



DEPARTMENT OF
ECOLOGY
State of Washington

Final Regulatory Analyses

Including the:

Final Cost-Benefit Analysis

Least-Burdensome Alternative Analysis

Administrative Procedure Act Determinations

Regulatory Fairness Act Compliance

*Chapter 173-407 WAC
Greenhouse Gas Mitigation Requirements
and Emissions Performance Standard for
Power Plants*

February 2018

Publication no. 18-02-008

Publication and Contact Information

This report is available on the Department of Ecology's website at <https://fortress.wa.gov/ecy/publications/SummaryPages/1802008.html>

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- **Final Cost-Benefit Analysis**
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 - **Regulatory Fairness Act Compliance –**
-

Chapter 173-407 WAC

Greenhouse Gas Mitigation Requirements and Emissions Performance Standard for Power Plants

by
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Executive Summary

This report presents the determinations made by the Washington State Department of Ecology (Ecology) as required under Chapters 34.05 and 19.85 Revised Code of Washington (RCW), for the adopted amendments to the Greenhouse Gas Mitigation Requirements and Emissions Performance Standard for Power Plants (Chapter 173-407 WAC; the “rule”). This includes the:

- Final Cost-Benefit Analysis (CBA)
- Least-Burdensome Alternative Analysis (LBA)
- Administrative Procedure Act Determinations
- Regulatory Fairness Act Compliance

This rule requires power plants and units to:

- Reduce carbon dioxide (CO₂) emissions (CO₂ mitigation; Part I).
- Meet the greenhouse gas emissions performance standard (Part II).
- Develop and implement plans or programs to reduce greenhouse gases as approved by Ecology (Part II).

This rule also describes Ecology’s consultation with Utilities and Transportation Commission and consumer-owned utilities (Part III).

In this rulemaking, we are:

- Adopting the most recent greenhouse gas emissions performance standard (standard) from WAC 194-26-020.
- Referencing WAC 194-26-020 for any new standard implemented after the effective date of this rule.
- Replacing the carbon dioxide conversion factors in Part I of this rule with the emission factors from 40 C.F.R., Part 98, Table C-1.
- Allowing certain facilities that are subject to the emission performance standard to have the option to use carbon dioxide emission factors from 40 C.F.R. Part 98, Table C-1.
- Allowing facilities that become subject to the standard after the effective date of this rule to have the option to use methane and nitrous oxide emission factors from 40 C.F.R., Part 98, Table C-2.
- Requiring applicant controlled mitigation projects to be operational within one year after the start of commercial operation, and allowing extensions.
- Aligning this rule with Chapters 80.70 and 80.80 RCW.
- Making technical clarifications, correct errors, and improving readability.

The adopted rule amendments are not expected to create costs.

The adopted rule amendments will likely create the following benefits.

- Reduced effort to explain emissions differences and perform duplicate calculations, due to replacing the CO₂ emission factors in Part I of this rule with the factors in 40 C.F.R. Part 98, Table C-1.
- Knowledge of when resale of carbon credits is an option, due to clarity that to get approval from the permitting authority, the resale of carbon credits must be offset by other mitigation methods.
- Reductions in monitoring costs and increased clarity, due to using 25 MW net output rating to trigger different CO₂ monitoring requirements as opposed to production.
- Flexibility in using least-cost options for measuring emissions, due to the allowance that to meet the emissions performance standard, Ecology may approve use of CO₂ emission factors in 40 C.F.R. Part 98, Table C-1 for facilities or units over 25 MW net output rating with less than 90 percent fossil fuel annual heat input and for facilities or units with less than 25 MW net output rating.
- Reductions in costs of establishing site specific emissions factors, due to allowing the use of the emission factors from 40 C.F.R. Part 98, Table C-2 to estimate methane and nitrous oxide emissions.

Ecology concludes, based on reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the adopted rule amendments, that the benefits of the amendments are greater than the costs.

After considering alternatives to the adopted rule's contents, as well as the goals and objectives of the authorizing statute, Ecology determined that the adopted rule represents the least-burdensome alternative of possible rule contents meeting statutory goals and objectives.

Based on research and analysis required by the Regulatory Fairness Act (RFA) – Chapter 19.85 RCW – Ecology has determined the adopted rule does not impact small businesses. After looking at Employment Security data for number of employees, we determined that the businesses regulated by this chapter do not meet the definition of small business in RCW 19.85.020(3). Therefore, Ecology is not required to prepare a small business economic impact statement, according to RCW 19.85.025(4).

