

2020 Adequacy Assessment Key Assumptions/Action Items



RAAC Steering Committee Meeting
March 9, 2015

Counting Resources

- Thermal – sited and licensed
- Wind/Solar – sited and licensed
- Energy Efficiency – 6th plan targets
- Demand Response
 - Existing – counted in the load forecast
 - New – added to standby resources
- Standby Resources
 - Not modeled explicitly
 - Included in post processor to assess final LOLP

Gas Supply Limitations

- **Current Assumption: no gas limitation**
- **Options**
 - **Reduce gas availability (gas-fired generation) by fixed amount when NW temperatures are extreme**
 - **Make gas-fired generation availability a function of NW temperature**

Capacity/Energy Values for Wind and Solar

- **Current Assumptions**
 - Wind Energy = 30%
 - Wind Capacity = 5%
- **Options**
 - Calculate Energy/Capacity ELCC for wind
 - Do the same for solar (need data)

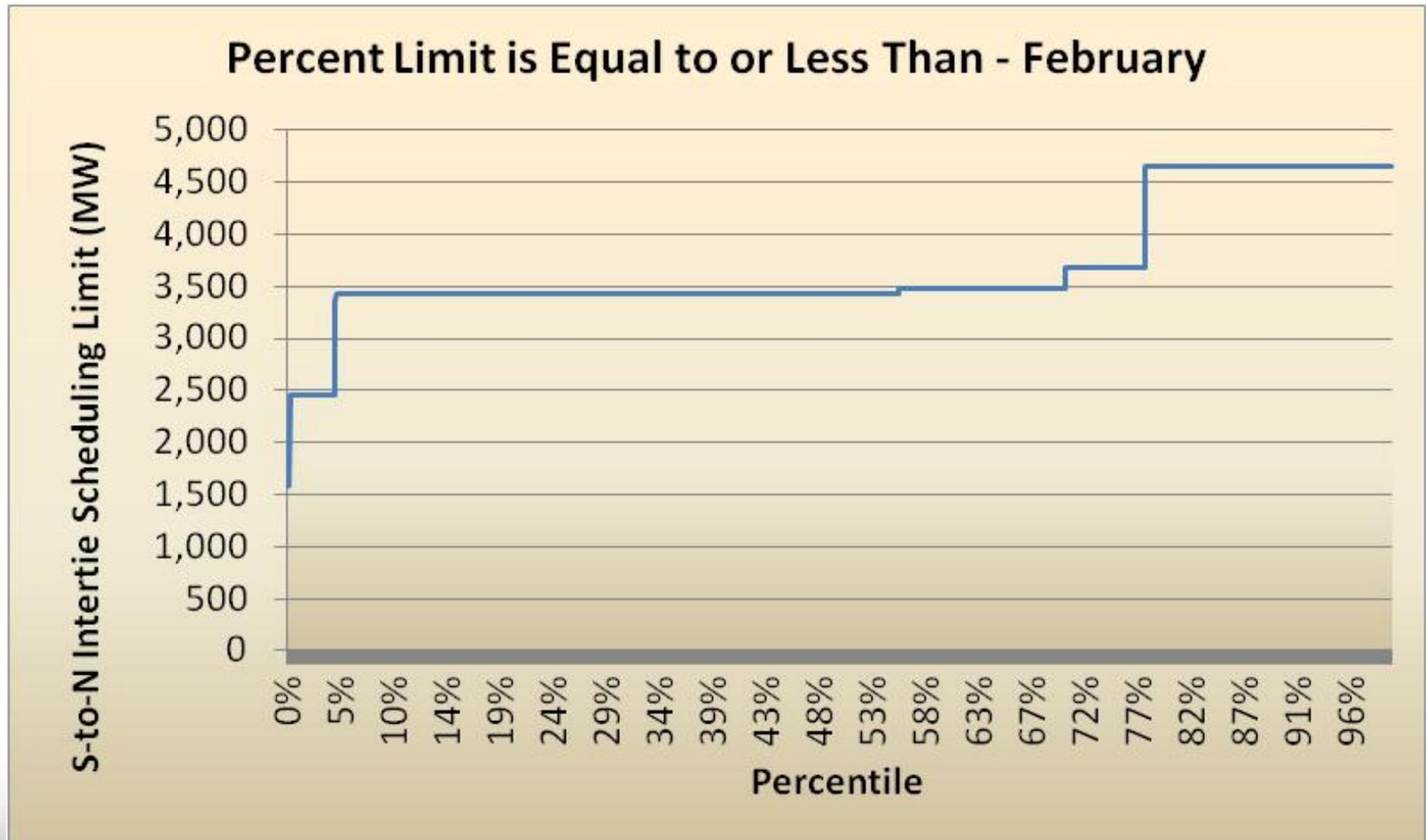
Market Supply

- **In Region – IPP**
 - Winter - full capability (~ 3,200 MW)
 - Summer – 1,000 MW
- **Spot Market – during hour of need**
 - Winter – 2,500 MW over all hours
 - Summer – none
- **Purchase Ahead**
 - 3,000 MW limit
 - Month, week and day ahead

Market Supply (cont'd)

- Limiting factor is the S-to-N intertie limit
- Historic winter on-peak limit ranges from 1,500 MW to 4,500 MW (see next slide)
- Intertie limit set to 3,400 MW

Historic S-to-N Intertie Limit



Market Friction

- **Current Assumption – not modeled**
- **Options**
 - **Out-of-region imports**: apply more severe limits to max available
 - **In-region**: Reduce availability of IPPs
 - Apply reduction as a function of severity of potential shortfall

Load Forecast

- **Comparison to NRF loads**
 - Similar monthly shape
 - Extreme winter peaks seem high
 - Summer peaks seem low
- **Council staff is looking into this**

Within-hour Balancing

- **Current Assumptions**
 - For BPA BA only
 - Carried by federal hydro
 - Incorporated INC/DEC directly into peaking
- **Options**
 - Extrapolate BPA need to entire region
 - Develop method to use thermal resources to carry remaining balancing reserves

Modeling Issues

