1.5 Percent for Green Energy Technology in Public Buildings

Projects reported calendar year 2015

Annual Report to the Oregon Legislature

OREGON DEPARTMENT OF ENERGY

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1.5% for Green Energy Technology in Public Buildings

HISTORY OF THE STATUTE

In 2007, House Bill 2620 established the requirement for a public body to spend 1.5 percent of the total contract price of a building on solar technology. In 2012, Senate Bill 1533 amended ORS 279C.527-528 to 1.5 percent for Green Energy Technology (GET), allowing geothermal technology to also meet the requirement. In the 2013 legislative session, House Bill 3169 further amended the law. House Bill 2987 in 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 the next appropriate building project. Also in 2015, House Bill 3329 lowered the minimum water source temperature from 140°F to 128°F for geothermal technologies in K-12 school projects.

The original HB 2620 had reporting requirements by the Oregon Department of Energy to the legislative assembly on two specific dates. HB 3169 restored reporting requirements by the department to the legislature and made the reports due annually, before the start of the session. HB 3169 also specified reporting requirements from public bodies to ODOE that had previously been defined in rule.

GREEN ENERGY TECHNOLOGY REQUIREMENTS

The GET requirement applies to any new, public building with construction costs exceeding $1,000,000. It also applies to buildings being renovated when construction costs exceed $1,000,000 and 50 percent of the insured value of the building. 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, and special government bodies including school districts, education service districts, community college districts and public corporations created by state statute. Members of the Oregon University System are exempt from the requirement.

Green Energy Technology is defined as renewable energy technologies that employ:

- Solar technologies, which include photovoltaic, solar hot water, passive solar and day lighting.
- Geothermal systems that use geothermal source temperatures of 140° F or more to provide heating or make electricity, with the 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.

To accommodate geothermal technologies, SB 1533 allows off-site installation of green energy technologies if certain requirements are met. These include cost-effectiveness, proximity of location and providing 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.

If the public body plans to install green energy technology 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 member of a public body, a solar or geothermal technical expert, and is chaired by ODOE staff. The public body must provide to the panel information about the site and the cost of the green energy technology system at each location.

If the public body considers green energy technologies 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 body makes a final determination whether the green energy technology is appropriate for the project. Both the public body's decision and the review panel's recommendation must be reported to ODOE.

If the public body determines green energy technology is inappropriate for the project, and no state funds are used for the construction/renovation of the public building, there is no further requirement. However, if state funds are included in the construction/renovation funding, the public body must spend an equivalent amount in the next project that it builds. This amount is in addition to the 1.5 percent of the future project cost used for green energy technology.

The law requires all public bodies with a building project subject to the green energy technology requirement to report the project information to the Oregon Department of Energy. After a public body makes a final determination whether green energy technology is appropriate and 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 regular session.

OUTREACH EFFORTS BY ODOE TO PUBLIC BODIES

The number of green energy technology projects has averaged about five per year since the 2008 statute came into existence. It became apparent that contracting agencies were not sufficiently aware of the requirement to incorporate green energy technology into projects and were even less familiar with the requirement to report their projects to ODOE. With the 2008 recession, public building construction slowed significantly and this may have contributed to the low number of projects reported.

In 2014, the Oregon Department of Energy began outreach efforts to public bodies by providing information about the requirements stipulated in ORS 279C.527 through ORS 279C.528. ODOE now conducts annual outreach reminding public bodies of the requirements via email and includes a frequently asked questions and answers. This outreach email is sent to the Association of Counties, League of Oregon Cities, Special Districts Association of Oregon, community colleges, state agencies, counties, cities and K-12 school districts, amongst others.

1.5% for Green Energy Technology in Public Buildings

ODOE is also developing an informational brochure for distribution at public body conferences and gatherings, in the continued effort to expand outreach.

Between 2008 (the date the requirement went into effect) and up through 2013, 23 projects were reported to ODOE. For years 2014 and 2015, during which ODOE has conducted outreach, 21 projects were reported. It appears that ODOE outreach efforts have improved the level of reporting by public bodies. We will continue to increase outreach to public bodies in 2016.

PROJECTS REPORTED TO ODOE

Projects in which Green Energy Technology has been installed

Ten projects for which green energy technology was deemed appropriate were reported in 2015. No projects for which green energy technology was determined to be inappropriate were reported during the year. The projects, as reported to ODOE, are listed below.

