

Columbia River Estuary Conference 2018



John Shurts

April 2018



**Northwest Power and
Conservation Council**

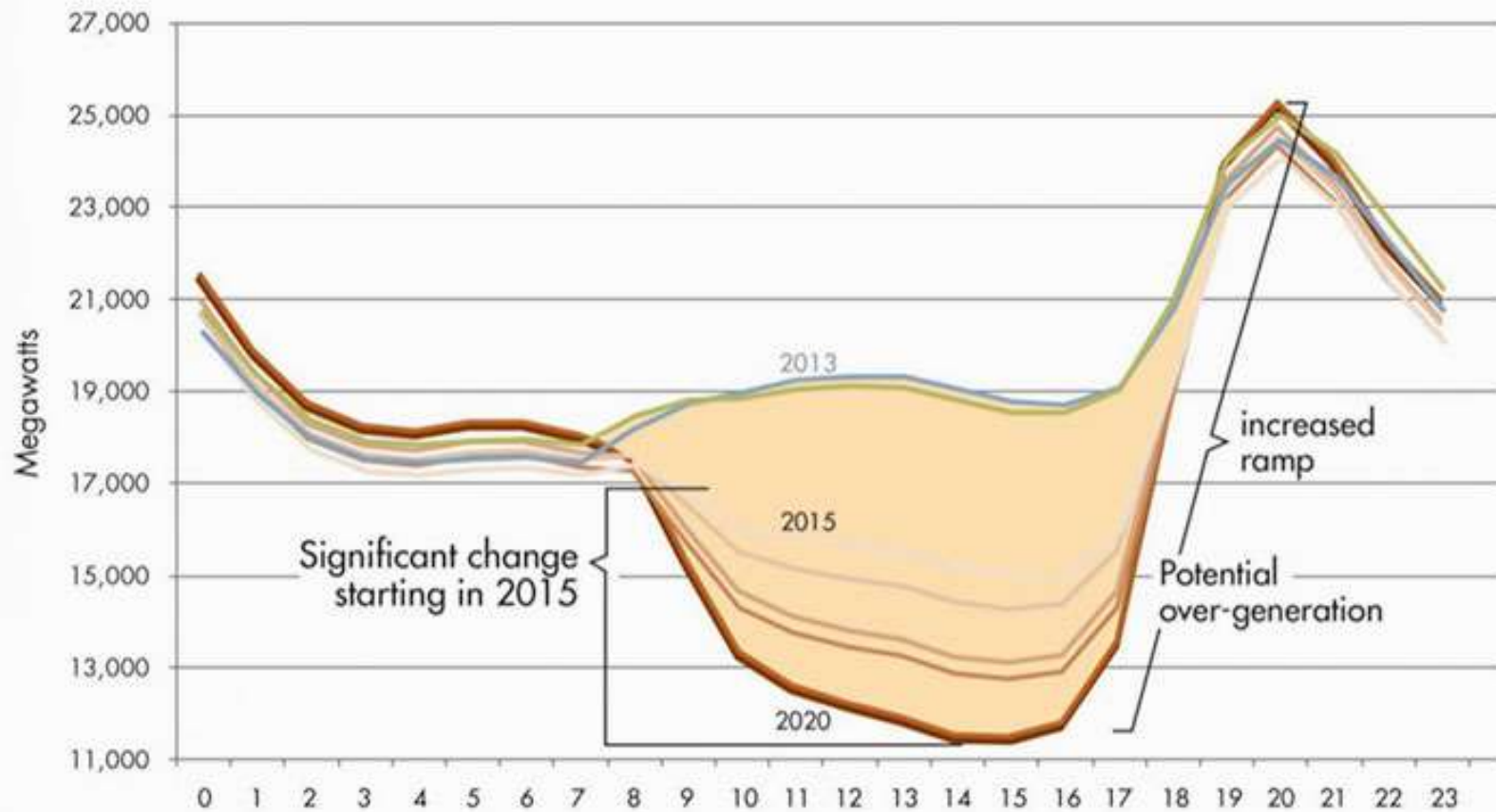
Promoting Resiliency Under Shifting Environmental Conditions



Promoting Resiliency Under Shifting ~~Environmental~~ **Westcoast Power Market** Conditions?



