

# Oregon

Kate Brown, Governor



**Date:** September 7, 2017

**To:** Oregon Energy Facility Siting Council (EFSC or "the Council")

**From:** Jason Sierman, Policy Analyst  
Todd Cornett, ODOE Assistant Director / Council Secretary

550 Capitol St. NE  
Salem, OR 97301  
Phone: 503-378-4040  
Toll Free: 1-800-221-8035  
FAX: 503-373-7806  
[www.oregon.gov/energy](http://www.oregon.gov/energy)

**Subject:** Agenda Items B and F for the September 21-22, 2017 Council Meeting  
Rulemaking: Phase 1 Updates to Carbon Dioxide Standards (Information & Action Items)  
Rulemaking hearing and the potential adoption of final rule language for the Phase 1 update to the Council's carbon dioxide (CO<sub>2</sub>) standards. This rulemaking proposes to:

- 1) Evaluate and update the monetary offset rate per ton of CO<sub>2</sub> emissions, and
- 2) Update the CO<sub>2</sub> equivalency weights for methane and nitrous oxide under the standard for nongenerating energy facilities that emit carbon dioxide.

## **Overview**

At its August 18, 2017 Council meeting, the Council received an overview of staff's work on the Council's fourth scheduled rulemaking project for 2017, the Phase 1 rulemaking to update the Council's CO<sub>2</sub> standards. Work included drafting a redline document showing the precise changes being proposed in this rulemaking (see **Attachment A**) and issuing official public notice of this rulemaking on August 10th, with a rulemaking hearing scheduled to occur before the Council at 4:30pm on September 21, 2017 at Boardman City Hall (see **Attachment B**). The rulemaking hearing is Agenda Item B, an information item for the Council. After the hearing and after considering all comments received on the record before the close of the hearing, the Council will deliberate and decide on whether to adopt final rule language under Agenda Item F, an action item for the Council.

## **Purpose and Scope**

The administrative rules promulgating the Council's CO<sub>2</sub> standards are collectively located in Chapter 345, Division 24. They begin at OAR 345-024-0500 and end at 345-024-0720. Within this set of rules, Council Staff has identified a total of three specific issues that could be addressed through rulemaking. This current Phase 1 rulemaking project addresses the first two issues. The Phase 2 rulemaking project will address the third issue. The three issues are:

- 1) evaluate and update the monetary offset rate per ton of CO<sub>2</sub> emissions under 345-024-0580;
- 2) update the CO<sub>2</sub> equivalency weights for methane and nitrous oxide under 345-024-0620, the standard for nongenerating energy facilities that emit carbon dioxide; and
- 3) evaluate and update the CO<sub>2</sub> emissions standards for base load gas plants, non-base load power plants, and nongenerating energy facilities that emit carbon dioxide. In addressing each of the three issues, staff will propose new numerical values for the administrative

rules governing each issue (note, staff anticipates initiating rulemaking on this aspect of the rules in the first quarter of 2018, as is discussed below).

The first two issues did not require staff to complete a complex evaluation when proposing new numerical values.

#### Issue 1

A 2007 rulemaking amended the monetary offset rate for carbon dioxide (CO<sub>2</sub>) emissions (\$ per ton of CO<sub>2</sub> emissions) from \$0.85 to \$1.27 per ton of CO<sub>2</sub> emissions. The monetary offset rate has not been updated since 2007. The monetary offset rate is a key component of the monetary pathway for compliance with EFSC's CO<sub>2</sub> standards. The intention of the design of the CO<sub>2</sub> standards was that there would be multiple, equally effective, pathways to achieving the standards. The monetary pathway was designed to achieve the same amount of offsets as other pathways, including the pathway for an applicant to acquire carbon offsets on its own (one of the pathways other than the monetary pathway). However, the difference in the existing monetary offset rate and the actual cost of acquiring carbon offsets on the open market has diverged significantly. Based on staff's research, the current monetary offset rate is priced considerably below the cost per ton of CO<sub>2</sub> equivalent offsets in other states and regions that have implemented CO<sub>2</sub> trading programs, including California. In order to bring the monetary offset rate closer to the current market cost of offsets, it is necessary to increase the monetary offset rate. This rulemaking proposes to update the monetary offset rate under 345-024-0580 from \$1.27 to \$1.90 per ton of CO<sub>2</sub>. This would be a 50% increase. Under ORS 469.503, the Council may increase or decrease the monetary offset rate no more than 50% in any two-year period. If the Council adopts the proposed increase to \$1.90, ORS 469.503 would restrict the Council from adopting another increase or decrease to the monetary offset rate until at least 2-years after the effective date of this rulemaking.

