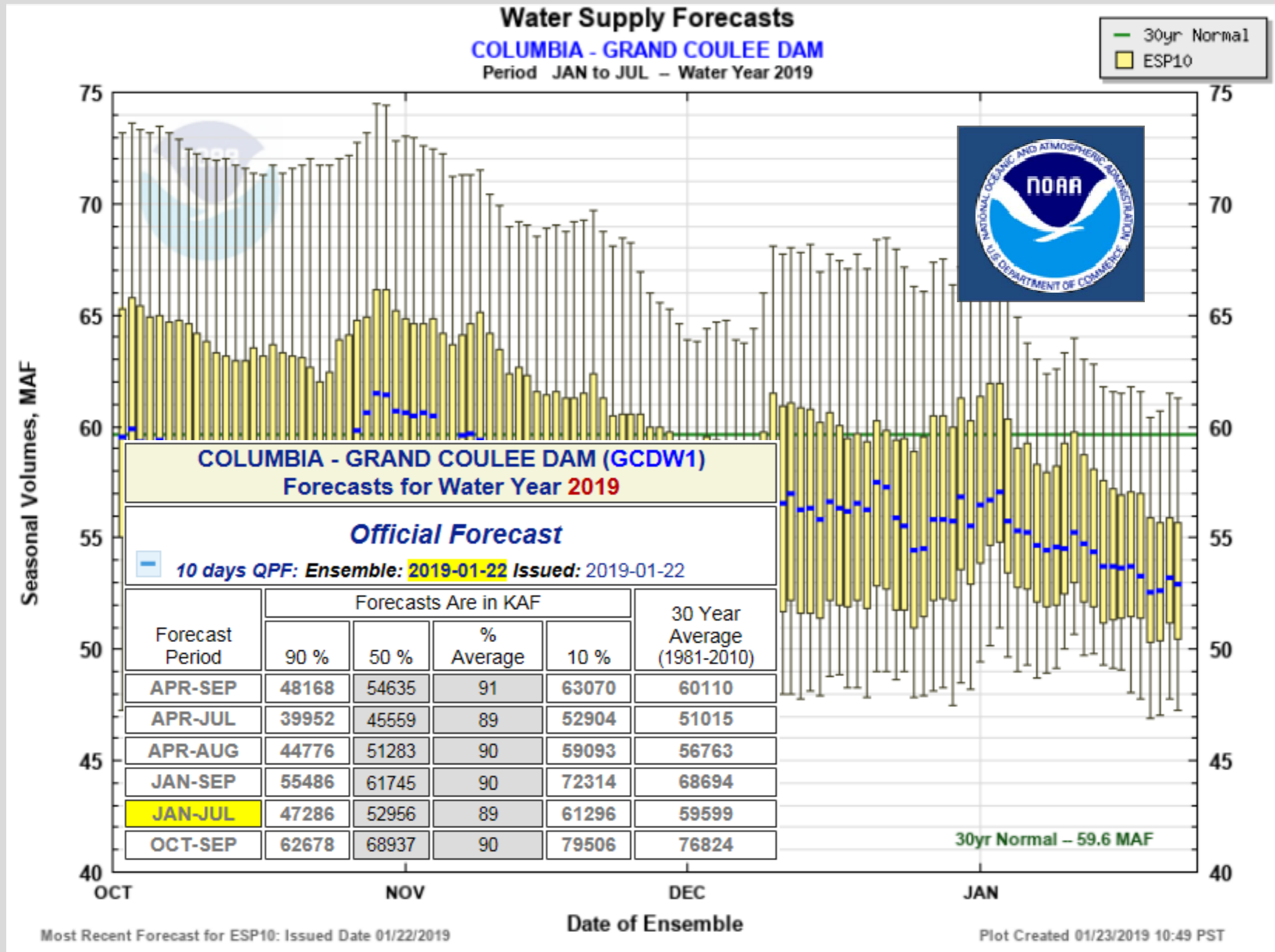


	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Long Term Slice - Avista			5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Slice Product 30 - Avangrid	5.0%	5.0%	5.0%	5.0%	5.0%							
Slice Product 29 - Morgan	5.0%	5.0%	5.0%	5.0%								
Slice Product 26 - Morgan	5.0%	5.0%	5.0%									
Slice Product 22 - Avista	5.0%	5.0%										
Slice Product 18 - Exelon	5.0%											

