

Achieving Carbon Neutral Light Rail Operations
APTA Sustainability Workshop 2018
Vancouver, BC

ST SOUND TRANSIT







A map of the United States with numerous blue circles of varying sizes scattered across the landmass, representing the locations of hydropower production. The circles are most densely packed in the western United States, particularly in the Pacific Northwest and California, and also in the eastern United States. The background is a solid light blue color.

Top Hydropower Producers

Washington—27%

California—13%

Oregon—11%

New York—6%

Alabama—4%

EIA 2017



Regional Express Service Central Puget Sound

47M rides in 2017

- Link light rail
- Sounder Commuter train
- ST Express buses
- 54 Cities
- 3 Counties
- 55+ facilities

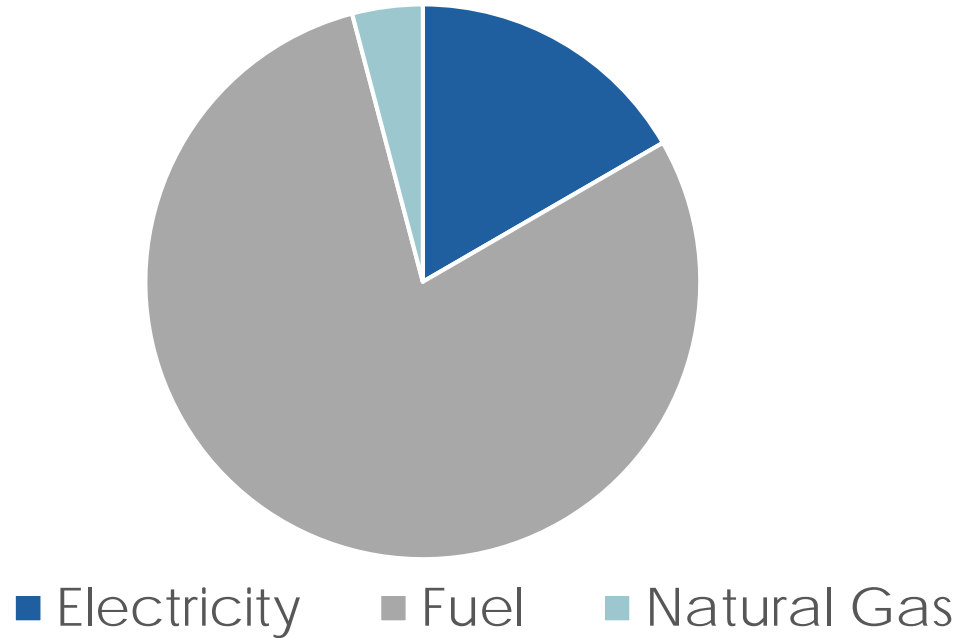
Energy background

- WA
- 4 Energy Utilities
- Kwh Consumption
- Cost
- Agency Charter
- Utility agreements

Regulated energy market
1 private, 3 PUDs
53M kwh annually
\$4.5M annually
NO RECs or offsets
TBD

GHG Emissions

2017 ST sources of GHG Emissions



GHG Reduction Goals

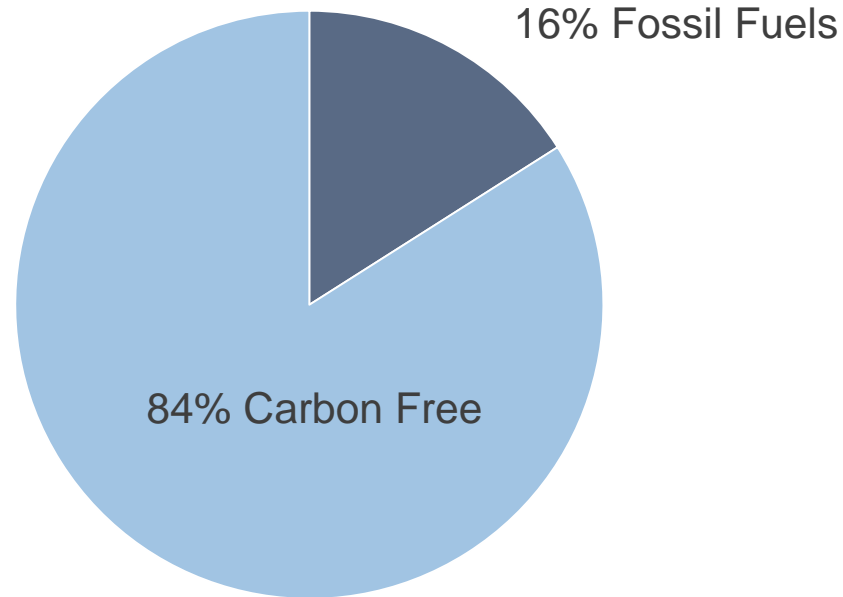
2011/15 Sustainability Plans Carbon neutral electricity by 2030