#### Issue 2

A 2013 rulemaking amended the CO<sub>2</sub> equivalency weights for methane and nitrous oxide under the Council's standard for base load gas plants and its standard for non-base load power plants, but did not amend the same CO<sub>2</sub> equivalency weights under its standard for nongenerating energy facilities that emit carbon dioxide. In order to correct for this oversight, it is necessary to update the CO<sub>2</sub> equivalency weights for methane and nitrous oxide under 345-024-0620, the Council's standard for nongenerating energy facilities that emit carbon dioxide. The methane equivalency weight is proposed to be updated from 23 to 25 pounds of CO<sub>2</sub>, and the nitrous oxide equivalency weight is proposed to be updated from 296 to 298 pounds of CO<sub>2</sub>. These proposed equivalency weights are identical to what is already specified under rules 345-024-0550 and 345-024-0590, which govern the same subject matter for base load gas plants and non-baseload power plants.

Because these two issues do not require staff to complete a complex evaluation, the Council, at its January 19, 2017 meeting, directed staff to address these first two issues in a single rulemaking project (Phase 1 - Updates to CO<sub>2</sub> Standards) in the third quarter of 2017 and to address the third issue (an evaluation and update of the CO<sub>2</sub> emissions standards for base load gas plants, non-base load power plants and nongenerating energy facilities that emit carbon dioxide) in a separate and distinct rulemaking project later in time (Phase 2 – Updates to CO<sub>2</sub> Standards).

The following is a summary of the specific rules relating to the Council’s carbon standards that the Council is addressing in the two rulemaking projects (Phase 1 and Phase 2) and the breakdown of how and when these rulemaking projects will occur.

Current Rulemaking: Phase 1 - Updates to CO<sub>2</sub> Standards (Q3 of 2017)

- 1) Evaluate and update the monetary offset rate under OAR 345-024-0580
- 2) Update CO<sub>2</sub> equivalency weights under OAR 345-024-0620

Future Rulemaking: Phase 2 – Updates to CO<sub>2</sub> Standards (targeted for Q1 of 2018):

- 3) Evaluate and update the CO<sub>2</sub> emissions standards under:
  - OAR 345-024-0570 Modification of the Standard for Base Load Gas Plants,
  - OAR 345-024-0550 Standard for Base Load Gas Plants,
  - OAR 345-024-0590 Standard for Non-Base Load Power Plants, and
  - OAR 345-024-0620 Standard for Nongenerating Energy Facilities

**Applicability of EFSC Rule Changes Approved by the Council**

Generally speaking, applicants for site certificates, and site certificate holders making a request for amendment to the site certificate, must demonstrate compliance with the EFSC rules that are in effect on the date the Council makes its final decision on whether to approve or deny a site certificate or an amendment to a site certificate. Absent any specific language stating otherwise, any and all changes that are approved in an EFSC rulemaking project (other than rules relating to the Council’s land use standard) become applicable to all in process applications for site certificates and all in process requests for amendment upon their effective date. The Council’s land use standard is the only EFSC rule that becomes fixed upon the date an application is submitted, or the date a request for amendment is submitted.