# WY 2018 Water Supply Forecast



# WY 2019 Water Supply Forecast

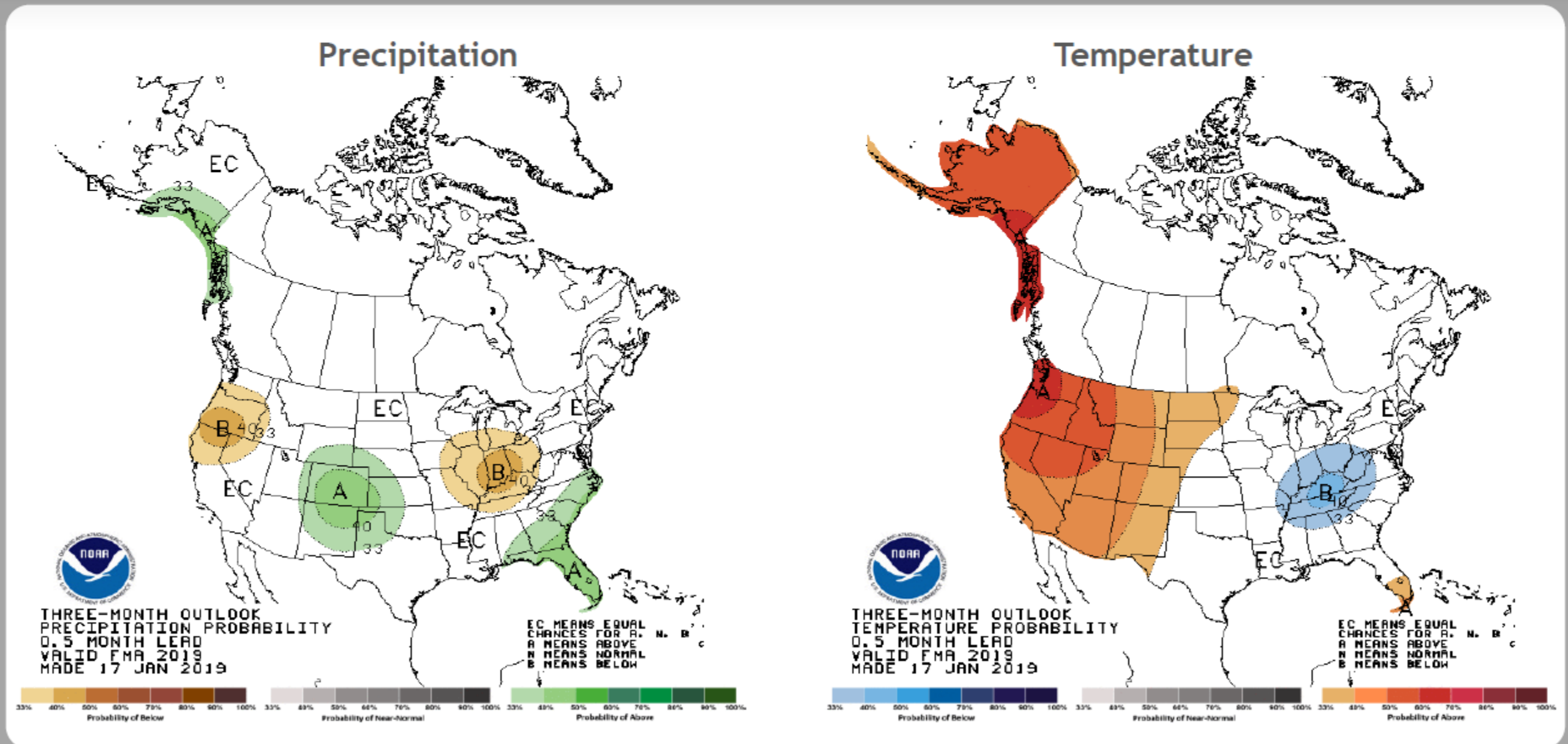




# U. S. Seasonal Outlooks

February - April 2019

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



