



Final Regulatory Analyses:

Including the:

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

Imports from Centralized Electricity Markets:
Chapter 173-441 WAC, Reporting of Emissions
of Greenhouse Gases and Chapter 173-446
WAC, Climate Commitment Act Program Rule

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For the

Climate Pollution Reduction Program

Washington State Department of Ecology
Olympia, Washington

December 2024, Publication 24-14-082

Publication Information

This document is available on the Department of Ecology's website at:
<https://apps.ecology.wa.gov/publications/SummaryPages/2414082.html>

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Chapter 173-441 WAC, Reporting of Emissions
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Climate Pollution Reduction Program
Washington State Department of Ecology

Olympia, WA

December 2024 | Publication 24-14-082



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Abbreviations and Acronyms

APA	Administrative Procedure Act
BPA	Bonneville Power Administration
CAISO	California Independent System Operator
CARB	California Air Resources Board
CBA	Cost-Benefit Analysis
CCA	Climate Commitment Act
CEM	Centralized electricity market
CETA	Clean Energy Transformation Act
CO _{2e}	Carbon dioxide equivalent
CTAM	Carbon Tax Assessment Model
EDAM	Extended Day-Ahead Market
EIM	[Western] Energy Imbalance Market
EPE	Electric power entity
FJD	First jurisdictional deliverer
LBA	Least-Burdensome Alternative Analysis
MWh	Megawatt hour
MT	Metric ton
NAICS	North American Industry Classification System
RCW	Revised Code of Washington
REMI	Regional Economic Models, Inc.
RFA	Regulatory Fairness Act
SCC	Social cost of carbon
SPP	Southwest Power Pool
UTC	[WA] Utilities and Transportation Commission
WA	Washington State
WAC	Washington Administrative Code

Executive Summary

This report presents the determinations made by the Washington State Department of Ecology as required under Chapters 34.05 RCW and 19.85 RCW, for the amendments related to centralized electricity markets, to the Reporting of Emissions of Greenhouse Gases rule (Chapter 173-441 WAC; “reporting rule”) and Climate Commitment Act Program Rule (Chapter 173-446 WAC; “CCA rule”). This includes the:

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

Background

In 2021, the Washington Legislature passed the Climate Commitment Act (CCA), which established a Cap-and-Invest Program to help Washington meet greenhouse gas emission limits by statutory deadlines (RCW 70A.45.020). Ecology adopted the CCA Program Rule (Chapter 173-446 WAC) to implement the CCA law, in conjunction with amendments to the greenhouse gas reporting rule (Chapter 173-441 WAC), in 2022. The CCA law (Chapter 70A.65 RCW), requires Ecology to adopt a methodology in rule to address imported electricity associated with centralized electricity markets (CEMs) by October 1, 2026.²

This rulemaking intends to help determine which entities will be responsible for emissions associated with electricity imported from centralized electricity markets. This rule does not modify eligibility criteria for inclusion under the Cap-and-Invest Program. The rule establishes a framework that accounts for specified electricity imported through centralized electricity markets. The resulting compliance obligation is assigned in the CCA Program Rule (Chapter 173-446 WAC), with the processes and procedures for identifying resources contained within the Reporting of Emissions of Greenhouse Gases Rule (Chapter 173-441 WAC). Supporting changes to the Reporting Rule will also ensure that appropriate data are available.

The rule applies to existing and future centralized electricity markets including the Western Energy Imbalance Market (EIM), the Extended Day-Ahead Market (EDAM), and Markets+. The rule also addresses other issues related to the reporting of greenhouse gas emissions for entities importing electricity to Washington.

Summary of the rule amendments

The rule amendments:

- Amend reporting requirements in the greenhouse gas reporting rule (Chapter 173-441 WAC):
 - Amending the definition of “Electric Power Entity” (EPE).

² RCW 70A.65.080(1)(c)

- Changing annual report submission requirements.
- Adding, removing, or changing definitions specific to EPE reporting requirements.
- Expanding data requirements and calculation methods from the Energy Imbalance Market to all CEMs.
- Specifying how EPEs must report imported CEM electricity from specified sources.
- Expanding documentation requirements.
- Specifying greenhouse gas emissions equations and applicability.
- Amending requirements for registration of import or export sources.
- Making changes without material impacts:
 - Clarify language and update terminology.
 - Remove obsolete requirements and language.
- Amend the CCA rule (Chapter 173-446 WAC):
 - Adding definitions consistent with the greenhouse gas reporting rule.
 - Amending covered emissions to reflect electricity imported from CEMs.

Costs and benefits of the rule amendments

Ecology estimates rule impacts over 20 years, and compares those streams of costs and benefits occurring over time using present values. A present value accounts for inflation as well as the opportunity cost of having funds later instead of now. We estimated the following costs and benefits of the rule amendments, with qualitative impacts summarized below the table. For full discussion of costs and benefits (or cost-savings) including illustrative examples, see chapters 3 and 4.

Table 1. Total 20-year present value costs and benefits, millions of dollars

Type of impact	Low 20-year cost	High 20-year cost	Low 20-year benefit	High 20-year benefit
Reporting	\$0.26	\$0.37	qualitative	qualitative
Potential obligations (associated value)	\$25.58*	\$671.60*	\$172.63*	\$2,427.66*
CEM functions	none or minor	none or minor	qualitative	qualitative

* Estimates in this row reflect total allowance value and total social cost of carbon associated with potential additional compliance obligations over 20 years. Actual costs and benefits depend on the degree to which additional incentive to reduce emissions results in avoided greenhouse gas emissions. We estimate that average annual emissions reductions of between 1,500 MT CO₂e and 120,000 MT CO₂e per year would make these benefits exceed costs. We note, however, that:

- Based on conservative assumptions to mitigate uncertainty about marginal costs of greenhouse gas emissions abatement, the minimum MT CO₂e quantities above are likely to be overestimates.

- The high end of this range is associated with higher assumed emissions from CEM imports over time.
- Emissions associated with imported electricity (including via CEMs) are covered by the CCA program under the baseline statute. While the amended rules establish a point of regulation to make this possible to implement, the fact that they are covered emissions that must be assigned a compliance obligation is not within Ecology’s discretion.

Qualitative benefits include:

- Benefits of CEM import emissions reporting:
 - Improved greenhouse gas emissions tracking and accuracy. The amendments create a structure that more fully achieves the objectives of the authorizing statute for the reporting rule, by specifying the requirements and processes for quantifying emissions associated with electricity imports through CEMs and identifying the deemed market importers that must report them.
 - Facilitation of programs that rely on accurate greenhouse gas emissions data as discussed in the following bullets. Consistency with, and support of requirements under chapters 70A.45 and 70A.65 RCW are also objectives of the authorizing reporting statute.
 - Accurate data to assign compliance obligations under the CCA rule. Without this data, we cannot accurately, consistently, and equitably identify CEM importers, or determine how much greenhouse gas was emitted during generation of that electricity. Under the baseline, these emissions are not accounted for in reporting or in the Cap-and-Invest Program, as there is not yet a consistent process and approach to do so.
 - Improved CCA program implementation and planning: The CCA law defines the scope of covered greenhouse gas emissions and tasks Ecology with implementing a cap on covered greenhouse gas emissions and a program to track, verify, and enforce compliance with the cap through use of compliance instruments. The overall goal is ensuring greenhouse gas emissions reductions consistent with the “Limiting Greenhouse Gas Emissions” law (Chapter 70A.45 RCW). To achieve this objective, Ecology needs comprehensive data on greenhouse gas emissions, which in turn requires clear and consistent processes and expectations for covered CEM importers, as well as consistent tracking infrastructure and documentation underlying that data.
- Benefits of CEMs functioning efficiently in WA. Supporting benefits provided by CEMs, through specification of how CEM importers are identified and how compliance obligations are assigned. Benefits include:

- Cost-efficiency and cost-savings. For example, CEM participants were estimated to receive various benefits of cost savings:
 - During the 4th quarter of 2023, EIM participants attained nearly \$400 million in cost-savings.³
 - 2022 modeling of benefits of the EDAM estimated that the West could save over \$500 million per year in operating costs and similar annual savings from avoiding additional capacity investments.⁴ Separate 2023 modeling estimated cost savings for five specific participants of nearly \$500 million annually.⁵
- Improved availability and integration of renewable resources, and feasibility of efficiently meeting statutory greenhouse gas reduction goals.
- Improved grid reliability and matching of generating resources and demand.
- Reduced renewable resource curtailment when supply exceeds local demand.
- Improved allocation of emissions-generating resources that are more efficient.

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

Least-Burdensome Alternative

We considered the following alternative rule requirements, and did not include them in the rule amendments. This list includes alternatives that were suggested by the public during development of the rule, with the intent of mitigating negative impacts, including environmental harms, on vulnerable populations and overburdened communities, and equitably distributing benefits. Each section below explains why we did not include these alternatives.

- Assign the market operator as the deemed market importer.
- Update emissions factor calculations.
- Addressing greenhouse gas emissions leakage.
- Alternative scope.
- Adopt a load-based approach.
- Explicitly define “deemed market importer” for specified and unspecified power.
- Ecology approval of attribution methods.

³ CAISO, 2024. WEIM benefits report shows another historic milestone. News Release January 31, 2024.

⁴ CAISO, 2024. EDAM: Extended Day-Ahead market fact sheet.

⁵ Brattle, 2023. Extended Day-Ahead Market Benefit Study. Presentation August 30, 2023.

- BPA backstop.

After considering alternatives, within the context of the goals and objectives of the authorizing statute, we determined that the amended rules represent the least-burdensome alternative of possible rule requirements meeting the goals and objectives.

Regulatory Fairness Act

Based on costs per business and business size (small or large), we calculated average costs per employee, as summarized in the tables below.

Table 2. Costs per employee

Business Size	Cost per employee (low)	Cost per employee (high)
Small	\$2,328	\$23,513
Largest	\$556	\$5,619

We conclude that the rule amendments are likely to have disproportionate impacts on small businesses. Ecology has therefore included elements in the rule amendments to mitigate this disproportion, as far as is legal and feasible.

Model simulations of the WA economy found the following ranges of impacts on employment and output:

- Loss of 4 to 41 full-time employee (FTE)-equivalents economy-wide in the first year (highest impacts in the construction industry, which is one of the most sensitive industries in the model to costs impacting employment), shifting to between 2 and 77 FTEs by 2045. For context, the baseline statewide employment in the model is between 5 million in 2027 and 5.6 million in 2045.
- Loss of \$1 million to \$10 million in economy-wide output in the first year (highest impacts in electric power generation, transmission, and distribution), shifting to between \$1 million and \$32 million statewide by 2045. For context, the baseline statewide output in the model is between \$1.2 trillion in 2027 and \$1.7 trillion in 2045.

Recall that based on the underlying assumptions for each end of the range, we expect impacts toward the lower end of each range to be more likely (see Chapter 3). Note also that these results assume all costs are incurred by entities embedded within the WA economy, which may not be the case for all impacted parties (e.g., out-of-state or multi-jurisdictional entities). This means the estimates above are likely overestimating the actual likely impacts of the amended rules.

Chapter 1: Background and Introduction

1.1 Introduction

This report presents the determinations made by the Washington State Department of Ecology as required under Chapters 34.05 RCW and 19.85 RCW, for amendments related to centralized electricity markets, to the Reporting of Emissions of Greenhouse Gases rule (Chapter 173-441 WAC; “reporting rule”) and Climate Commitment Act Program Rule (Chapter 173-446 WAC; “CCA rule”) rules. 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 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.

1.1.1 Background

In 2021, the Washington Legislature passed the Climate Commitment Act (CCA), which established a Cap-and-Invest Program to help Washington meet greenhouse gas (greenhouse gas) emission limits in statute (RCW 70A.45.020). Ecology adopted the CCA rule (Chapter 173-460 WAC) to implement the CCA law, in conjunction with amendments to the greenhouse gas reporting rule (Chapter 173-441 WAC), in 2022. The CCA law (Chapter 70A.65 RCW), requires Ecology to adopt a methodology in rule to address imported electricity associated with centralized electricity markets (CEMs) by October 1, 2026.⁶

⁶ RCW 70A.65.080(1)(c)

This rulemaking intends to help determine which entities will be responsible for emissions associated with electricity imported from centralized electricity markets. This rule does not modify eligibility criteria for inclusion under the Cap-and-Invest Program. The rule establishes a framework that accounts for specified electricity imported through centralized electricity markets. The resulting compliance obligation is assigned in the CCA Program Rule (Chapter 173-446 WAC), with the processes and procedures for identifying resources contained within the Reporting of Emissions of Greenhouse Gases Rule (Chapter 173-441 WAC). Supporting changes to the Reporting Rule will also ensure that appropriate data are available.

The CEMs addressed in the rulemaking include:

- California Independent System Operator’s (CAISO) Western Energy Imbalance Market (EIM).
- CAISO’s Extended Day-Ahead Market (EDAM).
- Southwest Power Pool’s (SPP) Markets.

1.2 Summary of the rule amendments

The rule amendments:

- Amend reporting requirements in the greenhouse gas reporting rule (Chapter 173-441 WAC):
 - Amending the definition of “Electric Power Entity” (EPE).
 - Changing annual report submission requirements.
 - Adding, removing, or changing definitions specific to EPE reporting requirements.
 - Expanding data requirements and calculation methods from the EIM to all CEMs.
 - Specifying how EPEs must report imported CEM electricity from specified sources.
 - Expanding documentation requirements.
 - Specifying greenhouse gas emissions equations and applicability.
 - Amending requirements for registration of import or export sources.
 - Making changes without material impacts:
 - Clarify language and update terminology.
 - Remove obsolete requirements and language.
- Amend the CCA rule (Chapter 173-446 WAC):
 - Adding definitions consistent with the greenhouse gas reporting rule.
 - Amending covered emissions to reflect electricity imported from CEMs.

1.3 Reasons for the rule amendments

The purpose of these updates is to help determine which entities will be responsible for emissions associated with electricity imported from centralized electricity markets. This rule does not modify eligibility criteria for inclusion under the Cap-and-Invest Program. The rule establishes a framework that accounts for specified electricity imported through centralized electricity markets. The resulting compliance obligation is assigned in the CCA Program Rule (Chapter 173-446 WAC), with the processes and procedures for identifying resources contained within the Reporting of Emissions of Greenhouse Gases Rule (Chapter 173-441 WAC). Supporting changes to the Reporting Rule will also ensure that appropriate data are available.

Existing requirements in the greenhouse gas reporting rule do not provide sufficient data to identify greenhouse gas emissions from electricity imported through CEMs. Similarly, the existing CCA rule does not adequately specify how these emissions are reflected in covered emissions under the Cap-and-Invest Program, or detail how compliance obligations are assigned for them. This means electricity currently imported from CEMs is not fully captured in compliance obligations under the Cap-and-Invest Program, though the CCA law conceptually includes them as covered emissions.

Finally, in the absence of clear expectations for how electricity imports and importers would be defined and tracked, and how compliance obligations would be assigned, CEM operators face uncertainty in establishing and investing in data infrastructure and processes that would appropriately track information needed for reporting. This could limit CEM participation, efficiency, and ability to provide CEM benefits such as reduced energy costs and diversified power sources.

