



Joint Study Session on Carbon Reduction

City of Tacoma | Tacoma Power

City Council Meeting/Committee Name

September 18, 2018

ITEM #



Agenda

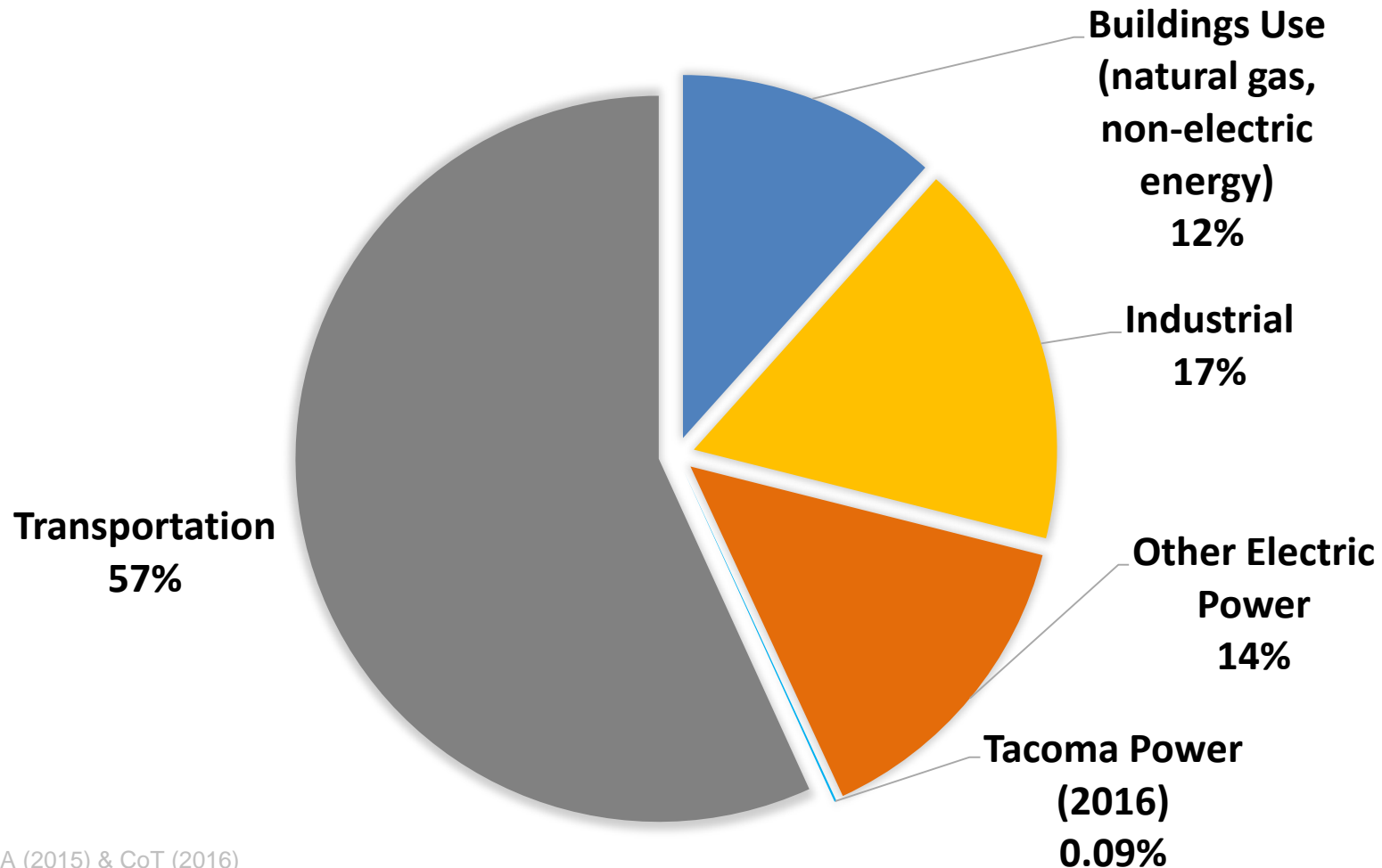
1. Legal Briefing on Voter Initiatives | Bill Fosbre
2. Background
3. Electric Sector Can Be Part of the Solution
4. Recent Legislative Proposals
5. Summary and Discussion

Section 2 | Background

**TACOMA'S ELECTRICITY IS VERY CLEAN -
MOST EMISSIONS COME FROM
TRANSPORTATION AND NON-ELECTRIC
ENERGY USE IN BUILDINGS**

