1.5% for Green Energy Technology in Public Buildings

Projects Reported Calendar Year 2022

Submitted to the

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1.5% FOR GET IN PUBLIC BUILDINGS – 2023 REPORT (FOR CALENDAR YEAR 2022)

INTRODUCTION

Pursuant to ORS 279C.527 and 279C.528, the Oregon Department of Energy must deliver an annual report to the Legislative Assembly on or before the first date of the session summarizing the compliance of contracting agencies required to incorporate green energy technology (GET) or eligible alternative energy technology in public improvement projects.

HISTORY OF THE STATUTE

The history of the 1.5% Green Energy Technology program began with legislation in 2007, which provided new solar requirements in ORS 279C.527 – ORS 279C.528. Including initial adoption, the legislature has amended this statute several times, including:

- House Bill 2620 (2007) - established the requirement for a public body to spend 1.5 percent of the total contract price of a building on solar technology.
- Senate Bill 1533 (2012) - amended ORS 279C.527-528 to 1.5 percent for green energy technology, allowing geothermal technology to also meet the requirement.
- House Bill 3169 (2013) - further amended the law and updated the reporting requirements by the department to the legislature, making the reports due annually before the start of the session.
- House Bill 2987 (2015) - removed the requirement that public bodies identify an account where deferred funds were to be held but maintained the requirement to spend the equivalent funds on a future appropriate building project.
- Senate Bill 3329 (2015) - lowered the minimum water source temperature from 140°F to 128°F for geothermal technologies in K-12 school projects.
- Senate Bill 634 (2017) - added woody biomass energy technology as an alternative for meeting the GET requirement.
- House Bill 2496 (2019) - made a number of updates to the program, including the following: added battery storage as an eligible green energy technology, made certain energy use efficiency improvements eligible alternatives to GET, increased minimum total contract price threshold for buildings subject to the requirement to $5 million, clarified the "total contract price" definition, excluded seismic costs from total contract price, and lowered passive solar and daylight systems energy use reduction from 20 percent to 10 percent.

GREEN ENERGY TECHNOLOGY REQUIREMENTS

Beginning with public building procurements solicited or advertised in calendar year 2020, the GET requirement applies to any new public building with a total contract price exceeding $5 million. It also applies to buildings being renovated when the total contract price exceeds $5 million and 50 percent of the insured value of the building. Prior to January 1, 2020, this threshold was $1 million. To be subject to the requirements, a public body must own or control the building and use it for conducting public business or as space for its employees.

Public bodies include state agencies, cities, counties, local service districts, special government bodies, school districts, education service districts, community college districts, and public corporations created by state statute, among others. Oregon's seven public universities, as listed in ORS 352.002, are exempt from the requirement. Also, after January 1, 2020, airports are also exempt from the requirement as a result of House Bill 2496 (2019).

PUBLIC BODIES MUST SPEND 1.5 PERCENT OF A BUILDING'S CONTRACT PRICE ON GREEN ENERGY TECHNOLOGY, INCLUDING SOLAR PV, PASSIVE SOLAR, OR GEOTHERMAL TECHNOLOGIES

GET is defined as energy systems that employ:

- Solar technologies, which include photovoltaic, solar hot water, passive solar, and day lighting (and, after January 1, 2020, battery storage technology that is paired with solar or geothermal systems that generate electricity).
- Geothermal systems that use geothermal source temperatures of 140° F or higher to provide heating or make electricity, with an exception for K-12 school projects, which are allowed to use minimum geothermal source temperatures of 128°F. Ground source heat pumps do not comply with the definition.

Woody biomass energy technology is an allowable alternative to GET and is defined as a system that for space or water heating, or as a combined heat and power system:

- Uses a boiler with a lower heating value combustion efficiency of at least 80 percent.
- Uses, as fuel, material from trees and woody plants that is a by-product of forest management, agriculture, ecosystem restoration, or fire prevention or related activities.

Woody biomass does not include wood pieces that have been treated with specified chemicals, municipal solid waste, construction and demolition waste, or other industrial wood waste.

After passage of House Bill 2496 (2019) and subsequent agency administrative rulemaking, energy use efficiency is also an allowable alternative to GET if the site's Total Solar Resource Fraction (the fraction of usable solar energy that the panels should collect, based on shading and the tilt and orientation of the panels) is 75 percent or less, effective January 1, 2020. To be eligible, energy use efficiency requires measures that reduce energy consumption by 20 percent or greater when compared to an energy code baseline.

To accommodate geothermal technologies, SB 1533 (2012) allowed for off-site installation of green energy technologies if certain requirements are met. These include cost-effectiveness, proximity of location, and the provision of new generating capacity. As a result, the public body has the option to place a technology off-site if it considers the technology inappropriate at the building site. The energy produced at either location must be used at the building site. The same off-site allowances and requirements apply to woody biomass energy technology.

