

# Resource Adequacy Advisory Committee

## Preliminary Assessment for 2019

Technical Committee Meeting  
March 21, 2014

# Outline

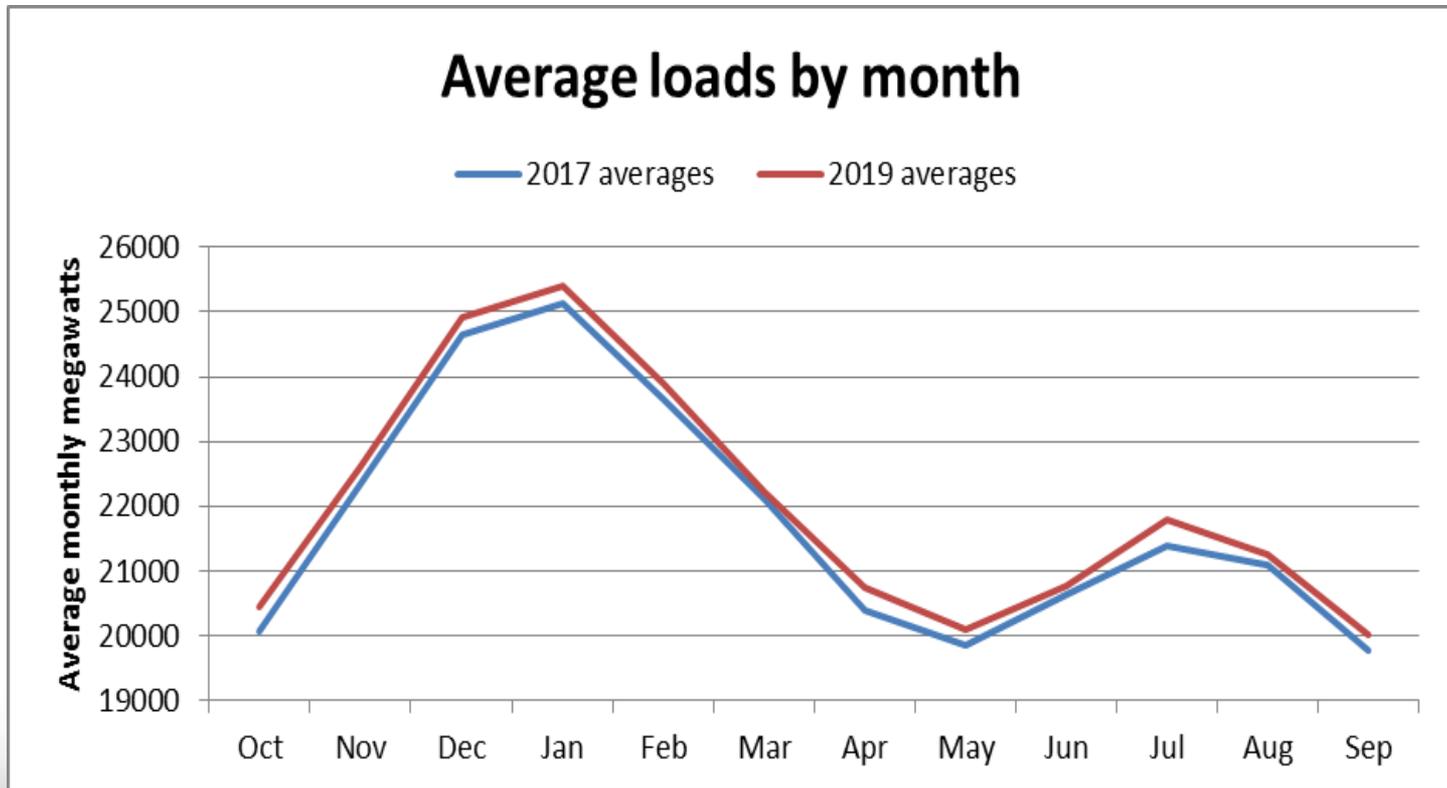
- 1. Data updates between 2017 and 2019**
- 2. Modeling changes**
- 3. Preliminary results for 2019**