Additionally, Ecology determined that the adopted rule does not impose costs on businesses. Because zero cost is below the minor cost threshold, Ecology is not required to prepare a small business economic impact statement according to RCW 19.85.030(1)(a)(i).

Chapter 1: Background and Introduction

1.1 Introduction

This report presents the determinations made by the Washington State Department of Ecology (Ecology) as required under Chapters 34.05 and 19.85 Revised Code of Washington (RCW), for the adopted amendments to the Greenhouse Gas Mitigation Requirements and Emissions Performance Standard for Power Plants (Chapter 173-407 WAC; the “rule”). This includes the:

- Final Cost-Benefit Analysis (CBA)
- Least-Burdensome Alternative Analysis (LBA)
- Administrative Procedure Act Determinations
- Regulatory Fairness Act Compliance

The Washington Administrative Procedure Act (APA; RCW 34.05.328(1)(d)) requires Ecology to evaluate significant legislative rules to “determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the law being implemented.” Chapters 1 – 5 of this document describe that determination.

The APA also requires Ecology to “determine, after considering alternative versions of the rule...that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives” of the governing and authorizing statutes (RCW 34.05.328(1)(d)). Chapter 6 of this document describes that determination.

The APA also requires Ecology to make several other determinations (RCW 34.05.328(1)(a) – (c) and (f) – (h)) about the rule, including authorization, need, context, and coordination. Appendix A provides the documentation for these determinations.

Ecology bases all determinations on the best available information at the time of publication.

The Washington Regulatory Fairness Act (RFA; Chapter 19.85 RCW) requires Ecology to evaluate the relative impact of rule amendments that impose costs on businesses in an industry. It compares the relative compliance costs to small businesses to the largest businesses affected. Chapter 7 documents that analysis, when applicable.

1.1.1 Chapter 173-407 WAC

This rule requires power plants and units to:

- Reduce carbon dioxide (CO₂) emissions (CO₂ mitigation; Part I).
- Meet the greenhouse gas emissions performance standard (Part II).

- Develop and implement plans or programs to reduce greenhouse gases as approved by Ecology (Part II).

This rule also describes Ecology's consultation with Utilities and Transportation Commission and consumer-owned utilities (Part III).

In 2013, the Washington Department of Commerce (Commerce) adopted a more restrictive greenhouse gas emissions performance standard in WAC 194-26-020. State law establishes that the standard set by Commerce must be met under Chapter 173-407 WAC. However, until Ecology updates Chapter 173-407 WAC facilities face two different emission performance standards but may comply with the less stringent standard in this rule.

As required by RCW 80.80.050, Commerce started surveying the greenhouse gas emissions of new combined-cycle natural gas thermal electric generation turbines in July 2017. If the survey indicates a lower emissions performance standard is appropriate, Commerce intends to adopt a new standard in their rule by June 30, 2018.

In this rulemaking, we are:

- Adopting the most recent greenhouse gas emissions performance standard (standard) from WAC 194-26-020.
- Referencing WAC 194-26-020 for any new standard implemented after the effective date of this rule.
- Replacing the carbon dioxide conversion factors in Part I of this rule with the emission factors from 40 C.F.R., Part 98, Table C-1.
- Allowing certain facilities that are subject to the emission performance standard to have the option to use carbon dioxide emission factors from 40 C.F.R. Part 98, Table C-1.
- Allowing facilities that become subject to the standard after the effective date of this rule to have the option to use methane and nitrous oxide emission factors from 40 C.F.R., Part 98, Table C-2.
- Requiring applicant controlled mitigation projects to be operational within one year after the start of commercial operation, and allowing extensions.
- Aligning this rule with Chapters 80.70 and 80.80 RCW.
- Making technical clarifications, correct errors, and improving readability.

Most of the changes in this rulemaking only apply to:

- New power plants and units.
- Existing power plants and units that:
 - Change ownership.
 - Upgrade with an increase in heat input or fuel usage.
 - Are named in a new long-term financial commitment (such as power purchase agreements and plant purchases).

1.2 Summary of the adopted rule amendments

Many of the adopted amendments make technical clarifications, correct errors, and improve readability. RCW 34.05.328(5)(b)(iv) exempts these types of changes from analysis.

