Portland General Electric

2019 Sustainability Accounting Standards Board (SASB) Report

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This year marks Portland General Electric's first year mapping our disclosures to the SASB standard for Electric Utilities & Power Generators. Our responses reflect 2019 performance.

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Topic	Data request	PGE response
Greenhouse gas emissions and energy resource planning	(1) Gross global Scope 1 emissions, percentage covered under (2) Emissions-limiting regulations, and (3) Emissions-reporting regulations	(1) Total $MTCO_2e$ from generation activities, reported as Scope 1: 7,681,207 *Notes:* *(1) The reported Scope 1 emissions are only from PGE's thermal generating resources. PGE's EEI ESG Report provides carbon emissions associated with power delivered to customers, including purchased power, and it removes carbon emissions from thermal generating resources associated with power sold outside of PGE's service territory. Reporting and data collection capabilities are still being developed for other Scope 1 sources of emissions.* *(2) and (3): Because the Scope 1 inventory only includes thermal generating resources PGE is electing not to report the percentages requested; as Scope 1 reporting matures, these fields will be reported. PGE anticipates other Scope 1 sources of GHG emissions will be negligible in comparison to GHG emissions from its thermal generating resources.*
	Greenhouse gas (GHG) emissions associated with power deliveries	7,449,129 $MTCO_2e$
	Discussion of long-term and short-term strategy or plan to manage Scope 1 emissions, emissions reduction targets, and an analysis of performance against those targets	Vision for a Clean Energy Future The Path to a Decarbonized Energy Economy 2019 Form 10-K, page 30 PGE Carbon Reduction Factsheet 2019 Integrated Resource Plan
	(1) Number of customers served in markets subject to renewable portfolio standards (RPS) and (2) Percentage fulfillment of RPS target by market	(1) 890,019 customers (2) 2019 RPS Compliance Report

<table>
<tr><th>Topic</th><th>Data request</th><th colspan="2">PGE response</th></tr>
<tr><td rowspan="11">Air quality</td><td rowspan="11">Air emissions of the following pollutants:
(1) NOx (excluding N2O),
(2) SOx,
(3) Particulate matter (PM10),
(4) Lead (Pb), and
(5) Mercury (Hg);
Percentage of each in or near areas of dense population</td><td colspan="2">(1), (2), (5): PGE 2019 EEI ESG Report</td></tr>
<tr><td>PM_{10}</td><td>Pb</td></tr>
<tr><td>780.8 MT</td><td>79.4 kg</td></tr>
<tr><td colspan="2">Note: Emissions (not a part of PGE 2019 EEI ESG Report)

(3), (4):</td></tr>
<tr><td colspan="2">Percentage near a dense population</td></tr>
<tr><td>NO_x</td><td>13.5%</td></tr>
<tr><td>SO_x</td><td>0.4%</td></tr>
<tr><td>PM_{10}</td><td>16.4%</td></tr>
<tr><td>Pb</td><td>0.0%</td></tr>
<tr><td>Hg</td><td>0.1%</td></tr>
</table>

Topic	Data request	PGE response
Water management	(1) Total water withdrawn, (2) Total water consumed, percentage of each in regions with High or Extremely High Baseline Water Stress	(1) 194,590 thousand cubic meters (2) 194,070 thousand cubic meters consumptive 520 thousand cubic meters non-consumptive N/A; PGE operations are not in High or Extremely High Baseline Water Stress areas *Note: Water withdrawal and consumption data is associated with PGE thermal generating facilities only, and does not include nominal water use (e.g., drinking water) for which data were not readily available.*
	Number of violations of non-compliance associated with water quantity and/or quality permits, standards, and regulations	None
	Description of water management risks and discussion of strategies and practices to mitigate those risks	PGE operates three hydropower generation systems licensed by the Federal Energy Resource Commission (FERC): Pelton Round Butte Hydroelectric Project (Deschutes River), Clackamas River Hydroelectric Project (Clackamas River and tributaries), and Willamette Falls Hydroelectric Project (Willamette River). License conditions (e.g., specific flow requirements based on seasonal natural resource needs) were developed in partnership with natural resource agencies and environmental stakeholders, and support our objectives of healthy native fisheries (e.g., salmon and steelhead) and long-term sustainability for wildlife and water quality in the basins where we operate. Our efforts include significant PGE-led and PGE-partnership projects in the watersheds of our hydropower facilities focused on basin-wide water conservation efforts to increase in-river flows that are critical for habitat improvement and fisheries' restoration goals.
Coal ash management	Amount of coal combustion residuals (CCR) generated, percentage recycled	205,943 MT of CCR generated from operations, 9.3% recycled
	Total number of coal combustion residual (CCR) impoundments, broken down by hazard potential classification and structural integrity assessment	Total CCR impoundments: 1.6 Number of CCR impoundments with hazard potential classification: 1.6 (Significant) Number of CCR impoundments with structural integrity assessment rating: 1.6 (Meets requirements) *Note: Boardman does not have a CCR impoundment. In addition, PGE does not operate the Colstrip plant, but owns 20% of the output from Colstrip Units 3 and 4. Thus, the values presented reflect PGE ownership percentage of Colstrip Units 3 and 4.*