Most WA GHG Emissions are from Transportation & Building Use

WASHINGTON STATE CO₂ EMISSION COMPOSITION 2015

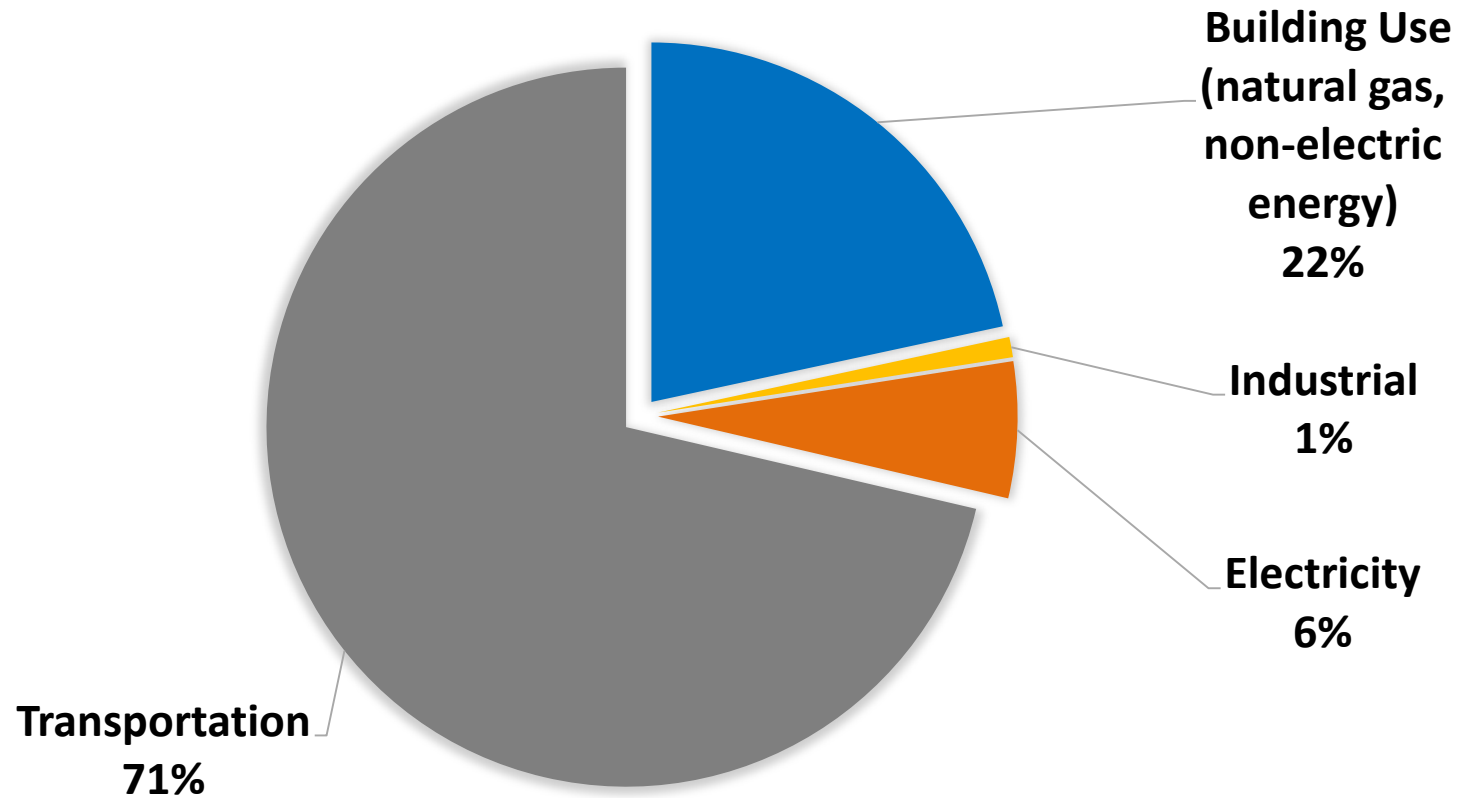


The transportation sector has the largest share of CO₂ emissions in Washington State

Transportation is Tacoma's Largest Source of GHG Emissions



CITY OF TACOMA COMMUNITY GHG EMISSIONS COMPOSITION 2016

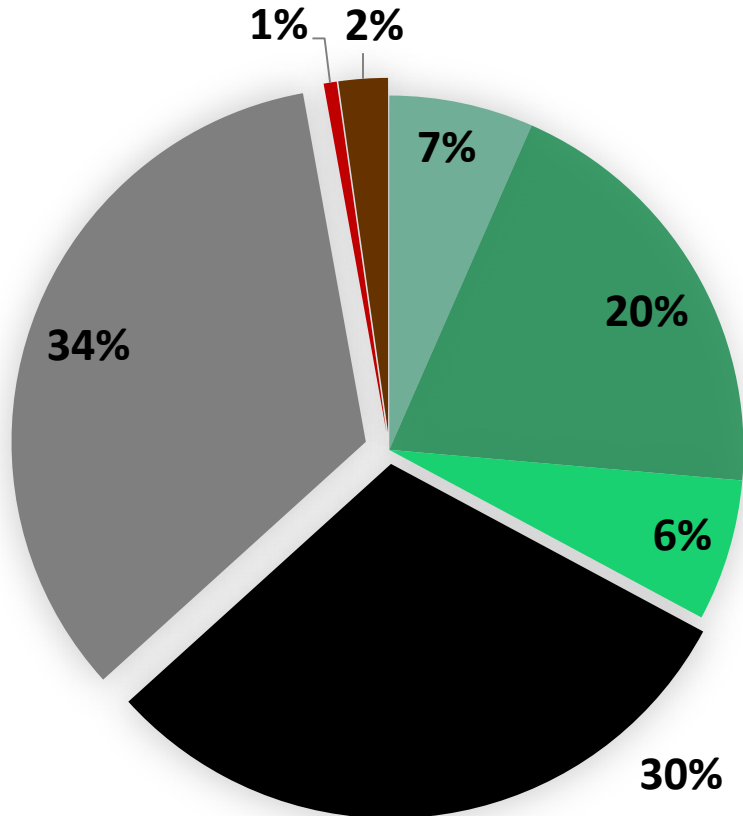


Only 6% of Tacoma's GHG emissions are from electricity*, and this number fluctuates by year due to water conditions