We note, however, that during this rulemaking Ecology identified that issues such as addressing emissions leakage⁷ and requirements for unspecified electricity imports will require additional development. These issues will be addressed in a future rulemaking.

1.4 Document organization

The chapters of this document are organized as follows:

- **Chapter 2 - Baseline and the rule amendments:** Description and comparison of the baseline (what would occur in the absence of the rule amendments) and the amended rule requirements.
- **Chapter 3 - Likely costs of the rule amendments:** Analysis of the types and sizes of costs we expect impacted entities to incur as a result of the rule amendments.

⁷ Emissions leakage, or an underreporting of greenhouse gas emissions that were generated out-of-state, is a common concern among this rulemaking's interested parties. Emissions leakage may result from "secondary dispatch," whereby fossil generating sources in regions without carbon pricing backfill electricity that is deemed/attributed to regions with carbon pricing. In other words, if the supply of clean energy is "used up" by regions that have carbon pricing, and regions without carbon pricing use fossil fuels to make up the difference, leakage may then occur.

- **Chapter 4 - Likely benefits of the rule amendments:** Analysis of the types and sizes of benefits we expect to result from the rule amendments.
- **Chapter 5 - Cost-benefit comparison and conclusions:** Discussion of the complete implications of the CBA.
- **Chapter 6 - Least-Burdensome Alternative Analysis:** Analysis of considered alternatives to the contents of the rule amendments.
- **Chapter 7 - Regulatory Fairness Act Compliance:** When applicable. Comparison of compliance costs for small and large businesses; mitigation; impact on jobs.
- **Appendix A - APA Determinations:** RCW 34.05.328 determinations not discussed in chapters 5 and 6.

Chapter 2: Baseline and Rule Amendments

2.1 Introduction

We analyzed the impacts of the 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 does not adopt the amended rules.

2.2 Baseline

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

For this rulemaking, the baseline includes:

- The CCA law, Chapter 70A.65 RCW (“Greenhouse Gas Emissions – Cap and Invest Program”).
- Section 2200 of the WA Clean Air Act, RCW 70A.15.2200 (“Classification of air contaminant sources – Registration – Fee – Registration program defined – Adoption of rules requiring persons to report emissions of greenhouse gases”).
- The existing greenhouse gas reporting rule, Chapter 173-441 WAC (“Reporting of Emissions of Greenhouse Gases”).
- The existing CCA rule, Chapter 173-446 WAC (“Climate Commitment Act Program Rule”).
- Engrossed Second Substitute Senate Bill 6058, Chapter 352, Laws of 2024, Sec. 11 (“Carbon market linkage – California- Québec carbon market”).
- RCW 19.405 (“Washington Clean Energy Transformation Act”; CETA).
- California Air Resources Board (CARB) Regulation for the Mandatory Reporting of Greenhouse Gas Emissions (Title 17 California Code of Regulations (CCR), Div. 3, Ch. 1, Subchapter 10, Article 2).
- CARB California Cap on Greenhouse Gas Emissions and Market-Based Compliance Mechanisms (Title 17 CCR, Div. 3, Ch. 1, Subchapter 10, Article 5).
- The Federal Power Act (16 USC Ch. 12).
- Federal Energy Regulatory Commission (FERC) regulation and approval of market tariffs.⁸

⁸ Federal Energy Regulatory Commission, 2021. Order approving settlement agreement (Docket No. AD20-14-000). Retrieved from www.ferc.gov/sites/files/2021-04/AD20-14-000-041521.pdf. Current CAISO tariff: [Conformed-Tariff-as-of-Apr1-2024.pdf \(caiso.com\)](http://www.ferc.gov/sites/files/2021-04/AD20-14-000-041521.pdf). See also publicly available CAISO FERC filings and orders: [California ISO - Regulatory filings and orders \(caiso.com\)](http://www.ferc.gov/sites/files/2021-04/AD20-14-000-041521.pdf). Markets+ Tariff: [final filed markets plus tariff 20230329 1045 \(2\).pdf \(spp.org\)](http://www.ferc.gov/sites/files/2021-04/AD20-14-000-041521.pdf)

2.3 Rule amendments

The rule amendments:

- Amend reporting requirements in the greenhouse gas reporting rule (Chapter 173-441 WAC):
 - Amending the definition of “Electric Power Entity” (EPE).
 - Changing annual report submission requirements.
 - Adding, removing, or changing definitions specific to EPE reporting requirements.
 - Expanding data requirements and calculation methods from the EIM to all CEMs.
 - Specifying how EPEs must report imported CEM electricity.
 - Expanding documentation requirements.
 - Specifying greenhouse gas emissions equations and applicability.
 - Amending requirements for registration of import or export sources.
 - Making changes without material impacts:
 - Clarify language and update terminology.
 - Remove obsolete requirements and language.
- Amend the CCA rule (Chapter 173-446 WAC):
 - Adding definitions consistent with the greenhouse gas reporting rule.
 - Amending covered emissions to reflect electricity imported from CEMs.

2.3.1 Amending the definition of “Electric Power Entity” (EPE) (Chapter 173-441 WAC)

Baseline

The existing greenhouse gas reporting rule defines “electric power entity” (EPE) as including any of the following that supply electric power in WA:

- Electricity importers and exporters.
- Retail providers, including multijurisdictional retail providers.
- Asset controlling suppliers.

Adopted

The rule amendments expand the definition of EPE to include any of the above entities that transact electric power in WA.

Expected impact

This amendment extends reporting requirements to electricity importers and exporters, retail providers, and asset controlling suppliers that transact electric power in the state. This will

result in reporting costs for entities that transact power in WA but are not suppliers, and benefits of comprehensive greenhouse gas emissions data collection related to electricity transactions in the state if that data is not being collected under the baseline.

Definitions do not, in and of themselves, have impact beyond how the defined terms are used in the rule. Where definitions inform the coverage, scope, or type(s) of impacts under the rule amendments, costs and benefits associated with those sections of the rule, below, include the relevant baseline and adopted definitions.

2.3.2 Changing annual report submission requirements (Chapter 173-441 WAC)

Baseline

Under the baseline greenhouse gas reporting rule, EPEs must submit two annual reports:

- A report based on “best available information” by March 31 of each year.
- A final report by June 1 of each year.

Adopted

The rule amendments require each EPE to submit a single annual report by June 1 of each year.

Expected impact

This amendment reduces reporting costs for EPEs, by not requiring a preliminary report by March 31 of each year. Ecology believes that a single annual report is sufficient to provide necessary greenhouse gas emissions reporting data to meet program needs.

2.3.3 Adding, removing, or changing definitions specific to EPE reporting requirements (Chapter 173-441 WAC)

Baseline

The baseline greenhouse gas reporting rule includes multiple definitions specific to EPEs, including:

- “Direct delivery of electricity” is electricity that meets any of the following criteria:
 - The facility has a first point of interconnection at a WA scheduling point or within a power system.
 - The electricity is scheduled for delivery from the specified source to a WA scheduling point or a power system via a continuous physical transmission path from interconnection of the facility in the balancing authority in which the facility is located to the WA scheduling point or power system.
 - There is an agreement to dynamically transfer electricity from the facility to a WA scheduling point or power system.
- “Electricity importer” means any of the following:

- For electricity that is scheduled with an e-tag to a final point of delivery into a balancing authority area located entirely within WA, the electricity importer is identified on the e-tag as the purchasing-selling entity on the last segment of the tag's physical path with the point of receipt located outside WA and the point of delivery located inside WA.
- For facilities physically located outside WA with the first point of interconnection to a balancing authority area located entirely within WA when the electricity is not scheduled on an e-tag, the electricity importer is the facility operator or owner.
- For electricity imported through a centralized market, the electricity importer is the retail provider, marketer, or asset controlling supplier that conducts an electricity transaction through the Western Energy Imbalance Market operated by the California Independent System Operator (EIM) that results in EIM power being delivered to final point of delivery in WA.
- For electricity from facilities allocated to serve retail electricity customers of a multijurisdictional electric company, the electricity importer is the multijurisdictional electric company.
- If the importer identified based on electricity scheduled with an e-tag to a final point of delivery into a balancing authority area located entirely in WA is a federal power marketing administration over which WA does not have jurisdiction, and the federal power marketing administration has not voluntarily elected to comply with this chapter, then the electricity importer is the next purchasing-selling entity in the physical path on the e-tag, or if no additional purchasing-selling entity over which WA has jurisdiction, then the electricity importer is the electric utility that operates the Washington state transmission or distribution system, or the generation balancing authority.
- For electricity that is imported into the state by a federal power marketing administration and sold to a public body or cooperative customer or direct service industrial customer located in WA pursuant to section 5 (b) or (d) of the Pacific Northwest Electric Power Planning and Conservation Act of 1980, P.L. 96-501, the electricity importer is the federal marketing administration.
- If the importer identified under (c)(vi) of this subsection has not voluntarily elected to comply with this chapter, then the electricity importer is the public body or cooperative customer or direct service industrial customer;
- For electricity that is imported into the state to a designated scheduling point inside the balancing authority area of a federal power marketing administration, the importer is the purchasing-selling entity on the e-tag at the last point on the physical path that is not the sink;
- If the importer identified based on electricity imported into the state to a designated scheduling point inside the balancing authority area of a federal

power marketing administration is a federal power marketing administration that has not elected to voluntarily comply with this chapter, then the importer is the retail provider with which the scheduling point is associated.

- For electricity from facilities allocated to a consumer-owned utility inside WA from a multijurisdictional consumer-owned utility, the electricity importer is the consumer-owned utility inside WA.
- “First jurisdictional deliverer” (FJD) means the owner or operator of an electric generating facility in Washington state or an electricity importer.
- “Generation providing entity” (GPE) means a facility or generating unit operator, full or partial owner, party to a contract for a fixed percentage of net generation from the facility or generating unit, party to a tolling agreement with the owner, or exclusive marketer for the facility or generating unit recognized by Ecology.
- “Imported electricity” means electricity generated outside WA with a final point of delivery within the state.
- “Specified source” means a facility, unit, or asset controlling supplier that is permitted to be claimed as the source of electricity delivered. The reporting entity must have either full or partial ownership in the facility or a written power contract to procure electricity generated by that facility or unit or from an asset controlling supplier at the time of entry into the transaction to procure electricity.
- “Unspecified source” means a source of electricity that is not a specified source at the time of entry into the transaction to procure electricity.
- “Electricity transaction” means the purchase, sale, import, export or exchange of electric power.
- “Exported electricity” means electricity generated inside WA and delivered to serve load located outside WA. This includes electricity delivered from a first point of receipt inside WA, to the first point of delivery outside WA, with a final point of delivery outside WA. Exported electricity delivered across balancing authority areas is documented on e-tags with the first point of receipt located inside WA and the final point of delivery located outside WA. Exported electricity does not include electricity generated inside WA then transmitted outside of WA, but with a final point of delivery inside WA. Exported electricity does not include electricity generated inside WA that is allocated to serve WA retail customers of a multijurisdictional retail provider, consistent with a cost allocation methodology approved by the WA Utilities and Transportation Commission (UTC) and the utility regulatory commission of at least one additional state in which the multijurisdictional retail provider provides retail electric service.
- “Power contract” means a written document, including associated verbal or electronic records if included as part of the written power contract, arranging for the procurement of electricity. Power contracts may be, but are not limited to, power purchase agreements, enabling agreements, electricity transactions, and tariff provisions, without regard to duration, or written agreements to import or export on behalf of another

entity, as long as that other entity also reports to Ecology the same imported or exported electricity. A power contract for a specified source is a contract that is contingent upon delivery of power from a particular facility, unit, or asset-controlling supplier's system that is designated at the time the transaction is executed.

Adopted

The rule amendments add, remove, or change various definitions specific to EPEs:

- The amendments add definitions of:
 - “Centralized electricity market” (CEM) means an electricity market organized and operated by a market operator and approved by the Federal Energy Regulatory Commission to provide wholesale electricity to market participants through a system of bidding and generation resource offers that are used to determine the dispatch of electricity from market participants. Examples of existing and proposed CEMs include the Energy Imbalance Market and Extended Day-Ahead Market operated by the California Independent System Operator, and the Markets+ market operated by the Southwest Power Pool.
 - “Deemed market importer” means a market participant that successfully offers electricity from a resource or system into a CEM and the electricity is assigned, designated, deemed, or attributed to be serving WA electric load by the methodologies, processes, or decision algorithms that are put in place by the market operator of that CEM for purposes of reporting under this rule and approved by the Department of Ecology. For the EIM and EDAM, the deemed market importer is the participating resource scheduling coordinator.⁹
 - “Extended Day-Ahead Market” (EDAM) means the Extended Day-Ahead Market operated by the California Independent System Operator.
 - “Market operator” means the legal entity that operates and maintains a CEM.
 - “Market participant” means an EPE that has an agreement with a CEM operator and participates in that CEM in accordance with the rules and procedures of that market, as well as with an approved tariff that governs the operations of the CEM.
 - “Markets+” means the Markets+ centralized electricity market operated by the Southwest Power Pool.
- The amendments remove definitions of:
 - “First jurisdictional deliverer” (FJD).
- The amendments change definitions of:

⁹ We note that this is intended to provide additional clarity in the rule based on CEM request during development of the rule amendments. It is not, however, intended to provide an exhaustive list of deemed market importers.

- “Direct delivery of electricity”:
 - Replace “power system” throughout with “balancing authority area located entirely in WA”.
 - Add, “or the facility has a first point of interconnection within a CEM and electricity from that facility is attributed to WA by the CEM”
- “Electricity importer”:
 - Change the sub-definition related to electricity imported through a centralized market to state, “For imported electricity assigned, designated, deemed, or attributed to Washington through a CEM, the electricity importer is the deemed market importer.”
- “Imported electricity”:
 - Add that imported electricity “includes electricity transferred into or attributed to WA by a CEM but does not include electricity imported into Washington by a market operator to obtain or provide emergency assistance under applicable emergency preparedness and operations reliability standards of the North American Electric Reliability Corporation or Western Electricity Coordinating Council.”
- “Power contract”:
 - Clarify that power contracts arrange for the sale or procurement of electricity, rather than just procurement.
- “Specified source”:
 - Add that, “For electricity from a resource or system that is assigned, designated, deemed, or attributed to be serving WA electric load by the methodologies, processes, or decision algorithms that are put in place by the market operator of that CEM for purposes of reporting under this rule and approved by the Department of Ecology, the reporting entity must indicate in the offer of the electricity to the market that the electricity is available to serve load in WA.”
- “Source of generation” or “generation source”:
 - Add that source of generation or generation source may also mean, “a resource or system identified by the market operator of a CEM as the source of electricity assigned, designated, deemed, or attributed to be serving WA load.”

Expected impact

Definitions do not, in and of themselves, have impact beyond how the defined terms are used in the rule. Where definitions inform the coverage, scope, or type(s) of impacts under the rule amendments, costs and benefits associated with those sections of the rule, below, include the relevant baseline and adopted definitions.

