



Final Regulatory Analyses:

Including the:

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

Chapter 173-446 WAC, Climate Commitment Act Program Rule and Chapter 173-441 WAC, Reporting of Emissions of Greenhouse Gases

(Cap-and-Invest Program Updates and Linkage)

By

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For the

Climate Pollution Reduction Program

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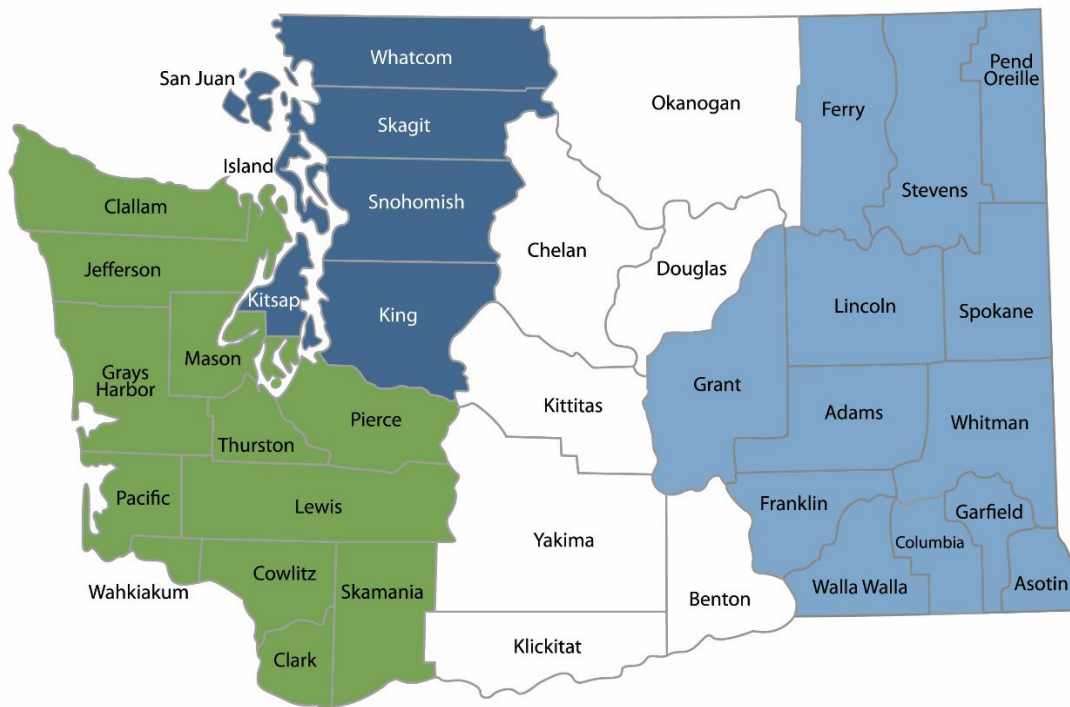
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State of Washington

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Abbreviations and Acronyms

APA	Administrative Procedure Act
APCR	Allowance Price Containment Reserve
BAU	Business as Usual
CARB	California Air Resources Board
CO ₂ e	Carbon Dioxide equivalent
CETA	Clean Energy Transformation Act
CFS	Clean Fuel Standard
CCA	Climate Commitment Act
DEBs	Direct Environmental Benefits
DFM	Dynamic Factor Model
ECR	Emissions Containment Reserve
EITE	Emissions Intensive and Trade Exposed
EJA	Environmental Justice Analysis
EPA	(US) Environmental Protection Agency
FPMA	Federal power marketing administration
FTE	Full-time employee
GMP	General market participant
HB	House Bill
IWG	Interagency Working Group
MT	Metric ton
NCA	No-cost allowance
NAICS	North American Industry Classification System
OMB	Office of Management and Budget
PFCs	Perfluorocarbons

PCU	Price Ceiling Unit
RCW	Revised Code of Washington
RFA	Regulatory Fairness Act
RFF	Resources for the Future
SB	Senate Bill
SCC	Social Cost of Carbon
TSD	Technical Support Document
USCFTC	United States Commodities Futures Trading Commission
VRE	Voluntary Renewable Electricity reserve
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 adopted amendments to the rules implementing the Cap-and-Invest Program, under the Climate Commitment Act.

Laws and rules

In 2021, the Washington Legislature passed the Climate Commitment Act (the “CCA statute”; chapter 70A.65 RCW), which establishes a comprehensive, market-based program to reduce carbon pollution and support achievement of the greenhouse gas limits set in state law.² The Climate Commitment Act Program Rule (the “CCA rule”; chapter 173-446 WAC) implements the CCA by providing detailed requirements and procedures to administer this Cap-and-Invest Program. In addition, all entities covered by the Cap-and-Invest Program must report their greenhouse gas emissions,³ so that Ecology can track program compliance and emissions-reduction progress over time. Requirements for greenhouse gas emissions reporting are set in the Reporting of Emissions of Greenhouse Gases rule (the “reporting rule”; chapter 173-441 WAC), established under RCW 70A.15.2200 and chapter 70A.65 RCW.

Adopted amendments

The rule amendments make multiple changes to both the CCA and reporting rules, in order to:

- Facilitate carbon market linkage with other jurisdictions, as required by law.
- Update the Cap-and-Invest Program to meet statutory requirements to update allowance budgets, align calculation of no-cost allowances for natural gas utilities, and expand program coverage over time.
- Align with changes made to statute from recently enacted legislation (2024 – 2026).
- Address imported electricity, including electricity associated with centralized electricity markets, and adopt rules identifying electricity importers where necessary and not defined in statute.
- Update no-cost allowance allocation rules to improve clarity and efficiency, strengthen decarbonization incentives, and support program stability.
- Further improve program integrity and security.

Modeled market impacts

The rule amendments facilitate linkage by aligning certain aspects of Washington’s carbon market with carbon markets in California and Québec. However, the rule amendments do not, themselves, link Washington’s Cap-and-Invest Program with any other jurisdiction. To link

² RCW 70A.45.020 requires the state to limit anthropogenic (human-caused) emissions of greenhouse gases to achieve emissions reductions to 1990 emissions levels by 2020, 45% below 1990 levels by 2030, 70% below 1990 levels by 2040, and 95% below 1990 levels by 2050.

³ In this document “emissions” refers to greenhouse gas emissions, unless otherwise noted.

requires a separate public process. Therefore, Ecology considered likely costs and benefits of the rule amendments under both unlinked and linked scenarios.

We incorporated some of the amendments, when possible, into a quantitative market model created for Ecology by a team from the University of California (“UC Team”) and evaluated the following scenarios:

- **Regulatory baseline:** this is the existing program including features effective through statute that have passed but have not been implemented via rulemakings.⁴
- **Unlinked rule scenario:** Rule amendments in an unlinked market.
- **Linked rule scenario:** Rule amendments in a linked market.⁵

Unlinked rule scenario:

The model estimated that carbon market results (emissions and allowance prices) were not substantially different when comparing the regulatory baseline to the rule amendments in an unlinked scenario.

Linked rule scenario:

Under a linked scenario, however, Ecology estimated cumulative net positive impacts from 2027 to 2037 (compared to the regulatory baseline). Depending on assumptions related to the societal costs generated by greenhouse gas emissions (the Social Cost of Carbon, “SCC”; an estimate of the economic impacts of greenhouse gas emissions through their contribution to climate change)⁶ we estimated multiple totals for the present value of net benefits (the difference between benefits and costs adjusted for inflation and opportunity costs, and added up over time). These are summarized in the table below, based on varying SCC and discount rate assumptions using values modeled by either the US Environmental Protection Agency (EPA) or Resources for the Future (RFF), and using different percentage discount rates. While this total net present value diverges depending on assumed SCC, totals range from approximately -\$0.17 billion to \$1.18 billion in net benefits over the 10-year timeframe of the analysis. We consider these quantified estimates in conjunction with qualitative impacts summarized in Figure 1 and discussed in detail in Chapter 5.

Because the expected cost reductions of the current rule exceed the expected decrease in benefits from avoided SCC, the expected net benefits identified in Table 1 are positive under two of the four SCC scenarios, and negative under one. Quantifiable costs and benefits are approximately equal in the case of doubled SCC values. The magnitude of positive net benefits

⁴ As an example, auction purchase limits were modified directly via statute in SB 6058 (2024) without discretion for Ecology on whether to implement those limits or not. Even though that was not contained in the 2022 rulemaking or other CCA rulemakings, that change is part of the regulatory baseline. However, Ecology was given discretion under HB 1975 (2025) on the number of allowances placed in the APCR (some amount between 2 and 5 percent) from 2031 to 2040, so the exact quantity is not part of the regulatory baseline.

⁵ The distinction between the scenarios is further discussed in Section 2.3.

⁶ See Appendix B for a discussion of what is and is not included in the Social Cost of Carbon.

under two discount rate scenarios is approximately five to seven times larger than the magnitude of negative net benefits under the 1.5% discount rate scenario

Table 1: Total present value (PV) costs, benefits, and net benefits 2027 - 2037, linked market, compared to regulatory baseline (billions 2026\$; by % discount rate)

Impact ⁷	EPA 1.5%	Double RFF 2%	RFF 2%	EPA 2.5%
Total social wellbeing impact <i>PV benefit of the rule amendments</i>	-\$1.81	-\$1.75	-\$0.88	-\$0.67
Total compliance cost impact <i>PV cost of the rule amendments</i>	-\$1.64	-\$1.75	-\$1.75	-\$1.85
Total net benefits of the rule amendments <i>PV benefit minus PV cost</i>	-\$0.17	\$0.00	\$0.87	\$1.18

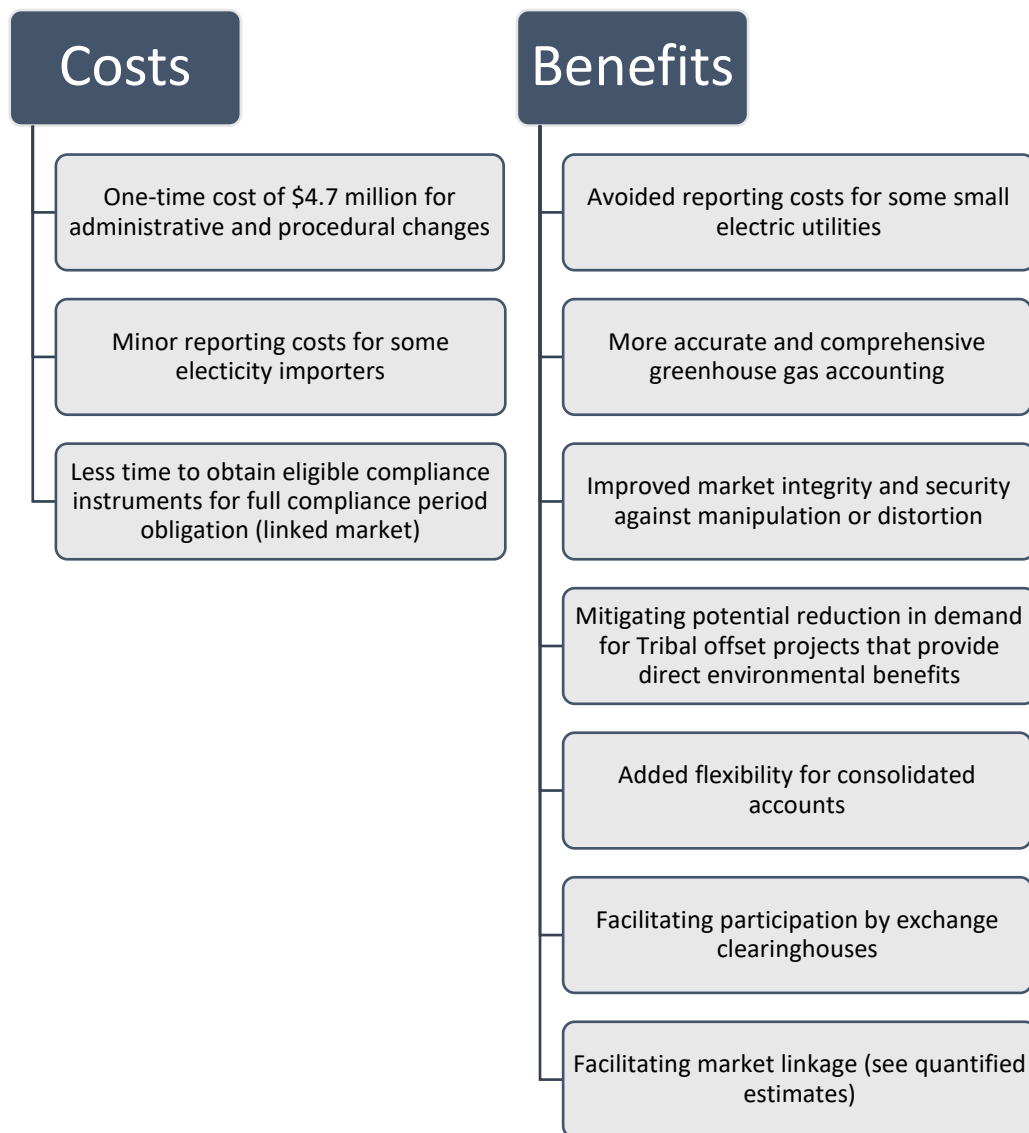
We note that this analysis focuses on emissions occurring within Washington. Ecology previously found that total emissions across the three linked jurisdictions are likely to fall under a linked market.⁸ The contribution of greenhouse gases to climate change (and its impacts on people and the environment) does not depend on where they are emitted, and an aggregate reduction to emissions is a benefit to Washingtonians as well. This means that **if we also accounted for the reduction in total emissions across linked jurisdictions, it would make the present value of benefits positive under all discount rates**, rather than the negative values reflected in the first row of Table 1 for Washington-only emissions. This would result in universally positive and larger net benefits than summarized in the table above. Although we conclude that the expected benefits of the amended rule will likely outweigh its expected costs even without accounting for the reduction in total emissions across linked jurisdictions, if we accounted for those emissions we would expect the net benefits to be even greater.

The **quantified impacts discussed above are considered in conjunction with the qualitative impacts of the amended rule, summarized in Figure 1**. These likely costs and benefits could not be captured by the quantitative market model. Most of these impacts apply whether carbon markets are linked or not, but some apply only in the case of market linkage.

⁷ ¹ Negative costs imply cost savings from the rule. Negative benefits imply reduced social wellbeing (due to emissions increase) from the rule. Positive net benefits imply that the value of the cost savings exceed the reduced social wellbeing.

⁸ WA Department of Ecology, 2026. [Cap-and-Invest Linkage Criteria Findings](https://apps.ecology.wa.gov/publications/documents/2614020.pdf). Ecology publication no. 26-14-020. <https://apps.ecology.wa.gov/publications/documents/2614020.pdf>

Figure 1: Additional costs and benefits not reflected in the market model



See qualitative discussions in sections 3.2.2 and 4.2.2 for more detail and additional minor or potential impacts.

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 regulatory baseline, that the benefits of the rule amendments are greater than the costs.