2016 ST3 Plan Affirmed agency GHG reduction commitments

Regional Context

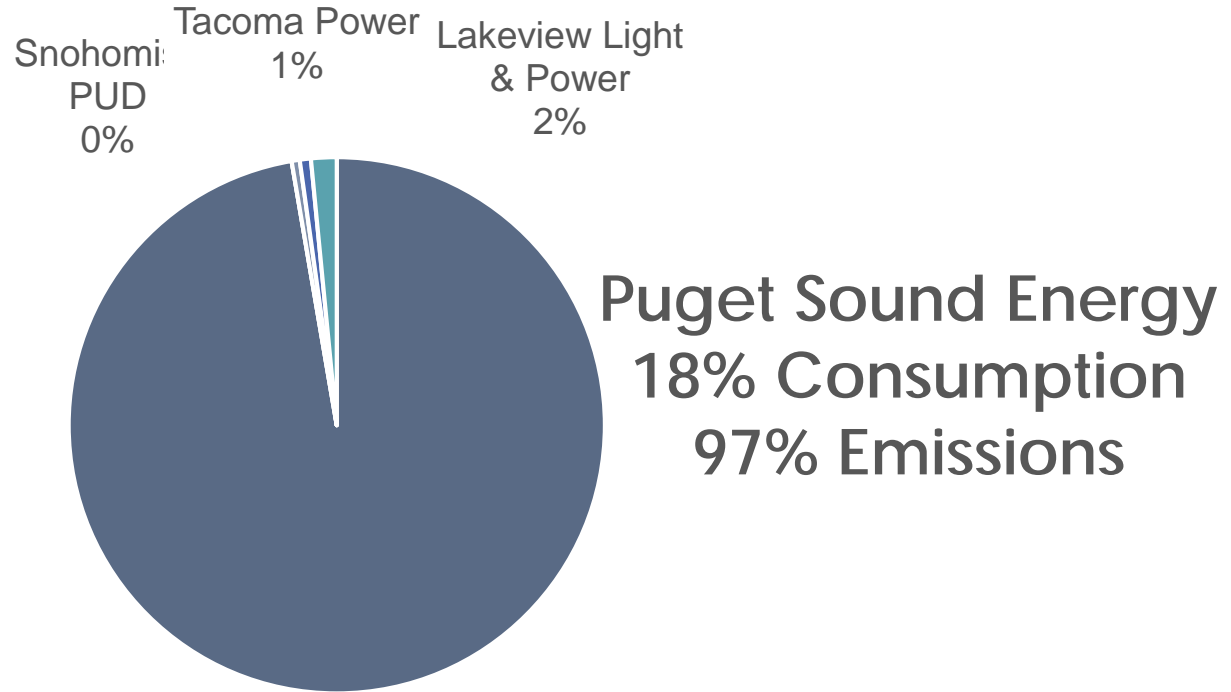
- City of Seattle – Gov't & community carbon neutral by 2050
- King County – county operations carbon neutral by 2025
- WA State – 1990 levels by 2020; 20% below 1990 by 2035