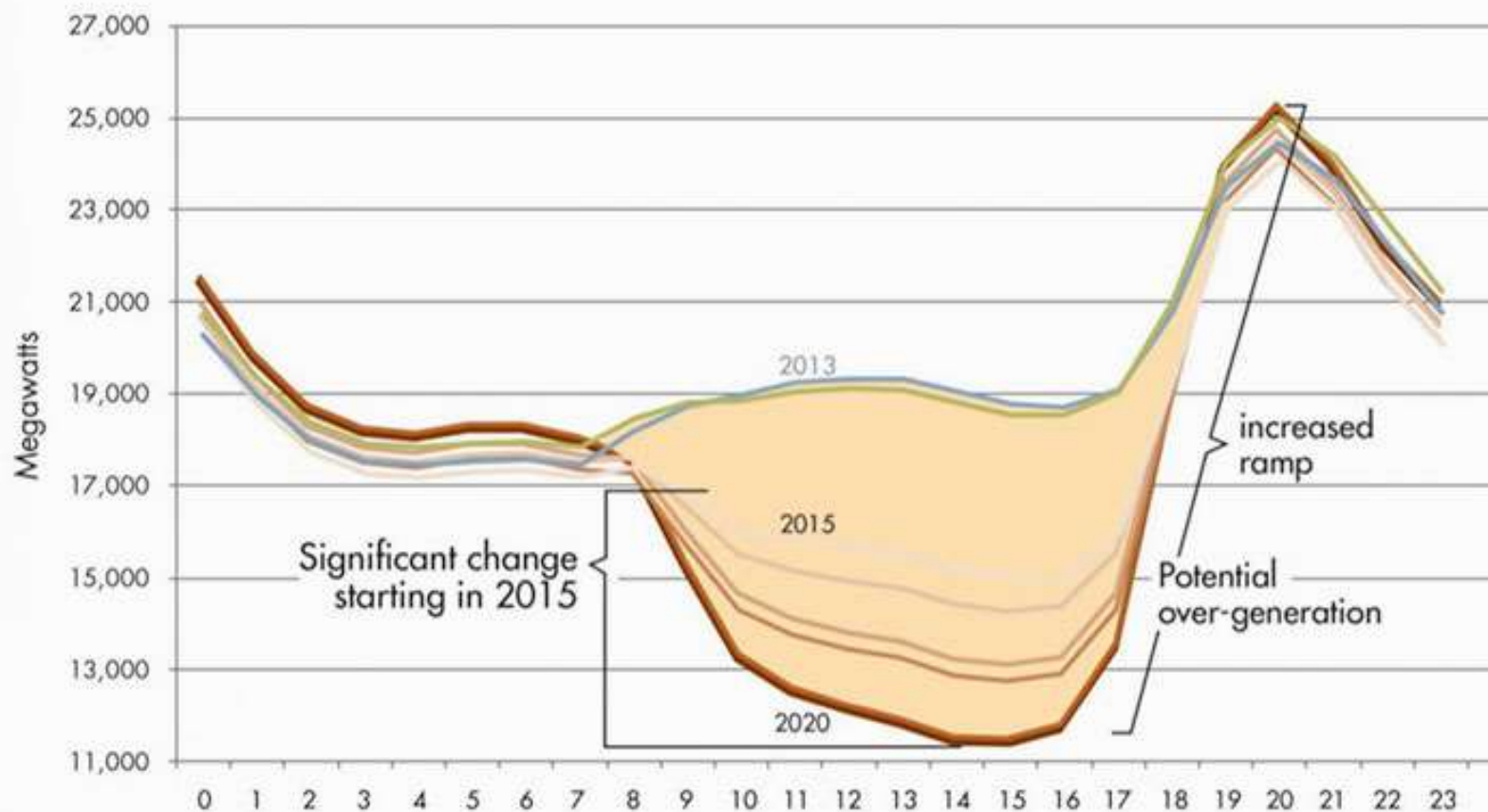
California ISO Duck Curve







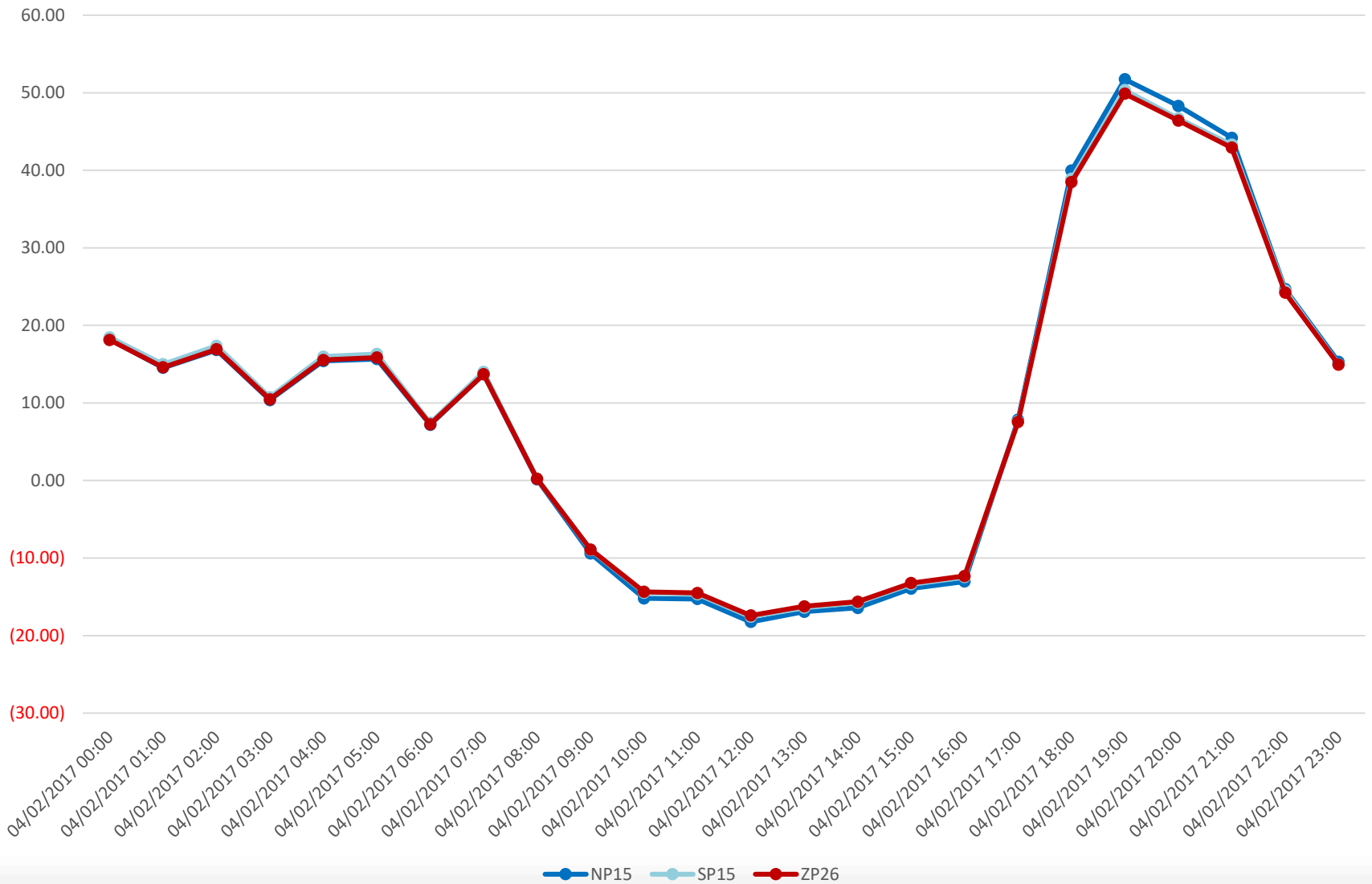
California ISO Duck Curve



Summary of Northwest Resource Changes 1995 - 2014

Resource	Installed	Availability	Peak
Natural Gas	6,822 MW	6,652 MWa	6,822 MW
Wind ¹	8,972 MW	2,826 MWa	448 MW
Other ²	140 MW	20 MWa	140 MW
Hydro	(see Other)	- 1,200 MWa ³	- 5,400 MW ⁴
Total Change	15,934 MW	8,298 MWa	2,010 MW

California Pricing April 2, 2017



Planned Coal Retirements - Region

Plant	Retirement Date	Capacity & Op Yr	Location	Ownership
Boardman*	2020	600 MW (1980)	Boardman, OR	PGE, Idaho Power (90/10)
Centralia – 1	2020	670 MW (1971)	Centralia, WA	TransAlta
Centralia – 2	2025	670 MW (1971)		
Colstrip – 1	2022	360 MW (1975)	Colstrip, MT	PSE, Talen Energy (50/50)
Colstrip – 2		360 MW (1976)		
J. E. Corette	2015	173 MW (1968)	Billings, MT	PPL Montana**
North Valmy – 1	EOY 2025	254 MW (1981)	Valmy, NV	Idaho Power, NV Energy (50/50)
North Valmy – 2		268 MW (1985)		
Regional Total		2,921 MW***		

