

1 **DIVISION 24**2 **SPECIFIC STANDARDS FOR SITING FACILITIES**3  
4 **Standards for Energy Facilities that Emit Carbon Dioxide**5  
6 **345-024-0550**7 **Standard for Base Load Gas Plants**

8 To issue a site certificate for a base load gas plant, the Council must find that the net carbon  
9 dioxide emissions rate of the proposed facility does not exceed ~~0.6140-675~~ pounds of carbon  
10 dioxide per kilowatt-hour of net electric power output, with carbon dioxide emissions and net  
11 electric power output measured on a new and clean basis. For a base load gas plant designed  
12 with power augmentation technology as defined in OAR 345-001-0010, the Council shall apply  
13 the standard for a non-base load power plant, as described in 345-024-0590, to the incremental  
14 carbon dioxide emissions from the designed operation of the power augmentation technology.  
15 The Council shall determine whether the base load carbon dioxide emissions standard is met as  
16 follows:

17 (1) The Council shall determine the gross carbon dioxide emissions that are reasonably  
18 likely to result from the operation of the proposed energy facility. The Council shall base such  
19 determination on the proposed design of the energy facility. The Council shall adopt site  
20 certificate conditions to ensure that the predicted carbon dioxide emissions are not exceeded  
21 on a new and clean basis.

22 (2) For any remaining emissions reduction necessary to meet the applicable standard, the  
23 applicant may elect to use any of the means described in OAR 345-024-0560, or any  
24 combination thereof. The Council shall determine the amount of carbon dioxide or other  
25 greenhouse gas emissions reduction that is reasonably likely to result from the applicant's  
26 offsets and whether the resulting net carbon dioxide emissions meet the applicable carbon  
27 dioxide emissions standard. The amount of greenhouse gas emissions means the pounds of  
28 carbon dioxide and the carbon dioxide equivalent of other greenhouse gases. For methane, one  
29 pound of methane is equivalent to 25 pounds of carbon dioxide. For nitrous oxide, one pound  
30 of nitrous oxide is equivalent to 298 pounds of carbon dioxide.

31 (3) If the applicant elects to comply with the standard using the means described in OAR  
32 345-024-0560(2), the Council shall determine the amount of greenhouse gas emissions  
33 reduction that is reasonably likely to result from each of the proposed offsets. In making this  
34 determination, the Council shall not allow credit for offsets that have already been allocated or  
35 awarded credit for greenhouse gas emissions reduction in another regulatory setting. The fact  
36 that an applicant or other parties involved with an offset may derive benefits from the offset  
37 other than the reduction of greenhouse gas emissions is not, by itself, a basis for withholding  
38 credit for an offset. The Council shall base its determination of the amount of greenhouse gas  
39 emission reduction on the following criteria and as provided in 345-024-0680:

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

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

1 (c) The extent to which the reduction of greenhouse gas emissions would occur in the  
2 absence of the offsets.

3 (4) Before beginning construction, the certificate holder shall notify the Department of  
4 Energy in writing of its final selection of a gas turbine vendor and shall submit a written design  
5 information report to the Department sufficient to verify the facility's designed new and clean  
6 heat rate and its nominal electric generating capacity at average annual site conditions for each  
7 fuel type. In the report, the certificate holder shall include the proposed limits on the annual  
8 average number of hours of facility operation on distillate fuel oil, if applicable. In the site  
9 certificate, the Council may specify other information to be included in the report. The  
10 Department shall use the information the certificate holder provides in the report as the basis  
11 for calculating, according to the site certificate, the amount of greenhouse gas emissions  
12 reductions the certificate holder must provide under OAR 345-024-0560.

#### 13 14 **345-024-0570**

##### 15 **Modification of the Standard for Base Load Gas Plants**

16 The Council may by rule modify the carbon dioxide emissions standard for base load gas plants  
17 in OAR 345-024-0550 if the Council finds that the most efficient stand-alone combined cycle,  
18 combustion turbine, natural gas-fired energy facility that is commercially demonstrated and  
19 operating in the United States has a net heat rate of less than ~~6,321~~<sup>6,955</sup> Btu per kilowatt  
20 hour higher heating value adjusted to ISO conditions. In modifying the carbon dioxide emission  
21 standard, the Council shall determine the rate of carbon dioxide emissions per kilowatt hour of  
22 net electric output of such energy facility, adjusted to ISO conditions and reset the carbon  
23 dioxide emissions standard at 17 percent below this rate.

