



Final Regulatory Analyses:

Including the:

- Final Cost-Benefit Analysis
- Least-Burdensome Alternative Analysis
- Administrative Procedure Act Determinations
- Regulatory Fairness Act Compliance

Chapter 173-441 WAC

Reporting of Emissions of Greenhouse Gases

By

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For the

Air Quality Program

Washington State Department of Ecology

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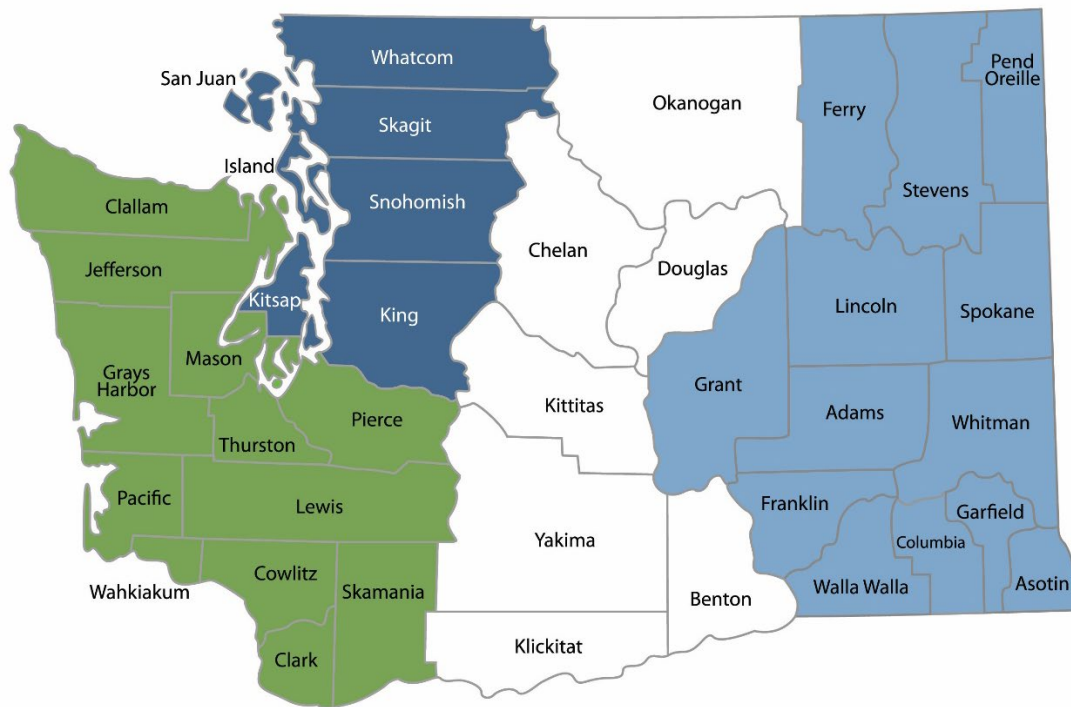
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*Chapter 173-441 WAC, Reporting of Emissions
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Acronyms

APA	Administrative Procedure Act
CBA	Cost-Benefit Analysis
CCA	Climate Commitment Act
EPA	US Environmental Protection Agency
GHG	Greenhouse gas
LBA	Least-Burdensome Alternative Analysis
MTCO ₂ e	Carbon dioxide-equivalent metric tons
NAICS	North American Industry Classification System
RCW	Revised Code of Washington
REMI	Regional Economic Models, Inc.
RFA	Regulatory Fairness Act
WAC	Washington Administrative Code

Executive Summary

In 2021, the Legislature passed the Climate Commitment Act (CCA), which establishes a cap and invest program to help meet Washington’s greenhouse gas (GHG) emissions limits. Ecology has undertaken three separate rulemakings to address the first set of CCA requirements.

The adopted rule reflects the amendments to the reporting statute in Section 33 of the CCA, which serve to support new CCA requirements. Currently, emitters do not report about 75 percent of the GHG emissions included in the new cap and invest program, or they report them using methods inconsistent with the CCA.

This report presents the determinations made by the Washington State Department of Ecology (Ecology) as required under Chapters 34.05 RCW and 19.85 RCW, for the adopted amendments to the Reporting of Emissions of Greenhouse Gases rule (Chapter 173-441 WAC; the “rule”). This includes the:

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

All determinations are based on the best available information at the time of publication.

Many elements of the adopted rule support implementation of other rules the CCA directs Ecology to develop. Those rules are currently in the development or proposal stage of the rulemaking process, but have not yet been adopted. In addition, while the CCA creates the cap and invest program, it requires implementation through Ecology rules.

We cannot analyze the impacts of some elements of the adopted rule that have no independent impact until other rules reference them (e.g., definitions or methods in the adopted rule affecting emissions reduction requirements in the cap and invest program). Ecology will analyze those impacts as part of the other CCA-directed rulemakings. This will ensure the public and stakeholders have opportunities to provide input, suggest alternatives, and comment on the impacts of incorporating the adopted rule in other CCA rules.

The adopted rule amendments make the following changes:

- Applicability and definitions: Require facilities, suppliers, and electric power entities emitting at least 10,000 metric tons of carbon dioxide equivalent (MT CO₂e) per year GHG to report GHG emissions to Ecology. Many already report under existing rules, but the amendment adds electric power entities and some suppliers.
- Reporting: Expand calculation and report content, including production, fuel use, and electricity use or generation.
- Third party verification: Reporters emitting at least 25,000 MT CO₂e per year or with a compliance obligation under the CCA need to have verification performed by a third party.

- Fees: While the rule continues to base total fees on program administration costs, it reallocates fees based on degree of third party verification required.
- Administrative changes such as changing the reporting deadline to match the new deadline set in statute and various clarifications and corrections.

Costs

We identified the following 20-year present value costs of the adopted rule amendments.

Table 1: Total present value costs

	Low 20-Year Present Value	High 20-Year Present Value
Reporting	\$2,807,017	\$3,351,066
Third Party Verification	\$30,758,191	\$34,343,703
Fees	\$8,624,700	\$10,224,700
Total	\$42,189,908	\$47,919,469

Benefits

We identified the following benefits of the adopted rule amendments.

Reporting

- Creating a comprehensive database of emitters and emissions.
- Supporting the CCA program, per statutory requirement. Reports inform CCA baselines and demonstrate compliance with the statute.
- Creating comprehensive contents and usefulness of GHG emissions reports and the reporting program.
- Clarity, consistency, and comprehensiveness of emissions represented for decision makers and for the public.
- Compatibility with other jurisdictions' GHG programs, per CCA requirement, opening up future emissions reduction opportunities and compliance cost efficiencies through an expanded allowance market. This also reduces additional work needed to comply with GHG regulation in multiple jurisdictions.
- For the public, policymakers, and businesses, opportunities for improvements and efficiencies in:
 - Policy planning and creation
 - Public relations
 - Consumer purchasing
 - Investment behavior

Verification

- Transparent, credible information in interactions between the public, policy, and businesses.

- Clarity and confidence in GHG emissions reported, supporting the CCA per statutory requirement, and providing the public with confidence in these elements of the regulatory program achieving its goals.
- Comprehensive information for the public to make more efficient consumption choices relative to their preferences, including preferences for carbon impact. This could include:
 - Short and long-run energy conservation.
 - Use of more efficient or low-GHG materials.
 - Improved understanding of the impacts of a unique regional power system.
 - Financial and investment decisions with improved data confidence.
 - Verification that emissions reductions are real, quantifiable, and credible.

Fees

- Existing facility reporters not required to have third party verification see their fees decrease by \$1,935. There are 52 such reporters, totaling \$100,620 in reduced fees. Note that this is a subset of the net cost calculation listed in the table.
- Total fees reflect a wage and time-based value of the benefits generated by the services they fund. In the absence of these total fees, the program would not be able to perform any of its functions, which include technical assistance, data management, and assurance to reporters that they are complying with relevant statutes and rules efficiently.

Conclusion

We conclude, based on a reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the adopted rule amendments, as compared to the baseline, that the benefits of the adopted rule amendments are greater than the costs.

We note that the quantifiable and qualitatively discussed costs and benefits of the adopted rule amendments include some costs and benefits created by the CCA. Ecology included some of the adopted rule amendments as explicitly part of the baseline, while it based others on Ecology's discretion. In some cases, however, it is difficult to conceptually and analytically separate the baseline from discretionary elements of the adopted rule – for example, where the baseline CCA establishes reporting scope and some definitions, but the adopted rule amendments include additional definitions, methods, or references needed to fully define the reporting program and facilitate compliance.

When this is the case, the actual impacts of adopted amendments Ecology chose to include are not separable from the impacts of the overall program established under the baseline. To avoid underestimating costs in these cases, Ecology estimates the costs and benefits of the overall program, accounting for individual elements of the baseline wherever possible.

Least-Burdensome Alternative

We considered the following alternative rule content, and did not include it in the adopted rule amendments because it did not meet the goals and objectives of the authorizing statute and/or imposed additional burden on reporters.

- Verifier changes: Reporters not required to switch third party verifiers every six years.
- Washington-specific verification: Third party verifiers specific to Washington State
- Deadlines: June 1 deadline for electric power entities instead of March 31.
- Data confidentiality: Provisions protecting data confidentiality.
- Unique requirements: Unique reporting system and requirements for Washington State.
- Ecology verification: Verification exclusively conducted by Ecology staff instead of using a third party.

We also changed the proposed rule language after the public comment period to reflect stakeholder comments. The following are considerations included in the proposal that we changed in the adopted rule amendments to reduce burden on reporters.

- Affiliation description: Reporters required to describe direct or indirect affiliation with other reporters.
- Secondary NAICS: No option for total facility product data for secondary NAICS.
- Product metrics: Narrower pulp, paper, and paperboard mill (NAICS 3221XX) and petroleum refinery (NAICS 324110) product metrics.
- Product metric flexibility: Limited product metric options for aerospace product and parts manufacturing (NAICS 3364XX).

After considering alternatives to the adopted rule's contents, within the context of the goals and objectives of the authorizing statute, we determined that the adopted rule represents the least-burdensome alternative of possible rule contents meeting the goals and objectives.