Topic	Data request	PGE response
Energy affordability	Average retail electric rate for: (1) Residential, (2) Commercial, and (3) Industrial customers	(1) 12.3 cents/kWh (2) 9.4 cents/kWh (3) 6.4 cents/kWh
	Typical monthly electric bill for residentialcustomers for: (1) 500 kWh and (2) 1,000 kWh of electricity delivered per month	(1) $69.18 (2) $126.40
	Number of residential customer electric disconnections for nonpayment, % reconnected within 30 days	Total number of residential disconnections in 2019: 28,063 Number of residential disconnections reconnected within 30 days: 26,563 As a percentage of total: 95% Bill Payment Assistance Disconnection and Reconnection
	Discussion of impact of external factors on customer affordability of electricity, including the economic conditions of the service territory	PGE is working with our customers and partners to build a clean reliable energy future that brings everyone along. Achieving a clean energy future will be challenging, but we believe it is attainable and vital for all Oregonians. This transition should not compromise reliability and affordability for our customers, and all customers can and should be able to participate in and benefit from a clean energy future. Keeping our rates affordable and supporting well-designed programs that seek to reduce energy burden are top priorities in our planning and decision-making. In addressing energy burden, we also recognize the importance of programs and policies like energy-efficiency, whole-house weatherization, and other technologies which can provide other benefits including health, comfort, safety, resiliency, and reducing GHG emissions. Helping low-income households take advantage of free weatherization services, benefit from energy-efficient appliances and participate in demand response programs can reduce energy bills and is the first and most important step in promoting more equitable energy transformation. PGE also advocates for increased energy assistance funding and simplification of the process of applying for it. Currently, almost one in five of our residential customers have trouble paying their bills each month, and roughly 20% of these customers receive bill assistance. While existing assistance programs are effective, they are insufficient in meeting current needs.

Topic	Data request	PGE response
Workplace health and safety	(1) Total recordable incident rate (TRIR), (2) Fatality rate, and (3) Near miss frequency rate (NMFR)	(1), (2) PGE 2019 EEI ESG Report (3) 5.39
End-use efficiency and demand	Percentage of electric load served by smart grid technology	PGE 2019 EEI ESG Report *Note: Consistent with SASB guidelines, PGE considers its Advanced Metering Infrastructure (AMI) to serve smart grid technology.* PGE Smart Grid Webpage Grid Platform for a Clean Energy Future
	Customer electricity savings from efficiency measures, by market	287,328 MWh were saved from PGE's Energy Efficiency Measures in 2019. Portland General Electric Company is subject to several regulations by the Oregon Public Utility Commission (OPUC) related to customer efficiency measures. In July 1999, Senate Bill 1149 (SB 1149) was enacted to establish consistent, reliable funding for investments in energy efficiency and renewable energy for Oregon residents, businesses, and schools. The funding, called a public purpose charge (PPC), comes from customers of PGE and Pacific Power. The PPC establishes an annual expenditure of 3% of revenues to fund energy efficiency. ORS 757.612 outlines the requirements for PPC expenditures, and 56.7% of those funds are designated for energy conservation. PGE customers are eligible for services and cash incentives from the Energy Trust of Oregon, an independent non-profit organization overseen by the Oregon Public Utility Commission. Energy Trust helps customers save energy and money by providing information, assistance and cash incentives for energy efficient upgrades and renewable energy systems. In support of this mission, the OPUC directs PGE to provide ETO with a limited set of information about large and commercial industrial customers, including customer name, service address, and whether the customer is applying self-direct credits against its energy-efficiency and renewable public purpose charge during each billing period.
	Percentage of electric utility revenues from rate structures that: (1) Are decoupled and (2) Contain a lost revenue adjustment mechanism (LRAM)	(1) PGE's Sales Normalization Adjustment (SNA) is based on the difference between actual usage per customer and that projected in PGE's 2019 general rate case. The SNA mechanism applies to approximately 76% of 2019 customer revenues. (2) The Lost Revenue Recovery Adjustment mechanism is based on the difference between actual energy-efficiency savings (as reported by the ETO) and those incorporated in the applicable load forecast. The LRRA mechanism applies to approximately 16% of 2019 customer revenues.