2.3.4 Expanding data requirements and calculation methods from the EIM to all CEMs (Chapter 173-441 WAC)

Baseline

The baseline greenhouse gas reporting rule requires EPEs to report imports and exports in megawatt-hours (MWh) disaggregated by the first point of receipt or final point of delivery, and separately report imports and exports from unspecified sources, the EIM, and each specified source.

Adopted

The rule amendments replace the EIM with CEMs.

Expected impact

This rule amendment will result in expansion of the types of CEMs the greenhouse gas reporting rule applies to. This, in turn, contributes to costs associated with reporting emissions from electricity imported through these markets, as well as benefits of supporting centralized market functions, efficiencies, and use in WA.

2.3.5 Specifying how EPEs must report imported CEM electricity (Chapter 173-441 WAC)

Baseline

The baseline greenhouse gas reporting rule:

- Requires reporting entities to separately report power from the EIM.
- Requires EPEs to report exports in MWh and their greenhouse gas emissions for unspecified sources disaggregated by each final point of delivery outside of WA, and for specified sources disaggregated by each final point of delivery outside of WA.
- Does not specify reporting requirements for retail providers reporting net purchases from centralized markets.
- Specifies that reporting includes retail sales from the EIM.
- Application for, and maintenance of, asset controlling supplier status includes listing electricity generating facilities for which they are the first jurisdictional deliverer.

Adopted

The rule amendments:

- Require reporting entities to report electricity from CEMs:
 - For the EIM, for 2023-2026, retail providers and market participants receiving electricity facilitated through the EIM are the electricity importers. If the market operator identifies deemed market importers that offer energy attributed to WA before 2026, those are the deemed market importers beginning in the following year.

- Each deemed market importer must separately report electricity assigned, designated, deemed, or attributed to WA by an originating CEM.
- Each deemed market importer must annually calculate, report, and verify greenhouse gas emissions for the electricity they offered that was designated, deemed, or attributed to WA.
- Add a requirement that for electricity dispatched by a CEM, EPEs must report specified electricity sales attributed to market participants outside WA or exported from the market to entities outside WA, for unspecified and specified sources disaggregated by recipient.
- In the baseline specification that reporting includes retail sales from the EIM, replace the EIM with each CEM.
- In the application and maintenance requirements for asset controlling suppliers, replace first jurisdictional deliverers with electricity generating facilities the reporting entity anticipates will be part of its greenhouse gas report.

Expected impact

This rule amendment contributes to overall reporting costs, as well as effort associated with designation of importers and attribution of electricity. It would also contribute to benefits of:

- Accurate identification of electricity imports from centralized markets and who is importing that power.
- Participation and development of CEMs.
- Data collection supporting the state’s statutory goals related to greenhouse gas emissions tracking, planning, and reductions.

Based specifically on amended rule language related to regulatory timing and transition, Washington Energy Imbalance Market (EIM) importers will not be considered deemed market importers for reporting years 2023-2026. Since only deemed market importers will be required to report emissions associated with specified power CEM imports, this means these reporting costs and benefits would not occur until the 2027 reporting year. Similarly, these costs and benefits will not occur for imports from future CEMs such as EDAM and Markets+ until they launch operations (currently expected in May 2026 and early 2027, respectively). We therefore assume reporting costs and benefits would not occur until reporting year 2027.

2.3.6 Expanding documentation requirements (Chapter 173-441 WAC)

Baseline

The baseline greenhouse gas reporting rule requires EPEs to retain documentation of e-tags, power contracts, settlements data, and all other relevant information to confirm procurements and deliveries, for verification.

Adopted

The rule amendments add documentation requirements for any other reports provided by the market operator to the EPE documenting electricity attributed to WA for which that EPE is the deemed market importer.

Expected impact

This rule amendment will result in minor costs of retaining additional documents, as well as benefits of maintaining verifiable records underlying greenhouse gas emissions reporting.

2.3.7 Specifying greenhouse gas emissions equations and applicability (Chapter 173-441 WAC)

Baseline

Under the baseline greenhouse gas reporting rule, greenhouse gas emissions must be calculated for specified sources using the equation in WAC 173-444-040(4), where emissions are the product of the number of MWh and 0.437 MT CO₂e/MWh.

The baseline rule also requires calculation of greenhouse gas emissions for specified sources using an equation provided in rule.

Adopted

The rule amendments remove the reference to WAC 173-444-040(4), and replace it with a numerically equivalent equation in which emissions are the product of the number of MWh, an unspecified emissions factor, and a transmission loss multiplier. The unspecified emissions factor is 0.428 MT CO₂e/MWh, and the transmission loss multiplier is 1.02. The simplified equation is therefore MWh multiplied by 0.437, equivalent to the baseline equation.

The rule also specifies that the equation for specified electricity emissions also applies to specified electricity deemed, designated, assigned, or attributed by a CEM.

Expected impact

We do not expect this rule amendment to result in costs or benefits, beyond clarity in which equation must be used facilitating compliance. This is because the equation is numerically equivalent to the baseline equation in Chapter 173-444 WAC.

2.3.8 Amending requirements for registration of import or export sources (Chapter 173-441 WAC)

Baseline

The baseline greenhouse gas reporting rule requires reporters of specified facilities or units for imported or exported electricity to register their anticipated specified sources to be provided corresponding emissions factors, by March 31 of each year. If they miss the registration deadline for submitting a certificate of representation for a designated representative for the reporter (60 days before reporting deadlines), they must use the emissions factor provided by Ecology.

The baseline rule also specifies required registration information, and whether emissions are from new facilities or additional capacity at existing facilities, for specified facilities or units of imported or exported electricity.

Adopted

Under the rule amendments, deemed market importers are included in the types of specified facilities or units required to register their anticipated specified sources, by a registration deadline of February 1st of each year.

The amendments also add required information to be provided for registration, and specify that EPEs must be able to demonstrate that the market operator designated, assigned, deemed, or attributed the energy from those sources to WA.

Finally, the amended rule requires EPEs to provide settlement records or other documentation requested by Ecology, by May 1 of each year.

Expected impact

These rule amendments are likely to result in additional or expanded reporting costs. They also contribute to benefits of:

- Accurate identification of electricity imports from centralized markets and who is importing that power.
- Participation and development of CEMs.
- Data collection supporting the state's statutory goals related to greenhouse gas emissions tracking, planning, and reductions.

2.3.9 Making changes without material impacts (Chapter 173-441 WAC)

Baseline

The baseline greenhouse gas reporting rule requires EPEs to report imports and exports in MWh disaggregated by the first point of receipt or final point of delivery, and to separately report imports and exports from unspecified sources, the EIM, and each specified source.

It also requires EPEs that report electricity from unspecified sources to report when unspecified power came from the EIM.

Adopted

The rule amendments clarify that point of receipt and point of delivery reports must use an e-tag code only where applicable. They also delete the requirement to report when unspecified power came from the EIM.

Expected impact

These amendments are not likely to result in costs or benefits as compared to the baseline, beyond clarity. Since e-tag codes are not applicable to all power transactions, the clarification that they must be used only when applicable would reduce confusion for covered entities.

Under the collective rule amendments, the requirement to report unspecified power from the EIM would become obsolete, and so its removal would not have material impact given the other amendments would collect necessary information about specified imports from CEMs.

2.3.10 Adding definitions consistent with the greenhouse gas reporting rule (Chapter 173-446 WAC)

Baseline

The baseline CCA rule contains multiple definitions related to the scope, structure, function, and requirements of the Cap-and-Invest Program. It does not include definitions of new terms that this rulemaking also adds to the greenhouse gas reporting rule, including “centralized electricity markets” and “deemed market importer”.

Adopted

These rule amendments add definitions to the CCA rule, to make it consistent with amendments to the greenhouse gas reporting rule. It defines the following by explicit reference to the reporting rule:

- Centralized electricity market.
- Deemed market importer.

Expected impact

These amendments facilitate consistency between terms in the CCA rule and greenhouse gas reporting rule. Definitions do not, in and of themselves, have impact beyond how the defined terms are used in the rule. Where definitions inform the coverage, scope, or type(s) of impacts under the rule amendments, costs and benefits associated with those sections of the rule, below, include the relevant baseline and amended definitions.

2.3.11 Amending covered emissions to reflect electricity imported from CEMs (Chapter 173-446 WAC)

Baseline¹⁰

The baseline CCA rule defines emissions that are covered under the Cap-and-Invest Program, beginning with reported emissions under the greenhouse gas reporting rule, and modifying those reported emissions to only those that are not exempt and are covered by the program. This includes allotment provisions to avoid double-counting emissions or counting emissions the rule does not apply to.

¹⁰ Note that in the Preliminary Regulatory Analyses for this rulemaking (Ecology publication no. 24-14-052), Ecology also discussed allocation of no-cost allowances to utilities serving retail electricity as part of the baseline. Over the course of this rulemaking, improved understanding of the context and process for allocating these no-cost allowances has developed, and we identified that the allocation process is not part of the context for changes resulting from the amended rules. Nonetheless, we believe it is informative for readers to reiterate the purpose and function of those allocations, so we have moved discussion of them to Section 3.3.

As part of those provisions, the CCA rule specifically states that it, “provides details on allotment for covered emissions that are potentially attributable to multiple parties and provides direction for allotment when such emissions may be reported by multiple facilities, suppliers, or first jurisdictional deliverers of electricity.” It also notes that it only describes the process for determining which covered or opt-in entity is responsible for a given metric ton of covered emissions after exemptions are accounted for, and does not expand the definition of covered emissions itself.

The subsection relevant to this rulemaking defines the allotment of covered emissions for first jurisdictional deliverers of imported electricity:

- Emissions from imported electricity are covered for the first jurisdictional deliverer that is importing electricity.
- If the importer is a federal power marketing administration that is not voluntarily complying with the Cap-and-Invest Program, the importer is the next purchaser-seller on the e-tag. Otherwise, the importer is the utility receiving the electricity or the generation balancing authority.
- If the importer is a federal power marketing administration that is voluntarily participating in the Cap-and-Invest Program, then the utilities buying from it may provide (by agreement) that the federal power marketing administration is assuming the compliance obligation for emissions from the imported electricity.
- For the first compliance period (2023-2026), the importer for electricity from the EIM is the purchaser in WA that receives it. If the first jurisdictional deliverer generates and has a compliance obligation for the electricity that is transferred through the EIM, and that electricity is then delivered into WA, there is no second compliance obligation for it.

The baseline CCA rule also specifies that Ecology may adjust covered emissions based on new reported information, new assigned emissions levels, or to compensate for changes in methodology.

Adopted

The rule amendments include the following changes to the baseline covered emissions discussed above, to allocate covered emissions (and resulting compliance obligations) for electricity imported from CEMs:

- Importers are identified using the greenhouse gas reporting rule.
- If the importer is a federal power marketing administration, it may voluntarily comply for either all sales into WA or for attributions to WA in a CEM for which it is a deemed market importer. In this case the federal power marketing administration takes on the associated compliance obligation.¹¹

¹¹ This specification is based in Engrossed Second Substitute Senate Bill 6058 (“Carbon market linkage – California-Québec carbon market”; Chapter 352, Laws of 2024, Sec. 11). The act takes effect January 1, 2025 only if Initiative Measure No. 2117 is not approved by a vote of the people in the 2024 general election.

- Requirements related to EIM power during the first compliance period are deleted.
- The compliance obligation is only determined once for electricity from an electric generating facility in WA that is sold into a CEM, and is then assigned, designated, deemed, or attributed back into WA by that market.

Expected impact¹²

These amendments, in combination with amendments to the greenhouse gas reporting rule, establish a point of regulation for accounting for emissions associated with specified sources of electricity imported through CEMs. Ecology will assign these obligations to those entities identified as CEM importers, distributing compliance obligations in line with actual importing behavior. This may, in some circumstances result in new compliance costs associated with new compliance obligations, to the degree electricity use grows and imported electricity from greenhouse gas-emitting resources delivered by CEMs serves that need. In reality, electricity imported through CEMs will not necessarily create new compliance obligations. This is because electricity generating resources in WA may also participate in CEMs, CEM imports may either be additional to or displace other resources serving WA load, and CEMs will facilitate increased use of non-emitting resources in a price-competitive way.

This means we cannot confidently assert that the rule will result in either:

- No compliance costs from additional compliance obligations (e.g., if CEM imports displace existing sources or only non-emitting resources are used), or
- Compliance costs associated with new compliance obligations for all growth in electricity use (e.g., if all electricity sector emissions growth came from CEM imports).

Actual costs will likely be between these scenarios. Similarly, any associated emissions reductions incentivized by any new compliance obligations will be at a comparable scale. We discuss this uncertainty and potential scenarios in chapters 3 and 4.

Based specifically on rule language related to regulatory timing and transition, EIM importers are not likely to be considered deemed market importers for reporting years 2023-2026. Since only deemed market importers will be required to report emissions associated with specified power CEM imports, this means the above costs and benefits associated with any potential new compliance obligations, or any redistribution of existing compliance obligations across entities (not resulting in aggregate costs or benefits) will not occur until the 2027 reporting year. Similarly, these costs and benefits will not occur for imports from future CEMs such as EDAM and Markets+ until after they launch operations (currently expected in May 2026 and in 2027,

¹² Note that in the Preliminary Regulatory Analyses for this rulemaking (Ecology publication no. 24-14-052), Ecology also discussed allocation of no-cost allowances to utilities serving retail electricity as an impacted context for the rule amendments. Over the course of this rulemaking, improved understanding of the context and process for allocating these no-cost allowances has developed, and we identified that the allocation process is not part of the context for changes resulting from the amended rules. Nonetheless, we believe it is informative for readers to reiterate the purpose and function of those allocations, so we have moved discussion of them to Section 3.3.

respectively). We therefore assume these costs and benefits will not occur until reporting year 2027.

Chapter 3: Likely Costs of the Rule Amendments

3.1 Introduction

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

3.2 Cost analysis

The rule amendments:

- Amend reporting requirements in the greenhouse gas reporting rule (Chapter 173-441 WAC):
 - Amending the definition of “Electric Power Entity” (EPE).
 - Changing annual report submission requirements.
 - Adding, removing, or changing definitions specific to EPE reporting requirements.
 - Expanding data requirements and calculation methods from the EIM to all CEMs.
 - Specifying how EPEs must report imported CEM electricity.
 - Expanding documentation requirements.
 - Specifying greenhouse gas emissions equations and applicability.
 - Amending requirements for registration of import or export sources.
 - Making changes without material impacts:
 - Clarify language and update terminology.
 - Remove obsolete requirements and language.
- Amend the CCA rule (Chapter 173-446 WAC):
 - Adding definitions consistent with the greenhouse gas reporting rule.
 - Amending covered emissions to reflect electricity imported from CEMs.

Analytic approach

While the impacts of many rulemakings can be divided into costs and benefits of each amendment to a rule, this rulemaking includes multiple amendments across two rules, that work in concert to affect covered parties. As a result, we have grouped costs (and benefits; see Chapter 4) into three categories:

1. Reporting and necessary underlying compliance behaviors:
 - Costs of electricity tracking.
 - Costs and benefits of documentation and recordkeeping.