Regulatory Fairness Act Compliance

We conclude that the adopted rule amendments are likely to have disproportionate impacts on small businesses, based on median values and industry attributes, and therefore Ecology must include elements in the adopted rule amendments to mitigate this disproportion, as far as is legal and feasible.

The adopted rule amendments maintain or add elements that reduce compliance burden:

- The baseline rule and adopted amendments are reporting rules only. They do not contain substantive regulatory requirements, and we are not adopting any in addition.
- Recordkeeping and reporting requirements rely largely on maintaining consistency with other programs and using known operations data and information.
- The adopted rule amendments limit third party verification to where it is necessary for data quality assurance for larger reporters, such as those in the CCA program (as

required by statute). Smaller reporters are less likely to have compliance obligations or emissions over the threshold that will require third party verification.

- As part of this rulemaking, Ecology received information that electric power entities (many of which are small) desired later deadlines. While the statute specifies the reporting deadline, the adopted rule amendments require electric power entities to submit a provisional report by the statutory deadline, followed by a final report two months later as proposed by stakeholders. Ecology also made changes to third party verification to streamline the process for smaller utilities.
- The statute specifies many elements related to noncompliance, and could not be changed. Ecology was, however, able to phase in penalties for some requirements of the 2022 emissions year reported in 2023. Under the adopted rule amendments, Ecology will not issue monetary penalties, except for failure to comply with the requirement to submit a complete report by the reporting deadline, for this period.

Compliance costs of the adopted rule amendments could result in the loss of 18 to 21 full-time employee (FTE) equivalents statewide. Accounting for payments made to consultants, this impact decreases to one to 18 FTEs. The modeled impacts on employment are the result of multiple small increases and decreases in employment, prices, and other economic variables across all industries in the state. The industry potentially experiencing the largest cumulative job losses is construction, with up to five FTEs lost initially, dropping to two FTEs lost in the long run.

For context, the REMI E3+ model forecasts the Washington State economy to have over 4.7 million FTEs in 2022, increasing to nearly 5.4 million FTEs over the next 20 years.

By supporting the CCA cap and invest program, the adopted rule amendments also contribute to the effectiveness and efficiency of benefits resulting from the program, such as reductions in GHG emissions, avoided social costs of climate change, and investment in GHG reduction projects and industries. These benefits, supported indirectly by the adopted rule, will result in additional employment increases as the state shifts toward a green economy under the CCA.

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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 RCW and 19.85 RCW, for the adopted amendments to the Reporting of Emissions of Greenhouse Gases rule (Chapter 173-441 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. 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 of this document provides the documentation for these determinations.

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

All determinations are based on the best available information at the time of publication.

1.1.1 Background

In 2021, the Legislature passed the Climate Commitment Act (CCA), which establishes a cap and invest program to help meet Washington’s greenhouse gas (GHG) emissions limits. Ecology has undertaken three separate rulemakings to address the first set of CCA requirements.

The adopted rule reflects amendments to the reporting statute in Section 33 of the CCA, which support new CCA requirements. Currently, emitters do not report about 75 percent of the GHG emissions included in the new cap and invest program, or they report them using methods inconsistent with the CCA.

The adopted rule amendments create an accurate system for reporting GHGs by:

- Adding new reporters to the program.
- Improving data verification processes.
- Modifying reporting requirements.
- Modifying reporting fees.

1.1.2 Supporting future CCA rules

Many elements of the adopted rule support implementation of other rules the CCA directs Ecology to develop. Those rules are currently in the development or proposal stage of the rulemaking process, but have not yet been adopted. In addition, while the CCA creates the cap and invest program, it requires implementation through Ecology rules.

We cannot analyze the impacts of some elements of the adopted rule that have no independent impact until other rules reference them (e.g., definitions or methods in the adopted rule affecting emissions reduction requirements in the cap and invest program). Ecology will analyze those impacts as part of the other CCA-directed rulemakings. This will ensure the public and stakeholders have opportunities to provide input, suggest alternatives, and comment on the impacts of incorporating the adopted rule in other CCA rules.

1.2 Summary of the adopted rule amendments

The adopted rule amendments make the following changes:

- **Applicability and definitions:** Require facilities, suppliers, and electric power entities emitting at least 10,000 metric tons of carbon dioxide equivalent (MT CO₂e) per year to report GHG emissions to Ecology. Many already report under the existing rules, but the amendment adds electric power entities and some suppliers.
- **Reporting:** Expand calculation and report content, including production, fuel use, and electricity use.
- **Third party verification:** Reporters emitting at least 25,000 MT CO₂e per year or with a compliance obligation under the CCA need to have verification performed by a third party.
- **Fees:** While the rule continues to base total fees on program administration costs, it reallocates fees based on degree of third party verification required.
- **Administrative changes** such as changing the reporting deadline to match the new deadline set in statute and various clarifications and corrections.

1.3 Reasons for the adopted rule amendments

1.3.1 Applicability and definitions

RCW 70A.15.2200 (as amended by the CCA) directs Ecology to adopt a reporting program that supports CCA requirements, and specifically includes facilities, suppliers, and electric power entities in the scope. RCW 70A.15.2200 also provides definitions of suppliers and electric power entities. The adopted rule fulfills this requirement by including specific scope and definitions from the CCA, and other definitions necessary to create a comprehensive GHG reporting program that will support the CCA program.

1.3.2 Reporting

The CCA specifies certain elements of how entities must report GHG emissions under the GHG reporting program, as well as the scope of emissions included. The adopted rule includes and builds on these requirements and specifies report contents and timing, to ensure reporting supports the CCA program and is clear in definitions and required calculation methods.

1.3.3 Third party verification

RCW 70A.15.2200 (as amended by the CCA) requires the GHG reporting program to include verification for reporters emitting at least 25,000 MT CO₂e per year. The adopted rule includes this requirement and specifies the:

- Degree of verification required.
- Necessary data checks.
- Type of verification statement.

1.3.4 Fees

The CCA requires entities to base GHG reporting fees on the costs of administering the program. To reflect the costs incurred in relation to any given reporter, the adopted rule continues to base total fees on total costs, but reallocates fees based on degree of verification required.

1.3.5 Administrative changes

The adopted rule amendments incorporate specific directives of the statute, and make other edits without material impact, to ensure clarity and consistency.

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 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 sizes 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.
- **Regulatory Fairness Act Compliance (Chapter 7):** When applicable. Comparison of compliance costs for small and large businesses; mitigation; impact on jobs.
- **APA Determinations (Appendix A):** RCW 34.05.328 determinations not discussed in chapters 5 and 6.

Chapter 2: Baseline and Adopted Rule Amendments

2.1 Introduction

We analyzed the impacts of the adopted rule amendments relative to the existing rule, within the context of all existing requirements (federal and state laws and rules). This context for comparison is called the baseline, and reflects the most likely regulatory circumstances that entities would face if Ecology did not adopt the rule. Section 2.2, below, discusses this further.

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 the:

- Existing rule: Chapter 173-441 Reporting of Emissions of Greenhouse Gases.
- Authorizing statute: Climate Commitment Act, Chapter 70A.65 RCW.
- Federal Clean Air Act, 42 U.S.C. §§ 7401 et seq.
- Washington Clean Air Act, Chapter 70A.15 RCW.
- Limiting Greenhouse Gas Emissions, Chapter 70A.45 RCW.
- Existing federal and state regulations, including those covering GHG reporting at the federal level.

2.2.1 Separability of baseline from adopted rule requirements

Ecology included some of the adopted rule amendments as explicitly part of the baseline, while it based others on Ecology's discretion. In some cases, however, it is difficult to conceptually and analytically separate the baseline from discretionary elements of the adopted rule – for example, where the baseline CCA establishes reporting scope and some definitions, but the adopted rule amendments include additional definitions, methods, or references needed to fully define the reporting program and facilitate compliance. When this is the case, the actual impacts of adopted amendments Ecology chose to include are not separable from the impacts of the overall program established under the baseline. To avoid underestimating costs in these cases, Ecology estimates the costs and benefits of the overall program, accounting for individual elements of the baseline wherever possible.

2.3 Adopted rule amendments

The adopted rule amendments make the following changes:

- **Applicability and definitions:** Require facilities, suppliers, and electric power entities emitting at least 10,000 metric tons of carbon dioxide equivalent (MT CO₂e) per year to report GHG emissions to Ecology. Many already report under the existing rules, but the amendment adds electric power entities and some suppliers.
- **Reporting:** Expand calculation and report content, including production, fuel use, and electricity use.
- **Third party verification:** Reporters emitting at least 25,000 MT CO₂e per year or with a compliance obligation under the CCA need to have verification performed by a third party.
- **Fees:** While the rule continues to base total fees on program administration costs, it reallocates fees based on degree of third party verification required.
- **Administrative changes** such as changing the reporting deadline to match the new deadline set in statute and various clarifications and corrections.

2.3.1 Applicability and definitions

Baseline

The existing rule sets mandatory GHG reporting requirements for owners and operators of certain facilities that directly emit GHG as well as for certain suppliers of fuels. The threshold for reporting is 10,000 MT CO₂e per year.

RCW 70A.15.2200 (amended by the CCA) requires:

- Ecology to adopt rules applying reporting requirements to facilities, suppliers, and electric power entities.
- A reporting threshold of 10,000 MT CO₂e per year.
- The reporting program to support implementation of the CCA program.

RCW 70A.15.2200 also defines certain terms that affect applicability:

- **Supplier is defined as:**
 - Suppliers that produce, import, or deliver, or any combination of producing, importing, or delivering, a quantity of fuel products in Washington that, if completely combusted, oxidized, or used in other processes, would result in the release of GHGs in Washington equivalent to or higher than the 10,000 MT CO₂e per year threshold.
 - Suppliers of carbon dioxide that produce, import, or deliver a quantity of carbon dioxide in Washington that, if released, would result in emissions equivalent to or higher than the 10,000 MT CO₂e per year threshold.
- **Person is defined as:**
 - Owner or operator of a facility.