Project Name and Location	Sherwood Center for the Arts 22560 SW Pine Street Sherwood, OR 97140 Washington County
Project Start Date	1/27/2014
Occupancy Date	2/27/2015
Total Contract Price	$ 4,411,200.00
Minimum GET Budget	$ 66,168.00
GET Description	The building is provided with at Grid-Tied Photovoltaic system that consists of a 36-panel array, with a rated (DC) output of 270 watts per panel. The array is connected to a 9kW inverter connected to the building electrical distribution.
Est. Annual Production	9,500 kWh
Est. Annual Value	$ 684.00
Total GET Expenditures	Not reported

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Project Name and Location	Region 4 DMV Remodel 63085 North Hwy 97 Bend, OR 97701 Deschutes County
Project Start Date	6/17/2014
Occupancy Date	6/15/2015
Total Contract Price	$1,453,622.00
Minimum GET Budget	$ 21,804.00
GET Description	Solar (Photovoltaic)
Est. Annual Production	4,500 kWh
Est. Annual Value	$ 495.00
Total GET Expenditures	$ 20,443.00

Project Name and Location	Bonnie J. Ford Health, Nursing and Science Center 1140 Umpqua College Road Roseburg, OR 97470 Douglas County
Project Start Date	6/15/2015
Occupancy Date	8/01/2016
Total Contract Price	$12,868,287.00
Minimum GET Budget	$193,024.00
GET Description	0 to 80kw ground mounted solar PV system designed for future expansion
Est. Annual Production	50,000 kWh
Est. Annual Value	$3,500.00
Total GET Expenditures	Project not yet completed

1.5% for Green Energy Technology in Public Buildings

Project Name and Location	Jefferson County Courthouse 129 SW E Street Madras, OR 97741 Jefferson County
Project Start Date	5/01/2015
Occupancy Date	8/01/2016
Total Contract Price	$11,400,000.00
Minimum GET Budget	$171,000.00
GET Description	The proposed 32.8kW will utilize three 12kW inverters, one per rooftop. The inverter basis of design will be the Advanced Energy AE-3TL-12. These inverters will each have an output of 14.5A at 480V/3ph. The cumulative output current time 1.25% will be 54.375A. The 12kW inverters will allow for roughly 14kW of installed PV per inverter, so if the design goes towards zero tilt, or the PV contractor determines they can provide more panels based on the 1.5% budget, they can be accommodated without additional inverters. A 100A, 3 phase, 4 wire AC combiner panelboard will be provided to combine the three inverters into a single output. This output will be routed through a disconnect and production meter, and will land on the main switchboard via load side tap at the opposite end of the bus bar from the main breaker. This electrical setup will allow for roughly an additional 30kVa of PV to be located either on the small portion of west roof or elsewhere on the site via covered parking, ground mount, etc. without adding additional electrical equipment. We will be adding underground conduits for future expansion (potentially an additional courthouse), and we will parallel conduit for PV with these conduits for either PV on the future roof or PV in the south parking lot.
Est. Annual Production	46,976 kWh
Est. Annual Value	$5,167.00
Total GET Expenditures	Project not yet completed

1.5% for Green Energy Technology in Public Buildings

Project Name and Location	Port of Siuslaw Fish Cleaning Station 100 Harbor St. Florence, OR 97439 Lane County
Project Start Date	6/09/2015
Occupancy Date	7/04/2015
Total Contract Price	$28,000.00
Minimum GET Budget	$0
GET Description	We installed solar photovoltaic lighting to the new fish cleaning station Total cost of the project was approximately 28k and the lighting system cost $1200.00 representing approximately 4% green energy technology.
Est. Annual Production	766 kWh
Est. Annual Value	Not reported
Total GET Expenditures	$1,200.00

Project Name and Location	Union County Circuit Court Building 1105 K Avenue La Grande, OR 97850 Union County
Project Start Date	4/01/2015
Occupancy Date	12/15/2016
Total Contract Price	$2,433,006.00
Minimum GET Budget	$36,495.00
GET Description	The proposed building model results show a 21% decrease in energy usage and a 20% decrease in energy cost. This is consistent with the requirements of the Oregon Administrative Rules for public facilities. The facility is expected to be more efficient than a "code-minimum" constructed building. Energy saving features in this facility include, but are not limited to: 1) higher efficiency cooling and heating systems; 2) use of LED lighting fixtures; 3) daylight-responsive lighting controls to reduce lighting energy use; 4) higher efficiency domestic water heater. NOTE: ODOE response to Union County regarding reported technologies is included in Appendix A
Est. Annual Production	1416 Btu*
Est. Annual Value	$2,448
Total GET Expenditures	$67,550

