

Perspectives on the State of the Industry*

* View of presenter not necessarily NPPD



Nebraska Public Power District

Always there when you need us

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**NPPD/NDEQ
Power Summit**

October 30, 2018

Topics Today

- I. Quick review of previous three year's presentations
- II. Transformation of electricity generation
- III. Developments in the Southwest Power Pool (SPP)
- IV. Federal policy developments
- V. Predictions going forward

Staff Report to the Secretary on Electric Markets and Reliability

https://energy.gov/sites/prod/files/2017/08/f36/Staff%20Report%20on%20Electricity%20Markets%20and%20Reliability_0.pdf



August 2017

Power Summit
October 31, 2017

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Electricity and a New Administration



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Power Summit

November 16, 2016

2015 Conclusions

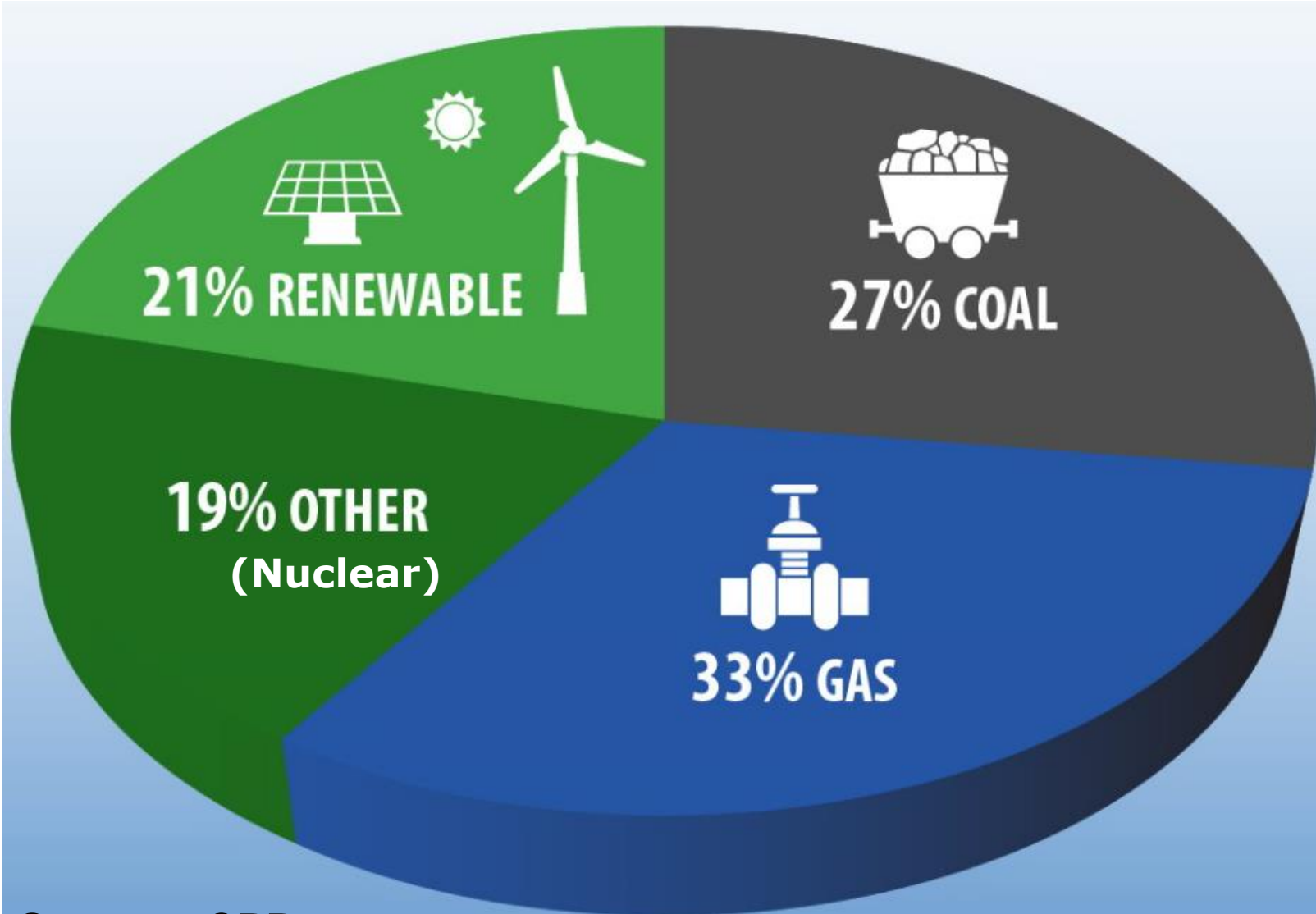
- The Nation remains deeply divided politically, socially and geographically
- National energy policy is increasingly made by federal regulatory agencies and not by Congress
- The use of coal to produce electricity will continue to decrease nationally, but remain significant in certain geographic regions
- Renewables and distributed generation will continue to grow, but will face increasing integration challenges in some regions
- Natural gas will continue to play a growing role in the production of electricity
- Transmission expansion will be required to incorporate more renewables
- Litigation over the Clean Power Plan will leave a cloud over the program until addressed by the Supreme Court (2018/2019)
- Tax subsidies have major impacts on electricity markets