- Costs of reporting.
 - Benefits of electricity tracking and reporting.
2. Potential for new compliance obligations:
 - Costs of meeting any newly assigned compliance obligations.
 - Benefits of any new incentives to reduce emissions.
 3. Centralized electricity market function:
 - Benefits of clear requirements and expectations.

While parts of the categories above could be roughly grouped by whether they are amendments to the greenhouse gas reporting rule or the CCA rule, some impacts are likely to arise from amendments to both rules. For example, amendments to the reporting rule may result in a specific cost, while corresponding benefits may come from those amendments in conjunction with amendments to the CCA rule.

3.2.1 Costs: Reporting and underlying behaviors

3.2.1.1 CEM impacts

The rule amendments will affect the types of tracking infrastructure, processes, and documentation used by CEMs when electricity is imported into WA. While the amendments specify needs particular to the WA reporting rule and CCA rule, we note that there are multiple baseline attributes, requirements, and initiatives that make it difficult to tell what, if any, difference the rule amendments would make to how CEM market operators support participating EPE compliance with WA rules and laws. These include:

- Pre-planning initiatives and enhancements based on WA statutory requirements.¹³
- Existing needs to facilitate transactions across zones that have or do not have compliance costs associated with greenhouse gas emissions.
- Facilitation of transactions across states with different regulatory requirements.
- Existing forecasting, tracking, and documentation processes.

We note also that there is significant uncertainty about future CEM participation and distribution of participants, as multiple markets are poised to operate in WA. The business decisions of large electricity providers such as the Bonneville Power Administration (BPA) also potentially affect the degree, scope, planning, and timing of any adjustments or enhancements CEMs may need to make.

Overall, multiple aspects of CEM processes are likely to change over time to meet ongoing needs of market participants. As a result, we do not expect the rule amendments to

¹³ See, for example: CAISO, 2022. Washington State Western Energy Imbalance market Greenhouse Gas Enhancements. Issue Paper/Straw Proposal. August 17, 2022; CAISO, 2022. Washington State Western Energy Imbalance market Greenhouse Gas Enhancements. Draft Final Proposal. September 22, 2022.

significantly impact existing needs and plans as compared to the baseline. In the absence of the rule amendments, CEMs are likely to develop suitable approaches as necessary to meet the needs of market participants and CEM efficiency and cost-savings goals. Although these may differ from those developed under the rule amendments, they are not necessarily differentiable in terms of effort or cost.

3.2.1.2 Electricity importer compliance¹⁴

To estimate the recordkeeping and reporting costs electricity importers would face under the amended rules, as compared to the baseline, we considered the number of current and potential future importers through CEMs.

Low-end estimate

It is likely that the rule amendments will result in additional tracking and reporting costs for deemed market importers participating in CEMs. To estimate the number of potential entities impacted, we identified:

- 24 EIM participants (current or expected to enter by 2026).¹⁵
- 5 entities that had agreed or signaled interest of joining EDAM.¹⁶
- Approximately 20 potential resource owners participating in Markets+ Phase One development¹⁷ as a proxy for potential future participation.

Of the above, 35 are unique entities, and we estimate approximately 30 could have generating resources outside of WA.

Based on the California Air Resources Board's (CARB's) 2018 rulemaking that adjusted requirements for reporters,¹⁸ including those that import energy via CEMs, we assumed reporters would incur average reporting costs of:

¹⁴ Note that in the Preliminary Regulatory Analyses for this rulemaking (Ecology publication no. 24-14-052), Ecology considered only the worst-case scenario in which costs are borne by utilities. In the development of this FRA, we identified that estimating a range of costs and discussing the likelihood of various scenarios is more appropriate to capture the full scope of potential outcomes given uncertainty about future covered entity behavior.

¹⁵ California ISO, 2024. Western Energy Markets. About. <https://www.westerneim.com/Pages/About/default.aspx>

¹⁶ California ISO, 2024. California ISO Secures Portland General Electric's Formal Commitment to Join the Extended Day-Ahead Market. News release, 07/02/2024. <https://www.caiso.com/about/news/california-iso-secures-portland-general-electrics-formal-commitment-to-join-the-extended-day-ahead-market#:~:text=In%20addition%20to%20PGE%2C%20PacifiCorp,Water%20%26%20Power%20and%20NV%20Energy.>

¹⁷ Southwest Power Pool, 2024. Markets+, Phase One. <https://www.spp.org/western-services/marketsplus/>

¹⁸ California Air Resources Board, 2018. Staff report: Initial statement of reasons. Public hearing to consider the proposed amendments to the regulation for the mandatory reporting of greenhouse gas emissions. (Updated to current dollars using US Bureau of Labor Statistics, 2024. Consumer price index.) We note that additional reporting costs were included in this report, reflecting costs of approximately \$5,000-7,000 to new reporters that would not report at all under their baseline, and would therefore face additional verification costs under the amended rule. In the context of our rulemaking, this would apply to importers that exclusively import power through CEMs and do not have any other covered emissions resulting from their electricity supply portfolio. We do not believe this is

- \$974 in the first year of reporting.
- \$487 in subsequent years.

As discussed in Chapter 2, we do not expect costs to be incurred until 2027.

Assuming all identified potential CEM participants with generating resources outside of WA began incurring costs in 2027, total estimated annual costs began at about \$29,000 for 2027 and fell to about \$15,000 in subsequent years. When considering flows of costs over time, Ecology calculates the present value of costs. A present value discounts future dollar values into current dollars, accounting for both inflation and the opportunity cost of having funds later instead of now.¹⁹ We estimated the 20-year present value cost of additional reporting effort as approximately \$261,000 over 20 years.

High-end estimate

It is possible that the point of compliance may be passed down to retail utilities, if a federal power marketing administration does not choose to opt in as a deemed market importer.²⁰ To capture this higher-cost scenario, we estimated reporting costs if they occurred at the utility level. We applied a range of estimated costs to different numbers of utilities, based on whether they currently report EIM imports, currently report emissions (as they emit more than the reporting threshold of 10,000 MT CO₂e), or don't currently report (emit below the threshold).

We identified 21 existing electric power entity (EPE) reporters that reported purchases from the EIM in 2022.²¹ We also identified a total of 30 EPE greenhouse gas emissions reporters.²² Finally, we identified 53 utilities in the state based on lists of regulated entities listed or identified by the WA Utilities and Transportation Commission (UTC).²³

WA is forecasted to significantly increase electricity consumption over coming decades, as well as need to significantly increase electricity imports to meet this demand.²⁴ To avoid underestimating additional reporting costs under the rule amendments, we assumed that over the next 20 years, all 53 identified EPEs could become importers (potentially, if they purchase

likely, however, as EPEs are likely to meet increasing demand over time by mixing various power sources including energy purchases from the Bonneville Power Administration, which carries a diversified generation and purchase portfolio.

¹⁹ Present values calculated using a 1 percent discount rate based on the 20-year historic average real rate of return on I Bonds. US Treasury Department, 2024. I bonds interest rates. Historic data collected twice-yearly by Ecology since September 1998.

²⁰ For additional discussion of the rule amendments in the context of this scenario, see Section 6.3.8.

²¹ Data reported to Ecology under WAC 173-441-124(3)(a)(v), which requires reporting entities to separately report power obtained from the Energy Imbalance Market. Note: EIM-related reporting was not available for other years.

²² Ibid.

²³ WA Utilities and Transportation Commission, 2024. Energy Resources List. <https://www.utc.wa.gov/regulated-industries/utilities/energy/energy-resources-list>. See list of Northwest Utilities – Electric Utilities, and underlying utility members of the WA Public Utility Districts Association (see <https://www.wpuda.org/about-puds>) and the WA Rural Electric Cooperative Association (see <https://www.wreca.coop/members/>)

²⁴ WA Department of Commerce, 2021. Washington 2021 State Energy Strategy. Updated in WA Department of Commerce, 2023. 2023 Biennial Energy Report.

power from a federal power marketing administration that does not opt into the program as a deemed market importer, and that electricity is purchased through a CEM). We assumed:

- Since the 21 identified EIM energy importers are already purchasing CEM electricity, they will continue to do so.
- The 9 EPEs that emit more than 10,000 MT CO₂e, but do not currently report EIM purchases, will begin purchasing imported CEM electricity beginning in the second year.
- The 20 remaining EPEs will need to increase delivery of electricity and begin purchasing imported CEM electricity, but since their emissions are currently below 10,000 MT CO₂e, they will not meet reporting thresholds until after the 9 additional EPE reporters above.

As this scenario would move from 21 utilities to 53 over 20 years, we assumed an average of 2 new utilities per year.

Based on the California Air Resources Board's (CARB's) 2018 rulemaking that adjusted requirements for reporters,²⁵ including those that purchase energy offered via CEMs, we assumed reporters would incur average reporting costs of:

- \$974 in the first year of reporting.
- \$487 in subsequent years.

As discussed in Chapter 2, we do not expect costs to be incurred until 2027. Starting that year, we calculated total new reporting costs by year.

Total estimated annual costs varied by year, ranging overall between \$14,124 to \$26,786, depending on the number of impacted utilities in a given year, and whether it is their first year of reporting imports from CEMs. When considering flows of costs over time, Ecology calculates the present value of costs. A present value discounts future dollar values into current dollars, accounting for both inflation and the opportunity cost of having funds later instead of now.²⁶ We estimated the 20-year present value cost of additional reporting effort as approximately \$368,000 over 20 years.

3.2.1.3 Sources of uncertainty

²⁵ California Air Resources Board, 2018. Staff report: Initial statement of reasons. Public hearing to consider the proposed amendments to the regulation for the mandatory reporting of greenhouse gas emissions. (Updated to current dollars using US Bureau of Labor Statistics, 2024. Consumer price index.) We note that additional reporting costs were included in this report, reflecting costs of approximately \$5,000-7,000 to new reporters that would not report at all under their baseline, and would therefore face additional verification costs under the amended rule. In the context of our rulemaking, this would apply to importers that exclusively import power through CEMs and do not have any other covered emissions resulting from their electricity supply portfolio. We do not believe this is likely, however, as EPEs are likely to meet increasing demand over time by mixing various power sources including energy purchases from the Bonneville Power Administration, which carries a diversified generation and purchase portfolio.

²⁶ Present values calculated using a 1 percent discount rate based on the 20-year historic average real rate of return on I Bonds. US Treasury Department, 2024. I bonds interest rates. Historic data collected twice-yearly by Ecology since September 1998.

One of the goals of this rulemaking is to establish a reporting structure that provides comprehensive information about electricity imports from centralized markets, and about their associated greenhouse gas emissions. This comprehensive data does not currently exist. As such, there are multiple factors that introduce uncertainty to our cost estimates for reporting:

- Growth in importers:
 - Currently, Ecology has data on MWh imported from the EIM for data year 2022, and we used this as one starting point for cost estimates in the previous section. It is likely that imports will grow, as electricity demand in the state increases substantially over time. At the same time, WA will have access to more centralized markets over time, with the likely addition of CAISO's Extended Day-Ahead Market (EDAM) and the Southwest Power Pool's Markets plus (Markets+) centralized markets.
 - This increase in imports will likely increase the number of importers, as well as the amounts of energy imported, but we cannot predict the extent to which the number of importers will grow over time, versus larger increases in individual reporters' MWh imported. This will depend on the internal business decisions of each importer.
- Distribution of imports and reporting effort:
 - We based reporting cost estimates on average reporting costs per importer. For reporters offering significantly larger quantities of imports, or from a complex set specified sources, the effort to track, report, and maintain documentation may be larger. Similarly, for reporters with limited quantities of imports, this effort may be smaller.
 - The decisions of large market participants, such as a federal power marketing administration, to participate in CEMs could also affect the distribution of reporting costs.

3.2.2 Costs: Potential for new obligations

To estimate costs associated with potential new compliance obligations established and assigned under the rule amendments, we considered current imports, potential growth trajectories over time, and potential allowance price profiles. There is considerable uncertainty about whether future CEM imports will add to compliance obligations, rather than redistribute obligations from where they would be assigned under the baseline (e.g., if they are covered as baseline generation sources) and/or be largely renewable and non-emitting. Here, we include a range of potential scenarios for compliance obligations, including discussion of their likelihood.

3.2.2.1 Electricity imports over time

Based on the 2022 reporting year, EPEs in WA purchased 353,550 MWh of electricity from the EIM.²⁷ As a share of total current electricity consumption in the state, this is approximately 0.4 percent.²⁸ There is no current method of data collection that identifies the greenhouse gas emissions associated specifically with these imports. The WA Department of Commerce (Commerce) estimates that electricity use will double by 2050, and need about half of this electricity to be provided via imports.²⁹

At the same time, the 2019 Clean Energy Transformation Act (CETA; SB 5116, 2019³⁰) commits the state to an electricity supply free of greenhouse gas emissions by 2045. CETA applies to all electric utilities serving retail customers in the state. It requires them to:³¹

- Phase out coal-fired electricity by 2025.³²
- Have greenhouse gas emissions neutral portfolios (serving some load with natural gas, but offsetting those emissions with other actions) by 2030.
- Supply electricity that is entirely renewable or non-emitting (without offsets) by 2045.

This means as electricity consumption and imports increase significantly over time, emissions associated with them must nonetheless decrease under the baseline.

To estimate greenhouse gas emissions in the state coming from electricity consumed in the state, we began with inventoried 2020 emissions from the electricity sector of 14.2 million MT CO_{2e},³³ and then approximated a linearly declining, CETA-compliant trajectory of emissions over time – to zero greenhouse gas emissions in 2045.³⁴

The share of emissions associated with imported electricity provided via CEMs is highly uncertain. These markets present opportunities for WA to import more electricity from states

²⁷ Data reported to Ecology under WAC 173-441-124(3)(a)(v), which requires reporting entities to separately report power obtained from the Energy Imbalance Market. Note: EIM-related reporting was not available for other years.

²⁸ US Energy Information Administration, 2022. State Electricity Profiles. Release date: November 2, 2023. <https://www.eia.gov/electricity/state/>; US Department of Energy, 2015. State of Washington Energy Sector Risk Profile.

²⁹ WA Department of Commerce, 2021. Washington 2021 State Energy Strategy. Updated in WA Department of Commerce, 2023. 2023 Biennial Energy Report.

³⁰ Chapter 288, Laws of 2019. <https://lawfilesexternal.wa.gov/biennium/2019-20/Pdf/Bills/Session%20Laws/Senate/5116-S2.SL.pdf?q=20210822161309>

³¹ See <https://www.commerce.wa.gov/growing-the-economy/energy/ceta/ceta-overview/> for more information and links about CETA.

³² We note that while CETA requires utilities to phase out use of coal-generated resources, CETA does not include coal-fired resources from a limited-duration wholesale retail purchase. This means utilities could continue to import coal-generated electricity from out of state resources through CEMs.

³³ WA Department of Ecology, 2022. Washington State Greenhouse Gas Inventory 1990-2019. Table 4. Washington total annual GHG emissions. Note: This table provides 2020 emissions for “Electricity, net consumption-based”.