1.5% for Green Energy Technology in Public Buildings

Project Name and Location	Patriot Hall Redevelopment Project Health & Wellness Center 1650 Lexington Ave. Astoria, OR 97103 Clatsop County
Project Start Date	6/08/2015
Occupancy Date	12/21/2016
Total Contract Price	$10,922,605.00
Minimum GET Budget	$163,839.00
GET Description	Twenty (20) solar thermal panels are included in the design which will provide solar thermal energy for meeting the building heating and domestic hot water needs. The system is designed to meet approximately 68% of the heating required. At peak operation the system will provide approximately 600 kBtu/hour of heating energy for the building.
Est. Annual Production	128 Btu
Est. Annual Value	$1,700.00
Total GET Expenditures	$164,500.00

Project Name and Location	Madras High School Performing Arts Center 390 SE 10th St Madras, OR 97741 Jefferson County
Project Start Date	3/01/2014
Occupancy Date	8/29/2015
Total Contract Price	$10,922,605.00
Minimum GET Budget	$163,839.00
GET Description	58kW roof mounted solar-voltaic system
Est. Annual Production	70 kWh
Est. Annual Value	$6,090.00
Total GET Expenditures	$164,500.00

1.5% for Green Energy Technology in Public Buildings

Project Name and Location	ODOT - SE Powell DMV 8710 SE Powell Blvd Portland, OR 97266 Multnomah County
Project Start Date	12/21/2015
Occupancy Date	3/01/2016
Total Contract Price	$2,275,000.00
Minimum GET Budget	$34,125.00
GET Description	2 strings of 250-W Solar World modules. 1 Enphase M215 micro-inverter per module 8.5 kW total capacity
Est. Annual Production	9193 kWh
Est. Annual Value	$779.00
Total GET Expenditures	$40,686.00

Project Name and Location	Applied Technology Bldg, Machining, Engineering, Drafting 4000 Lancaster Drive NE Salem, OR 97305 Marion County
Project Start Date	7/01/2014
Occupancy Date	9/01/2015
Total Contract Price	$12,100,000.00
Minimum GET Budget	$181,500.00
GET Description	Study was submitted to ODOE by PAE for approval. Modeled features include a high performance building envelope, window overhang and shading fins as well as reflectors, day lighting sensors above and beyond code, and passive cooling through cross and stack ventilation. Reported Btu savings include Elect at 76,046 kWh, and Natural Gas at 3,143 therms. Savings exceed 1.5% the requirements by 161MMBtu (all info from PAE)
Est. Annual Production	574 Million Btus
Est. Annual Value	Not reported
Total GET Expenditures	$463,000

TECHNICAL REVIEW PANEL DETERMINATIONS

Four projects were sent to the Technical Review Panel to determine appropriateness. The correspondence and determinations are included in Appendix B. The projects at Lane Community College and Metro Zoo have not yet been reported into the 1.5% GET database.

INCREASING COMPLIANCE WITH THE STATUTE

The Oregon Department of Energy's role is limited by statute to writing program rules, conducting outreach to public bodies and summarizing the public bodies' reporting efforts in the annual report to the legislature. The decision to determine whether green energy technology is appropriate or inappropriate remains in the hands of the public body. Public bodies that determine green energy technology to be inappropriate are required to submit their reasoning for a Technical Panel Review, however not all entities are following this required step. ODOE will continue to inform public bodies that they must request a review when making a determination that the technology is inappropriate and that regardless of which determination they make, all projects must be reported to the 1.5% GET reporting form.

APPENDIX A: ODOE RESPONSE TO UNION COUNTY

E-mail correspondence for Union County Courthouse project:

November 20, 2015

Shelley,

I want to thank you for reporting the Union County Circuit Court Building project into the 1.5% Green Energy technology database. The proposed technology was reported as Passive Thermal. Most of the technologies described, with the exception of daylighting controls, however do not meet the description of allowed passive technologies as detailed in Rule (OAR 330-135-0035). I want to assure you that your project will not be considered non-compliant, however I want to clarify what is required when building future county projects.

ODOE understands the confusion created in rule by directing local governments to model the baseline building according to the 2010 Oregon Energy Efficiency Specialty Code. This is an area of rule that we intend to revise so that public bodies that want to install passive solar technologies have a clear understanding of which technologies comply with the passive solar requirement. Going forward, please be aware that the only differences between the models should be for the elements that are directly attributable to the passive technologies. The efficiency improvements of equipment, such as electric or gas fueled water heaters, or improved lighting power densities cannot be counted towards the 20% savings and the cost of the equipment is not eligible towards meeting the requirement.

By reporting your project and describing the energy savings features as you did, you have helped make us aware of the need to revise the rules and provide more detail as to which building components meet the requirement.