U.S. Electricity Fuel Mix

- The fuel mix is changing rapidly
 - Wind, Solar & Natural Gas 
 - Subsidies
 - Fracking
 - Coal & Nuclear 
 - Regulation
 - Economics
- Fuel choices vary dramatically by region
 - Powder River Basin Coal (Wyoming) has low-sulfur and low-cost compared to eastern coal
- Great Plains is wind rich
- Southwest has significant solar
- Natural gas is currently low-cost and plentiful for the near to mid-term, but history has shown price to be volatile / unpredictable
- What role will storage play?

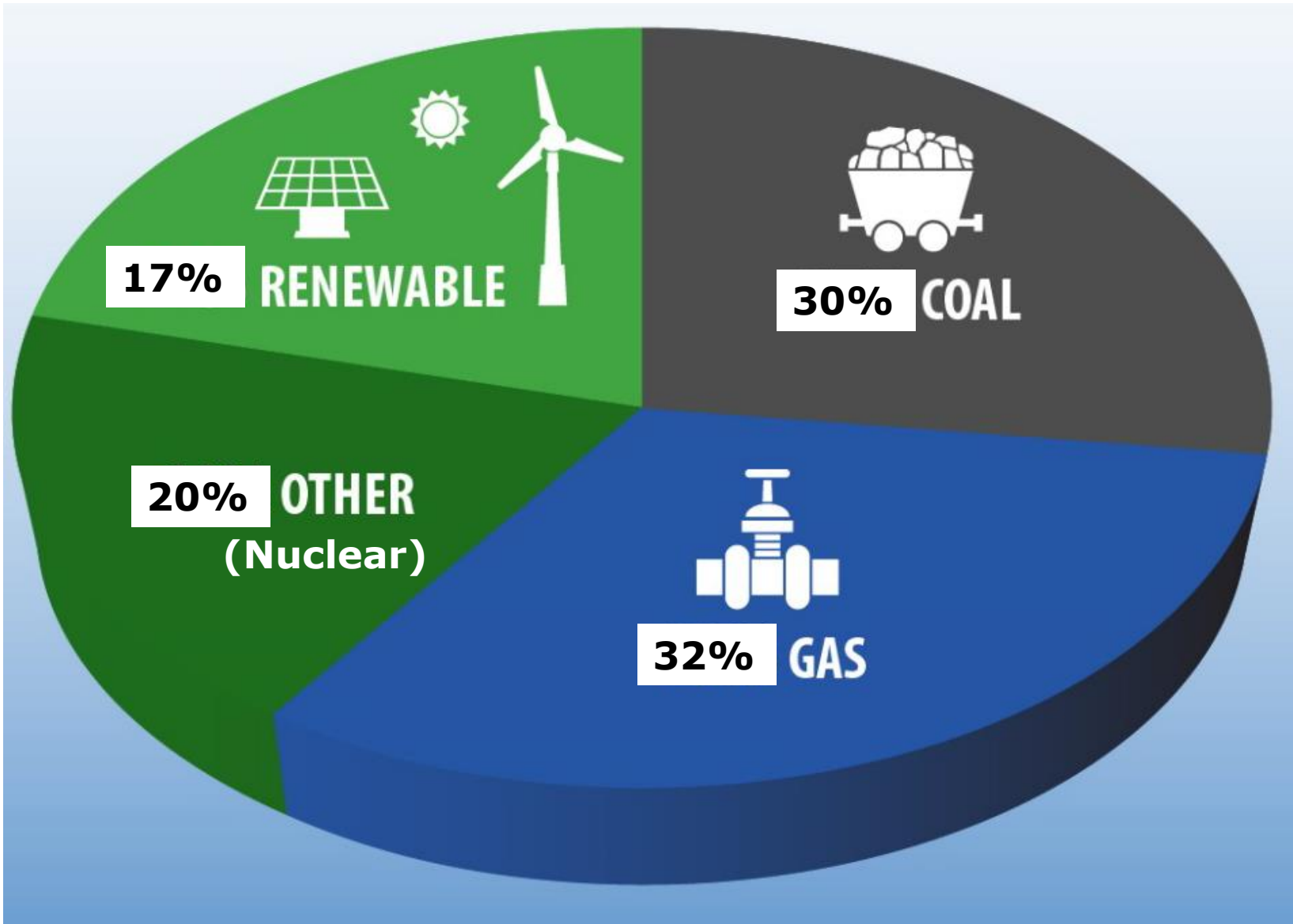
National Energy Mix in 2030

Under Clean Power Plan



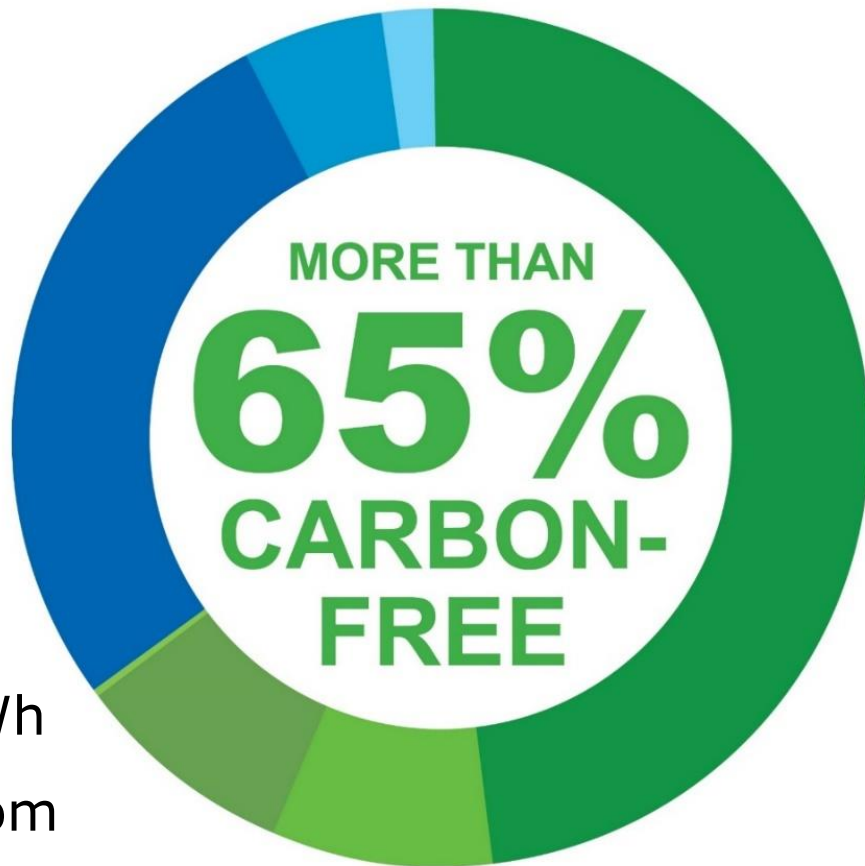
Source: CPP

National Energy Mix 2017



2017 NPPD Energy Generation Resources