³⁴ In the Preliminary Regulatory Analyses for this rulemaking (Ecology publication no. 24-14-052, we considered a past forecast of total emissions from electricity consumption, adjusted to reflect CETA requirements. Over the course of developing this analysis, however, we identified that some of those estimates were not necessarily consistent with the most recent greenhouse gas emissions inventory for electricity used in WA. We have therefore revised our methodology to account for more recent data.

with periods of excess renewable electricity generation from sources such as wind and solar. So on the low end, imports from CEMs could be largely or fully renewable electricity. On the high end, imports could theoretically reflect the majority of future greenhouse gas emissions if in-state production and contracted imports (outside of CEMs) shift entirely to renewable sources while CEM imports do not. We do not believe the latter is a likely scenario, as one of the benefits of efficiently operating CEMs is providing an avenue for increased availability of non-emitting resources at price-competitive rates (see discussion in Chapter 4).

Low-end estimate³⁵

While it is possible that imports through CEMs could shift toward being entirely non-emitting, and for the rule amendments to only redistribute baseline compliance obligations to newly identified deemed market importers (shifting the point of compliance), we acknowledge that there may be some portion of greenhouse gas-emitting imports that will be additional to those that are covered as coming from generating resources under the baseline.

To estimate the likely potential for the rule amendments to result in any additional compliance obligations, we considered a scenario in which the proportion of total greenhouse gas emissions resulting from electricity imported through CEMs remains constant over time. While we know that currently reported CEM purchases are approximately 0.4 percent of total electricity used in the state, we do not know the associated share of electricity GHG emissions they represent. For this lower-end estimate, we made the simplifying assumption that they also represent 0.4 percent of total emissions. This could reflect a scenario in which:

- CEMs are new avenues for electricity whose existing emissions are already otherwise covered under the baseline rules.
- Additional CEM imports are largely non-emitting.

This resulted in emissions of between approximately 45,000 MT CO₂e in 2027 and decreasing to zero by 2045 of greenhouse gas emissions associated with electricity imports through CEMs in a given year.

We note that in this scenario, baseline compliance obligations would be redistributed to different points of compliance (to the deemed market importer). So some entities could experience an increase in their compliance obligations, while others have lower compliance obligations or no longer have any. These transfers are not apparent in an aggregate approach, but we discuss impacts on different sizes of business in Chapter 7 of this document.

High-end estimate

For a high-end estimate, we choose to make the conservative assumption that emissions from specified electricity imports through CEMs would become similar to those currently in other

³⁵ Note that in the Preliminary Regulatory Analyses for this rulemaking (Ecology publication no. 24-14-052), Ecology considered only a worst-case scenario in which emissions from CEM imports continue as a proportion of total emissions over time. In the development of this FRA, we identified that estimating a range of costs and discussing the likelihood of various scenarios is more appropriate to capture the full scope of potential outcomes given uncertainty about future electricity market behavior.

markets. For 2022, CARB identified specified imports that were approximately 14 percent of total emissions in the electricity sector.³⁶ This captures, in part, a different mix of generating resources for imports (through CEMs or otherwise), but does not capture future prospects such as increased renewable generation capacity available through CEMs over time. For this estimate, we assumed that imports would grow from generating 0.4 percent of emissions in the low-end scenario (recall, this was based on the simplifying assumption that the proportion of electricity imported via CEMs was also their proportion of greenhouse gas emissions) to align with the 14 percent in California.

This resulted in between approximately 44,000 and 408,000 MT CO₂e of greenhouse gas emissions associated with electricity imports from CEMs in a given year, varying by year over the next 20 years. We emphasize that these estimates are based on the simplifying proportional assumptions above, and these numbers are likely to be lower if electricity imported from CEMs relies more heavily on renewable and non-emitting sources. Given that is one of the benefits of efficiently functioning CEMs, and that CEMs will likely become an avenue for trading in electricity whose emissions are already captured under the baseline, we do not believe this high-end scenario is a likely outcome of the rule amendments.

3.2.2.2 Allowance prices over time

The prices of greenhouse gas allowances in the CCA Cap-and-Invest program are also uncertain over time, with additional uncertainty currently created by:

- Uncertain expectations formed by market participants.
- Potential linkage of the WA market with the California-Québec market.
- CARB's consideration of changes to the California cap-and-trade market.

We therefore considered a range of assumed prices, based on past modeling of allowance market trajectories and adjusted assumptions based on new information or intended to account for some of the uncertainty above, including potential allowance market linkage. Overall, assumed prices ranged from approximately \$30 to \$180 in a given year over the next 20 years.

3.2.2.3 Total costs

Multiplying allowance prices by the range of estimated greenhouse gas emissions associated with electricity imports from CEMs, we estimated total annual costs (aggregated across all CEM importers) of between:

- Low estimate: \$137,000 to \$4.2 million.
- High estimate: \$4.5 million to \$65.7 million.

³⁶ California Air Resources Board, 2023. California Greenhouse Gas Emissions from 2000 to 2021: Trends of Emissions and Other Indicators. Figure 5. 2022 GHG Emissions by Scoping Plan Sector and Sub-Sector. Underlying dataset provided by CARB.

Total costs increase in the high-end estimate as a larger proportion of greenhouse gas emissions is assumed to come from CEM imports, and fall over time as the decrease in total greenhouse gas emissions outweighs CEM import growth.

When considering flows of costs over time, Ecology calculates the present value of costs. A present value discounts future dollar values into current dollars, accounting for both inflation and the opportunity cost of having funds later instead of now.³⁷ We estimated the 20-year present value cost of new compliance obligations as between:

- Likely estimate: \$25.6 million to \$46.4 million over 20 years.
- High-end estimate (unlikely): \$357 million to \$671.6 million over 20 years.

Due to the multiple sources of uncertainty related to CEM importer behavior, CEM import growth, and associated greenhouse gas emissions (see discussion in the next section), we estimated this broad range of costs reflecting a range of possibilities. Actual outcomes and impacts are likely within this range, but we are unable to specify where. We believe, however, that given the benefits of CEM participation as relates to cost-effectively importing more renewable and non-emitting electricity into WA, that the likely costs are in lower segments of the range.

We note again that our aggregate approach does not capture the degree to which compliance obligations under the baseline (e.g., associated with generating resources already assigned obligations) might be redistributed under the amended rules. Because the amended rules shift the point of compliance to deemed market importers, baseline compliance obligations may shift in part or entirely to those importers and away from in-state generating entities and current electricity importers that incur obligations under the baseline if electricity they provide is instead imported via CEMs.

3.2.2.4 Sources of uncertainty

As discussed above, there is uncertainty in both the quantity of imports from CEMs, as well as in allowance prices. We estimated costs of potential new compliance obligations in the aggregate (the total across the state), as substantial uncertainty also exists about how many how much electricity will be imported via CEMS, what the generating resources of that electricity will be, and what the resulting greenhouse gas emissions will be.

- Redistribution of baseline: We are not currently able to confidently identify the extent to which emissions covered under the baseline (e.g., as generating resources) will have electricity offered through CEMs over time, for which the amended rules may redistribute compliance obligations without creating new ones:
- CEM participation: The distribution of compliance obligation costs across importers will depend on the number of importers. If large marketer entities, such as a federal power marketing administration, choose to participate in a CEM, and would also take on the

³⁷ Present values calculated using a 1 percent discount rate based on the 20-year historic average real rate of return on I Bonds. US Treasury Department, 2024. I bonds interest rates. Historic data collected twice-yearly by Ecology since September 1998.

associated compliance obligation, they would incur larger costs than average. As a result, smaller entities with which they do business would not incur these compliance costs and administrative costs of reporting and compliance. (Note that compliance costs may be passed on through wholesale electricity prices as well. These potential costs to consumers would be offset by allocations of no-cost allowances to retail utilities. See Section 4.2.2 for discussion of this baseline function of the CCA.)

- **Importer volumes:** The distribution of costs across importers will also depend on how much electricity each offers through a CEM. Larger volumes (if the electricity comes from greenhouse gas-emitting sources; see next bullet) would be associated with a larger compliance obligation and higher total cost. Smaller volumes would have a lower total cost.
- **Electricity sources:** We cannot predict the resources that will be assigned or deemed to WA by the methods established by the market operator of each CEM. This would impact the proportion (and quantity) of greenhouse gas emissions associated with CEM imports. If resources assigned by CEMs are largely renewable or non-emitting, costs would be lower. Conversely, if those resources largely emitted greenhouse gases, costs would be higher. Ultimately, due to CETA requirements, a larger proportion of imports would need to be non-emitting or renewable over time. But electricity dispatches based on CEM cost-effectiveness and efficiency goals, as well as the type of electricity being offered at any given time, make it difficult to predict which resources will be used.

3.2.3 Costs: Centralized electricity market function

We do not expect the rule amendments related to compliance obligations to result in compliance costs to CEMs, as compared to the baseline. CEMs themselves will not be subject to compliance obligations. For discussion of CEM efforts to develop infrastructure aligned with the rule amendments, see Section 3.2.1.

3.2.4 Costs: Environmental justice

We do not expect the rule amendments to result in negative impacts in the context of overburdened communities and vulnerable populations. The amendments do not impose costs on these communities or populations. Further, we expect compliance costs that could otherwise be passed on to retail electricity consumers in some cases to be mitigated by the CCA program's allocation of no-cost allowances to retail electric utilities (see Section 3.3).

3.3 Mitigating ratepayer impacts

In section 230, the baseline CCA rule defines how no-cost allowances are distributed to electric utilities under the Cap-and-Invest Program. Allowances are a form of compliance instrument that can be used to satisfy compliance obligations for greenhouse gas emissions. Utilities subject to the WA Clean Energy Transformation Act (CETA; Chapter 19.405 RCW) are eligible to receive no-cost allowances to:

- Use for compliance.
- Monetize by consigning them at quarterly auctions.

- Transfer them to eligible generation facilities or a federal system providing the utility power.
- Bank them for future use.

By allocating no-cost allowances to electric utilities, the CCA program helps them mitigate the impacts of the CCA program on their Washington ratepayers. All proceeds from the sale of no-cost allowances at auction must be used to benefit utility customers, with the first priority the mitigation of any rate impacts to low-income customers.

By providing no-cost allowance allocation, Ecology enables a utility to mitigate both direct compliance costs of the Cap-and-Invest Program, associated with a utility's own electricity imports and generation used to serve Washington customers, and indirect costs associated with purchases of electricity that are covered by the Cap-and-Invest Program upstream of the utility. These direct compliance costs and indirect costs contribute to the cost burden associated with the CCA program.

Allocation to each utility is based on estimates of this cost burden effect. The electric utility allocation method incorporates forecasts of each utility's retail electric load and resource supply to estimate potential annual cost burden from the CCA Program. Forecasts of resource supply projected to serve retail electric load are multiplied by applicable greenhouse gas emission factors for each resource type, and then summed.

The equation below summarizes the cost burden effect calculation.

$$\text{cost burden effect} = \sum(\text{load}_{\text{source type } i} * EF_{\text{source type } i})$$

Chapter 4: Likely Benefits of the Rule Amendments

4.1 Introduction

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

4.2 Benefits analysis

The rule amendments:

- Amend reporting requirements in the greenhouse gas reporting rule (Chapter 173-441 WAC):
 - Amending the definition of “Electric Power Entity” (EPE).
 - Changing annual report submission requirements.
 - Adding, removing, or changing definitions specific to EPE reporting requirements.
 - Expanding data requirements and calculation methods from the EIM to all CEMs.
 - Specifying how EPEs must report imported CEM electricity.
 - Expanding documentation requirements.
 - Specifying greenhouse gas emissions equations and applicability.
 - Amending requirements for registration of import or export sources.
 - Making changes without material impacts:
 - Clarify language and update terminology.
 - Remove obsolete requirements and language.
- Amend the CCA rule (Chapter 173-446 WAC):
 - Adding definitions consistent with the greenhouse gas reporting rule.
 - Amending covered emissions to reflect electricity imported from CEMs.

Analytic approach

While the impacts of many rulemakings can be divided into costs and benefits of each amendment to a rule, this rulemaking includes multiple amendments across two rules, that work in concert to affect covered parties. As a result, we have grouped benefits (and costs; see Chapter 3) into three categories:

1. Reporting and necessary underlying compliance behaviors:
 - Costs of electricity tracking.
 - Costs and benefits of documentation and recordkeeping.

- Costs of reporting.
 - Benefits of electricity tracking and reporting.
2. Potential for new compliance obligations:
 - Costs of meeting any newly assigned compliance obligations.
 - Benefits of any new incentives to reduce emissions.
 3. Centralized electricity market function:
 - Benefits of clear requirements and expectations.

While parts of the categories above could be roughly grouped by whether they are amendments to the greenhouse gas reporting rule or the CCA rule, some impacts are likely to arise from amendments to both rules. For example, amendments to the reporting rule may result in a specific cost, but corresponding benefits may come from those amendments in conjunction with amendments to the CCA rule.

4.2.1 Benefits: Reporting and underlying behaviors

The rule amendments will result in access to comprehensive data on greenhouse gas emissions associated with imports of specified electricity from CEMs. Informational benefits are difficult to quantify, as data and information are used to improve planning and implementation of regulatory programs.

The data collected as a result of the amendments will:

- **Improve greenhouse gas emissions tracking and accuracy:** The authorizing statute for the reporting rule (Chapter 70A.15 RCW) requires Ecology to adopt rules that require greenhouse gas emitters to report emissions if they are at least 10,000 MT CO₂e, and the baseline rule does this for most other greenhouse gas emissions, including most EPE emissions. While the baseline reporting laws and rules include coverage of emissions associated with electricity imported through CEMs, we are unable to practically quantify and assign responsibility for those emissions. The rule amendments create a structure that more fully achieves the objectives of the authorizing statute for the reporting rule, by specifying the requirements and processes for quantifying these emissions and identifying the deemed market importers that must report them.

Having a better understanding of these emissions will also facilitate the programs that rely on accurate greenhouse gas emissions data, as discussed in the following bullets. Consistency with, and support of, requirements under chapters 70A.45 and 70A.65 RCW are also objectives of the authorizing reporting statute.

- **Facilitate assigning compliance obligations:** The amendments to reporting requirements will allow Ecology to have accurate data to assign compliance obligations under the CCA rule. Without this data, we cannot accurately, consistently, and equitably identify CEM importers, or determine how much greenhouse gas was emitted during generation of that electricity. Under the baseline, these emissions are not accounted for in reporting

or in the Cap-and-Invest Program, as there is not yet a consistent process and approach to do so.

- Improve CCA program implementation and planning: The CCA law defines the scope of covered greenhouse gas emissions and tasks Ecology with implementing a cap on covered greenhouse gas emissions and a program to track, verify, and enforce compliance with the cap through use of compliance instruments. The overall goal is ensuring greenhouse gas emissions reductions consistent with the “Limiting Greenhouse Gas Emissions” law (Chapter 70A.45 RCW). To achieve this objective, Ecology needs comprehensive data on greenhouse gas emissions, which in turn requires clear and consistent processes and expectations for covered CEM importers, as well as consistent tracking infrastructure and documentation underlying that data.