**Phase 1 – Updates to CO<sub>2</sub> Standards**

To accomplish the Phase 1 updates to the Council’s CO<sub>2</sub> standards, EFSC staff has proposed the following changes to (2) EFSC rules (*also see the proposed redline in **Attachment A***):

**1) OAR 345-024-0580 Monetary Offset Rate**

Staff recommends changing the monetary offset rate from \$1.27 to \$1.90. ORS 469.503(2)(c)(C) gives the Council the authority to change the monetary offset rate, but also prevents the Council from increasing or decreasing the monetary offset rate by more than 50 percent in any two-year period. Based on staff’s preliminary research and previous reports from The Climate Trust to the Council, there is evidence that the average price of a carbon offset project may be around \$4.90 per ton.<sup>1</sup>

---

<sup>1</sup> See, The Climate Trust’s Five-Year Report to the Oregon Energy Facility Siting Council, October 2014, pp. 14-15. “The Oregon Program neither requires a qualified organization, nor does it provide sufficient funding, to offset the full 17% of an energy facility’s carbon emissions. This is because the monetary pathway acts as a carbon price-based approach for energy facilities to comply with the Standard. The way the monetary path rate is designed precludes a qualified organization from fully offsetting an energy facility’s emissions for two reasons: 1) Up to twenty percent of offset funding is set aside to cover the costs of ‘monitoring, evaluation, administration and enforcement of contracts to implement offsets;’ and 2) The monetary path rate has not kept pace with market prices. Twenty percent of the monetary path payment is set aside to manage the offset contracts over their lifetimes, thereby reducing the amount of funds available for offsets to \$0.46 per

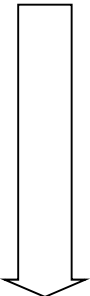
## 2) OAR 345-024-0620 Standard for Nongenerating Energy Facilities

Staff recommends changing the methane equivalency value from 23 to 25 pounds of CO<sub>2</sub> and changing the nitrous oxide equivalency value from 296 to 298 pounds of CO<sub>2</sub>. The CO<sub>2</sub> equivalency weights for methane and nitrous oxide under OAR 345-024-0550 and 345-024-0590 were updated in a past rulemaking to 25 and 298 respectively, but the updates to the values under 345-024-0620 were overlooked. Making the proposed changes will correct the past oversight, and will ensure the equivalency weights for methane and nitrous oxide are consistent across all the Council's carbon standards.

### **Recommended Process**

Based on the Council's direction, staff has completed the rulemaking process as illustrated below:

#### NO EARLY PUBLIC PARTICIPATION (APPROVED PROCESS)

	Start	Staff Drafts Proposed Language	<input checked="" type="checkbox"/>
		Council Approves Process	<input checked="" type="checkbox"/>
		Council Authorizes Staff to Issue Official Notice	<input checked="" type="checkbox"/>
		Staff Issues Official Notice	<input checked="" type="checkbox"/>
		Public Comment Period	<input checked="" type="checkbox"/>
		Public Hearing (before Council)	<input checked="" type="checkbox"/>
		Staff Report	<input checked="" type="checkbox"/>
		Council Adopts Final Rule Language	<input type="checkbox"/>
		Staff Files Final Rule Language	<input type="checkbox"/>
	Finish		

The next step in the process is for the Council to consider the proposed rule language in conjunction with its consideration of all comments received on the record before the end of the rulemaking hearing on September 21, 2017. Should the Council need additional time to consider all comments received, it may postpone its decision on adoption of permanent rules to a future Council meeting.

After the Council considers all comments received, the Council may vote on adoption of the proposed rule language as permanent rules. Subject to Council adoption, staff will ask for signature authorization from the Council Chair to file the permanent rules with the Oregon Secretary of State. Subject to the Council's adoption of permanent rules, and subject to receiving authorization to file, staff would likely file the permanent rules on or around September 28, 2017. Unless the Council chooses an effective date later than the filing date, the new rule language would become effective upon filing.

### **Staff Recommendation**

As discussed above, and as shown in the attached redlines, this rulemaking amends the following (2) rules:

---

metric ton at the original monetary path rate and to \$1.12 per metric ton at the current rate. The current monetary path rate provides \$1.12 per metric ton for offset contracts, whereas the average offset price The Climate Trust has been able to negotiate is \$4.32 per metric ton; this is in comparison to average market prices ranging from a high of \$7.34 in 2008 to \$4.90 in 2013."

- OAR 345-024-0580, the Council's Monetary Offset Rate rule; and
- OAR 345-024-0620, the Council's Standard for Nongenerating Energy Facilities.