If the public body plans to install GET, Woody Biomass, or Energy Use Efficiency at an alternate site, it must have its plan reviewed by a technical review panel. The technical review panel includes a professional engineer or architect, a representative of a public body, a representative

of a green energy technology industry, and a representative of the woody biomass technology industry. The technical review panel is chaired by ODOE staff. In 2022, new members for the review panel were introduced to the program and their role in technical review. When submitting for review, the public body must provide information to the panel about the site and the cost of the GET/Woody Biomass/Energy Use Efficiency system at each location.

If the public body considers GET or an alternative inappropriate both on-and off-site, the public body must also submit its reasoning to the technical review panel. The panel reviews the analysis and provides its written recommendation to the public body. The public body makes a final determination whether the GET or an alternative is appropriate for the project. A summary of both the public body's decision and the review panel's recommendation must be reported to the ODOE database.

If the public body determines GET or an alternative is inappropriate for the project, and any amount of state funds are included in the construction/renovation funding, the public body must spend an equivalent amount in a future project that it builds. This amount is in *addition* to any 1.5 percent of the future project cost that might be required for GET or an alternative. However, if no state funds are used (either directly or indirectly) for the construction/ renovation of the public building, there is no requirement to defer funds for a future project.

Reasons submitted for determining GET as inappropriate for a site include insufficient infrastructure, prohibitively costly upgrades for existing buildings, and poor solar access compared to other public agency upcoming projects. Net metering thresholds (25 kW in consumer-owned utility territories) that limit the capacity of solar PV that can be installed and interconnected to a utility grid can also be a barrier and can reduce the utility cost offsets from onsite solar.

The law requires all public bodies with a building project subject to the GET requirement to report the project information to the Oregon Department of Energy. After a public body makes a final determination whether GET or an alternative is appropriate — when all the project information is known and generally before construction of the system begins — it is required to report the project electronically using a form located on the ODOE website. ODOE summarizes all reported projects and provides this report to the legislative assembly prior to the start of the session.

OUTREACH EFFORTS BY ODOE TO PUBLIC BODIES

ODOE CONTINUES TO INCREASE AWARENESS AND TRACK PROJECTS THAT MAY BE SUBJECT TO 1.5% GET REQUIREMENTS THROUGH PUBLIC BODY OUTREACH EFFORTS AND COORDINATION WITH OTHER STATE AGENCIES.

To increase familiarity with the GET requirement, including the requirement to report GET projects to ODOE, the Oregon Department of Energy conducts outreach efforts to public bodies by providing information about the requirements stipulated in ORS 279C.527 through ORS 279C.528. ODOE conducts annual outreach via email to remind public bodies of the requirements. This outreach email is sent to the Association of Counties, League of Oregon

Cities, community colleges, state agencies, counties, cities, and K-12 school districts, among others, and was recently distributed in December 2022. ODOE has also developed an informational brochure for online posting and distribution at public body conferences and gatherings.

Also, beginning with the 2019 Oregon energy code (known as the *2019 Oregon Zero Energy Ready Commercial Code*), ODOE has worked with the Building Codes Division to include a reference to 1.5% GET requirements directly in the code document. The purpose of this is to help make architects, engineers, and others in the design community more aware of GET requirements, so that GET can be incorporated into early project design. This 1.5% GET reference continues in the recently adopted *2021 Oregon Energy Efficiency Specialty Code*. ODOE appreciates the collaboration and efforts of Building Codes Division to include this reference in the energy code, as it has been beneficial in supporting awareness and compliance of the 1.5% GET requirement. An excerpt from the current 2021 Oregon commercial energy code is included below.

> **Note:** For reference only. Not adopted by the State of Oregon, Building Codes Division, as part of the *state building code.*
>
> The Oregon Department of Energy administers the 1.5% for Green Energy Technology program for public buildings. New construction and major renovation projects for public buildings are required to evaluate and install Green Energy Technology and report to the Oregon Department of Energy in accordance with Oregon Revised Statute (ORS) Chapter 279C, Section 279C.527-528 and Oregon Administrative Rule (OAR) Chapter 330, Division 135. See *Oregon.gov/energy.*

https://www.oregon.gov/bcd/codes-stand/Documents/2021oeesc.pdf

Also, in 2019, ODOE identified a potential synergy with the Oregon Bureau of Labor and Industries' data collection and reporting requirements. BOLI provided a compilation of construction projects by public agencies that may meet the criteria and be subject to the 1.5% GET requirements. Separate from any 1.5% GET requirements, there are other prevailing wage requirements for public agencies and public works projects that are required to be reported to BOLI. These requirements apply to a much broader list of public projects than do the 1.5% GET requirements, but in general encompass all or most of the projects that would also be subject to the 1.5% GET requirements. ODOE works with BOLI to filter the dataset to identify projects for which the 1.5% GET requirements could potentially be applicable. ODOE then conducts targeted outreach to these public agencies regarding 1.5% GET applicability. Since public projects that are subject to 1.5% GET requirements can occur across a wide array of public agencies (counties, cities, school districts, etc.), ODOE has traditionally only been aware of projects that report to the agency or contact the agency with questions. By working with BOLI and utilizing its database to identify other 1.5% GET subject projects, ODOE has made progress toward proactively identifying and communicating with more of the 1.5% GET subject projects and public agencies. ODOE continues to collaborate with BOLI to increase public agency awareness and improve agency outreach efforts.

