Clean Energy Transformation Act

Early Look

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Agenda

- Introduction
- Clean Energy Transformation Act (CETA) Overview
- Early Look at Implications for PSE
- Next Steps…

Comments on information presented are mine, based on early work with CETA. These ideas will evolve as we engage with others, rules are clarified, and policies are implemented; i.e., actual results may vary.
Puget Sound Energy

- Service area: 6,000 square miles
- Service area population: approximately 4 million
- More than 1.1 million electric customers
- Nearly 900,000 natural gas customers
- PSE-owned generating capacity: 3,597 MW
  - 3 wind facilities
  - 2 hydroelectric facilities
  - 9 gas fired power plants
  - 1 coal plant
  - 1 diesel
- Planning Peak: ~6,000 MW (including reserves)
- Annual Sales: ~2,800 aMW

Data as of September 2019
Clean Energy Transformation Act

Major Provisions
Dec 31, 2025: Eliminate coal-fired resources from electric power supply

Jan 1 2030: Carbon neutral energy supply
- 80% non-emitting and renewable resources
- 20% can be met with alternative compliance
- Cost containment guard rail: 2% per year compounding
- Waiver as necessary to maintain reliability

Jan 1, 2045: 100% Non-emitting electricity supply goal
- Cost containment and reliability requirements still in effect

Implementation

- Resource planning
- Resource acquisition
- Compliance

Key Policies

- Regulatory reform
- Planning and implementation rules
- Market Integration
- Equity and low-income customer considerations
CETA—One Layer Deeper

Existing Hydro is renewable!
• New hydro that creates new impoundments does not count
• Pumped hydro storage?

4 Year Compliance Windows Starting 2030
• Mitigates some hydro/variability risk
• Questions on “bundledness”

Incorporating Equity and Ensuring All Customers Benefit
★ Executable policy: WUTC approval of targets for balanced portfolio is an immensely important policy change
• How to incorporate quantitative and qualitative considerations: great new challenge
PSE’s Estimated Renewable Need by 2030 for 80%: 1,400 aMW

- After significant increase in conservation
- At 30 – 35% capacity factor wind that’s >4,000 MW of wind
- …plus transmission to load…

Plus Resource Adequacy

- Region at 26% LOLP by 2026
- PSE relies on ~1500 MW of short-term market at peak
Balancing renewable generation in a CETA compliant portfolio in 2030 will require market or technology solutions.
The market price forecast is not the same as cost to customers (portfolio cost). The power price forecast is an input for the portfolio model.
Increasing intermittent supply of renewable generation increases price variability

Within the year variability under normal weather, not a stochastic risk analysis.
Significant rulemaking will shape available pathways for utilities to meet CETA goals.

Rulemaking Agencies: UTC  Commerce  Health  Ecology  L&I  EFSEC

- Energy transformation projects rulemaking
- Clean energy implementation plan rulemaking
- Equity/social justice (multiple rulemakings)
- Market integration work group + rulemaking
- Cumulative impact analysis work group

2019:
- Used and useful policy statement
- IRP rulemaking
- Natural Gas IRP & conservation rulemaking
- Energy transformation projects rulemaking

2020:
- EIA rulemaking
- Transmission corridors work group

2021:
- Resource acquisition rulemaking
- Cumulative impact analysis work group

2022:
- EIA rulemaking
- Market integration work group + rulemaking
- Cumulative impact analysis rulemaking
Conclusions

• Looking back, electrification was one of the most transformational societal developments of the 20th Century.
• Making that system sustainable, in a reliable, safe, and affordable way will have similar transformational impacts when future generations look back at the 21st Century.
• It won’t be easy, but neither was electrification for those that came before us. This will be an exciting and fulfilling adventure!