

Sustainable Energy Management Program

Customer Review Panel

June 13th, 2022



Today's Presentation

Objective:

- Provide background and update on the Sustainable Energy Management Program to the Customer Review Panel

CRP Asks:

- Any **questions or concerns** about Program or current progress?
- How might the CRP **support** this work?

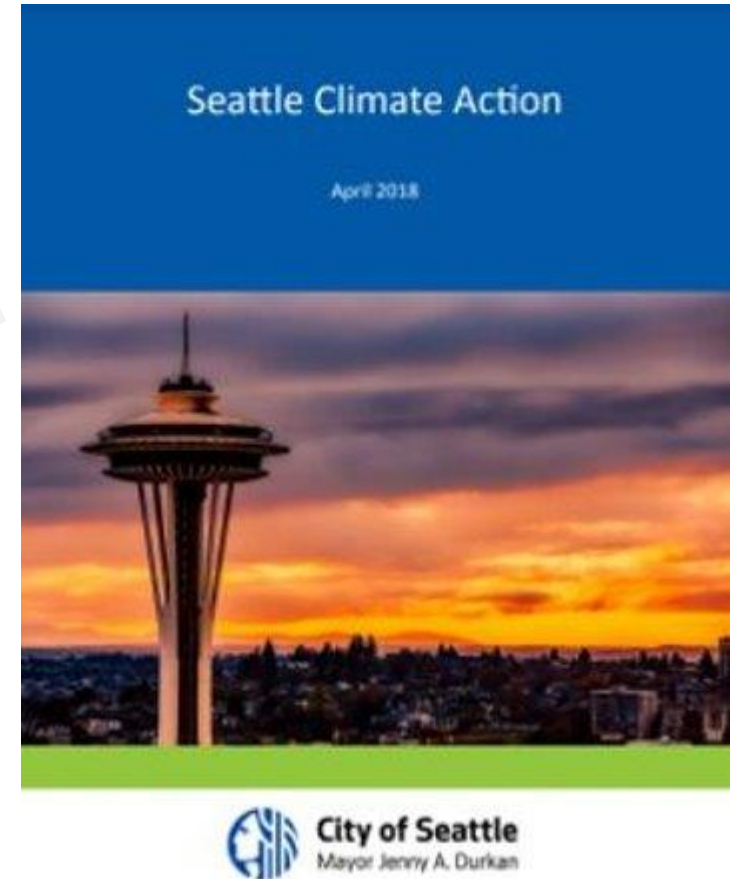
Background

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Seattle Energy and GHG Emissions Goals and Mandates

- **Building Benchmark and Tune-up Ordinances (2016)**
- **Green Fleets Executive Orders (2018)**
 - Fossil fuel free fleet by 2030
 - 10% reduction in City vehicle fleet
 - EV charging infrastructure investment
- **Seattle Climate Action Plan and Update (2013, 2018)**
 - 2050: Net carbon neutrality (*mid-term milestone of 58% reduction by 2030*)
- **Green New Deal for Seattle (2020)**
 - 2030: Citywide fossil fuel free
 - 2035: Municipal building electrification
- **Driving Accelerated Climate Action (Nov 2, 2021)**
 - Net-zero carbon buildings by 2050 (39% emissions reduction from 2008 by 2030)
 - Net-zero carbon transportation by 2050 (82% emissions reduction from 2008 by 2030)
 - Clean energy workforce committee



SPU's Sustainable Energy Management Program

Manage utility-wide energy use and associated greenhouse gas (GHG) emissions throughout operations, contracting, construction projects and service delivery, aiming for carbon neutrality by 2030.

