

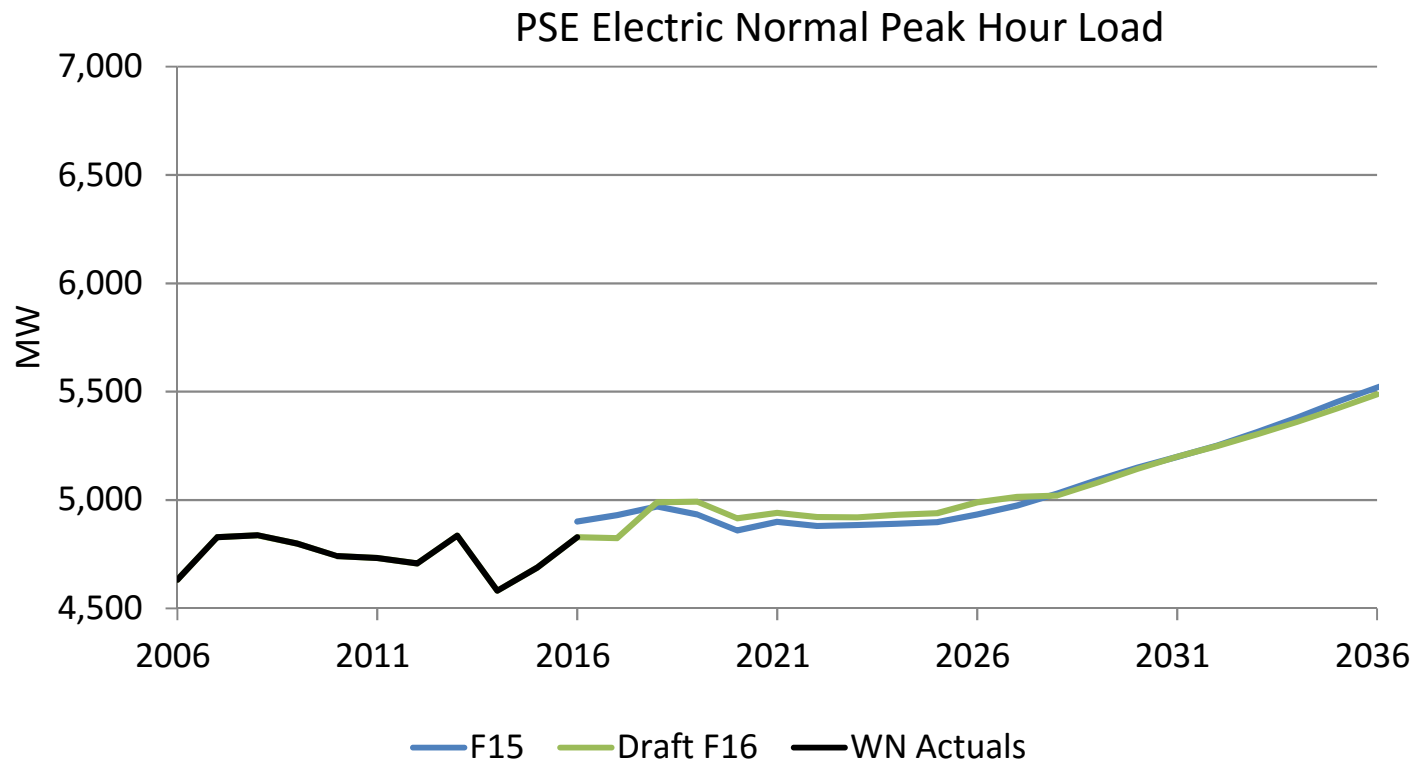
PNUCC Load Forecasting Workshop (2.0)