Energy Sources for Electricity



Energy Sources of ST Electricity

Electricity GHG Emissions by Utility



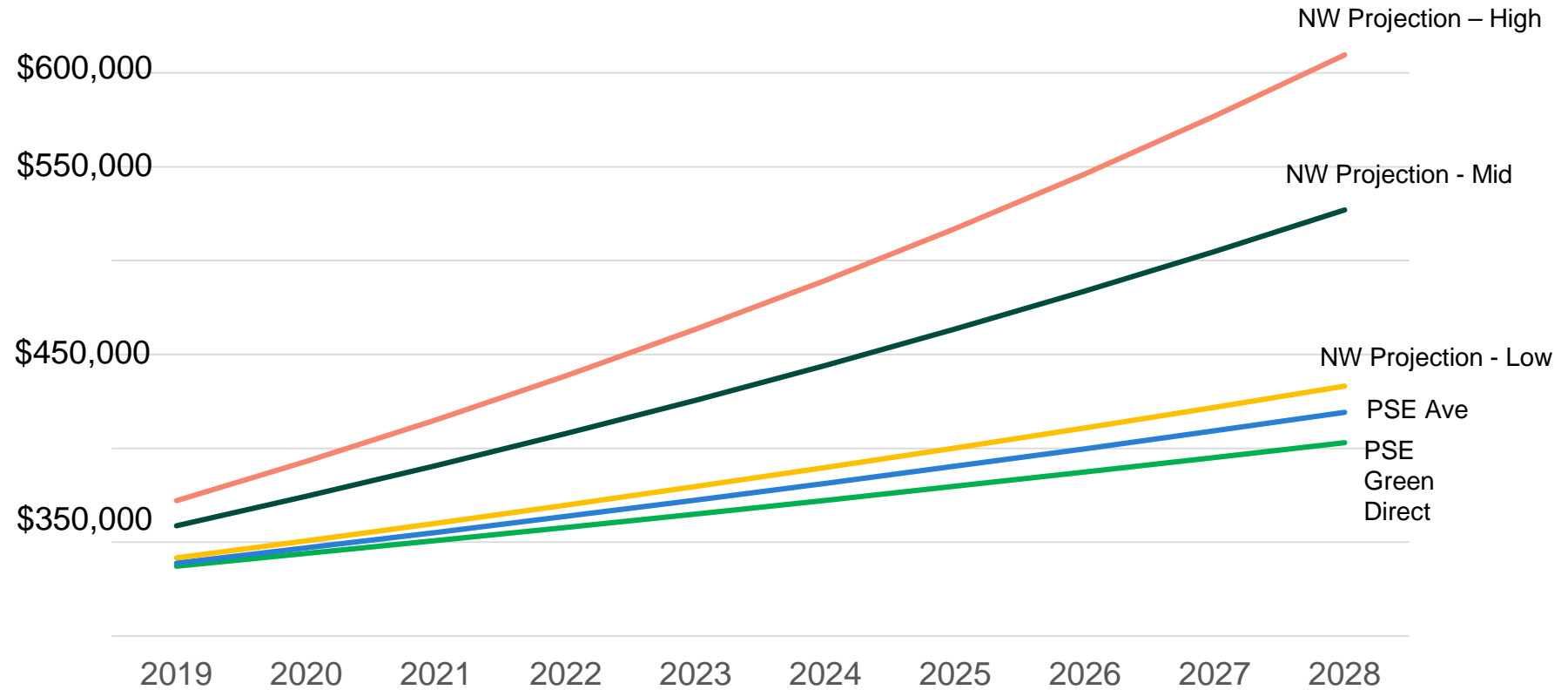
Solution?

- Become our own utility district?
- Purchase directly from BPA?
- Onsite solar generation?
- Negotiate new products with PSE?



- A 2017 Puget Sound Energy sponsored Power Purchase Agreement (PPA)
- Approved by WA Utilities and Transportation Commission
- Interest = project scoped
- Local wind energy by 2019
- Long-term contracts 10/15/20 years
- Fixed rate increase – 2%
- Only enroll existing accounts

Cost Power Purchase Agreement



Benefits

Enrolled 6 accounts – 10M kwh

- Reduce 68% of agency GHGs from electricity
- No energy security or O&M impact
- No capital cost
- “Immediate” online by 2019
- Not part of RPS – truly “additional”



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Green Direct

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Carbon Free light rail

Context Terminology



Context Terminology

	PSE PPA	City Light
Renewable	✓	✗
Carbon Neutral	✗	✓



Feasibility Pathways to zero carbon



Electricity
Conservation

Onsite
Renewables

Utility
Agreements

Update – Green Direct Phase 2

- 2018 Offering
- Solar project – online by 2021
- Phase 1 discount
- 5% below commercial rates
- Enroll 100% of remaining PSE accounts
- Reduce electricity GHG emissions by 97%
- Renewed attention on reducing fleet GHG emissions