4.2.2 Benefits: Potential for new incentives to reduce emissions

As discussed in Chapter 3, to estimate costs associated with potential new compliance obligations established and assigned under the rule amendments, we considered current imports, potential growth trajectories over time, and potential allowance price profiles. There is considerable uncertainty about whether future CEM imports will add to compliance obligations, rather than redistribute obligations from where they would be assigned under the baseline (e.g., if they are covered as baseline generation sources) and/or be largely renewable and non-emitting. In Chapter 3, we presented a range of potential scenarios for compliance obligations and discussed their likelihood.

Across the low-end and high-end scenarios, estimated emissions potentially assigned new compliance obligations compared to the baseline were:

- Low-end: Between approximately 45,000 MT CO₂e in 2027 and decreasing to zero by 2045 of greenhouse gas emissions associated with electricity imports through CEMs in a given year.
- High-end: Between approximately 44,000 and 408,000 MT CO₂e of greenhouse gas emissions associated with electricity imports from CEMs in a given year, varying by year over the next 20 years.

Recall that the estimates above were based on sets of simplifying assumptions about electricity imports from CEMs and their associated greenhouse gas emissions. (For details, see Section 3.2.2.) Over the entire 20-year timeframe of this analysis, the overall range of estimated quantities of emissions totaled between approximately 0.5 million and 5.6 million MT CO₂e.

If, in the aggregate, there are more new compliance obligations under the amended rules than under the baseline (versus reallocation of compliance obligations across different parties, based on who is identified as the first jurisdictional deliverer), there would be a net increase in allowance market demand. During time periods that this occurs, it may put some degree of upward pressure on allowance prices, and increase incentives to reduce emissions for entities whose marginal costs of greenhouse gas emissions abatement are lower than the new allowance price. The degree to which prices and greenhouse gas emissions reductions might adjust would depend on multiple aspects including but not limited to:

- Relative excess demand for allowances, including supply, demand, and banked allowances in other sectors.
- Expectations about the allowance market, prices, and the future.
- Individual entity marginal greenhouse gas emissions abatement costs and internal business decisions.
- Risk tolerance.
- Intertemporal decisions about allowance purchases, banking, and retirement.

Given market uncertainty in the factors above, compounded by uncertainty in the amended rule's potential to realistically generate an increase in compliance obligations compared to the baseline, we cannot estimate the degree to which the rule might affect allowance prices in the broader context of all covered parties and market participants. We emphasize, however, that any allowance price increases would be accompanied to some degree by additional greenhouse gas emissions reductions.

The value of greenhouse gas emissions reductions can be partially quantified using the Social Cost of Carbon (SCC). The SCC uses multiple climate and economic models together, to estimate the cost to society of each metric ton of CO₂ (or CO₂-equivalent) emitted in a specific year. The EPA's most-recent estimates of the SCC at a 1.5% discount rate (the closest to the one percent discount rate based on relatively risk-free returns on federal bonds we use in this analysis) begin at \$450 per MT CO₂e emitted in 2027, rising to \$554 per MT CO₂e emitted in 2045.³⁸ Given the potential allowance price paths modeled or considered for this analysis or for similar cap-and-trade markets (between roughly \$30 and \$180, these benefits of greenhouse gas emissions reductions are likely to exceed allowance price increases that happen due to increased demand or constrained supply.

Considering the likely and the high-end potential for the rule amendments to result in new compliance obligations discussed and estimated in Chapter 3, we can illustrate the associated total SCC with emissions for which there could be new compliance obligations. It is important to recall that:

- Faced with a new obligation, an importer can choose to either buy compliance instruments (allowances or offsets) or reduce emissions. They are likely to reduce emissions if their marginal cost of doing so is lower than what they would pay for compliance instruments. This means if the cost of reducing emissions is lower than purchasing compliance instruments (the costs estimated in Chapter 3), entities will instead spend less than we estimated to comply while also reducing the total SCC they impose.

³⁸ US Environmental Protection Agency, 2023. Supplementary Material for the Regulatory Impact Analysis for the Final Rulemaking, "Standards of Performance for new, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and natural Gas Sector Climate Review"—EPA Report on the Social cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances. November 2023. Updated to current dollars using U Bureau of Labor Statistics, 2024. Consumer Price Index.

- Emissions associated with imports through CEMs are covered emissions under the baseline law, and the rule amendments establish a mechanism and point of compliance to implement that coverage and assign compliance obligations.
- Incentive to reduce emissions does not necessarily mean those emissions will be reduced, as it depends on each importer's individual business decisions and marginal costs of reducing emissions.
- Emissions reductions are facilitated by efficiently functioning CEMs as discussed in Section 4.2.3.

The total SCC associated with the potential quantities of emissions for which compliance obligations could be newly assigned under the amended rules would range from:

- Low-end estimate: \$173 million in present value over 20 years.
- High-end estimate: \$2.4 billion in present value over 20 years.

Since we cannot confidently estimate the degree to which allowance prices may adjust (uncertainties about market behavior are compounded by uncertainties about whether and how much the amended rules could result in new compliance obligations), we considered the quantities of emissions reductions that would be necessary for the quantified costs of compliance obligations to be outweighed by the quantified benefits of incentives to reduce emissions.

We note that entities that choose to reduce emissions would do so at a cost lower than paying for compliance instruments (allowances and/or offsets). Since we do not have data about each entity's marginal greenhouse gas abatement costs, we made the simplifying assumption that costs of emissions reductions are at most the same as allowance prices. This means the results presented below are likely to overestimate the needed reductions for benefits to exceed costs.

For the benefits of additional incentives to reduce emissions to exceed compliance costs, the number of MT of emissions reduced must be greater than total costs divided by the SCC. This estimation is additionally complicated by uncertainty about when emissions might be reduced or allowances might be purchased. Using the overall range of 20-year emissions potentially assigned new compliance obligations above, as well as the overall range of SCC between approximately \$450 and \$560 per MT CO_{2e},³⁹ we found the following range of approximate minimum emissions reductions:

- Low: 26,000 MT CO_{2e} (1,500 MT CO_{2e} per year, or 6 percent of additional obligations)
- High: 2.2 million MT CO_{2e} (120,000 MT CO_{2e} per year, or 46 percent of additional obligations)

Recall that the high-end estimates in this analysis reflect an unlikely scenario in which a higher proportion of GHG emissions from electricity come from imports through CEMs, despite CEM participation expanding cost-effective access to electricity from renewable and non-emitting

³⁹ Ibid.

resources. Recall also that these are likely overestimates, as they do not account for marginal abatement costs that are lower than allowance prices.

To understand the potential for emissions reductions within a realistic context, we might look to the ability of CEMs themselves to reduce emissions. The EIM was reported to reduce greenhouse gas emissions by over 900,000 MT CO₂e between 2014 and 2023.⁴⁰ This is an average of over 100,000 MT CO₂e, or the equivalent of 2 million MT CO₂e over 20 years. We discuss benefits of efficiently operating CEMs – including lower costs and reducing emissions – in the next section.

4.2.3 Benefits: Centralized electricity market function

It is not clear to what degree or how efficiently CEMs would be able to operate in WA under the baseline. This is because of complex and uncertain factors such as the baseline CCA law's requirements for covered emissions (including those from imported electricity, though Ecology is tasked with adopting a rule that specifies the process for their inclusion), the lack of a specified mechanism to identify deemed market importers, and potential difficulties EPEs that participate in CEMs could have in demonstrating compliance with the law. This could create enforcement challenges and undermine the effectiveness of regulatory oversight and Ecology's ability to ensure the state meets statutory greenhouse gas emissions reduction goals.

Market operators may also:

- Incur higher transaction costs under the baseline, due to a need for additional risk management measures.
- Encounter difficulties ensuring fair competition or preventing electricity market manipulation, due to a lack of clear guidance. This could reduce CEM efficiency and raise costs.
- Be reluctant to invest in infrastructure upgrades or new technologies, which could create gaps in market coverage. Where coverage is possible, it could still be inefficient, and carry risks of grid instability, congestion, or failure due to lacking infrastructure.

As a result, the adopted specifications of CEM importer identification and compliance obligation responsibility support EPEs and consumers receiving the benefits of CEMs operating in WA. These include:⁴¹

- Cost-efficiency and cost-savings. For example, CEM participants were estimated to receive various benefits of cost savings:
 - During the 4th quarter of 2023, EIM participants attained nearly \$400 million in cost-savings.⁴²

⁴⁰ California ISO, 2023. Western Energy Imbalance Market hits \$4.66 billion in total benefits. News release. 10/31/2023.

⁴¹ For more discussion and examples, see CAISO, 2022. Washington State Western Energy Imbalance market Greenhouse Gas Enhancements. Presentation, September 29, 2022.

⁴² CAISO, 2024. WEIM benefits report shows another historic milestone. News Release January 31, 2024.

- 2022 modeling of benefits of the EDAM estimated that the West could save over \$500 million per year in operating costs and similar annual savings from avoiding additional capacity investments.⁴³ Separate 2023 modeling estimated cost savings for five specific participants of nearly \$500 million annually.⁴⁴
- Improved availability and integration of renewable resources, and feasibility of efficiently meeting statutory greenhouse gas reduction goals.
- Improved grid reliability and matching of generating resources and demand.
- Reduced renewable resource curtailment when supply exceeds local demand.
- Improved allocation of emissions-generating resources that are more efficient.

Source switching – an illustration

Access to efficiently functioning CEMs in WA would facilitate switching to lower-emitting generation sources, whether they emit no greenhouse gases, or emit less if they still emit greenhouse gases. Using default emissions factors in the baseline CCA rule’s allocation of no-cost allowances, one MWh of electricity could emit the following amounts of greenhouse gases:⁴⁵

- Natural gas generation: 0.4354 MT CO₂e.
- Coal generation: 1.0614 MT CO₂e.
- Unspecified: 0.437 MT CO₂e.
- Renewable or non-emitting: 0 MT CO₂e.

If the rule amendments facilitate access to efficient CEMs, switching to renewable sources would save between 0.4354 and 1.0614 MT CO₂e per MWh in this example. We note that source switching is already expected to occur to a large degree under CETA requirements, but it may be more feasible or more cost-effective using CEMs with greater access to diversified or better-timed generating sources.⁴⁶ Depending on relative pricing, market participation could be incentivized, and could result in importers switching to specified renewables rather than unspecified resources. Using the EPA’s SCC values for a 1.5 percent discount rate⁴⁷, for example years 2030 and 2040, this would be a benefit to society of approximately:

- \$203 to \$495 per MWh of electricity switched in 2030.

⁴³ CAISO, 2024. EDAM: Extended Day-Ahead market fact sheet.

⁴⁴ Brattle, 2023. Extended Day-Ahead Market Benefit Study. Presentation August 30, 2023.

⁴⁵ Default emissions rates used in WAC 173-446-230.

⁴⁶ We note that while CETA requires utilities to phase out use of coal-generated resources, CETA does not include coal-fired resources from a limited-duration wholesale retail purchase. This means utilities could continue to import coal-generated electricity from out of state resources through CEMs.

⁴⁷ US Environmental Protection Agency, 2023. Supplementary Material for the Regulatory Impact Analysis for the Final Rulemaking, “Standards of Performance for new, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and natural Gas Sector Climate Review”. November 2023. Updated to current dollars using U Bureau of Labor Statistics, 2024. Consumer Price Index.

- \$228 to \$556 per MWh of electricity switched in 2040.

The above example considers default emissions factors and switching from unspecified or specified greenhouse gas-emitting resources to those that do not emit greenhouse gases. But this does not capture the differences between site-specific emissions factors of different generating resources that would bid in CEMs. For example, two natural gas generating resources may be available, with different emissions factors. If a CEM dispatches the more-efficient of the two, cost-savings would be accompanied by reduced greenhouse gas emissions as well. Using emissions factors for two facilities of 0.44 MT CO₂e/MWh and 0.45 MT CO₂e/MWh, each MWh of electricity switched to the more emissions-efficient resource would generate avoided-SCC benefits of between \$14 and \$16 per MWh.

4.2.4 Benefits: Environmental justice

The rule amendments may offer environmental justice and economic justice benefits in various ways. By establishing a process to identify importers and the generating sources of their electricity imports from CEMs, the amendments facilitate the CCA program’s reduction of greenhouse gas emissions and contribution to climate change. Climate change has been consistently identified as more-heavily harming already economically, physically, or infrastructurally vulnerable populations:^{48, 49}

- Heat events are more harmful to people without access to air conditioning, with existing health conditions and higher cumulative health burden, and in neighborhoods with less tree canopy and more paved surfaces.

⁴⁸ For detailed discussion, citations, and examples of the impacts of climate change on overburdened communities and vulnerable populations, as well as the broader economy, see: WA Department of Ecology, 2022. Final Regulatory Analyses for Chapter 173-446 WAC, Climate Commitment Act Program. Publication no. 22-02-047. September 2022.

⁴⁹ For more recent findings on climate change impacts and valuations, see also:

- Gould, CF, S Heft-Neal, M Johnson, J Aguilera, M Burke, and K Nadeau, 2024. Health Effects of Wildfire Smoke Exposure. Annual Review of Medicine. Vol 75.
- Kearn Z and j Vogel, 2023. Urban extreme heat, climate change, and saving lives: Lessons from Washington state. Urban Climate. Vol 47.
- United Nations Environment Programme, 2022. Spreading like Wildfire – The Rising Threat of Extraordinary Landscape Fires. A UNEP Rapid Response Assessment. Nairobi.
- WA Department of Natural Resources, 2020. Impacts and Costs of Wildfire Season 2020. Presentation to the Senate Agriculture, Water, Natural Resources, and Parks. December 2, 2020.
- WA Department of Health, 2021. Heat Wave 2021. <https://doh.wa.gov/emergencies/be-prepared-besafe/severe-weather-and-natural-disasters/hot-weather-safety/heat-wave-2021> and US Environmental Protection Agency, 2022. Mortality Risk Valuation. <https://www.epa.gov/environmentaleconomics/mortality-risk-valuation>.
- Schramm, PJ, A Vaidyanathan, L Radhakrishnan, A Gates, K Harnett, and P Breyse, 2021. Heat-Related Emergency Department Visits During the Northwestern Heat Wave — United States, June 2021. US Centers for Disease Control and Prevention. Weekly 70(90), pp. 1020-2021. July 23, 2021.
- Corringham, TW, J McCarchy, T Shulgina, A Gershunov, DR Cayan, and FM Ralph, 2022. Climate change contributions to future atmospheric river flood damages in the western United States. Nature Scientific Reports 12:13747. <https://doi.org/10.1038/s41598-022-15474-2>.

- Wildfire smoke is similarly more harmful to people with existing health conditions and higher cumulative health burden, without access to air purification, and with limited or more-costly access to healthcare. This is compounded if smoke occurs concurrently with a heat event, and people cannot safely stay in hot homes.
- Flooding is more difficult to prevent, evacuate, or adapt to for populations with limited financial resources and infrastructural access.

Since the CCA program also includes allocation of no-cost allowances to retail utilities covered by CETA, it mitigates the potential for costs of complying with the program to be borne by ratepayers. See Section 3.3 for discussion of how and why no-cost allowances are allocated.