Meeting Recap – November 1, 2016

Workshop takeaways

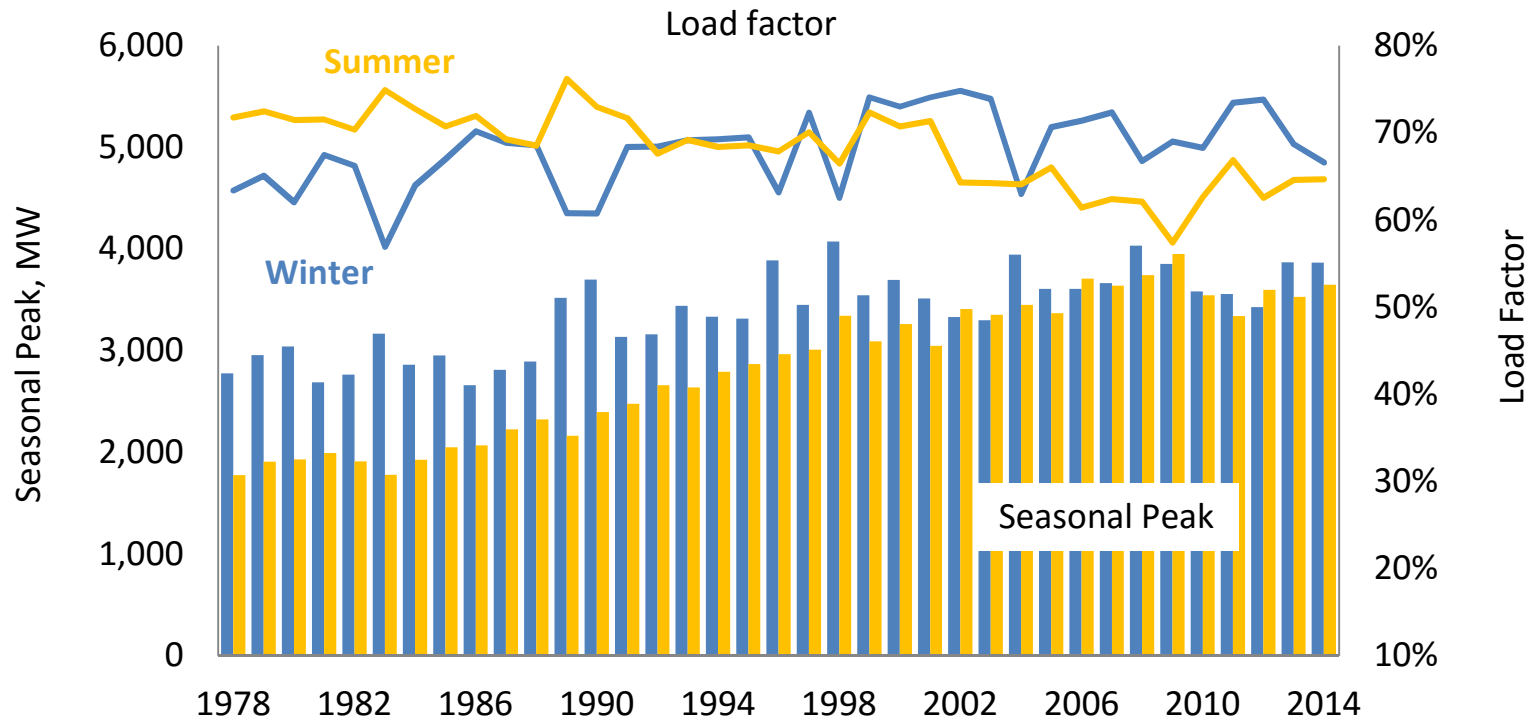
- Load growth across the region is tepid
 - Annual energy and winter loads not materializing as expected
 - Exception for utilities seeing large projects arrive in service area
- Summer loads growing faster than winter
- Codes and standards impact loads
- New loads still on the horizon
 - Indoor agriculture loads less than expected
 - EV adoption has been slower than projected

