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To: Energy Facility Siting Council

From: Sarah Esterson, Senior Policy Advisor

Date: September 10, 2021

Subject: Agenda Item D (Information Item): Overview of the Energy Facility Siting Council's Retirement and Financial Assurance standard (Part 2) for the September 24, 2021 EFSC Meeting

BACKGROUND

The Energy Facility Siting Council (Council) was created to oversee a comprehensive system for the siting, monitoring and regulating of the location, construction and operation of all energy facilities in Oregon. ORS 469.300. To carry out this purpose, the legislature entrusted the Council with the authority to decide whether to issue a site certificate for any energy facility proposed to be constructed or operated in Oregon. ORS 469.470(1). The Council's decision to issue a site certificate is binding upon state agencies and local governments and requires those agencies and governments to issue any permits specified in the site certificate without further proceedings. ORS 469.401(3).

In order to issue a site certificate, the Council must, in part, determine that the preponderance of the evidence on the record of proceedings on an application supports the conclusion that the facility, "complies with the applicable standards adopted by the council pursuant to ORS 469.501 or the overall public benefits of the facility outweigh any adverse effects on a resource or interest protected by the applicable standards the facility does not meet." ORS 469.503(1). With some exceptions, the Council must make similar finding of compliance for other state laws and administrative rules, and with the statewide land use planning goals adopted by the Land Conservation and Development Commission. See ORS 469.503(3) and (4).

The legislature provided the Council with broad authority to determine both the scope and format of its standards, but has provided a number of subjects which the standards may address, including the "financial ability and qualifications of the applicant." ORS 469.501(1)(d). The Council adopted a standard to address this subject under OAR 345-022-0050, the "Retirement and Financial Assurance Standard."

In Part 1 of this overview, presented at the August 27, 2021 Council meeting, staff provided a summary of how the Retirement and Financial Assurance Standard works, legislative and rulemaking history of the standard, and an overview of the substantive requirements of the standard and its associated application requirements. In Part 2, staff will provide a more

detailed explanation of how the standard is applied, including an explanation of the process for retiring a site and for preparing, reviewing, and updating cost estimates.

APPLICATION OF THE STANDARD

As part of its review, the Council must review the applicant's proposed retirement estimate and determine if the amount is sufficient, and if any additional monitoring and mitigation programs or conditions are required to ensure that the site will be able to be restored to a useful, non-hazardous condition. The Council's rules establish additional procedural and substantive requirements through mandatory conditions and compliance obligations. These include rules:

- Requiring the certificate holder to submit a bond or letter of credit that is acceptable to Council prior to beginning construction and maintaining that bond or letter of credit until the facility has been retired. OAR 345-025-0006(8)
- Requiring the certificate holder to submit a proposed retirement plan for Council approval within 2 years after permanent cessation of construction or operation of the facility, and retiring the facility according to the plan. OAR 345-025-0006(9)
- Authorizing use of the bond or letter of credit to retire the facility according to a retirement plan developed by the Department if the Council finds that the certificate holder failed to meet its obligations to retire the facility. 345-025-0006(16)

PREPARATION AND REVIEW OF DECOMMISSIONING COST ESTIMATE

Decommissioning a facility typically includes dismantling facility structures and components, removing materials from the site for recycling or disposal, and restoring the site to a useful, nonhazardous condition. The extent of required decommissioning activities may be influenced by the zoning of the site, agreements with underlying landowners, and ongoing use of related or supporting facilities for other purposes.

It is important to note that a certificate holder is not required to remove all facility components as part of the decommissioning process. Certain facility components, such as access roads or transmission infrastructure may be left in place if they would support allowed uses at the site. For many facilities sited on lands zoned for Exclusive Farm Use, foundations and buried utility infrastructure are only required to be removed to a depth of three feet, and components that are more than three feet below grade may be abandoned.

Estimated Cost of Site Restoration

While no specific methodology is required to be used when estimating decommissioning costs, all applicants must include the specific actions and tasks to restore the site to a useful, non-hazardous condition; an estimate of the total and unit costs of restoring the site to a useful, non-hazardous condition; and a discussion and justification of the methods and assumptions used to estimate site restoration costs. OAR 345-021-0010(1)(w)(B)-(D).