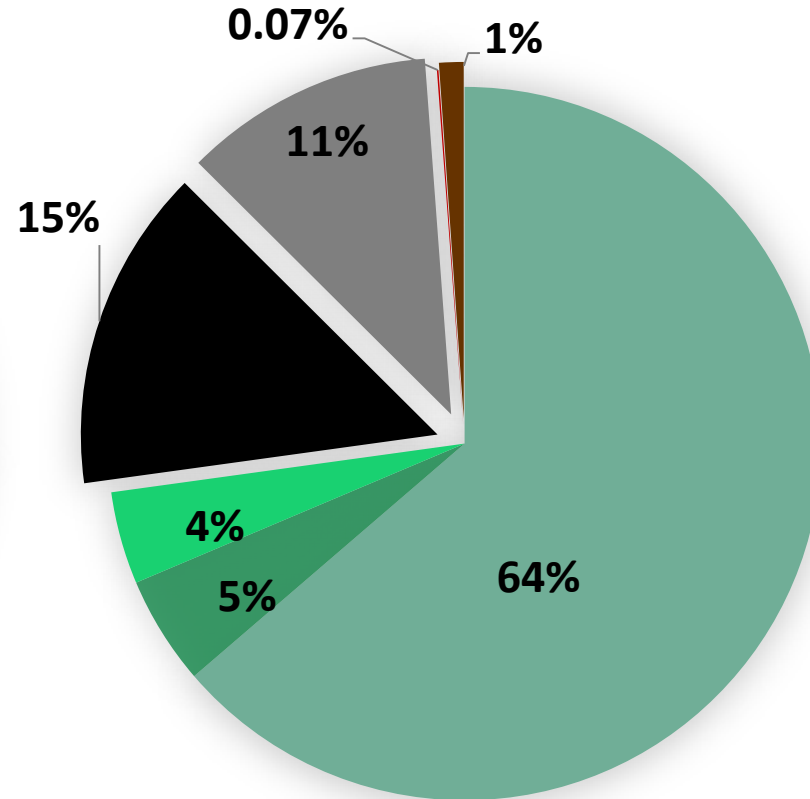
*Based on 2017 California Air Resources Board emissions factor for sale of Tacoma Power electricity