Puget's peak load forecast flat for 10 years



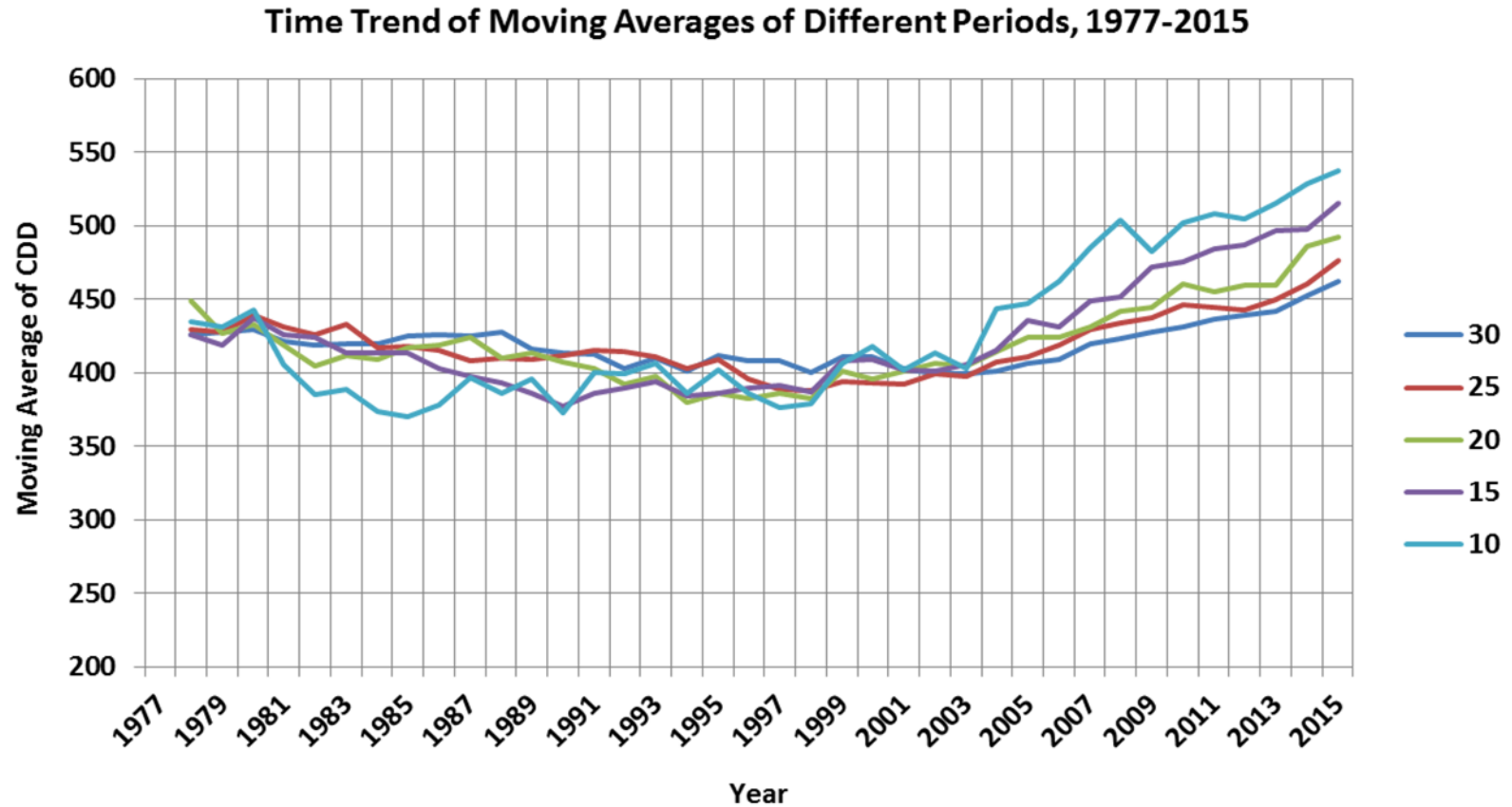
Shared by Puget at load forecasting workshop