While the applicant is also required to estimate the projected useful life of the facility no discounting of future costs is allowed, and the estimate must be provided using current cost values. OAR 345-021-0010(1)(w)(C). As discussed below, an annual inflation adjustment is provided to ensure that future price changes are accounted for.

Major cost components included in decommissioning estimates include direct costs such as labor costs, equipment operation and maintenance, tipping fees, permitting fees and revegetation and restoration, as well as indirect costs including site mobilization and contractor overhead, profit markup, and administration. Historically, the Department has recommended that the Council include a 10 to 20 percent contingency on the total estimated costs to account for any adverse development that may occur during operation of the facility or the decommissioning process. Adverse development may include increased regulatory or permitting requirements or the development of hazardous conditions on the site, such as soil contamination, that require higher levels of remediation than accounted for in the estimate. Some certificate holders with more detailed cost estimation methodology have requested a smaller contingency value.¹

As an example, the applicant’s estimated decommissioning and site restoration costs for the Madras Solar Energy Facility, with contingencies for indirect costs, were approximately \$4 million. The department recommended the application of an additional 1 percent contingency to purchase a performance bond, a 10 percent contingency for the Department’s administration of the decommissioning process, and a 10 to 20 percent for future development. The table below shows the approved decommissioning cost estimate and sum total costs of approximately \$4.9 million from the Final Order on the Application for Site Certificate for the Madras Solar Energy Facility.

Table 1: Madras Solar Energy Facility – Retirement Cost Estimate

Task or Action	Quantity	Unit Cost (\$)	Unit	Estimate (\$)
<u><i>Solar Photovoltaic Energy Generation Components</i></u>				
Solar PV Panel	175,446	\$1.79	Panel	\$314,867
Tracker	569,980	\$2.11	Linear Ft.	\$1,204,374
Power Conversion Station (PCS)	19	\$6,981	Location	\$132,641
Underground Cable	56	\$241	Tail	\$13,492
<u><i>Battery Storage</i></u>				
PCS – (Battery) Location	19	\$4,978	Location	\$94,578
<u><i>Substation, POI Station and Switching Station</i></u>				
POI Station	1	\$11,442	Location	\$11,442
Switching Station	1	\$5,762	Location	\$5,762
Substation	1	\$60,399	Location	\$60,399
Substation Auxiliary Equipment	1	\$23,469	Location	\$23,469
<u><i>Other Structures</i></u>				
O&M Enclosure	1	\$2,256	Each	\$2,256
Staging/Laydown	1	\$4,704	Location	\$4,704
Perimeter Fence	28,681	\$3.86	Linear Ft.	\$110,719
Roads	3,564	\$4.72	Sq. Yd.	\$16,817
<u><i>Other Tasks and Actions</i></u>				
Stored Materials	1	\$760	Lump Sum	\$760
Tipping Fees	5,050	\$110	Tons	\$555,930

¹ See Final Order on Application for Site Certificate for the Bakeoven Solar Project, April 24, 2020, pg. 133.

Table 1: Madras Solar Energy Facility – Retirement Cost Estimate

Task or Action	Quantity	Unit Cost (\$)	Unit	Estimate (\$)
Site Reclamation	400	\$200	acre	\$80,000
Utility disconnect	1	\$5,000	Each	\$5,000
Surveys	1	\$25,000	Lump Sum	\$25,000
Environmental	1	\$50,000	Lump Sum	\$50,000
Safety	1	\$25,000	Lump Sum	\$25,000
OSHA sanitary	1	\$50,000	Lump Sum	\$50,000
Field Office	10	\$1,250	months	\$12,500
Proj Mgmt	10	\$12,500	months	\$125,000
Mobilization	1	\$200,000	Lump Sum	\$200,000
Demobilization	1	\$150,000	Lump Sum	\$150,000
Subtotal =				\$3,274,710
General Costs				
Contingency	10		Percent	\$327,471
Overhead, Profit	15		Percent	\$491,206
Subtotal =		\$818,677		
Subtotal, All Tasks or Actions and Applicant Contingencies		\$4,093,387		
Department Applied Contingencies				
Performance Bond	1		Percent	\$40,933
Department Administration and Project Management	10		Percent	\$409,338
Future Development Contingency	10/20		Percent	\$418,795
Total Site Restoration Cost with Department Adjusted Contingencies (Q4 2019 Dollars)				\$4,962,453

The review process for the final bond and letter of credit amounts includes submission of the decommissioning estimate by the certificate holder, in Excel. The information is then reviewed by a Department Senior Siting Analyst and Fiscal Analyst to ensure that the prescribed methods have been followed correctly. Following review of the site certificate condition requirements, inflation estimate and methods, a certificate holder receives written concurrence from the Department of whether the estimate is accurate. Once confirmed by the Department to be accurate, the certificate holder then submits an executed bond or letter of credit, using a Council approved form and financial institution.