When we revise the rules, we will advertise on our webpage and assemble a stakeholder group to receive input during the rules revision process. If you would like to be involved in this process, I can add you to our list of interested parties to be notified for future 1.5% green energy technology rulemakings. Please let me know if you would like to be on the list.

Thank you reporting your project and for bringing this issue to our attention.

Sincerely,

Ann Hushagen
Energy Analyst, Oregon Department of Energy

APPENDIX B: TECHNICAL REVIEW PANEL DOCUMENTATION

City of Medford Request:

May 12, 2015
Mr. Robert DelMar
Oregon Department of Energy
1011 SW Emkay Dr. Suite 108
Bend, OR 97702

Subject: Technical Panel Request

Dear Mr. DelMar,

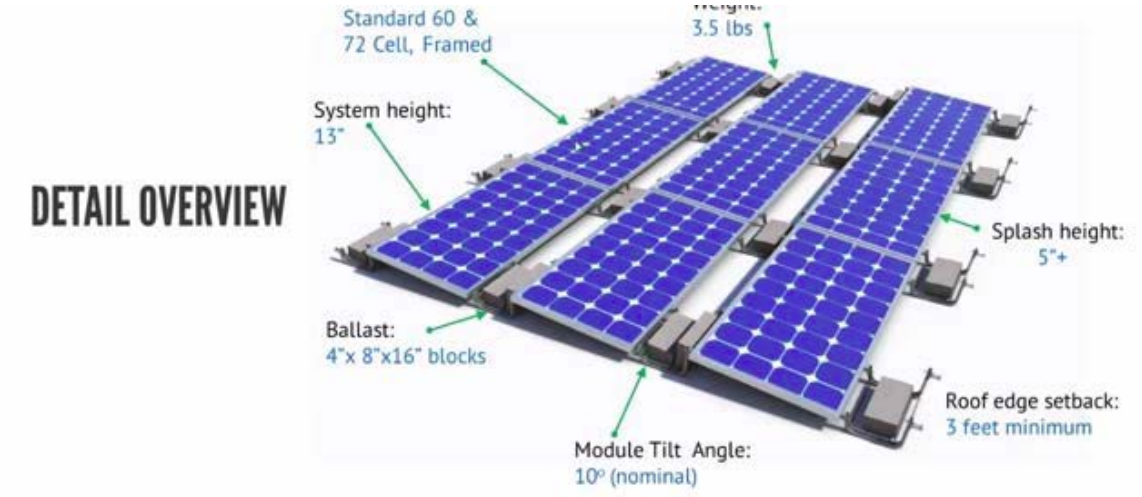
The City of Medford passed a bond measure for $8.3M for the construction of three (3) new fire halls. The buildings will feature many conservation/energy efficient features and in accordance with Oregon Department of Energy Administrative Rules, the City will dedicate 1.5% of the project costs for the installation of solar PV.

This request is for the allowance to install all of the PV on one location due to its superior Total Solar Resource Fraction (TSRF) of 89% (Attachment A) and the economies of establish one larger 27.7kW system rather than three (3) smaller 9 kW systems.

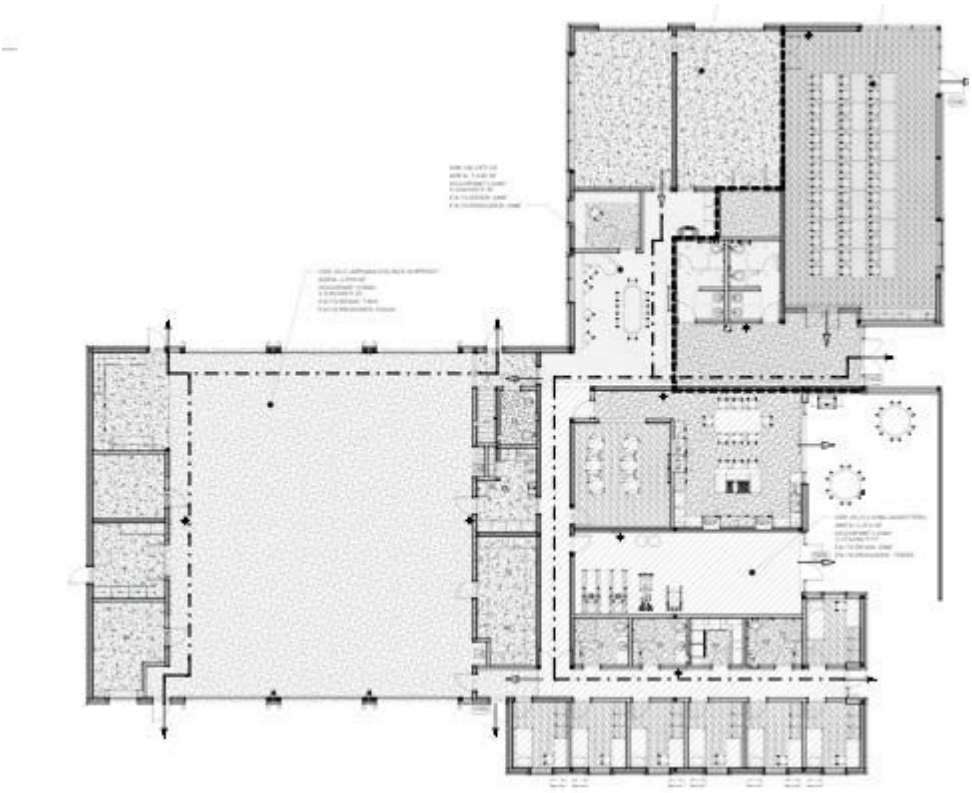
Because a major portion of a solar installation can be absorbed by labor, logistics, wiring, conduits, and permits, one larger location provides the City with a more cost effective installation and a larger renewable resource.