Electricity in Tacoma is 97% Carbon Free

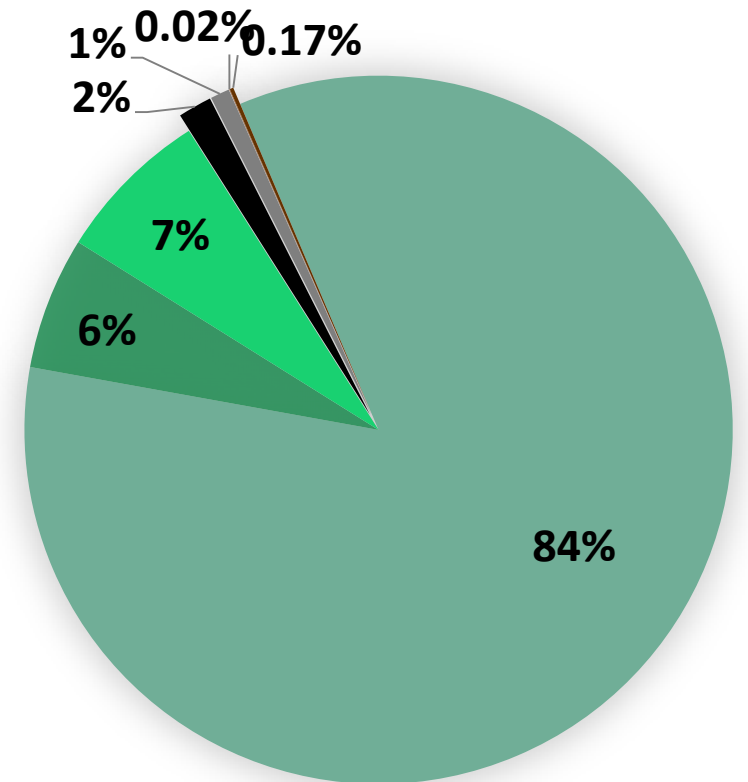
US: 33% Carbon Free



Washington State: 79% Carbon Free



Tacoma Power: 97% Carbon Free



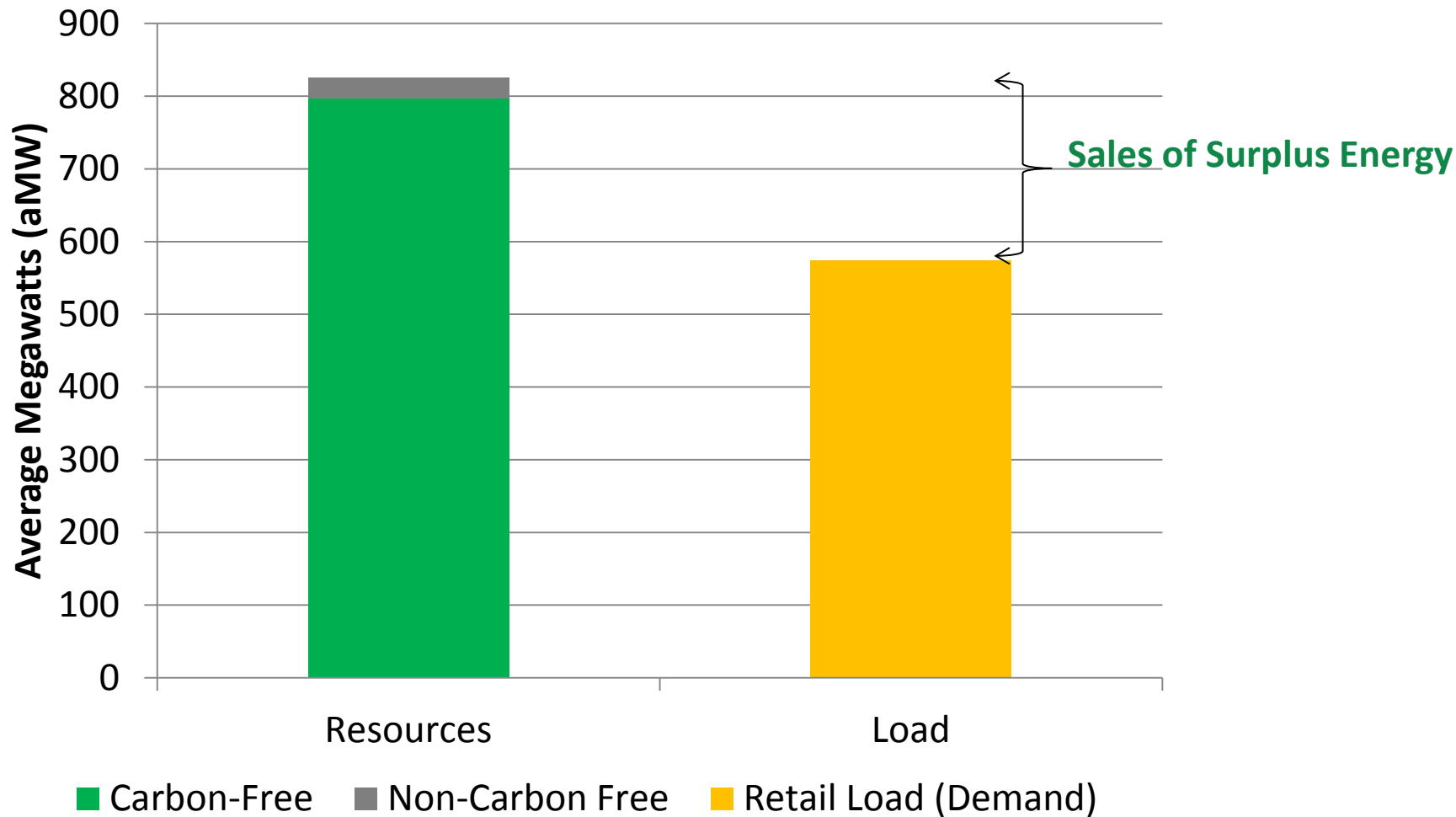
Carbon Free :

Carbon Emitting:

Hydro Nuclear Wind+Solar

Coal Natural Gas Petroleum Other

Tacoma Power is an Exporter of Carbon Free Electricity



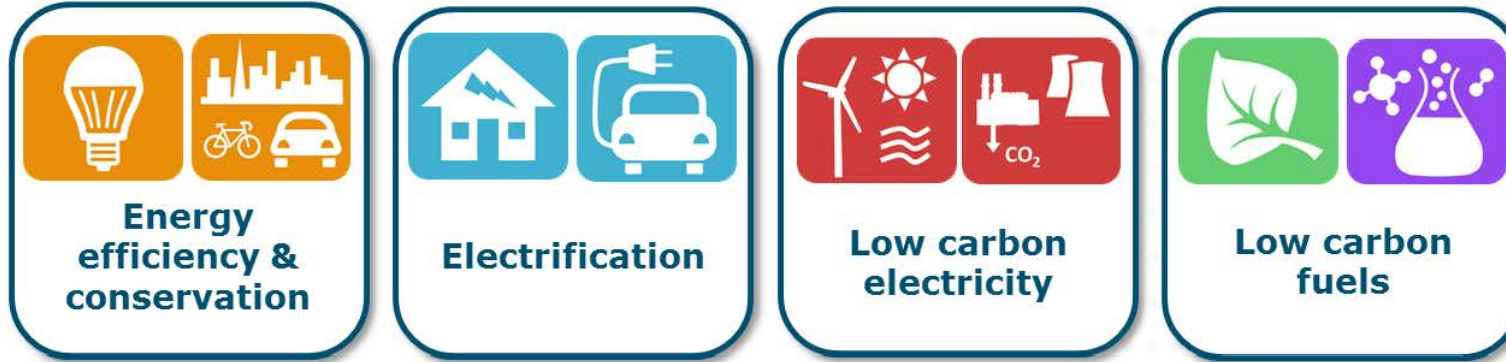
Tacoma Power sells surplus hydro power that displaces carbon-emitting generation in the region

Surplus sales could also be used to grow retail demand for electrification of transportation