Future? Less energy use; greater use of electricity

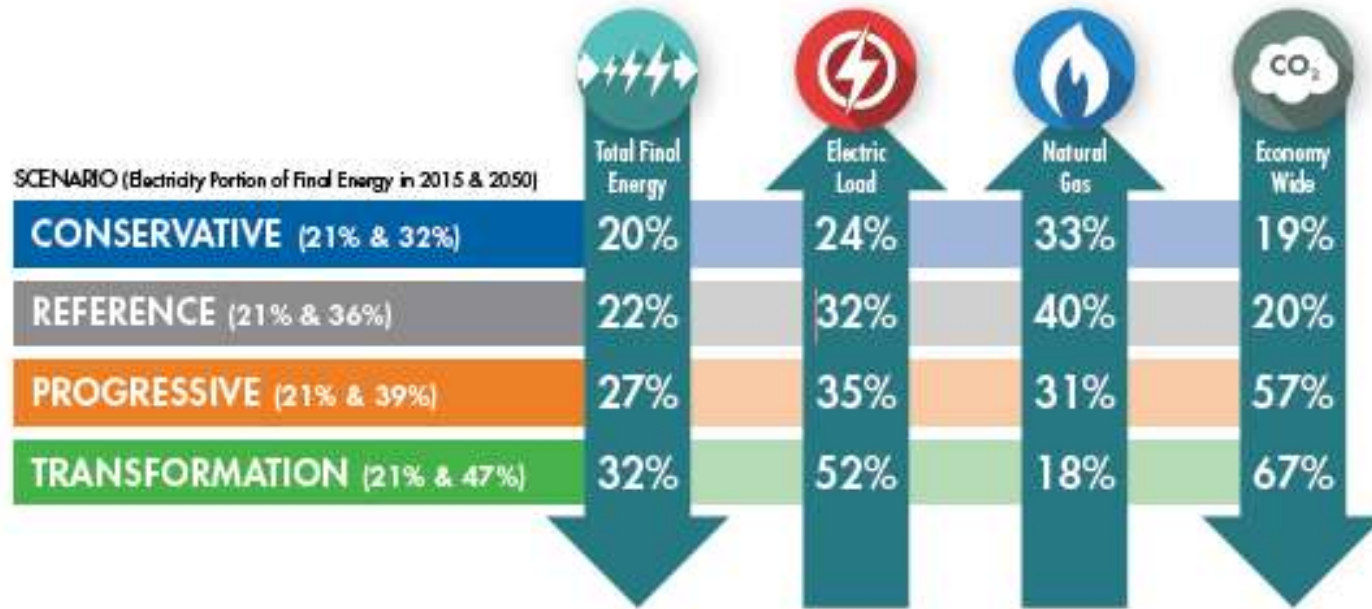
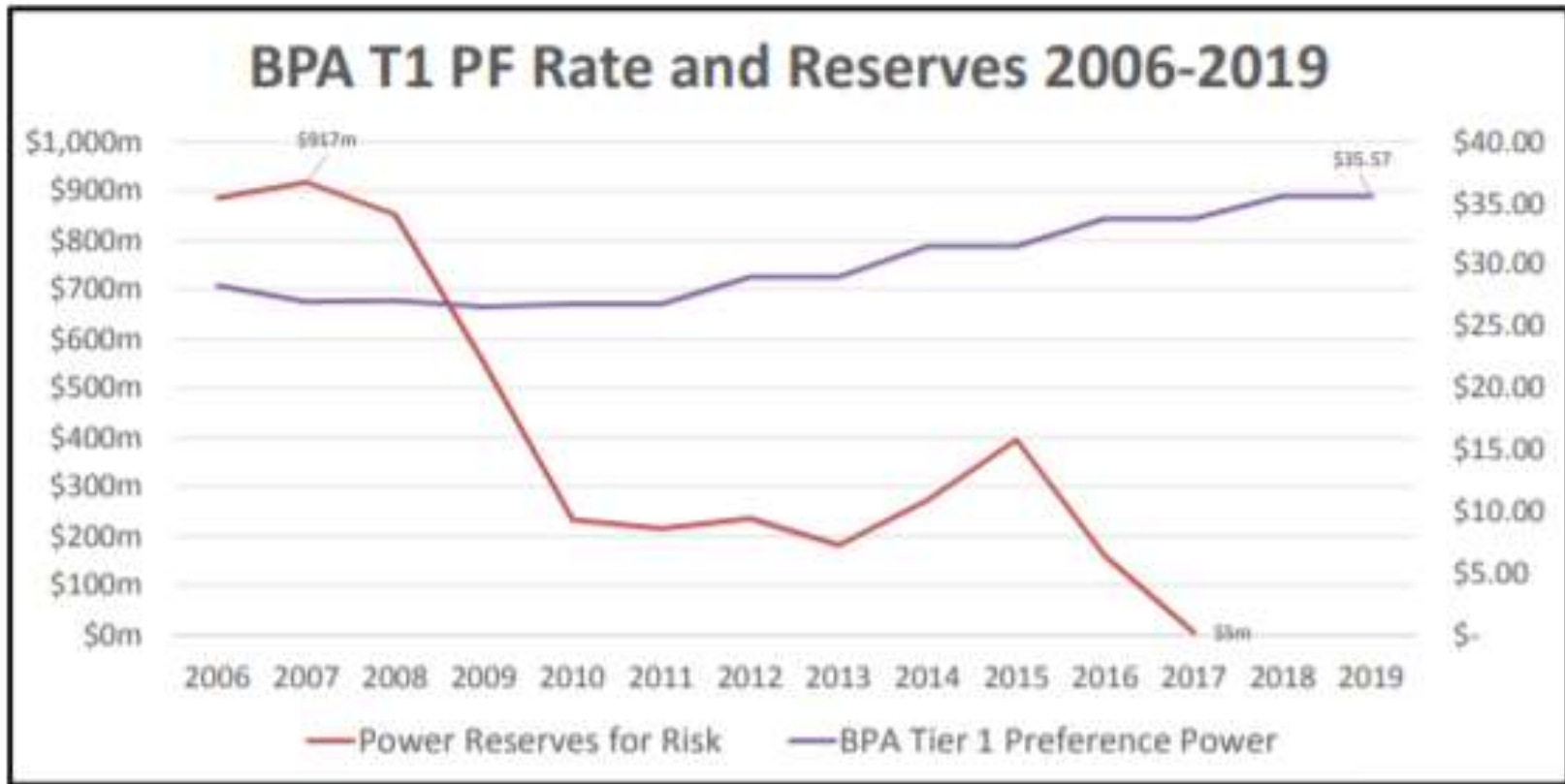