#### 24 25 **345-024-0590**

##### 26 **Standard for Non-Base Load Power Plants**

27 To issue a site certificate for a non-base load power plant, the Council must find that the net  
28 carbon dioxide emissions rate of the proposed facility does not exceed ~~0.6140~~<sup>0.675</sup> pounds of  
29 carbon dioxide per kilowatt-hour of net electric power output, with carbon dioxide emissions  
30 and net electric power output measured on a new and clean basis. For a base load gas plant  
31 designed with power augmentation technology as defined in OAR 345-001-0010, the Council  
32 shall apply this standard to the incremental carbon dioxide emissions from the designed  
33 operation of the power augmentation technology. The Council shall determine whether the  
34 carbon dioxide emissions standard is met as follows:

35 (1) The Council shall determine the gross carbon dioxide emissions that are reasonably  
36 likely to result from the operation of the proposed energy facility. The Council shall base such  
37 determination on the proposed design of the energy facility, the limitation on the hours of  
38 generation for each fuel type and the average temperature, barometric pressure and relative  
39 humidity at the site during the times of the year when the facility is intended to operate. For a  
40 base load gas plant designed with power augmentation technology, the Council shall base its

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<sup>1</sup> At the time of Public Notice, the proposed update to the baseline heat rate was 6,326 Btu/kWh not 6,321. Subsequent to issuing Public Notice, the Department received supplemental information from the turbine manufacturer that resulted in a re-calculation of the net HHV heat rate adjusted to ISO conditions. The stepwise re-calculation resulting in 6,321 is shown in Attachment G for this Agenda Item.

1 determination of the incremental carbon dioxide emissions on the proposed design of the  
2 facility, the proposed limitation on the hours of generation using the power augmentation  
3 technology and the average temperature, barometric pressure and relative humidity at the site  
4 during the times of the year when the facility is intended to operate with power augmentation  
5 technology. The Council shall adopt site certificate conditions to ensure that the predicted  
6 carbon dioxide emissions are not exceeded on a new and clean basis; however, the Council may  
7 modify the parameters of the new and clean basis to accommodate average conditions at the  
8 times when the facility is intended to operate and technical limitations, including operational  
9 considerations, of a non-base load power plant or power augmentation technology or for other  
10 cause.

11 (2) For any remaining emissions reduction necessary to meet the applicable standard, the  
12 applicant may elect to use any of the means described in OAR 345-024-0600 or any  
13 combination thereof. The Council shall determine the amount of carbon dioxide or other  
14 greenhouse gas emissions reduction that is reasonably likely to result from the applicant's  
15 offsets and whether the resulting net carbon dioxide emissions meet the applicable carbon  
16 dioxide emissions standard. The amount of greenhouse gas emissions means the pounds of  
17 carbon dioxide and the carbon dioxide equivalent of other greenhouse gases. For methane, one  
18 pound of methane is equivalent to 25 pounds of carbon dioxide. For nitrous oxide, one pound  
19 of nitrous oxide is equivalent to 298 pounds of carbon dioxide.

20 (3) If the applicant elects to comply with the standard using the means described in OAR  
21 345-024-0600(2), the Council shall determine the amount of greenhouse gas emissions  
22 reduction that is reasonably likely to result from each of the proposed offsets. In making this  
23 determination, the Council shall not allow credit for offsets that have already been allocated or  
24 awarded credit for greenhouse gas emissions reduction in another regulatory setting. The fact  
25 that an applicant or other parties involved with an offset may derive benefits from the offset  
26 other than the reduction of greenhouse gas emissions is not, by itself, a basis for withholding  
27 credit for an offset. The Council shall base its determination of the amount of greenhouse gas  
28 emission reduction on the following criteria and as provided in 345-024-0680:

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

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

34 (c) The extent to which the reduction of greenhouse gas emissions would occur in the  
35 absence of the offsets.

36 (4) Before beginning construction, the certificate holder shall notify the Department of  
37 Energy in writing of its final selection of an equipment vendor and shall submit a written design  
38 information report to the Department sufficient to verify the facility's designed new and clean  
39 heat rate and its nominal electric generating capacity at average annual site conditions for each  
40 fuel type. For a base load gas plant designed with power augmentation technology, the  
41 certificate holder shall include in the report information sufficient to verify the facility's  
42 designed new and clean heat rate, tested under parameters the Council orders pursuant to  
43 section (1), and the nominal electric generating capacity at average site conditions during the  
44 intended use for each fuel type from the operation of the proposed facility using the power  
45 augmentation technology. The certificate holder shall include the proposed limit on the annual

1 average number of hours for each fuel used, if applicable. The certificate holder shall include  
2 the proposed total number of hours of operation for all fuels, subject to the limitation that the  
3 total annual average number of hours of operation per year is not more than 6,600 hours. In  
4 the site certificate, the Council may specify other information to be included in the report. The  
5 Department shall use the information the certificate holder provides in the report as the basis  
6 for calculating, according to the site certificate, the gross carbon dioxide emissions from the  
7 facility and the amount of greenhouse gas emissions reductions the certificate holder must  
8 provide under OAR 345-024-0600.