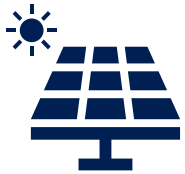
SPU Goals



Carbon Neutrality by 2030



An Energy Efficient & Energy Aware Utility



Generating Renewable Energy

By achieving these goals, SPU will be taking a strong stance on environmental stewardship and climate leadership while managing the costs of our operations, therefore contributing to ratepayer affordability and effective management of our assets

Strategic Business Plan

Stewarding Environment and Health

SPU has the opportunity to take a strong stance on **environmental stewardship and climate leadership** by addressing greenhouse gas emissions associated with our operations and supply chain

Strengthening our Utility's Business Practices

SPU can better **manage the costs** of our operations, therefore contributing to ratepayer affordability and effective management of our assets



Deliverables



1. GHG Inventory

Annual inventory to identify trends in GHG emissions, including all scope 1 and 2 emissions



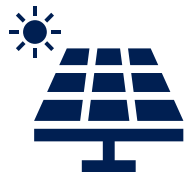
2. Supply Chain Inventory

One year analysis of GHG emissions associated with purchasing and contracting through SPU's supply chain



3. Energy Efficiency Program

Identify and prioritize opportunities for energy efficiency (EE) and conservation-based energy savings in all SPU buildings, assets and systems



4. Renewable Energy Assessments

Identify and prioritize opportunities for renewable energy generation on SPU property and buildings

SPU GHG Emissions Inventory Update



Carbon Neutrality by 2030

SPU GHG Emissions Categories

1



Fleet and Equipment Fuel*



Building & Facility Electricity



Natural Gas

2



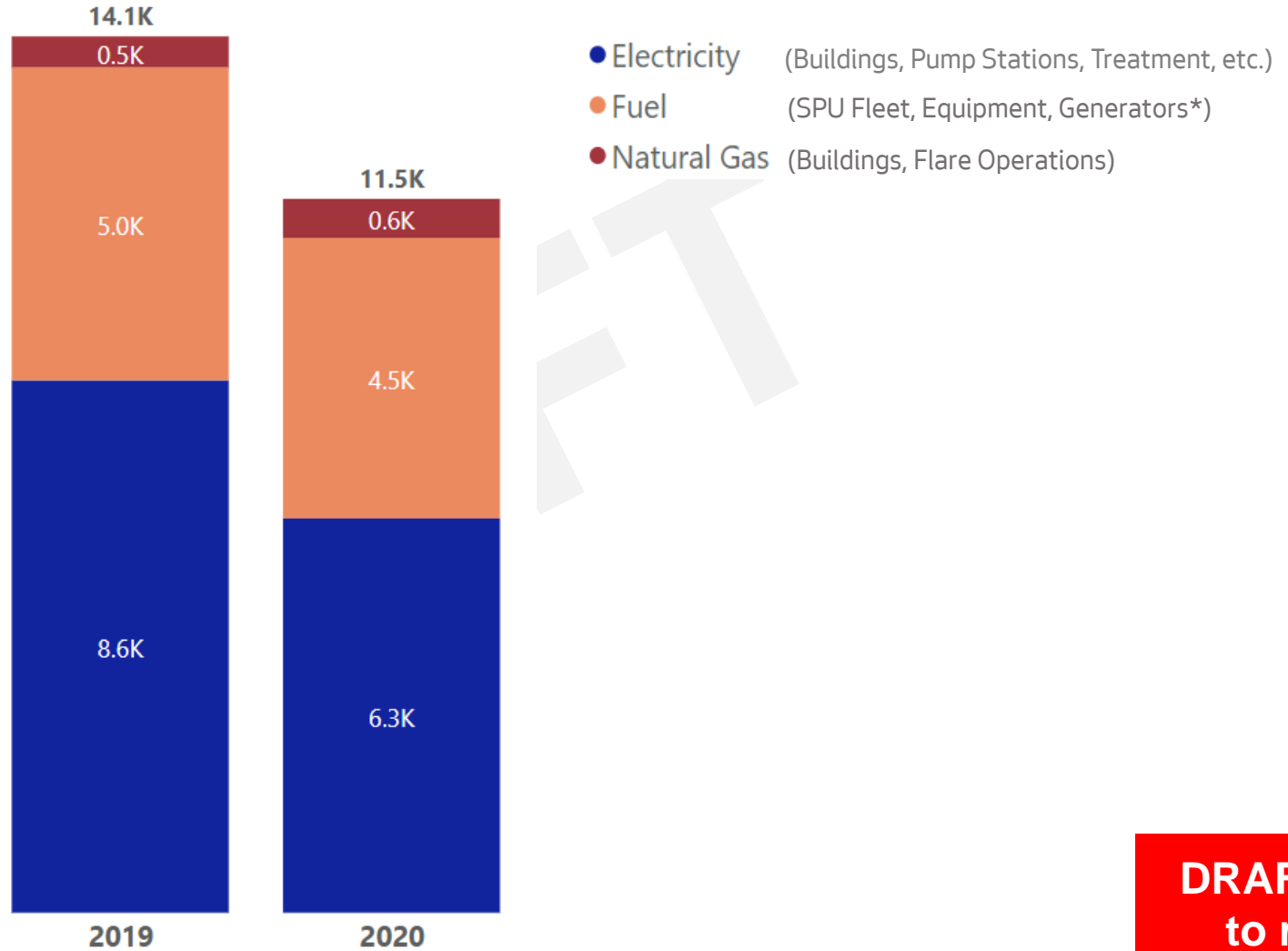
Methane Emissions from
Historic Landfills