Since the GET requirement came into effect, a total of 170 projects have been reported — including eight projects for calendar year 2022.[1]

PROJECTS REPORTED TO ODOE

Of the eight projects reported to ODOE in 2022, seven were for projects deemed appropriate for a GET (or an eligible alternative) technology, and one was deemed inappropriate. Details below.

Reported Projects in 2022 For Which GET (or an Eligible Alternative) Was Determined Appropriate

Seven projects for which GET (or an eligible alternative) was deemed by the public body to be appropriate were reported to ODOE in 2022. Projects are listed below in the order in which they were entered into the 1.5% GET database. This summary includes projects as reported by public bodies. Key fields from the information that public bodies are required to report include:

GET Category – The category of Green Energy Technology (GET) installed for a particular project. The options include active solar (photovoltaics), passive solar, solar thermal (water heating), geothermal, and battery storage.

GET Description – A brief description of the GET system as entered by the contracting agency.

Total Contract Price – This term has the definition given in Oregon Revised Statute 279C.527. Total Contract Price generally means all of the costs a contracting agency anticipates incurring in all contracts and subcontracts involved in constructing, reconstructing or performing a major renovation of a public building, with certain exemptions as detailed in the statutory definition.

Minimum GET Budget – This is the minimum spending obligation that the contracting agency must dedicate towards Green Energy Technology. This is a simple calculation of the Total Contract Price multiplied by 1.5 percent.

Total GET Expenditures – This value represents the total amount actually spent on Green Energy Technology, as reported by the contracting agency.

Est. Annual Production – Estimated annual energy production (or savings) of a Green Energy Technology system. This is reported in units of kilowatt-hours for electricity production or savings, and in units of Million Btu for thermal production or savings. For all projects reported in 2022 calendar year, the units are kilowatt-hours.

Est. Annual Value – This is the estimated monetary value of the energy produced or saved from the Green Energy Technology.

[1] Historic project counts may differ from previous program reports due to data review, organization, and clean up.

Project 22-2

Project Owner	Portland Public Schools
Project Name	Benson Polytechnic High School Modernization
Project Address	546 NE 12th Ave
City, State, Zip	Portland, OR 97232
Project Type	Renovation
GET Category	Active Solar
GET Description	PV array includes rooftop on canopies, covered bike shelter, main building, also south facing solar shading on brise soleil structures. Total PV array size 285.95 kW.
Total Contract Price	$212,000,000
Minimum GET Budget	$3,180,000
Total GET Expenditures	$3,180,000
Est. Annual Production	333,029
Est. Annual Value	$40,206
Date Project Submitted	January 13, 2022

Project 22-3

Project Owner	Medford School District
Project Name	Oakdale Middle School
Project Address	815 S Oakdale Ave
City, State, Zip	Medford, OR 97501
Project Type	Renovation
GET Category	Active Solar
GET Description	Photovoltaic Array. 65.17 kW array, includes 133 Silfab 490 panels.
Total Contract Price	$11,498,133
Minimum GET Budget	$172,472
Total GET Expenditures	$179,115
Est. Annual Production	97,494
Est. Annual Value	$10,237
Date Project Submitted	October 24, 2022

Project 22-4

Project Owner	Portland Community College
Project Name	Rock Creek Campus Childcare Building
Project Address	17705 NW Springville Rd
City, State, Zip	Portland, OR 97229
Project Type	New Construction
GET Category	Active Solar
GET Description	See PCC RC DSTB for details
Total Contract Price	$5,000,000
Minimum GET Budget	$75,000
Total GET Expenditures	$0
Est. Annual Production	0
Est. Annual Value	Not Reported
Date Project Submitted	December 1, 2022

Note: The PCC Rock Creek Campus Childcare Building's 1.5% GET requirement was consolidated with the PCC Rock Creek Campus Dealer Services Technology Building (DSTB), reported in 2021. Please refer to the "1.5% for GET in Public Buildings – 2022 Report (for Calendar Year 2021)" for additional information.

Project 22-5

Project Owner	Klamath Community College
Project Name	Apprenticeship Center
Project Address	7390 S 6th St
City, State, Zip	Klamath Falls, OR 97603
Project Type	New Construction
GET Category	Active Solar
GET Description	PV rooftop system. 112 panels, SilFab Solar 490 Mono. Total 54.88 kW DC capacity.
Total Contract Price	$8,513,770
Minimum GET Budget	$127,707
Total GET Expenditures	$140,000
Est. Annual Production	68,000
Est. Annual Value	$8,000
Date Project Submitted	December 19, 2022

Project 22-6

Project Owner	Salem Keizer School District
Project Name	Auburn Elementary School
Project Address	4612 Auburn Rd NE
City, State, Zip	Salem, OR 97301
Project Type	Renovation
GET Category	Active Solar
GET Description	PV panels at existing and new covered play structure. Approximately 216 total panels, approximate total PV sysem capacity of 80 kW.
Total Contract Price	$16,158,000
Minimum GET Budget	$242,370
Total GET Expenditures	$376,183
Est. Annual Production	96,000
Est. Annual Value	$6,240
Date Project Submitted	December 22, 2022