Staff recommends that the Council adopt the proposed language as final permanent rules and authorize staff to file the adopted permanent administrative rules with the Oregon Secretary of State. These rules would be effective upon filing, with a target filing date of September 28, 2017.

**DIVISION 24**

**SPECIFIC STANDARDS FOR SITING FACILITIES**

**Standards for Energy Facilities that Emit Carbon Dioxide**

**345-024-0580**

**Monetary Offset Rate**

The monetary offset rate is \$1.~~9027~~ per ton of carbon dioxide emissions. After two years from ~~June 1, 2007~~(the date this rule is made effective), the Council may by rule increase or decrease the monetary offset rate, subject to the requirements of ORS 469.503.

**345-024-0620**

**Standard for Nongenerating Energy Facilities**

To issue a site certificate for a nongenerating energy facility that emits carbon dioxide, the Council must find that the net carbon dioxide emissions rate of the proposed facility does not exceed 0.504 pounds of carbon dioxide per horsepower hour. The Council shall determine whether the carbon dioxide emissions standard is met as follows:

(1) The Council shall determine the gross carbon dioxide emissions that are reasonably likely to result from the operation of the proposed energy facility. The Council shall base such determination on the proposed design of the energy facility. In determining gross carbon dioxide emissions for a nongenerating facility, the Council shall calculate carbon dioxide emissions for a 30-year period unless the applicant requests, and the Council adopts in the site certificate, a different period. The Council shall determine gross carbon dioxide emissions based on its findings of the reasonably likely operation of the energy facility. The Council shall use a rate of 117 pounds of carbon dioxide per million Btu of natural gas fuel (higher heating value) and a rate of 161 pounds of carbon dioxide per million Btu of distillate fuel (higher heating value), if the applicant proposes to use such fuel. If the applicant proposes to use any other fossil fuel, the Council shall adopt by rule an appropriate carbon dioxide content rate for the fuel.

(2) For any remaining emissions reduction necessary to meet the applicable standard, the applicant may elect to use any of the means described in OAR 345-024-0630 or any combination thereof. The Council shall determine the amount of carbon dioxide or other greenhouse gas emissions reduction that is reasonably likely to result from the applicant's offsets and whether the resulting net carbon dioxide emissions meet the applicable carbon dioxide emissions standard. The amount of greenhouse gas emissions means the pounds of carbon dioxide and the carbon dioxide equivalent of other greenhouse gases. For methane, one pound of methane is equivalent to ~~253~~ pounds of carbon dioxide. For nitrous oxide, one pound of nitrous oxide is equivalent to ~~2986~~ pounds of carbon dioxide.

(3) If the applicant elects to comply with the standard using the means described in OAR 345-024-0630(1), the Council shall determine the amount of greenhouse gas emissions reduction that is reasonably likely to result from each of the proposed offsets. In making this determination, the Council shall not allow credit for offsets that have already been allocated or awarded credit for

1 greenhouse gas emissions reduction in another regulatory setting. The fact that an applicant or  
2 other parties involved with an offset may derive benefits from the offset other than the reduction of  
3 greenhouse gas emissions is not, by itself, a basis for withholding credit for an offset. The Council  
4 shall base its determination of the amount of greenhouse gas emission reduction on the following  
5 criteria and as provided in 345-024-0680:  
6

7 (a) The degree of certainty that the predicted quantity of greenhouse gas emissions reduction will  
8 be achieved by the offset.  
9

10 (b) The ability of the Council to determine the actual quantity of greenhouse gas emissions  
11 reduction resulting from the offset, taking into consideration any proposed measurement,  
12 monitoring and evaluation of mitigation measure performance.  
13

14 (c) The extent to which the reduction of greenhouse gas emissions would occur in the absence of  
15 the offsets.  
16

17 (4) Before beginning construction, the certificate holder shall notify the Department of Energy in  
18 writing of its final selection of an equipment manufacturer and shall submit a written design  
19 information report to the Department sufficient to verify the facility's designed rate of fuel use and  
20 its nominal capacity for each fuel type. In the site certificate, the Council may specify other  
21 information to be included in the report. The Department shall use the information the certificate  
22 holder provides in the report as the basis for calculating, according to the site certificate, the  
23 amount of greenhouse gas emissions reductions the certificate holder must provide under OAR 345-  
24 024-0630.  
25