Least-burdensome alternative

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

Relative burden on small businesses

We estimated reductions in compliance costs per employee under the amended rule as compared to the regulatory baseline, under a linked carbon market. These cost reductions are listed in Table 2.

Table 2: Compliance cost reductions per employee, 2027 – 2037, millions 2026\$

Business Size and Sector	Compliance Cost Reduction per Employee
Small, fuels (transportation)	\$0.05
Largest, fuels (transportation)	\$0.01
Small, facilities (industrial)	\$0.71
Largest, facilities (industrial)	\$0.01

We also estimated compliance cost per employee of \$180 for the largest general market participant (GMP) businesses, and of \$1,500 for small businesses, to complete administrative, legal, and reporting-related tasks. We note, however, that small businesses under the Washington Regulatory Fairness Act (RFA) definition in this case include large financial businesses and investment funds that may not have the same employment structure and responsiveness to compliance costs that a typical “mom and pop” small business (e.g., a store) would have.

We concluded that the rule amendments are likely to have disproportionate impacts on small businesses, even if both small and large businesses would experience a cumulative net cost-savings. Therefore, Ecology has included elements in the rule amendments to mitigate this disproportion, as far as is legal and feasible.

While our ability to modify substantive regulatory requirements of the rule amendments can be limited – as they are often dictated to a large degree by statutes – we note that elements of statutory requirements already serve to reduce the burden of the Cap-and-Invest Program overall on affected small businesses. In line with statutory requirements, the amendments allow electric power entities, including the numerous smaller electric power entities, to use existing reports to comply with the reporting rule, reducing duplicative effort in recordkeeping and reporting. The rule amendments also reflect alignment with statutory requirements to allow a federal power marketing administration (FPMA) to opt in to the program and take on some degree of compliance burden that would otherwise be borne by their customer utilities. This would help the FPMA’s many small utility customers reduce, or in some cases even avoid, direct administrative costs associated with the CCA rule.

All market participants – whether classified as small or large—must face the same market regulations to ensure fairness and avoid the ability of firms to modify their business structure to circumvent market requirements in a manner that escalates costs.

Additional cost to comply with the rule amendments may disproportionately impact small businesses that are covered entities under the Cap-and-Invest Program. However, these rule amendments facilitate linkage with the California-Québec market. If Washington links, we expect those small business covered entities would benefit from lower overall costs to comply with the Cap-and-Invest Program.

Impacts on employment and revenues

We used the REMI E3+ model, version 3.3.0 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, wage, interstate and international trade, and population or labor market changes; and dynamic adjustment of all economic variables over time.

We ran multiple versions of our model simulations, reflecting different SCC values and different approaches for how the model should reflect potential future spending of carbon market revenues. This provided seven sets of results for employment and revenue impacts. We found that statewide, the rule amendments would not significantly impact employment or output under an unlinked scenario. Under the linked scenario, the model indicated that the rule amendments would result in net impacts, across the 2027 – 2037 analytic timeframe, of:

- Cumulative employment gains of approximately 1,900 to 16,400 private sector jobs. Compared to the regulatory baseline, this is between 0.04% and 0.35% of statewide employment.
- Cumulative output gains of approximately \$5.7 billion to \$10.3 billion. Compared to the regulatory baseline, this is a gain of between 0.40% and 0.63% of statewide output.

We note that employment impacts are highly sensitive to inclusion of how state revenues from the carbon market are spent. Estimated employment impacts are aggregations of changes to employment across all private sectors in the state, in terms of full-time employee (FTE) equivalents within each year and should not be interpreted as numbers of individuals losing or gaining jobs.

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 the adopted amendments to the Climate Commitment Act Program rule (the “CCA rule”; chapter 173-446 WAC) and the Reporting of Emissions of Greenhouse Gases rule (the “reporting rule”; chapter 173-441 WAC). This includes the:

- Final Cost-Benefit Analysis
- Least-Burdensome Alternative Analysis
- 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 describes 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 describes that analysis, when applicable.

1.1.1 Background

The Climate Commitment Act

In 2021, the Washington Legislature passed the Climate Commitment Act law (the “CCA statute”; chapter 70A.65 RCW), which establishes the Cap-and-Invest Program – a comprehensive, market-based program to reduce carbon pollution and support achievement of

the greenhouse gas limits set in state law.⁹ The CCA statute covers greenhouse gas emissions from Washington’s largest emitting sources and industries and enables covered entities’ flexibility to determine the most cost-effective way to comply. The program works alongside other climate policies to help Washington achieve its greenhouse gas emission limits.

The CCA statute also puts environmental justice and equity at the center of climate policy, making sure communities that bear the greatest burdens from air pollution today see cleaner, healthier air as the state cuts greenhouse gases. Finally, funds from the auction of emission allowances support new investments in climate resiliency programs, clean transportation, addressing health disparities across the state, and more.

The CCA rule (that this rulemaking amended) implements the CCA statute by providing additional requirements and details to be able to administer this Cap-and-Invest Program. Throughout this document, references to “emissions” mean greenhouse gas emissions unless otherwise specified.

How Cap-and-Invest works

The Cap-and-Invest Program establishes a declining cap on greenhouse gas emissions from covered sectors. This cap declines at the same rate as Washington State economy-wide statutory emissions limits. The Cap-and-Invest Program caps are set by the annual allowance budgets, where 1 allowance equals 1 MT CO₂e (metric tons of carbon dioxide equivalent). Large emitters in the state, emitting 25,000 MT CO₂e or more annually, must obtain allowances equal to their covered greenhouse gas emissions.¹⁰ These allowances can be obtained through auctions hosted by Ecology or bought and sold on a secondary market. Also, certain utilities, waste-to-energy facilities, and emissions-intensive, trade-exposed (EITE) industries receive a certain number of no-cost allowances.

The cap will be reduced over time to support Washington’s achievement of its 2030, 2040, and 2050 emissions-reduction limits, which means Ecology will issue fewer allowances each year.

Covered entities may also cover a portion of their emissions with offset credits instead of allowances. The CCA statute requires offset credits to come from offset projects that result in greenhouse gas reductions that are real, permanent, quantifiable, verifiable, and enforceable. The reductions must be in addition to those already required by law. All offsets used for compliance in Washington’s Cap-and-Invest Program must demonstrate direct environmental

⁹ RCW 70A.45.020 requires the state to limit anthropogenic (human-caused) emissions of greenhouse gases to achieve emissions reductions to 1990 emissions levels by 2020, 45% below 1990 levels by 2030, 70% below 1990 levels by 2040, and 95% below 1990 levels by 2050.

¹⁰ Generally, entities that meet or exceed 25,000 MT of covered CO₂e are required to participate. All importers of unspecified electricity are covered and as a result of recent legislation some specific fuel suppliers will soon have a lower coverage threshold. Some types of emissions are exempt from the program, including emissions from fuels used for agricultural purposes, aviation fuels, and marine fuels combusted outside of Washington. In addition, entities that have historically met or exceeded the 25,000 MT threshold must remain in the Cap-and-Invest Program for a period before they are eligible to exit the program.

benefits to the state.¹¹ In addition, offset projects registered in the Cap-and-Invest Program must be verified by an independent third party, before credits can be issued. When offset credits are used for compliance, Ecology retires an equivalent number of allowances from the annual allowance budget.

Greenhouse gas emissions reporting

Under the CCA statute and rule, all entities covered by the Cap-and-Invest Program must report their emissions so Ecology can track program compliance and emissions-reduction progress over time. Requirements for greenhouse gas emissions reporting are set in chapter 173-441 WAC (Reporting of Emissions of Greenhouse Gases; the “reporting rule”), established under chapter 70A.15.2200 RCW, the reporting provision of the Clean Air Act. Currently, facilities, fuel suppliers, and electric power entities are required to report if they emit 10,000 MT CO₂e per year or more.

The reporting rule includes requirements related to the rule’s applicability, covered types of greenhouse gases, reporting requirements, recordkeeping requirements, and verification requirements. It specifies calculation methods used to quantify greenhouse gas emissions, as well as the information that entities must submit about the reporting entity and the fees they must pay.

Carbon market linkage

When the CCA was passed in 2021, there was only one state in the U.S. – California – with an economy-wide greenhouse gas emissions trading program. California began its program in 2012. A year later a similar program was started in Québec, Canada. California and Québec linked their programs in 2014, creating a shared carbon market.

The CCA directs Ecology to “seek to enter into linkage agreements with other jurisdictions” (RCW 70A.65.210(1)). Washington’s Cap-and-Invest Program was designed with the intent of linking with the existing California-Québec joint market.

In June 2026, Ecology's Director announced a decision to link Washington’s carbon market with California and Québec, and the three jurisdictions signed a carbon market linkage agreement.¹² A linkage agreement is a non-binding agreement that sets expectations for information sharing, cooperation, and accounting. It doesn't create new regulations or change existing regulations. That can be done only through each jurisdiction’s rulemaking process and changes to laws (statutes) made by legislators. California and Québec must complete additional steps, including

¹¹ In a standalone (unlinked) Program, all offset credits must provide direct environmental benefits (DEBs) to Washington. If Washington links its Cap-and-Invest carbon market, the percentage of offset credits that need to provide DEBs to Washington is reduced to 50% in the first compliance period (2023-2026) and 75% in later compliance periods (2027-2050). The remaining offset credits may come from projects located in a linked jurisdiction. RCW 70A.65.170

¹² [Washington-California-Québec linkage agreement](#)

adopting regulations to accept compliance instruments from Washington, before a linked market can take effect. Pending updates to regulations and the completion of other statutory process steps by California and Québec, the three jurisdictions expect to begin operating a linked market in 2027.

In a linked market, Washington's carbon market would combine with the joint California-Québec market to create a single shared market. Allowances could be used to cover emissions in any of the three jurisdictions, regardless of which jurisdiction originally added them to the market.

A linked market would have joint allowance auctions with a common allowance price across all the jurisdictions. Before each auction, each of the three jurisdictions would decide how many allowances to offer for sale based on that jurisdiction's overall greenhouse gas limit for that year and other factors. Market participants from all three jurisdictions would then purchase allowances from the joint auction, all at the same auction settlement price. After an auction, each jurisdiction's auction proceeds would be calculated based on the number of allowances they each put into the joint auction. So, for example, if Washington put 30% of the allowances into a joint auction, it would receive 30% of the auction proceeds.

Market participants would also be able to trade allowances across jurisdictions, meaning a business in Washington could sell allowances to a business in California.

The Washington-California-Québec market will have a mechanism in place to account for the flow of compliance instruments across the linked jurisdictions pursuant to Section 13 of the linkage agreement, which is the same process California and Québec currently use.¹³

1.2 Reasons for the rule amendments

Facilitating program linkage

The CCA statute required Ecology to design the Cap-and-Invest Program so it could potentially be linked with other carbon markets.

¹³ State of Washington and State of California and Gouvernement du Québec. Agreement On the Harmonization of Carbon Market Programs for Reducing Greenhouse Gas Emissions. June 2026. <https://apps.ecology.wa.gov/publications/summarypages/2614018.html>. California Air Resources Board. [Accounting Mechanism for Article 8 of the 2017 Linkage Agreement](#). June 2022. https://ww2.arb.ca.gov/sites/default/files/2022-06/nc-Article_8_Accounting_Mechanism.pdf

To facilitate linkage with other carbon markets, the Legislature passed Engrossed Second Substitute Senate Bill 6058 (SB 6058), in 2024.^{14,15} The bill modified certain provisions of the CCA statute that need to be aligned to link.

Some of the adopted rule amendments change requirements in the CCA rule and reporting rule to align with requirements in California and Québec to facilitate Washington joining a linked market, including the implementation of SB 6058. The programs in the three jurisdictions do not need to be identical to link. Certain aspects need to be aligned in a linked market. This includes compliance period lengths, certain price containment features, and registration, auction, and corporate association requirements, as well as overall coverage of electricity imports.

Changes over time required by the CCA statute

The CCA statute not only set initial requirements for the Cap-and-Invest Program but also set requirements over time. The statute requires Ecology to adopt allowance budgets for the second compliance period (2027 – 2030) by October 1, 2026, to ensure that emissions reductions align with Washington’s 2030, 2040, and 2050 greenhouse gas emission limits. No-cost allowance allocation to natural gas utilities is also being updated to align with future total allowance budgets as required under statute. The law also phases in coverage of some sectors of emitters.

The rule amendments adopt future compliance period allowance budgets (for 2027 through 2050), as well as add the waste-to-energy sector to the entities covered by the rule in the second compliance period, and railroads in the third compliance period.

Aligning with statutory changes made in 2024, 2025, and 2026

As mentioned above, to facilitate linkage with other carbon markets, the Legislature passed SB 6058 in 2024. The bill modified certain provisions in the CCA statute that need to be aligned in order to link, including certain provisions related to the coverage of imported electricity. The bill also required Ecology to develop registration requirements for a federal power marketing administration (FPMA), if it chooses to voluntarily participate, as well as processes for electric utilities to transfer no-cost allowances to a FPMA.

In 2025, the Legislature passed Second Substitute House Bill 1975 (HB 1975).^{16,17} This bill made changes to the CCA statute to support allowance price stability and support greater frequency

¹⁴ [SB 6058](https://lawfilesexternal.wa.gov/biennium/2023-24/Pdf/Bills/Session%20Laws/Senate/6058-S2.SL.pdf?q=20251231094138). <https://lawfilesexternal.wa.gov/biennium/2023-24/Pdf/Bills/Session%20Laws/Senate/6058-S2.SL.pdf?q=20251231094138>

¹⁵ For ease of reference we are referring to Chapter 352, Laws of 2024; Engrossed Second Substitute Senate Bill 6058.

¹⁶ [HB 1975](https://lawfilesexternal.wa.gov/biennium/2025-26/Pdf/Bills/Session%20Laws/House/1975-S2.SL.pdf?q=20251231094220). <https://lawfilesexternal.wa.gov/biennium/2025-26/Pdf/Bills/Session%20Laws/House/1975-S2.SL.pdf?q=20251231094220>

¹⁷ For ease of reference we are referring to Chapter 320, Laws of 2025; Second Substitute House Bill 1975.

of Cap-and-Invest modeling. Several of HB 1975's changes made for allowance price stability and relief are enacted by this rulemaking.

Additionally, the Legislature passed Engrossed Second Substitute House Bill 1912 (HB 1912) in 2025.^{18,19} The bill modified CCA statute exemptions for agricultural fuel use.

In 2026, the Legislature passed Engrossed Second Substitute House Bill 2416 (HB 2416).²⁰ This bill made changes to the conditions under which waste-to-energy facilities become a covered sector in the CCA statute in the second compliance period.

The rule amendments would change requirements in the CCA rule and the reporting rule to implement these various changes in the law.

Other amendments

The CCA statute also requires Ecology to adopt rules addressing imported electricity associated with centralized electricity markets and to adopt rules identifying electricity importers where necessary and not defined in statute. The reporting provision of the CCA statute allows Ecology to require electricity importers to report emissions associated with all electricity transacted in or imported into Washington. The reporting provision also requires Ecology to design reporting methods to ensure accuracy and consistency. Based on experience implementing the reporting rule, the complexity and evolving nature of electricity markets, and looking ahead to potential market linkage, Ecology is updating the reporting rule related to imported electricity to improve clarity and efficiency and ensure consistent coverage of the sector.