$8,300,000 X 1.5% = $124,500
$124,500 / $4.50/kW = 27.666 kW

Proposed racking/ballast system: This low profile system ensure high density with minimal penetration on a membrane roof. Design conditions: Wind load 110 MPH, Snow load #20/sq.ft.



Proposed system layout:



Proposed PV Location:
TSRF = 89%

Please let me know if you have any questions regarding this request.

Sincerely,
Buzz Thielemann
President

RHT Energy Solutions
1215 Stowe Ave
Medford, OR 97501
541.770.5884
buzz@rhtenergy.com

Technical Panel Response:

July 10, 2015

Buzz Thielemann
President
RHT Energy Solutions
1215 Stowe Ave
Medford, OR 97501

RE: Request for technical review of 1.5% green energy technology requirements

Dear Mr. Thielemann,

This letter is in response to a request for a technical panel review of the 1.5% green energy technology requirement for three new fire halls in Medford received via mail by ODOE on June 2, 2015. The technical review panel has considered your request and believes that your intention to consolidate funds to a single fire hall is appropriate. The committee appreciates your efforts to optimize the solar capacity, performance and cost effectiveness of this 1.5% green energy technology commitment.

Please note that the program rules provide for a recommendation from the technical review panel but that the final determination regarding siting of the project is to be made by the contracting agency. Please also note that the projects must be submitted into the green energy technology database as described in section 330-135-0055 of the permanent rules filed December 13th, 2013. The program rules and database reporting form can be found on the Oregon Department of Energy Web page at http://www.oregon.gov/ENERGY/CONS/pages/publicsolar.aspx.

Please let me know if you have any questions.

Sincerely,

Robert Del Mar, Chair of Technical Review Committee

Umpqua College request:

March 18, 2015

Mr. Rob Del Mar
Central Oregon Field Energy Analyst
Oregon Department of Energy
1011 SW Emkay Drive, Suite 108
Bend, OR 97702

Reference: Umpqua Community College HNSC Project
1.5% Green Energy Technology- Request for Technical Review
Solar PV Site away from building site

Dear Mr. Del Mar,

Umpqua Community College is currently in the Construction Document Phase for a Health, Nursing & Science Center project that is required to provide 1.5% of the Total Contract Price be applied toward Green Energy Technology(GET). At this time, UCC's design team is evaluating installation of a 5,000 sq. ft. solar PV system on the proposed building. During this evaluation, it became apparent that future projects will most likely be required to comply with the GET rules as the 2008 Master Plan is implemented (see attached). Currently, the next project slated for development in the near future is the Industrial Arts and Technology building.

The design team decided that it made sense for UCC to look for an on-site location (see attached) that could be used for the HNSC project but also could accommodate the needs of future projects possibly at a better cost per watt installed than doing multiple sites, some possible ground mounted, some possible roof mounted, all requiring duplicate components. In the development of this on-site location, power would be fed to an existing nearby campus facility thus requiring only one metering location that would reduce the overall campus power consumption.

Therefore, as per OAR 330-135-0052(2), UCC requests a technical review of its determination that green energy technology constructed away from any one building site, at a central on-site location, is appropriate. Acceptance of this determination will allow UCC to proceed with an evaluation by an ODOE listed solar contractor/installer in conjunction with the HNSC design team to make a final determination of how to apply GET to the UCC campus.

Should you require future information please contact me at your convenience.