Other
(Fugitive Gases, Business Travel, ...)

**Solid Waste Contracted Vehicles are not currently included in the Fuel emissions assessment*

SPU Emissions: Electricity, Fuel, Natural Gas



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Metric tons carbon dioxide equivalent (CO₂e)

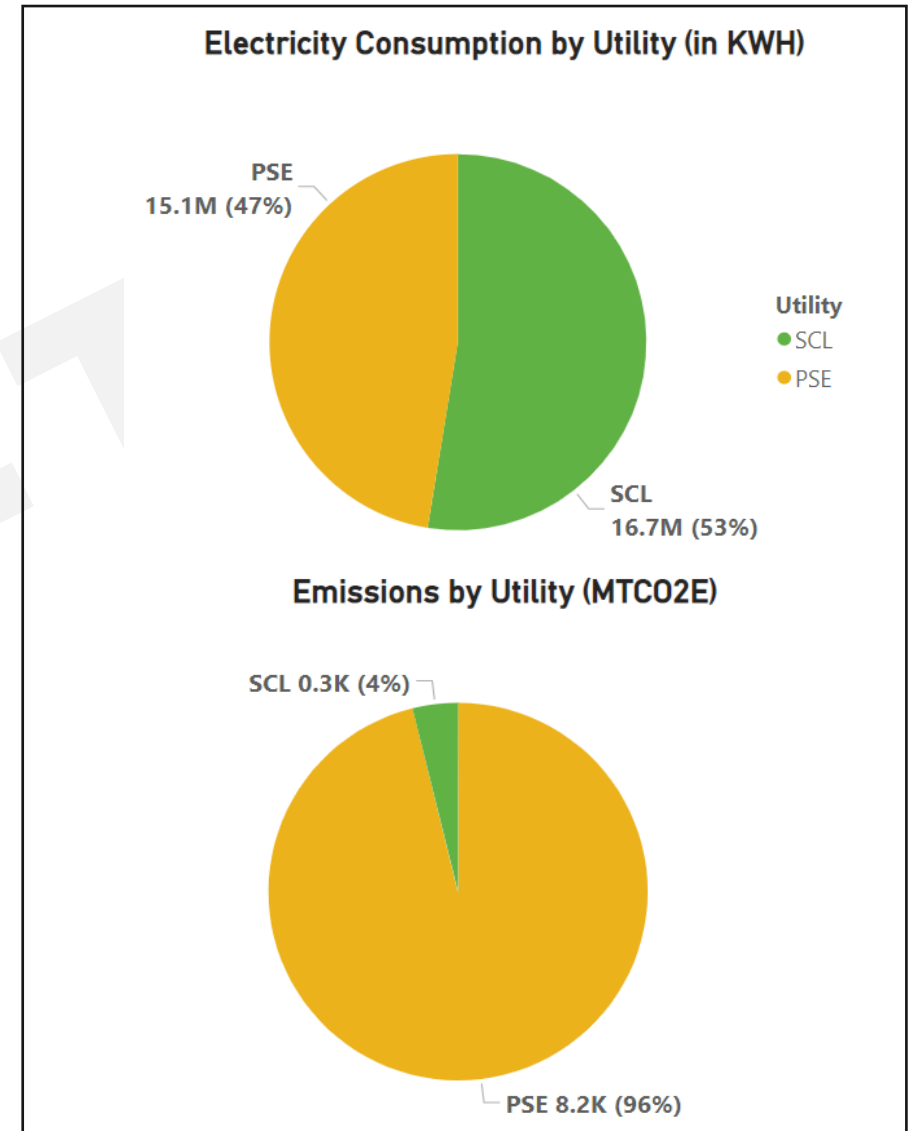
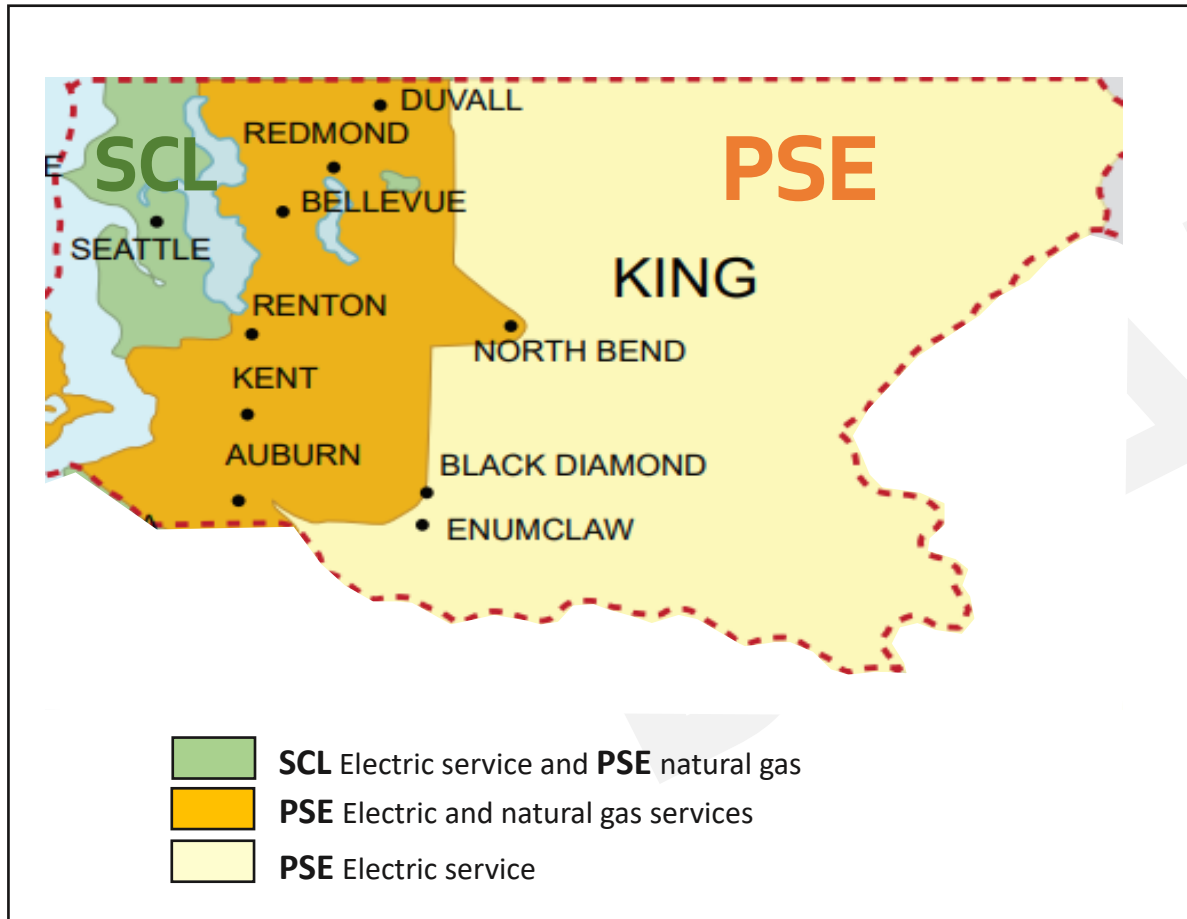
*Solid Waste Contracted Vehicles are not currently included in the Fuel emissions assessment