- Supplier.
- Electric power entity.
- Facility is defined as:
 - Facilities that directly emit GHGs in Washington equivalent to the 10,000 MT CO₂e per year threshold or higher, with at least one source category listed in the US EPA's mandatory GHG reporting regulation.
- Electric power entity is defined as the following if they supply electric power in Washington with associated emissions of at least the 10,000 MT CO₂e per year threshold:
 - Electricity importers and exporters.
 - Retail providers, including multijurisdictional retail providers.
 - First jurisdictional deliverers not otherwise included here.

Adopted

The adopted rule amendments make the following definition changes to the existing rule.

- Add definitions consistent with statute, including clarifying language with no material impact.
- Remove references to the Washington State Department of Licensing, as they are no longer relevant.
- Amend the definition of facility to account for other specifications in rule.
- Add a definition of Asset Controlling Supplier as appropriate terminology for first jurisdictional deliverers.
- Clarify overlap of facility and supplier terminology.
- Add fuel-related definitions necessary for implementation, and assumptions for consistency with statute.
- Add definitions specific to the CCA program, per statute.
- Add definitions consistent with statutory requirements for consistency with federal definitions.

The adopted rule amendments make the following applicability changes to the existing rule.

- Add electric power entities, per statute.
- Add reporting threshold of 10,000 MT CO₂e per year for suppliers and electric power entities, from all source categories, per statute.
- Amend supplier reporting basis to be the statutory threshold, based on all source categories.

- Add electric power entity reporting basis to be the statutory threshold, based on all source categories.
- Add specification that reporters with a compliance obligation under the CCA program must report for any year with an obligation, per statute.

Expected impact

We expect the adopted rule amendments to applicability and definitions to increase the number of reporters subject to GHG reporting requirements. These new reporters incur costs of reporting, verification, and fees, which are all addressed in sections below. Through this expansion of the scope of the reporting program, the adopted amendments create a more comprehensive registry of emitters and emissions, supporting the CCA program per statutory requirement.

The statute largely requires the expanded scope of the adopted rule, but Ecology used its discretion to add specifications and definitions that aid implementation of the rule and clarity as to its coverage. Elements of costs and benefits that are a result of statutory requirements are not costs and benefits of the adopted rule amendments, but it is not possible to separate the discretionary choices made by Ecology from the statutory requirements. To avoid underestimating costs, we considered the costs and benefits of adopted applicability and definition changes as a whole.

2.3.2 Reporting

Baseline

The existing rule includes calculation methods, conversion factors, and reporting contents for GHG reporters.

RCW 70A.15.2200 (amended by the CCA) requires the rule to require:

- Separate reporting of GHGs resulting from the combustion of fossil fuels and the combustion of biomass.
- Submitting annual reports to include emissions data for the preceding year by March 31.
- An established method for persons who are not required to report under this section to voluntarily report their GHG emissions.

It also requires updating the rule whenever:

- The US EPA adopts final amendments to 40 C.F.R. Part 98, to ensure consistency with federal reporting requirements for emissions of greenhouse gases.
- Needed to ensure consistency with emissions reporting requirements for jurisdictions with which Washington has entered a linkage agreement.

RCW 70A.15.2200 authorizes Ecology to, at its discretion:

- Include additional gases to the definition of GHG in RCW 70A.45.010, but only if the gas has been designated as a GHG by the US Congress, US Environmental Protection Agency

(EPA), or included in external greenhouse gas emission trading programs with which Washington has linked.

- Exempt persons who are required to report GHG emissions to the US EPA and who emit less than 10,000 MT CO₂e annually.

Adopted

The adopted rule amendments make the following changes to the baseline rule:

- Set a universal reporting deadline of March 31, for mandatory and voluntary reporters, per statute.
- Allow electric power entities to submit a provisional report by March 31, followed by a final report by June 1.
- Report contents:
 - Expand report contents for suppliers and electric power entities to include all source categories, per statute.
 - Specify that North American Industry Classification System (NAICS) codes be subject to Ecology approval.
 - Add itemized electricity purchases and onsite generation.
 - Add fuel used or supplied, which most facilities are already reporting. This is consistent with California reporting, per statute.
 - Add total annual facility product data by NAICS code, Ecology specification, or energy calculation. This is consistent with California reporting, per statute.
 - Add the option to report total annual facility product data for reported secondary NAICS code.
 - Add narrative for greater than five percent increase or decrease in emissions. This is consistent with California reporting, per statute.
- Require reporters to use the same emission calculation methods for all reports, but provide a process to request approval to change the method.
- Specify that reporters must cooperate with Ecology verification efforts.
- Extend recordkeeping from three years to 10 years. This is consistent with California reporting, per statute.
- Specify a limit of 15 business days to provide Ecology with records upon request.
- Monitoring plan:
 - Require reporters to keep a written GHG monitoring plan, including a reference to a visual block diagram of operations.
 - Specify a limit of 15 business days to provide Ecology with information collected per the monitoring plan.

- Clarify that “days” refers to calendar days unless otherwise specified.
- Increase the number of days a reporter has to request an extension from two days to five days before the report is due and reduce the length of the extension from 30 days to 15 days.
- Calibration and accuracy:
 - Require instruments for financial transactions meet the calibration and accuracy requirements.
 - Add product data measuring devices and specify calibration by Jan 1, 2023.
 - New procedures for how to substitute missing data. This is consistent with California reporting, per statute.
- Clarify that facilities use emissions calculations to determine their reporting requirements.
- Specify which emissions calculation equations municipal solid waste landfills must use for reporting.
- Specify that entities must report supplied CO₂ from facilities but it does not count toward the reporting threshold.
- Add calculation methods for suppliers. This is consistent with California reporting, per statute.
- Add calculation methods for electric power entities. This is consistent with California reporting, per statute.
- Require electric power entities that import or export electricity to prepare GHG Inventory Program documentation, in lieu of a GHG Monitoring Plan.
- Add definitions specific to electric power entities for clarity and to facilitate compliance for entities that do not have E-Tags² for all transactions.

The adopted rule amendments do not affect elements of the existing rule related to:

- Greenhouse gases.
- Designated representatives.
- Certification.
- Report submittal.
- Standardized methods and conversion factors incorporated by reference.
- Petition for alternative methods.

² An E-Tag represents a transaction on the North American bulk electricity market scheduled to flow within, between, or across electric utility company territories.

Expected impact

We expect the adopted rule amendments to increase the time and effort necessary to report. For existing reporters, this is an incremental change, while for new reporters the increase is the entire reporting effort. This results in reporting costs, as well as benefits of increased clarity, consistency, and scope of emissions represented for regulation, decision makers, and the public. It also increases compatibility with other jurisdictions' GHG programs, consistent with statutory requirements.

We note that the adopted change in required emissions calculation method for solid waste landfills is a significant change that has no impact in practice. Under the baseline, landfills can choose which of two methods to report, choosing the most favorable. Instead, Ecology has been assigning them the higher of the two emissions levels. While the adopted amendments change the process in order for landfills to report the higher level of emissions, it would not differ from the assigned emissions under the baseline. We do not expect this change to result in costs or benefits as compared to the baseline and how we currently implement it.

Ecology included many elements of calculation methods and reporting as part of the baseline, while it based others on Ecology's discretion. Elements of costs and benefits that are a result of statutory requirements are not costs and benefits of the adopted rule amendments, but it is not possible to separate the discretionary choices made by Ecology from the statutory requirements. To avoid underestimating costs, we considered the impacts of adopted reporting changes as a whole.

2.3.3 Third party verification

Baseline

The existing rule does not include third party verification.³

RCW 70A.15.2200 (amended by the CCA) requires the rule to:

- Establish methods of verifying the accuracy of emissions reports.
- Apply verification requirements to reporters with emissions of at least 25,000 MT CO₂e per year, including biogenic CO₂.
- Apply verification requirements to reporters that have a compliance obligation under the CCA program.

Ecology can adopt rules to accept verification reports from another jurisdiction with a linkage agreement, in cases where Ecology deems the methods or procedures are substantively similar.

³ Third party verification requirements are based on a reporter's status under the Clean Air Rule, which was vacated by Thurston County Superior Court, held partially invalid by the Washington Supreme Court, and is currently not in effect, so no reporter is currently required to perform third party verification. Ruling: http://climatecasechart.com/climate-change-litigation/wp-content/uploads/sites/16/case-documents/2020/20200116_docket-95885-8_opinion.pdf

Adopted

The adopted rule amendments make the following changes to the baseline rule:

- Require third party verification for reporters with:
 - Emissions of at least 25,000 MT CO₂e per year including biogenic CO₂, per statute.
 - A compliance obligation under the CCA program, per statute.
- Require third party verification to years that are:
 - Part of the baseline calculation under the CCA program if the baseline is after 2023.
 - The first year the three bullets above no longer apply.
- Specify that previously verified emissions factors meeting certain standards do not need reverification, but reports using them do.
- Allow a maximum 5 percent discrepancy between reported emissions and verified emissions.
- Require full third-party verification (including site visit), except for reporters without compliance obligation under CCA, once every three years. Use the subsequent two years for less-intensive verification.
- Add a list of what verification data checks must include.
- Set a deadline for corrections after verification.
- Verification report:
 - Set deadline of August 10 to submit report to Ecology.
 - Add verification statement tiers.
- Limit eligible verifiers to those accredited under the California Air Resources Board (CARB) program.
- Clarify that conflict of interest does not include working for a reporter to verify GHG emissions in another jurisdiction.
- Specify that Ecology may assign an emissions level in cases of discrepancy, per statute.
- Specify that Ecology may assign the emissions level used under the CCA program, per statute.

Expected impact

We expect the adopted rule amendments to third party verification to result in additional verification costs for some reporters. Reporters emitting at least 25,000 MT CO₂e per year or with compliance obligations under the CCA incur these additional costs. Benefits of third party verification include increased clarity and confidence in GHG emissions reported, supporting the

CCA per statutory requirement, and providing the public with confidence in these elements of the regulatory program.

The verification requirements in the adopted rule are largely as required by statute, but Ecology used its discretion to add specifications that aid implementation of the rule. Elements of costs and benefits that are a result of statutory requirements are not costs and benefits of the adopted rule amendments, but it is not possible to separate the discretionary choices made by Ecology from the statutory requirements. To avoid underestimating costs, we considered the impacts of adopted applicability and definition changes as a whole.