Sincerely,

Larry Spielbusch
HNSC Construction Project Manager

CC: Jess Miller, UCC Facilities Director

attachments

Technical Panel Response:

April 23, 2015

Larry Spielbusch
HNSC Project Manager
Umpqua Community College
1140 Umpqua College Road
P.O. Box 967
Roseburg, OR 97470

Attn: Building Facilities

RE: Request for technical review of 1.5% Green Energy Technology requirements for the Health, Nursing & Science Center project

Dear Mr. Spielbusch,

This letter is in response to a request for a technical panel review of the 1.5% Green Energy Technology requirement for the new Health, Nursing & Science Center project at Umpqua Community College that you submitted to ODOE via email on March 20, 2015. The technical review panel has considered your request and believes that constructing a ground mounted PV array on campus in lieu of a roof mounted system on the new building is appropriate. The committee believes that the design team is demonstrating good technical and fiscal planning and that the project has the potential to be an excellent example of a site-based generation facility serving multiple buildings.

Please note that the program rules provide for a recommendation from the technical review panel but that the final determination regarding siting of the project is to be made by the contracting agency. Please also note that the project must be submitted into the green energy technology database as described in section 330-135-0055 of the permanent rules filed December 13th, 2013. The program rules and database reporting form can be found on the Oregon department of Energy Web page at http://www.oregon.gov/ENERGY/CONS/pages/publicsolar.aspx.

Please let me know if you have any questions.

Sincerely,

Robert Del Mar
Chair of Technical Review Committee
503-302-7027

Lane Community College request:

MEMORANDUM

To: Robert Delmar

Cc: Todd Smith

From: Jennifer Hayward Date: June 18, 2015

Re: Lane Community College, Eugene, Oregon

Subj.: "Center for Learning and Student Success", a renovation project

The subject project is a major renovation of the Center building on the college's main campus. It is financed with funds from several public sources: a local bond levy, CCWD- Xl-G bonds, and donations. The purpose of this memo is to request that the college be permitted to comply with the requirement that 1.5% of estimated construction funds be used for solar energy at multiple sites on the campus.

The Center building is a four story, 50 year old building with a partial basement. The renovation includes major changes to the interiors of the basement, 1st, 2nd. and 3rd floors along with a modest one story addition at the ground level. The scope of work also includes a considerable amount of new window wall to introduce day-lighting into the building. The total construction cost of the renovation is $26 million and 1.5% of this is $390,000.

1.5% for Green Energy Technology in Public Buildings

Section 330-135-0035 of the Department of Energy's 1.5 % for Green Energy Technology in Public Buildings notes that the cost of photovoltaic and daylighting systems are Eligible Green Energy Technology costs. The college proposes to comply with the 1.5% solar energy requirement by building a new "Solar Lab" plus daylighting of the building.

The goal of the Solar Lab is to be very visible by anyone on campus and instructional by the Energy Management classes while generating solar power. The roof of the Center building is the only place where a solar array could be installed but it isn't visible by the public and it's difficult to access by students. Consequently, we are looking for another location on campus that would satisfy the visibility and accessibility requirements. The Solar Lab's budget is $130,000.

The Center building renovation included 4872 square feet of new window wall which was 7' above the floor. The construction cost to install the new window wall was $70/sq. ft. which comes to a total of $341,040. This amount doesn't include costs for the other permissible costs i.e. electrical equipment, commissioning, etc.

The total cost of the photovoltaic and daylighting systems comes to $471,000.

The college conceives of the main campus as a whole entity - what benefits one building benefits the whole campus. The college has established a goal of becoming carbon-neutral by 2050. To this end, the college set 1% of the 2008 bond levy aside to fund projects that would contribute to meeting the goal. In rounded numbers, the bond levy produced $83.7 million. This was budgeted as follows:

1.	Non-construction costs	$28.4 million
2.	Construction costs	$41.3 Million*
3.	Renewable energy	$ 0.8 Million**
4.	Infrastructure costs	$13.2 Million
	Total =	$83.7 Million

*1.5% of the budgeted construction cost is $619,500. ($41.3 million x 1.5%)
** Renewable energy budget of $830,000 = 2% of budgeted construction cost

The following solar energy projects were intended to be funded from the $830,000 bond fund set aside for renewable energy:

1. A solar-thermal array on the roof of building 30 cost $373,000 – completed
2. A photo-voltaic array on the roof of an electric vehicle charging station cost $329,000. – completed
3. A Solar Lab - $130,000. – preliminary planning phase

The evidence cited above shows that the college has gone well beyond the state requirement of expending 1.5% of construction funds for renewable energy.
Consequently, the college requests the Technical Panel to approve compliance of the subject's solar energy requirement.