PGE sees rising summer peaks



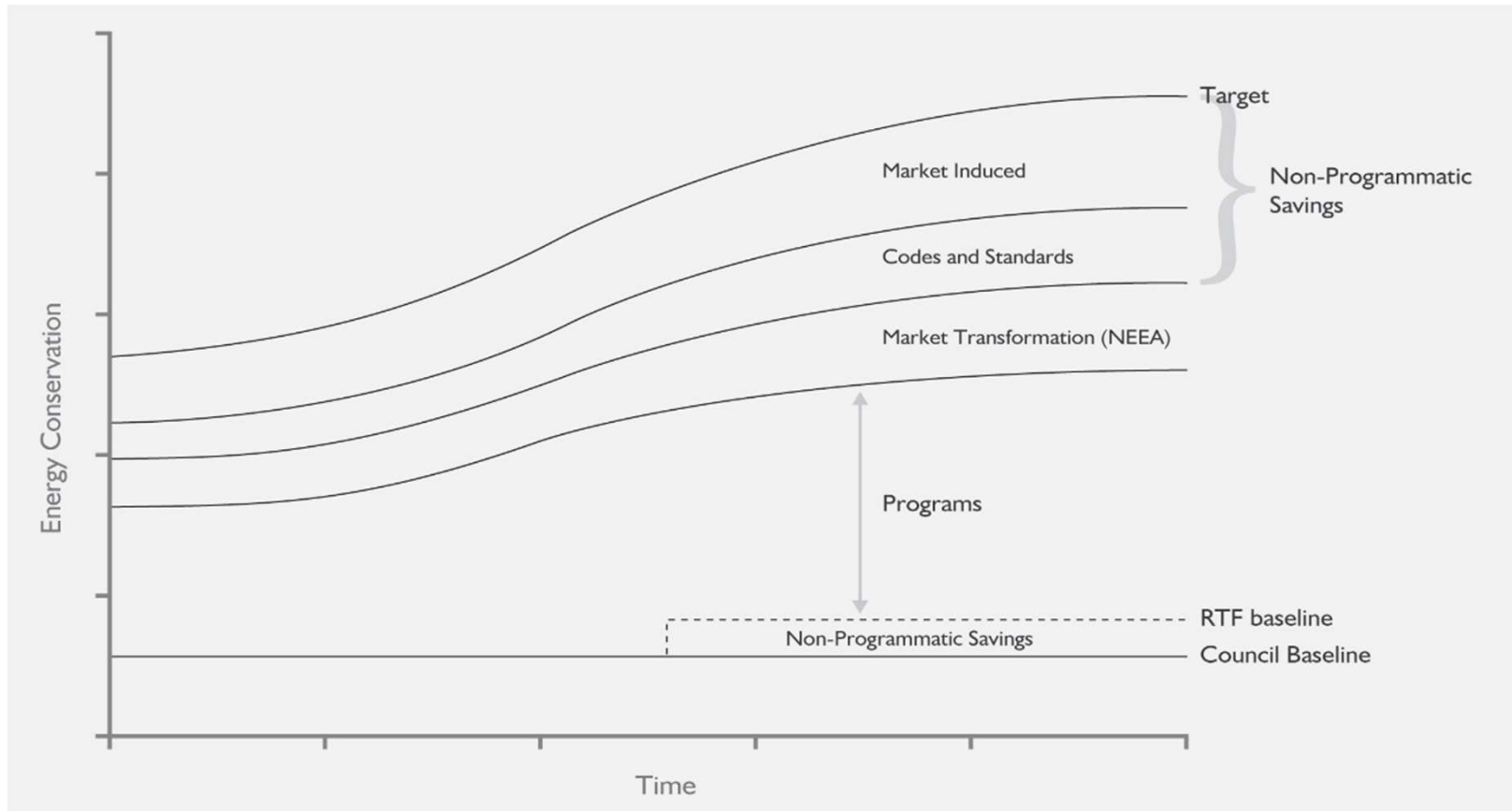
Shared by PGE at load forecasting workshop

Increased cooling degree days for Avista



Shared by Avista at load forecasting workshop

Codes and standards add up



Shared by NWPC at load forecasting workshop

Incorporating energy efficiency

- We did not dig into the topic expressly at the workshop
 - Any utilities on the phone or in the room interested in sharing how they incorporate energy efficiency into their forecast?

RAAC load forecast comparison

Forecast characteristics	2002-13 actual	2015 RAAC (for 2021)	2016 RAAC (for 2021)
Years	12	77	77
Mwa	20,412	21,783	20,250
Years with an hour above 09 max	1 at max (2009)	25	36
Years with an hour above 40,000 MW	0	5	17
Median winter max	31,514	33,643	34,919
Median summer max	27,354	26,850	28,240
Max	35,316	41,301	46,257
Dec load factor	0.77	0.78	0.68
Raw LOLP, V13 (800 games)	N/A	8.7	12.7

Questions for 2017 RAAC forecast

- Should the forecast aim for a load factor similar to the past few years?
- Should the peaks and annual energy values be compared to recent events to check for reasonableness?
- Should the RAAC run the new model with 2016 and 2017 loads to understand the impact loads play in LOLP?