The CCA statute also requires Ecology to adopt rules directing no-cost allowance allocation to electric utilities. Ecology is updating the CCA rule related to no-cost allowance allocation to improve program clarity and efficiency, strengthen decarbonization incentives, and support program stability.

Based on experience implementing greenhouse gas reporting and the Cap-and-Invest Program, and looking ahead at potential market linkage, Ecology is also adopting various other amendments to improve program clarity and efficiency, ensure sufficient enforcement tools to promote a fair compliance market, reduce risks of carbon market manipulation, and support program stability.

¹⁸ [HB 1912](https://lawfilesexternal.wa.gov/biennium/2025-26/Pdf/Bills/Session%20Laws/House/1912-S2.SL.pdf?q=20251231094250). <https://lawfilesexternal.wa.gov/biennium/2025-26/Pdf/Bills/Session%20Laws/House/1912-S2.SL.pdf?q=20251231094250>

¹⁹ For ease of reference we are referring to Chapter 282, Laws of 2025; Engrossed Second Substitute House Bill 1912.

²⁰ For ease of reference we are referring to Chapter 216, Laws of 2026; Engrossed Second Substitute House Bill 2416.

1.3 Summary of the rule amendments

The **amendments to the greenhouse gas reporting rule** (chapter 173-441 WAC):

- **Clarify and add definitions** to facilitate linkage. (Section 020 Definitions)
- **Clarify program applicability and exit conditions**, to facilitate linkage, promote consistency, improve clarity, and align with statutory changes. (Section 030 Applicability)
- **Update reporting methodologies** to align with statutory changes and facilitate linkage. (Section 040 Greenhouse gases)
- **Update monitoring, reporting, recordkeeping, and verification** to facilitate linkage and improve clarity. (Section 050 General monitoring, reporting, recordkeeping, and verification requirements)
- **Update verification requirements** to facilitate linkage and improve program efficiency and stability. (Section 085 Third-party verification)
- **Change calculation methods:**
 - **Update facility calculation methods** to facilitate linkage, update language, and improve clarity. (Section 120 Calculation methods for facilities)
 - **Align supplier calculation methods** with statutory changes and update to facilitate linkage. (Section 122 Calculation methods for suppliers)
 - **Update electric power entity calculation methods** to facilitate linkage, align with statutory changes, improve clarity and efficiency, and ensure consistent coverage of electricity imports, including via centralized electricity markets as required by statute. (Section 124 Calculation methods for electric power entities)

The **amendments to the CCA rule** (chapter 173-446 WAC):

- **Add or amend definitions** for clarity or to support alignment with statutory changes, facilitate linkage, and support program efficiency and stability. (Section 020 Definition changes)
- **Update program coverage and compliance periods:**
 - **Align coverage thresholds and compliance periods** with statutory changes and updates to facilitate linkage. (Section 030 Applicability)
 - **Align coverage exemptions** with statutory changes. (040 Covered emissions)
 - **Align requirements for importers of unspecified electricity** with statutory changes and to facilitate linkage. (Section 060 New or modified covered entities)
 - **Add and streamline exit procedures** to support program efficiency and stability. (Section 070 Exiting the program)

- **Change registration requirements:**
 - **Update covered and opt-in registration requirements** to support program efficiency and stability, and to facilitate linkage. (Section 050 Covered and opt-in entity registration)
 - **Add exchange clearinghouse registration requirements** to facilitate linkage and to support program efficiency and stability. (Section 052 Exchange clearinghouse registration)
 - **Update electric utility registration requirements** to support program efficiency and stability. (Section 053 Electric utilities registration)
 - **Align federal power marketing administration registration requirements** with statutory changes. (Section 054 Federal power marketing administration registration)
 - **Update general market participant registration requirements** to support program efficiency and stability, and to facilitate linkage. (Section 055 General market participant registration)
 - **Update requirements for corporate association groups, consultants, advisors, or those using them** to facilitate linkage and support program efficiency and stability. (Section 056 Cap-and-Invest consultants and advisors)
- **Clarify use of future vintage allowances** for compliance obligations. (Section 080 Allowances)
- **Add linkage processes and timing requirements** to facilitate linkage. (Section 090 Linkage)
- **Update program accounts** to facilitate linkage. (Section 100 Program accounts required)
- **Change corporate association requirements:**
 - **Revise and clarify corporate association requirements** to facilitate linkage and prevent unequal market advantage. (Section 105 Disclosure of corporate associations – Indicia of corporate associations)
 - **Update corporate disclosure requirements** to facilitate linkage, increase transparency for market participants and prevent unequal market advantage. (Section 110 Disclosure of corporate associations – Types of disclosures required)
 - **Clarify and update disclosed information requirements** to facilitate linkage and support program function. (Section 120 Disclosure of corporate association – Information to be submitted)
- **Change account representative and viewing agent designation requirements:**
 - **Update account representative designation and certification requirements** to facilitate linkage and support program efficiency and stability. (Section 130 Designation and certification of account representatives)

- **Update account viewing agent designation requirements** to facilitate linkage and support program efficiency and stability. (Section 140 Designation of account viewing agents)
- **Update accounts and limits** with statutory changes, to facilitate linkage, and to and support program efficiency and stability. (Section 150 Accounts for registered entities)
- **Update allowance supplies and allocation procedures:**
 - **Update total program baselines** to reflect sectors entering the program in the second and third compliance periods, as required by statute. (Section 200 Total program baseline)
 - **Establish allowance budgets** for future years, as required in statute. (Section 210 Total program allowance budgets)
 - **Update procedures for allocating no-cost allowances to emissions-intensive and trade-exposed facilities** to align with statutory changes and to support program efficiency and stability. (Section 220 Distribution of allowances to emissions-intensive and trade-exposed facilities)
 - **Update no-cost allowance allocation and consignment rules for electric utilities** for clarity and to support program efficiency and stability. (Section 230 Distribution of allowances to electric utilities)
 - **Add no-cost allowance allocation, consignment requirements, and requirements to complete a decarbonization plan for waste-to-energy facilities** to align with statutory requirements. (Section 235 Distribution of allowances to waste-to-energy facilities)
 - **Update no-cost allowance allocation to natural gas utilities** to align with statute. (Section 240 Distribution of allowances to natural gas utilities)
- **Reorganize Voluntary Renewable Electricity reserve account requirements** for clarity. (Section 245 Voluntary renewable electricity reserve account)
- **Update allowance removal and retirement procedures** to support program efficiency and stability and to facilitate linkage. (Section 250 Removing and retiring allowances)
- **Reorganize allowance distribution dates** with other sections for clarity. (260 Allowance distribution dates)
- **Change auction requirements:**
 - **Update current and prior year allowance auction deadlines and limits** to implement statutory changes, facilitate linkage, support efficiency and stability, and for clarity. (Section 300 Auctions of current and prior year allowances)
 - **Add and clarify auction registration disclosure requirements** to support efficiency and stability and to facilitate linkage. (Section 315 Registration for an auction)

- **Clarify prohibited actions** required to support efficiency and stability. (Section 317 Auctions – prohibited actions)
- **Clarify and update deregistration ability** to support program efficiency and stability and to facilitate linkage. (Section 320 Suspension and revocation of registration)
- **Align purchase limits** with changes to statute and make clarifications to facilitate linkage. (Section 330 Purchase limits)
- **Update the price ceiling** to align with statutory changes and facilitate linkage. (Section 335 Auction floor price and ceiling price)
- **Clarify bid requirements** without material change. (Section 350 Bids)
- **Update the frequency of future vintage allowances** to facilitate linkage. (Section 365 Auction of future year allowances)
- **Change allowance reserve requirements and price control mechanisms:**
 - **Update allowance supply and tier prices** to align with statutory changes, to facilitate linkage, and make additional changes to support program efficiency and stability. (Section 370 Allowance price containment reserve account)
 - **Update allowance supply and clarify language related to timeframes and who may receive allowances** to align with statutory changes, support program efficiency and stability, and to facilitate linkage. (Section 375 Emissions containment reserve account)
 - **Clarify price ceiling unit participation and availability** to facilitate linkage. (Section 380 Price ceiling units)
 - **Clarify and correct price ceiling unit sales language and update who can make a request** to support program efficiency and stability. (Section 385 Price ceiling unit sales)
- **Change transaction and transfer requirements:**
 - **Update transaction requirements** to facilitate linkage and streamline language for clarity. (Section 400 Compliance instrument transactions – general information)
 - **Clarify and correct allowance transfer language** without material change. (Section 410 Transfers among registered entities – process)
 - **Establish clearinghouse transaction processes** to facilitate linkage and to support program efficiency and stability. (Section 412 Transactions involving exchange clearinghouses)
 - **Update attestations and transaction requests** to facilitate linkage and to support program efficiency and stability. (Section 415 Transaction requests – information required by Ecology)

- **Align no-cost allowance transfer language** with statutory changes and for clarity. (Section 425 Transfers of no-cost allowances from an electric utility to an electrical generating facility)
- **Add a transfer process from electric utilities to federal power marketing administrations** to align with statutory changes. (Section 426 Transfers of no-cost allowances from an electric utility to a federal power marketing administration)
- **Update waste-to-energy facility no-cost allowance transfer consignment requirements** to align with statutory changes. (Section 430 Transfers of NCAs from a utility's holding account to its limited use holding account for consignment to auction)
- **Add a process for voluntary retirement transfers** to support clarity in Ecology's process. (Section 435 Voluntary requirement transfers)
- **Add transfer prohibitions** to support market efficiency and stability and to facilitate linkage. (Section 440 Compliance instrument transactions – prohibited actions)
- **Update compliance obligation requirements** for clarity, to facilitate linkage and align with statutory changes related to offsets. (Section 600 Compliance obligations)
- **Add and clarify enforcement requirements** to support program efficiency and stability, to facilitate linkage, and to align with statutory changes. (Section 610 Enforcement)
- **Update contact information** to reflect current information. (Section 620 Contact information)

1.4 Document organization

The chapters of this document are organized as follows:

Chapter 2 – Regulatory baseline and the rule amendments: Description and comparison of the regulatory 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 cost impacts we expect impacted entities to incur as a result of the rule amendments.

Chapter 4 - Likely benefits of the rule amendments: Analysis of the types and sizes of benefit impacts we expect to result from the rule amendments.

Chapter 5 - Cost-benefit comparison and conclusions: Discussion of the complete implications of the cost-benefit analysis.

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: Regulatory Baseline and Rule Amendments

2.1 Introduction

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

Note that because the statutes and rules addressed here also use the term “baseline” when referring to emissions, **this analysis uses the term “regulatory baseline”** to refer to statutes and rules applicable in the absence of the rule amendments.

2.2 Regulatory baseline

The regulatory baseline for our analyses generally consists of existing statutes 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 regulatory baseline includes:

- Chapter 173-446 WAC, Climate Commitment Act Program Rule (the existing CCA rule).
- Chapter 173-441 WAC, Reporting of Emissions of Greenhouse Gases (the existing reporting rule).
- Chapter 70A.65 RCW, Greenhouse Gas Emissions – Cap-and-Invest Program (the CCA statute).
- Chapter 70A.45 RCW, Limiting Greenhouse Gas Emissions (including emissions limits referenced by the CCA statute, and an authorizing statute for the reporting rule).
- Chapter 70A.15 RCW, Washington Clean Air Act (including reporting referenced by the CCA statute, and the primary authorizing statute for the reporting rule).
- Recently enacted bills amending the CCA statute and Washington Clean Air Act:
 - Carbon Market Linkage – California-Québec Carbon Market, Chapter 352, Laws of 2024 (Engrossed Second Substitute Senate Bill 6058 passed in 2024; amended the CCA statute and Washington Clean Air Act).
 - Climate Commitment Act – Modification, Chapter 320, Laws of 2025 (Second Substitute House Bill 1975 passed in 2025; amended the CCA statute and Washington Clean Air Act).
 - Agricultural Fuel Use – Climate Commitment Act Exemptions, Chapter 282, Laws of 2025 (Engrossed Second Substitute House Bill 1912 passed in 2025; amended the CCA statute).

- Waste-to-energy Facilities – Climate Commitment Act, Chapter 216, Laws of 2026 (Engrossed Second Substitute House Bill 2416 passed in 2026; amended the CCA statute).
- Chapter 19.405 RCW, Clean Energy Transformation Act (CETA; 2019), which commits Washington to an electricity supply free of greenhouse gases.
- Chapter 70A.535 RCW, Transportation Fuel – Clean Fuels Program, most recently updated in 2025, which requires transportation fuels to reduce their carbon intensity over time.

2.2.1 Regulatory baseline RCW highlights

Throughout this chapter, we highlight aspects of the regulatory baseline statutes (including amendments made in 2024, 2025 and 2026) that are specifically relevant to the rule amendments. These include statutory requirements for the Cap-and-Invest Program that we further implement through the CCA rule – these can also affect related requirements for the greenhouse gas reporting rule. Some of these requirements are new, based on recent statutory changes. Others were forward-looking requirements in the original CCA statute, which intended for the CCA rule to be updated over time.

The regulatory baseline statutes require Ecology to:

- Seek to enter into linkage agreements with other jurisdictions, subject to a public comment process and Ecology’s findings related to:
 - How linkage would impact Washington’s ability to meet its greenhouse gas reduction limits.
 - Impacts on vulnerable populations and overburdened communities.²¹
- Consider opportunities to implement the program in a manner that allows linking the state’s program with other jurisdictions.²²
- Establish emission reporting methods that are designed to address accuracy and consistency.²³
- Seek to reduce reporting burdens for electric power entities with up to 10,000 metric tons of carbon dioxide-equivalent (MT CO₂e) by allowing use of other existing reports.²⁴
- Adopt annual allowance budgets for the second compliance period of the Cap-and-Invest Program, by October 1, 2026.²⁵

²¹ RCW 70A.65.210

²² RCW 70A.65.060(3)

²³ RCW 70A.15.2200(5)

²⁴ RCW 70A.15.2200(5)(a)

²⁵ RCW 70A.65.070(1)(b)

- Adopt rules to address electricity imports and support implementation of the CCA rule.²⁶
- Adopt a methodology to address imported electricity from centralized electricity markets by October 1, 2026.²⁷
- Adopt an allocation schedule, by October 1, 2026, by rule for no-cost allowances to electric utilities.²⁸

Detailed statutory requirements for the Cap-and-Invest Program include, but are not limited to:

- New definitions related to biofuels.²⁹
- Allowing for alternative lengths of compliance periods, if needed to align with a linked jurisdiction.³⁰
- What the Cap-and-Invest Program covers and what is exempt:
 - Waste-to-energy facilities are covered entities, beginning in the second compliance period, if their greenhouse gas emissions were at least 25,000 MT CO₂e in a given year between 2023 and 2025.³¹
 - Beginning in the third compliance period, railroad companies are covered entities, if their greenhouse gas emissions were at least 25,000 MT CO₂e in a given year between 2027 and 2028.³²
 - Agricultural fuels are exempt from coverage under the Cap-and-Invest Program whether they are used in a vehicle or not through 2029. Beginning in 2030, they must be used in a vehicle to be exempt. Agricultural fuels include motor vehicle fuel and special fuels such as diesel, liquefied petroleum gas, and biodiesel.³³
- How the Cap-and-Invest Program deals with electricity:
 - Electricity wheeled through Washington is excluded from imported electricity.³⁴
 - Entities with any amount of greenhouse gas emissions that come from unspecified electricity imports are covered under the Cap-and-Invest Program.³⁵

²⁶ RCW 70A.15.2200(5)(a), RCW 70A.65.010(43)(d), RCW 70A.65.010(27)(j)

²⁷ RCW 70A.65.080(1)(c)(ii)

²⁸ RCW 70A.65.120(2)(c)

²⁹ RCW 70A.65.010(12)

³⁰ The original CCA statute (underling the existing CCA rule) defined compliance periods as 4-year periods with specific beginning and ending dates. This statute was amended by SB 6058 (2024). Specifically, the current definition of a compliance period in RCW 70A.65.010(20) was amended by SB 6058 (2024) to allow Ecology to change compliance period dates by rule, if needed to link. Language throughout the CCA statute as currently written allows for a change to compliance period dates, except for the first compliance period.