ADJUSTMENT OF BOND OR LETTER OF CREDIT AMOUNT

Decommissioning estimates for a proposed facility or facility with proposed changes are evaluated by Council during the siting review process. If approved by Council through the siting review process, the facility decommissioning estimate: 1) is based on the present dollar value at the time the Application for Site Certificate (ASC) or Request for Amendment (RFA) is deemed complete by the Department; and 2) accounts for all proposed facility components. Council considers these two factors and imposes site certificate conditions requirements for inflation and final built facility adjustments applicable to the final bond or letter of credit amount, as further described below.

Inflation Adjustments

Site certificate conditions for the decommissioning bond or letter of credit require certificate holders to adhere to two inflation adjustments. The first inflation adjustment requires an evaluation of the change in dollar value from the quarter/year the estimate is based to the quarter/year of facility construction commencement. Site certificate conditions prescribe, with some flexibility, the first adjustment method as follows:

- The final amount of the bond or letter of credit must be adjusted to present value, using the U.S. Gross Domestic Product Implicit Price Deflator, Chain Weight, as published in the Oregon Department of Administrative Services' "Oregon Economic and Revenue Forecast" or by any successor agency and using the index value and the quarterly index value for the date of issuance of the bond or letter of credit.
- If at any time the index is no longer published, the certificate holder must request Department/Council input on an acceptable, comparable calculation to adjust the approved dollar amount to present value.

The second inflation adjustment applies annually after the initial bond or letter of credit is received from the certificate holder by the Department:

- The total bond or letter of credit amount must be adjusted on annual basis, based on a date cycle consistent with the date of issuance/effective date, using the same methods identified above.

The condition requires the bond or letter of credit amount to be evaluated annually by the Department's Fiscal Analyst, and to be adjusted based on changes in the prices of goods and services in the U.S., as reflected by the GDP Price Deflator. Based on this review, the Department issues letters to all certificate holders requesting adjustment of the bond or letter of credit amount to ensure the condition is both satisfied and accurately accounted.

Built Facility Adjustments

Site certificate conditions for the decommissioning bond or letter of credit allow certificate holders to adjust the final amount based on final number of facility components built within the allowed construction duration. It is fairly standard for a built facility to include significantly less number of facility components than the maximum number approved. This adjustment applies solely to the number of facility components.

Historically, site certificate conditions have not authorized a certificate holder to change the tasks, actions or cost estimating method as part of the adjustment. Because site certificate conditions do not allow adjustment to the decommissioning tasks, actions or cost estimating method, if requested by a certificate holder, would be considered substantive given that the standard requires Council to find that the facility decommissioning amount is satisfactory for restoring the site to a useful, nonhazardous condition, prior to approval. Therefore, based on typical site certificate condition language, a change in tasks, actions and estimating methods would necessitate formal review, likely in the form of an amendment.

Adjustment Considerations

Council's evaluation of whether an applicant or certificate holder's decommissioning estimate is satisfactory for restoring the facility site to a useful, nonhazardous condition is discretionary. More specifically, to find that a decommissioning estimate is satisfactory, there is not a specific estimating method or tool that must be used; there is not a specific or average amount that must be identified; and there are not restrictions on the process Council imposes to ensure that the decommissioning amount is satisfactory for the duration of facility operations. Therefore, given that estimating methods differ, and decommissioning activities and cost may vary over time, beyond variation in inflation, Council has the authority to consider whether site certificate conditions should contemplate other types of adjustments, as part of its findings of whether the decommissioning estimate is satisfactory. Other types of adjustments could include periodic revaluation in estimating methods and/or decommissioning and restoration actions by the certificate holder, the Department or Department's third-party consultant.