Note: The Salem-Keizer School District has complied with the 1.5% GET program requirements by consolidating multiple projects' 1.5% GET requirement to projects with the most solar feasibility. Please refer to the following explanation from the district:

The Salem Keizer School District (SKSD) addressed the Green Energy Technology (GET) requirements with a comprehensive approach to their bond projects. Similar to the bond budget spent across numerous schools based on need, the GET budget was allocated to the most appropriate schools. Several things were taken into account, but a main priority was not adding to any maintenance issues for the school. There was some concern that a PV array could cause leaks that may cause damage, or interrupt school schedules. Roof upgrades to existing schools could have taken too large a portion of the bond. The solution was to add PV arrays to the Covered Play Structures to maximize the dollars spent on solar, rather than just upgrades. Consequently, there were seventeen schools that had Solar Feasibility Studies conducted by Elemental Energy, a Solar Trade Ally with Energy Trust of Oregon, which funded ninety percent of that cost. The schools with the highest Total Solar Resource Fraction (TSRF of at least over 75) were considered. The GET team then put those schools into a SmartSheet that was shared with the project managers to integrate the process with design development through construction. Each team worked to assess the structural impacts, infrastructure needed and site to maximize solar on the Covered Play Structures. Then the contractor engaged a Solar Trade Ally to implement the design, and provide feedback as needed. Several guidelines were created to help standardize the process from a Basis of Design document specifying code interpretation, design guides, and PV module performance. An additional guide was made for ongoing operations and maintenance of the PV arrays through the SolarEdge Dashboard that was a standard requirement tied to each inverter. The total budget was tracked from design through construction of all eligible GET costs on the SmartSheet. The total five million and seven hundred thousand dollars allocated to Green Energy Technology with PV's was exceeded. A substantial portion of that budget was attributed to one large ground mounted array on the Yoshikai site where there was sufficient open space. This over million dollar system covered a few schools that did not have solar installed for the reasons listed above. Overall, the Salem Keizer School District

exceeded the GET budget requirement of $5.7 million dollars that was determined to be 1.5% of the Total Contract Price of the eligible bond work.

Project 22-7

Project Owner	Salem Keizer School District
Project Name	Sumpter Elementary School
Project Address	525 Rockwood St SE
City, State, Zip	Salem, OR 97306
Project Type	Renovation
GET Category	Active Solar
GET Description	3 Array 69 kW Roof Mounted Photovoltaic System using SolarEdge 480V three 66kW Inverter & Solaredge Optimized Technology.
Total Contract Price	$8,179,851
Minimum GET Budget	$122,698
Total GET Expenditures	$503,294
Est. Annual Production	82,986
Est. Annual Value	$10,787
Date Project Submitted	December 22, 2022

Note: Please refer to the project 22-6 description for additional information on Salem-Keizer School District's comprehensive approach to 1.5% GET project requirements across multiple projects.

Project 22-8

Project Owner	City of Wilsonville Public Works
Project Name	Wilsonville Public Works Complex
Project Address	28625 SW Boberg Rd
City, State, Zip	Wilsonville, OR 97070
Project Type	New Construction
GET Category	Active Solar
GET Description	Canadian Solar: CS3W-455MS PV System to be installed roof top of building B on Public Works Campus. Approved Submittal attached. Total PV array capacity of 94.64 kW.
Total Contract Price	$21,239,788
Minimum GET Budget	$318,597
Total GET Expenditures	$350,000
Est. Annual Production	109,000
Est. Annual Value	$37,252
Date Project Submitted	December 30, 2022

Reported Projects for Which GET Was Determined to be Inappropriate

One project for which GET was determined to be inappropriate by the contracting agency was reported into the 1.5% GET database in 2022.

Project 22-1	
Project Owner, Project Name and Location	Bend - La Pine Schools Bend Senior High School Addition
Project Type	New Construction/Addition
Total Contract Price	$6,785,000
Minimum GET Budget	$101,775
Public Body explanation as to why GET was determined to be inappropriate for the project	Deemed the project was not appropriate based on a cost benefit analysis.
Technical Review Panel Findings	Please refer to “Technical Review Panel Determinations” Section.

COMPLIANCE WITH THE STATUTE

The Oregon Department of Energy's role includes writing program rules, conducting outreach to public bodies, and summarizing the public bodies' reporting efforts in the annual report to the legislature. The determination as to whether GET is appropriate or inappropriate remains with the public body. Public bodies that determine GET or an alternative to be inappropriate are directed to submit their reasoning for a Technical Panel Review. ODOE continues to inform public bodies that they must request a review when making a determination that GET is inappropriate and that regardless of which determination they make, all subject projects must be reported to the 1.5 percent GET/alternative reporting form.