9 (5)(a) Every five years after commencing commercial operation, the certificate holder shall  
10 report to the Council the facility's actual gross carbon dioxide emissions. The certificate holder  
11 shall calculate actual gross carbon dioxide emissions using the new and clean heat rate and the  
12 actual hours of operation on each fuel during the five-year period or shall report to the Council  
13 the actual measured or calculated carbon dioxide emissions as reported to either the Oregon  
14 Department of Environmental Quality or the U.S. Environmental Protection Agency pursuant to  
15 a mandatory carbon dioxide emissions reporting requirement.

16 (b) The certificate holder shall specify its election of method used to measure or calculate  
17 carbon dioxide emissions in the notification report described at section (4) of this rule. That  
18 election, once made, shall apply for each five year period unless the site certificate is amended  
19 to allow a different election. If the certificate holder calculates actual carbon dioxide emissions  
20 using the new and clean heat rate and the actual hours of operation, the certificate holder shall  
21 also report to the Council the facility's actual annual hours of operation by fuel type. If the  
22 actual gross carbon dioxide emissions exceed the projected gross carbon dioxide emissions for  
23 the five-year period calculated under section (4), the certificate holder shall offset any excess  
24 emissions for that period and shall offset estimated future excess carbon dioxide emissions  
25 using the monetary path as described in OAR 345-024-0600(3) and (4) or as approved by the  
26 Council

27 (6) For a base load gas plant designed with power augmentation technology, every five  
28 years after commencing commercial operation, the certificate holder shall report to the Council  
29 the facility's actual hours of operation using the power augmentations technology for each fuel  
30 type. If the actual gross carbon dioxide emissions, calculated using the new and clean heat rate,  
31 tested under parameters the Council orders pursuant to section (1), and the actual hours of  
32 operation using the power augmentation technology on each fuel during the five-year period  
33 exceed the projected gross carbon dioxide emissions for the five-year period calculated under  
34 section (4), the certificate holder shall offset any excess emissions for that period and shall  
35 offset estimated future excess carbon dioxide emissions using the monetary path as described  
36 in OAR 345-024-0600(3) and (4) or as approved by the Council.

### 37 38 **345-024-0620**

#### 39 **Standard for Nongenerating Energy Facilities**

40 To issue a site certificate for a nongenerating energy facility that emits carbon dioxide, the  
41 Council must find that the net carbon dioxide emissions rate of the proposed facility does not  
42 exceed ~~0.4580-504~~ pounds of carbon dioxide per horsepower hour. The Council shall determine  
43 whether the carbon dioxide emissions standard is met as follows:

44 (1) The Council shall determine the gross carbon dioxide emissions that are reasonably  
45 likely to result from the operation of the proposed energy facility. The Council shall base such

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

11 (2) For any remaining emissions reduction necessary to meet the applicable standard, the  
12 applicant may elect to use any of the means described in OAR 345-024-0630 or any  
13 combination thereof. The Council shall determine the amount of carbon dioxide or other  
14 greenhouse gas emissions reduction that is reasonably likely to result from the applicant's  
15 offsets and whether the resulting net carbon dioxide emissions meet the applicable carbon  
16 dioxide emissions standard. The amount of greenhouse gas emissions means the pounds of  
17 carbon dioxide and the carbon dioxide equivalent of other greenhouse gases. For methane, one  
18 pound of methane is equivalent to 25 pounds of carbon dioxide. For nitrous oxide, one pound  
19 of nitrous oxide is equivalent to 298 pounds of carbon dioxide.

20 (3) If the applicant elects to comply with the standard using the means described in OAR  
21 345-024-0630(1), the Council shall determine the amount of greenhouse gas emissions  
22 reduction that is reasonably likely to result from each of the proposed offsets. In making this  
23 determination, the Council shall not allow credit for offsets that have already been allocated or  
24 awarded credit for greenhouse gas emissions reduction in another regulatory setting. The fact  
25 that an applicant or other parties involved with an offset may derive benefits from the offset  
26 other than the reduction of greenhouse gas emissions is not, by itself, a basis for withholding  
27 credit for an offset. The Council shall base its determination of the amount of greenhouse gas  
28 emission reduction on the following criteria and as provided in 345-024-0680:

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

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

34 (c) The extent to which the reduction of greenhouse gas emissions would occur in the  
35 absence of the offsets.

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

44 (5) In the site certificate, the Council shall specify the schedule by which the certificate  
45 holder shall provide offsets. In the schedule, the Council shall specify the amount and timing of

1 offsets the certificate holder must provide to an offset credit account. In determining the  
2 amount and timing of offsets, the Council may consider the estimate of total offsets that may  
3 be required for the facility and the minimum amount of offsets needed for effective offset  
4 projects. The Department shall maintain the record of the offset credit account.