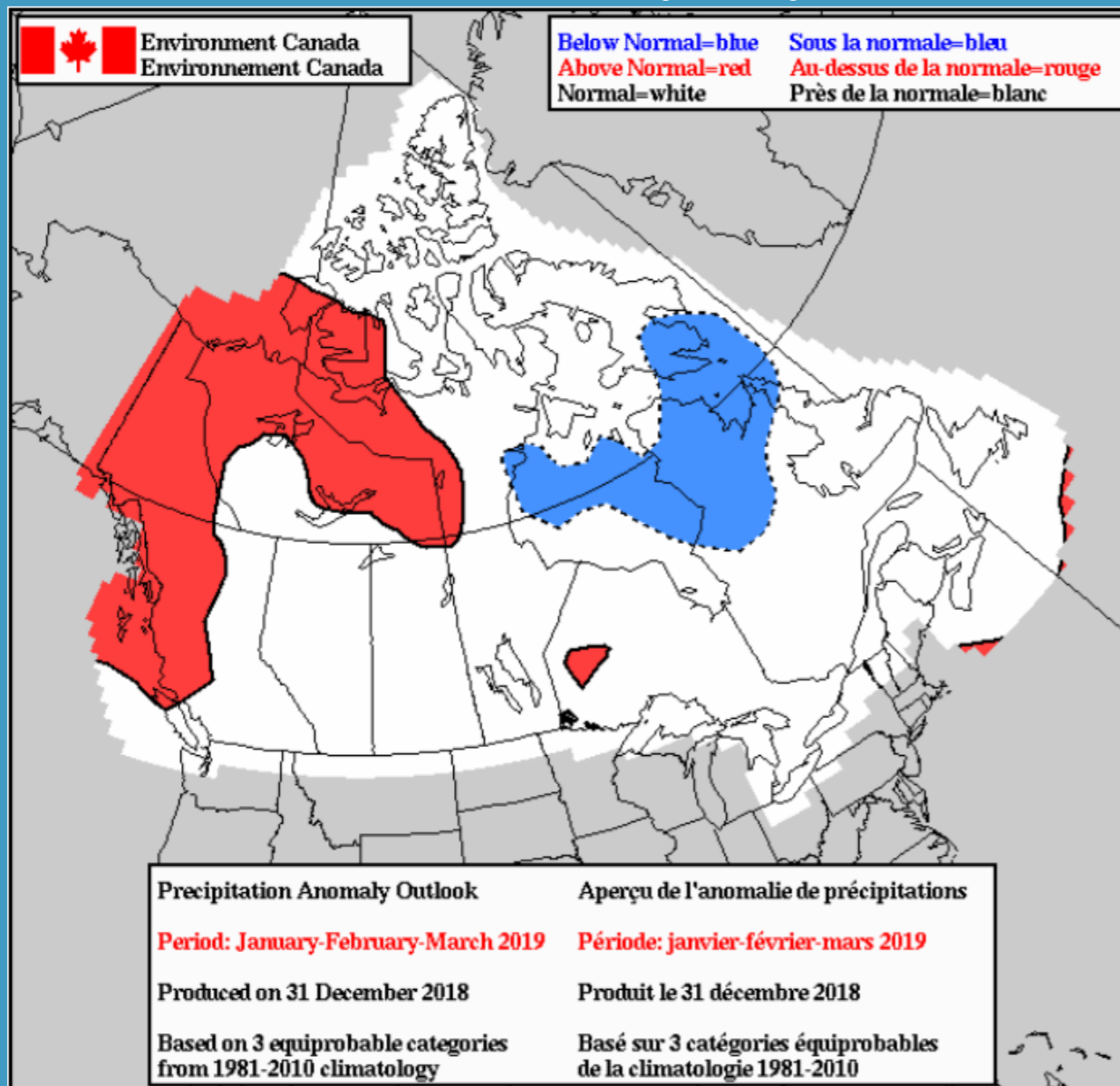
# Canadian Jan-Mar forecasts

## Temperature and precipitation deterministic forecasts

### Precipitation

Red = Above (wetter)

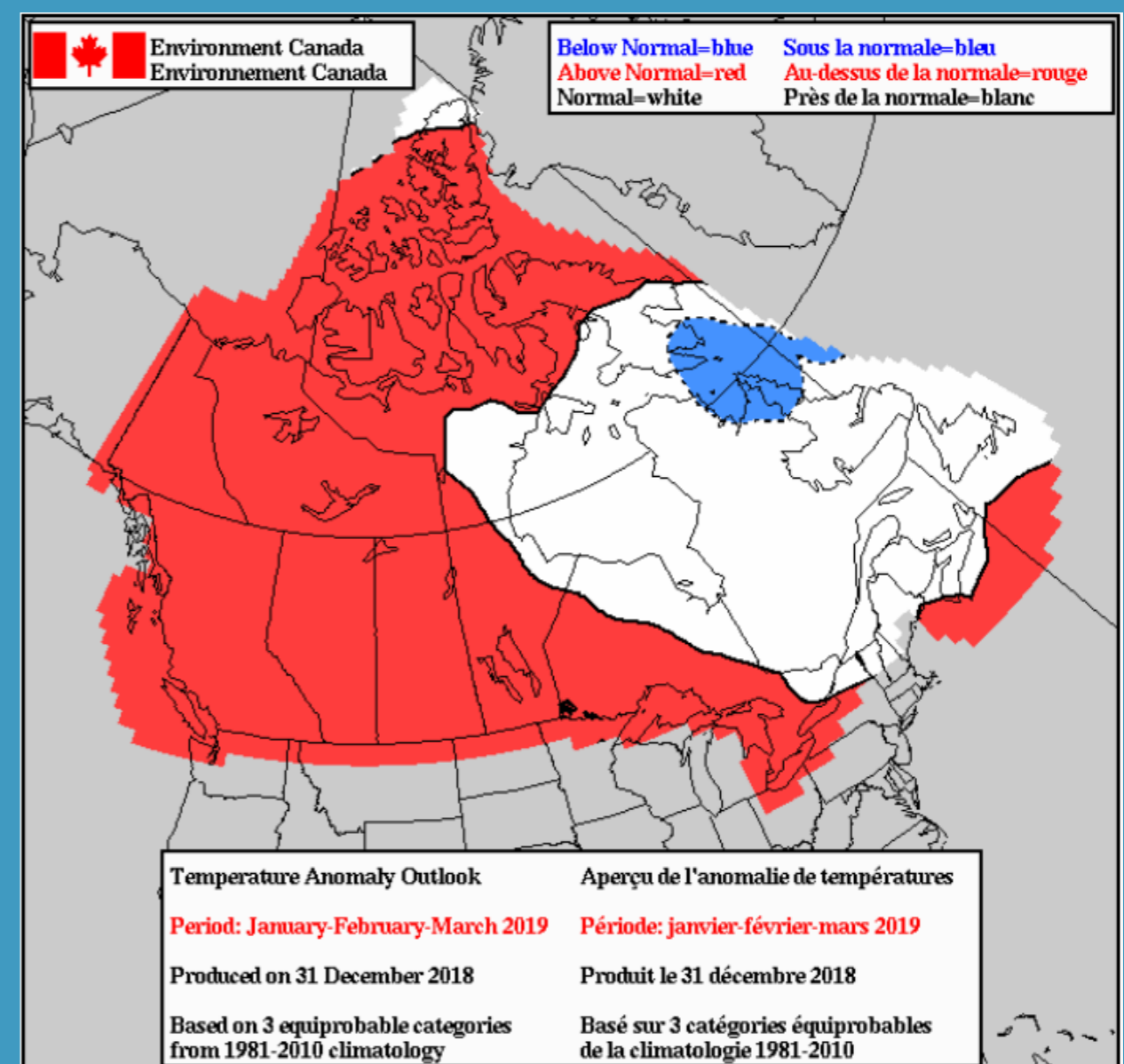
Blue = Below (drier)