- **3-Node Configuration**
 - Split off southern Idaho
 - Code in place but problem with hydro correlation due to 1-dam model representation
 - Will consider using multi-dam logic for future
- **Capacity Assessment**
 - Aggregating hydro (1-dam) for hourly dispatch may be too blunt
 - Consider developing multi-dam logic for future

Future Considerations

- **Review adequacy standard**
- **LOLP may not be precise enough metric**
- **Consider using Expected Unserved Energy (EUE) and Loss of Load Hours (LOLH) both adopted by NERC to measure adequacy**
- **Will need to develop new thresholds for EUE, LOLH or both**

Additional Slides

New and Standby Resources

Assumptions	2019	2020
Thermal	Sited and licensed	Sited and licensed
Wind	Sited and licensed (e.g. not RPS)	Sited and licensed (e.g. not RPS)
Existing demand response	In load forecast	In load forecast
New demand response	In standby resources	In standby resources
Standby resources energy	40,800 MW-hours	40,800 MW-hours
Standby resources capacity	623/833 winter/summer where winter = Oct-Mar, summer = Apr-Sep	623/833 winter/summer where winter = Oct-Mar, summer = Apr-Sep
Energy Efficiency magnitude	Council 6 th plan targets	Council 6 th plan targets
Energy Efficiency shape	Same as load	Same as load

Market Supplies

Assumptions	2019	2020
NW market winter, where winter = Nov-May	3,467 MW (full IPP)	3,219 MW (full IPP)
NW market summer, where summer = Jun-Oct	1,000 MW	1,000 MW
BC market	0 MW	0 MW
Southern Idaho market	0 MW	0 MW
SW winter spot market	2,500 MW (on peak only)	2,500 MW (all hours)
SW winter purchase ahead	3,000 MW (off peak)	3,000 MW (off peak)
SW summer spot market	0 MW	0 MW
SW summer purchase ahead	3,000 MW (off peak)	3,000 MW (off peak)
Maximum SW import limit	3,400 MW	3,400 MW

Within-hour Balancing Reserves

Assumptions	2019	2020
Fed Hydro balancing reserves	900 MW INC 1100 MW DEC	900 MW INC 1100 MW DEC
Non-Fed Hydro reserves	Not modeled	Not modeled
Non-hydro balancing reserves	Not modeled	Not modeled
New balancing reserves	Not modeled	Not modeled
Energy Imbalance Market	Not modeled	Not modeled
Borrowed hydro	1000 MW-periods	1000 MW-periods