Other amendments incorporate by reference other federal and state laws or rules without material change. RCW 34.05.328(5)(b)(iii) exempts these types of changes from analysis.

The adopted rule amendments make the following changes not required by other laws or rules:

- Replacing the CO₂ emission factors in Part I of this rule with the factors in 40 C.F.R. Part 98, Table C-1.
- Requiring offsets by other mitigation methods to get approval from the permitting authority for the resale of carbon credits.
- Using 25 MW net output rating to trigger CO₂ monitoring requirements as opposed to production.
- Allowing Ecology to approve use of CO₂ emission factors in 40 C.F.R. Part 98, Table C-1 for facilities or units over 25 MW net output rating with less than 90 percent fossil fuel annual heat input and for facilities or units with less than 25 MW net output rating for facilities to meet their emission performance standards.
- Allowing the use of the emission factors from 40 C.F.R. Part 98, Table C-2 to estimate methane and nitrous oxide emissions.

1.3 Reasons for the adopted rule amendments

1.3.1 Replacing the CO₂ emission factors in Part I of this rule with the factors in 40 C.F.R. Part 98, Table C-1

To align with greenhouse gas emissions reporting required by the Environmental Protection Agency (EPA) and Chapter 173-441 WAC, Ecology replaced the emission factors in the rule with the same emission factors used in the state and federal greenhouse gas emission inventory programs. This will eliminate multiple calculations of the same emissions.

1.3.2 Requiring offsets by other mitigation methods to get approval from the permitting authority for the resale of carbon credits

Stakeholders requested instructions on how the permitting authority approves resold carbon credits in Part I. The permitting authority must determine that the facility selling the permanent carbon credits replaces them with other CO₂ mitigation methods. Further, facilities ceasing operation may sell their carbon credits without replacement.

1.3.3 Using 25 MW net output rating to trigger CO₂ monitoring requirements as opposed to production

Stakeholders requested that Ecology use net output rather than the name plate of generation capacity to determine CO₂ monitoring requirements in Part II. They commented that the net output is preferable because it reflects the actual energy supplied to the electric grid.

1.3.4 Allowing Ecology to approve use of CO₂ emission factors in 40 C.F.R. Part 98, Table C-1 for facilities or units over 25 MW net output rating with less than 90 percent fossil fuel annual heat input and for facilities or units with less than 25 MW net output rating for facilities to meet their emission performance standards

Ecology added this to provide an alternative to continuous CO₂ emission monitoring systems and fuel carbon content monitoring in Part II.

1.3.5 Allowing the use of the emission factors from 40 C.F.R. Part 98, Table C-2 to estimate methane and nitrous oxide emissions

Ecology added this to replace the requirement for an affected power plant to develop site specific emission factors for reporting nitrous oxide (N₂O) and methane (CH₄).

1.4 Document organization

The remainder of this document is organized in the following chapters:

- Baseline and the adopted rule amendments (Chapter 2): Description and comparison of the baseline (what would occur in the absence of the adopted rule amendments) and the adopted changes to rule requirements.
- Likely costs of the adopted rule amendments (Chapter 3): Analysis of the types and sizes of costs we expect impacted entities to incur as a result of the adopted rule amendments.
- Likely benefits of the adopted rule amendments (Chapter 4): Analysis of the types and size of benefits we expect to result from the adopted rule amendments.
- Cost-benefit comparison and conclusions (Chapter 5): Discussion of the complete implications of the CBA.
- Least-Burdensome Alternative Analysis (Chapter 6): Analysis of considered alternatives to the contents of the adopted rule amendments.
- Small Business Economic Impact Statement (Chapter 7, when applicable): Comparison of compliance costs to small and large businesses; mitigation; impact on jobs.
- RCW 34.05.328 determinations not discussed in Chapter 5 or 6 (Appendix A).

Chapter 2: Baseline and the Adopted Rule Amendments

2.1 Introduction

We analyzed the impacts of the adopted rule amendments relative to the baseline of the previous rule, within the context of all existing requirements (federal and state laws and rules). We call this context for comparison the “baseline”, and it reflects the most likely regulatory circumstances that entities would face if Ecology did not adopt amendments to the rule. The baseline is discussed in Section 2.2 below.

2.2 Baseline

The baseline for our analyses generally consists of existing rules and laws, and their requirements. This is what allows us to make a consistent comparison between the state of the world with and without the adopted rule amendments.