Please contact me if you wish elaboration or clarification of anything noted above.

Contact information:
Jennifer Hayward
Tel: 541-463-5594
Email: haywardj@lanecc.edu

Technical Panel Response:

August 14, 2015

Jennifer Hayward
Sustainability Coordinator
Lane Community College
4000 East 30th Ave
Eugene, Oregon 97405

RE: Request for technical review of 1.5% Green Energy Technology requirements for the Center for Learning and Student Success project

Dear Jennifer Hayward,

This letter is in response to a request for a technical panel review of the 1.5% Green Energy Technology requirement for the Center for Learning and Student Success project at Lane Community College that you submitted to ODOE on June 18, 2015. In that letter you propose to partially comply with the 1.5% Green Energy Technology commitment by constructing a $130,000 "solar Lab". The letter did not state the full nature of the proposed Solar Lab however the technical review panel believes that constructing the Solar Lab in lieu of a roof mounted system is appropriate so long as the Solar Lab consists of a solar installation. The committee believes that Lane Community College is demonstrating a strong commitment to showcasing energy efficiency and renewable energy on campus.

Please note that the program rules provide for a recommendation from the technical review panel but that the final determination regarding siting of the project is to be made by the contracting agency. Please also note that the project must be submitted into the green energy technology database as described in section 330-135-0055 of the permanent rules filed December 13th, 2013. The program rules and database reporting form can be found on the Oregon department of Energy Web page at http://www.oregon.gov/ENERGY/CONS/pages/publicsolar.aspx .

Please let me know if you have any questions.

Sincerely,

Robert Del Mar
Chair of Technical Review Committee

Technical Panel Response to Metro Zoo request:

June 11, 2015

Scott Robinson
Deputy Chief Operating Officer
Metro
600 NE Grand Ave
Portland, OR 97232-2736

RE: Request for technical review of 1.5% Green Energy Technology requirements for project at the Oregon Zoo

Dear Mr. Robinson,

This letter is in response to a request for a technical panel review of the 1.5% Green Energy Technology requirement for the Oregon Zoo projects that you submitted to ODOE via email on April 20, 2015. The technical review panel has considered your request and believes that your intention to consolidate funds to solar projects on the Veterinary Medical Center (2012), Elephant Lands (2015) and Education Center (2017) is appropriate. The committee appreciates your efforts to optimize the solar resource, visibility and cost effectiveness of these 1.5% Green Energy Technology projects.

Please note that the program rules provide for a recommendation from the technical review panel but that the final determination regarding siting of the project is to be made by the contracting agency. Please also note that the projects must be submitted into the green energy technology database as described in section 330-135-0055 of the permanent rules filed December 13th, 2013. Because part of the justification for this deferral included optimizing the solar resource please consider including the estimated solar resource at the Polar Bears and Primates / Rhinoceros projects within the database. The program rules and database reporting form can be found on the

Oregon department of Energy Web page at
http://www.oregon.gov/ENERGY/CONS/pages/publicsolar.aspx .

Please let me know if you have any questions.

Sincerely,

Robert Del Mar
Chair of Technical Review Committee

APPENDIX C: GREEN ENERGY TECHNOLOGY QUESTIONS & ANSWERS
1.5 Percent for Green Energy Technology:
Oregon Law for Public Bodies Constructing New Buildings

Q: When did the requirement start for a public body to spend 1.5 percent of the total contract price of a public building for green energy technology?

A: In 2007, HB 2620 established the requirement for a public body to spend 1.5% of the total contract price of a building on solar technology. In 2012, SB 1533 amended the law to include geothermal technology beginning Jan. 1, 2013. In 2013, HB 3169 added requirements for green energy technologies installed at an alternate site and specified reporting requirements. In 2015, HB 2987 modified requirements for holding unspent funds in an identified account, effective January 1, 2016, however those funds must still be spent on a future building project. Also in 2015, HB 3329 modified the minimum geothermal source temperatures for K-12 public schools, effective October 5, 2015.

Q: What is a green energy technology?

A: ORS 279C.527 defines green energy technology as renewable energy technologies that meet the requirements specified in HB 3169. They include:

- Solar technologies such as photovoltaic and solar thermal
- Passive solar and day lighting systems that reduce whole building energy use by 20% or more
- Geothermal systems that use geothermal source temperatures of 140° F or more to provide heating or make electricity. Geothermal systems installed in k-12 school buildings may use a source temperature of 128° F or more. Ground source heat pumps do not meet this requirement.

Q: Who must comply with the 1.5 percent for Green Energy Technology requirement?