Section 2

THE ELECTRIC SECTOR CAN BE PART OF THE SOLUTION

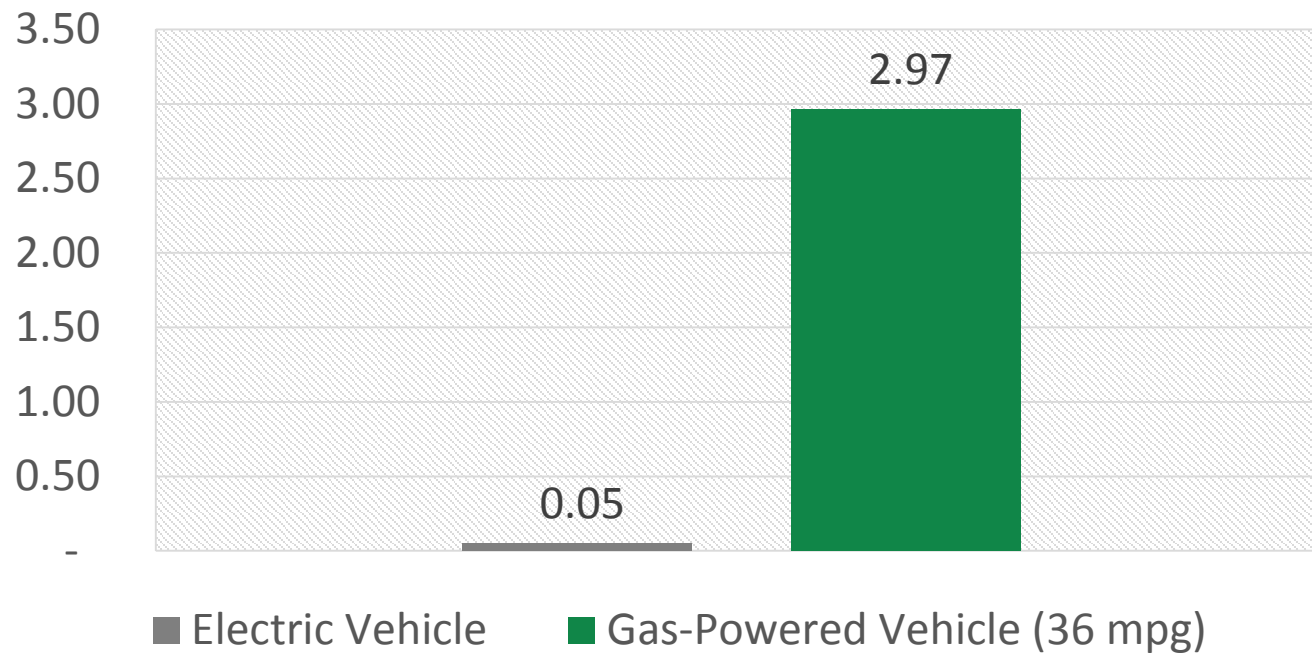
Deep Decarbonization



- + **Four foundational elements are consistently identified in studies of strategies to meet deep decarbonization goals**
- + **Across most decarbonization studies, electric sector plays a central role in meeting goals**
 - Through direct carbon reductions
 - Through electrification of loads to reduce emissions in other sectors

●●● EV Adoption Drastically Reduces GHG

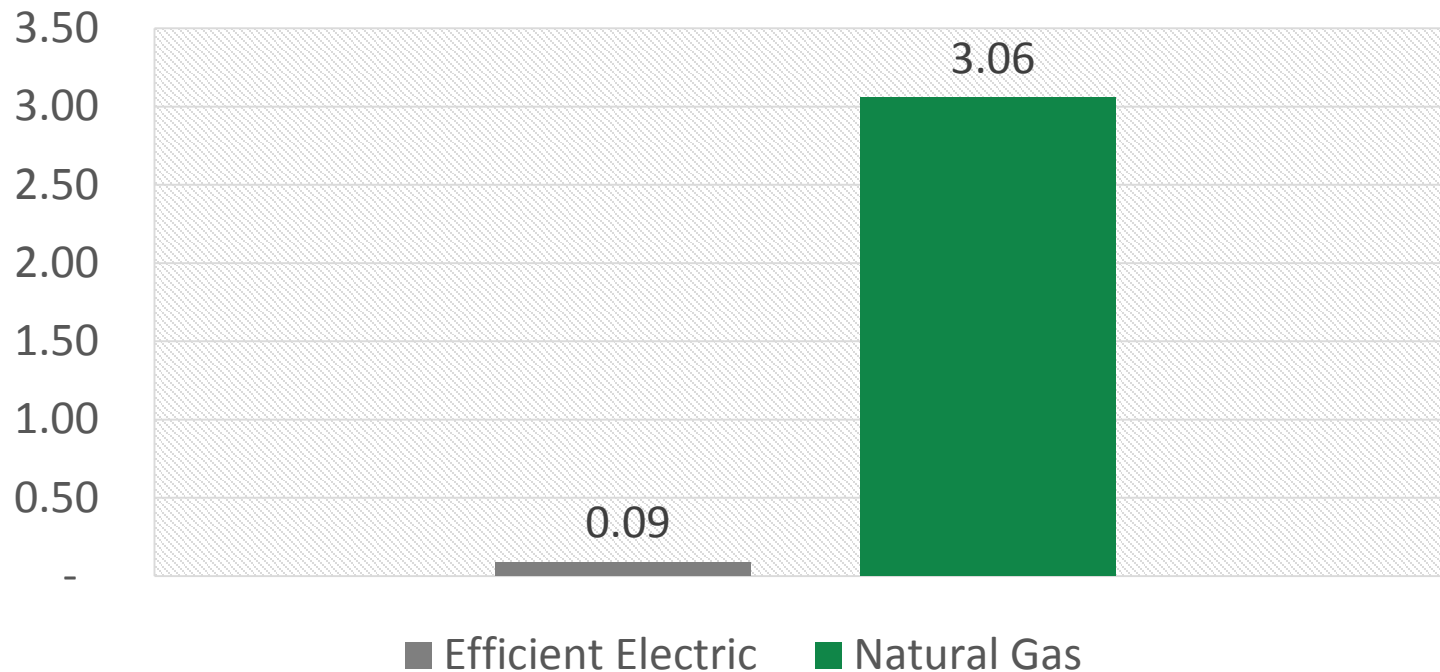
Emissions Across Vehicle Choice
(Metric Tons of CO₂ per year)