2.3.4 Fees

Baseline

The existing rule charges reporters fees based on proportional allocation of the costs of administering the program, by dividing the total program budget by the number of facilities reporting. Suppliers pay zero fees under the existing rule.

Current fees are:

- \$2,635 per facility.
- \$0 per transportation fuel supplier.

Adopted

The adopted rule amendments do not affect the total program budget (this is not specified in rule), but do change how fees are allocated across reporters. A reporter's fee depends on whether their GHG emissions report is subject to third party verification.

Current estimates of likely annual fees are:

- \$700 for reporters not subject to third party verification.
- \$4,000 for reporters subject to third party verification.

Expected impact

We expect the adopted rule amendments to fee allocation to result in individual fee increases and decreases. The direction of an individual fee change depends on whether a reporter is an existing facility or supplier, and whether it is likely to be subject to third party verification under the adopted amendments. New reporters (see section 2.3.1) experience only fee increases, of the full fee amount. The rule does not dictate the total program budget. Any change in total costs will result from additional sources required to report and any increased effort required for administration of the expanded program.

2.3.5 Administrative changes

The adopted rule amendments make administrative changes that are specifically from the baseline or have no material impact other than ensuring the rule is clear and consistent, such as clarifications and updating references.

Chapter 3: Likely Costs of the Adopted Rule Amendments

3.1 Introduction

We analyzed the likely costs associated with the adopted rule amendments, as compared to the baseline. Chapter 2 of this document discusses the adopted rule amendments and the baseline in detail.

3.2 Cost analysis

The adopted rule amendments make the following changes:

- **Applicability and definitions:** Require facilities, suppliers, and electric power entities emitting at least 10,000 metric tons of carbon dioxide equivalent (MT CO₂e) per year to report GHG emissions to Ecology. Many already report under the existing rules, but the amendment adds electric power entities and some suppliers.
- **Reporting:** Expand calculation and report content, including production, fuel use, and electricity use.
- **Third party verification:** Reporters emitting at least 25,000 MT CO₂e per year or with a compliance obligation under the CCA need to have verification performed by a third party.
- **Fees:** While the rule continues to base total fees on program administration costs, it reallocates fees based on degree of third party verification required.
- **Administrative changes** such as changing the reporting deadline to match the new deadline set in statute and various clarifications and corrections.

3.2.1 Applicability and definitions

We expect the adopted rule amendments to applicability and definitions to increase the number of reporters subject to GHG reporting requirements. These new reporters incur costs of reporting, verification, and fees, which are all addressed in the relevant sections below.

Based on past implementation of the reporting rule, the total number of reporters remains relatively stable over time, if not decreases. Given the requirements and provisions of the CCA, the number of new electric power entity reporters in the future may increase. That would increase the total number of reporters beyond the current expanded scope of the adopted amendments. This would scale both costs and benefits.

The statute largely expands the scope of the adopted rule, but Ecology used its discretion to add specifications and definitions that help implement the rule and clarify who must comply with the rule. Elements of costs and benefits that are a result of statutory requirements are not costs and benefits of the adopted rule amendments, but it is not possible to separate the

discretionary choices made by Ecology from the statutory requirements. To avoid underestimating costs, we considered the impacts of adopted applicability and definition changes as a whole.

3.2.2 Reporting

We expect the adopted rule amendments to reporting to increase the time and effort necessary to report. For existing reporters, this will be an incremental change in reporting costs. For new reporters the cost will be of the entire reporting effort.

Many elements of calculation methods and reporting are part of the baseline, while Ecology based others on its discretion. Elements of costs and benefits that are a result of statutory requirements are not costs and benefits of the adopted rule amendments, but it is not possible to separate the discretionary choices made by Ecology from the statutory requirements. To avoid underestimating costs, we considered the impacts of adopted reporting changes as a whole.

To estimate the costs of adopted amendments to reporting, including applicability expansion, we used the list of current facility and fuel supplier reporters, as well as identifying likely new facility, supplier, and electric power entity reporters. The table below summarizes them.

Table 2: Ranges of reporter by type

Reporter Type	Low Count	High Count
Existing facilities	159	159
New facilities	0	0
Existing suppliers	42	42
New suppliers	16	26
New electric power entities	50	60
Ceasing reporting (statutory change)	-5	-5
Total	272	292

Since electric power entities and many suppliers are not currently required to report, we could not identify all specific entities that will likely become reporters under the adopted amendments:

- In addition to six likely new suppliers identified, based on Ecology staff professional judgment and experience implementing the GHG reporting program, we assumed between 10 and 20 additional suppliers will become reporters.
- Based on professional judgement and experience, as well as corroborating information from the Bonneville Power Administration⁴ and Washington Utilities and Transportation

⁴ BPA phone discussion with Neil Caudill, WA Department of Ecology Air Quality Program.

Commission (UTC)⁵, we assumed between 50 and 60 electric power entities will become reporters.⁶

Based on past estimates of necessary reporting workload, as well as assessments by the US EPA⁷, we assumed how much additional time it will take various positions to complete the reporting required under the adopted amendments. Loaded wages reflect overhead costs such as benefits, equipment, and administrative support⁸, based on median wages by employment type in Washington⁹. Overhead costs conservatively potentially overestimate labor costs, corresponding to hiring outside contractors for reporting. Existing internal staff hourly wages would not reflect overhead.

For existing reporters, this will be the increase in costs from current reporting, and new reporters will incur the full cost.

⁵ <https://www.utc.wa.gov/regulated-industries/utilities/energy/energy-resources-list> ; <https://www.wpuda.org/> ; <https://www.wreca.coop/about/>

⁶ WA UTC (Ibid.) indicates there are 55 total electric utilities in Washington. Our assumed range also allows for other electric power entities that are not utilities, e.g. electricity brokers.

⁷ US Environmental Protection Agency, 2010. Economic Impact Analysis for the Mandatory Reporting of Greenhouse Gas Emissions Under Subpart W Final Rule (GHG Reporting). November 2010. https://www.epa.gov/sites/default/files/2015-05/documents/subpart-w_eia.pdf.

⁸ WA Department of Ecology, 2021. 2021 Standard Costs. Ecology Fiscal Office.

⁹ US Bureau of Labor Statistics, 2020. May 2020 State Occupational Employment and Wage Estimates, Washington. https://www.bls.gov/oes/current/oes_wa.htm. US Bureau of Labor Statistics, 2021. Consumer Price Index May 2020 and 2021. https://www.bls.gov/data/inflation_calculator.htm.

Table 3: Additional reporting effort for existing facility reporters^{10,11}

Facility Reporters	Additional First Year Hours	Additional Subsequent Year Hours	Loaded Wage	First Year Total Cost	Subsequent Year Total Cost
Senior Management	0	0	\$74.81	\$0.00	\$0.00
Middle management	0	0	\$71.83	\$0.00	\$0.00
Junior Engineer/Technician	0.5	0.5	\$28.04	\$14.02	\$14.02
Senior Operator	0.5	0	\$45.22	\$22.61	\$0.00
Third Party Licensed Professional Engineer	0	0	\$87.98	\$0.00	\$0.00
			Total	\$36.63	\$14.02

Table 4: Additional reporting effort for existing supplier reporters

Existing Supplier Reports	Additional First Year Hours	Additional Subsequent Year Hours	Loaded Wage	First Year Total Cost	Subsequent Year Total Cost
Senior Management	0	0	\$74.81	\$0.00	\$0.00
Middle management	0	0	\$71.83	\$0.00	\$0.00
Junior Engineer/Technician	2.13	1.73	\$28.04	\$59.72	\$48.51
Senior Operator	11.81	11.1	\$45.22	\$534.04	\$501.94
Third Party Licensed Professional Engineer	8	8	\$87.98	\$703.84	\$703.84
			Total	\$1,297.60	\$1,254.28

Table 5: Reporting effort for new supplier reporters

New Supplier Reports	Additional First Year Hours	Additional Subsequent Year Hours	Loaded Wage	First Year Total Cost	Subsequent Year Total Cost
Senior Management	0.05	0.04	\$74.81	\$3.74	\$2.99
Middle management	1.24	1.08	\$71.83	\$89.07	\$77.57
Junior Engineer/Technician	4.13	3.73	\$28.04	\$115.80	\$104.58
Senior Operator	13.81	13.1	\$45.22	\$624.48	\$592.38
Third Party Licensed Professional Engineer	8	8	\$87.98	\$703.84	\$703.84
			Total	\$1,536.92	\$1,481.36

Table 6: Reporting effort for electric power entity reporters

¹⁰ Compared to the proposed rule language, the adopted rule includes additional reporting metrics for pulp, paper, and paperboard mills (NAICS 3221XX). Since the added metrics of air dried paper or paperboard are information

Entity Reporter	Additional First Year Hours	Additional Subsequent Year Hours	Loaded Wage	First Year Total Cost	Subsequent Year Total Cost
Senior Management	0.05	0.04	\$74.81	\$3.74	\$2.99
Middle management	1.24	1.08	\$71.83	\$89.07	\$77.57
Junior Engineer/Technician	4.13	3.73	\$28.04	\$115.80	\$104.58
Senior Operator	13.81	13.1	\$45.22	\$624.48	\$592.38
Third Party Licensed Professional Engineer	8	8	\$87.98	\$703.84	\$703.84
			Total	\$1,536.92	\$1,481.36

Based on the above numbers of reporters and reporting costs, we estimated total annual reporting costs:

- Facilities (all existing reporters):
 - \$5,824 in the first year.
 - \$2,229 in subsequent years.
- Existing supplier reporters:
 - \$54,499 in the first year.
 - \$52,680 in subsequent years.
- New supplier reporters:
 - \$24,591 – \$39,960 in the first year.
 - \$23,702 – \$38,515 in subsequent years.
- Electric power entities (all new reporters):
 - \$76,846 – \$92,215 in the first year.
 - \$74,068 – \$88,881 in subsequent years.

To reflect flows of costs over time (e.g., different annual costs in different years), Ecology uses present values. Present value calculations use discount rates to convert future values to current values, accounting for inflation as well as the opportunity cost of having money later instead of

known to reporters, we did not assume they significantly increase aggregate reporting time for these existing reporters over what was assumed for the proposed rule amendments.

