



e-FILING REPORT COVER SHEET

COMPANY NAME: Portland General Electric

DOES REPORT CONTAIN CONFIDENTIAL INFORMATION? No Yes If yes, submit a redacted public version (or a cover letter) by email. Submit the confidential information as directed in OAR 860-001-0070 or the terms of an applicable protective order.

Select report type: RE (Electric) RG (Gas) RW (Water) RT (Telecommunications)
 RO (Other, for example, industry safety information)

Did you previously file a similar report? No Yes, report docket number: RE 18

Report is required by: OAR 860-027-0015

Statute

Order

Note: A one-time submission required by an order is a compliance filing and not a report (file compliance in the applicable docket)

Other

(For example, federal regulations, or requested by Staff)

Is this report associated with a specific docket/case? No Yes, docket number:

List Key Words for this report. We use these to improve search results.

Portland General Electric 2022 New Construction Budget RE 18

Send the completed Cover Sheet and the Report in an email addressed to PUC.FilingCenter@puc.oregon.gov

Send confidential information, voluminous reports, or energy utility Results of Operations Reports to PUC Filing Center, PO Box 1088, Salem, OR 97308-1088 or by delivery service to 201 High Street SE Suite 100, Salem, OR 97301.



Portland General Electric Company
121 SW Salmon Street • 1WTC0306 • Portland, OR 97204
portlandgeneral.com

April 03, 2023

Via Electronic Filing

Public Utility Commission of Oregon
PO Box 1088
Salem, OR 97308-1088

RE: RE 18 Portland General Electric Company 2021 New Construction Budget Report

Filing Center:

Enclosed is Portland General Electric Company's filing for the New Construction Budget Report for the 2023 calendar year. This report is being provided per OAR 860-027-0015 and the PUC Report Filing requirements. No hardcopy will be submitted.

Should you have any questions, please call Jaki Ferchland, Manager, Revenue Requirement, at (503) 464 - 7488.

Sincerely,

/s/ Jaki Ferchland

Jaki Ferchland
Manager, Revenue Requirement

JF/np
Enclosure



ELECTRIC COMPANY NEW CONSTRUCTION BUDGET FOR 2023

GENERAL INSTRUCTIONS

1. Each energy utility operating within the State of Oregon and having gross operating revenues of \$50,000 or more per year is required to file a New Construction Budget annually on or before March 31st and report information on new construction, extensions, and new additions to property of the utility in accordance with Oregon Administrative Rule 860-027-0015.
2. The New Construction Budget Report should be completed and filed with the Public Utility Commission of Oregon Filing Center. Complete the e-Filing Report Cover Sheet found at <https://www.oregon.gov/puc/forms/Pages/default.aspx?wp6900=se:%22Report+Cover+Sheet%22>. Email both the report and the cover sheet to PUC.FilingCenter@puc.oregon.gov, no later than March 31st.

PROJECT NARRATIVE

For major projects (the three largest projects in terms of cost and all projects greater than \$10 million) a narrative supplying the following information is required:

1. Project Description: Include a brief technical specification of the project, ownership, if jointly owned, operating date, stage of construction, and other relevant information.
2. Need for the Project: Attach all prepared information documenting the need for the project, including the specific need the project is intended to fill. Economic comparisons with alternatives are to be attached. All the underlying assumptions of the economic analyses are to be specified.
3. Contingencies: Attach a listing of existing or potential future problems which might impact the final cost or successful completion and operation of the project, such as licensing problems, labor difficulties, litigation, etc.
4. Reconciliation with Prior Budget: Each successive year's budget can be expected to reflect differing estimates of project costs as the project progresses. For each major project, prepare a reconciliation with the prior budget's estimates and provide specific reasons for the changes.

In addition, please attach copies of prepared documentation or plans describing generation transmission, and general plant projects exceeding \$1,000,000 in total cost and for which construction will commence in the budget year. Information submitted should contain:

1. A Brief Project Description: Include the project function (e.g., production, transmission, distribution, general plant, thermal, hydro, or other), project identification.
2. Location: Include a starting and ending date.
3. Total budgeted cost.

FULL NAME OF ELECTRIC COMPANY			
Portland General Electric Company			
ADDRESS: PO BOX OR STREET NUMBER	CITY	STATE	ZIP CODE
121 SW Salmon Street	Portland	OR	97204
CERTIFICATION: I CERTIFY THAT THE INFORMATION REPORTED IS TRUE AND COMPLETE TO THE BEST OF MY KNOWLEDGE.			
SIGNATURE	TITLE	DATE	
<i>James A. Ajello</i> James A. Ajello (Apr 3, 2023 13:29 PDT)	SVP & CFO	Apr 3, 2023	