The carbon emissions from an EV in Tacoma is far lower than a gas-powered vehicle

● ● ● Electric Heat has Significantly Less GHG Emissions

Emissions Across Space & Water Heating Fuel Choice
(Metric Tons of CO2 per Year)



The carbon emissions from an efficient electric home in Tacoma is far lower than a home heated by natural gas

Section 3

RECENT LEGISLATIVE PROPOSALS

SSB 6203 – CARBON TAX BILL

2SSB 6203 – Carbon Tax Bill

Summary:



- Proposed escalating carbon tax by 2019 on most fossil fuel emissions, from all sectors of the economy (transportation, building use, and electricity)
- \$12/metric ton, increases every year by \$1.80 until reaching \$30/metric ton
- Allowed utilities to retain 100% of carbon fees for local carbon reduction activities, such as electrification of transportation
- Carbon tax collected would be deposited in the Carbon Pollution Reduction Account
- A seven-member Joint Committee would oversee ongoing review of the implementation of the carbon tax and funding from the revenues. Members include the Governor, Commissioner of Public Lands, State Auditor, two members of the Senate and two members of the House of Representatives
- Tacoma Power staff analysis concluded the tax would result in a net benefit to ratepayers through increased wholesale revenues for the utility and decreased BPA power costs.

100% CLEAN ELECTRICITY POLICY FRAMEWORK (VARIOUS BILLS)

“100% Clean” Definition



Reliability and cost impacts differ dramatically across definitions

| “100% Clean” Definition (Absolute Zero)  | Carbon-Free Definition (Net Zero)  |
|---|---|
| <p>Absolutely zero carbon content energy must be used to serve demand in Washington <u>in every hour</u></p> <p>Tacoma Power would be subject to penalties</p> | <p>Renewable or zero-carbon generation credit \geq demand <u>as measured over a year</u></p> <p>No compliance cost (Tacoma Power already exceeds this standard)</p> |

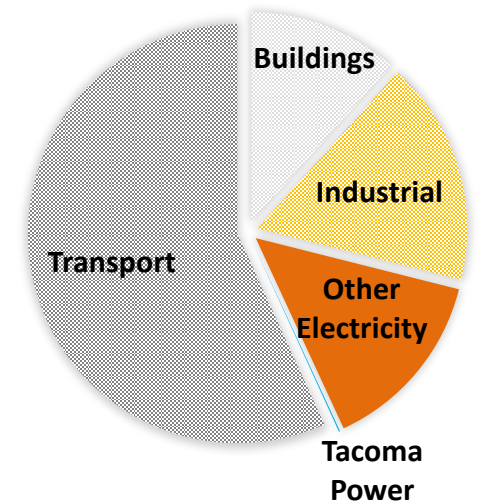
“Net Zero” definition solves most of our concerns with “100% Clean”

100% Clean Electricity Policy:

Summary*:

- **Addresses carbon only in electricity sector, not transportation or building use**
- Eliminates electricity from fossil fuels delivered to customers by setting reduction targets for number of megawatt-hours from fossil fuels
- Enforced through financial penalties on utilities
- Establishes a public utility tax credit (subject to caps) for investments in new renewable energy projects
- Oversight and distribution of penalty monies unclear