¹¹ Compared to the proposed rule language, the adopted rule includes a phased in reporting metric and additional reporting metrics for petroleum refineries (NAICS 324110), and adds reporting metric options for aerospace product and parts manufacturing (NAICS 3364XX). While this added flexibility could simplify reporting for NAICS 3364XX, or additional metrics could involve some additional effort, we did not assume reporting incremental known information or choosing information will significantly impact (increase or decrease) aggregate reporting time for these existing reporters from what was assumed for the proposed rule amendments.

now. The current long-run average real (inflation-adjusted) discount rate is 0.94 percent.¹² The table below summarizes 20-year present value costs of reporting by reporter type and total.

Table 7: 20-year present value costs of reporting

Present Value Costs	Low Present Value	High Present Value
Existing facilities	\$44,443	\$44,443
Existing suppliers	\$967,211	\$967,211
New suppliers	\$435,240	\$707,264
Electric power entities	\$1,360,124	\$1,632,148
Total	\$2,807,017	\$3,351,066

3.2.3 Third party verification

We expect the adopted rule amendments to third party verification to result in additional verification costs for some reporters. Reporters emitting at least 25,000 MT CO₂e per year or with compliance obligations under the CCA incur these additional costs.

The verification requirements in the adopted rule are largely as required by statute, but Ecology used its discretion to add specifications that will help implement the rule. Elements of costs and benefits that are a result of statutory requirements are not costs and benefits of the adopted rule amendments, but it is not possible to separate the discretionary choices made by Ecology from the statutory requirements. To avoid underestimating costs, we considered the impacts of adopted applicability and definition changes as a whole.

We estimated the costs of third party verification based on estimated costs of full (including site visit) verification and less-intensive verification, of \$22,195 and \$701, respectively.¹³ According to the adopted rule amendments, reporters subject to third party verification:

- Must undergo full verification the first year of each three-year verification period, followed by less-intensive verification the remaining two years, if they have a compliance obligation under the CCA.
- Must undergo less-intensive verification if they emit over 25,000 MT CO₂e per year and do not have a compliance obligation under the CCA.

Table 8: Number of reporters subject and not subject to third party verification

¹² US Treasury Department, 2021. Series I Savings Bonds Rates & Terms: Calculating Interest Rates. https://www.treasurydirect.gov/indiv/research/indepth/ibonds/res_ibonds_iratesandterms.htm.

¹³ Massachusetts Department of Environmental Protection, 2015. Massachusetts Greenhouse Gas Reporting Program: 2014 Verification Review. September, 2015. <https://www.mass.gov/doc/draft-verification-review-document-public-comment-accepted-until-october-9-2015/download>; US Bureau of Labor Statistics, 2021. Consumer Price Index May 2020 and 2021. https://www.bls.gov/data/inflation_calculator.htm.

Verification Type	Low Count	High Count
Third party required	201	221
Third party NOT required	71	71
Total	272	292

To simplify calculations around uncertainty ranges, we conservatively assumed all new suppliers and electric power entities were subject to full third party verification.

Table 9: Less-intensive and full verification reporter counts and costs per reporter

Verification Type	Low Count	High Count	Year 1	Year 2	Year 3
Less-intensive	27	27	\$700.89	\$700.89	\$700.89
Full	162	182	\$22,194.70	\$700.89	\$700.89
Full beginning in 2027	1	1	\$22,194.70	\$700.89	\$700.89
Full beginning in 2031	11	11	\$22,194.70	\$700.89	\$700.89

To reflect flows of costs over time (e.g., different annual costs in different years), Ecology uses present values. Present value calculations use discount rates to convert future values to current values, accounting for inflation as well as the opportunity cost of having money later instead of now. The current long-run average real (inflation-adjusted) discount rate is 0.94 percent.¹⁴ The table below summarizes 20-year present value costs of reporting by reporter type and total.

Table 10: 20-year present value costs of verification

Verification Type	Low Present Value	High Present Value
Less-intensive	\$414,261	\$414,261
Full	\$30,343,930	\$33,929,442
Total	\$30,758,191	\$34,343,703

3.2.4 Fees

We expect the adopted rule amendments to fee allocation to result in individual fee increases and decreases. The direction of an individual fee change depends on whether a reporter is an existing facility or supplier, and whether it is subject to third party verification under the adopted amendments. New reporters (see section 2.3.1) experience only fee increases, of the full fee amount. The rule does not dictate the total program budget. Any change in total costs will result from additional sources required to report and any increased effort required for administration of the expanded program.

Current fees are:

- \$2,635 per facility.

¹⁴ US Treasury Department, 2021. Series I Savings Bonds Rates & Terms: Calculating Interest Rates. https://www.treasurydirect.gov/indiv/research/indepth/ibonds/res_ibonds_iratesandterms.htm.

- \$0 per transportation fuel supplier.

Current estimates of likely fees under the adopted rule amendments are:

- \$700 for reporters not subject to third party verification.
- \$4,000 for reporters subject to third party verification.

Table 11: Fee change by baseline to adopted amendment

Reporter Type	Fee Change
Existing facility, no third party verification	-\$1,935
Existing supplier, no third party verification	\$700
Existing facility, third party verification	\$1,365
Electric power entities and new suppliers (assuming all third party verification)	\$4,000

Across the entire population of likely reporters, this results in increased annual costs of \$431,235 – \$511,235, accounting for both positive and negative cost impacts.

To reflect flows of costs over time (e.g., different annual costs in different years), Ecology uses present values. Present value calculations use discount rates to convert future values to current values, accounting for inflation as well as the opportunity cost of having money later instead of now. The current long-run average real (inflation-adjusted) discount rate is 0.94 percent.¹⁵ The table below summarizes 20-year present value costs of reporting amendments.

Table 12: 20-year present value costs of fee reallocation

Low Present Value	High Present Value
\$8,624,700	\$10,224,700

3.2.5 Administrative changes

We do not expect the adopted administrative changes to result in costs as compared to the baseline.

¹⁵ US Treasury Department, 2021. Series I Savings Bonds Rates & Terms: Calculating Interest Rates. https://www.treasurydirect.gov/indiv/research/indepth/ibonds/res_ibonds_iratesandterms.htm.

Chapter 4: Likely Benefits of the Adopted Rule Amendments

4.1 Introduction

We analyzed the likely benefits associated with the adopted rule amendments, as compared to the baseline. Chapter 2 of this document discusses the adopted rule amendments and the baseline in detail.

4.2 Benefits analysis

The adopted rule amendments make the following changes:

- **Applicability and definitions:** Require facilities, suppliers, and electric power entities emitting at least 10,000 metric tons of carbon dioxide equivalent (MT CO₂e) per year to report GHG emissions to Ecology. Many already report under the existing rules, but the amendment adds electric power entities and some suppliers.
- **Reporting:** Expand calculation and report content, including production, fuel use, and electricity use.
- **Third party verification:** Reporters emitting at least 25,000 MT CO₂e per year or with a compliance obligation under the CCA need to have verification performed by a third party.
- **Fees:** While the rule continues to base total fees on program administration costs, it reallocates fees based on degree of third party verification required.
- **Administrative changes** such as changing the reporting deadline to match the new deadline set in statute and various clarifications and corrections.

4.2.1 Applicability and definitions

We expect the adopted rule amendments to applicability and definitions to increase the number of reporters subject to GHG reporting requirements. Through this expansion of the scope of the reporting program, the adopted amendments create a more comprehensive registry of emitters and emissions, supporting the CCA program per statutory requirement. See additional discussion of these benefits below.

The statute largely expands the scope of the adopted rule, but Ecology used its discretion to add specifications and definitions that will help implement the rule and clarify who must comply with the rule. Elements of costs and benefits that are a result of statutory requirements are not costs and benefits of the adopted rule amendments, but it is not possible to separate the discretionary choices made by Ecology from the statutory requirements. To avoid underestimating costs and benefits, we considered the impacts of adopted applicability and definition changes as a whole.

4.2.2 Reporting

We expect the adopted rule amendments to reporting to increase the contents and usefulness of reports and the reporting program. For existing reporters, this is an incremental change, while for new reporters the increase is the entire report. This results in benefits of increased clarity, consistency, and scope of emissions represented for regulation, decision makers, and the public. It also increases compatibility with other jurisdictions' GHG programs, consistent with statutory requirements from the CCA.

Many elements of calculation methods and reporting are part of the baseline, while Ecology based others on its discretion. Elements of costs and benefits that are a result of statutory requirements are not costs and benefits of the adopted rule amendments, but it is not possible to separate the discretionary choices made by Ecology from the statutory requirements. To avoid underestimating costs, we considered the impacts of adopted reporting changes as a whole.

Expansion to a more comprehensive database

The adopted rule amendments result in a more-comprehensive collection of data. This reflects what the CCA program needs for data support. The CCA program will use this improved and more comprehensive data to establish CCA baselines and demonstrate compliance with the statute.

Ecology believes that inclusion of the broader and more-clearly defined set of emissions sources, and associated calculation methods provides significant additional information for planning and implementation of future emissions reduction goals.

Linkage with other jurisdictions

In the future, Washington State may link the CCA program with GHG emissions reduction programs in other jurisdictions. The CCA directs the adopted rule to be consistent with other jurisdictions in part to serve this purpose. Linkage with other jurisdictions would, in turn, open up additional GHG emissions reduction opportunities.

This will also help Washington reporters that also report to other jurisdictions face clear and consistent requirements, regardless of linkage. This reduces additional work needed to comply with multiple jurisdictions, and facilitates efficiencies in compliance costs through an expanded allowance market.

Greater understanding of distribution and structure of GHG emissions in WA

As with the baseline GHG reporting rule, we expect the public, regulatory agencies, and businesses to benefit from a greater knowledge specifically of the local economy and its relationship with GHG emissions.

For all three points of view – public, policy, and business – the adopted rule amendments offer opportunities for Washington-specific improvements and efficiencies in the following, even in the absence of a CCA program and GHG emissions reduction obligations:

- Policy planning and creation

- Public relations
- Consumer purchasing
- Investment behavior
- A broader scope of transparent, credible information in all of these interactions between the public, policy, and businesses – opening the possibility for benefits accruing to one or more of the above groups, and benefiting Washington as a whole.