PROJECT NARRATIVE - Major Projects

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MAJOR PRODUCTION PROJECTS	EST. IN SERVICE DATE	PROJECT DESCRIPTION	NEED FOR PROJECT	CONTINGENCIES	RECONCILIATION W/ PRIOR BUDGET	PROJECT TOTAL [1]
P22449 P22449 Colstrip Capital Proj PPL	3/1/2004	12/31/2024	This project is for work related to the Colstrip power plant and based on the five year business plan agreed to by Colstrip's owners of which PGE has 20% ownership.	Maintain plant and meet obligations in five year business plan agreed to with Colstrip's other owners.	Reduction from \$10M to \$6.1M, lower amount of items in scope.	\$ 122,573,104.49
P35172 PSES - Generation Fitness Fund	1/1/2012	12/31/2025	This project is to fund and approve known and emerging routine capital projects that are essential for maintaining fitness of PGE Generation Plants.	Funds known and emerging routine capital projects that are small in nature but essential for maintaining PGE Generation Plants.	No risks above and beyond the standard risks of all construction projects were identified	\$ 44,914,151.43
P35959 WSH Structural Reliability Upgrades	1/1/2015	12/31/2025	This five year program (2015-2020) program provides funding to enhance the capability of four West Side Hydro Powerhouses and other structures to withstand seismic hazards, improve plant reliability over the duration of the new FERC operating license, and address personnel safety issues during routine and extreme events.	While the powerhouses have been maintained and are structurally sound, none of them were built with seismic reinforcements introducing an undesirable level of risk of catastrophic failure in the event of a major Cascadia subduction seismic episode, or a nearby crustal earthquake. Due to the age and original design of the West Side Hydro facilities, there are numerous routine tasks that include an undesirable safety risk to plant personnel, such as removing debris from the trash racks and placing flashboards. Additionally, some components have far exceeded their original design/functional life and are in need of replacement.	No risks above and beyond the standard risks of all construction projects were identified.	\$ 49,356,575.51
P36105 2016-2024 Dispatchable Standby Gen	1/1/2016	12/31/2024	New sites will be added to the Schedule 200 program.	No change from previously current approved.	No risks above and beyond the standard risks of all construction projects were identified.	\$ 10,919,630.76
P36116 Wind Generation Fitness Program	2/1/2016	12/31/2025	Scope of work will be developed as individual components fail and require replacement.	PGE has determined that renewal of the existing Service and Maintenance Agreement and Guaranteed Availability and Warranty Extension is no longer the most effective method for operating and maintaining the Biglow Canyon Wind Farm.	Not applicable. Project was not included in previous BOE. Increase of \$15M to address increasing need for wind fitness investment.	\$ 48,850,592.22
P36134 Hydro Control System Upgrade	8/1/2015	10/31/2024	The project replaces the control system at 8 power plants and related PLC's. The project also replaces key instrumentation and upgrades the HMI to meet EEMUA 201 Standard.	Existing hydro control systems were installed in the 1990s and have exceeded their end of life. Typical control system hardware starts to fail at ten years. The current setup also uses a dial up modem network which limits plant operations visibility and operations responses.	No risks above and beyond the standard risks of all construction projects were identified.	\$ 36,260,285.23
P36187 FY: Repower Faraday Units 1-5	11/23/2015	2/28/2023	The new powerhouses will optimize generation potential for the remaining license period and provide a modern plant with a 40-plus year design life. The new powerhouses will include two high-efficiency turbines housed in a reinforced concrete structure with new flood protection systems and will result in increased plant reliability and efficiency. The project will also include the upgrades to the headworks and replacement of the penstocks that transport water to the powerhouse.	Existing hydro control systems were installed in the 1990s and have exceeded their end of life. Typical control system hardware starts to fail at ten years. The current setup also uses a dial up modem network which limits plant operations visibility and operations responses.	No risks above and beyond the standard risks of all construction projects were identified.	\$ 173,838,261.05