Nebraska Customers



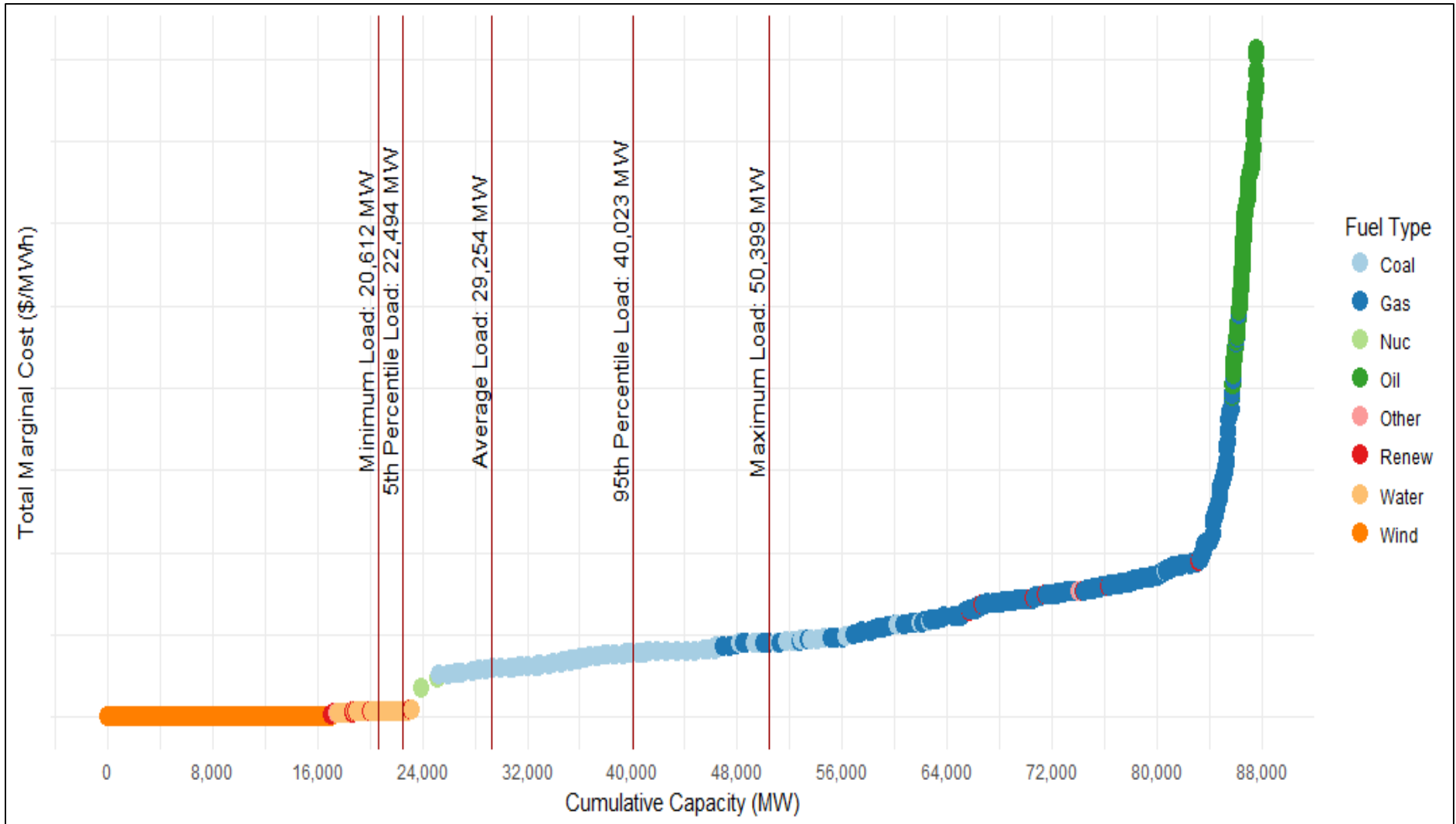
- ✓ 682 lbs. CO₂ / MWh
- ✓ 32% reduction from 2010 levels

QLG*	Gas/Oil	Purchases	Wind	Hydro	Coal	Nuclear
0.4%	2.0%	5.5%	8.3%	8.4%	27.3%	48.2%

*Qualifying Local Generation (QLG) includes renewable energy facilities installed by our wholesale customers and in NPPD retail communities.