Notes:

1. The PSE Electricity Emissions Factor fell between 2019 and 2020, which accounts for the majority of the emissions reductions from electricity between the two years

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PSE vs. SCL



Highest Emissions Sites (Electricity & Natural Gas)

Metric tons carbon dioxide equivalent (CO₂e)

PSE electric

Cedar Water Treatment Plant



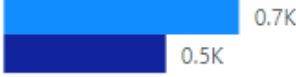
PSE electric

Tolt Water Treatment Plant



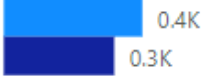
PSE electric

Lake Youngs Pump Station



PSE electric

Landsburg



PSE electric

Water Pump Station - Lake Hills



PSE gas, SCL

Operations Control Center



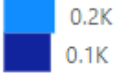
PSE

Cedar Control Works / Fairwood Pump Station



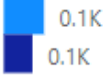
PSE gas

Water Quality Lab



PSE electric

Lake Youngs Satellite Buildings



PSE electric

Water Pump Station - Eastgate



Year

● 2019

● 2020

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Metric tons carbon dioxide equivalent (CO₂e)

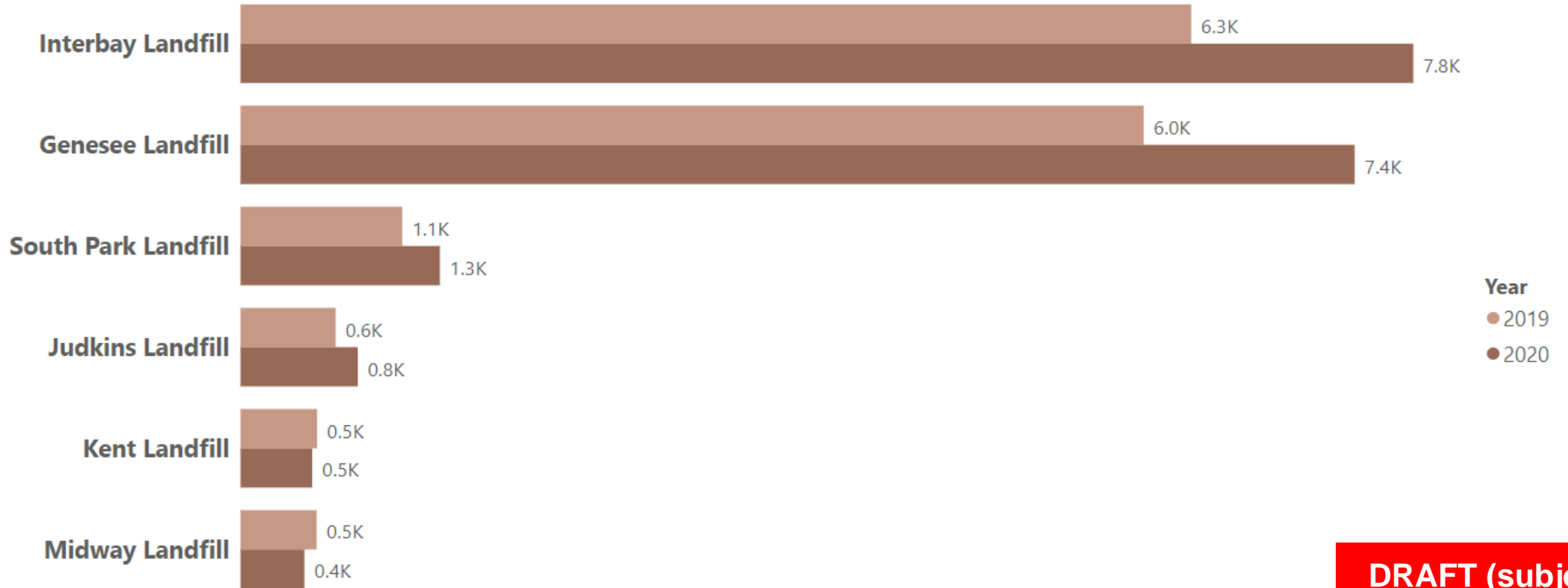
Notes:

1. While water treatment plants are on PSE accounts, a significant fraction of the electrons that feed the plants come from SCL hydropower. Further consideration is required for how this could be reflected.
2. Regional water use varies from year to year based on weather, and electricity usage is in some cases directly proportional to these flows. Water usage by SPU customers in 2020 was lower than in 2019.
3. The PSE Electricity Emissions Factor fell between 2019 and 2020, which explains some of the significant emissions reductions at larger electricity users where electricity usage did not fall as much.

DRAFT (subject to revision)



Methane Emissions from Historic Landfills



Metric tons carbon dioxide equivalent (CO₂e), from SPU reporting

DRAFT (subject to revision)



Initial Observations

In order to get to carbon neutral by 2030:

- **Electricity:** PSE sites will be a priority, but SCL energy efficiency efforts are still critical to our overall program goals
- **Fuel:** Continue Fleet Electrification/Fuel Technology Exploration
- **Natural Gas:** Implement Building Electrification
- **Historic Landfills:** Continue monitoring development of promising methane destruction technologies for historic landfills
- **Carbon Offsets:** In addition to best efforts above, there will likely be a need to purchase carbon offsets

Next Steps for Inventory

1. Finalize 2019/2020 Inventory Results
2. Develop 2021 Inventory
3. Develop First Annual GHG Emissions and Energy Usage Report

Detailed analysis of GHG emissions sources and energy usage across our operations

Identifies a pathway to 2030 with initial hypotheses on emissions reduction measures, energy efficiency measures, and required carbon offsets