For this rulemaking, the baseline includes:

- 40 CFR Part 60, Subparts TTTT and UUUU.
- 40 CFR Part 98.
- Chapter 70.94 RCW.
- Chapter 80.70 RCW.
- Chapter 80.80 RCW.
- Chapter 173-407 WAC in its current form.
- WAC 194-26-020.
- Chapter 463-80 WAC.
- Chapter 463-85 WAC.
- Chapter 480-100 WAC Part VII.

2.3 Adopted rule amendments

The adopted rule amendments that differ from the baseline and are not *specifically* dictated in the authorizing statute or elsewhere in law or rule include:

- Replacing the CO₂ emission factors in Part I of this rule with the factors in 40 C.F.R. Part 98, Table C-1.

- Requiring offsets by other mitigation methods to get approval from the permitting authority for the resale of carbon credits.
- Using 25 MW net output rating to trigger CO₂ monitoring requirements as opposed to production.
- Allowing Ecology to approve use of CO₂ emission factors in 40 C.F.R. Part 98, Table C-1 for facilities or units over 25 MW net output rating with less than 90 percent fossil fuel annual heat input and for facilities or units with less than 25 MW net output rating for facilities to meet their emission performance standards.
- Allowing the use of the emission factors from 40 C.F.R. Part 98, Table C-2 to estimate methane and nitrous oxide emissions.

2.3.1 Replacing the CO₂ emission factors in Part I of this rule with the factors in 40 C.F.R. Part 98, Table C-1

Baseline

Ecology requires a facility or unit to use a set of emission factors developed in 2004 to determine the CO₂ mitigation quantity in Part I.

Adopted

Ecology will require a facility or unit to use the CO₂ emission factors in 40 C.F.R. Part 98, Table C-1 to align with the state and federal greenhouse gas reporting programs.

Expected impact

Keeping CO₂ emission calculations consistent with the emissions calculated for the greenhouse gas reporting programs, and reducing the number of different emission quantities reported for the same emissions, will provide a benefit to the owner/operator of the facility or unit and Ecology.

2.3.2 Requiring offsets by other mitigation methods to get approval from the permitting authority for the resale of carbon credits

Baseline

Ecology requires approval from a permitting authority to resell carbon credits, however Ecology does not specify criteria.

Adopted

To approve a sale of permanent carbon credits, the permitting authority must determine that the seller has other CO₂ mitigation methods to offset the credits sold. Facilities ceasing operation may sell their carbon credits without replacement.

Expected impact

Clarifies to a credit holder when a permitting agency will or will not approve a sale of the carbon credits. This results in a benefit to the credit holder.

2.3.3 Using 25 MW net output rating to trigger CO₂ monitoring requirements as opposed to production

Baseline

Does not specify whether to use production when determining whether the 25 MW threshold is met.

Adopted

Using net output rating to determine whether the 25 MW threshold is met.

Expected impact

As net output rating is typically less than name plate capacity and is not as variable as actual production,, units close to the threshold based on production will have a clear threshold to determine which of the available methods to determine CO₂ emissions to use. Currently no facility in Washington subject to this rule is operating near this threshold value. We expect a low impact on individual power plants as this aligns with their current practices.

2.3.4 Allowing Ecology to approve use of CO₂ emission factors in 40 C.F.R. Part 98, Table C-1 for facilities or units over 25 MW net output rating with less than 90 percent fossil fuel annual heat input and for facilities or units with less than 25 MW net output rating for facilities to meet their emission performance standards

Baseline

Facilities or units must monitor CO₂ emissions by a continuous emission monitoring system meeting the requirements of 40 C.F.R. 75.10 and 75.13 and 40 C.F.R. Part 75, Appendix F. If allowed by the requirements of 40 C.F.R. Part 72, a facility may estimate CO₂ emissions through fuel carbon content monitoring and methods meeting the requirements of 40 C.F.R. 75.10 and 75.13 and 40 C.F.R. Part 75, Appendix G.

Adopted

If an electric generation facility or unit with net output rating of 25 MW or more uses less than 90 percent fossil fuel for its annual heat input, or a facility or unit with net output rating less than 25 MW, Ecology may approve the use of emission factors in 40 C.F.R. Part 98, Table C-1 as an additional option to determining CO₂ emissions.