APPENDIX A: TECHNICAL REVIEW PANEL DOCUMENTATION

One project that was reported to ODOE in 2022 was submitted for technical review for a recommendation.

All TRP correspondence and determinations are included in this appendix. Reference project numbers for reported projects are listed.

In addition to technical review for projects reported in 2022, one project was also submitted to the Technical Review Panel in 2022 that has not yet been reported to the database. This is also listed in Appendix A.

Project #22-1: TECHNICAL REVIEW PANEL COMMUNICATIONS

Bend LaPine School District

Bend Senior High School Addition

* Note: Technical staff review for this project occurred in 2020-2021, but the project was reported into the 1.5% GET Database in 2022.

Public Body Submittal:

Bend LaPine School District is planning to build a gymnasium addition at High Desert Middle School. The new addition will be approximately 10,029 square feet with a total project cost of $5,245,500. It is my understanding that under ORS 279C.527 we are required to spend 1.5% of the total project cost on green energy technology specifically solar. Based on the attached engineering analysis the cost benefit for installation of green energy technology on this project would be inappropriate and would therefore be exempt from the requirement. Please review this request with the Technical Review Panel and advise.

Summary of Staff Response:

ODOE staff, including the chair of the Technical Review Panel, communicated with the public agency representative to outline the 1.5% GET program requirements, opportunities for other allowable technology pathways for compliance, and request additional information. The information submitted did not include sufficient detail for a technical review. The Bend LaPine School District determined that Green Energy Technology was inappropriate for this project and reported the project to ODOE in 2022.

ADDITIONAL TECHNICAL REVIEW PANEL COMMUNICATIONS

The Technical Review Panel provided a review for the following project in 2022, but this project has not yet been reported into the 1.5% GET database

Oregon Department of Transportation
Meacham Maintenance Station

Public Body Submittal:

[Narrative]
ODOT is requesting a deferral of the green energy technology requirement for the new Meacham Maintenance Station construction project as construction nears completion. In 2016, construction began of the new Meacham Maintenance Facility for ODOT, located about ½ hour SE of Pendleton, OR, and serves one of the steepest and coldest hills along I-84. It consists of a 27,000 SF maintenance and dispatch facility for snow plows and support vehicles with space for crews and training, a 7,500 SF storage facility, a fuel island, and a salt/gravel shed. The facility incorporates heated slabs both inside the maintenance facility and full exterior perimeter apron to aid. The facility includes a 12,000 square foot membrane-covered storage bunker for ODOT's road sand and salt products as well as; fuel, deicer, and other material storage. In addition, a new radio tower at the highest elevation on the property to improve radio signal over the Blue Mountains for ODOT and other response crews.

ODOT's Meacham Maintenance Station facility is the Agency's home base for highway maintenance on Interstate 84 through the Blue Mountains between La Grande and Pendleton. Facility functions include maintenance vehicle dispatch, equipment servicing, minor repairs, material and tool storage, fueling, de-icing, stockpiling of road sand and salt, and crew areas. ODOT has been planning for decades to invest in a replacement of the Meacham Maintenance Station. This investment will coincide with snow zone safety improvements on I-84, and will improve highway maintenance response times on I-84 and crew efficiency, as well as reduce wear and tear on agency equipment, and save on energy costs.

Meacham is one of the coldest places in the continental United States. The biggest barrier to incorporating green energy technology into the new Meacham Maintenance Station is installing systems that are resilient to the harsh weather conditions. In Meacham, Oregon, winter consists of large amounts of snowfall. The large accumulations of snow take until July to melt. Meacham holds the national record of snowfall in a 24 hour stretch and can see four to six feet of snow in a 24 hour period. Statically, snowstorms have the highest effect on electricity production of solar photovoltaics due to blockage and more wear-and-tear from the elements. Severe weather poses a threat to all power system infrastructure; however, there are advantages to using solar PV as a resilient power source, such as its distributed nature and no need for fuel. To fully benefit from these advantages, it is vital that solar arrays are designed and installed in a manner that gives them the greatest likelihood of surviving severe weather events and thus being able to produce power afterwards.

The main takeaway from discussions with site designers, installers, and operators was the importance of designing for resilience and designing and building a system correctly from system inception (rather than retrofitting it after install). Ensuring a high standard of maintenance is also crucial. To be effective as a resilient power solution, though, the system needs to survive the weather event. To survive, it must be designed, installed, and maintained to a higher standard. While doing so will come with a significant increase in cost. As a result, the Facilities branch made the decision to install solar arrays in two sites better suited for solar electricity generation, Pendleton and Hermiston. Both are near the site of Meacham's construction, but have lower snow loads and more days of sunshine. Meacham Oregon has an annual snow fall of 99lbs per square foot which is significantly more than at Hermiston (13lb per square foot) or Pendleton (21lbs per square foot). This is an overall advantage to the local ODOT crews, local utilities, and Oregon as a whole because the installed arrays are ultimately more efficient. Furthermore, while installing a storm hardened PV system will likely come with a cost premium over a baseline system, costs of system components have increased recently.