³¹ RCW 70A.65.080(2)(a)(i)

³² RCW 70A.65.080(3)

³³ RCW 70A.65.080(7)(e)(i)

³⁴ RCW 70a.65.010(43)

³⁵ RCW 70A.65.080(1)

- A federal power marketing administration (FPMA) can opt into the Cap-and-Invest Program. It may choose to take on the compliance obligation either for all its electricity sales into Washington or just for its sales through centralized electricity markets. Ecology must set registration requirements for a FPMA that opts into the Cap-and-Invest Program. Electric utilities are allowed to transfer no-cost allowances to the FPMA, and the law sets related notification and transfer requirements.³⁶
- How no-cost allowances are distributed to EITEs:
 - Allocation of no-cost allowances to EITE covered entities are determined on 4-year cycles until 2034. For 2023 through 2026, allocation must be based on each facility's carbon intensity or mass-based allocation baselines, and accounting for changes in production volumes where applicable. For 2027-2030 and 2031-2034, total allocation must be adjusted downwards by a fixed percentage specified in the law. Allocation may also be adjusted by Ecology based on technical and economic feasibility.³⁷
- How many allowances participants in the Cap-and-Invest Program can buy or hold:
 - The percentage a single covered or opt-in entity can buy at an allowance auction is limited at 25% of auctioned allowances (instead of the 10%, effective until the end of 2024).³⁸ General market participants may not buy more than 4% of the allowances offered during a single auction.
 - General market participants may not own more than 10% of total allowances issued in a calendar year, unless the Cap-and-Invest Program links with another jurisdiction that does not have that requirement. Otherwise, 10% is the maximum.³⁹
- How allowance budgets are set resulting in an increased supply of allowances due to a clarification that statutory greenhouse gas limits are to be met at the end of each year versus the start of each year:⁴⁰
 - An expansion of the number of allowances previously introduced to the Cap-and-Invest market from 2023 to 2026.
 - An expansion in the number of allowances that will be introduced to market from 2027 through 2050.

³⁶ RCW 70A.65.320

³⁷ RCW 70A.65.110(3)

³⁸ RCW 70A.65.100(6)

³⁹ RCW 70A.65.100(6)

⁴⁰ RCW 70A.65.070(2)

- o An increase in allowances placed in the allowance price containment reserve (APCR), emissions containment reserve (ECR), and voluntary renewable electricity (VRE) resulting from these changes to the 2023 through 2050 budgets.
- How allowance price volatility is limited:
 - o To reduce price volatility leading up to linking the program to another jurisdiction's program, APCR allowances through 2040 must be frontloaded for earlier availability. Between 2% and 5% of allowances from 2027 through 2040 must be frontloaded into the APCR.⁴¹
 - o The price ceiling for 2026 and 2027 is set at \$80 and the tier 2 trigger price for auctions of APCR allowances must be adjusted accordingly. The price ceiling must increase annually in proportion to the APCR trigger price. If the Cap-and-Invest Program links with another jurisdiction's program, and they do not align their price ceiling with Washington's, Ecology can align its price ceiling with theirs.⁴²
- How offset credits are used to meet compliance obligations:
 - o Offset credits can be up to 5% (first compliance period) and up to 4% (second and later compliance periods) of a covered entity's compliance obligation, regardless of whether the offset projects they come from are on Tribal land or not.⁴³
 - o An additional 3% (first compliance period) and 2% (second compliance period) of a covered entity's compliance obligation can be from offset projects on Tribal land.⁴⁴
 - o In a linked market, at least 50% (first compliance period) and at least 75% (later compliance periods) of offset credits used for compliance must provide direct environmental benefits (DEBs) to Washington. The remaining portion may come from credits issued by a linked jurisdiction for projects located in a linked jurisdiction.
- How waste-to-energy facilities are treated:
 - o For the period beginning January 1, 2027, through December 31, 2030, Ecology must allocate no-cost allowances to waste-to-energy facilities constructed before 1992 under program coverage. Facilities must maintain compliance with federal laws and regulations, meet state air quality standards, and provide timely verified reports.

⁴¹ RCW 70A.65.150

⁴² RCW 70A.65.160(1)

⁴³ RCW 70A.65.170

⁴⁴ RCW 70A.65.170

- o No-cost allowances must be allocated based on a percentage of a facility's baseline greenhouse gas emissions, defined as the facility's average annual emissions, during the calendar years 2021 through 2025:
 - 100% of baseline emissions for Emissions Years 2027 and 2028.
 - 93% of baseline emissions for Emissions Year 2029.
 - 86% of baseline emissions for Emissions Year 2030.
- o A facility is required to consign 40% of allocated no-cost allowances to auction. Proceeds may only be used for investments in projects or programs that reduce greenhouse gas emissions associated with the facility, and these investments must be detailed in a decarbonization plan reviewed by Ecology and completed by 2030.

2.2.2 Analytic separability of regulatory baseline and amended requirements with Ecology discretion

In most of Ecology's Regulatory Analyses, the rule requirements analyzed are readily separable from the requirements of their authorizing statute. In this rulemaking, Ecology has included some of the amended rule requirements that are dictated by the CCA statute and the reporting provision of the statute (as amended by recent legislation) as explicitly part of the regulatory baseline with the existing rules, while we excluded from the regulatory baseline the requirements that were included as a result of Ecology's discretion (see detailed discussion in Section 2.3). Due to the detailed nature of the authorizing statutes, statutory changes, and the interaction of multiple parts of the existing rules with adopted amendments, it is difficult to conceptually separate the regulatory baseline from discretionary elements of the amended rule. For example, the regulatory baseline defines the program's scope and key compliance mechanisms, and statutory changes include specific requirements for carbon market functions. The rule amendments include requirements needed to fully implement these statutory requirements and to meet statutory direction related to carbon market linkage. These various elements interact to fully define the program, affect resulting compliance behaviors, and affect carbon market outcomes like prices.

When this is the case, the projected impacts of Ecology's discretion in the amendments are not analytically separable from the projected impacts of the overall program directed in statute and implemented by the existing rule under the regulatory baseline. To avoid underestimating costs in these cases, we estimated the costs and benefit of the amendments accounting for individual elements of the regulatory baseline only wherever they were identifiably separable from the rule amendments. When this was not possible, we evaluated the costs and benefits of combined regulatory baseline and discretionary requirements of the CCA and reporting programs.

We also note that, for amendments that would influence allowance prices, the specific impacts of purely discretionary choices would identify only a subset of the impacts to future greenhouse gas emissions and price trajectories. This would not fully inform the public, affected entities, or

decision-makers about what the actual likely impacts to overall costs and benefits would be under the amendments, making it difficult to compare the state of the CCA and reporting programs with and without the adopted amendments.

For example, isolating the impacts of changes to allocation of no-cost allowances could inform the change in remaining allowance demand for some covered entities and their willingness-to-pay for allowances. But without an understanding of the interaction between changes in their allowance demand, demand from other entities, changes to allowance supply, and changes to price containment mechanisms, we would not be able to estimate changes to costs or emissions reductions incentivized by the carbon market itself. As a result, the public and covered entities would not be as fully informed about what the amendments would do through the carbon market over time. Assessing the overall impact of the program allows us to more comprehensively understand the overall impacts of the rule amendments, with an understanding that some of the costs and benefits may be coming from the regulatory baseline.

2.3 Adopted rule amendments

Amendments facilitating market linkage

In analyzing the costs and benefits of the rule amendments, Ecology identified that while many of the amendments are intended to align Washington's carbon market with the California-Québec market to facilitate market linkage, this rulemaking does not officially link the three programs. While the official linkage agreement was signed by all three jurisdictions in June 2026, market linkage will occur only after the other jurisdictions adopt regulations to recognize and accept compliance instruments from Washington starting on a specified linkage effective. Many of the adopted rule amendments would only be triggered by market linkage and only have effect after the linkage effective date. Changes that would be relevant and applicable for an unlinked market would remain in place until that linkage effective date.

This required Ecology to consider two scenarios for the impacts of the rule amendments: (1) an amended and aligned but unlinked market and (2) an amended and aligned and linked market. The amendments themselves will only directly result in an aligned but unlinked market. However, as the statutory and rulemaking intent is to facilitate linkage and as Ecology has signed a linkage agreement with California and Québec, presenting only impacts of an unlinked scenario would not necessarily reflect realistic expectations of costs or benefits. As a result, our discussion of likely impacts in this chapter addresses both unlinked and linked scenarios.

The amendments to the greenhouse gas reporting rule:

- **Clarify and add definitions** to facilitate linkage. (Section 020 Definitions)
- **Clarify program applicability and exit conditions** to facilitate linkage, promote consistency, improve clarity, and align with statutory changes. (Section 030 Applicability)
- **Update reporting methodologies** to align with statutory changes and facilitate linkage. (Section 040 Greenhouse gases)

- **Update monitoring, reporting, recordkeeping, and verification** to facilitate linkage, improve program efficiency and stability, and improve clarity. (Section 050 General monitoring, reporting, recordkeeping, and verification requirements)
- **Update verification requirements** to facilitate linkage and improve program efficiency and stability. (Section 085 Third-party verification)
- **Change calculation methods:**
 - **Update facility calculation methods** to facilitate linkage, update language, and improve clarity. (Section 120 Calculation methods for facilities)
 - **Align supplier calculation methods** with statutory changes and update to facilitate linkage. (Section 122 Calculation methods for suppliers)
 - **Update electric power entity calculation methods** to facilitate linkage, align with statutory changes, improve clarity, and ensure consistent coverage of electricity imports, including via centralized electricity markets as required by statute. (Section 124 Calculation methods for electric power entities)

The amendments to the CCA rule:

- **Add or amend definitions** for clarity or to support alignment with statutory changes, facilitate linkage, and support program efficiency and stability. (Section 020 Definition changes)
- **Update program coverage and compliance periods:**
 - **Align coverage thresholds and compliance periods** with statutory changes and update to facilitate linkage. (Section 030 Applicability)
 - **Align coverage exemptions** with statutory changes. (040 Covered emissions)
 - **Align requirements for importers of unspecified electricity** with statutory changes and to facilitate linkage. (Section 060 New or modified covered entities)
 - **Add and streamline exit procedures** to support program efficiency and stability. (Section 070 Exiting the program)
- **Change registration requirements:**
 - **Update covered and opt-in registration requirements** to support program efficiency and stability, and to facilitate linkage. (Section 050 Covered and opt-in entity registration)
 - **Add exchange clearinghouse registration requirements** to facilitate linkage and to support program efficiency and stability. (Section 052 Exchange clearinghouse registration)
 - **Update electric utility registration requirements** to support program efficiency and stability. (Section 053 Electric utilities registration)

- **Align federal power marketing administration registration requirements** with statutory changes. (Section 054 Federal power marketing administration registration)
- **Update general market participant registration requirements** to support program efficiency and stability, and to facilitate linkage. (Section 055 General market participant registration)
- **Update requirements for corporate association groups, consultants, advisors, or those using them** to facilitate linkage and support program efficiency and stability. (Section 056 Cap-and-Invest consultants and advisors)
- **Clarify use of future vintage allowances** for compliance obligations. (Section 080 Allowances)
- **Add linkage processes and timing requirements** to facilitate linkage. (Section 090 Linkage)
- **Update program accounts** to facilitate linkage. (Section 100 Program accounts required)
- **Change corporate association requirements:**
 - **Revise and clarify corporate association requirements** to facilitate linkage and prevent unequal market advantage. (Section 105 Disclosure of corporate associations – Indicia of corporate associations)
 - **Update corporate disclosure requirements** to facilitate linkage, increase transparency for market participants and prevent unequal market advantage. (Section 110 Disclosure of corporate associations – Types of disclosures required)
 - **Clarify and update disclosed information requirements** to facilitate linkage and support program function. (Section 120 Disclosure of corporate association – Information to be submitted)
- **Change account representative and viewing agent designation requirements:**
 - **Update account representative designation and certification requirements** to facilitate linkage and support program efficiency and stability. (Section 130 Designation and certification of account representatives)
 - **Update account viewing agent designation requirements** to facilitate linkage and support program efficiency and stability. (Section 140 Designation of account viewing agents)
- **Update accounts and limits** with statutory changes, to facilitate linkage, and to and support program efficiency and stability. (Section 150 Accounts for registered entities)
- **Update allowance supplies and allocation procedures:**
 - **Update total program baselines** to reflect sectors entering the program in the second and third compliance periods, as required by statute. (Section 200 Total program baseline)

- **Establish and modify allowance budgets** for future years, as required in statute and to align with statutory changes regarding the date upon which economy-wide greenhouse gas limits must be reached. (Section 210 Total program allowance budgets)
- **Update procedures for allocating no-cost allowances to emissions-intensive and trade-exposed facilities** to align with statutory changes and to support program efficiency and stability. (Section 220 Distribution of allowances to emissions-intensive and trade-exposed facilities)
- **Update no-cost allowance allocation and consignment rules for electric utilities** for clarity and to support program efficiency and stability. (Section 230 Distribution of allowances to electric utilities)
- **Add no-cost allowance allocation, consignment requirements, and requirements to complete a decarbonization plan for waste-to-energy facilities** to align with statutory requirements. (Section 235 Distribution of allowances to waste-to-energy facilities)
- **Update no-cost allowance allocation to natural gas utilities** to align with statute. (Section 240 Distribution of allowances to natural gas utilities)
- **Reorganize Voluntary Renewable Electricity reserve account requirements** for clarity. (Section 245 Voluntary renewable electricity reserve account)
- **Update allowance removal and retirement procedures** to support program efficiency and stability and to facilitate linkage. (Section 250 Removing and retiring allowances)
- **Reorganize allowance distribution dates** with other sections for clarity. (260 Allowance distribution dates)
- **Change auction requirements:**
 - **Update current and prior year allowance auction deadlines and limits** to implement statutory changes, facilitate linkage, support efficiency and stability, and for clarity. (Section 300 Auctions of current and prior year allowances)
 - **Add and clarify auction registration disclosure requirements** to support efficiency and stability and to facilitate linkage. (Section 315 Registration for an auction)
 - **Clarify prohibited actions** required to support efficiency and stability. (Section 317 Auctions – prohibited actions)
 - **Clarify and update deregistration ability** to support program efficiency and stability and to facilitate linkage. (Section 320 Suspension and revocation of registration)
 - **Align purchase limits** with changes to statute and make clarifications to facilitate linkage. (Section 330 Purchase limits)