26 (5) In the site certificate, the Council shall specify the schedule by which the certificate holder shall  
27 provide offsets. In the schedule, the Council shall specify the amount and timing of offsets the  
28 certificate holder must provide to an offset credit account. In determining the amount and timing of  
29 offsets, the Council may consider the estimate of total offsets that may be required for the facility  
30 and the minimum amount of offsets needed for effective offset projects. The Department shall  
31 maintain the record of the offset credit account.  
32  
33  
34  
35

# PUBLIC NOTICE

## Rulemaking Hearing and Public Comment Period

Amend the monetary offset rate for carbon dioxide (CO<sub>2</sub>) emissions and correct CO<sub>2</sub> equivalency weights.

### Summary

Date Issued: August 9, 2017

Proposal: Amend the monetary offset rate for carbon dioxide (CO<sub>2</sub>) emissions and correct CO<sub>2</sub> equivalency weights.

### Rulemaking Hearing:

Date: September 21, 2017

Time: EFSC meeting begins at 3:00 p.m.  
Rulemaking hearing begins at 3:30 p.m.

Location: Boardman City Hall  
200 City Center Circle  
Boardman, OR 97818

Call-in: 877-873-8017

Passcode: 799345

### Written Comment Deadline:

September 21, 2017 (close of the rulemaking hearing)

### Introduction

The proposed rule amendments relating to Oregon EFSC's standards for energy facilities that emit carbon dioxide would update the monetary offset rate per ton of CO<sub>2</sub> emissions and would correct the CO<sub>2</sub> equivalency weights for methane and nitrous oxide that are applicable to nongenerating energy facilities that emit carbon dioxide.

### Description of Rulemaking Activity

A 2007 rulemaking amended the monetary offset rate for CO<sub>2</sub> emissions (\$ per ton of CO<sub>2</sub> emissions) from \$0.85 to \$1.27 per ton of CO<sub>2</sub> emissions. The monetary offset rate has not been updated since 2007. Based on ODOE's research, the current monetary offset rate is priced considerably below the cost per ton of CO<sub>2</sub> equivalent offsets in other states and regions that have implemented CO<sub>2</sub> trading programs, including California. This rulemaking proposes to update the monetary offset rate under 345-024-0580 from \$1.27 to \$1.90 per ton of CO<sub>2</sub>. This would be a 50 percent

increase. Under ORS 469.503, the Council may increase or decrease the monetary offset rate no more than 50 percent in any two-year period. If the Council adopts the proposed increase to \$1.90, ORS 469.503 would restrict the Council from adopting another increase or decrease to the monetary offset rate until at least two years after the effective date of this rulemaking.

Also, a 2013 rulemaking amended the CO<sub>2</sub> equivalency weights for methane and nitrous oxide under the Council's standard for base load gas plants and its standard for non-base load power plants, but did not amend the same CO<sub>2</sub> equivalency weights under its standard for nongenerating energy facilities that emit carbon dioxide. In order to correct for this oversight, staff proposes to update the CO<sub>2</sub> equivalency weights for methane and nitrous oxide under 345-024-0620, the Council's standard for nongenerating energy facilities that emit carbon dioxide. The methane equivalency weight is proposed to be updated from 23 to 25 pounds of CO<sub>2</sub>, and the nitrous oxide equivalency weight is proposed to be updated from 296 to 298 pounds of CO<sub>2</sub>. These proposed equivalency weights are identical to what is already specified under rules 345-024-0550 and 345-024-0590, which govern the same subject matter for base load gas plants and non-base load power plants.

### EFSC Decision Process

EFSC relies upon its authority under ORS 469.470 and ORS 469.501 to conduct rulemaking. EFSC will make all decisions on the proposed rule amendments at a public meeting and will provide public notice of the date, time, and location of all EFSC meetings. EFSC plans to consider the proposed amendments and potentially take action to approve the proposed amendments at its September 21-22, 2017 meeting. If EFSC approves the proposed amendments at that time, permanent rules could become effective as early as September 28, 2017.