# Data updates – Hourly Loads

- **Temperature – 84 years available**  
Oct 1928 through Sep 2012
- **Wind – 77 years (temperature correlated)**  
Oct 1929 through Sept 2005
- **Load – 77 years used to match wind data**
- **Load growth from 2017 to 2019 = 260 MWa**  
(about a 0.6% annual rate)

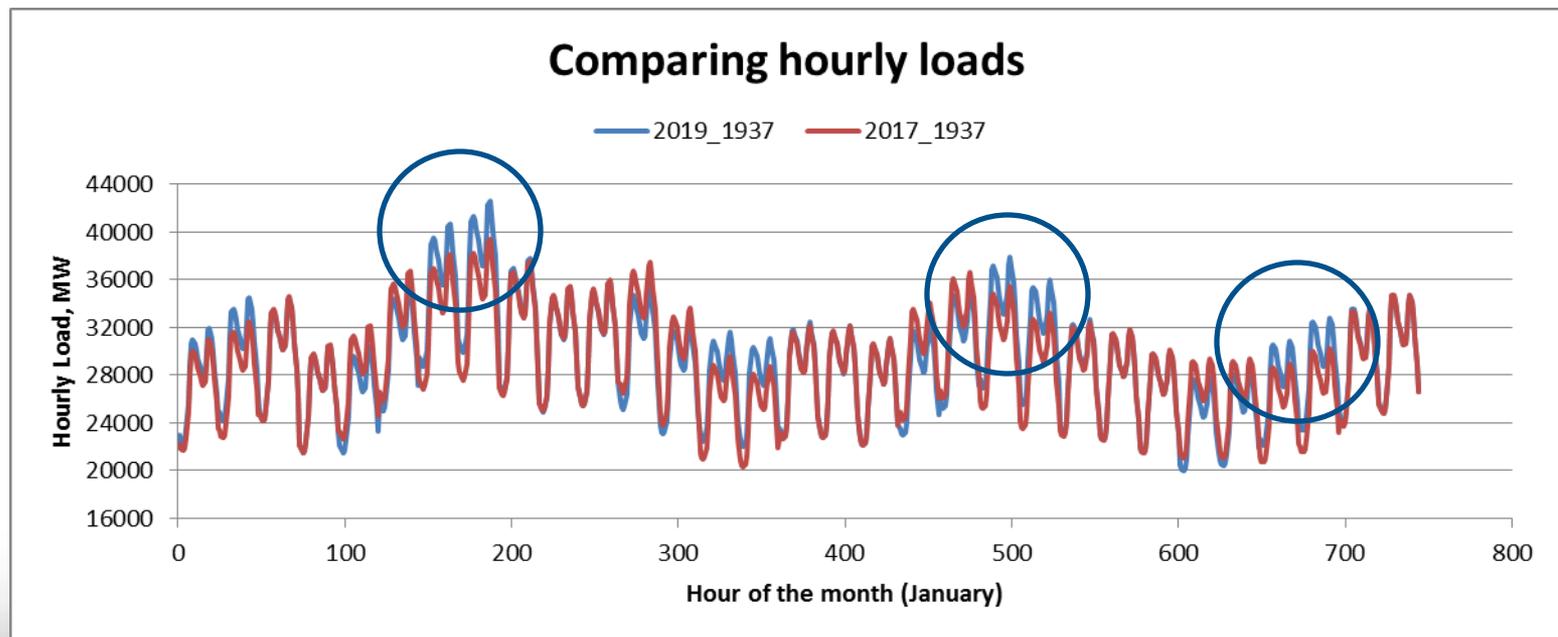
# Data updates for 2019

- Hourly loads averaged by month across all load years, the differences range from 130 to 400 MWa



# Data updates for 2019

- **Peak Hourly Loads:**  
Individual load years do have some large increases in peaks in the month of January (1937 temps)