- **Update the price ceiling** to align with statutory changes and facilitate linkage. (Section 335 Auction floor price and ceiling price)
- **Clarify bid requirements** without material change. (Section 350 Bids)
- **Update the frequency of future vintage allowances** to facilitate linkage. (Section 365 Auction of future year allowances)
- **Change allowance reserve requirements and price control mechanisms:**
 - **Update allowance supply and tier prices** to align with statutory changes, to facilitate linkage, and make additional changes to support program efficiency and stability. (Section 370 Allowance price containment reserve account)
 - **Update allowance supply and clarify language related to timeframes and who may receive allowances** to align with statutory changes, support program efficiency and stability, and to facilitate linkage. (Section 375 Emissions containment reserve account)
 - **Clarify price ceiling unit participation and availability** to facilitate linkage. (Section 380 Price ceiling units)
 - **Clarify and correct price ceiling unit sales language and update who can make a request** to support program efficiency and stability. (Section 385 Price ceiling unit sales)
- **Change transaction and transfer requirements:**
 - **Update transaction requirements** to facilitate linkage and streamline language for clarity. (Section 400 Compliance instrument transactions – general information)
 - **Clarify and correct allowance transfer language** without material change. (Section 410 Transfers among registered entities – process)
 - **Establish clearinghouse transaction processes** to facilitate linkage and to support program efficiency and stability. (Section 412 Transactions involving exchange clearinghouses)
 - **Update attestations and transaction requests** to facilitate linkage and to support program efficiency and stability. (Section 415 Transaction requests – information required by Ecology)
 - **Align no-cost allowance transfer language** with statutory changes and for clarity. (Section 425 Transfers of no-cost allowances from an electric utility to an electrical generating facility)
 - **Add a transfer process from electric utilities to federal power marketing administrations** to align with statutory changes. (Section 426 Transfers of no-cost allowances from an electric utility to a federal power marketing administration)

- **Update waste-to-energy facility no-cost allowance transfer consignment requirements** to align with statutory changes. (Section 430 Transfers of NCAs from a utility’s holding account to its limited use holding account for consignment to auction)
- **Add a process for voluntary retirement transfers** to support clarity in Ecology’s process. (Section 435 Voluntary requirement transfers)
- **Add transfer prohibitions** to support market efficiency and stability and to facilitate linkage. (Section 440 Compliance instrument transactions – prohibited actions)
- **Update compliance obligation requirements** for clarity, to facilitate linkage and align with statutory changes related to offsets. (Section 600 Compliance obligations)
- **Add and clarify enforcement requirements** to support program efficiency and stability, to facilitate linkage, and to align with statutory changes. (Section 610 Enforcement)
- **Update contact information** to reflect current information. (Section 620 Contact information)

Amendments to both rules also make multiple wording clarifications, corrections, and cross-references without material impact to requirements. Amendments also add specificity to deadlines when they do not fall on a business day. This will make very minor shifts for some deadlines (to earlier or later), technically changing the present value of costs to meet those deadlines by approximately 0.005% per day.

2.3.1 Reporting rule: Definitions (section 020)

Regulatory baseline

The CCA statute, as amended by SB 6058 (2024), no longer requires Ecology to update the rule to align with amendments to federal greenhouse gas reporting rules. This chapter also sets the regulatory scope of the reporting rule as it only applies in Washington. The existing rule includes explanation of what a “material misstatement is” though it does not include the term in its definition section.

Adopted amendments

The rule amendments allow the reporting rule to deviate from updates to federal law, by retaining the requirements adopted by reference in the existing rule. They also add definitions of “material misstatement” and “nonconformance”. The new definitions clarify and restate how these terms are defined and used elsewhere in the baseline rule. Finally, the amendments make multiple corrections or clarifications to the rule language without materially changing rule requirements. For example, “facilities” is defined only as including facilities in Washington, which aligns with the agency’s regulatory scope.

Expected impact

We do not expect these amendments to result in costs or benefits as compared to the regulatory baseline, beyond benefits of clarity. This is because they are clarifications of the regulatory baseline without material difference.

2.3.2 Reporting rule: Program applicability and exit conditions (section 030)

Regulatory baseline

Chapter 70A.65 RCW (the CCA statute), as amended by SB 6058 (2024), expands Cap-and-Invest Program coverage to include electricity importers who import any unspecified electricity where the associated emissions exceed zero metric tons of carbon dioxide equivalent (MT CO₂e) in a year. SB 6058 allows Ecology, by rule, to require electric power entities to report emissions of greenhouse gases from all electricity that is purchased, sold, imported, exported, or exchanged in Washington, which helps support the revised coverage threshold for electricity importers.

Under the existing reporting rule, entities may stop reporting when they meet certain criteria related to their emissions over time. These include reporting either five consecutive years of emissions below 10,000 MT CO₂e, or three consecutive years of emissions below 5,000 MT CO₂e. They must follow notification requirements to do so. Under the CCA statute, a federal power marketing administration (FPMA) may voluntarily opt into the Cap-and-Invest Program and take on the compliance obligations for imported electricity when the FPMA is identified as the electricity importer.

Adopted amendments

The rule amendments change the reporting threshold from 10,000 to zero MT CO₂e for electricity importers. To facilitate compliance, the amendments also clarify that this threshold takes effect starting for Emissions Year 2027.

The amendments clarify that existing criteria and processes for stopping reporting continue to apply to facilities and fuel suppliers but would specify similar criteria and a process for electric power entities using the relevant zero MT CO₂e threshold. They also specify that electric power entities that have zero imported electricity because a FPMA has opted into the reporting and CCA rule no longer need to report. To exit reporting, these entities still need to meet notification requirements.

Expected impact

We expect these rule amendments to result in minor costs compared to the regulatory baseline, due to the zero-threshold reporting requirement. We also expect them to result in benefits from clarity and incorporating statutory requirements into one location (rather than across statute and rule), and for some electric utilities they may result in cost-savings of being able to stop reporting earlier than under the regulatory baseline. Where electric utility customers of a FPMA may incur costs of notification to exit the reporting program, we expect they will only choose to do this if they anticipate a net cost-savings compared to waiting to report between three and five years of emissions below the existing thresholds under the regulatory baseline rule.

2.3.3 Reporting rule: Reporting methodologies and requirements (section 040)

Regulatory baseline

Under chapter 70A.15 RCW (the Clean Air Act), as amended by SB 6058 (2024), Ecology is required to set greenhouse gas reporting methodologies to address needs of accuracy and consistency over time, and Ecology is allowed to make them similar to reported methodologies in linked jurisdictions. The existing rule references federal methodology as of a specified date.

Adopted amendments

To support consistent reporting methodologies, the rule amendments replace the set of “saturated PFCs” with the set of “fully fluorinated greenhouse gases”. This aligns rule requirements with the wording used in the federal methodology referenced in the existing rule as of the federal adoption date also referenced in the existing rule.

Expected impact

We do not expect the amendments to reporting methodologies to result in costs or benefits beyond clarity, as compared to the regulatory baseline.

2.3.4 Reporting rule: Monitoring, reporting, recordkeeping, and verification (section 050)

Regulatory baseline

Under the existing reporting rule, entities required to report or voluntarily reporting must do so by March 31 of each year, except electric power entities reporting under Section 124 of the reporting rule (Calculation methods for electric power entities) which have a deadline of June 1 of each year. Under Section 124, electric power entities must follow required calculations to determine whether they are subject to reporting requirements.

Under the Clean Air Act, as amended by SB 6058 (2024), Ecology is required to set greenhouse gas reporting methodologies to address needs of accuracy and consistency over time, and Ecology is allowed to make them similar to reported methodologies in linked jurisdictions. The existing rule includes required computations entities must use in the event of missing data in their emissions calculations.

The existing rule includes a table of total annual facility product data requirements by industry. For petroleum refineries, these include a facility-level federal report, barrels of crude oil and intermediate products processed at the facility, and complexity-weighted barrels as reported under California rules.

Under the existing rule, reporting entities are required to have a data monitoring plan. This plan includes documenting the people or entities responsible for collection of emissions data and greenhouse gas emissions calculations, as well as the processes and methods used to collect the supporting data for calculations.

For facilities that use flow meters, the existing reporting rule includes calibration and accuracy requirements for the meters. These include using a “best available estimate” to substitute for missing product data that cannot be reflected using corresponding federal regulations.

The existing rule requires a person who discovered or is notified by Ecology of substantive errors in their annual greenhouse gas report to either resubmit a corrected report or demonstrate that a substantive error has not occurred.

Adopted amendments

The rule amendments clarify that electric power entities must use the calculation methods in the rule to report voluntarily as well.

The rule amendments align missing data computations with those required in California. These include changing from using “the total number of hours in the year that a missing data procedure was used for each data element” to using “the data capture rate of that element, and a percentage of the data year”.

In the table of facility product data reporting requirements, the rule amendments remove complexity-weighted barrels from petroleum refinery reporting requirements.

For the existing monitoring plan, the amendments add product data to the types of data the plan must document people, processes, and methods for.

The rule amendments align calibration and accuracy requirements with requirements in California. These include replacing the “best available estimate” to substitute for missing data, with specific sets of past data from the facility, depending on the data capture rate. The lower the data capture rate, the more years of past data must be used.

The amended rule defines the scope of substantive errors, including thresholds for when a revised annual greenhouse gas report must be submitted to Ecology when the substantive error impacts the quantity of GHG emissions reported. It also sets timelines for Ecology notification and reporter submittal of revised reports and sets the timeframes within which substantive errors resulting from over-reporting or under-reporting emissions must be identified to require submittal of a revised report.

Expected impact

Under the regulatory baseline, electric power entities voluntarily reporting may encounter necessary corrections to their reports to meet the regulatory baseline. Therefore, we do not expect the amendment related to voluntary reporting to significantly affect costs or benefits aside from potentially improving timeliness of reports and reducing correction delays.

While changes to missing data procedures may affect the final emissions calculation results, we do not expect a significant difference in the amount of labor or information required to adjust for missing data and report results differently. The final results of these calculations, however, are likely more reliable.

While it is a reduction in reporting requirements and is conceptually cost-savings for refineries, we do not expect the removal of complexity-weighted barrels from reporting to result in costs

or benefits. No entity has ever been required to report this. We do not expect significant changes in the petroleum refinery reporting population covered by the rule.

While not a rule requirement, product data is used in calculations that determine allocation of no-cost allowances to emissions-intensive and trade-exposed facilities under the regulatory baseline, meaning facilities have existing requirements that incentivize documentation of product data procedures to demonstrate compliance with the regulatory baseline. Ecology has also been requiring this data from production facilities. As such, we do not expect this amendment to result in significant costs or benefits as compared to the baseline.

Under the regulatory baseline, “best available estimate” is not defined for use in substituting for missing data. Some facilities may already be using independent approaches to calculate “best available estimate” that are similar to this amendment. Others may be using methods that provide lower quality estimates, while others may be using methods that use more past data than would be required under the amendments. We do not expect additional labor costs to be associated with these different estimation techniques, but there may be impacts to the amount of emissions ultimately reported. As we do not have data on what procedures are being used under the regulatory baseline, we cannot confidently determine whether the amendments would result in increases or decreases to reported emissions.⁴⁵

Compared to the regulatory baseline of a broad requirement for reporters to resubmit reports in the event of substantive errors, we expect the rule amendments to potentially reduce the number of resubmitted reports. This would result in a cost-savings of avoided labor to develop and submit revised reports.

2.3.5 Reporting rule: Verification requirements (section 085)

Regulatory baseline

The existing rule requires any entity that emits at least 25,000 MT CO₂e under the rule, or that has a mandatory or voluntary compliance obligation under chapter 17A.65 RCW, to undergo third-party verification. It also includes definitions relevant to what third-party verification is and what it entails.

Existing rule requirements include having a verification plan that details data and methodologies used to verify annual reports and verification schedules. They also require third-party verifiers for Washington’s program to be certified for use in California’s greenhouse gas emissions program.

Adopted amendments

⁴⁵ We note that higher or lower reported emissions may affect entities’ compliance obligations, no-cost allowance allocations, and ultimate demand for market allowances. Shifts in demand for market allowances would also put upward or downward pressure on allowance prices, making the ultimate impact on costs or benefits indeterminate. As these procedures would be required to improve data accuracy, we do not believe they would be sufficient to significantly affect market prices.

The amended rule clarifies that only entities that report more covered emissions than the 25,000 MT CO₂e threshold (rather than emitting more than the threshold) must undergo third-party verification. It also amends or adds definitions to clarify existing terms, without material change from reasonable interpretation of the regulatory baseline language in context, to align with regulatory definitions in California’s greenhouse gas emissions program.

To facilitate carbon market linkage and improve clarity, the rule amendments add requirements for verifications plans, sampling plans, plan retention, data checks, and independent reviewers.

Finally, the rule amendments clarify due date context for business days and clarify applicability of suspension or revocation criteria to both verification bodies and individual verifiers.

Expected impact

We do not expect the clarification of reporting at or above the 25,000 MT CO₂e threshold for covered emissions, rather than emitting more than the threshold, to result in costs or benefits as compared to the regulatory baseline. This is because the term “emissions” is likely interpreted as the amount reported according to the calculations in rule, regardless of the level of other, non-covered, emissions.

We do not expect the clarification of definitions to result in costs or benefits as compared to the baseline as they would not materially change requirements.

The amendments to verification and sampling plans would align with California’s program requirements for third-party verification and the regulatory baseline requires verifiers to be certified to operate in that program; therefore, we do not expect significant costs or benefits to result from these amendments. We also note that in past communication with third-party verifiers, many of the added requirements are consistent with industry standard, and variability in third-party verification pricing comes instead from the degree of complexity in the verification itself (e.g., degree of data centralization, number of site visits).⁴⁶

We do not expect clarifications of non-business-day due dates and applicability of suspension or revocation criteria to materially change rule requirements. Therefore, we do not expect costs or benefits to result from these changes beyond benefits of clarity.

2.3.6 Reporting rule: Calculation methods (sections 120, 122, 124)

Regulatory baseline

Under the Clean Air Act, as amended by SB 6058 (2024), Ecology is required to set greenhouse gas reporting methodologies to address needs of accuracy and consistency over time, and Ecology is allowed to make them similar to reporting methodologies in linked jurisdictions.

⁴⁶ Discussions during rule development for Ecology rulemaking AO# 23-10, [amendments to chapter 173-424 WAC, Clean Fuels Program Rule](https://ecology.wa.gov/regulations-permits/laws-rules-rulemaking/rulemaking/wac-173-424). Adopted October 20, 2025. <https://ecology.wa.gov/regulations-permits/laws-rules-rulemaking/rulemaking/wac-173-424>

The CCA statute, as amended by SB 6058 (2024), defines “biomass-derived fuels” as those with the lower of: 30% lower greenhouse gas lifecycle emissions compared to substitute petroleum fuels, or fuels that meet Ecology’s definition adopted in rule.