Applicant/Certificate Holder Requests for Adjustments

Applicant's and certificate holders often request Council consideration of other adjustments to the decommissioning amount, either short or long term. Some applicants have requested that Council allow credit for the scrap value of metals in facility components to be included in decommissioning cost estimates, but since at least the mid-2000's the Council has not allowed scrap values to be considered based on concerns over fluctuating market value and the risk that third party creditors or other parties could assert a claim against the scrap or salvage value in the event that a certificate holder became insolvent or declared bankruptcy.

Some applicants have requested Council consideration of a reduced bond or letter of credit after the facility is in commercial operation, based on assurance provided through a security agreement and an executed Power Purchase Agreement. For example, in one ASC, an applicant proposed to submit to the Department, prior to construction, a bond or letter of credit in the approved amount, to be in place until the facility was in commercial operation. Then, after the initial year of operation, applicant proposed to file a Uniform Commercial Code (UCC) financing statement with the State of Oregon, where evidence of the filing would be provided to the Department prior to construction and the bond or letter of credit would be reduced to \$1. Then, in Year 20, or the last year of the applicant's Power Purchase Agreement (PPA), whichever were later, the bond or letter of credit would be based on the full facility decommissioning amount, for the remainder of the facility's operational life.

Council's review of the above example concluded that uncertainties remain in the assurances provided to the State by a PPA, even with consideration of the applicant's proposed conditions to execute a security interest with the State. Council concluded that the variation in proposal to meet the standard, from the historically accepted full bond or letter of credit amount necessary for facility decommissioning, would be more appropriately evaluated through rulemaking, where information and expertise of subject matter experts could be considered, rather than relying solely on information provided by the applicant in favor of the proposal.

AUTHORITIES

Statutory Authority

469.501 Energy facility siting, construction, operation and retirement standards; exemptions; rules.

(1) The Energy Facility Siting Council shall adopt standards for the siting, construction, operation and retirement of facilities. The standards may address but need not be limited to the following subjects.

(d) The financial ability and qualifications of the applicant.

Administrative Rules

345-021-0010 - Contents of an Application

*(1) *** The applicant must include in its application for a site certificate information that addresses each provision of this rule identified in the project order. ****

*(m) **Exhibit M.** Information about the applicant's financial capability, providing evidence to support a finding by the Council as required by OAR 345-022-0050(2). Nothing in this subsection requires the disclosure of information or records protected from public disclosure by any provision of state or federal law. The applicant must include:*

(A) An opinion or opinions from legal counsel stating that, to counsel's best knowledge, the applicant has the legal authority to construct and operate the facility without violating its bond indenture provisions, articles of incorporation, common stock covenants, or similar agreements;

(B) The type and amount of the applicant's proposed bond or letter of credit to meet the requirements of OAR 345-022-0050; and

(C) Evidence that the applicant has a reasonable likelihood of obtaining the proposed bond or letter of credit in the amount proposed in paragraph (B), before beginning construction of the facility.

*(w) **Exhibit W.** Information about site restoration, providing evidence to support a finding by the Council as required by OAR 345-022-0050(1). The applicant must include:*

(A) The estimated useful life of the proposed facility;

(B) Specific actions and tasks to restore the site to a useful, non-hazardous condition;

(C) An estimate, in current dollars, of the total and unit costs of restoring the site to a useful, non-hazardous condition;

(D) A discussion and justification of the methods and assumptions used to estimate site restoration costs; and

(E) For facilities that might produce site contamination by hazardous materials, a proposed monitoring plan, such as periodic environmental site assessment and reporting, or an explanation why a monitoring plan is unnecessary

ENERGY FACILITY SITING COUNCIL STANDARD

345-022-0050 - Retirement and Financial Assurance

To issue a site certificate, the Council must find that:

(1) The site, taking into account mitigation, can be restored adequately to a useful, non-hazardous condition following permanent cessation of construction or operation of the facility.

(2) The applicant has a reasonable likelihood of obtaining a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition.

CONDITIONS

345-025-0006 - Mandatory Conditions in Site Certificates

(7) The certificate holder must prevent the development of any conditions on the site that would preclude restoration of the site to a useful, non-hazardous condition to the extent that prevention of such site conditions is within the control of the certificate holder.