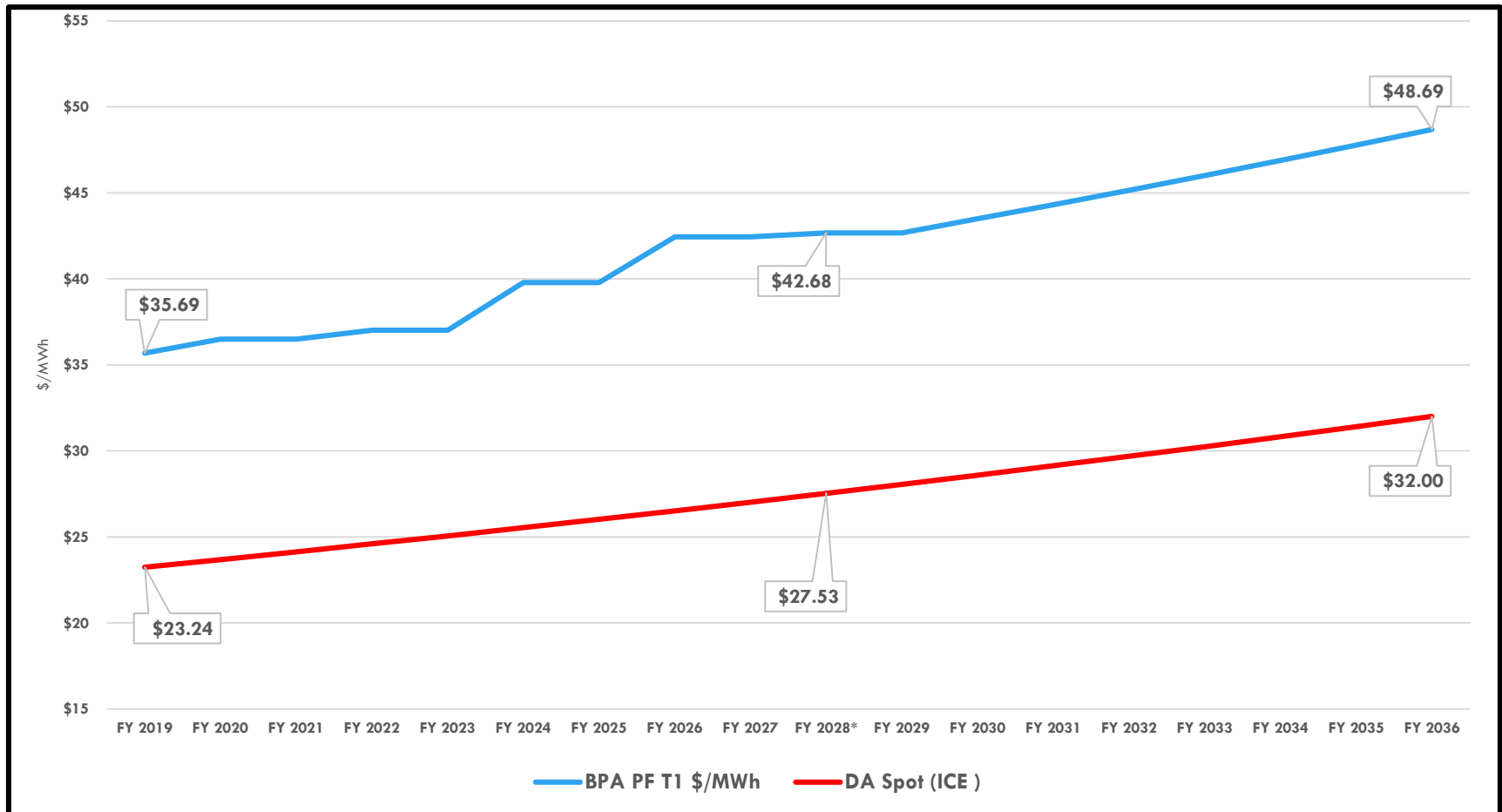
Figure ES-2. High-level Overview of Modeling Results