## Comment Period

EFSC requests public comment on these draft amendments. EFSC also requests public comment on whether other options should be considered for achieving the proposed rule's substantive goals while reducing the negative economic impact of the rule on business.

The Oregon Department of Energy (ODOE) will accept written comments on the proposed amendments until the end of the rulemaking hearing scheduled to begin at 3:30 p.m. on September 21, 2017. Any person or agency may provide oral comments on this rulemaking in person or via telephone during the rulemaking hearing.

Any person or agency may send written comments by email to [EFSC.rulemaking@oregon.gov](mailto:EFSC.rulemaking@oregon.gov), or by mail, hand-delivery or fax to:

Jason Sierman, EFSC Rules Coordinator  
Oregon Department of Energy  
550 Capitol St. NE  
Salem, OR 97301  
Fax: 503-373-7806

## More Information

Please contact Jason Sierman at 503-373-2127, by email to [jason.sierman@oregon.gov](mailto:jason.sierman@oregon.gov), or at the mailing address listed above with any questions regarding this rulemaking.

Additional information about the proposed rulemaking and updates on the rulemaking review process are available using any of the following options:

### 1) Oregon Department of Energy's Webpage

Details about this rulemaking, including: proposed rule language, a statement of need and fiscal impact, a list of principal documents prepared by or relied upon in preparing the rule, and information regarding the use of any advisory committee are available online at:

<http://www.oregon.gov/energy/Get-Involved/Pages/Energy-Facility-Siting-Council-Rulemaking.aspx>

### 2) Updates by Email/Mail

In order to receive future updates related to this rulemaking project or other rulemaking projects you must be signed up on either or both of the two lists below. You will not automatically receive future updates simply by providing comments on the rulemaking.

#### Email

Subscribe to GovDelivery for email updates on EFSC rulemaking activities and other activities related to energy facilities under EFSC jurisdiction. GovDelivery is an automated email system that allows the public to manage subscriptions to receive information on ODOE's projects and events. For more information, please visit: <http://tinyurl.com/EFSC-email>.

#### Mail

To receive notices of rulemaking activities in paper via U.S. postal mail, please contact Jason Sierman and request to be added to the paper notice list. His contact information is contained in this notice.

### 3) In Hardcopy

Copies of the proposed rules, and all the information related to this rulemaking that is posted to the EFSC webpage, are available in hardcopy for public inspection at:

Oregon Department of Energy  
550 Capitol St. NE  
Salem, OR 97301

## Accessibility Information

The Oregon Department of Energy is committed to accommodating people with disabilities. If you require any special physical or language accommodations, or need information in an alternate format, please contact Megan Boardman at 503-378-3895, toll-free in Oregon at 800-221-8035, or by email to: [Megan.Boardman@oregon.gov](mailto:Megan.Boardman@oregon.gov).

**Oregon Department of Energy  
Testimony on Proposed Amendment To  
OAR 345-024-580, Monetary Path Offset Rate**

OAR 345-024-0580 states that the monetary offset rate for carbon dioxide emissions in excess of the Council's carbon dioxide standard is \$1.27 cents per ton. The Department proposes to increase the offset rate by 50%, to \$1.90 per ton.

The Council's statutory authority to increase the rate is at ORS 469.503(2)(c)(C), which states that:

“\*\*\*any change to the monetary offset rate shall be based on empirical evidence of the cost of carbon dioxide offsets and the Council's finding that the standard will be economically achievable with the modified rate for natural gas-fired power plants. Following the initial three-year period, the Council may increase or decrease the monetary offset rate no more than 50 percent in any two year period.”

The Council last increased the offset rate in 2007. Therefore, more than ten years have passed since the last increase, well above the two years allowed in statute.

**Empirical Evidence of the Cost of Offsets**

The Oregon Climate Trust is the qualified organization that has provided carbon dioxide offsets for the natural gas fired power plants under EFSC jurisdiction that have begun construction since the carbon dioxide standard was adopted. The Climate Trust has funded offset projects with funds collected from Hermiston Power Partners, Klamath Generation Peakers, Klamath Cogeneration, and Portland General Electric (Carty Generating Station, Port Westward and Coyote Springs 2).