P36654 Generation Portfolio Blanket	1/1/2019	12/31/2024	Funding will be allocated from this Project to cover scope developed by projects progressing through the Planning and Execution gates.	Budget only. Generation portfolio blanket used to fund separate projects.	Risks are in the specific projects funding is allocated to.	\$ 25,627,401.64
P36836 BR- Beaver Modernization	4/1/2019	1/31/2026	This submit reflects the remaining combustion upgrades for all Beaver gas turbines and the Major Inspections, exhaust frame refurbishments, and generator stator & rotor rewinds that will be performed concurrent with the combustion upgrades. The remaining combustion upgrades will be identical to the upgrade being installed on Unit 6 in 2022. All units except for Unit 5 will have a concurrent Major Inspection and exhaust frame refurbishment due to the fired hours since the last major inspection. Unit 5 has had major turbine maintenance work and exhaust frame refurbishment performed recently. Units 1, 2, and 4 will have a concurrent generator rotor rewind due to the fired hours since the last rotor rewind. Units 3 and 5 have had a generator rotor rewind performed recently. Unit 4 will have a concurrent stator rewind due to the condition of the generator stator.	The Beaver Modernization Project will upgrade the existing Beaver gas turbine combustion systems from a dual fuel system to a single fuel dry low NOx combustion system. The new turbines, the heat exchangers are upgraded. The stator and rotor will be rewound. The new fuel oil system will be installed from operating on fuel oil as an alternative. The combustion upgrade will allow for greater operational flexibility while meeting PGE's commitment to reduced greenhouse gas emissions at the site.	Placed a 10% contingency on planning funds related to the first unit being installed. A lower 5% contingency placed on the second unit's planning cost. Contingency for execution costs will be determined at the execution gate.	\$ 57,406,860.60
P36838 RB- Replace Turbine Shutoff Valves	4/1/2019	1/15/2025	Engineering, procurement of three turbine shut-off valves, draft tube/PRV gates, fill valve, specifications, and functional testing of the tunnel dewatering. The old valves are severely leaking and require the use of wood chips to seal. This project is jointly owned with the Confederated Tribes of Warm Springs.	The old valves are severely leaking and require the use of wood chips to seal.	This revision reflects \$3.9M in contingency funds. As part of the RFP for the installation scope, bidders were asked to develop allowances for anticipated risk categories which will be used to allocate the amount of contingency funds to be provided. A final calibration of contingency funds will be conducted after risk planning activities are completed with the selected contractor in Q1 2023.	\$ 10,583,110.01
P37417 PW2: Top End Engine Parts and Insta	6/15/2022	12/30/2024	The scope of this funding would be: 1. Purchase of 11 upgraded design Piston Crown Seals 2. Purchase of 12 sets of upgraded Heat Exchange Plates including contractor installation 3. Purchase of 1 set of Small End Bearing as a Capital Spare 4. Purchase of 12 sets of Firing Rings, required for head installation and not reusable 5. Increased predicted manual labor from 2 engineers for 2 weeks per engine to 3 engineers for 4,5 weeks per engine.	This project is to reduce down time from 8 weeks per engine to 4 weeks and capitalize parts and labor that has been approved as capital by Asset Accounting.	No specific risks identified beyond supply chain and labor market impacts.	\$ 10,615,087.68