Source: Electric Power Research Institute – US. National Electrification Assessment April 2018

Bonneville firm power rates up; cash reserves depleted

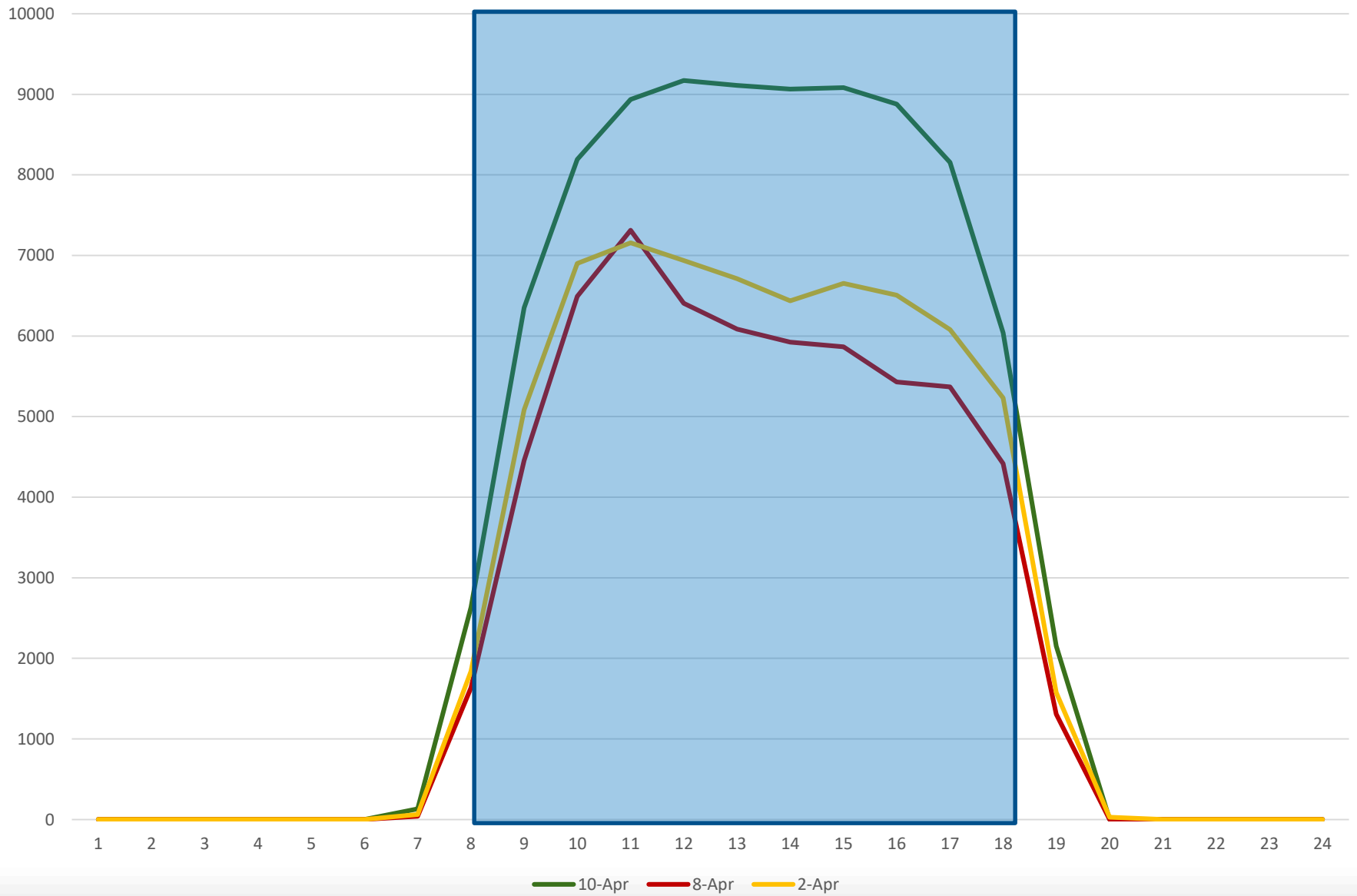


Spot market prices for electricity vs Bonneville's firm power rates -- projections on current trends