Finally, if the rule amendments do result in some increase in compliance obligations over time (as opposed to a reallocation of baseline compliance obligations to different entities), they may also result in emissions reductions or increased revenues to the state to fund climate change mitigation and adaptation projects. These funds reduce the impacts of climate change on communities and reduce heating/cooling costs, through projects such as energy-efficient affordable housing, home electrification and weatherization, improved transportation access, and improvements to air quality monitoring in overburdened neighborhoods.⁵⁰

⁵⁰ See <https://climate.wa.gov/washington-climate-action-work/climate-commitment-act-projects-and-programs>

Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Summary of costs and benefits of the rule amendments

Ecology estimates rule impacts over 20 years, and compares those streams of costs and benefits occurring over time using present values. A present value accounts for inflation as well as the opportunity cost of having funds later instead of now. We estimated the following costs and benefits of the rule amendments, with qualitative impacts summarized below the table. For full discussion of costs and benefits (or cost-savings) including illustrative examples, see chapters 3 and 4.

Table 3. Total 20-year present value costs and benefits, millions of dollars

Type of impact	Low 20-year cost	High 20-year cost	Low 20-year benefit	High 20-year benefit
Reporting	\$0.26	\$0.37	qualitative	qualitative
Potential obligations (associated value)	\$25.58*	\$671.60*	\$172.63*	\$2,427.66*
CEM functions	none or minor	none or minor	qualitative	qualitative

* Estimates in this row reflect total allowance value and total social cost of carbon associated with potential additional compliance obligations over 20 years. Actual costs and benefits depend on the degree to which additional incentive to reduce emissions results in avoided greenhouse gas emissions. We estimate that average annual emissions reductions of between 1,500 MT CO₂e and 120,000 MT CO₂e per year would make these benefits exceed costs. We note, however, that:

- Based on conservative assumptions to mitigate uncertainty about marginal costs of greenhouse gas emissions abatement, the minimum MT CO₂e quantities above are likely to be overestimates.
- The high end of this range is associated with higher assumed emissions from CEM imports over time.
- Emissions associated with imported electricity (including via CEMs) are covered by the CCA program under the baseline statute. While the amended rules establish a point of regulation to make this possible to implement, the fact that they are covered emissions that must be assigned a compliance obligation is not within Ecology’s discretion.

Qualitative benefits include:

- Benefits of CEM import emissions reporting:
 - Improved greenhouse gas emissions tracking and accuracy. The amendments create a structure that more fully achieves the objectives of the authorizing statute for the reporting rule, by specifying the requirements and processes for

quantifying emissions associated with electricity imports through CEMs and identifying the deemed market importers that must report them.

- Facilitation of programs that rely on accurate greenhouse gas emissions data as discussed in the following bullets. Consistency with, and support of requirements under chapters 70A.45 and 70A.65 RCW are also objectives of the authorizing reporting statute.
- Accurate data to assign compliance obligations under the CCA rule. Without this data, we cannot accurately, consistently, and equitably identify CEM importers, or determine how much greenhouse gas was emitted during generation of that electricity. Under the baseline, these emissions are not accounted for in reporting or in the Cap-and-Invest Program, as there is not yet a consistent process and approach to do so.
- Improved CCA program implementation and planning: The CCA law defines the scope of covered greenhouse gas emissions and tasks Ecology with implementing a cap on covered greenhouse gas emissions and a program to track, verify, and enforce compliance with the cap through use of compliance instruments. The overall goal is ensuring greenhouse gas emissions reductions consistent with the “Limiting Greenhouse Gas Emissions” law (Chapter 70A.45 RCW). To achieve this objective, Ecology needs comprehensive data on greenhouse gas emissions, which in turn requires clear and consistent processes and expectations for covered CEM importers, as well as consistent tracking infrastructure and documentation underlying that data.
- Benefits of CEMs functioning efficiently in WA. Supporting benefits provided by CEMs, through specification of how CEM importers are identified and how compliance obligations are assigned. Benefits include:
 - Cost-efficiency and cost-savings. For example, CEM participants were estimated to receive various benefits of cost savings:
 - During the 4th quarter of 2023, EIM participants attained nearly \$400 million in cost-savings.⁵¹
 - 2022 modeling of benefits of the EDAM estimated that the West could save over \$500 million per year in operating costs and similar annual savings from avoiding additional capacity investments.⁵² Separate 2023 modeling estimated cost savings for five specific participants of nearly \$500 million annually.⁵³

⁵¹ CAISO, 2024. WEIM benefits report shows another historic milestone. News Release January 31, 2024.

⁵² CAISO, 2024. EDAM: Extended Day-Ahead market fact sheet.

⁵³ Brattle, 2023. Extended Day-Ahead Market Benefit Study. Presentation August 30, 2023.

- Improved availability and integration of renewable resources, and feasibility of efficiently meeting statutory greenhouse gas reduction goals.
- Improved grid reliability and matching of generating resources and demand.
- Reduced renewable resource curtailment when supply exceeds local demand.
- Improved allocation of emissions-generating resources that are more efficient.

5.2 Conclusion

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

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 must determine that the requirements of the rule are the least burdensome set of requirements that achieve the goals and objectives of the authorizing statute(s).

We assessed alternative 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 rule amendments were the least burdensome to those required to comply with them.

6.2 Goals and objectives of the authorizing statute

The authorizing statutes for these rules are Chapter 70A.65 RCW, Greenhouse Gas Emissions – Cap and Invest Program and Chapter 70A.15 RCW, Washington Clean Air Act.

The goals and objectives are to:

- Implement a cap on greenhouse gas emissions from covered entities and a program to track, verify, and enforce compliance with the cap through the use of compliance instruments, in order to ensure the reduction of greenhouse gas emissions consistent with the limits established in RCW 70A.45.020.

- Adopt a methodology for addressing imported electricity associated with a centralized electricity market.
- Regulate first jurisdictional deliverer importing electricity into the state and the cumulative annual total emissions associated with the imported electricity exceeds 25,000 MT CO₂e.
- Require persons to report the emissions of greenhouse gases where those emissions from electricity meet or exceed 10,000 MT CO₂e annually.
- Consider opportunities to implement the program in a manner that allows linking the state's program with those of other jurisdictions.

In 2020, the legislature updated the state's greenhouse gas emissions limits that are to be achieved by 2030, 2040, and 2050, based on current science and emissions trends, to support local and global efforts to avoid the most significant impacts from climate change. Achieving the greenhouse gas emissions reductions required by these limits will require coordinated, comprehensive, and multisectoral implementation of policies, programs, and laws, as other enacted policies are insufficient to meet the limits. Chapter 70A.65 RCW includes a goal of ensuring that the government provides clear policy and requirements, financial tools, and other mechanisms to support achieving the greenhouse gas emissions limits.

6.3 Alternatives considered and why they were excluded

We considered the following alternative rule requirements, and did not include them in the rule amendments. This list includes alternatives that were suggested by the public during development of the rule, with the intent of mitigating negative impacts, including environmental harms, on vulnerable populations and overburdened communities, and equitably distributing benefits. Each section below explains why we did not include these alternatives.

- Assign the market operator as the deemed market importer.
- Update emissions factor calculations.
- Addressing greenhouse gas emissions leakage.
- Alternative scope.
- Adopt a load-based approach.
- Explicitly define “deemed market importer” for specified and unspecified power.
- Ecology approval of attribution methods.
- BPA backstop.

6.3.1 Assign the market operator as the deemed market importer

We considered a compliance back-stop approach which would only assign the market operator as the deemed or “designated” market importer⁵⁴ (i.e., the entity with a compliance obligation) if the market operator is unable or unwilling to assign a deemed market importer itself. Some interested parties would prefer to assign compliance obligations only to generating sources, and not the market operator. Interested parties are concerned that a market operator could be responsible for greenhouse gas emissions that it did not generate, as the market operator merely facilitates transactions. The reason we considered the compliance back-stop was to ensure there is always some entity with a compliance obligation. After this alternative was reviewed in light of interested party comments, we assessed that this alternative may be more burdensome to parties that are required to comply because of the potential that they would be responsible for emissions that they did not generate. In addition, at this time the only operational centralized electricity market does assign a deemed market importer, so there is no current need for this backstop. Our assessment may change in the future if other viable alternatives are not readily available.

6.3.2 Update emissions factor calculations

We considered updating emissions factor calculations to reflect a contemporary mix of electricity generating sources for unspecified sources. This concern stems from an interest in ensuring that greenhouse gas emissions are reported as accurately as possible.

Ecology needs to ensure consistency with emissions factors that exist elsewhere (e.g., in CETA). We did include minor changes to the emissions factor calculation to account for transmission loss. This alternative would not meet the goal of requiring emissions from electricity to be reported because the true emissions may be undercounted and could potentially contribute to greenhouse gas emissions leakage.

6.3.3 Addressing greenhouse gas emissions leakage

We considered additional provisions related to secondary dispatch or greenhouse gas emissions leakage in this rule. Many interested parties are concerned that participation in CEMs, particularly EDAM and Markets+, could “use up” clean electricity and thereby require additional generation from emitting sources to “back-fill” demand, particularly by states without carbon pricing.

The CCA legislative findings commit Washington to minimizing greenhouse gas emissions leakage. However, the legislature gave no specific direction to make additional, leakage-specific changes in this rule. Ecology anticipates that it will address leakage at some point in future rulemakings but, as market designs remain in flux, we do not have sufficient data to make appropriate changes at this time. Addressing leakage before we have sufficient data could lead to inaccuracies during future regulatory actions.

⁵⁴ Over the course of rule development, the words “designated” and “deemed” have been used interchangeably. We similarly use them interchangeably in this chapter, to reflect input received from interested parties during development of the rule amendments.

6.3.4 Alternative scope

We considered alternative scopes for this rulemaking, such as one unified rulemaking to address current and future CEMs, including for specified and unspecified sources of electricity. We initially favored a single unified approach. However, some entities, such as TransAlta, expressed concerns about making rules for markets (i.e., EDAM and Markets+) while they are still under development.

We did not change the scope of the rulemaking to focus solely on one market over another. However, we decided to focus on a specific subset of electricity imports from CEMs: specified sources. The rule language still applies to existing and future CEMs including the Energy Imbalance Market, the Extended Day Ahead Market, and Markets+. Additionally, the rule language addresses other issues related to the reporting of greenhouse gas emissions for entities importing specified sources of electricity to Washington. However, Markets+ is expected to allow both specified and unspecified sources of electricity. Our narrowed rulemaking scope will apply to Markets+ insofar as SPP allows the marketplace to include specified imports. Future rulemakings will touch upon unspecified sources of electricity from CEMs. Note that unspecified power, in the context of bilateral trades (not CEMs), is still being addressed by the narrowed scope.

6.3.5 Adopt a load-based approach

We considered adopting a load-based approach to assigning compliance obligations. Interested parties are concerned that assigning compliance obligations to electricity importers is suboptimal and inefficient; they say it is better to put compliance obligations on the load-serving entity that caused the import to occur.

The concept of importing electricity is central to our statutory framework. We have grounded our rule in the concept of a first jurisdictional deliverer to ensure the point of compliance is placed on electricity when it is imported into the state, rather than on electricity generation that occurs out-of-state. Additionally, California has stated they will not change the point of regulation to a load-based approach. If we adopted a load-based approach, that would likely preclude linkage with California's markets, which would not meet the goal of considering opportunities to implement the program in a manner that allows linking the state's program with those of other jurisdictions.

6.3.6 Explicitly define “deemed market importer” for specified and unspecified power

Before we narrowed the scope of this rulemaking to focus on specified market imports, we considered explicitly defining the deemed or “designated” market importer for specified and unspecified sources of electricity. Previous drafts of the rule language tasked market operators with making this designation. Interested parties expressed several concerns with this approach: (1) it gives market operators too much discretion; (2) it may be inconsistent with recent Federal Energy Regulatory Commission (FERC) guidance, which clarifies that how a state chooses to address greenhouse gas emissions is “exclusively” within the state's jurisdiction; and (3) it does not provide sufficient direction for market operators to follow.

The main reason we did not define the term explicitly for specified and unspecified power ultimately relates to our change in scope. As part of the scope change, we narrowed the definition of deemed market importer to apply only to specified market imports. Additionally, we provided an example to clarify that for the Energy Imbalance Market – the only market that is currently operational – the deemed market importer would be the participating resource scheduling coordinator.

Because the narrowed rule does not address unspecified imports from CEMs, many of the concerns that interested parties raised do not apply. Ecology may revisit these concerns and consider alternative approaches in a later rulemaking related to importing unspecified power through CEMs.

6.3.7 Ecology approval of attribution methods

We considered removing the requirement for Ecology approval of the attribution method put in place by market operators in the definition of deemed market importer. Interested parties are concerned that the “methodologies” subject to approval by Ecology seemed to extend to elements of market design that should be decided solely by market operators. However, Ecology is responsible for implementing the Cap-and-Invest Program under the Climate Commitment Act, and we have a legitimate interest in approving the methodologies by which a market operator attributes electricity to serve Washington load. Ecology is not claiming authority beyond the narrow scope of approving market attribution processes that are necessary to implement the Climate Commitment Act. Instead of removing the approval requirement and relying instead on guidance, Ecology clarified the scope of approval in the final rule by limiting it to methodologies “for the purposes of reporting under this rule.”

6.3.8 BPA backstop

We considered establishing a “backstop” emissions reporting provision in the case that the Bonneville Power Administration chooses to participate in a CEM, but does not voluntarily elect to comply with the Cap-and-Invest Program by registering as an opt-in entity. The amended version of WAC 173-446-040(3)(e)(iii) says, “If no such election has been made by that federal power marketing administration, then the requirements of (e)(ii) of this subsection apply to the [greenhouse gas] emissions associated with that electricity.” The aforementioned subsection, WAC 173-446-040(3)(e)(ii), identifies the electricity importer in the event that a federal power marketing administration does not voluntarily opt-in as the “next purchasing-selling entity in the physical path on the NERC e-tag.” If there is no additional purchasing-selling entity over which the state of Washington has jurisdiction, then the electricity importer is the “utility that purchases electricity for use in the state of Washington from that federal power marketing administration or the generation balancing authority.”

Although the electricity importer with a compliance obligation is identified by existing regulations in the event BPA does not voluntarily opt-in, Ecology recognizes that interested parties have concerns about how these existing regulations align with the deemed market importer framework. Where appropriate and as the need arises, Ecology will consider additional regulatory changes in future rulemakings, such as the rulemaking for linkage, which addresses other changes required by E2SSB 6058. The current Electricity Markets rulemaking

began before E2SSB 6058 was signed into law. E2SSB 6058 made a number of changes that affect BPA's opt-in requirements. Ecology believes it is essential that these changes be considered together, and with additional opportunities for input and review by interested parties to effectively meet the goal of adopting a methodology for addressing imported electricity associated with a centralized electricity market.

6.4 Conclusion

After considering alternatives, within the context of the goals and objectives of the authorizing statute, we determined that the amended rules represent the least-burdensome alternative of possible rule requirements meeting the goals and objectives.

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 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 rule amendments.
- Expected impact on jobs.

A small business is defined by the RFA 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 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 the impacts, for this part of our analyses, are not evaluated for government entities.

7.2 Analysis of relative compliance cost burden

We calculated the estimated per-business costs to comply with the rule amendments, based on the costs estimated in Chapter 3 of this document. In this section, we estimate compliance costs per employee.