Expected impact

A potential benefit of providing an additional option for a facility or unit meeting the criteria to determine CO₂ emissions through the use of emission factors.

2.3.5 Allowing the use of the emission factors from 40 C.F.R. Part 98, Table C-2 to estimate methane and nitrous oxide emissions

Baseline

Facilities or units must develop a site specific emission factor for N₂O and CH₄ through a series of four emission tests to determine site specific emission factors.

Adopted

Facilities or units that trigger the emissions performance standard after the effective date of this rule may use emission factors from 40 C.F.R. Part 98, Table C-2 or develop site specific emission factors. If a facility developed site specific emission factors in the past, the facility must use those for compliance determinations.

Expected impact

A potential benefit for facilities or units to use the most cost-effective option for determining emission factors. The monetary benefit (avoided cost) is from not having to contract for emissions testing to develop the site specific emission factors.

Chapter 3: Likely Costs of the Adopted Rule Amendments

3.1 Introduction

We estimated the likely costs associated with the adopted rule amendments, as compared to the baseline. The adopted rule amendments and the baseline are discussed in detail in Chapter 2 of this document.

3.2 Cost analysis

The adopted rule amendments are not expected to create costs compared to the baseline.

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Chapter 4: Likely Benefits of the Adopted Rule Amendments

4.1 Introduction

We estimated the likely benefits associated with the adopted rule amendments, as compared to the baseline (both described in Chapter 2 of this document).

4.2 Benefit analysis

The adopted rule amendments will likely create benefits due to the following:

- Replacing the CO₂ emission factors in Part I of this rule with the factors in 40 C.F.R. Part 98, Table C-1.
- Requiring offsets by other mitigation methods to get approval from the permitting authority for the resale of carbon credits.
- Using 25 MW net output rating to trigger CO₂ monitoring requirements as opposed to production.
- Allowing Ecology to approve use of CO₂ emission factors in 40 C.F.R. Part 98, Table C-1 for facilities or units over 25 MW net output rating with less than 90 percent fossil fuel annual heat input and for facilities or units with less than 25 MW net output rating for facilities to meet their emission performance standards.
- Allowing the use of the emission factors from 40 C.F.R. Part 98, Table C-2 to estimate methane and nitrous oxide emissions.

4.2.1 Replacing the CO₂ emission factors in Part I of this rule with the factors in 40 C.F.R. Part 98, Table C-1

This change provides consistency in the calculation of CO₂ to be mitigated with the calculation of CO₂ emissions for the state and federal greenhouse gas reporting programs. The cost savings comes from not having to explain why the emission numbers are different, and eliminating duplicate calculations by the affected power plants.

4.2.2 Requiring offsets by other mitigation methods to get approval from the permitting authority for the resale of carbon credits

By specifying approval requirements, the adopted rule amendments benefits credit holders by allowing them to know when resale is an option.

4.2.3 Using 25 MW net output rating to trigger CO₂ monitoring requirements as opposed to production

As net output is typically less than name plate capacity and production varies hourly. Using net output rating sets a clear line to determine which monitoring requirements apply for small facilities. This creates a benefit for the facility or unit by using a single, unchanging rating to determine applicable monitoring requirements.

4.2.4 Allowing Ecology to approve use of CO₂ emission factors in 40 C.F.R. Part 98, Table C-1 for facilities or units over 25 MW net output rating with less than 90 percent fossil fuel annual heat input and for facilities or units with less than 25 MW net output rating for facilities to meet their emission performance standards

This will create a potential benefit by providing an additional option for measuring CO₂ emissions from units with more than 25 MW net output rating and less than 90 percent fossil fuel derived annual heat input and units with less than 25 MW net output rating through use of emission factors. This option provides an alternative to the expense of installing and operating a continuous emission monitoring system¹ or monitoring the fuel carbon content.

4.2.5 Allowing the use of the emission factors from 40 C.F.R. Part 98, Table C-2 to estimate methane and nitrous oxide emissions

The current rule requires a power plant to perform a series of emission tests to establish site specific emission factors for N₂O and CH₄. One power plant owner has reported that the series of tests cost \$100,000 without accounting for the internal personnel costs².

Use of the federal emission factors as an alternate will save affected power plant owners this cost. However, the rule language retains the option for an affected power plant to develop site specific emission factors.

This will create a potential benefit for facility or unit to use the most cost-effective option for determining emission factors.