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MAJOR PRODUCTION PROJECTS		EST. IN SERVICE DATE	PROJECT DESCRIPTION	NEED FOR PROJECT	CONTINGENCIES	RECONCILIATION W/ PRIOR BUDGET	PROJECT TOTAL [1]
PROJ. NO.	PROJ. TITLE	START DATE	EST. IN SERVICE DATE	PROJECT DESCRIPTION	NEED FOR PROJECT	CONTINGENCIES	RECONCILIATION W/ PRIOR BUDGET
P37511	Construct Clearwater Wind Farm	11/1/2022	12/31/2023	Clearwater Wind is a 775 MW Facility located in eastern Montana approximately 65 miles northeast of Colstrip, Montana. The project consists of 3 phases of which the second phase will be partially owned by PGE. The PGE owned portion will be a 205 MW wind farm consisting of 117,200 square foot 100' tower wind turbines and associated infrastructure. PGE is currently O&M building for this phase of the project. The project will be built by NextEra and transferred to PGE under a Build Transfer Agreement (BTA). The project will start construction in May 2023 and achieve Substantial Completion in December 2023. NextEra will then manage the operation and maintenance of the wind farm for a period of 20 years under and O&M Agreement. The O&M Agreement will be a 20 year term with options for extensions and it will be on a Time and Material basis.	PGE issued a 2021 All-Source RFP to make an important step in decarbonizing Oregon's grid. In accordance with the 2019 JRP Action plan and updated according to the Oregon Public Utility Commission's (OPUC) Order 21-020, this RFP is being reissued in 2021. The project is a 205 MW wind farm located in the Clearwater area of eastern Oregon. The project is on a very tight schedule with limited float so any delays to PGE's obligation to energize the project could delay the project into the winter months where limited work can be completed and delays will be incurred. Lastly, establishing a transmission pseudobid in accordance with the transmission service agreements has not been completed yet and is dependent on both agreement from BPA and INWMT. Both of these issues could delay action in the area and cause significant delays. Contingency has also been added for these potential delays.	Not applicable. Project was not included in previous BOE	\$ 422,306,592.94
MAJOR TRANSMISSION PROJECTS							
PROJ. NO.	PROJ. TITLE	START DATE	EST. IN SERVICE DATE	PROJECT DESCRIPTION	NEED FOR PROJECT	CONTINGENCIES	RECONCILIATION W/ PRIOR BUDGET
P36617	South Milliken Line Rebuild	8/1/2018	12/02/2027	PGE owns 35 miles of 67KV double circuit lattice Milliken Towers which have been in service for over 10 years. 2017 North grade pole study (22 random Milliken towers) were inspected, 55% had significant trends of corrosion. Urgent repair or replacement is required.	No changes from prior justification.	To be determined at execution gate.	Not applicable. Project was not included in previous BOE
P36913	Trans Line Clearance Mitigation	10/1/2019	12/31/2025	TLCM plans to design and construct 300 transmission pole replacements that do not currently meet PGE's current clearance standards.	Rev 56, 2021 Authorize to Spend: <input type="checkbox"/> 2021 Capital \$4M (increase) <input type="checkbox"/> Total Project Capital \$5.5M; <input type="checkbox"/> January BSG-CRG <input type="checkbox"/> This revision includes incremental project management support (\$35K) per portfolio management guidance; <input type="checkbox"/> This revision requests \$4M funding in 2021. This funding level will allow for design and construction of 300 transmission pole replacements for the Transmission Line Clearance Mitigation (TLCM) project. This amount matches Portfolio Mgmt's guidance for Capital Call 2021.	N/A	Not applicable. Project was not included in previous BOE
P36666	Build Evergreen Substation	10/1/2018	12/31/2025	This revision requests initial planning funds for Evergreen-Shute Lines 1&2 and requests initial planning funds and long lead materials for new distribution scope within the Evergreen Substation. Construct the new Evergreen substation for additional transmission capacity. The new substation will have both 230KV and 115KV yards. The Horizon-Horizon 230KV line (currently under construction) will loop into the new substation, creating a Evergreen-Horizon 230KV line and a Evergreen-Horizon 230KV line. The Shute-West Union 115KV line (currently under construction) will loop into the new substation, creating a Evergreen-Shute 115KV line and a Evergreen-West Union 115KV line. The existing Shute-Sunset #2 115KV line will be disconnected from Shute and extended to Evergreen, creating a Evergreen-Sunset 115KV line. Two new bulk power transformers (230/115KV) will be installed to provide bulk power system capacity for load growth in the Hillsboro area. Two 115KV capacitor banks will also be installed for voltage support.	This is part of the larger Hillsboro Reliability Project, which is a strategic project incorporating work among four different Funding Projects. The need for additional distribution capacity at Evergreen is driven by projected load growth in the area. Current projections indicate that the distribution capacity at Shute Substation may be depleted by 2025. The Evergreen substation project can provide the underserved load requirements through the addition of this scope. This revision includes incremental project management support (\$35K) per portfolio management guidance; <input type="checkbox"/> This revision requests \$4M funding in 2021. This funding level will allow for design and construction of 300 transmission pole replacements for the Transmission Line Clearance Mitigation (TLCM) project. This amount matches Portfolio Mgmt's guidance for Capital Call 2021.	This revision includes \$1.5M in contingency, which is a \$20,652,462 increase over prior BOE filing for 2023 and 2024 project expenditures. The increased approval is for labor and materials budget in this stage of the execution gate of the project.	\$ 34,903,843.05
P37061	OH FTINES Transmission	7/1/2020	12/31/2030	Project Scope in 2021 is to replace complete 160 transmission pole replacement work orders. This is a direct result of the OH FTINES Inspection program required by OPUC regulations.	Rev 22, Jan 2021 BSG-CRG <input type="checkbox"/> 2021 Capital \$2.9M; <input type="checkbox"/> Total Project Capital \$2.9M; This revision requests a total of \$3M capital funding in 2021 for transmission pole replacements identified through the OH FTINES Inspection Program. This funding will allow for the construction of approx. 160 transmission pole replacement work orders in 2021.	Risks are in the specific projects funding is allocated to.	Not applicable. Project was not included in previous BOE
P37086	T&D BSG Reserve	1/1/2021	12/31/2025	This budget only funding project covers inside the Target T&D projects.	Budget only T&D reserve used to fund separate projects	Risks are in the specific projects funding is allocated to.	Not applicable. Project was not included in previous BOE