# Data updates

## Resources and Contracts

- **Major resource additions:**
  - Carty Generating Station (440 MW)
  - Port Westward 2 (220 MW)
  - Minor updates reflect retirements and adjustments to data
  - **Net increase is 667 MW**
- **Wind additions:**
  - From 4265.6 MW to 4532.4 MW
  - **Net increase 266.8 MW**
- Contracts (imports, exports, intra-regional transfers) updated from 2013 White Book

# Data updates

## Standby Resources

- **2017:**

- Annual energy = 83,000 MW-hr
- Oct-Mar peak = 660 MW
- Apr-Sep peak = 720 MW

- **2019:**

- Annual energy = 41,650 MW-hr
- Oct-Mar peak = 673 MW
- Apr-Sep peak = 733 MW

# Data updates Hydro Regulation

- **2017:**
  - Initial 2017 assessment (reported in 2012) used the initial 2017 hydro regulation
  - Revised 2017 assessment (redone this year) used the final 2017 hydro regulation
- **2019:**
  - Used the final 2019 hydro regulation
- Sustained peaking data for 2019 based off of the final 2019 hydro regulation

# Modeling Changes for 2019

- **12 period to 14 period**
  - April and August periods are now split-month
  - Initial 2017 assessment modeled April and August as single periods
- **Nodal allocation of resources**
  - Hydro resource node allocation revised to line up with nodal allocation used in Aurora (3 nodes)
  - 2019 assessment was run in 2-node configuration
- **Multiple wind year sets**
  - 2017 assessment used a single set of temperature-correlated wind capacity factors per year
  - 2019 assessment incorporates a random draw from 20 wind sets per year

# Modeling Changes - In Progress

- **Testing 3-node configuration (splitting out southern Idaho)**
- **Explicit load forecasts for each node**
- **Nodal peak vs. nodal energy for hourly hydro dispatch**
- **Weekly hydro generation shaping**

# Preliminary Results for 2019

- **Reference case assumptions**
  - Council's medium load forecast
  - SW winter peak import max is 1700 MW on peak (same as for the 2017 assessment)
  - Off-peak SW import max is 3000 MW year round
- **Variations for sensitivity analysis**
  - Loads: -2.5%, -1.5%, +1.5% , +2.5%
  - SW winter peak imports: 0 MW, 900 MW, 1700 MW, 2400 MW, 3200 MW and 4000 MW
  - **South to North tie capacity may not be as high as 4000 MW in every month**

# South to North Tie Limits

<b>AC+DC Scheduling Limits (5-Year Average) for South to North Flows</b>	
January	3,968
February	3,715
March	3,624
April	3,698
May	3,668
June	3,670
July	3,638
August	3,721
September	3,104
October	2,938
November	3,625
December	3,768

# Preliminary results

Load	-2.5%	-1.5%	0% (Ref)	+1.5%	+2.5%
Market (MW)					
0	6.95%	8.04%	9.63%	12.27%	14.14%
900	5.37%	5.97%	7.32%	9.17%	10.88%
1700 (Ref)	4.14%	4.98%	<b>5.93%</b>	7.82%	8.72%
2400	3.69%	4.32%	5.11%	6.67%	7.48%
3200	3.38%	3.98%	4.64%	5.91%	7.03%
4000	3.10%	3.80%	4.37%	5.42%	6.53%

- Reference case LOLP ~ 5.9%
- Low market and high load case LOLP ~ 14.1%
- High market and low load case LOLP ~ 3.4%

# Preliminary Observations

- Energy GPS analysis of SW import availability shows high values for Oct-Jun
  - Upper end values likely limited by tie capacity
  - Low end values unrealistic
  - Reconsider the reference case value of 1700 MW
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- **500 MW** of additional new resource brings the ref case LOLP down to 5%
- **455 to 535 MW** of additional standby resources brings the ref case LOLP down to 5?%