The Climate Trust reports annually to the Council on the status of offset projects implemented by The Climate Trust. The Climate Trust has stated that the actual cost it pays for a one ton offset project exceeds \$4.00 per ton.

In its 2007 testimony on the proposed rule that increased the offset rate from 85 cents to \$1.27, the Department pointed out that even with that increase, the monetary path offset rate covers only a fraction of the true cost of offsets. That remains true in 2017. Since The Climate Trust began buying offset projects for carbon emitting EFSC facilities, it has paid a cumulative average of \$4.54 per short ton of CO<sub>2</sub>. Therefore, even after increasing the monetary offset rate to \$1.90, any funds paid to The Climate Trust by a facility demonstrating compliance through the monetary pathway will likely result in less than half of a facility's excess CO<sub>2</sub> emissions actually being offset.

In its 2001 testimony, the Department stated:

“\*\*\*the intention of the design of the CO<sub>2</sub> standard was that there would be multiple paths to achieving the standard that were equally effective in meeting it. The monetary path was designed to achieve the same amount of offsets as other paths\*\*\* in the four years that the legislation has been in effect\*\*\*the difference in the monetary offset rate and the actual cost of acquiring has diverged significantly”

In the ten years since the Council last increased the offset rate, that divergence has continued. For this reason, the Department recommends that the Council adopt the maximum increase permitted by statute.

### **Economically Achievable**

ORS 469.503(2)(c)(C) also requires the Council to find that the standard will be economically achievable with the modified rate. The Department recommends that the Council look at the increase in cost of compliance for an energy facility under its jurisdiction.

#### **Base Load Gas Plants and Non-Base Load Power Plants**

Base load gas plants and non-base load power plants that emit carbon dioxide are subject to the Council’s carbon dioxide emissions standard. One example of a facility that must comply with this standard is the Carty Generating Station. In June of 2012, the Council issued a final order approving a site certificate for Portland General Electric’s (PGE’s) Carty Generating Station (“Carty”). Construction of Carty began on January 9, 2014, and commercial operation began on July 29, 2016.

#### **Capacity of Carty - Block One**

Carty is approved for the construction and operation of (2) power blocks, each with a nominal capacity of 390 MW under base load conditions, and 441 MW with power augmentation. Only block one has been constructed.

#### **Costs of Carty - Block One**

Exhibit 300, page 12, of PGE’s UE 294 filing with the PUC dated February 12, 2015 stated the projected gross plant in-service cost of Carty block one to total approximately \$488.3 million. On November 3, 2015, the Oregon Public Utility Commission (OPUC or “the Commission”) issued Order 15-356, which approved a \$514 million capital cost for Carty block one. From PGE’s December 2016 Investor Presentation, the total completion costs of Carty block one ranged from \$514 million to \$660 million. For simplicity, we recommend using \$514 million as the plant’s nominal cost of construction.

**Costs of Excess CO<sub>2</sub> Emissions for Carty - Block One**

The projected excess CO<sub>2</sub> emissions for Carty blocks one and two were calculated to be 11.90 million short tons of CO<sub>2</sub>. The projected emissions for block one were 5.95 million short tons of CO<sub>2</sub>.

To account for the excess emissions of block one, and in accordance with its site certificate, PGE provided approximately \$7,854,000 in offset funds and approximately \$366,492 in selection and contracting funds to The Climate Trust.<sup>1</sup> A total of approximately \$8,220,492.

Had the proposed monetary offset rate of \$1.90 per short ton of excess CO<sub>2</sub> emissions been in effect at that time, PGE would have paid approximately \$11,750,000 in offset funds and approximately \$533,552 in selection and contracting funds to The Climate Trust. A total of approximately \$12,283,552.

Therefore, the difference in the total payment under the current \$1.27 rate vs. the proposed \$1.90 rate is \$4,063,060 and that difference is less than 0.8% of the \$514 million cost of construction of block one. This illustrates that the difference between a monetary payment made under the proposed CO<sub>2</sub> offset rate and one made under the existing CO<sub>2</sub> offset rate is a very small percentage of the overall costs to construct a facility, and that a monetary offset rate of \$1.90 is unlikely to significantly affect the overall economic viability of a facility.