(8) Before beginning construction of the facility, the certificate holder must submit to the State of Oregon, through the Council, a bond or letter of credit in a form and amount satisfactory to the Council to restore the site to a useful, non-hazardous condition. The certificate holder must maintain a bond or letter of credit in effect at all times until the facility has been retired. The Council may specify different amounts for the bond or letter of credit during construction and during operation of the facility.

(9) The certificate holder must retire the facility if the certificate holder permanently ceases construction or operation of the facility. The certificate holder must retire the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0110. The certificate holder must pay the actual cost to restore the site to a useful, non-hazardous condition at the time of retirement, notwithstanding the Council's approval in the site certificate of an estimated amount required to restore the site.

(16) If the Council finds that the certificate holder has permanently ceased construction or operation of the facility without retiring the facility according to a final retirement plan approved by the Council, as described in OAR 345-027-0410, the Council must notify the certificate holder and request that the certificate holder submit a proposed final retirement plan to the Department within a reasonable time not to exceed 90 days. If the certificate holder does

not submit a proposed final retirement plan by the specified date, the Council may direct the Department to prepare a proposed final retirement plan for the Council's approval. Upon the Council's approval of the final retirement plan, the Council may draw on the bond or letter of credit described in section (8) of this rule to restore the site to a useful, nonhazardous condition according to the final retirement plan, in addition to any penalties the Council may impose under OAR chapter 345, division 29. If the amount of the bond or letter of credit is insufficient to pay the actual cost of retirement, the certificate holder must pay any additional cost necessary to restore the site to a useful, non-hazardous condition. After completion of site restoration, the Council must issue an order to terminate the site certificate if the Council finds that the facility has been retired according to the approved final retirement plan

TERMINATION

345-027-0110 - Termination of a Site Certificate

(1) A certificate holder may apply to the Council to terminate a site certificate at any time, subject to the requirements of this rule.

(2) A certificate holder must apply to the Council to terminate a site certificate within two years following cessation of construction or operation of the facility.

(3) If the certificate holder fails to apply to the Council to terminate the site certificate and the Council finds that the certificate holder has permanently ceased construction or operation of the facility, then the Council may terminate the site certificate according to the procedure described in OAR 345-025-0006(16).

(4) In an application for termination of the site certificate, the certificate holder must include a proposed final retirement plan for the facility and site. The certificate holder must submit two printed copies of the application for termination and the proposed final retirement plan, and an electronic version of the application for termination and the proposed final retirement plan in a non-copy-protected electronic format acceptable to the Department. The certificate holder must submit additional printed copies of the application for termination and the proposed final retirement plan to the Department upon request.

(5) In the proposed final retirement plan, the certificate holder must include:

(a) A plan for retirement that provides for completion of retirement without significant delay and that protects public health, safety and the environment;

(b) A description of actions the certificate holder proposes to take to restore the site to a useful, non-hazardous condition, including information on how impacts to fish, wildlife and the environment would be minimized during the retirement process;

(c) A current detailed cost estimate and a plan for ensuring the availability of adequate funds for completion of retirement; and

- (d) An updated list of property owners, as described in OAR 345-021-0010(1)(f).*
- (6) Within 15 days after receiving an application for termination of a site certificate, the Department must:*
- (a) Send a notice of the application, specifying a date by which comments on the application are due, by mail or email to:
 - (A) All persons on the Council's general mailing list, as defined in OAR 345-011-0020;*
 - (B) All persons on any special list established for the facility; and*
 - (C) The property owners on the updated list submitted by the certificate holder under section (5) of this rule;**
 - (b) Send copies of the application for termination by mail or email to the reviewing agencies for the facility, and ask those agencies to comment by a specified date; and*
 - (c) Post an announcement of the application for termination on the Department's website.*
- (7) The Council must review the proposed final retirement plan and must consider any comments received from the public and the reviewing agencies. The Council may approve the proposed final retirement plan or modify the plan to comply with the rules of this chapter and applicable conditions in the site certificate. If the plan is approved, the Council must issue an order authorizing retirement according to the approved or modified final retirement plan and subject to any conditions the Council finds appropriate. The Council's order may be appealed as described in ORS 183.480.*
- (8) When the Council finds that the certificate holder has completed the retirement of the facility according to the Council's order authorizing retirement, the Council must issue an order terminating the site certificate.*