For facilities, the existing rule requires calculation methods based on federally required methodologies. It includes exceptions to those calculation methods for many industry categories.

For suppliers, the existing rule defines “biomass-derived fuels”, exempts some types of fuel, and allows fuel suppliers to report exempt fuels.

For electric power entities, the existing rule sets definitions necessary to implement greenhouse gas reporting, including but not limited to “deemed market importer”, “electricity importer”, and “retail sales”. The rule also specifies how emissions are covered under the reporting rule, how they must be reported, and what types of entity are responsible for them.

The CCA statute also directs Ecology to adopt a methodology for addressing imported electricity associated with centralized markets and specifies emissions thresholds for electricity importers to be covered by the program (and therefore needing to report emissions). The CCA statute, as amended by SB 6058 (2024), specifies what electricity does not count as imported electricity, defines related terms such as “electricity wheeled through the state”, enables Ecology to further define the electricity importer when necessary and not already defined in statute, and enables Ecology to further define imported electricity considering electricity already accounted for by the CCA statute.

SB 6058 (2024) also allowed a FPMA more flexibility in opting into the program and assume compliance obligations for either all electricity it markets in the state or for just what it markets in the state through centralized electricity markets.

The reporting provision of the CCA statute allows Ecology to require electric power entities to report greenhouse gas emissions from all electricity that is purchased, sold, imported, exported, or exchanged in the state, to support implementation of the Cap-and-Invest Program.

The CCA rule requires Electric Power Entities reporting imported electricity delivered from unspecified sources to report, for each point of receipt:

- Whether the first point of receipt is located in a linked jurisdiction.
- The amount of electricity from unspecified sources.
- The amount of electricity imports of unspecified electricity that are netted by exports in the same hour to any jurisdiction not linked with Washington’s.
- The net amount of imported unspecified electricity.
- Greenhouse gas emissions including transmission losses.

The existing rule requires reporting of additional information for deemed market importers for claims of specified sources of electricity. To receive a positive verification statement, they must be able to demonstrate that the market operator attributed energy from those resources to

Washington. Records demonstrating this are due to Ecology by May 1st for the previous calendar year.

Adopted amendments

For facilities, the rule amendments to WAC 173-441-120 retain the federal methodologies in the regulatory baseline, but add or revise exceptions to the calculations. These include referencing the applicable regulatory baseline thresholds in the reporting rule and statute.

For suppliers, the rule amendments to WAC 173-441-122 revise the definition of “biomass-derived fuels” to also include natural gas derived from biomass. The adopted rule language provides added clarification related to biogas and to calculation of greenhouse gas emissions reduction relative to fossil fuel. They also incorporate statutory changes resulting from HB 1975 (2025) related to special fuels and make corresponding changes to reporting requirements and calculations necessary to support them.

For electric power entities, the rule amendments to WAC 173-441-124:

- Specify an Emissions Year 2027 start date for new electric power entity reporting rules.
- Require balancing authority areas to sign data sharing agreements that allow a central authority to share comprehensive electricity tracking information with Ecology. This requirement specifies that the agreement authorizes the e-tag authority to share data with Ecology aggregated by entity and statewide for total imports, total exports, and total wheel-throughs.
- Change and add definitions:
 - Revising “deemed market importer” to specify that the resource owner is the deemed market importer when a FPMA is the market participant on behalf of non-federal resources.
 - This definition is also clarified to distinguish “imported electricity from a resource or system assigned, designated, deemed, or attributed to Washington through a centralized electricity market” versus “imported electricity that is bulk unspecified electricity from resources within a centralized electricity market”. This clarification does not materially change requirements from the regulatory baseline.
 - Revising “electricity importer” for clarity and to address gaps in reporting coverage and ability to assign compliance obligations at specific points of regulation under the regulatory baseline rules.
 - Adding a definition for “composite source point of receipt” to facilitate the new composite source accounting method.
 - Adding clarifying definitions or modifying definitions, including for “common point”, “dynamic tag”, “electricity wheeled through the state”, and “imported electricity” to align with and implement requirements from the CCA statute, including its reporting provision.

- o Adding definitions of “committed capacity” and “surplus electricity” to support reporting that will inform Ecology of potential emissions leakage associated with centralized electricity markets. These are used in new composite source reporting requirements.
- Remove the existing “netting” mechanism and replace it with the “wheeled through the state” basis specified in the CCA statute.
- Facilitate reporting of emissions related to specified imports from aggregated zero-emissions generation sources.
- Specify an accounting method for electricity imports from a “composite source point of receipt”.
- Update emissions calculation equations to allow them to account for a different transmission loss factor if it has already been accounted for in centralized electricity market imports.
- Simplify specified source registration requirements.
- Clarify terminology, definitions, and requirements without material effect on requirements.
- Allow small electricity importers to use existing qualifying reports to comply with the reporting rule.
- Extend the deadline for deemed market importers claiming specified sources to submit additional information to receive a positive verification statement, from May to June.

Expected impact

We do not expect the amendments to facility calculations to result in costs or benefits as compared to the regulatory baseline, beyond providing clarity.

We expect the amendments to supplier calculations to potentially affect costs and benefits as compared to the regulatory baseline. Natural gas suppliers deriving fuel from biomass that are claiming an exemption under the CCA rule for biomass-derived fuels already report under the regulatory baseline. There are four of these suppliers. As reporting the additional information required under the rule amendments is an incremental addition to their existing reporting, we do not expect this change to be significant.

For all biomass-derived fuel suppliers, the rule amendments may affect their lifecycle assessment of the relative greenhouse gas emissions of their fuels. While having some method of reporting is necessary to meet statutory requirements and definitions of “biomass-derived fuels,” Ecology had discretion in choosing the lifecycle greenhouse gas emissions method. To the extent the rule amendments change how these emissions relative to fossil fuels are calculated, this amendment may result in compliance costs of labor or higher compliance obligations, as well as benefits of more accurate assessment of emissions and benefits associated with not underreporting emissions (emissions reductions in the state really lower

than assumed) or not overreporting emissions (emissions reductions more costly than necessary to meet statutory emissions reduction goals).

In addition to the benefits of creating clarity that facilitates reporters' understanding of the rule requirements and compliance, we expect the rule amendments related to electric power entities to result in:

- Clarity of when the benefits of new reporting requirements are applicable. This means costs or benefits associated with new reporting requirements begin for Emissions Year 2027.
- Allowing Ecology to verify reported emissions against North American electricity sector data provided by the e-tag authority. This is likely to create minor costs of signing and submitting standardized data sharing agreements, and benefits to the regulated community of precise and accurate emissions accounting and to the Cap-and-Invest Program achieving its goals efficiently and accurately.
- Clear obligations in cases where the FPMA participates in a centralized electricity market on behalf of a different resource owner. This creates a benefit of transparency in who the deemed market importer is and results in benefits of meeting statutory goals associated with covering all emissions in the sector and assigning relevant obligations under the program.
- Capturing emissions that are not currently captured under the existing reporting rule. These include special cases such as electricity load that is scheduled in a balancing authority area operated by a multijurisdictional electric company but is not served by that company or already accounted for in reporting. They also include larger gaps in coverage associated with not having a point of regulation if a FPMA does not elect to participate in the Cap-and-Invest Program. Finally, they include cases in which a centralized electricity market does not attribute imports into Washington in a way that is captured by the existing designated market importer framework. These result in costs associated with any resulting increases in reported emissions that increase compliance obligations. They also result in benefits of meeting statutory goals associated with covering all emissions in the sector and assigning relevant obligations under the program.
- Allowing and facilitating composite source accounting that would offer potential cost-savings if chosen in a manner that ensures a consistent reporting approach and protects the environmental integrity of the program.
- Definitions that are clear and aligned with definitions in the regulatory baseline laws.
- Incorporating requirements in the CCA statute related to excluding "wheel throughs" from electricity imports and removing references to "netting". This change is specified in the regulatory baseline, and associated impacts are not due to Ecology's discretion in this rulemaking.

- Clarity in when “wheel throughs” occur based on understanding of a “common point.” This is necessary to support incorporating requirements in the CCA statute related to excluding “wheel throughs” from electricity imports.
- Potential cost-savings in aggregated reporting for zero-emissions generation resources.
- Potential lower reported emissions for importers that had not previously accounted for centralized electricity market purchases that already accounted for losses. This would have associated reductions in compliance costs, but would not come with associated emissions changes, as it would just more accurately calculate emissions.
- Reduced costs for reporters registering specified sources.
- Allowing small electricity importers to use existing qualifying reports to comply with the reporting rule.
- Minor present-value cost-savings for deemed market importers claiming specified sources being allowed to submit additional information to receive a positive verification statement one month later.

2.3.7 CCA rule: Definitions

Regulatory baseline

The regulatory baseline CCA rule includes multiple definitions necessary to implement the requirements in the rule, which are how Ecology implements the CCA statute. These definitions specify various meanings in the rule, including those related to entities covered by or choosing to participate in the Cap-and-Invest Program, what they must do to comply with the rule and law, how compliance instruments are created, allocated, distributed, and used over the life of the program, and how the program reduces risk of market manipulation or inefficiencies. Many of the definitions were specified in the CCA statute, while others were adopted by Ecology in past rulemakings.

Adopted amendments

The amendments to WAC 173-446-020:

- Add definitions of “control person”, “linkage effective date”, “physical address”, “exchange clearinghouse”, “emissions obligation,” and “expanded EITE facility,” “process unit,” to support new or amended requirements elsewhere in the CCA rule.
- Remove definitions of “closed electricity importer”, and “closed supplier” to eliminate redundant or inconsistent terminology.
- Revise definitions of “retail electric load”, “holding limit”, “allowance price containment reserve”, “biofuels”, “closed facility”, “market position”, “auction purchase limit”, and “external greenhouse gas emissions trading system,” “affiliated registered entities,” “direct corporate association,” “forest owner,” “physical address,” for clarity. Many of these definitions would also be revised to facilitate carbon market linkage.
- Revise the definition of “compliance period” to facilitate carbon market linkage.

- Revise the definition of “linkage” or “link” and “linked jurisdiction” for clarity and connecting it to the process for setting a linkage effective date.”
- Revise the definition of “market sensitive information” to facilitate carbon market linkage, broaden the scope of who could potentially engage in market manipulation, and provide more protection for confidential information related to emissions-intensive and trade-exposed industries (EITEs).

Expected impact

Generally, definitions only have impacts in the context in which they are used. We expect these amendments to result in:

- Facilitating costs or benefits that result from associated amendments or additions to rule requirements. These are impacts related to requirements for a “control person” related to registration, market activities, and confidentiality discussed in later sections of this document. Similarly, they include changes related to implementation of a linked carbon market and relevant requirements, what address information is included in registrations and other documentation submitted to Ecology, and how exchange clearinghouses may participate in the program and what is required of them.
- Clarity benefits of not defining terms that are not otherwise used, or that are used inconsistently with other terms with the same meaning.
- Facilitating costs and benefits of changes throughout the rule that address requirements and timing in the event Washington’s program links with another jurisdiction and clarifying the rule’s regulatory scope when requirements address circumstances that cross jurisdictional borders.
- Costs and benefits of shortening compliance periods in the event of carbon market linkage, to a combination of two and three-year periods instead of four-year periods under the regulatory baseline. In the event Washington does not link with another jurisdiction, there will be no change and no costs or benefits to this amendment. Costs include less ability to optimize market participation and compliance plans in shorter compliance periods in a linked market scenario. Benefits of this change include alignment across jurisdictions and facilitating market linkage and its associated impacts including greater market liquidity (more and easier allowance trading) leading to reduced price volatility.
- Benefits of having a clear process for how market linkage and associated requirements would be implemented. This results in the benefit of providing clear information for entities to set expectations that affect their market and compliance behaviors.
- Benefits of additional protections against disclosure of confidential and market sensitive information. Benefits include lowered risk of market inefficiency – either paying more than is necessary to achieve the same emissions goals or failing to meet emissions goals – that could result from market manipulation. Benefits also include an enhanced ability to ensure protection of confidential industry information.

2.3.8 CCA rule: Program coverage and compliance periods (sections 030, 040, 060, 070)

Regulatory baseline

The regulatory baseline CCA statute, as amended by SB 6058 (2024), specifies coverage thresholds for electricity. It specifies a 25,000 MT CO₂e threshold for electricity importers only importing electricity from specified sources or unspecified electricity purchased from a FPMA. The CCA statute also specifies a zero MT CO₂e threshold for electricity importers who have any imported electricity from unspecified sources. The existing rule's corresponding section 030 has not yet been updated to reflect these changes.

The CCA statute, as amended by HB 1912 (2025), extends covered emissions exemptions for on-road agricultural fuel use from 2027 to 2029. The existing rule has not yet been updated to reflect this change. The existing rule's corresponding section 040 also includes language that Ecology identified as obsolete or inconsistent across other parts of the rule.

The CCA statute and the existing rule sets requirements in section 060 related to program coverage of new or modified covered entities. It specifies when new sectors are covered, and what their relevant thresholds are. The CCA statute and rule states that entities in the waste-to-energy sector become covered in the second compliance period and entities in the rail sector become covered in the third compliance period if they meet or exceed the 25,000 MT CO₂e threshold.

The existing rule includes provisions in section 070 for how covered entities, opt-in entities, and general market participants can exit the program. These include criteria for emissions below thresholds.

Across all these topics, the regulatory baseline also includes direction in the CCA statute to seek to link with another jurisdiction's market and to align rule requirements as necessary to do so, as much as is feasible.

Adopted amendments

The rule amendments to WAC 173-446-030 incorporate the thresholds from the CCA statute above. They also specify that for Emissions Years 2023 and 2024, there is no change to the requirements. Finally, they replace specific dates listed to define compliance periods, replacing them with compliance period numbers, to facilitate flexibility in whether Washington links with another jurisdiction's program (see section 2.3.7 for discussion of making the definition of "compliance period" flexible to suit both linked and unlinked scenarios).

The amendments to WAC 173-446-040 incorporate the change in the CCA statute to extend the agricultural fuel use exemption to 2029. They also delete subsections that are duplicative or conflicting related to electricity importers for consistency across the amended rule.

The amendments to WAC 173-446-060 make changes throughout the section to clarify requirements by referencing section 030, to ensure new entities become covered according to the same criteria that existing entities become covered.

The amendments to WAC 173-446-070 change specific program exit criteria related to emissions to referencing section 030 to consistently use applicability criteria. They also add processes for opt-in entities and registered entities including general market participants to exit the program.

Expected impact

We expect the amendments to program applicability in section 030 to result only in benefits of clarity when different emissions thresholds for program coverage apply. Remaining changes are explicitly part of the regulatory baseline. In the event Washington does not link with another jurisdiction, compliance periods would not be different from the regulatory baseline. In the event Washington does link, compliance periods would be aligned to facilitate linkage per regulatory baseline direction to seek linkage.