4.2.3 Third party verification

We expect the adopted rule amendments to third party verification to result in additional verification for some reporters. Benefits of third party verification include increased clarity and confidence in GHG emissions reported, supporting the CCA per statutory requirement, and providing the public with confidence in these elements of the regulatory program achieving its goals.

The verification requirements in the adopted rule are largely as required by statute, but Ecology used its discretion to add specifications that will aid implementation of the rule. Elements of costs and benefits that are a result of statutory requirements are not costs and benefits of the adopted rule amendments, but it is not possible to separate the discretionary choices made by Ecology from the statutory requirements. To avoid underestimating costs, we considered the impacts of adopted applicability and definition changes as a whole.

Public confidence and government transparency

With the adopted rule amendments requiring third party verification, per statute, and specifying elements of how that verification works, emissions estimates for Washington State are likely to hold more public confidence. This is likely not only for the emissions numbers themselves, but also for the CCA program and achievements in GHG emissions reduction. Increased public confidence in the quality and the scope of reported numbers increases the likelihood the public will more fully understand the specific emissions reduction actions, why we take them, and how they interconnect with the local economy.

Credibility, consumer behavior, and investment

While the adopted rule amendments – even with their broader scope of reporters and emissions sources – may not produce a complete mapping of all emissions involved in industry, fuels, and energy, we expect the incremental information they provides to consumers to benefit them by allowing them to make more efficient consumption choices relative to their preferences, including preferences for carbon impact.

This could include short and long-run energy conservation, use of more efficient or low-GHG materials, and improved understanding of the impacts of a unique regional power system. With third party verification providing greater confidence in the quality of emissions data, one could see such actions as lower risk than if emissions data was uncertain or lacking confidence. It could also affect financial and investment decisions with improved data confidence, and provide credibility that emissions reductions are real, quantifiable, and credible.

4.2.4 Fees

We expect the adopted rule amendments to fee allocation to result in individual fee increases and decreases. The direction of an individual fee change depends on whether a reporter is an existing facility or supplier, and whether it will likely be subject to third party verification under the adopted amendments. New reporters (see section 2.3.1) will experience only fee increases, of the full fee amount. The rule does not dictate the total program budget. Any change in total costs will result from additional sources required to report and any increased effort required for administration of the expanded program.

Recall from Table 10 that existing facility reporters not required to have third party verification will see their fees decrease by \$1,935. There are 52 such reporters, totaling \$100,620 in reduced fees. Note that this is a subset of the net cost calculation discussed in section 3.2.4 and is not additive here.

Since the rule bases total fees on the costs of implementing the reporting program, they inherently reflect a wage and time-based value of the benefits generated by the services they fund. In total, when collecting funding this way, the benefits of program services are at least as large as the costs of the program. In the absence of these total fees, the program would not be able to perform any of its functions, which include technical assistance, data management, and assurance to reporters that they are complying with relevant statutes and rules efficiently.

4.2.5 Administrative changes

We do not expect the adopted administrative changes to result in benefits beyond clarity as compared to the baseline.

Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Summary of costs and benefits of the adopted rule amendments

In Chapter 3, we identified the following 20-year present value costs of the adopted rule amendments.

Table 13: Total present value costs

Present Value Costs	Low Present Value	High Present Value
Reporting	\$2,807,017	\$3,351,066
Third Party Verification	\$30,758,191	\$34,343,703
Fees	\$8,624,700	\$10,224,700
Total	\$42,189,908	\$47,919,469

In Chapter 4, we identified the following benefits of the adopted rule amendments.

Reporting

- Creating a comprehensive database of emitters and emissions.
- Supporting the CCA program, per statutory requirement. Reports will inform CCA baselines and demonstrate compliance with the statute.
- Creating comprehensive contents and usefulness of GHG emissions reports and the reporting program.
- Clarity, consistency, and comprehensiveness of emissions represented for decision makers and for the public.
- Compatibility with other jurisdictions' GHG programs, per CCA requirement, opening up future emissions reduction opportunities. This will also reduce additional work needed to comply with GHG regulation in multiple jurisdictions.
- For the public, policymakers, and businesses, opportunities for improvements and efficiencies in:
 - Policy planning and creation
 - Public relations
 - Consumer purchasing
 - Investment behavior

Verification

- Transparent, credible information in interactions between the public, policy, and businesses.

- Clarity and confidence in GHG emissions reported, supporting the CCA per statutory requirement, and providing the public with confidence in these elements of the regulatory program achieving its goals.
- Comprehensive information for the public to make more efficient consumption choices relative to their preferences, including preferences for carbon impact. This could include:
 - Short and long-run energy conservation.
 - Use of more efficient or low-GHG materials.
 - Improved understanding of the impacts of a unique regional power system.
 - Financial and investment decisions with improved data confidence.
 - Verification that emissions reductions are real, quantifiable, and credible.

Fees

- Existing facility reporters not required to have third party verification see their fees decrease by \$1,935. There are 52 such reporters, totaling \$100,620 in reduced fees. Note that this is a subset of the net cost calculation listed in the table.
- Total fees that reflect a wage and time-based value of the benefits generated by the services they fund. In the absence of these total fees, the program would not be able to perform any of its functions, which include technical assistance, data management, and assurance to reporters that they are complying with relevant statutes and rules efficiently.

5.2 Conclusion

We conclude, based on a reasonable understanding of the quantified and qualitative costs and benefits likely to arise from the adopted rule amendments, as compared to the baseline, that the benefits of the adopted rule amendments are greater than the costs.

We note that the quantifiable and qualitatively discussed costs and benefits of the adopted rule amendments include some costs and benefits created by the CCA. Ecology included some of the adopted rule amendments as explicitly part of the baseline, while it based others on Ecology's discretion. In some cases, however, it is difficult to conceptually and analytically separate the baseline from discretionary elements of the adopted rule – for example, where the baseline CCA establishes reporting scope and some definitions, but the adopted rule amendments include additional definitions, methods, or references needed to fully define the reporting program and facilitate compliance. When this is the case, the actual impacts of adopted amendments Ecology chose to include are not separable from the impacts of the overall program established under the baseline. To avoid underestimating costs in these cases, Ecology estimates the costs and benefits of the overall program, accounting for individual elements of the baseline wherever possible.

Chapter 6: Least-Burdensome Alternative Analysis

6.1 Introduction

RCW 34.05.328(1)(c) 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, we are 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).

We assessed alternative adopted rule content, and determined whether they met the goals and objectives of the authorizing statute(s). Of those that would meet the goals and objectives, we determined whether those chosen for inclusion in the adopted rule amendments were the least burdensome to those required to comply with them.

6.2 Goals and objectives of the authorizing statute

The primary authorizing statute for this rule comes from the Climate Commitment Act (CCA; Engrossed Second Substitute Senate Bill 5126), Chapter 316, Laws of 2021, Chapter 70A.65 RCW. Specifically, Section 33 of the CCA amended RCW 70A.15.2200, a section of the Washington Clean Air Act (Chapter 70A.15 RCW). Its goals and objectives are:

- Preserve, protect, and enhance the air quality for current and future generations.

- Secure and maintain levels of air quality that protect human health and safety, including the most sensitive members of the population.
- Comply with the requirements of the federal clean air act.
- Prevent injury to plant, animal life, and property.
- Foster the comfort and convenience of Washington's inhabitants.
- Promote the economic and social development of the state.
- Facilitate the enjoyment of the natural attractions of the state.
- Protect the public welfare, to preserve visibility, to protect scenic, aesthetic, historic, and cultural values, and to prevent air pollution problems that interfere with the enjoyment of life, property, or natural attractions.
- In selecting air pollution control strategies state and local agencies shall support those strategies that lessen the negative environmental impact of the project on all environmental media, including air, water, and land.
- Energy efficiency and energy conservation can help to reduce air pollution and shall therefore be considered when making decisions on air pollution control strategies and projects.
- The costs of protecting the air resource and operating state and local air pollution control programs shall be shared as equitably as possible among all sources whose emissions cause air pollution.
- Regional air pollution control programs are to be encouraged and supported to the extent practicable as essential instruments for the securing and maintenance of appropriate levels of air quality.
- Safeguard the public interest through an intensive, progressive, and coordinated statewide program of air pollution prevention and control.
- Provide for an appropriate distribution of responsibilities.
- Encourage coordination and cooperation between the state, regional, and local units of government.
- Improve cooperation between state and federal government, public and private organizations, and the concerned individual.
- Provide for the use of all known, available, and reasonable methods to reduce, prevent, and control air pollution.

The CCA also directs Ecology to develop the rule to support the CCA program, adding relevant goals and objectives (via specific amendments to Chapters 70A.15 and 70A.45 RCW):

- Covered entities are defined based on GHG emissions data reported to Ecology.
- Annual CCA allowance budgets must be based on GHG emissions data reported to Ecology.

- Reporting and verification procedures facilitate linkage with GHG emissions reduction programs in other jurisdictions.
- Chapter 70A.45 RCW Limiting Greenhouse Gas Emissions
 - Limit and reduce emissions of greenhouse gas consistent with the emission reductions established in RCW 70A.45.020
 - Minimize the potential to export pollution, jobs, and economic opportunities.
 - Support industry sectors that can act as sequesterers of carbon.
 - Reduce emissions at the lowest cost to Washington's economy, consumers, and businesses.

6.3 Alternatives considered and why they were excluded

We considered alternative rule content, in the following areas, and did not include it in the adopted rule amendments. We discuss the reasons in each subsection below.

- Verifier changes
- Washington-specific verification
- Reporting deadlines
- Data confidentiality
- Unique requirements
- Ecology verification

We also changed the proposed rule language after the public comment period to reflect stakeholder comments. The following are alternatives included in the proposal that we changed in the adopted rule amendments to reduce burden on reporters.

- Affiliation description: Reporters required to describe direct or indirect affiliation with other reporters.
- Secondary NAICS: No option for total facility product data for secondary NAICS.
- Product metrics: Narrower pulp, paper, and paperboard mill (NAICS 3221XX) and petroleum refinery (NAICS 324110) product metrics.
- Product metric flexibility: Limited product metric options for aerospace product and parts manufacturing (NAICS 3364XX).