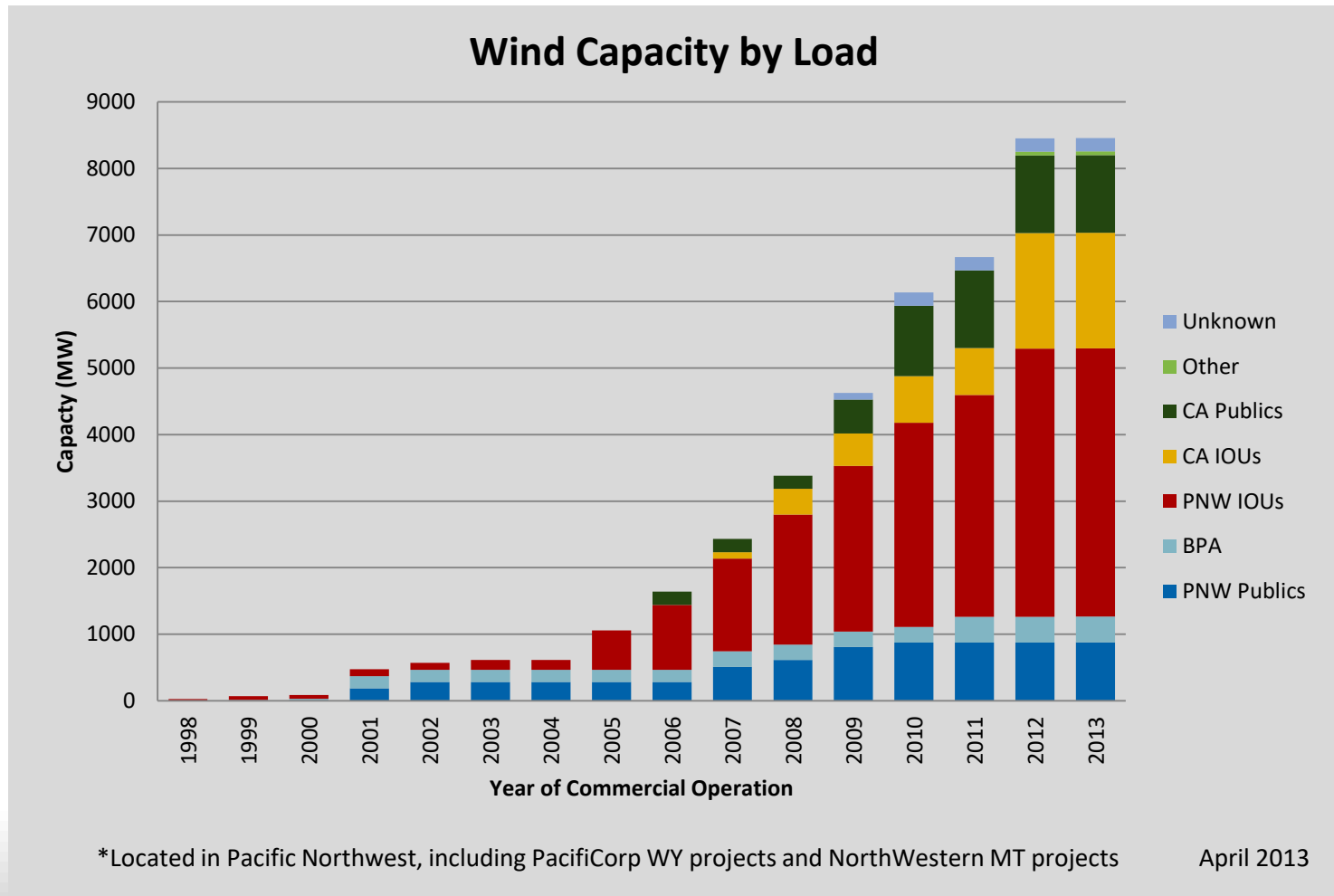
Extra slides

CAISO Solar Generation

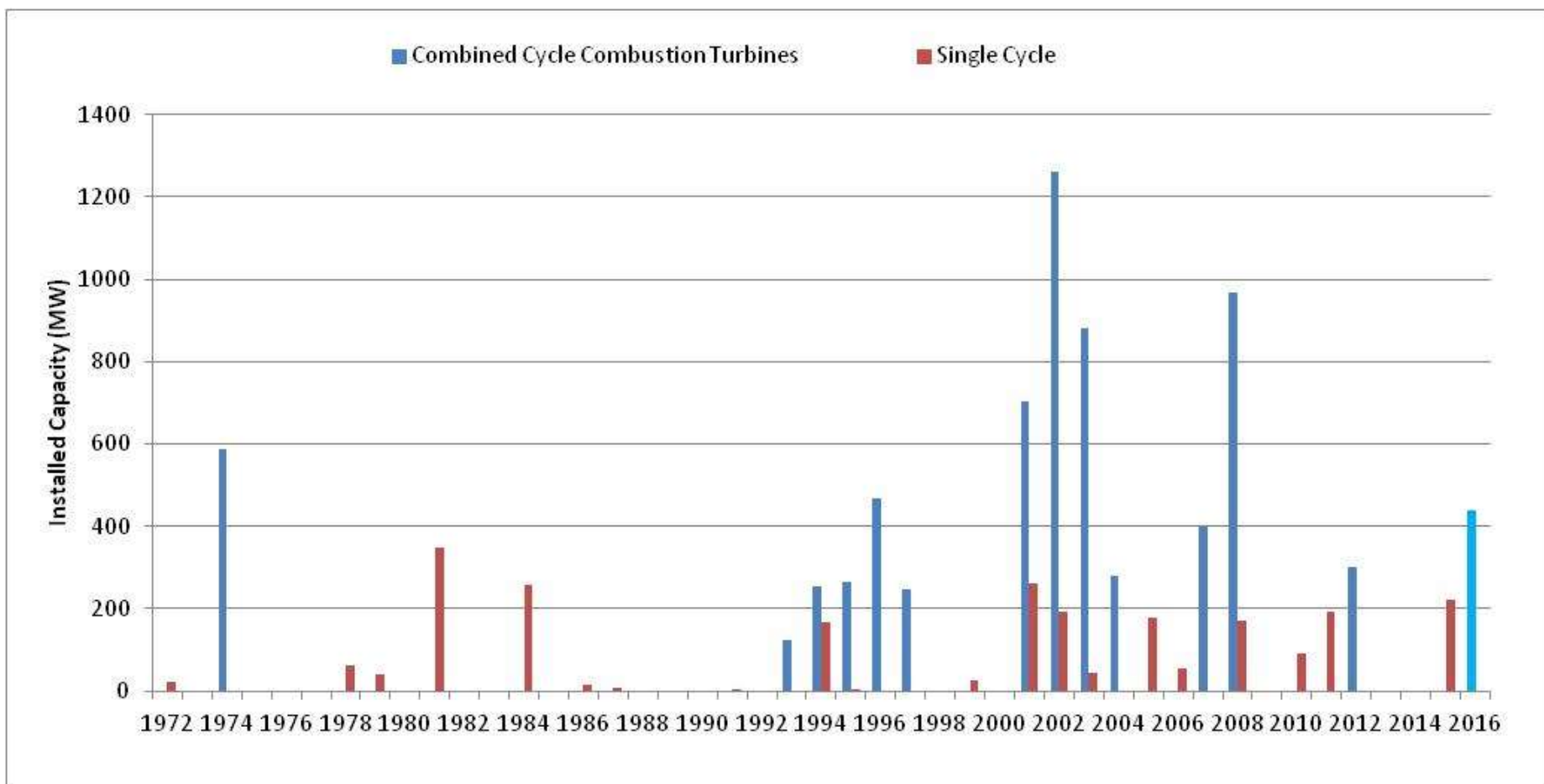


Wind in the Northwest

carbon issues/PTC/RPS/technology and price



Natural Gas Plants in the Northwest



Since 1978 Utility & BPA Programs, Energy Codes & Federal Efficiency Standards Have Produced 6500 MWh of Savings