We do not expect the amendments to covered emissions in section 040 to result in costs or benefits as compared to the regulatory baseline, beyond benefits of clarity and consistency in how they support understanding of, and compliance with, the rule.

We do not expect the amendments to new or modified entity coverage in section 060 to result in costs or benefits as compared to the regulatory baseline, beyond benefits of clarity and consistency. However, by referencing section 030, these amendments make the shorter compliance periods in the event of market linkage affect sectors that become covered according to which compliance period it is, rather than according to specific years. This means entities in the railroad sector that would have become covered entities in the third regulatory baseline compliance period (subject to emissions thresholds) would become covered two years sooner in a linked scenario. This would result in compliance costs for railroad entities that exceed the threshold two years earlier, as well as benefits of associated emissions reductions associated with that sector two years earlier as well.

We do not expect the amendments to covered entity exit criteria to result in costs or benefits, beyond the benefit of clarity and consistency. The new exit processes for opt-in entities and registered entities, including general market participants would potentially result in cost-savings resulting from streamlining the process. In the absence of these processes, we expect that entities would want to exit the program because they no longer expect a positive net benefit from participation and could incur additional workload costs of repeated interactions with Ecology or delays if the process for exit is unclear.

2.3.9 CCA rule: Registration requirements (sections 050, 052, 053, 054, 055, 056)

Regulatory baseline

The existing rule includes registration requirements for the following types of entity:

- Covered entities (section 050)
- Opt-in entities (section 050)
- Electric utilities (section 053)

- General market participants (section 055)

It also includes requirements for all registered entities related to their use of Cap-and-Invest consultants and advisors (section 056).

The CCA statute, as amended by SB 6058 (2024), also required a registration process be developed in consultation with a FPMA should they decide to voluntarily participate in the Cap-and-Invest Program, and allows an electric utility to transfer all their allocated no-cost allowances to the FPMA.

Across all these topics, the regulatory baseline also includes direction in the CCA statute to potentially link with another jurisdiction's market, and to align rule requirements as necessary to do so, as much as is feasible.

Adopted amendments

The rule amendments:

- Revise registration requirements for covered entities, opt-in entities, electric utilities, and general market participants.
- Add new sections to specify registration requirements for exchange clearinghouses (section 052) and FPMAs (section 054).
- Revise registration requirements for entities using Cap-and-Invest consultants and advisors (section 056).

Covered and opt-in entities

The rule amendments for covered and opt-in registration (section 050):

- Define the registration process and requirements for opt-in entities to add clarity and make it consistent with the covered entity registration process.
- Clarify that entities must comply with requirements related to account viewing agents (section 140).
- Revise disclosure requirements to facilitate linkage and strengthen market protections. Revisions include specifying requirements for directors and officers, clarification of entity-controlling individuals and entities, adding more disclosure requirements regarding the incorporation or registration with another U.S. state's Secretary of State or relevant officials, adding requirements to disclose charges or settlements involving trade violations, requiring new account registration for changed tax identification information, and requiring updated registration information when it changes.

Electric utilities

The rule amendments for electric utilities (section 053):

- Clarify that an electric utility that receives no-cost allowance allocation but will only be transferring it to a FPMA does not need to register.

- Clarify that entities must comply with requirements related to account viewing agents (section 140).
- Revise disclosure requirements to facilitate linkage and reinforce market protections. Revisions include specifying requirements for directors and officers, clarifying entity-controlling individuals and entities, adding more disclosure requirements regarding the incorporation or registration with another U.S. state's Secretary of State or relevant officials, clarifying individuals that may have knowledge of a party's market position, requiring updated registration information when it changes, and adding requirements to disclose charges or settlements involving trade violations.

General market participants

Amendments for general market participants (section 055):

- Expand the scope of consultants and advisors that must be disclosed beyond Washington.
- Clarify that offset project operators can receive offset credits and/or allowances only to satisfy intentional reversal requirements.
- Add information offset project operators must include in registration to reflect their relationship with offset projects.
- Add exchange clearinghouses as a type of general market participant.
- Add disclosure requirements related to consultants and advisors and add disclosures for entities with information access or provide services to other entities in a linked carbon market.
- Clarify what "located in" means.
- Clarify that entities must comply with requirements related to account viewing agents (section 140).
- Revise disclosure requirements to facilitate linkage and reinforce market protections. Revisions include specifying requirements for directors and officers, clarifying entity-controlling individuals and entities, adding more disclosure requirements regarding the incorporation or registration with another U.S. state's Secretary of State or relevant officials, requiring new account registration for changed tax identification information, clarifying individuals that may have knowledge of a party's market position, requiring updated registration information when it changes, and adding requirements to disclose charges or settlements involving trade violations.

Exchange clearinghouses

The amendments add a new section to the rule to set registration requirements for exchange clearinghouses (section 052). They include:

- Allowing an exchange clearinghouse to register as a general market participant.

- Requiring registrations to include name, contact information, physical and mailing addresses, and US Secretary of State registration information, as well as the name, physical address, mailing address, phone number, and email of control persons, United States Commodities Futures Trading Commission (USCFTC) documentation, and declarations.
- Registration information would need to be communicated within 30 days of a change.
- Requiring immediate notification if suspended or under regulatory supervision, with an associated process for coming out of supervision.

Federal power marketing administration

The amendments add a new section to the rule to set registration requirements for a FPMA (section 054). They include:

- Clarifying required compliance with other applicable parts of the rule related to designation of account representatives.
- Requiring registrations to include name, contact information, and physical address, tracking system identification number, names, addresses, and contact information for administrators and officers with authority to make legally binding decisions, a taxpayer identification number or employer identification number, names and contact information for employees with knowledge and decision-making authority related to market position, and an attestation.

Cap-and-Invest consultants and advisors

The amendments to requirements related to registered entities using Cap-and-Invest consultants and advisors (section 056) apply to all such registered entities, including all the types discussed above in this section. They:

- Include all entities acting as consultants or advisors across a linked market.
- Specify that contact information means phone number and email address, as well as mailing address in addition to physical address.
- Set a 30-day deadline to disclose this information after entering into a contract with a consultant or advisor.

Expected impact

Covered and opt-in entities

We expect the amendments to result in minor increases in registration costs for opt-in entities, electric utilities, and general market participants to provide additional information. Adding new information to their registrations involves collecting and submitting small amounts of known information (e.g., attestation and entity type for opt-in entities). It may also involve clarified information if not previously interpreted the same way (e.g., that “contact information” is physical address, mailing address, phone number, and email). Finally, entities may need to provide comprehensive information

for additional people if not previously included to reflect anyone with beneficial ownership or knowledge of their market position.

Having this information supports Ecology's ability to address concerns and prevent issues that would result in market manipulation or distortions. Prevention of potential market manipulation represents cost-savings (benefit) to market participants. We expect remaining amendments would at least provide clarification benefits, with amendments such as requirements to keep information up to date or register for new accounts if tax identification numbers change resulting in avoided delays in correcting errors, avoiding repeated interactions with Ecology staff that can happen under the baseline requirement to provide Ecology with additional information it requests. While there could be costs to some entities of providing this information earlier than they would under the regulatory baseline, the differential change in timing would not significantly affect their present value.⁴⁷

Electric utilities

Specific to electric utilities, we expect some utilities to no longer need to register with the program if a FPMA voluntarily enters the program. These would be utilities that have no compliance obligations moving forward and elect to transfer all their no-cost allowances to the administration. Exiting the Cap-and-Invest Program would result in cost-savings to some, likely smaller, electric utilities versus the regulatory baseline, though the exact number of electric utilities that will experience cost-savings is unknown at this time. Based on experience of implementing the program, there have been at least four public utilities that have had cost constraints make their participation difficult.

Offset project operators

Specific to offset project operator general market participants, we expect the amendments to result in potential cost-savings or help avoid violations. Under the existing rule, offset project operators must meet requirements to replace offset credits that have been invalidated due to intentional reversal, but are required to do so using only offset credits. The amendments offer them the flexibility of also being able to use allowances. While allowances generally come at a premium compared to offsets due to associated perceived risk, they may also not be as readily available if an offset project operator needs to acquire them.

We also expect that offset project operators will incur minor additional administrative costs associated with the registration process to provide known registry identification numbers for projects they are associated with within 180 days, and a statement affirming their association if it is not specifically listed in offset documents. Having this information included would generate benefits of added confidence that offset project

⁴⁷ Future value adjusted to current dollars to reflect inflation and the opportunity cost of having funds later rather than immediately.

operators are associated with specific projects and are not at risk of market manipulation or deceptive activities.

General Market Participants

The amendments are likely to result in additional registration costs for general market participants, related to additional disclosures related to a potentially broader set of entities providing and receiving consultation and advisory services across a linked market. They will also incur additional registration costs of providing known information related to trade violations, directors and officers, and individuals with knowledge of market positions.

Having this information supports Ecology's ability to address concerns and prevent issues that would result in market manipulation or distortions. Prevention of potential market manipulation represents cost-savings (a benefit) to market participants. We expect remaining amendments would, at a minimum, provide clarification benefits, with amendments such as requirements to keep information up to date or register for new accounts if tax identification numbers change resulting in avoided delays in correcting errors, avoiding repeated interactions with Ecology staff that can happen under the baseline requirement to provide Ecology with additional information it requests. While there could be costs to some entities for providing this information earlier than they would under the regulatory baseline, the differential change in timing would not significantly affect their present value.⁴⁸

Exchange clearinghouses

The amendments are likely to result in added registration costs for exchange clearinghouses. This facilitates exchange clearinghouses participating in the program, and they would only participate if they expect a net benefit from doing so. Therefore, we do not expect these new registration costs to result in a net cost to exchange clearinghouses. These changes also support benefits of exchange clearinghouses actively and efficiently participating in the program and doing so under full disclosure that reduces risk of market manipulation. These changes also lower the complexity for other market participants that take physical delivery of Washington allowance futures contracts, lowering trading costs to some regulated entities.

Federal power marketing administration

As participation by a FPMA is allowed under the CCA statute, the actual ability to participate is part of the regulatory baseline. The specific registration information that would be required under the amended rule would result in registration costs for the registering administration. It would also result in benefits of having disclosures that allow Ecology to ensure that no one associated with the administration can take advantage of the information available to them to manipulate the market or otherwise

⁴⁸ Future value adjusted to current dollars to reflect inflation and the opportunity cost of having funds later rather than immediately.

gain from their knowledge of market position. Basic contact information allows Ecology to contact and resolve questions or concerns efficiently.

All registered entities using Cap-and-Invest consultants and advisors

For registered entities using consultants and advisors, we expect the amended rule to potentially result in additional registration costs in a linked market scenario, due to the expanded universe of consultants and advisors that would need to be disclosed. We also expect minor costs of providing the more specific contact information for all consultants and advisors, if the regulatory baseline rule language was not already interpreted that way by a registered entity. We expect these costs to come with benefits of supporting Ecology's ability to address concerns and prevent issues that would result in market manipulation or distortions.

2.3.10 CCA rule: Use of future vintage allowances (section 080)

Regulatory baseline

The existing rule states that Ecology creates allowances with unique serial numbers and vintage years and specifies how future vintage allowances may be used to meet compliance obligations. Future vintage year allowances are not allowed to be used to meet compliance obligations for an earlier year.

Adopted amendments

The rule amendments clarify language in this section and delete provisions that are addressed in other sections of the amended rule. This includes the order in which different vintage year allowances are retired, and prohibition of using future vintage allowances for compliance in an earlier year. These topics are instead addressed in amended section 600, Compliance obligations.

Expected impact

In combination with other amendments to section 600, we do not expect these changes to result in costs or benefits aside from the benefit of clarity.

2.3.11 CCA rule: Linkage processes and timing requirements (section 090)

Regulatory baseline

The existing rule does not include a specific process related to market linkage.

The CCA statute defines linkage and directs Ecology to seek linkage if we determine it would meet criteria specified in the law related to meeting emissions reduction targets, impacts on vulnerable populations and overburdened communities, and public comments.

Adopted amendments

The rule amendments add a section specific to the market linkage process as it relates to a linkage effective date and the actions it triggers. The process includes:

- Specifying that the linkage effective date is the date that Ecology begins accepting compliance instruments from the other jurisdictions.
- Requiring public notice of the linkage effective date at least 90 days beforehand, with additional notices about delays.
- Setting a limit of 30 days from the notice for entities to disclose corporate associations across the linked jurisdictions.
- Clearly stating that under linked markets, each jurisdiction may accept the other's compliance instruments, and that compliance instruments can be traded across the jurisdictions.
- Requiring public notice if Ecology withdraws from a linkage agreement.
- Specifications related to suspension or revocation of linkage, including what happens to compliance instruments from the other jurisdiction.

Expected impact

We expect these amendments to result in benefits of clarity and consistent information for registered entities to form reasonable expectations to inform their compliance choices, whether it is at the beginning of market linkage, or in the case of withdrawal, suspension, or revocation. This supports benefits of minimizing market distortions that could result in the absence of a clear process and standardized public information. Avoiding or reducing market distortions helps to avoid higher costs than necessary to meet program goals, as well as price spikes or troughs that could result from market participants varying or inaccurate assumptions about when linkage will occur.

As the requirement to disclose corporate associations is set elsewhere in the rule, this section's limit of 30 days from the initial public notice of the linkage effective date would result in entities with corporate association groups across both jurisdictions incurring disclosure costs earlier than they might without this deadline. Assuming they would otherwise wait until the linkage date itself to incur the same costs, the present value of incurring them up to 60 days earlier is a minimal present value cost.⁴⁹

2.3.12 CCA rule: Program accounts (section 100)

Regulatory baseline

The existing CCA rule specifies the accounts Ecology will create for registered entities when they have met all registration and disclosure requirements. Registered entities that are members of direct corporate associations may apply for a consolidated entity account. Entities

⁴⁹ Future value adjusted to current dollars to reflect inflation and the opportunity cost of having funds later rather than immediately.

that are members of direct corporate associations may also apply for separate accounts but must provide the allocation of holding and purchase limits across accounts in the corporate association group. Applications need to include attestations signed by an entity's director or officer.

Adopted amendments

The rule amendments add that consolidated accounts are available for direct corporate associations with members in both linked jurisdictions. They also clarify persons that may have authority to make legally binding decisions on behalf of the registered entity is broader than under the regulatory baseline director or officer and change it to the newly defined "control person".

Expected impact

The rule amendments are likely to result in net benefits to entities that choose to apply for consolidated accounts. These are benefits of managing only one account rather than having an account in each linked jurisdiction and the need to manage and coordinate across both, net of costs of submitting the consolidated account application. Entities that do not expect this to be a net benefit would not choose to apply for a consolidated account.

2.3.13 CCA rule: Corporate association requirements (section 105, 110, 120)

Regulatory baseline

The existing rule specifies "indicia of corporate associations". These are the criteria that determine whether a corporate association exists. Direct corporate associations include, but are not limited to, when one party⁵⁰ has interest in or control of another party in excess of 50%, when multiple parties are connected to one another through direct corporate associations. Indirect corporate associations include, but are not limited to, when parties do not have a direct corporate association, but one has more than 20% interest in another. Direct corporate associations can also exist in specific relationships between electric utilities, generating facilities, and importers.