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P37286	Reedville Substation Rebuild	8/1/2021	3/7/2023	<p>The Reedville Substation Rebuild project will include the following:</p> <ul style="list-style-type: none"> - Substation: <input type="checkbox"/> 115KV, 6-position GIS ring bus <input type="checkbox"/> - Busbar: <input type="checkbox"/> 115KV, 6-position GIS ring bus <input type="checkbox"/> - 3 Transformer terminals <input type="checkbox"/> - 3 Transformer terminals <input type="checkbox"/> - Replace the existing three distribution transformers with new 115/13KV, 50 MVA transformers <input type="checkbox"/> - Replace the existing open-air distribution box structure with 3000A metal-dad enclosed switchgear <input type="checkbox"/> - Replace the existing open-air distribution capacitor banks with enclosed capacitor banks <input type="checkbox"/> - Replace the existing control enclosure with a new control enclosure <input type="checkbox"/> - Additional animal mitigation as required <input type="checkbox"/> - Feeder exit gateway replacement <input type="checkbox"/> - Transmission <input type="checkbox"/> - Modify existing transmission drops into Reedville <input type="checkbox"/> - New 2.25 mile transmission line along Kinmanan Rd (becomes Murrayhill-Reedville) on existing 3 phase distribution line. Removal of 0.7 miles of existing transmission (Murrayhill-Reedville). About 18 poles to top to distribution. <input type="checkbox"/> - New 0.13 miles transmission line along Blanton St (becomes Reedville-St Marys) on existing 3 phase distribution line. <input type="checkbox"/> - Distribution: <input type="checkbox"/> - Replace all 5 initial underground feeder cables and include DTS monitoring equipment and fiber optic monitoring <input type="checkbox"/> - Replace all of the existing air-insulated pad switches with Vista switches. <input type="checkbox"/> - Move Reedville-Augusta 13KV feeder to new Reedville switchgear serving radial only (non-Initial) loads. <input type="checkbox"/> - Initial loads. <input type="checkbox"/> - Communication: <input type="checkbox"/> - Add new fiber route for Reedville-St Marys <input type="checkbox"/> 	<p>Substation Near-Term Asset + Annual Risk situation: Reedville sub as #5 on the Substation Risk Register, indicating its high-risk profile in comparison to other stations. The GIS ring substation project that is considered under this project reduces Reedville's risk profile to #134 on the Risk Register.</p> <p>Major project risks associated with current supply chain issues and constraints with major equipment and material availability, this is an expected risk. Permitting in York County is a major risk. But the engineering or construction but as economic activity continues, obtaining labor resources to complete the work on the desired schedule may be difficult.</p>	<p>Major project risks associated with current supply chain issues and constraints with major equipment and material availability, this is an expected risk. Permitting in York County is a major risk. But the engineering or construction but as economic activity continues, obtaining labor resources to complete the work on the desired schedule may be difficult.</p>	<p>Project was not included in previous BOE</p>	13,162,417.92
P37302	Horizon-Keeler BPA #2 230KV Line	12/1/2021	5/31/2024	<p>PGE's Line Design Engineering will be exploring various routing and design options for a new 230 KV line connecting PGE's Horizon Substation To BPA's Horizon Substation. The new Horizon-Keeler #2 230KV line currently has no planned route. <input type="checkbox"/></p> <p>With the planning funding we will be able to start the following activities: <input type="checkbox"/></p> <ul style="list-style-type: none"> - Design Criteria PGE's engineers will explore various structure types and framing scenarios to develop a design criteria specific to the needs of this project. <input type="checkbox"/> - Routing Study: PGE will commission a routing options study to determine the viable routes and determine which route(s) are the least impactful given a wide range of criteria. <input type="checkbox"/> - Environmental: Begin the desktop studies based off the routing analysis to find any environmental concerns/constraints. <input type="checkbox"/> - Survey: Acquire ground and LIDAR survey at pinch points and along route(s) to determine viability of routing and the design alternative viability. <input type="checkbox"/> 	<p>This project aims to construct a second Horizon-Keeler BPA #2 230 KV line using 2156 ACSS conductor. The line will terminate on a new position constructed by BPA (at PGE's cost) at BPA's Keeler substation. It also installs a new breaker at the Horizon substation for the new line. <input type="checkbox"/></p> <p>PGE requires this line to serve new load and maintain compliance with NERC standards. <input type="checkbox"/></p>	<p>This project maintains \$691K in contingency to support engineering and equipment orders. <input type="checkbox"/></p>	<p>Project was not included in previous BOE</p>	11,511,069.08