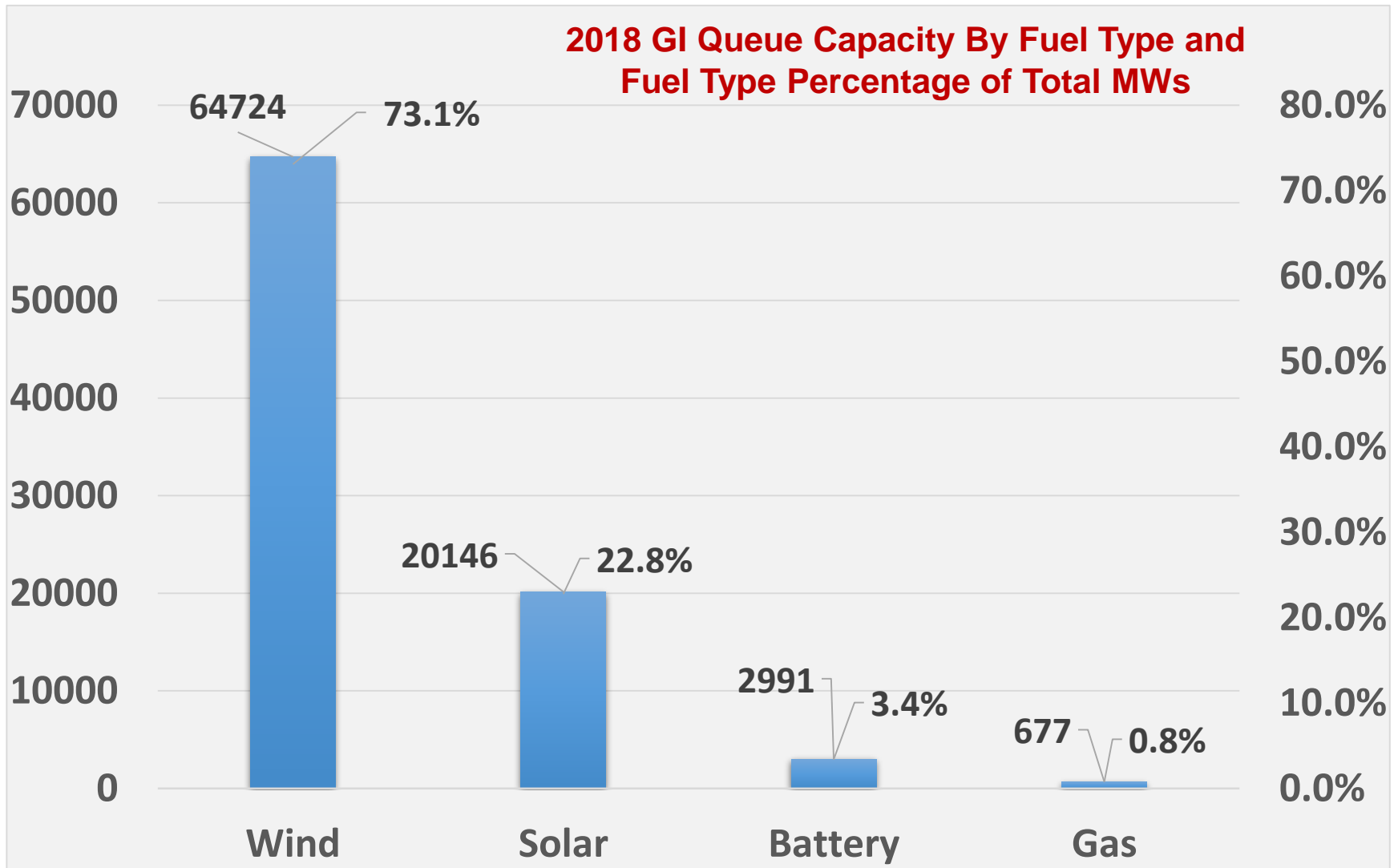
III.