Topic	Data request	PGE response
Nuclear safety and emergency management	Total number of nuclear power units, broken down by U.S. Nuclear Regulatory Commission ("NRC") Action Matrix Column	N/A *Note: The NRC regulates the licensing and decommissioning of nuclear power plants, including PGE's Trojan nuclear power plant, which was closed in 1993. The NRC approved the 2003 transfer of nuclear spent fuel from a spent pool to a separately licensed dry cask storage facility that will house the fuel on the former plant site until a United States Department of Energy (USDOE) facility is available. Radiological decommissioning of the plant site was completed in 2004 under an NRC-approved plan, with the plant's operating license terminated in 2005. Spent fuel storage activities will continue to be subject to NRC regulation until all nuclear fuel is removed from the site and radiological decommissioning of the storage facility is completed.* *2019 Form 10-K, page 6*
	Description of efforts to manage nuclear safety and emergency preparedness	PGE permanently ceased commercial operation of the Trojan nuclear power plant in January 1993. Since then, the plant has been dismantled as part of the decommissioning process and all nuclear fuel has been placed in long term, dry storage as of September 2003. Trojan's nuclear fuel is stored in robust canisters which are encapsulated in vertical concrete casks that provide structural protection, radiation shielding, and sufficient passive cooling to maintain the safety of the fuel. Based on this robust design and extensive analysis of hazards, there are no operations or credible accidents that result in a release of radioactive material from the canisters. As an owner of special nuclear material, PGE is licensed by the Nuclear Regulatory Commission for fuel storage. In 2019, following an extensive review of PGE's proposed Aging Management Program, the Nuclear Regulatory Commission granted an extension of PGE's license to store fuel an additional 40 years to 2059. Nuclear safety is the highest priority for the Trojan staff, and its nuclear safety culture is assessed and monitored by an ISFSI (Independent Spent Fuel Storage Installation) Safety Review Committee, which advises the Corporate Executive Responsible for Trojan on all matters related to the safe storage of spent fuel. The Trojan organization operates in compliance with a Quality Assurance Plan under which operations and security functions are regularly audited. Trojan Spent Fuel Storage

Topic	Data request	PGE response
Grid resiliency	Number of incidents of non-compliance with physical and/or cybersecurity standards or regulations	Portland General Electric Company is subject to mandatory physical and cybersecurity standards adopted by the North American Electric Reliability Corporation (NERC). Our practice is to self-report all identified instances of actual or potential noncompliance with the NERC physical and cybersecurity standards, regardless of severity. In 2019, we discovered two instances of actual or potential noncompliance that have been determined to be minimal risk violations not subject to penalty or future tracking.
	(1) System Average Interruption Duration Index (SAIDI), (2) System Average Interruption Frequency Index (SAIFI), and (3) Customer Average Interruption Duration Index (CAIDI), inclusive of major event days	(1) 128 minutes (2) 0.71 (3) 180 minutes ***Note:*** *Values are inclusive of major event days. In 2019, Portland General Electric Company experienced two major storm events:* *January 2019 Storm:* — *Caused by weather* — *57,000 customer outages* — *Estimated total storm cost: $1.5 million* *June 2019 Storm* — *Caused by weather* — *27,000 customer outages* — *Estimated total storm cost: $0.5 million* *Actions taken to mitigate the potential for future service interruptions:PGE has increased its spending on tree trimming and is implementing a distribution automation program to limit the effects of outages, and it is continuously looking to lower impacts to our customers from its Strategic Asset Management program.*

Topic	Data request	PGE response
Activity metrics	Number of: (1) Residential (2) Commercial, (3) Industrial customers served	(1) 779,673 (2) 110,084 (3) 262
	Total electricity delivered to: (1) Residential (2) Commercial (3) Industrial (4) All other retail customers (5) Wholesale customers	Retail energy deliveries* (1) 7,416 (2) 7,430 (3) 4,376 (4) N/A (5) 4,669
	Length of transmission and distribution lines	As of December 31, 2019, PGE-owned electric transmission system consisted of 1,264 circuit miles as follows: — 287 circuit miles of 500 kV line — 423 circuit miles of 230 kV line — 554 miles of 115 kV line. The Company also has 27,755 circuit miles of distribution lines that deliver electricity to its customers.
	Total electricity generated, percentage by major energy source, percentage in regulated markets	PGE 2019 EEI ESG Report
	Total wholesale electricity purchased	2,545*

**in thousands of MWh*