Meacham, Oregon is relatively isolated, the closest town of any size to pull a labor force is 50 miles away. Finding a qualified labor force in the current environment is extremely challenging, costly, and prohibitive. The one-two punch is causing more than a 20% increase in prices. ODOT has determined based on current available resources that it was not appropriate to install green energy technology at the Meacham Maintenance Station site and that those resources would be better utilized elsewhere. ODOT prefers to defer the expenditure of the total contract price to locations where green energy technology was more suitable. The scope of the project(s) included the installation of a grid-tied Solar Photovoltaic System at the Hermiston Maintenance Station and Pendleton Maintenance Station.

The Hermiston Solar system was a flush roof mounted array consisting of 54 micro-inverters to yield a total capacity of 25.92 kW DC. The total project cost was $115,530. The Hermiston Maintenance Station solar project completed installation in July of 2022. Anticipated savings of approximately $6,809 in electric bills (61%) at current utility rates in the first year. Savings will grow as electric utility rates are expected to rise 5.00% a year. The purchase of electric energy (kWh) from our utility is expected to be reduced by 71%. The payback on the projected is estimated at 9 years and the cash gained over the life of the project is estimated at $256,765. CO^2 emissions saved over the life of the system are estimated at 1,424 tons. The Pendleton Maintenance Station Solar Project scope included the installation of a 47.5kW grid-tied solar system, utilizing 132 panels and 3 inverters. The project completed installation in June of 2019. The total project cost was $97,558. Since installation, the Pendleton Maintenance Station has had a 20% reduction in source EUI, 21% annual energy cost savings, and a 14% reduction of GHG emission intensity.

Installation of owned-renewable electricity generation requires an appropriate area – either roof space or open land area – and the economics favor installing as large a system as possible. On-site solar installments can carry large upfront costs and require additional maintenance costs, which can be a barrier for many. ODOT has made investing in green energy technology and reducing carbon emissions a priority. ODOT led the nation in innovative on-site renewable generation through Oregon's Solar Highway Program, which utilizes highway right-of-way space for installation of solar PV arrays. Rooftop and additional right-of-way solar installations also offer future opportunities for ODOT. While these installations generate GHG-free electricity for ODOT, significant developments would be needed to match ODOT's electricity consumption. ODOT will need to prioritize future project locations where resources are best utilized. Investor-owned utilities continue to offer incentives and net metering agreements that are limited in consumer-owned utility districts. ODOT will work with Portland General Electric (PGE) and Pacific Power utilities to prioritize projects in those territories.
[End Narrative]

Staff Technical Response:

Oregon
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November 30, 2022

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Re: 1.5% for Green Energy Technology funds at Meacham Maintenance Station

Hi Egan,

This letter is in response to your request for a technical review of the 1.5% Green Energy Technology (GET) requirements associated with the new maintenance station in Meacham, Oregon. Thank you for the additional clarification provided via email on 9/12/22. In the request you describe ODOT's decision to defer 1.5% GET funds based on the difference in snow loads between sites. The Technical Review Committee agrees that extreme snow load, for sites such as Meacham, is an important and appropriate factor to consider for deferment of funds. The review committee also generally recommends a more comprehensive assessment beyond solar access and snow loads for the eligible technologies, when solar photovoltaics are not feasible at a site. In future requests, the committee would like additional information describing the difference in solar resource between alternate sites. Committee members pointed out that site conditions such as roof slope, orientation, and shading also affect solar performance. Additionally, a more comprehensive site assessment would consider other eligible technologies and alternatives when solar is not seen as feasible.

There are also a couple of additional programmatic items related to the 1.5% GET requirements at the Meacham maintenance facility. The first concerns the timing of the deferment projects and the second concerns the budget. Project deferral requests are intended to be proactive, based on assessments during project planning and early design. Deferral requests should look ahead intentionally to specific future projects, if known, for which GET can be deferred. The letter provided on 9/12/22 details a deferral to solar projects at Hermiston and Pendleton stations that have already been completed and it is not clear to ODOE if this was planned as an intentional deferral of Meacham 1.5% GET Requirement or if these were separate projects to which the Meacham requirement is being retroactively applied. Additionally, per the statute ORS 279C.527(6)(b), deferrals are to be part of a future public building project. It is also not clear if the sites selected for deferral and associated PV installations were associated with separate building projects at these sites. However, ODOE does recognize and appreciate ODOT's voluntary installation of valuable solar projects at these sites, and understands that the Meacham Maintenance Station has experienced budget challenges that have significantly affected the overall construction timeline. For future requests for deferral, please align the timing with early project design and a forward-looking approach to future public building projects for 1.5% GET application.