If all costs are borne by deemed market importers or a federal power marketing administration, there are no small businesses impacted by the amended rules (all are large businesses or public entities). In this case, this rulemaking would be exempt from the RFA because it does not impact small businesses (see RCW 19.85.025(4)).

However, as we note in Chapter 3, if a federal power marketing administration does not choose to opt into the program, responsibilities may fall to their utility customers. In this case, the average affected small business potentially impacted employs about 26 people.⁵⁵ The largest ten percent of affected businesses employ an average of 110 people.⁵⁶ Many of the entities potentially impacted by the rule amendments are also government entities, and are excluded from this analysis.

Based on cost estimates in Chapter 3, we estimated compliance costs per employee in the first year for which we estimated non-zero costs, 2027.

⁵⁵ Dun & Bradstreet, 2024. Market Insight database.

⁵⁶ Excludes outlier of nearly 400,000 employees at a parent multinational investment firm. Without the exclusion, this average rises to 396,500 employees.

Table 4. Costs per business

Cost Estimate Type	Cost
Low estimate	\$61,195
High estimate	\$618,068

Then, based on costs per business and business size (small or large), we calculated costs per employee, as summarized in the tables below.

Table 5. Costs per employee

Business Size	Cost per employee (low)	Cost per employee (high)
Small	\$2,328	\$23,513
Largest	\$556	\$5,619

We conclude that the rule amendments are likely to have disproportionate impacts on small businesses. Ecology has therefore included elements in the rule amendments to mitigate this disproportion, as far as is legal and feasible.

7.3 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, and the goals and objectives of the authorizing statutes (see Chapter 6). We limited compliance cost-reduction methods to those that:

- Are legal and feasible.
- Meet the goals and objectives of the authorizing statute.

Substantive regulatory requirements

The authorizing statutes do not allow Ecology to reduce, modify, or eliminate substantive regulatory requirements for any covered entities under the reporting rule or CCA rule. The areas of the rules reflecting these statutory requirements are captured in the scope of the rules, and include program coverage, compliance timetables or support of consistency with potentially linked jurisdictions, and penalties. Ecology does not have discretion in these substantive regulatory requirements.

The baseline and amended rules both also allow for a federal power marketing administration to take on compliance obligations in place of small entities that purchase imported CEM electricity from them.

Recordkeeping and reporting requirements

Recordkeeping and reporting requirements in the baseline and amended rules rely largely on maintaining consistency with other programs, using known operations data and information, and using standardized common calculations. Ecology developed the amendments to reporting requirements to provide information necessary for the data's use in the CCA program, and at the same time to be feasible for importers and CEM processes, based on interested party input.

Inspections

This rulemaking does not address inspections, and inspections are not required under the rules.

Compliance timetables

Compliance deadlines are specified in the authorizing statutes. Ecology cannot use its discretion to change these deadlines. We note also that the rule amendments remove some of the phased-in compliance timelines that were included in the baseline rules when they were first adopted but are no longer necessary. As part of the 2022 rulemaking amending the reporting rule, Ecology received information that EPEs (many of which are small) desired later deadlines for the new program. While the statute specifies the reporting deadline, the rule amendments adopted at that time allowed EPEs to submit a provisional report by that deadline, followed by a final report two months later as proposed by interested parties. After gaining experience with the reporting program, reporters are more likely to be able to meet the statutory deadline, and may save costs of developing and submitting separate preliminary reports.

Penalties and noncompliance

The statute specifies many elements related to noncompliance, and could not be changed.

Other reductions of burden

Ecology also considered multiple alternative requirements during development of the rule amendments. These were found to either impose more burden on covered parties, or to not meet the goals and objectives of the authorizing statutes. See Chapter 6 for discussion of these alternatives.

7.4 Small business and local government involvement

We involved small businesses and local governments in the development of the rule amendments, using the following methods. Recipients and attendees include members of the public, local governments, small businesses, and business associations.

- Emails sent to meeting requirements one day prior to meetings as a reminder.
- Rule development meeting reminders via gov delivery to all rulemaking subscribers.
- Informational session #1 – July 25, 2023.
- Informational session #2 – August 2, 2023.
- Draft language input review meeting #1 – August 12, 2023.
- Draft language input review meeting #2 – August 16, 2023.
- Listening session – August 18, 2023.
- Informational meeting with CAISO – September 12, 2023.
- Informational meeting with Southwest Power Pool – September 28, 2023.
- First informal comment period – July 25 to August 25, 2023.
- Second informal comment period – October 5 to October 30, 2023.
- Third informal comment period – November 8 to November 27, 2023.
- Draft language input review meeting #3 – January 24, 2024.
- Individual meetings (by request) with:
 - CARB- March 25, 2024
 - CARB & CAISO- April 10, 2024
 - CARB- May 3, 2024
 - CARB- September 23, 2024

The following is a list of local and state government attendees:

- City of Issaquah.
- City of Shoreline.
- City of Tacoma.
- Office of the Attorney General.
- Puget Sound Clean Air Agency.
- Spokane Regional Clean Air Agency.
- WA Department of Commerce.
- WA Department of Health.
- WA Public Ports Association.
- WA Department of Transportation.
- WA Parks and Recreation Commission.
- Washington State Parks and Recreation Commission.
- Washington Utilities and Transportation Commission.

To support an informed approach to a variety of electricity topics, Ecology announced a series of Cap-and-Invest Electricity Forums (outside of this rulemaking) on September 9, 2024. Ecology is hosting the Electricity Forums to provide a venue for regular communications with interested parties in the electricity sector, including utilities and electricity importers. These forums are an

opportunity for participants to engage in two-way dialogue on complex electricity sector topics within the Cap-and-Invest and Greenhouse Gas Emissions Reporting Programs. Ecology chose a forum format instead of a workgroup to enable participation from a greater diversity of electricity sector stakeholders. Ecology held the first Electricity Forum on October 3, 2024. The first forum provided an introduction to the forum structure, a presentation of electricity topics currently under development, a review of program timelines, and an opportunity to comment on the scope of Ecology's work on different electricity-related topics.

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

The rule amendments likely impact the following industries, with associated NAICS codes. NAICS definitions and industry hierarchies are discussed at <https://www.census.gov/naics/>.

- 221122 Electric power distribution
- 221118 Other electric power generation

7.6 Loss of sales or revenue and impacts on jobs

Businesses that would incur costs would experience reduced sales or revenues if the rule amendments significantly affect the prices of the goods they sell. The degree to which this could happen is strongly related to each business's production and pricing model (whether additional lump-sum costs would significantly affect marginal costs), as well as 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. Finally, overall shifts in economic activity in the state, including competition within markets and attributes of the labor market simultaneously adjust in response to changes in compliance costs.

Similarly, employment within directly impacted industries, other industries in Washington, the labor market, and in the state as a whole will also adjust in response to a change in costs.

We used the REMI E3+ model for Washington State to estimate the impact of the rule amendments on directly affected markets, accounting for dynamic adjustments throughout the economy. The model accounts for variables including but not limited to:

- Inter-industry impacts.
- Price changes, including wages.
- Interstate and international trade.
- Population or labor market changes.
- Dynamic adjustment of all economic variables over time.

Because the REMI model aggregates homogeneous (related and similar) sectors, all estimated impacts under the rule amendments would occur within the same industry grouping: Electric power generation, transmission, and distribution. Model simulations found the following ranges of impacts:

- Loss of 4 to 41 full-time employee (FTE)-equivalents economy-wide in the first year (highest impacts in the construction industry, which is one of the most sensitive industries in the model to costs impacting employment), shifting to between 2 and 77 FTEs by 2045. For context, the baseline statewide employment in the model is between 5 million in 2027 and 5.6 million in 2045.
- Loss of \$1 million to \$10 million in economy-wide output in the first year (highest impacts in electric power generation, transmission, and distribution), shifting to between \$1 million and \$32 million statewide by 2045. For context, the baseline statewide output in the model is between \$1.2 trillion in 2027 and \$1.7 trillion in 2045.

Recall that based on the underlying assumptions for each end of the range, we expect impacts toward the lower end of each range to be more likely (see Chapter 3). Note also that these results assume all costs are incurred by entities embedded within the WA economy, which may not be the case for all impacted parties (e.g., out-of-state or multi-jurisdictional entities). This means the estimates above are likely overestimating the actual likely impacts of the amended rules.

Recall from Chapter 3 that our analysis is for aggregate (total) impacts, and there may be distributional impacts within the electricity sector in WA. There is considerable uncertainty about how costs would be distributed across electricity importers participating in CEMs, including how many importers are impacted, to what degree costs are redistributed from the baseline rather than added (costs for some entities decreasing while those of others increase), and the size of costs based on individual circumstances and business decisions.

Traditionally, competitive businesses with higher net operating costs would face downward pressure on output and their use of labor. Electricity importers may face different incentives and limitations (e.g., obligations to meet demand, government or nonprofit structures, limited local competition or geographic monopolies, regulations governing electricity rates, or variable timing of available generating resources). Where ability to respond with changes to employment or output (positive or negative) are limited, impacts may instead manifest as changes to planned infrastructure investments or timing.

References

- Brattle, 2023. Extended Day-Ahead Market Benefit Study. Presentation August 30, 2023.
- California Air Resources Board, 2018. Staff report: Initial statement of reasons. Public hearing to consider the proposed amendments to the regulation for the mandatory reporting of greenhouse gas emissions.
- California Air Resources Board, 2023. California Greenhouse Gas Emissions from 2000 to 2021: Trends of Emissions and Other Indicators. Figure 5. 2022 GHG Emissions by Scoping Plan Sector and Sub-Sector. Underlying dataset provided by CARB.
- California Independent System Operator, 2022. Washington State Western Energy Imbalance market Greenhouse Gas Enhancements. Issue Paper/Straw Proposal. August 17, 2022.
- California Independent System Operator, 2022. Washington State Western Energy Imbalance market Greenhouse Gas Enhancements. Draft Final Proposal. September 22, 2022.
- California Independent System Operator, 2022. Washington State Western Energy Imbalance market Greenhouse Gas Enhancements. Presentation, September 29, 2022.
- California Independent System Operator, 2023. Western Energy Imbalance Market hits \$4.66 billion in total benefits. News release. 10/31/2023.
- California Independent System Operator, 2024. Western Energy Markets. About. <https://www.westerneim.com/Pages/About/default.aspx>
- California Independent System Operator, 2024. California ISO Secures Portland General Electric's Formal Commitment to Join the Extended Day-Ahead Market. News release, 07/02/2024. <https://www.caiso.com/about/news/california-iso-secures-portland-general-electrics-formal-commitment-to-join-the-extended-day-ahead-market#:~:text=In%20addition%20to%20PGE%2C%20PacifiCorp,Water%20%26%20Power%20and%20NV%20Energy.>
- California Independent System Operator, 2024. WEIM benefits report shows another historic milestone. News Release January 31, 2024.
- California Independent System Operator, 2024. EDAM: Extended Day-Ahead market fact sheet.
- Dun & Bradstreet, 2024. Market Insight database.
- Southwest Power Pool, 2024. Markets+, Phase One. <https://www.spp.org/western-services/marketsplus/>
- US Bureau of Labor Statistics, 2024. Consumer price index.
- US Department of Energy, 2015. State of Washington Energy Sector Risk Profile.
- US Energy Information Administration, 2022. State Electricity Profiles. Release date: November 2, 2023. <https://www.eia.gov/electricity/state/>.
- US Environmental Protection Agency, 2023. Supplementary Material for the Regulatory Impact Analysis for the Final Rulemaking, "Standards of Performance for new, Reconstructed,

and Modified Sources and Emissions Guidelines for Existing Sources: Oil and natural Gas Sector Climate Review”—EPA Report on the Social cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances. November 2023.

US Treasury Department, 2024. I bonds interest rates. Historic data collected twice-yearly by Ecology since September 1998.

WA Department of Commerce, 2021. Washington 2021 State Energy Strategy. Updated in WA Department of Commerce, 2023. 2023 Biennial Energy Report.

WA Department of Commerce, 2022. Carbon Tax Assessment Model. Version 4.2, base case January 2021. Adjusted to reflect CETA requirements and zero carbon tax.

WA Department of Ecology, 2022. Final Regulatory Analyses for Chapter 173-446 WAC, Climate Commitment Act Program. Publication no. 22-02-047. September 2022.

WA Department of Ecology, 2022. Washington State Greenhouse Gas Inventory 1990-2019. Table 4. Washington total annual GHG emissions.

WA Department of Ecology, 2024. Data reported to Ecology under WAC 173-441-124(3)(a)(v).

WA Utilities and Transportation Commission, 2024. Energy Resources List.

<https://www.utc.wa.gov/regulated-industries/utilities/energy/energy-resources-list>.

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.**

In 2021, the Washington Legislature passed the Climate Commitment Act (CCA), which established a Cap-and-Invest Program to help Washington meet greenhouse gas emission limits by 2050. The CCA statute directs Ecology to adopt rules to implement the provisions of the program (RCW 70A.65.220.). To align with the requirements of the CCA, this rulemaking will adopt amendments to Chapter 173-441 WAC (Reporting of Emissions of Greenhouse Gases) and Chapter 173-446 WAC (Climate Commitment Act Program Rule).

As of 2024, one centralized electricity market is serving Washington, and two day-ahead centralized electricity markets are under development. The rulemaking is necessary to ensure that specified sources of electricity imported into the state from centralized electricity markets can be identified and counted as covered emissions in the Cap-and-Invest Program. Currently, there is lack of clear methodologies and procedures to assign compliance obligations on the importing entity. Additionally, this rulemaking will allow centralized electricity market operators to put in place the necessary data infrastructure to track importing entities and report that information to Ecology. The rule may also address other issues related to reporting of greenhouse gas for entities importing electricity to Washington.

If this rule is not adopted, it is likely that the operators of these centralized electricity markets would not put in place the necessary data infrastructure to allow Washington to track and capture the necessary compliance obligation for importing entities. It is also possible that greenhouse gas emissions associated with the electricity from these centralized electricity markets would go uncovered under the program, reducing the effectiveness of the Cap-and-Invest Program and potentially creating a barrier to linking the program with other capped jurisdictions. Finally, as this source of emissions is predicted to grow substantially in the future, these problems would only grow over time and increasingly impact compliance.

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. The requirements of this rule do not conflict with EPA reporting requirements for greenhouse gases 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.

As specified by RCW 70A.65.080(1)(c), compliance obligations in this rule only applies to electricity imported from centralized electricity markets.

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.

No. This rule does not differ from any federal regulation or statute applicable to the same activity or subject matter.

- If **yes**, the difference is justified because of the following:
 - (i) A state statute explicitly allows Ecology to differ from federal standards.
 - (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.

We are coordinating this rule to the maximum extent practicable, with other federal, state, and local laws applicable to the same subject matter. There are overlaps in the interested parties and Ecology staff working on these rules, which facilitates coordination. We are also coordinating rulemaking with the requirements of RCW 19.405, the Clean Energy Transformation Act. Additionally, Ecology is working to make the rule consistent where possible with similar state law in California to facilitate potential program linkage, per RCW 70A.65.060(3).