SPP Generation Stack (Summer 2017)



Source: Velocity Suite SPP data, NPPD

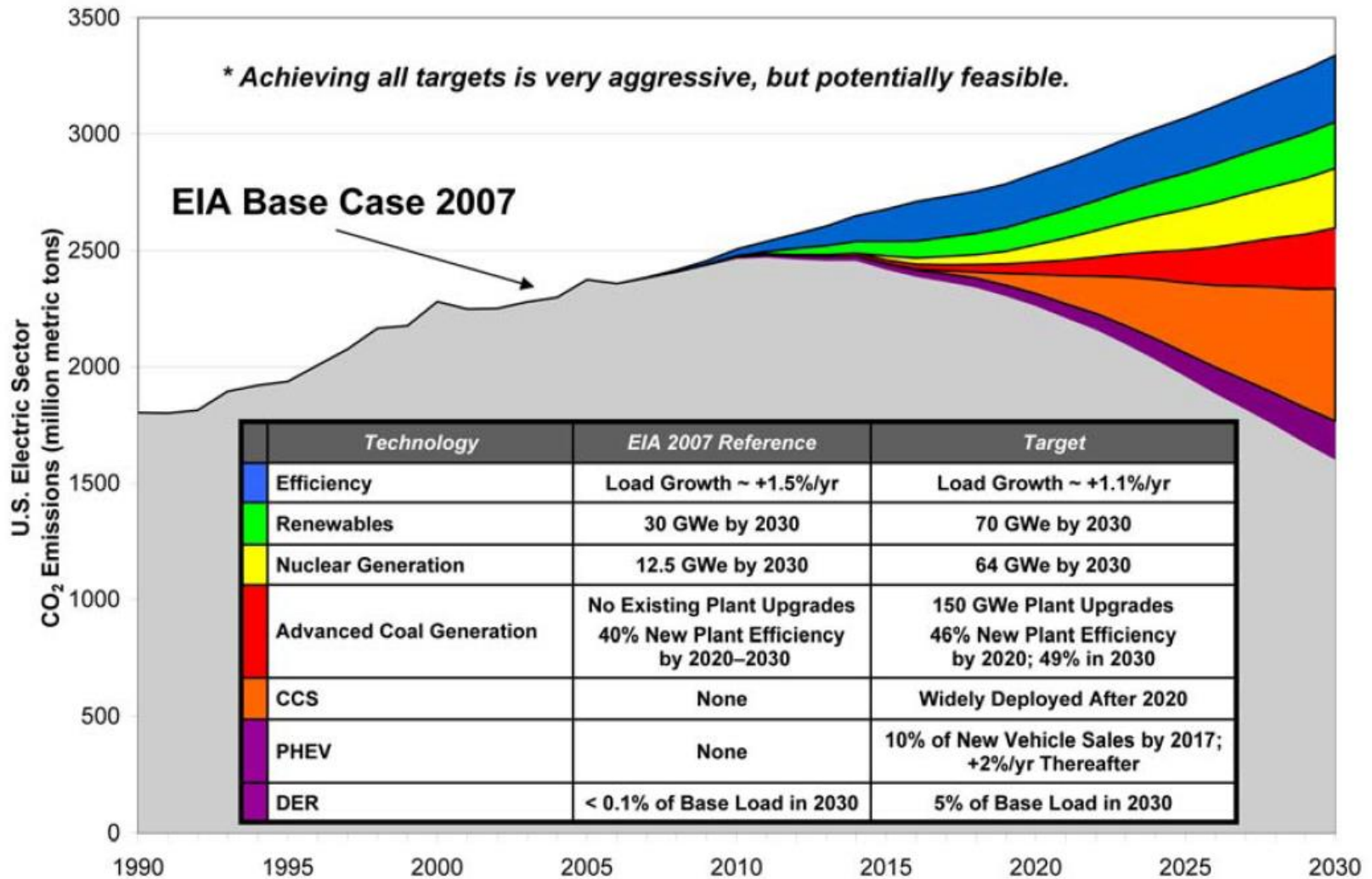
What's in the SPP Queue?



***“It’s Difficult to make
Predictions,
especially about the
Future”***

Attributed to multiple sources

Electricity Technology Under a Carbon-Constrained Future (PRISM Analysis)



IV.

Future Environmental and Energy Policy



IV.

Future Environmental and Energy Policy



IV.

Future Environmental and Energy Policy



IV.

Future Environmental and Energy Policy



2018 Elections

- Senate – Likely to remain Republican controlled
- House – Better than 50% chance of flipping
- Over 70 new House members
- Average turnover ~ 50
- 30 seats are a toss-up
- If flip – lots of oversight hearings, impeachment?

v.

Political Ads Divide Families



Predictions for 2019 and beyond