Also, regarding the project budget, ODOE understands through previous communications that the original total contract price for the project in 2016 was approximately $16.4 million, but that cost increases since then have resulted in a current total contract price of more than $26 million. Program rules, OAR 330-135-0025, specify that for 1.5% GET purposes the total contract price can be fixed at a certain point in time and should be based on the "*anticipated, budgeted costs for all required elements of the total contract price as best known to the contracting agency during project planning and schematic design phases*", in order to provide more certainty to project teams regarding the 1.5% GET budget amount. As

previously noted, ODOE understands the budget challenges associated with this project, and that for many projects the actual costs can exceed original budgets. The timeline for this project is somewhat different than other projects, however, given that there were multiple years between original budgeting and actual construction along with a resulting price increase of more than 50 percent. The deferral request has also come at a point in time where the actual price is known. The information presented is not clear about whether the GET budget should have been based on the revised project cost, given the multiple years and associated revised planning and design in the interim. Also, at the lower original costs of $16.4 million, the GET spending requirement would have been approximately $246,000. Based on the information presented in the 9/12/22 email, a total of $213,088 ($115,530 in Hermiston and $97,558 in Pendleton) was spent as deferred funding to meet the Meacham obligation. This would result in a remaining 1.5% GET requirement of approximately $33,000, which per previous conversations ODOE understands may be installed in an expanded array at the Pendleton Maintenance Station. The program deferral pathway is not intended to be distributed piecemeal across installations, and although ODOT's approach on this particular project is understood, future deferral requests should be directed toward single future public building projects.

Please note that the final determination regarding use of 1.5% funds is to be made by the contracting agency and reported in the green energy technology database. When reporting the project in the database please document the reason for not spending the GET funds on the subject project. The program rules and database reporting form can be found on the Oregon Department of Energy Web page at https://www.oregon.gov/energy/energy-oregon/pages/get.aspx.

Feel free to contact me if you have any questions.

Sincerely,

Blake Shelide
Facilities Engineer, Oregon Department of Energy

APPENDIX B: 1.5% GREEN ENERGY TECHNOLOGY PROGRAM PATH FLOWCHART

https://www.oregon.gov/energy/energy-oregon/Documents/GET-Flowchart-2020.pdf

(see below)

Green Energy Technology Program Flowchart (post HB 2496)

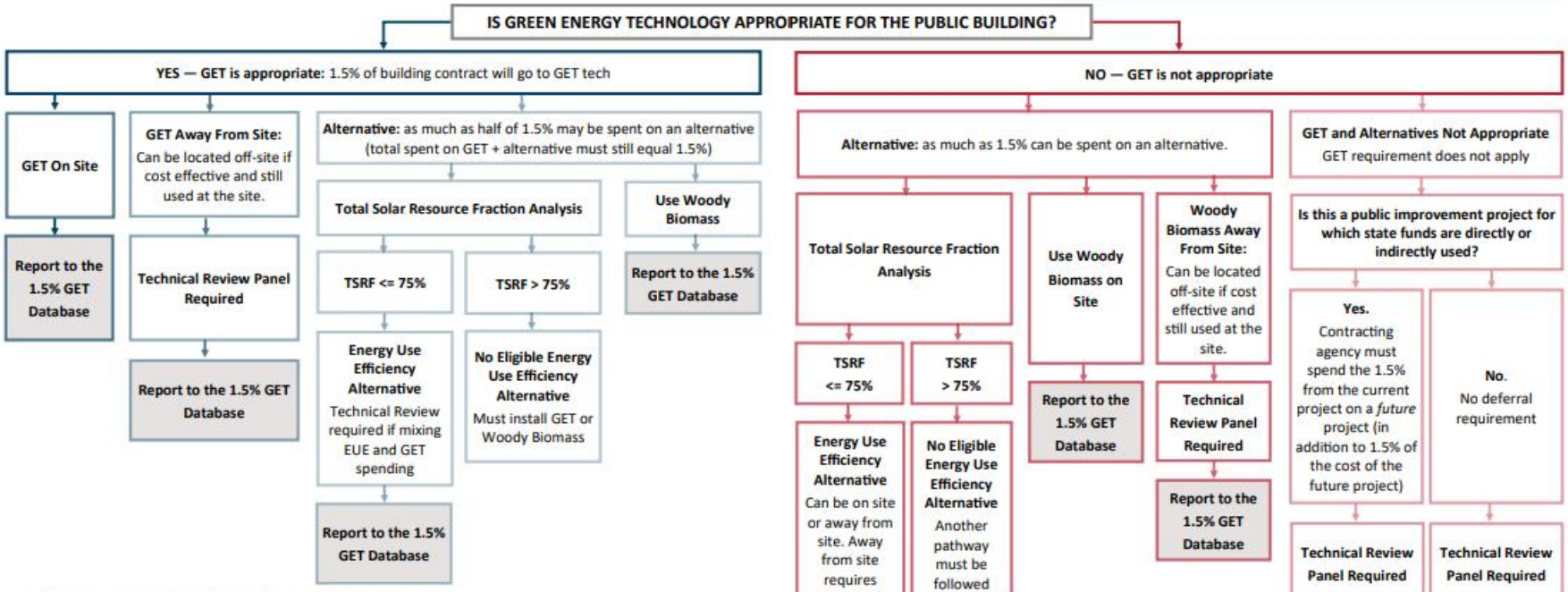
Public Buildings Subject to 1.5% GET Requirements:

- New construction with "total contract price" of $5 million or more
- Major renovation with "total contract price" of $5 million or more and greater than half the insured value of the building
- Public building means a building is owned or controlled by a public body, and is used or occupied by public employees or used for conducting public business
- GET spending can now be consolidated from multiple buildings into one building or off-site location

What qualifies as GET?