6.3.1 Verifier changes

Ecology considered not requiring reporters to switch third party verifiers every six years. This would not have met goals and objectives regarding consistency with other jurisdictions and supporting CCA goals with reliable data. Ecology chose to adopt the requirement to change

third party verifiers to prevent a conflict of interest and to remain consistent with California requirements.

6.3.2 Washington-specific verification

Ecology considered requiring third party verifiers to be located in Washington State. This would have imposed additional burden on reporters – through reduced availability or increased prices of local verifiers – without furthering the goals and objectives of the statute. While verifiers can be located anywhere, the adopted rule will still require third party verifiers complete a Washington-specific certification training program under the GHG reporting program.

6.3.3 Reporting deadlines

Ecology considered allowing electric power entities until June 1 to submit reports, instead of the adopted March 31 deadline. This would not have met the explicit statutory requirement of a March 31 deadline for all reporters.

Ecology recognized, however, that electric power entities might need additional time to ensure complete and accurate data in reports, given industry practices and timing. The adopted amendments allow electric power entities to submit a provisional report by the statutory deadline, followed by a final report by June 1.

6.3.4 Data confidentiality

Ecology considered expanding data confidentiality provisions, but the baseline already addresses data confidentiality to the maximum extent possible. The Washington Clean Air Act (Chapter 70A.15 RCW), and the Department of Ecology statute (43.21A.160 RCW) allow any reporter to request we treat their data as confidential proprietary information. Expanding provisions would not have met goals and objectives including CCA use of reporting data to set emissions baselines and compliance obligations.

6.3.5 Unique requirements

Ecology considered developing a reporting system, requirements, protocols, and methods unique to Washington State. This would not have met goals and objectives regarding consistency with other jurisdictions, and would have imposed additional burden on reporters who would have to develop different reports for different jurisdictions and programs.

6.3.6 Ecology verification

Ecology considered performing verification instead of requiring third party verification. While this would have imposed less compliance burden on some reporters, it is not likely to have reduced burden overall. It would have increased total reporting program costs, due to the additional staff time and effort necessary to perform verification. This would have resulted in higher fees across all reporters. And potentially confidential business information could have

been subject to public disclosure requests. Ecology verification could have also delayed the reporting program's ability to support the goals and objectives of public and environmental protection, and the CCA program.

6.3.7 Affiliation description

Ecology initially proposed rule language that required reporters to describe direct or indirect affiliation with other reporters, but removed this language as it posed potential risks associated with confidential business information. Removing this requirement in the adopted rule amendments reduces burden on reporters, while maintaining the goals and objectives of the authorizing statute.

6.3.8 Secondary North American Industry Classification System codes

Ecology initially proposed rule language that did not address secondary NAICS codes, and whether or how facility product data should be reported for them. Adding the option in the adopted rule amendments for facilities to report product data for secondary NAICS codes reduces compliance burden on reporters by reducing the risk of over-reporting product data for all NAICS codes (primary and secondary).

6.3.9 Product metrics

Ecology initially proposed rule language that identified only air dried pulp as the product metric for pulp, paper, and paperboard mills (NAICS 3221XX¹⁶), and only complexity weighted barrels for petroleum refineries (NAICS 324110).

The adopted rule amendments add air dried paper or paperboard for NAICS 3221XX, per comments from industry stakeholders. While this may result in minor additional reporting effort, we did not assume reporting this incremental known information will affect estimated additional reporting costs for existing reporters. Moreover, this facilitates comprehensive reporting of facility product data and calculation of carbon intensity under the CCA, potentially reducing burden under the cap and invest program created under the CCA (currently in the rulemaking process). This approach maintains the goals and objectives of the authorizing statute while reducing potential long-run burden.

For NAICS 324110, the adopted rule amendments add product metrics of:

- Facility level Subpart MM reports – moved from Section 120 of the proposed rule amendments.
- Barrels of crude oil and intermediate products received from off site that are processed at the facility.

These amendments delay reporting of complexity weighted barrels until after the refinery's first turnaround after 2022. This phasing in of the complexity weighted barrel metric, as well as

¹⁶ NAICS codes 3221XX denote all six-digit codes that begin with 3221.

the addition of other reported metrics supports ongoing understanding of product metric reporting for this industry, within the context of the CCA and the cap and invest program created under the CCA (currently in the rulemaking process). All refineries already report barrels of crude oil and intermediate products processed at the facility, so the additional metric is consistent with current practice and does not impose additional burden. This approach maintains the goals and objectives of the authorizing statute while reducing potential short-run burden.

6.3.10 Product metric flexibility

Ecology initially proposed rule language that limited product metric options for aerospace product and parts manufacturing (NAICS 3364XX¹⁷). The adopted rule amendments add flexibility for product metrics. This added flexibility reduces potential compliance burden by offering these manufacturers options while still achieving the goals and objectives of the authorizing statute.

6.4 Conclusion

After considering alternatives to the adopted rule's contents, within the context of the goals and objectives of the authorizing statute, we determined that the adopted rule represents the least-burdensome alternative of possible rule contents meeting the goals and objectives.

¹⁷ NAICS codes 3364XX denote all six-digit codes that begin with 3364.

Chapter 7: Regulatory Fairness Act Compliance

7.1 Introduction

The Regulatory Fairness Act (RFA; RCW 19.85.070) requires Ecology to perform a set of analyses and make certain determinations regarding the adopted rule amendments. This chapter presents the:

- Analysis of relative compliance cost burden.
- Consideration of lost sales or revenue.
- Cost-mitigating elements of the rule, if required.
- Small business and local government consultation.
- Industries likely impacted by the adopted rule.
- Expected impact on jobs.

The RFA defines a small business as having 50 or fewer employees, at the highest ownership and operator level. Estimated compliance costs are determined as compared to the baseline (the regulatory environment in the absence of the adopted rule amendments, limited to existing federal and state requirements). Analyses under the RFA only apply to costs to “businesses in an industry” in Washington State. This means we did not evaluate the impacts, for this part of our analyses, for government agencies.

7.2 Analysis of relative compliance cost burden

We calculated the estimated per-business costs to comply with the adopted rule amendments, based on the costs estimated in Chapter 3 of this document. In this section, we estimate compliance costs per employee. We note that costs of compliance are potentially significantly different, as compared to the baseline, for existing reporters that are largely facilities. We therefore considered costs per employee separately for a median facility, supplier, and electric power entity.

The median affected small business likely covered by the adopted rule amendments employs between five and ten people. The largest ten percent of affected businesses employ a median of between 500 and 3,150 people. The table below summarizes them.

Table 14: Median employment by reporter type

Reporter Type	Small Business Median Employment	Largest 10 Percent of Businesses Median Employment
Electric power entities	10	500
Facilities	10	3,150
Suppliers	5	500

It is important to note that the values above are likely underestimates of actual employment. They reflect low-end, local employment where precise total corporate employment was not

available, and for electric power entities and suppliers, they reflect overall industry attributes because we could not identify specifically which businesses will become reporters. In reality:

- Small business employment is likely moderately higher.
- Largest business employment is likely significantly higher.
- Electric power entity and supplier small and large business employment are likely significantly higher.

Based on cost estimates in Chapter 3, we estimated the following compliance costs per employee.

Table 15: Compliance costs per employee

Reporter Type	Median Cost per Employee Small Businesses	Median Cost per Employee Largest 10 Percent of Businesses
Electric power entities	\$2,188	\$44
Facilities	\$208	\$1
Suppliers	\$2,334	\$23

We conclude that the adopted rule amendments are likely to have disproportionate impacts on small businesses, based on median values and industry attributes, and therefore Ecology must include elements in the adopted rule amendments to mitigate this disproportion, as far as is legal and feasible. As discussed above, however, the degree of disproportion is likely smaller than quantified here, based on conservative underestimation of employment numbers.

7.3 Loss of sales or revenue

Businesses that will incur costs could experience reduced sales or revenues if the adopted rule amendments significantly affect the prices of the goods they sell. Each business's production and pricing model (whether additional lump-sum costs significantly affect marginal costs) strongly determine the degree to which this could happen. It also relates to the specific attributes of the markets in which they sell goods, including the degree of influence each firm has on market prices, as well as the relative responsiveness of market demand to price changes.

We used the REMI E3+ model for Washington State to estimate the impact of the adopted rule amendments on directly affected markets, accounting for dynamic adjustments throughout the economy. The model accounts for: inter-industry impacts; price, wage, and population changes; and dynamic adjustment of all economic variables over time.

Based on E3+ model runs for low and high cost estimates aggregated to the 4-digit North American Industry Classification System (NAICS¹⁸) level, we estimated potential impacts to price levels and output value over time. This allowed us to estimate the degree to which businesses will be able to pass costs on to their customers through increased prices, as well as to what

¹⁸ NAICS definitions and industry hierarchies are discussed at <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2017>

degree customers will be able to substitute to less-expensive goods. Together, these impact the likelihood that businesses will experience impacts to sales or revenue.

Model results did not indicate significant immediate or long-run impacts to overall price levels in the state (0 to 0.001 percent increase), but did forecast relatively small aggregate impacts to the value of output statewide. Most of the median \$6 million per year statewide impact was concentrated in the following industries, likely due to minor increases in energy costs impacting broad sectors. For context, total annual output in the state is worth over \$600 billion.

- Manufacturing: \$1 million to \$1.2 million.
- Construction: \$600,000 to \$1.2 million.
- Utilities: \$600,000 to \$1.2 million.

7.4 Action taken to reduce small business impacts

The RFA (19.85.030(2) RCW) states that:

“Based upon the extent of disproportionate impact on small business identified in the statement prepared under RCW 19.85.040, the agency shall, where legal and feasible in meeting the stated objectives of the statutes upon which the rule is based, reduce the costs imposed by the rule on small businesses. The agency must consider, without limitation, each of the following methods of reducing the impact of the proposed rule on small businesses:

- a) Reducing, modifying, or eliminating substantive regulatory requirements;
- b) Simplifying, reducing, or eliminating recordkeeping and reporting requirements;
- c) Reducing the frequency of inspections;
- d) Delaying compliance timetables;
- e) Reducing or modifying fine schedules for noncompliance; or
- f) Any other mitigation techniques including those suggested by small businesses or small business advocates.”