WASHINGTON STATE CO₂ EMISSIONS



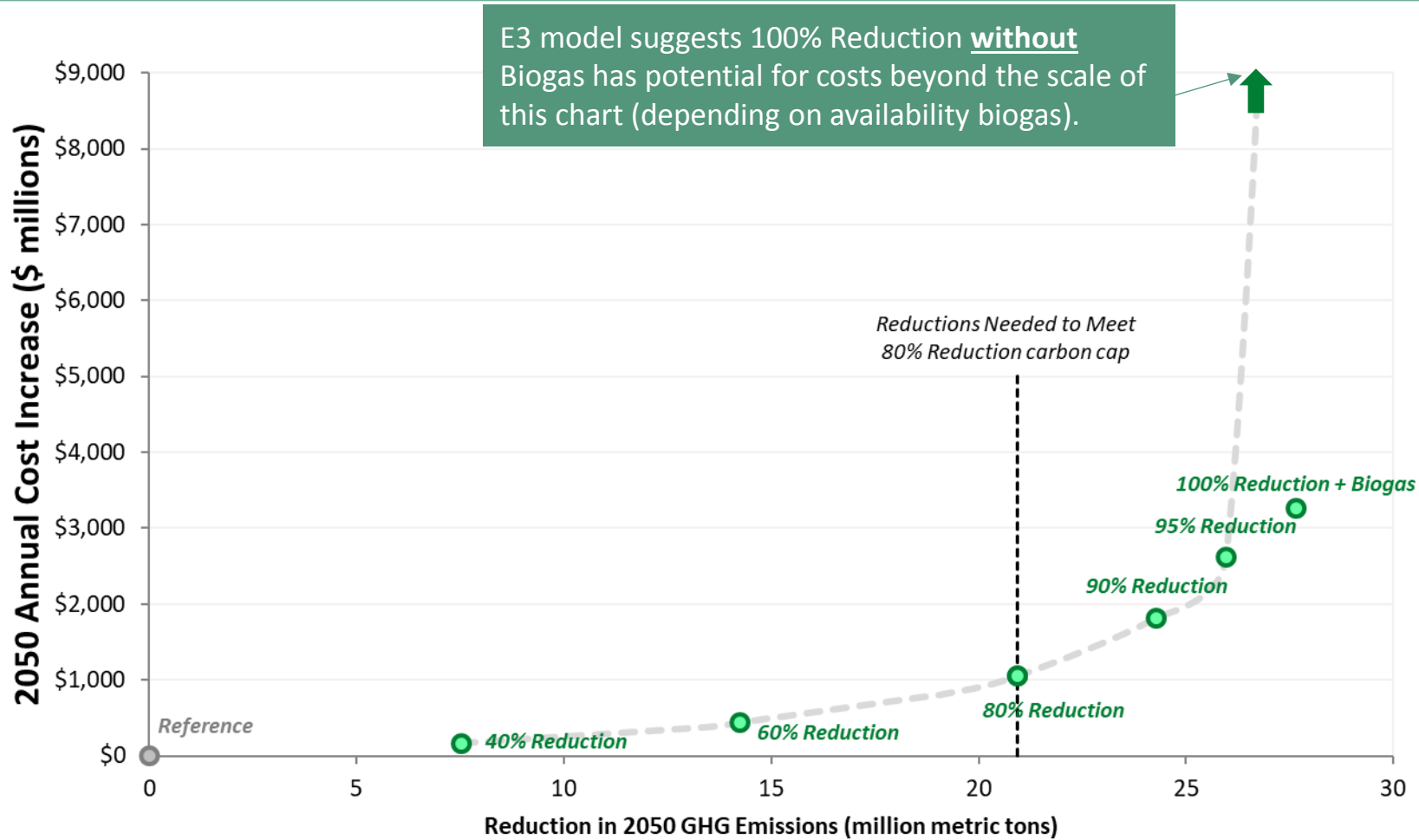
**Summary based on SHB 2995 as passed by House Finance committee during 2018 Legislative Session*

100% Clean Electricity Impacts – “Absolute Zero” Definition



- Tacoma Power would pay penalties between \$1 and \$9 million per year, despite being an exporter of carbon-free electricity
- Bonneville Power Administration (BPA) controls its sales and purchases but Tacoma Power would be subject to penalties based on their actions
- Tacoma Power has to buy and sell energy in the market to ensure reliability and keep rates down; “non-specified” sources subject to penalties
- Penalties cannot be retained by the utility to make clean energy investments
- Unclear if grid operators can keep the lights on without gas generation

E3 2018 Evaluated Pacific NW Carbon Scenarios



E3 model suggests 100% Reduction without Biogas has potential for costs beyond the scale of this chart (depending on availability biogas).

Note: Reference Case reflects current industry trends and state policies, including Oregon's 50% RPS goal for IOUs and Washington's 15% RPS for large utilities

Section 4

SUMMARY & DISCUSSION

Carbon Bill Summary

2SSB 6203:

- Economy-Wide Carbon Reductions
- Potential to Decrease Electricity Costs to Tacoma Power Customers
- Improves Economics for Reducing Carbon in the Transportation and Building Sectors
- Utility Retains Tax Revenue for Local Projects
- Provides Direct Mechanism (retained revenue) for Tacoma Power to Invest in Transportation Electrification

100% Clean Framework (SHB 2995) *:

Electricity Sector Only

- Potential to Increase Electricity Costs to Tacoma Power Customers
- Does Not Directly Improve Economics for Reducing Carbon in Transportation and Building Sectors
- Does Not Allow Utility to Retain Penalties for Local Projects
- Does Not Provide a Direct Mechanism for Tacoma Power to Invest in Transportation Electrification
- Raises Electric Grid Reliability Concerns

Next Steps

Stakeholder Engagement on 100% Clean Potential Legislation

- Governor's office, NW Energy Coalition, WA Environmental Council, Sierra Club, Renewables NW, Climate Solutions, Rep. Gail Tarleton, Rep. Joe Fitzgibbon, Rep. Richard DeBolt
- Continue working with other utilities
- TPU staff recommend participating in the Governor's process, consistent with Public Utility Board and City Council policy direction, to find a single path forward for the 2019 legislative session