**Nongenerating Energy Facilities**

Nongenerating energy facilities that emit carbon dioxide are subject to the Council's carbon dioxide emissions standard as well. One example of a facility that must comply with this standard is the NW Natural Mist Underground Natural Gas Storage facility, and specifically the compressor stations at that facility. In April 2016, the Council approved Amendment #11 to the site certificate for the Mist Underground Natural Gas Storage Facility. This amendment approved the "North Mist Expansion Project," which includes a new compressor station, the North Mist Compressor Station (NMCS). The North Mist Expansion Project (NMEP) began construction on June 18, 2017.

**Costs of NMEP and NMCS**

On May 29, 2015 NWN filed an update to its 2014 Integrated Resource Plan (IRP) with OPUC. This update provided more complete analysis of its NMEP with refined cost estimates. Its 2014 IRP estimated an investment of \$73.5 million for the NMEP. The May 29, 2015 update revised the estimate for the NMEP, and also provided cost estimates for two other alternative configurations. Alternative 1 (the configuration that was called out

---

<sup>1</sup> The cost of offset funds was derived by multiplying the existing monetary offset rate of \$1.27 by the 5.95 million tons of excess CO<sub>2</sub> emissions, and multiplying that product by a 1.04 ratio of U.S. GDP Deflator factors. The selection and contracting fees were calculated by using the formula described in OAR 345-024-0710(4). Records supporting these calculations are retained by the Oregon Department of Energy.

in its 2014 IRP) was revised from \$73.5 million to \$114 million. Alternative 2 had a cost estimate of \$138.6 million, and Alternative 3 was \$127.8 million. Additionally, the May 29, 2015 update provided a line item cost estimate of \$42.5 million for the NMCS itself. The \$42.5 million estimate for the NMCS was the same across all three alternatives. For simplicity, and for the most conservative estimate of how the proposed increase to the Council's monetary offset rate would impact the economic feasibility of approved changes such as NWN's NMEP, we recommend using \$42.5 million as the cost of construction for the changes approved by the Council in Amendment #11.

Costs of Excess CO<sub>2</sub> Emissions for NMEP

Based on the final order approving Amendment #11, the projected excess CO<sub>2</sub> emissions for the NMEP were calculated to be 44.373 thousand short tons of CO<sub>2</sub>. However, on May 17, 2017, NWN submitted revised calculations to the Department due to an adjusted engine horsepower (HP) for the compressor stations. Based on the revised calculations, the projected excess CO<sub>2</sub> emissions for the NMEP are 41.340 thousand short tons of CO<sub>2</sub>.

To account for the excess emissions for the NMEP, and in accordance with its site certificate, NWN provided approximately \$53,189 in offset funds and approximately \$5,319 in selection and contracting funds to The Climate Trust.<sup>2</sup> A total of approximately \$58,508.

Had the proposed monetary offset rate of \$1.90 per short ton of excess CO<sub>2</sub> emissions been in effect at that time, NWN would have paid approximately \$79,575 in offset funds and approximately \$7,958 in selection and contracting funds to The Climate Trust. A total of approximately \$87,533.

Therefore, the difference in the total payment under the current \$1.27 rate vs. the proposed \$1.90 rate is \$29,025 and that difference is less than 0.07% of the \$42.5 million cost of construction of the NMCS for the NMEP. This illustrates that the difference between a monetary payment made under the proposed CO<sub>2</sub> offset rate and one made under the existing CO<sub>2</sub> offset rate is a very small percentage of the overall costs to construct a facility, and that a monetary offset rate of \$1.90 is unlikely to significantly affect the overall economic viability of a facility.

---

<sup>2</sup> The cost of offset funds was derived by multiplying the existing monetary offset rate of \$1.27 by the 41.340 thousand tons of excess CO<sub>2</sub> emissions, and then adding a 1.31 percent annual average U.S. GDP Deflator factor. The selection and contracting fees are 10 percent of the offset funds. Records supporting these calculations are retained by the Oregon Department of Energy.