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PROJ. NO.	PROJ. TITLE	START DATE	EST. IN SERVICE DATE	PROJECT DESCRIPTION			
MAJOR GENERAL PLANT PROJECTS							
PROJ. NO.	PROJ. TITLE	START DATE	EST. IN SERVICE DATE	PROJECT DESCRIPTION	NEED FOR PROJECT	CONTINGENCIES	RECONCILIATION W/ PRIOR BUDGET
P36101	Substation Communication Upgrade	1/1/2016	12/31/2026	This project will replace the communications all PGE substations with new equipment. This project is in response to telephone companies phasing out the equipment currently in use in 2020, putting at risk the ability to communicate with substations if the currently equipment breaks and replacement parts are no longer available.	The current state functionally is adequate. However, the telephone companies are discontinuing the types of circuits that utilities have historically used for the data and voice connections into substations. Some vendors have already stopped these services. Communication infrastructure must be replaced before service is discontinued or contact with substations will be lost. This is a compliance, safety, and reliability issue.	Resource availability to perform the work from Nokia network sites and hardware including purchases of preassembled panels. Will cover Phase 1 & 2 site as well as 30 - 50 sites of phase 3.	\$ 55,283,031.92
P36364	Vintage Vehicle Replacement II	5/1/2017	12/31/2026	The budget reflects Fleet's efforts to identify and support replacing vehicles that have exceeded their life expectancy or costs of repairs is excessive.	An aging fleet (both vehicle age and miles/hours) presents potential reliability and efficiency risks. Delays in vehicle and equipment replacement could cause operational issues, crew downtime, and decreased confidence in vehicles and equipment.	The increase is related only to the pool of vehicle replacements scheduled in 2023	\$ 103,175,189.61
P36501	Integrated Operations Center - IOC	11/1/2017	12/31/2023	Operations of PGE's Transmission, Distribution, and Generation systems are changing at a fast pace. Construction of a new Integrated Operations Center creates the necessary foundation to deliver on new operational technologies, manage the grid of the future, and provide operational resiliency in the event of a major disaster.	The Operations Center layout needs to be designed to accommodate future implementation of the Distribution Management System which will significantly change how we manage the distribution system for our entire system. The integrated Grid Roadmap initiatives are being implemented in the future. The space limitations of 3WTC are making it difficult to adapt quickly to new technologies. The building is at capacity and does not have space to accommodate expansion of PGE's operational departments.	No change	\$ 187,955,233.27
P36723	Field Area Network Project (FAN)	11/21/2018	1/4/2025	This project will implement the Field Area Network (FAN), wireless communication network that connects field sensors and control devices throughout the electrical distribution system to the Integrated Operations Center. The FAN is designed to efficiently connect technologies such as Distribution Automation, SCADA, Demand Response, Microgrid control and integration of energy storage, and other smart grid technologies. The FAN will also support the integration of other field data communication.	A FAN provides the fundamental backbone to allow communication and visibility within the distribution network	Over time, additional sensor locations will be identified and added to the FAN	\$ 20,073,044.43
P37017	Facilities Upgrades-EV Readiness	3/1/2020	12/31/2026	Construct the new Evergreen substation for additional transmission capacity. The new substation will have both 230kV and 115kV yards. The Harborton-Horizon 230kV line (currently under construction) will loop into the new substation, creating a Evergreen-Harboron 230kV line and a Evergreen-Horizon 230kV line. The Shute-West Union 115kV line (currently under construction) will loop into the new substation, creating a Evergreen-Shute 115kV line and a Evergreen-West Union 115kV line. The existing Shute-Sunset #2 115kV line will be disconnected from Shute and extended to Evergreen, creating a Evergreen-Sunset 115kV line. Two new bulk power transformers (230/115kV) will be installed to provide bulk power system capacity growth in the hillsboro area. Two 115kV capacitor banks will also be installed for extra support.	The clarification of the PGE fleet is necessary component of achieving the PGE goal of net-zero carbon emissions by 2040.	This project maintains a contingency for less than 10%. Not applicable. Project was not included in previous BOE	\$ 19,619,074.10
P37095	CTO Infrastructure Fitness Blanket	1/1/2021	12/31/2023	Blanket will be allocated from this Blanket to individual sub-blankets or projects at the beginning of 2023. Each sub-blanket will fund both fitness and project-related activities: individual projects in the respective areas will be funded by each sub-blanket and documented in accordance with SDL.	Budget only IT infrastructure blanket used to fund separate projects to.	Risks are in the specific projects funding is allocated to previous BOE	\$ 11,000,000.00
P37093	Facilities Management Fitness	11/1/2020	12/31/2023	Asset Preservation: Based on a recent evaluation of our facilities by an external assessment, that are critical findings that must be addressed regarding the condition of our facilities based on the DCR ratings provided to us. The assessment is attached. In addition, there are lighting systems in place that are inefficient and require regular maintenance. Most of the lighting fixtures are fluorescent, which are being replaced with LED lighting. LED lighting is more energy efficient and has a longer life span, which is more cost-effective in the long run. LED lighting is also more environmentally friendly and less expensive to replace. Apart from our newer facilities, the current HVAC equipment & automation controls at our sites are at the end of their life cycle, which is 15-20 years. These systems have equipment and parts that are no longer supported and contain CFC's which have been deemed to be environmentally hazardous. Salem Line Center (1981) Exterior EFS wall assessment revealed numerous deficiencies within the building envelope that, if not addressed, could result in moisture intrusion, structural damage, safety concerns, material corrosion, and premature material failure. Over the last several years, there has been an increase in security gaps and system failures. Some of the current gates and operators have been in service well over 15 years. The failure rate will only increase with age. Currently, 23 gates have been replaced with 14 remaining. My Safety Projects continue to require funding of approx. \$200K annually Unknown Asks are taking away from planned project funding unexpectedly if funding is not provided. Rev 81 - 10% reduction to budget required by BSC/CRG to balance the capital portfolio and approve the repair of the leaking bridge roof at the Wotter Trade Center complex.	Risks are in the specific projects funding is allocated to previous BOE	Not applicable. Project was not included in previous BOE	\$ 10,948,516.42