4.3 Benefit Summary

The adopted rule amendments will likely create the following benefits.

- Reduced effort to explain emissions differences and perform duplicate calculations, due to replacing the CO₂ emission factors in Part I of this rule with the factors in 40 C.F.R. Part 98, Table C-1.

¹ A continuous monitoring system involves the installation of a CO₂ monitor, a flow monitor, a flue gas drying system, and associated data collection and handling equipment. The system also requires weekly QA/QC checks, a quarterly cylinder gas audit, and an annual relative accuracy test audit.

² Communication between Alan Newman and Puget Sound Energy.

- Knowledge of when resale of carbon credits is an option, due to clarity that to get approval from the permitting authority, the resale of carbon credits must be offset by other mitigation methods.
- Reductions in monitoring costs and increased clarity, due to using 25 MW net output rating to trigger different CO₂ monitoring requirements as opposed to production.
- Flexibility in using least-cost options for measuring emissions, due to the allowance that to meet the emissions performance standard, Ecology may approve use of CO₂ emission factors in 40 C.F.R. Part 98, Table C-1 for facilities or units over 25 MW net output rating with less than 90 percent fossil fuel annual heat input and for facilities or units with less than 25 MW net output rating.
- Reductions in costs of establishing site specific emissions factors, due to allowing the use of the emission factors from 40 C.F.R. Part 98, Table C-2 to estimate methane and nitrous oxide emissions.

The APA requires that Ecology include quantifiable and qualitative costs and benefits in this analysis, and the qualitative discussion above describes the types of benefits that are likely to arise.

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Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Summary of the costs and benefits of the adopted rule amendments

The adopted rule amendments are not expected to create costs.

The adopted rule amendments will likely create the following benefits.

- Reduced effort to explain emissions differences and perform duplicate calculations, due to replacing the CO₂ emission factors in Part I of this rule with the factors in 40 C.F.R. Part 98, Table C-1.
- Knowledge of when resale of carbon credits is an option, due to clarity that to get approval from the permitting authority, the resale of carbon credits must be offset by other mitigation methods.
- Reductions in monitoring costs and increased clarity, due to using 25 MW net output rating to trigger different CO₂ monitoring requirements as opposed to production.
- Flexibility in using least-cost options for measuring emissions, due to the allowance that to meet the emissions performance standard, Ecology may approve use of CO₂ emission factors in 40 C.F.R. Part 98, Table C-1 for facilities or units over 25 MW net output rating with less than 90 percent fossil fuel annual heat input and for facilities or units with less than 25 MW net output rating.
- Reductions in costs of establishing site specific emissions factors, due to allowing the use of the emission factors from 40 C.F.R. Part 98, Table C-2 to estimate methane and nitrous oxide emissions.

5.2 Conclusion

Ecology concludes, based on reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the adopted rule amendments, that the benefits of the adopted rule amendments are greater than the costs.

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Chapter 6: Least-Burdensome Alternative Analysis

6.1 Introduction

RCW 34.05.328(1)(e) requires Ecology to “[d]etermine, after considering alternative versions of the rule and the analysis required under (b), (c), and (d) of this subsection, that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated under (a) of this subsection.” The referenced subsections are:

- (a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements;
- (b) Determine that the rule is needed to achieve the general goals and specific objectives stated under (a) of this subsection, and analyze alternatives to rule making and the consequences of not adopting the rule;
- (c) Provide notification in the notice of proposed rulemaking under RCW 34.05.320 that a preliminary cost-benefit analysis is available. The preliminary cost-benefit analysis must fulfill the requirements of the cost-benefit analysis under (d) of this subsection. If the agency files a supplemental notice under RCW 34.05.340, the supplemental notice must include notification that a revised preliminary cost-benefit analysis is available. A final cost-benefit analysis must be available when the rule is adopted under RCW 34.05.360;
- (d) Determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented;

In other words, to be able to adopt the rule, Ecology is required to determine that the contents of the rule are the least burdensome set of requirements that achieve the goals and objectives of the authorizing statute(s).

Ecology assessed alternatives to the adopted rule content, and determined whether they met the goals and objectives of the authorizing statutes. Of those that would meet these goals and objectives, Ecology determined whether those chosen for the adopted rule were the least burdensome to those required to comply with them.