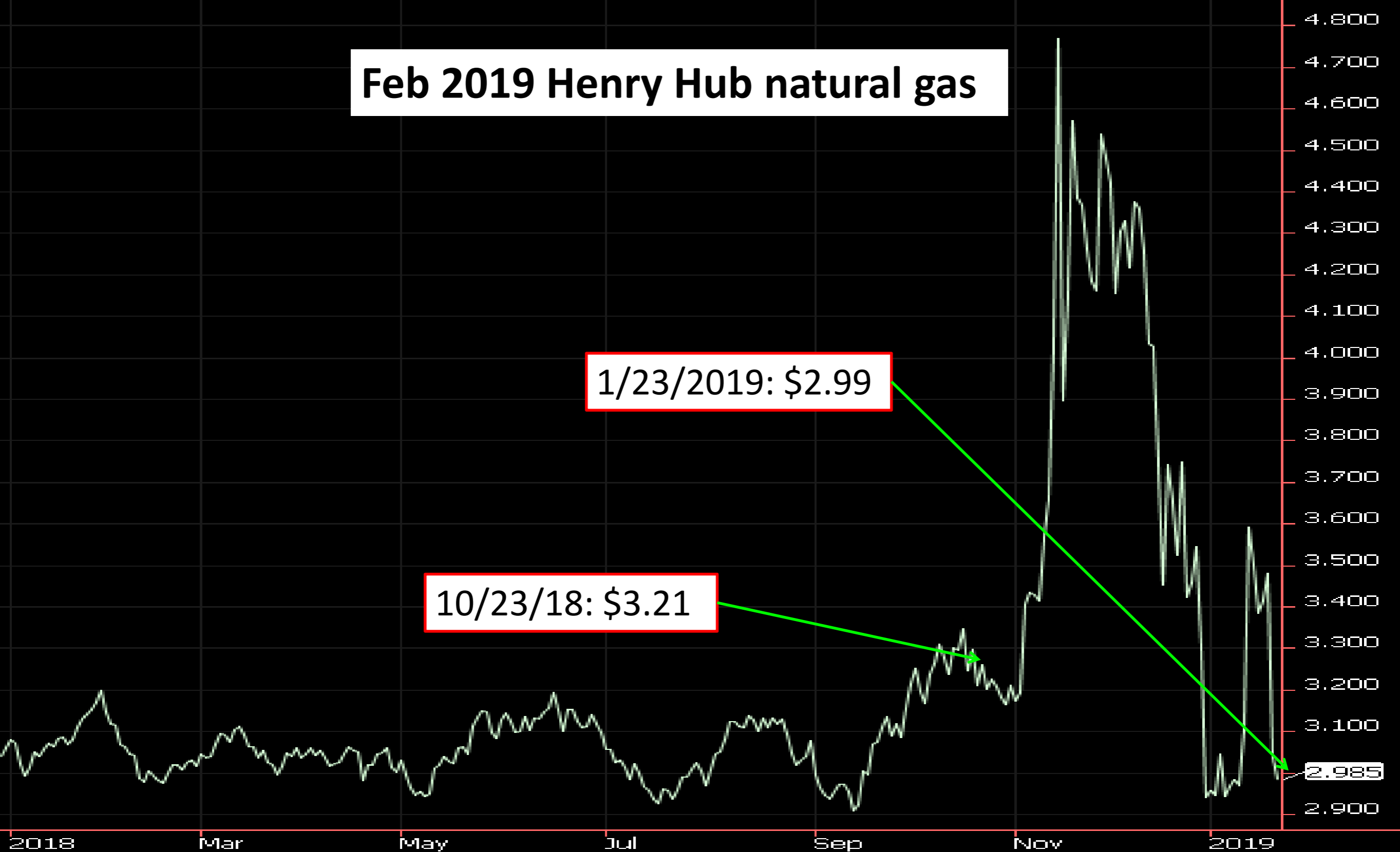
### Temperature

Red = Above (warmer)