PROJECT NARRATIVE - Major Projects

For major projects (the three largest projects in terms of cost and all projects greater than \$10 million) a narrative supplying the following information is required:

- 1 Project Description. Include a brief technical specification of the project, ownership, if jointly owned, operating date, stage of construction, and other relevant information.
- 2 Need for the Project. Attach all prepared information documenting the need for the project, including the specific need the project is intended to fill. Economic comparisons with alternatives are to be attached. All the underlying assumptions of the economic analyses are to be specified.
- 3 Contingencies. Attach a listing of existing or potential future problems which might impact the final cost or successful completion and operation of the project, such as licensing problems, labor difficulties, litigation, etc.
- 4 Reconciliation with Prior Budget. Each successive year's budget can be expected to reflect differing estimates of project costs as the project progresses. For each major project, prepare a reconciliation with the prior budget's estimates and provide specific reasons for the changes.

MAJOR PRODUCTION PROJECTS		EST. IN SERVICE		PROJECT DESCRIPTION		NEED FOR PROJECT		CONTINGENCIES		RECONCILIATION W/ PRIOR BUDGET		PROJECT TOTAL [1]	
PROJ. NO.	PROJ. TITLE	START DATE	SERVICE DATE	EST. IN SERVICE DATE	PROJECT DESCRIPTION	NEED FOR PROJECT	CONTINGENCIES	RECONCILIATION W/ PRIOR BUDGET	PROJECT TOTAL [1]				
P37096	IT Software Blanket	1/1/2021	12/31/2024		This project is for BUDGET ONLY and is for Inside the Target software type projects that POE expects to fund in 2023 and 2024. These projects will come before the Capital Review Group (CRG) for authorization individually and on a rolling basis after a Project Manager is assigned, and as early as 90 days before the start of the fiscal year. The projects are prioritized based on the following criteria: business benefits to the organization, IT and business process integration, and the project has been recommended by the relevant Business Sponsor Group. When software projects come before the CRG individually and are authorized, this blanket budgeting project will be correspondingly reduced. This BUDGET ONLY funding project will be managed and maintained by the IT Governance team under the Technology Center of Excellence.	Budget only software blanket used to fund separate projects	Risks are in the specific projects funding is allocated to.	14,421,991 reduction in funding as the company reduced overall funding to IT Software projects.	\$ 10,978,005.00				
P37346	powerPlay	5/2/2022	8/22/2023		This project will touch all functions within POE and will include an effort to complete process reengineering work in several areas as part of the system design. There is a need to modernize the financial systems infrastructure to scale and support POE's revenue growth, new business models and offerings. Core systems to be affected/replaced within the project include PeopleSoft, Oracle, SAP, and other systems such as Maximo, Coupa, etc. Impacted areas will include financial planning & budgeting control, GL Accounting, Project Accounting & Asset Management, and Inventory. In addition, this project will focus on improving data architecture and data governance at an enterprise level.	There is a need to modernize the financial systems infrastructure to scale and support POE's revenue growth, new business models and offerings. Core systems to be affected/replaced within the project include PeopleSoft, Financials, PowerPlan simplification, finance reporting tools, interfaces with other systems such as Maximo, Coupa, etc.	Covering potential, integration complexity, licenses, custom reporting, development and other unforeseen resource needs	Not applicable. Project was not included in previous BOE	\$ 33,142,866.81				

PROJECT NARRATIVE – Projects with Total Budget > \$1M

In addition, please attach copies of prepared documentation or plans describing generation transmission, and general plant projects exceeding \$1,000,000 in total cost and for which construction will commence in the budget year. Information submitted should contain:

- 1 A Brief Project Description: include the project function (e.g., production, transmission, distribution, general plant, thermal, hydro, or other), project identification.
- 2 Location: include a starting and ending date.
- 3 Total budgeted cost.

PROJ. NO.	PROJ. TITLE	START DATE	EST. IN SERVICE DATE	FUNCTIONAL CLASS	PROJECT DESCRIPTION	PROJECT TOTAL
P37421	Foreign Utility Blanket	1/1/2023	12/31/2024	Transmission Plant	Replace various equipment at jointly owned facilities that have exceeded their useful and economic life and are no longer supported by the manufacturer. This project will replace the following equipment at the jointly owned Gizzly substation: <input type="checkbox"/> Replace Supervisory Control & Data Acquisition (SCADA) - GRIZ-SCADA-8600 equipment	\$ 1,027,069
P37428	Salem Pole Storage	1/1/2023	12/31/2023	Intangible & General Plant	Funding will cover costs to grade, gravel fence and provide lighting to the PGE lot adjacent to the Salem storeroom. The work will include: <input type="checkbox"/> \$900K – Minimum cost for excavating and laying down rock for 3 or 4 acres <input type="checkbox"/> \$90K – 10% Contingency <input type="checkbox"/> \$1.0M for expenses related to safety, lighting, and additional City of Salem requirements (fencing/sidewalks/other city improvements) <input type="checkbox"/>	\$ 2,400,000
P37439	PACS Tier Upgrades	10/20/2022	12/31/2023	Intangible & General Plant	<p>PACS Tier Upgrade Revised <input type="checkbox"/></p> <p><input type="checkbox"/> Decreasing costs (Tier Level Substation (design costs) <input type="checkbox"/></p> <p><input type="checkbox"/> Utilize newly developed tiered substation levels to commission 3rd party vendors to design security upgrades for 16 tier-1/2 locations. <input type="checkbox"/></p> <p><input type="checkbox"/> Commission third-party vendor to produce designs for sixteen (16) Tier 1/2 Substations Upgrades – Approximately \$400,000.00 <input type="checkbox"/></p> <p><input type="checkbox"/> Decreasing costs (Moved \$1M to 2022 remaining costs for 2023) <input type="checkbox"/></p> <p><input type="checkbox"/> There are (41) sites (substations, solar yards, switchgear yards, and telco sites) that currently have outdated fence fiber, fifteen (15) of these sites will be addressed with 2022 capital funds. These sites have been identified to receive fence fiber upgrades (ProTech), regardless of their designated tier level. <input type="checkbox"/></p> <p><input type="checkbox"/> New Fence Fiber/Fence protection at 27 Sites (2022-2023) - Outdated systems which are not fully leveraged to our Lenel alarm system - current increase in break-ins. \$1,705,620.00 <input type="checkbox"/></p> <p><input type="checkbox"/> Add (Capital Labor Dollars) <input type="checkbox"/></p> <p><input type="checkbox"/> This proposed work will require hundreds of Physical Security personnel hours to execute. In addition, the physical security team still has all the typical annual O&M work to do. The Physical Security team wants to augment the costs associated with this work and minimize the added O&M costs to the Physical Security Department budget. <input type="checkbox"/></p> <p><input type="checkbox"/> We are asking for less than 10% of our total project costs (fence fiber, e-core locks, and Sullivan Powerhouse), \$190,000.00. <input type="checkbox"/></p>	\$ 2,925,000