6.2 Goals and objectives of the authorizing statutes: Chapters 80.70 and 80.80 RCW

The goals and objectives of the authorizing statutes are:

- Develop rules to implement Chapter 80.70 RCW. These rules require CO₂ mitigation for:
 - New power plants with capacity between 25 MW and 350 MW³.
 - Modifications of power plants that increase the CO₂ emissions.
- Develop rules to implement Chapter 80.80 RCW in conjunction with the Energy Facility Site Evaluation Council. These rules must require compliance with the greenhouse gas emissions performance standard for:
 - Power plants or units in Washington that are:
 - New.
 - Existing that changed ownership.
 - Existing that upgraded.
 - Power plants or units in or outside Washington that are named in new long term financial commitments, including power purchase agreements and power plant purchases.

6.3 Alternatives considered and why they were not included

6.3.1 Adopting new greenhouse gas emission performance standards from Commerce's rule every five years following their rule adoption

The law requires sources to comply with the current (2013) greenhouse gas emission performance standard determined by Commerce. Ecology must adopt the new emission performance standard into our rule to implement it in our jurisdiction. Instead of updating our rule every five years like Commerce, Ecology is adopting Commerce's emission performance standard rule by reference. This reduces Ecology's rulemaking workload, yet still meets the requirements of the state Administrative Procedures Act. Not employing the adopted approach would delay implementation of the most updated emission performance standards.

Adopting the alternative, requiring Ecology rulemaking to incorporate the standard developed by commerce, would be more burdensome.

³ The statute also requires the Energy Facility Site Evaluation Council to require mitigation for all power plants under its jurisdiction, power plants with a net capacity of 350 MW or greater and floating power plants with a net capacity of 100 MW or greater. The Council has a parallel regulation implementing these requirements on their power plants.

6.3.2 Not allowing an additional option for determining CO₂ emissions alternative emission factors for units with less than 90 percent fossil fuel annual heat input or less than 25 MW net capacity rating

The alternative approach to the adopted amendments leaves this requirement unchanged. The baseline rule requires an affected power plant to install a continuous CO₂ emissions monitoring system or use a fuel carbon content monitoring program to determine CO₂ emissions. The fuel carbon content monitoring program complexity and expense varies with the number and types of different fuels used in a power plant.

The alternative of using emission factors developed and established by EPA is both simpler and less expensive than the baseline rule requirements. This alternative would impose more burden on covered facilities.

6.3.3 Requiring site specific emission factors rather than allowing the use of the N₂O and CH₄ emission factors from 40 C.F.R. Part 98, Table C-2

The adopted amendments give options to use the default emission factors in addition to the requirement to establish site specific N₂O and CH₄ emission factors through a program of emissions testing. Using default emission factors will be a simpler approach.

The alternative considered was to retain the baseline process to establish site specific emission factors. Due to the similarity between the site specific emission factors and default factors from the federal rule, the use of site specific factors provides minimal benefit.

6.4 Conclusion

After considering alternatives to the adopted rule's contents, as well as the goals and objectives of the authorizing statute, Ecology determined that the adopted rule represents the least-burdensome alternative of possible rule contents meeting these goals and objectives.

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Chapter 7: Regulatory Fairness Act Compliance

7.1 Introduction

Based on research and analysis required by the Regulatory Fairness Act (RFA) – Chapter 19.85 RCW – Ecology has determined the adopted rule does not impact small businesses. After looking at Employment Security data for number of employees, we determined that the businesses regulated by this chapter do not meet the definition of small business in RCW 19.85.020(3). Therefore, Ecology is not required to prepare a small business economic impact statement, according to RCW 19.85.025(4).

Additionally, Ecology determined that the adopted rule amendments do not impose compliance costs on businesses. Because zero cost is below the minor cost threshold, Ecology is not required to prepare a small business economic impact statement according to RCW 19.85.030(1)(a)(i).

Appendix A

Administrative Procedure Act (RCW 34.05.328)

Determinations

Describe the general goals and specific objectives of the statute that this rule implements. RCW 34.05.328(1)(a)

See Chapter 6.

Explain why this rulemaking is needed to achieve the goals and objectives of the statute. RCW 34.05.328(1)(b)

See Chapters 1 and 2.

Describe alternatives to rulemaking and the consequences of not adopting this rule. RCW 34.05.328(1)(b)

Before starting the rulemaking we considered not revising the rule.