A: All public bodies in Oregon must comply with the 1.5% requirement for green energy technology. Public bodies include state agencies, cities, counties, local service districts, and special government bodies including school districts, education service districts, community college districts, and public corporations created by state statute. Members of the Oregon University System are exempt from the green energy technology requirement.

1.5 percent for Green Energy Technology in public buildings

Q: Which buildings must comply with the 1.5 percent for Green Energy Technology requirement?

A: The requirement applies to any new, public building with construction costs more than $1,000,000 and any existing building that is being renovated where the construction costs exceed $1,000,000 and 50% of the insured value of the building. The building must be owned or controlled by a public body and either used for conducting public business or occupied by employees of the public body.

Q: If a building is to be constructed using private and public funds, do the private funds need to be included in the total contract price?

A: If the building has both private and public funding and the subsequent ownership of the building will be shared by the private and public entities, the 1.5% amount should be calculated on the public funding portion.

If the project is built with any amount of private funding with the intention that the building will be donated or sold to a public body upon completion of construction, the 1.5% must be calculated on the total contract price.

Q: Can building owners purchase "green power" from a utility to satisfy the 1.5 percent requirement?

A: No. The purchase of green power or Renewable Energy Certificates does not meet the requirement. Also, the energy supplied by the system must be used at the building site.

Q: How do building owners show that they have met the requirement?

A: The law requires all public bodies to report green energy project information to the Oregon Department of Energy. Prior to installation, public bodies have to submit details about the technology design using an electronic form on the ODOE website http://greenenergytechnology.odoe.state.or.us/.

If a public body determines that green energy technology is inappropriate, it must also report that determination in the electronic form.

Q: What if the information entered into the green technology database (such as the design of the green energy technology system or the calculated energy production of the green technology system) changes after submitting the project report? Who is responsible for making changes?

A: Once submitted, a public body cannot make changes to the form but may request at any time that ODOE staff make changes to its project information. After the occupancy date that

was entered in the reporting form, ODOE staff will communicate with the public body's contact person to learn of any significant changes to the cost, design, etc., and will correct the information in the database.

Q: What if a building owner considers a green technology system inappropriate for a particular building? For example, if the building is shaded by a larger building, blocking access to the sun, and there is no geothermal source for the building.

A: The law allows for locating the system at an alternative location provided the offsite location meets certain requirements. The energy produced at either location must be used at the building site. Any public body planning to use an alternate location has to contact ODOE and request a review from the "technical review panel" organized by ODOE. The public body submits in writing the reasons for the decision, including site details and cost of the green technology system for each location. The panel reviews the owner's assessment and offers recommendations in writing.

If the public body considers green technologies inappropriate both onsite and offsite, the public body must submit its reasoning to the technical review panel. The technical review panel will consider the documentation provided by the public body and determine whether it agrees or disagrees with the assessment. If the technical review panel disagrees with the public body's assessment, it can make a recommendation to the public body that the green energy technology should be installed.

Q: What type of questions will the technical review panel address?

A: The purpose of the technical review panel is to analyze the feasibility of installing a green energy system at a building site or an alternate site. Its role is not to review legal questions about the statute or rules.

Q: Who makes up the technical review panel and how does a public body contact the panel?

A: Among others, the panel includes a professional engineer or architect, a member of a public body, a solar or geothermal technical expert and an ODOE employee.

A public body may request a technical review by contacting Rob Del Mar at the Oregon Department of Energy, 503-302-7027 or robert.delmar@odoe.state.or.us.

Q: What if the public body disagrees with the technical review panel's recommendation?

A: The public body should review the panel's recommendations before making a final decision whether or not to install a green energy system, then submit its conclusions along with that of

the review panel's to ODOE at http://greenenergytechnology.odoe.state.or.us/. ODOE will include both determinations in its annual report to the Legislature.

Q: If a public body makes a final decision that the technology is inappropriate for the building, does this complete the process?

A: The public body must report to ODOE information about the project and its decision not to install a system. If no state funds are used for construction and renovation, there is no further requirement.

However, if state funds are included in the construction/renovation funding, the public body must spend 1.5% of the total contract price on the next project that it builds and must report the unspent amount in the 1.5% GET Reporting Form http://greenenergytechnology.odoe.state.or.us/. The amount not spent must be added to 1.5% of the total project cost of the future building for installation of green energy technology. The aggregated amount spent must be reported at the time of the next project construction.

Q: Does the public body only have to spend 1.5 percent of the state-funded portion of the current contract on the future project?

A: The amount to be added to the next project must be 1.5% of the total contract price, not just the state-funded portion.