We considered all of the above options, the goals and objectives of the authorizing statutes (see Chapter 6), and the scope of this rulemaking. We limited compliance cost-reduction methods to those that:

- Are legal and feasible.
- Meet the goals and objectives of the authorizing statute.
- Are within the scope of this rulemaking.

The adopted rule amendments maintain or add elements from the above list provided in the RFA:

- The baseline rule and adopted amendments are reporting rules only. They do not contain substantive regulatory requirements, and we are not adopting any in addition.
- Recordkeeping and reporting requirements rely largely on maintaining consistency with other programs, using known operations data and information, and using standardized common calculations.
- If we consider the equivalent of inspections for the adopted amendments to the reporting rule to be third party verification, the adopted rule amendments limit this verification to where it is necessary for data quality assurance in its support of the CCA program (as required by statute). Smaller reporters are less likely to have compliance obligations or emissions over the threshold that requires third party verification.
- As part of this rulemaking, Ecology received information that electric power entities (many of which are small) desired later deadlines. While the statute specifies the reporting deadline, the adopted rule amendments require electric power entities to submit a provisional report by the statutory deadline, followed by a final report two months later as proposed by stakeholders. Ecology also made changes to third party verification to streamline the process for smaller utilities.
- The statute specifies many elements related to noncompliance, and could not be changed. Ecology was, however, able to phase in penalties for some requirements of the 2022 emissions year reported in 2023. Under the adopted rule amendments, Ecology will not issue monetary penalties, except for failure to comply with the requirement to submit a complete report by the reporting deadline, for this period.

7.5 Small business and government involvement

We involved small businesses and local governments in development of the adopted rule amendments as part of our overall communications and rule development strategy.

- Rule announcement and proposal notices sent via email to:
- Rules and State Implementation Plan (SIP) listserv.
- GHG reporting listserv.
- CCA listserv.
- Current GHG reporters.
- WAC track (rulemaking).
- Stakeholder meeting materials sent on 7/15/21 to:
- Registered participants.
- GHG reporting listserv.
- Current GHG reporters.

- Stakeholder meeting on 7/22/21 to provide overview of rule changes and get feedback on draft rule language.
- Public hearing on 11/9/21.

Email recipients and meeting attendees included potential reporters, business associations, and industry associations across all three categories of reporter. These included or represented small businesses unable to participate. Local governments (cities, counties) were also direct participants.

7.6 North American Industry Classification System (NAICS) codes of impacted industries

The adopted rule amendments likely impact the following industries, with associated NAICS codes. NAICS definitions and industry hierarchies are discussed at <https://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2017>.

Table 16: Potentially impacted NAICS codes

NAICS	NAICS Title	NAICS	NAICS Title
1121	Cattle Ranching and Farming	3311	Iron and Steel Mills and Ferroalloy Manufacturing
2123	Nonmetallic Mineral Mining and Quarrying	3313	Alumina and Aluminum Production and Processing
2131	Support Activities for Mining	3314	Nonferrous Metal (except Aluminum) Production and Processing
2211	Electric Power Generation, Transmission and Distribution	3321	Forging and Stamping
2212	Natural Gas Distribution	3344	Semiconductor and Other Electronic Component Manufacturing
2213	Water, Sewage and Other Systems	3359	Other Electrical Equipment and Component Manufacturing
3112	Grain and Oilseed Milling	3364	Aerospace Product and Parts Manufacturing
3114	Fruit and Vegetable Preserving and Specialty Food Manufacturing	4247	Petroleum and Petroleum Products Merchant Wholesalers
3115	Dairy Product Manufacturing	4251	Wholesale Electronic Markets and Agents and Brokers
3116	Animal Slaughtering and Processing	4451	Grocery Stores
3119	Other Food Manufacturing	4471	Gasoline Stations
3211	Sawmills and Wood Preservation	4811	Scheduled Air Transportation
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing	4862	Pipeline Transportation of Natural Gas
3219	Other Wood Product Manufacturing	4881	Support Activities for Air Transportation
3221	Pulp, Paper, and Paperboard Mills	4921	Couriers and Express Delivery Services
3222	Converted Paper Product Manufacturing	4931	Warehousing and Storage
3241	Petroleum and Coal Products Manufacturing	5621	Waste Collection
3251	Basic Chemical Manufacturing	5622	Waste Treatment and Disposal
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing	6113	Colleges, Universities, and Professional Schools
3272	Glass and Glass Product Manufacturing	9241	Administration of Environmental Quality Programs
3273	Cement and Concrete Product Manufacturing	9281	National Security and International Affairs
3274	Lime and Gypsum Product Manufacturing		

7.7 Impact on jobs

We used the REMI E3+ model for Washington State to estimate the impact of the adopted rule amendments on jobs in the state, accounting for dynamic adjustments throughout the economy.

The adopted rule amendments will result in transfers of money within and between industries, as compared to the baseline. The modeled impacts on employment are the result of multiple small increases and decreases in employment, prices, and other economic variables across all industries in the state. We define a job as one year of a full-time equivalent job, and may not reflect the ongoing or accumulating loss of entire employment positions.

Table 17: Compliance cost impacts on jobs

Industry	Initial Jobs Impact	Jobs Impact in Year 20
All Industries	-19 to -21	-18 to -20
Construction	-4 to -5	-2
Retail trade	-2 to -3	-1
Manufacturing	-2	-2
Health care and social assistance	-1 to -2	-1 to -2
Professional, scientific, and technical services	-1	-2
Wholesale trade	-1	-1 to -3
State and Local Government	-1	-1 to -3
Real estate and rental and leasing	-1	-1
Transportation and warehousing	-1	-1

These employment impacts are based only on compliance costs incurred as a result of the adopted rule amendments (internal costs, payments to consultants), and do not account for benefits resulting from the reporting program's support of the CCA.

Accounting for the employment impacts of transfer payments to other industries – payments for consulting services – the total employment impact across all industries are lower, while employment impacts to industries incurring costs, or their customers sensitive to small price impacts, remain largely the same.

Table 18: Net impacts on jobs

Industry	Initial Jobs Impact	Jobs Impact in Year 20
All Industries	-1 to -8	-16 to -18
Construction	-4	-2
Retail trade	-2	-1
Manufacturing	-2	-2
Health care and social assistance	-1	-2
Professional, scientific, and technical services	+5 to +7	-1 to +1
Wholesale trade	-1	-1
State and Local Government	-1	-2 to -3
Real estate and rental and leasing	-1	-1
Transportation and warehousing	-1	-1

For context, the REMI E3+ model forecasts the Washington State economy to have over 4.7 million FTEs in 2022, increasing to nearly 5.4 million FTEs over the next 20 years.

By supporting the CCA cap and invest program, the adopted rule amendments also contribute to the effectiveness and efficiency of benefits resulting from the program, such as reductions in greenhouse gas emissions, avoided social costs of climate change, and investment in GHG reduction projects and industries. These benefits, supported indirectly by the adopted rule, will result in additional employment increases as the state shifts toward a green economy under the CCA.

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Appendix A: Administrative Procedure Act (RCW 34.05.328) Determinations

- A. RCW 34.05.328(1)(a) – Clearly state in detail the general goals and specific objectives of the statute that this rule implements.**

See Chapter 6.

- B. RCW 34.05.328(1)(b) –**

- 1. Determine that the rule is needed to achieve the general goals and specific objectives of the statute.**

See chapters 1 and 2.

- 2. Analyze alternatives to rulemaking and the consequences of not adopting this rule.**

The Climate Commitment Act (CCA) requires Ecology to adopt rules to implement requirements. Section 33 specifically directs Ecology to modify the GHG reporting program. If Ecology does not adopt these rules, we will not have the greenhouse gas emissions data necessary for the operation of the cap and invest program created by the CCA. This would limit the ability of the state to meet its greenhouse gas emissions limits required by 2030, 2040, and 2050.

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

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

When filing a rule proposal (CR-102) under RCW 34.05.320, Ecology provides notice that a preliminary cost-benefit analysis is available. At adoption (CR-103 filing) under RCW 34.05.360, Ecology provides notice of the availability of the final cost-benefit analysis.

- D. RCW 34.05.328(1)(d) – Determine that probable benefits of this 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.**

See Chapters 1 – 5.

- E. RCW 34.05.328 (1)(e) - Determine, after considering alternative versions of the analysis required under RCW 34.05.328 (b), (c) and (d) 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 in Chapter 6.**

Please see Chapter 6.

- F. RCW 34.05.328(1)(f) - Determine that the rule does not require those to whom it applies to take an action that violates requirements of another federal or state law.**

This rule does not require covered parties to violate existing federal and state laws and rules. Ecology is updating Chapter 173-441 WAC to align with revised state statutes (The Climate Commitment Act). Greenhouse gas reporting requirements in this rule do not conflict with EPA reporting requirements and do not alter reporting requirements in other states.

G. RCW 34.05.328 (1)(g) - Determine that the rule does not impose more stringent performance requirements on private entities than on public entities unless required to do so by federal or state law.

The reporting requirements in this rule apply to both private and public entities. More extensive reporting requirements, such as third party verification, are required for both private and public entities with higher emissions.

H. RCW 34.05.328 (1)(h) Determine if the rule differs from any federal regulation or statute applicable to the same activity or subject matter.

The statute drives the differences between WA and EPA reporting. The differences are minimal and impart a low level of costs to reporters. They do not impact non-reporters. Nothing in this regulation prevents a reporter from complying with any federal regulation or statute.

- If **yes**, the difference is justified because of the following:

☒ (i) A state statute explicitly allows Ecology to differ from federal standards.
Chapter 70A.65 RCW

☐ (ii) Substantial evidence that the difference is necessary to achieve the general goals and specific objectives stated in Chapter 6.

I. RCW 34.05.328 (1)(i) – Coordinate the rule, to the maximum extent practicable, with other federal, state, and local laws applicable to the same subject matter.

Ecology is coordinating this rulemaking with other related rulemakings and existing rules, including Climate Commitment Act rulemakings and the Clean Energy Transformation Rule. Ecology is also working to make the rule consistent with federal reporting requirements and reporting requirements in CA and OR.