- Solar or geothermal installations
- Passive solar that reduces energy use from other sources by at least 10% from code
- Battery storage, if it is part of a system that generates electricity from solar or geothermal on site
- Alternatives include woody biomass or energy use efficiency

Note: Total Solar Resource Fraction (TSRF) analysis is required for projects that will incorporate solar energy or energy use efficiency.



Learn more about the GET Program on ODOE's website:
https://www.oregon.gov/energy/energy-oregon/Pages/GET.aspx

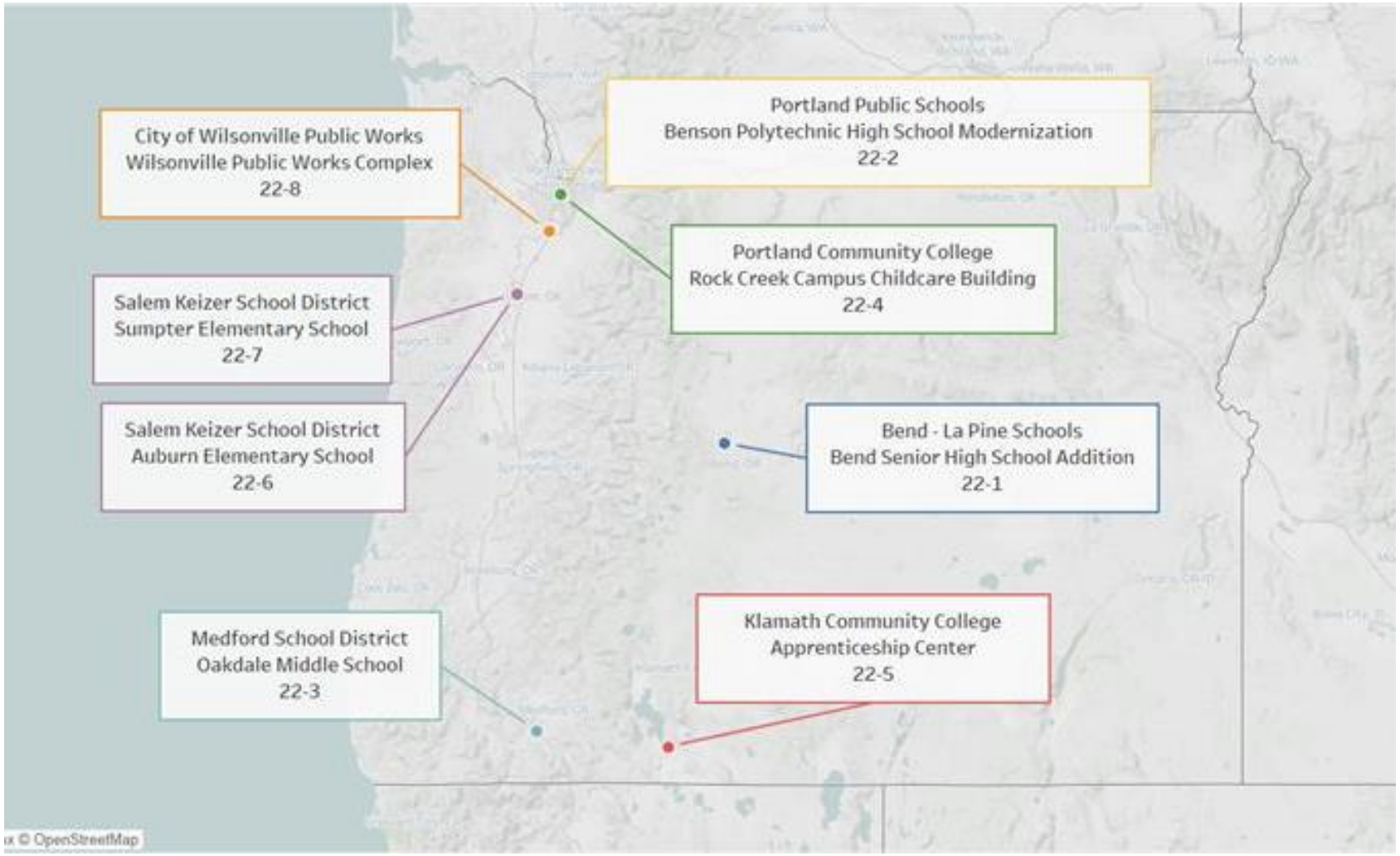
Relevant Statute & Rules:

- ORS 279C.527
- ORS 279C.528
- OAR 330-135-0055
- OAR 330-135-0050

1/15/2020

OREGON DEPARTMENT OF ENERGY

APPENDIX C: MAP OF PROJECTS REPORTED IN 2022



FOR MORE INFORMATION

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