Schedule B: Electric Company New Construction Budget (System)

COMPANY:
Portland General Electric Company

BUDGET YEAR:
2023

INSTRUCTIONS

1. Report size of major production projects only, and percent ownership, scheduled operating dates, and expenditures required to complete project for major production, transmission, and general plant projects.
2. Major projects are defined as those projects having a total estimated cost to completion exceeding \$10 million.
3. Under "Distribution," report specific line item expenditures for the budget year only. All expenditures for distribution following the budget year should be aggregated for the year and only total distribution expenditures reported for the period.
4. Non-major project expenditures within each category should be aggregated and only the totals reported.
5. Report all expenditures in thousands of dollars.

DESCRIPTION	SIZE	PERCENT OWNERSHIP %	SCHEDULED OPERATING DATE (MO / YR)	EXPENDITURES (B.Y. = BUDGET YEAR; B.Y. + 1 = THE FIRST YEAR AFTER THE BUDGET YEAR, ETC.)														
				PRIOR TO B.Y.	B.Y.	B.Y. + 1	B.Y. + 2	B.Y. + 3	B.Y. + 4	REQUIRED TO COMPLETE	TOTAL							
Major Production Projects:																		
Colstrip Capital Proj PPL		100%	Dec-2026	\$118,990	\$2,971													\$121,961
PSSES – Generation Fitness Fund		100%	Dec-2025	\$40,998	\$2,744													\$43,742
WSH Structural/Reliability Upgrades		100%	Dec-2025	\$46,701	\$386	\$2,150												\$49,237
2016-2024 Dispatchable Standby Gen		100%	Dec-2024	\$2,556	\$2,856	\$5,732												\$11,144
Wind Generation Fitness Programs		100%	Dec-2025	\$41,496	\$5,355													\$46,851
Hydro Control System Upgrade		100%	Oct-2024	\$26,600	\$6,321	\$3,550												\$36,470
FY: Repower Faraday Units 1-5		100%	Feb-2023	\$152,276	\$21,562													\$173,838
Generation Portfolio Blanket		100%	Dec-2024		\$25,627													\$25,627
BR: Beaver Modernization		100%	Jan-2026	\$24,943	\$32,463													\$57,407
RB: Replace Turbine Shutoff Valves		51%	Jan-2025	\$14,819	\$5,966	\$266												\$21,051
PW2: Top End Engine Parts and Insta		100%	Dec-2024	\$3,241	\$7,374													\$10,615
Construct Clearwater Wind Farm		100%	Dec-2023	\$305	\$422,002													\$422,307
Non-Major Production Projects				\$394,754	\$18,254	\$5,320	\$1,360											\$419,689
Total Production Projects				\$867,679	\$553,883	\$17,018	\$1,360											\$1,439,940
Major Transmission Projects:																		
South Milliken Line Rebuild		100%	Dec-2027	\$3,880	\$6,936	\$2,753												\$13,568
Transm Line Clearance Mitigation		100%	Dec-2025	\$11,666	\$8,308													\$19,974
Build Evergreen Substation		100%	Dec-2025	\$10,953	\$23,947													\$34,900
OH FITNES Transmission		100%	Dec-2030	\$4,312	\$7,315													\$11,627
T&D BSG Reserve		100%	Dec-2025		\$37,178													\$37,178
Reedville Substation Rebuild		100%	Mar-2025	\$5,702	\$5,473													\$11,175
Horizon-Keeler BPA #2 230kV Line		100%	May-2024	\$8,988	\$2,523													\$11,511
Non-Major Transmission Projects				\$345,200	\$24,154	\$2,753												\$369,354
Total Transmission Projects				\$390,699	\$115,835	\$2,753												\$509,287
Distribution (See Instruction 3):																		
Station Equipment					\$186,988													
Poles, Towers, and Fixtures					\$24,835													
Overhead Conductors and Devices					\$37,240													
Underground Conductors and Devices					\$1,631													
Underground Conduit					\$49,153													
Line Transformers					\$13,780													
Services					\$27,467													
Meters					\$3,846													
Street Lighting and Signal Systems					\$7,139													
Other:																		
Total Distribution					\$352,079	\$9,348												\$361,427