INITIATIVE 1631 – POLLUTION FEE

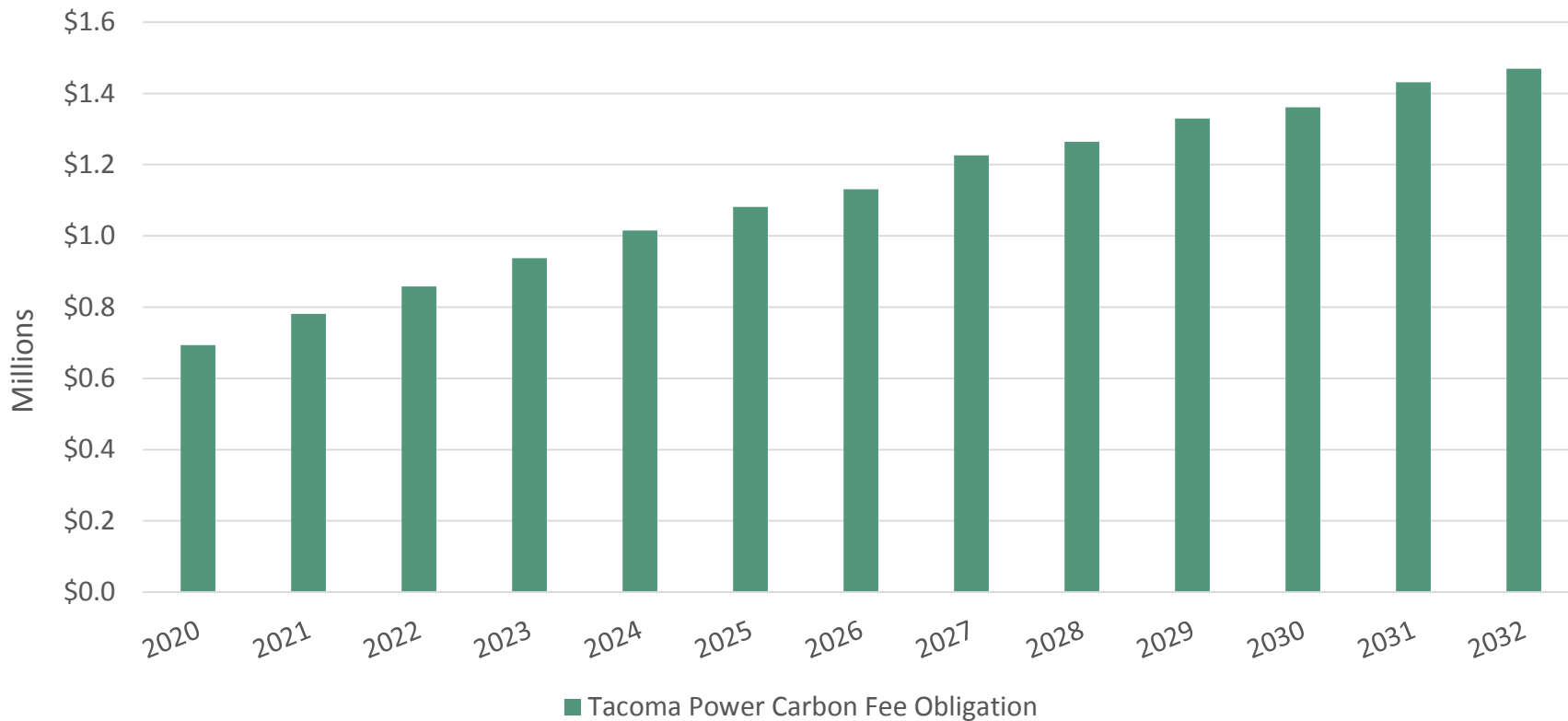
Initiative-1631

Ballot Title: This measure would charge pollution fees on sources of green house gas pollutants and use the revenue to reduce pollution, promote clean energy, and address climate impacts, under oversight of a public board.

- Imposes escalating pollution fee by 2020 on most fossil fuel emissions, from all sectors of the economy (transportation, building use, and electricity)
- \$15/metric ton, increases every year by \$2 plus inflation
- The fee increases by \$2 per metric ton each year until the State's 2035 greenhouse gas reduction goal is met and on track to meet the 2050
- Allows utilities to retain 100% of carbon fees for local carbon reduction activities, such as electrification of transportation
- Pollution fees collected would be deposited in the Clean Up Pollution Fund
- Governor appointed 15- member public oversight board

Estimated Carbon Fees

Tacoma Power I-1631 Estimated Fee Obligation (\$2018)



If Tacoma Power's Clean Energy Investment Plan is approved, 100% of this obligation can be retained and used for carbon reduction programs

Initiative-1631

100% utility retained pollution fees:

- Utilities may retain up to 100% of pollution fee obligation for use on local carbon reduction projects
- Funds can only be retained with a Clean Energy Investment Plan approved by the Department of Commerce for consumer-owned utilities and the Washington Utilities and Transportation Commission for investor-owned utilities
- Details subject to state rulemaking process



Eligible utility investment examples include:

- “Programs, activities, or projects that reduce transportation-related carbon emissions...”
- “Programs, activities, or projects, including self-directed investments, that increase energy efficiency in new and existing buildings...”
- “Programs, activities, or projects, including investments, that increase energy efficiency or reduce carbon emissions of industrial facilities...”
- “Programs, activities, or projects that deploy eligible renewable resources, such as wind and solar power...”
- “Programs, activities, or projects that deploy distributed generation, energy storage, demand response technologies, and other grid modernization projects...”

QUESTIONS?