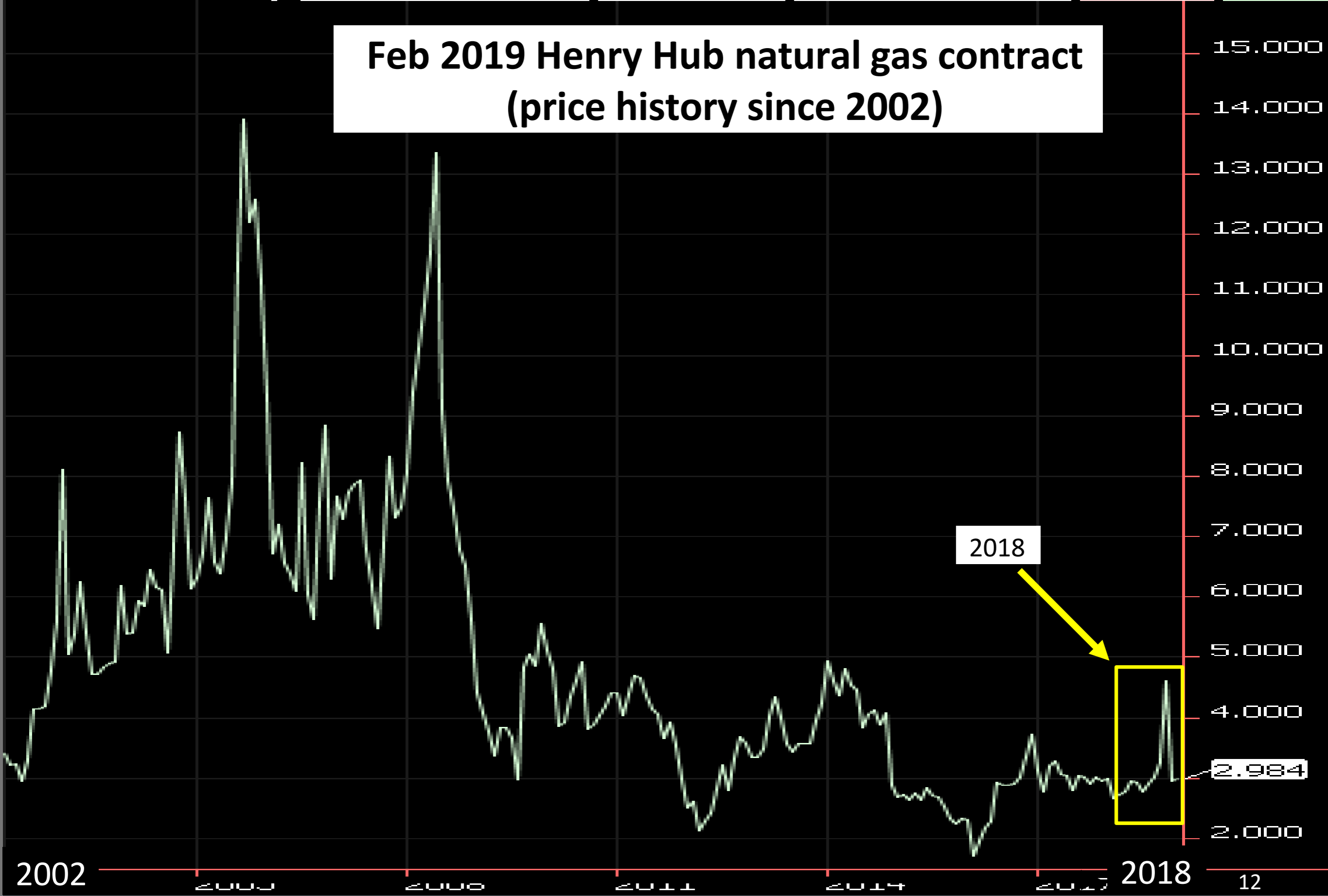
Blue = Below (colder)



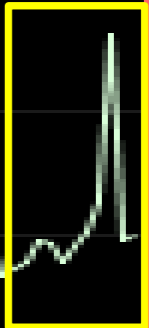
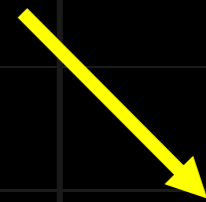
# Feb 2019 Henry Hub natural gas