Ecology considered not making changes to Chapter 173-407 WAC and made the following determinations:

- If Ecology does not adopt the lower 2013 greenhouse gas emissions performance standard into this rule, a facility triggering the rule is subject to the less protective standard currently in the rule.
- If Ecology does not update the rule with the revisions to the state laws, industry must comply with a rule that conflicts with the requirements of Chapters 80.70 and 80.80 RCW.

We also considered adopting new greenhouse gas emission performance standards from Commerce's rule every five years following their rule adoption.

Please see the Least Burdensome Alternative Analysis, Chapter 6 of this document, for discussion of alternative rule content considered.

A preliminary cost-benefit analysis was made available. RCW 34.05.328(1)(c)

Notice is provided in the proposed rulemaking notice (CR-102 form) filed under RCW 34.05.320.

Do the probable benefits of this rulemaking outweigh the probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented? RCW 34.05.328(1)(d)

See Chapters 1 – 5.

Is this rule the least burdensome alternative for those required to comply? RCW 34.05.328 (1)(e)

Please see Chapter 6 and the rulemaking record.

Does this rule require those to whom it applies to take an action that violates requirements of another federal or state law?

- Yes
 No

Explain how that determination was made. RCW 34.05.328(1)(f)

RCW 80.80.040 and 050 allow Ecology to differ from federal standards. Upon development of Clean Power Plan, the more restrictive standard would apply. At the time of filing this adoption, there is no federal counterpart to this law and rule since the federal Clean Power Plan was stayed by U.S. Supreme Court.

Chapter 80.70 RCW sets up a state program with no federal counterpart.

Does this rule impose more stringent performance requirements on private entities than on public entities? RCW 34.05.328 (1)(g)

- Yes. Provide a citation. Explain.
 No

This rule imposes the same performance requirements on private and public entities.

Do other federal, state, or local agencies have the authority to regulate this subject?

- Yes. List below.
 No

Is this rule different from any federal regulation or statute on the same activity or subject?

- Yes
 No

If yes, check all that apply. The difference is justified because:

A state statute explicitly allows Ecology to differ from federal standards. (If checked, provide the citation.)

There is substantial evidence that the difference is necessary to achieve the general goals and objectives of the statute that this rule implements. (If checked, explain.)

RCW 34.05.328 (1)(h)

RCW 80.80.040 and 050 allow Ecology to differ from federal standards. Chapter 80.70 RCW sets up a state program with no federal counterpart.

Energy Facility Site Evaluation Council (EFSEC) has authority to implement both Chapters 80.70 and 80.80 RCW for facilities under their jurisdiction.

Local clean air agencies have authority to implement the Chapter 80.70 RCW provisions for power plants under their jurisdiction:

- Benton Clean Air Agency

- Northwest Clean Air Agency
- Olympic Region Clean Air Agency
- Puget Sound Clean Air Agency
- Southwest Clean Air Agency
- Spokane Regional Clean Air Agency
- Yakima Regional Clean Air Agency

Utility and Transportation Commission (UTC) has authority to implement portions of Chapter 80.80 RCW for investor owned utilities under their jurisdiction.

Consumer owned electric utilities are required to comply with the Chapter 80.80 RCW requirements for power plants and power purchase agreements.

Department of Commerce has authority to conduct a survey and adopt the average available greenhouse gas emissions output as the new greenhouse gas emissions performance standard, every five years.

Environmental Protection Agency (EPA) has authority to regulate this subject under its own rules (40 CFR Part 60, Subparts TTTT and UUUU). Most of the carbon dioxide emission standards under these federal rules are less stringent than the 2013 greenhouse gas emissions performance standard adopted by Commerce. One possible exception is that Washington needs to develop a plan to implement the more restrictive requirements under Subpart UUUU of the federal rules, which may result in more stringent requirements. However, the U. S. Supreme Court stayed the requirement to develop this plan until the completion of litigation. Therefore, this plan has not been developed. In the future, whichever greenhouse gas emission standard is more restrictive standard would apply.

EPA has jurisdiction over tribal lands to enforce federal rules.

Explain how Ecology ensures that the rule is coordinated with other federal, state, and local agencies, laws, and rules. RCW 34.05.328 (1)(i)

Ecology Air Quality Program notified these agencies to offer them opportunities to participate in the stakeholder meetings, and during formal and informal public comment periods.