Documents existing efforts

Energy Efficiency Programs

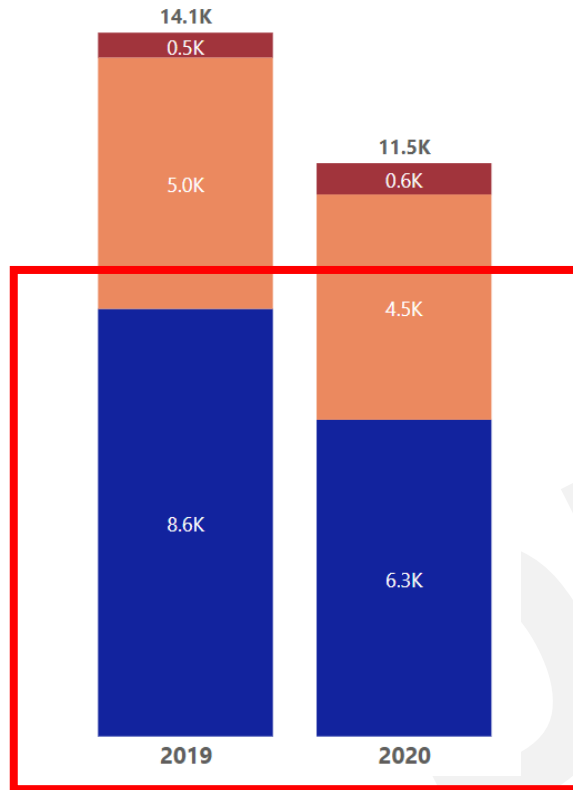
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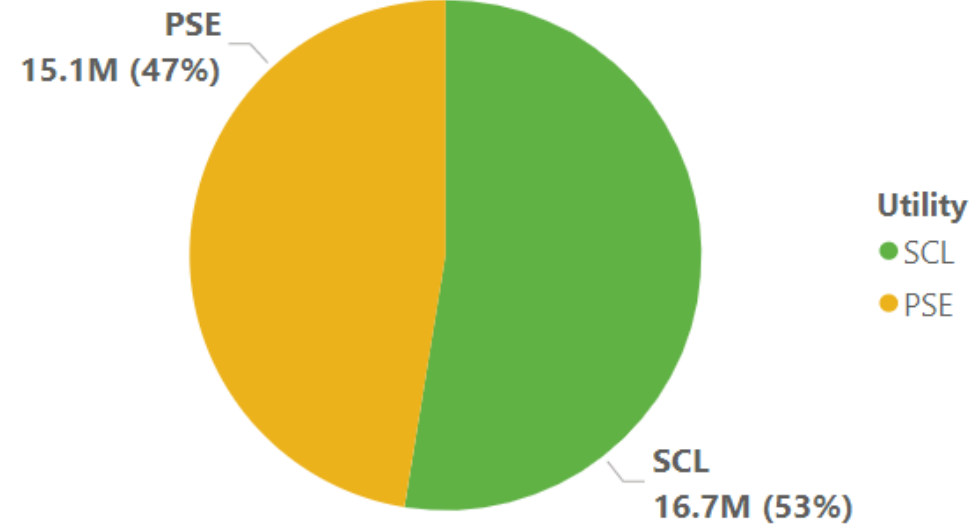
An Energy Efficient & Energy Aware Utility



Electricity Usage at SPU



Electricity Consumption by Utility (in KWH)



Efforts around efficiency in our electricity usage will help us address emissions, and achieve our goals of being energy efficient and energy aware

Energy Efficiency Programs

Energy Smart Industrial Program *(Seattle City Light Electricity)*

- **2-year program** working with operators and managers at SPU to identify **low or no-cost energy efficiency opportunities** across the utility
- Training, peer to peer workshops, coaching and technical support, energy performance tracking
- SCL incentives provided: **2.5 ¢ for every kwh saved**, up to 27-43 ¢ for every kwh saved due to larger capital projects
- **5% O&M savings in the first year** across typical cohort
- **20% or higher total energy savings over a multi-year horizon** achieved by sites that embrace O&M and capital projects combined

Industrial System Optimization Program *(Puget Sound Energy Electricity)*

- Two-part energy audit: initial scoping meeting and a site deep-dive
- Identify low and no-cost action items with an estimate of annual cost and energy savings for each item
- Once changes are implemented PSE provides incentives based on energy savings achieved up to 100% of eligible costs

Next Steps for Energy Efficiency

1. Identify and engage internal energy & data champions
2. Conduct site visits at highest usage sites in order to identify energy efficiency measures

Racial and Social Equity Analysis

Equity analysis is in progress for the SEM program:

- **Equity is a strong motivating factor behind the SEM program:** climate impacts in Seattle will disproportionately burden already marginalized communities
- **Data analysis** should aim to identify any geographical trends in GHG pollution and other nuances around equity
- **The identification, prioritization & implementation of all energy efficiency and emissions reductions efforts should take an equity lens** in considering potential impacts to different groups, and ensuring stakeholders are engaged appropriately
- **Actions that can support marginalized voices and directly benefit target communities** should be prioritized (e.g., blue and green job programs, contracting with WMBE organizations)

Asks for the Customer Review Panel:

- 1) Any **questions or concerns** about Program or current progress?
- 2) How might the CRP **support** this work?

Thank you!

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