# Feb 2019 Henry Hub natural gas contract (price history since 2002)



2018



2.984

2002

2003

2006

2011

2014

2017

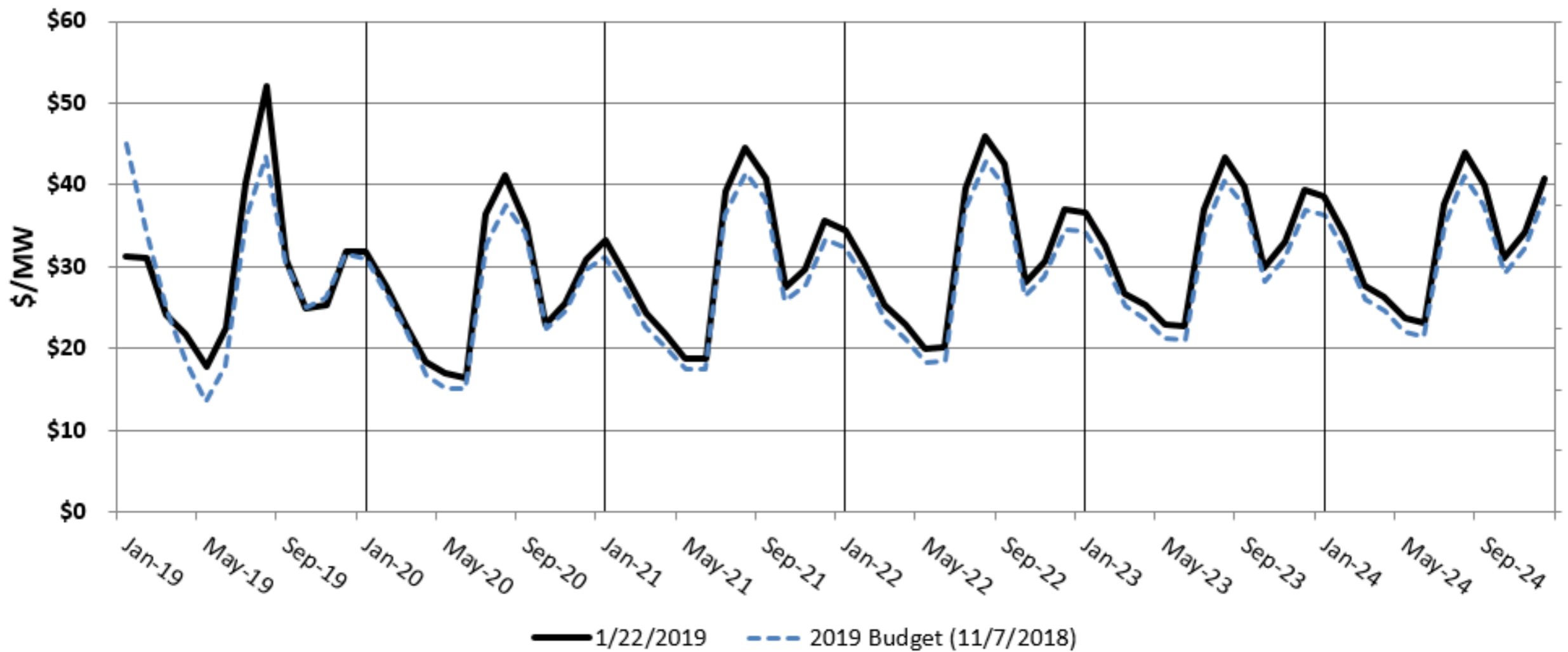
2018

12

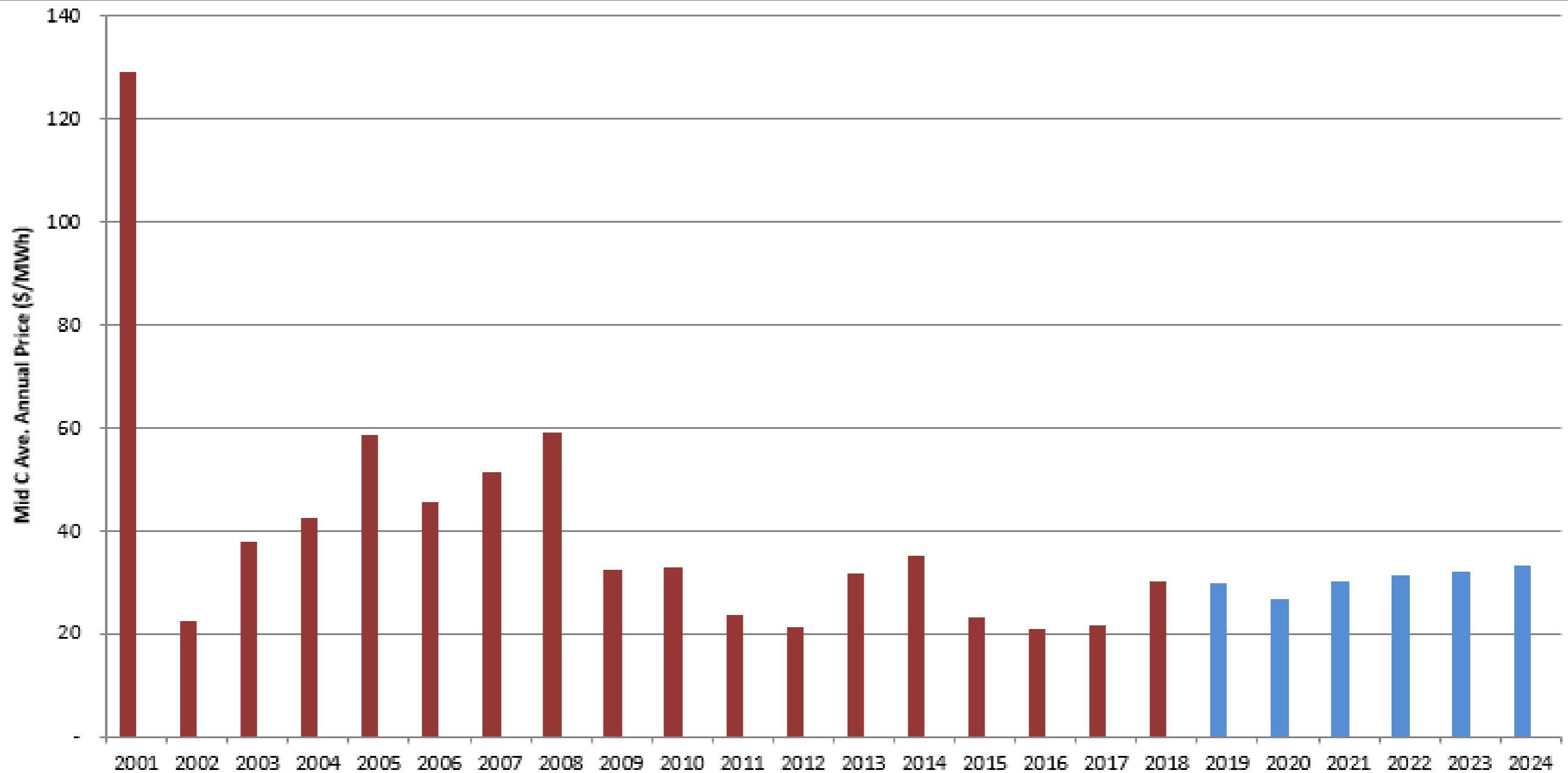


# MIDC forward price curve

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



# MIDC flat annual Wholesale Electricity Prices



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

# 2018 Net Wholesale Revenue detail

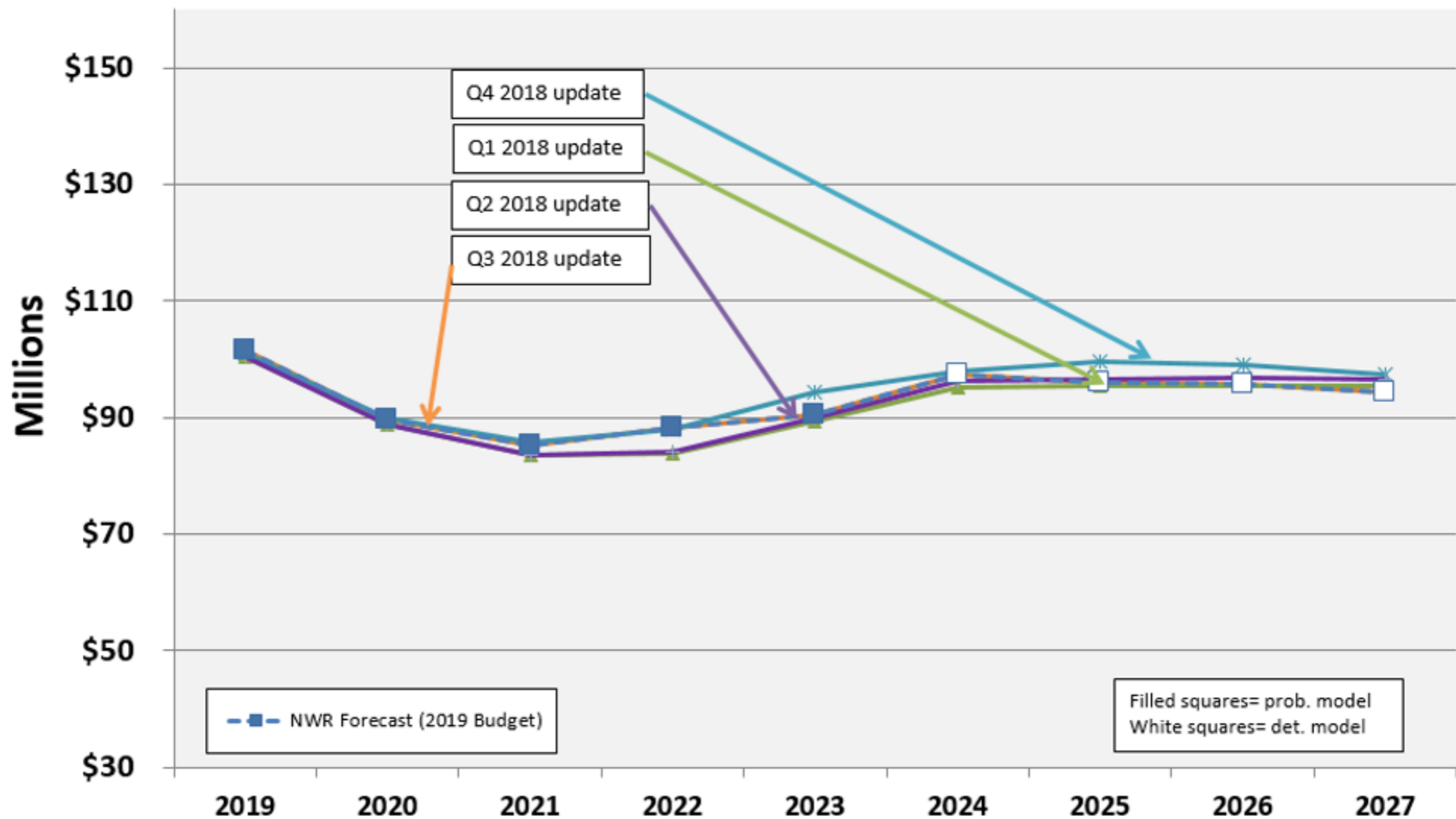
## 2018 NWR and Other Energy-Related Revenue

(amounts in millions)

	Budget		Actuals		Variance
<b>Net Wholesale Revenue (NWR)</b>					
Energy Sales	\$	104.3	\$	101.3	\$ (3.0)
Specified Source Premium	\$	3.7	\$	4.9	\$ 1.2
Renewables- Bundled*			\$	0.6	\$ 0.6
NWR Sub-total	\$	108.0	\$	106.8	\$ (1.2)
<b>Other Energy-Related Revenue</b>					
LT Power Contract- Retained Surplus	\$	0	\$	14.9	\$ 14.9
LT Power Contract- Admin Fees	\$	0	\$	2.2	\$ 2.2
Frequency Response & Load Shedding	\$	1.1	\$	1.1	\$ -
Renewables- Unbundled*	\$	0.7	\$	0.1	\$ (0.6)
Real-Time Revenue	\$	7.0	\$	9.5	\$ 2.5
Other Sub-total	\$	8.8	\$	27.8	\$ 19.0
<b>NWR and Other Energy-Related Revenue</b>	<b>\$</b>	<b>116.8</b>	<b>\$</b>	<b>134.6</b>	<b>\$ 17.8</b>

\* Renewables, both bundled and unbundled (\$.7M in total) were all budgeted as other energy-related revenue, but actual results are recorded as NWR when bundled and other revenue when unbundled. Total actuals equal the total budget.

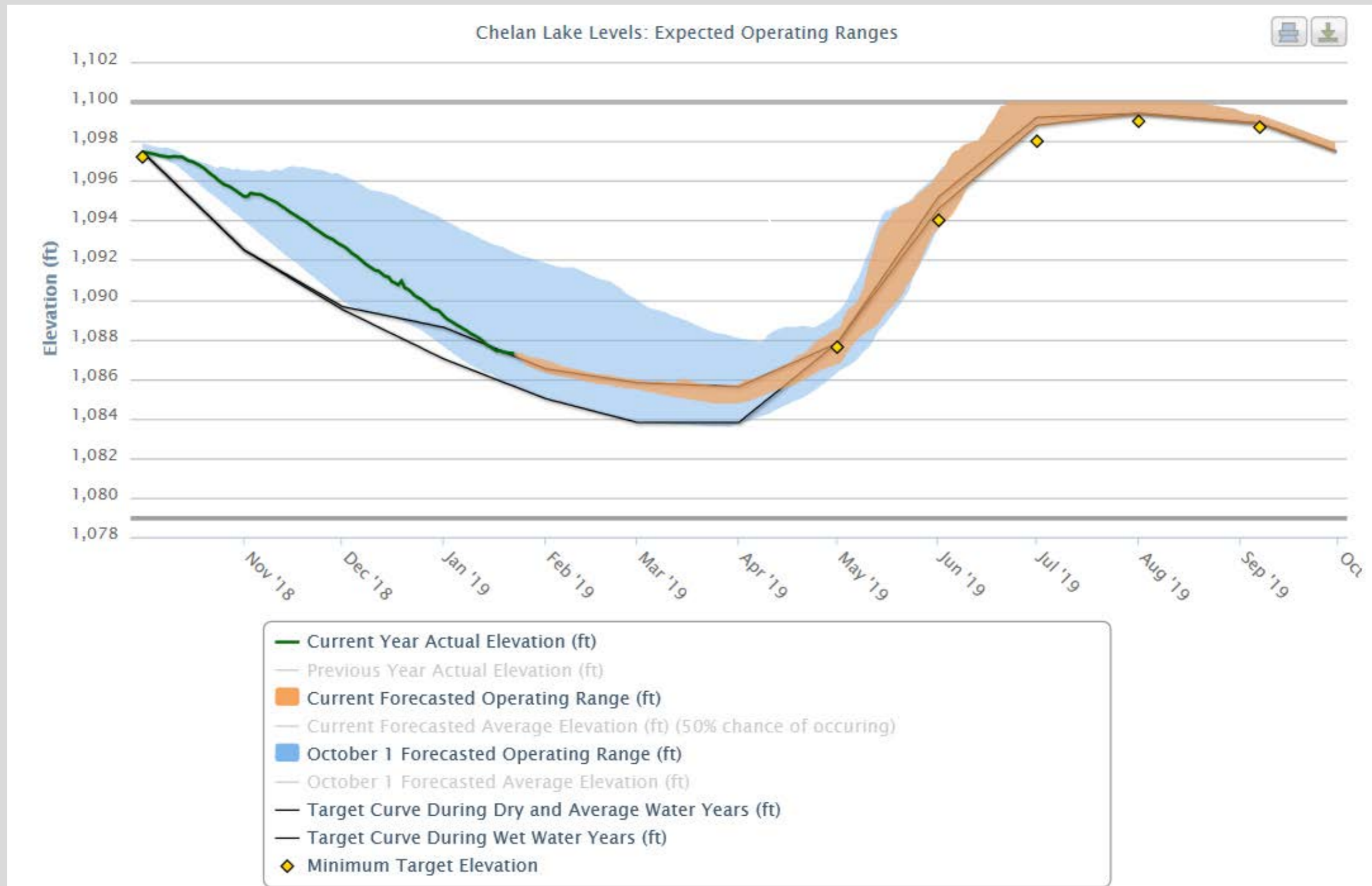
# Net Wholesale Revenue Forecast





# Lake Chelan lake level webpage

(01/22/19)



# Market Info

## EIA lowers spot gas price forecasts for 2019:

- EIA predicts production growth will keep pace with demand and export growth and inventory builds will outpace the five-year average
- Full year 2019 price estimate fell 22 cents to \$2.89/MMBtu, while the new 2020 estimate averages \$2.92/MMBtu
- Natural gas is forecast to continue its ascent in the mix of electric generating resources, averaging a 36% share 2019 and 37% in 2020, while coal declines, averaging 26% in 2019 and 24% in 2020

## Nevada plans for solar, less coal

- Regulators approved NV Energy Inc's resource plan to add 1,001 MW of contracted solar and 100 MW of storage and retire an aging coal plant four years earlier than scheduled (254 MW)
- “..solar contracts have historically low prices that will range from \$21.55/MWh up to \$29.96/MWh.
- NV Energy has a short-term goal of doubling its renewable resources by 2023 and a longer-term goal of delivering 100% renewable energy to its customers

# Q4 ENERGY EFFICIENCY RESULTS

Two-Year (2018/2019) Compliance Target is 2.42 aMW

Annual 2018 Stretch Target was 1.7 aMW

2018 Energy Savings (aMW) <sup>1</sup>	Incentive and Labor Cost	Levelized Cost <sup>2</sup> (\$/MWh)	Estimated Value over Life <sup>2</sup>
1.85	\$ 3,000,000	\$ 19.60	\$ 5,910,000

1 Pending metering and verification and based on expected NEEA savings

2 Based on weighted avg. life of measure and discounted at 7%

# LED Streetlight Retrofit Update

- The project is 70% complete
- Leavenworth is complete
- Cobraheads (metal standard streetlights) completed in Cashmere
- Lights in rural areas north and west of Wenatchee have been installed
- Work in Manson, Chelan, and Entiat is finished
- All but a few of the WSDOT lights have been installed (lights are on order)
- Work continues in the City of Wenatchee (note approximately 55% of total work is in City of Wenatchee)
- **Path Forward:** Complete City of Wenatchee and Cashmere retrofits



# SUMMARY

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# QUESTIONS?



CHELAN COUNTY