The existing rule also sets requirements for disclosure of corporate association groups. These include requirements to disclose various direct corporate associations with entities that participate in markets related to Washington's market within the United States and Canada, as well as a requirement to disclose similar corporate associations in other countries within 30 days of an Ecology request. Disclosure requirements may be met using existing documents and forms submitted to other regulatory agencies. The rule includes parties that are exempt from disclosure.

⁵⁰ We use the term "party" in this section (rather than "entity") to reflect the broader scope of corporate associations beyond covered and opt-in entities.

To demonstrate compliance, the existing rule specifies the information that must be submitted related to each disclosable corporate association. This includes information such as name, contact information, tracking system identification number, information for the party's directors and officers with the ability make legally binding decisions, as well as those controlling at least 10% of voting rights, business and tax identification numbers, place of incorporation, information for all employees with knowledge of market position, and shares of shared holding limits and purchase limits. It also includes descriptions of the types of relationships, and the timing of required updates to all disclosure information.

The CCA statute defines linkage and directs Ecology to seek linkage if we determine it would meet criteria specified in the law related to meeting emissions reduction targets, impacts on vulnerable populations and overburdened communities, and public comments.

Adopted amendments

The rule amendments to indicia of corporate association (section 105) clarify that multiple indicia can create a corporate association group, as well as clarifying or expanding the scope of persons that may be considered to make legally binding decisions on behalf of an entity and specifying that corporate associations can occur across linked jurisdictions.

The amendments to indicia of corporate associations add corporate association provisions to align with other jurisdictions, including defining a person that has access to the market position of two or more parties in a linked market as having a shared role and requiring that entities that have the same Commodity Pool Operator or Commodity Trading Advisor would have a direct corporate association. They also include a timeframe for entities to adjust to impacts associated with changes to the shared role provisions and update necessary disclosures before the shared role provisions are effective. The amendments provide several specific exemptions for consultants and advisors who are providing services to covered entities, including specific exemptions for consultants and advisors who are only providing services to consumer-owned electric utilities that would be impacted by the shared role provisions. The eligibility of these exemptions depends on the types of entities they are providing services to and whether the individual has a user account. Finally, the amendments include the ability for registered entities to apply for a shared role exemption.

Amendments to disclosure of corporate associations (section 110) clarifies and adds language expanding existing disclosure requirements to include corporate associations in a linked jurisdiction. The amendments update the permissible transactions for offset project operators who are exempt from corporate association disclosure requirements, to include receiving offset credits or allowances to meet requirements associated with intentional reversals.

Disclosure amendments also add a process for a shared role exemption. This includes criteria and the process to apply for and receive a shared role exemption.

The rule amendments to information that must be submitted in disclosures include:

- Addition of mailing address for each corporate association.

- Specification of physical and mailing address of workplace of control persons, including expanding the potential scope of those with beneficial ownership as well as regulatory baseline voting rights.
- Expansion of those whose information must also be provided beyond employees of the registered entity to anyone with knowledge of the party's market position.
- For market linkage, clarifying that a direct corporate association with entities in either jurisdiction must have total holding and purchase limits totaling 100%, accounting for those opting out of a consolidated account.
- For market linkage, clarifying that holding limits and purchase limits stay in effect until all the entities in a direct corporate association submit updated and consistent percentage shares of the holding limit.
- Requiring that entities that are part of a direct corporate association must identify and disclose information and choose to apply for a shared role exemption starting 180 days before December 31, 2027.

Expected impact

The rule amendments generally are expected to result in benefits of clarity and supporting consistent requirements across jurisdictions to facilitate market linkage.

Changes to corporate association group indicia may expand corporate association groups compared to the regulatory baseline. Related shared role and Commodity Pool Operator or Commodity Trading Advisor requirements are likely to impose additional costs. These changes support benefits of CCA statute direction to reduce risk of market manipulation and are necessary to align with other jurisdictions.

Changes to corporate association disclosures are consistent with changes to indicia of corporate association, in requiring corporate association groups that span linked jurisdictions to make additional disclosures and generate associated benefits of supporting market stability. Amendments to the disclosure exemption for offset project operators will result in benefits for operators that need to trade in or receive offset credits or allowances to meet requirements related to intentional reversals.

Generally, we expect the amendments to result in an increased need to create corporate association groups. However, amendments providing specific exemptions are included to reduce impact on covered entities, including specific exemptions for consultants and advisors who are only providing services to consumer-owned electric utilities. While consolidated entity accounts are likely more appropriate for covered entities with multiple facilities, it will likely require more effort to have a direct corporate association than a consolidated account. Overall, to the extent that entities can ultimately manage fewer accounts over time, they may benefit from these collective rule amendments, as compared to managing multiple accounts.

The new process for a shared role exemption will generate costs of submitting required information to apply for the exemption but would likely be used only when a net benefit is

expected. As the amendments include a phased-in requirement for shared roles, we expect them to mitigate the present value of associated costs.

2.3.14 CCA rule: Designation requirements (sections 130, 140)

Regulatory baseline

The existing rule sets requirements related to designation and certification of account representatives. These include requirements for every registered applicant to designate between two and five people as their account representatives. Account representatives perform operations in the Cap-and-Invest Program on the entity's behalf. The rule specifies information that must be submitted to Ecology about the designated account representatives, including various identifying information as well as employer, banking, and criminal background information. It also includes signed declarations. The rule also specifies various requirements for account representatives, including residency, background, and circumstances about which the registered entity must notify Ecology.

The existing rule also sets requirements related to designation of account viewing agents. These are up to five individuals that may be authorized by designated account representatives to view all information contained in the tracking system involving the registered entity's account, information, and transfer records. To delegate account viewing authority, an account representative must provide information about each viewing agent, including various identifying information as well as employer, banking and criminal background information. It also includes a signed attestation from the registered entity.

As many of the amendments to these rule sections (discussed below) are intended to align requirements across jurisdictions to facilitate linkage, a relevant baseline element is the CCA statute. The CCA statute defines linkage and directs Ecology to seek linkage if we determine it would meet criteria specified in the law related to meeting emissions reduction targets, impacts on vulnerable populations and overburdened communities, and public comments.

Adopted amendments

The rule amendments to designation of account representatives (section 130) include multiple clarifications of the existing rule, including that an individual general market participant only needs one account representative, that "located in" means incorporated in the United States, residency requirements for primary and alternative account representatives, and clarifying who a control person is beyond directors and officers. They also make more substantive changes including:

- Updating notarization requirements.
- Strengthening banking-related disclosures.
- Strengthening criminal background restrictions.
- Strengthening enforcement options.
- Clarifying requirements to update information.

- Allowing Ecology to revoke access if information is inaccurate or not up to date.
- Setting a deadline of 10 business days to provide additional information regarding disclosures.
- Specifying that account representatives must abide by the terms and conditions of the tracking system and auction platform and not share logins.
- Clarifying requirements for the minimum number of account representatives and what happens when there are fewer than two.
- Exempting exchange clearinghouses from residency requirements.
- Aligning enforcement actions with those for account viewing agents.
- Requiring that a general market participant must have a registered agent in Washington if it does not have an account representative residing in Washington.

The rule amendments to account viewing agent designation (section 140) include multiple clarifications, including that a deposit account is a bank account, that “located in” means incorporated in the United States, and clarifying who a control person is beyond directors and officers. Other amendments include:

- Aligning enforcement actions with those for account representatives.
- Specifying that account viewing agents must abide by the terms and conditions of the tracking system and auction platform and not share logins.
- Updating notarization requirements.
- Strengthening banking-related disclosures.
- Strengthening criminal background restrictions.
- Clarifying requirements to update information.
- Setting a deadline of 10 business days to provide additional information regarding disclosures.
- Clarifying requirements to update information.
- Allowing Ecology to revoke access if information is inaccurate or not up to date.

Expected impact

Amendments to these two sections of the rule are likely to result in similar costs for registered entities related to their designation of account representatives and account viewing agents. We expect these amendments to result in likely costs associated with submitting additional information related to designated account representatives or account viewing agents, though many of these changes are clarifications and overall increases in information are expected to be relatively minor in the context of overall designation effort. We do not expect these changes to significantly affect the ability of registered entities to find at least two account representatives and their chosen number of account viewing agents. Additional costs may be associated with

revised requirement for general market participants to obtain a registered agent with the Washington Secretary of State if they do not have an account representative residing in Washington. Associated benefits include strengthened security related to the Cap-and-Invest Program and the carbon market, as it relates to verified documentation, criminal backgrounds, up to date information, and proper use of electronic systems. Additional enforcement options provide further disincentive for actions that could put the market at risk of manipulation.

2.3.15 CCA rule: Accounts and limits (section 150)

Regulatory baseline

The existing rule sets requirements for Ecology to create accounts necessary for the functions of the Cap-and-Invest Program, including compliance accounts and holding accounts for covered and opt-in entities, holding accounts for general market participants, and additional limited use holding accounts for electric and natural gas utilities. The rule sets holding limits that are the maximum number of allowances that entities may hold in their accounts, for past, current, or vintage-less allowances, and for future vintage allowances. It also specifies the types of allowances that do not count toward holding limits and sets a maximum of 10% on the share of total allowances of any vintage year that can be held by a general market participant.

The rule specifies requirements for cases when holding limits are exceeded, including notification, as well as divestment, transfer, or redistribution that is required to return to compliance with the holding limit. If they fail to do so, Ecology will withdraw excess allowances and make them available for auction. Finally, the existing rule sets holding account public information sharing requirements for Ecology, and documentation requirements in the case of a registered entity changing ownership.

Regarding the maximum share of allowances from a specific vintage year that general market participants can hold, the CCA statute specifies that, “Until Washington links with a jurisdiction that does not have this requirement, a general market participant may not in aggregate own more than 10% of total allowances to be issued in a calendar year.”⁵¹

The CCA statute also specifies that waste-to-energy facilities with covered emissions that meet or exceed the 25,000 MT CO₂e threshold also become covered entities in the second compliance period.

Adopted amendments

The rule amendments add electricity allocation holding accounts to the accounts that Ecology creates for registered entities to align rule requirements with how allocation is distributed in the tracking system. They also add exchange clearinghouse accounts to support the addition of exchange clearinghouses to the Cap-and-Invest Program under the amended rule.

Amendments to holding limit requirements include:

⁵¹ RCW 70A.65.100(6)(c)

- Adding waste-to-energy facilities as registered entity types for which Ecology creates accounts.
- Updating the holding limit calculation to reflect the addition of the electricity allocation holding account.
- Updating the holding limit calculations to reflect potential carbon market linkage.
- Aligning limited exemptions to holding limits to only include current vintage allowances, to support alignment necessary for carbon market linkage.
- Exempting exchange clearinghouses from holding limits.
- Removing vintage year holding limits for general market participants if Washington links with another jurisdiction, to align with the CCA statute.
- Clarifying that the scope of potential control persons extends beyond just the directors and officers specified in the baseline.

Expected impact

The addition of creating accounts for waste-to-energy facilities aligns with the regulatory baseline CCA statute's addition of these facilities to the Cap-and-Invest Program. The additional account types that would be created align with the addition of exchange clearinghouses necessary for linked carbon market function or align with structures in the tracking system. We do not expect these changes to result in costs or benefits in and of themselves, compared to the regulatory baseline. Impacts associated with the inclusion of additional types of registered entities are discussed in the sections that would add them to the program.

Amendments to the distribution of the holding limit across accounts do not materially change the holding limit itself, only how allowances are organized across accounts in the tracking system. Amendments to facilitate linkage would similarly not affect holding limits, and the changes to limited exemption language clarify the regulatory baseline.

Excluding exchange clearinghouses from holding limits does not have material impact as compared to the regulatory baseline (in which exchange clearinghouses are not specified as a type of registered entity). This exemption, however, is clear in supporting their function under the amended rule. Exchange clearinghouses are needed in the case of a linked market, to facilitate trade in allowances. A holding limit would not logically be applicable to them. In this regard, this amendment supports benefits of the rule's addition of exchange clearinghouses to the program.

2.3.16 CCA rule: Allowance supplies and allocation (sections 200, 210, 220, 230, 235, 240)

Regulatory baseline – Budgets and allowance baselines

The existing rule specifies total program baselines for the Cap-and-Invest Program (section 200). A total program baseline is the total covered greenhouse gas emissions from covered entities in each compliance period. The rule specifies methods for establishing total program

baselines, including subtotal baselines for each reporter and sector, information sources that can be used for calculations, and how they are calculated for sectors covered in different compliance periods. The existing rule includes only a quantified baseline for 2023 – 2026, specifies that Ecology will set the total program baseline for 2027 – 2030 by October 1, 2026, and for subsequent compliance periods by October 1, 2028. The CCA statute governs how total program baselines change over time, specifying that by October 1, 2026, Ecology will incorporate emissions from newly covered sectors into the total program baseline.

Total program baselines are used to calculate total allowance budgets under the program (section 210). The existing rule specifies how total allowance budgets are calculated for different Emissions Years, based on a declining percentage that aligns with economy-wide emissions targets required in the CCA statute. The rule specifies the actual number of allowances in the total program allowance budget based on these calculation methods, for each year 2023 – 2026.

The CCA statute, as modified by HB 1975 (2025), specifies target dates for emissions reductions as December 31st of each year, instead of January 1st, as was set in the current rule. This required Ecology to (1) expand the number of allowances that comprise the 2023 through 2026 allowance budgets, and (2) expand the number of allowances that will be introduced from 2027 through 2050. This also increases the number of allowances placed in the APCR, ECR, and VRE, and required Ecology to place between two and five percent of allowances from the 2030s into the APCR in the second compliance period.

Regulatory baseline – Allocation of no-cost allowances

The CCA statute and existing rule specify how no-cost allowances are allocated to the following sectors:

- EITE facilities.
- Electric utilities.
- Natural gas utilities.

The CCA statute specifies requirements for allocation of no-cost allowances to a waste-to-energy facility, and for consignment of those allowances to auction. It also includes requirements for planning and spending revenues from consigned allowances.

Emissions-intensive and trade-exposed industries – Regulatory Baseline

For EITE facilities (section 220), the existing rule specifies the methods and calculations used to determine the number of no-cost allowances allocated to them. This includes how carbon intensity baselines that are submitted by facilities are reviewed and approved by Ecology using specific data sources, methods, and criteria. It also specifies the methods used to determine no-cost allowance allocation to EITE facilities, including:

- 100% of allocation baseline during the first compliance period (2023 – 2026)
- 97% of allocation baseline during the second compliance period (2027 – 2030)
- 94% of allocation baseline during the third compliance period (2031 – 2034)

The existing rule specifies equations used to calculate the initial and final allocation amounts for EITE facilities with carbon intensity baselines using reported production data. It also includes equations and processes for determining allocation for facilities using an alternative mass-based allocation baseline, the process for adjusting allocation, and requirements in cases of facility curtailment or noncompliance.

The CCA statute authorizes Ecology to establish protocols for allocating allowances to new EITE facilities built after July 25, 2021. It also directs Ecology to provide allowances to EITE facilities using a reductions schedule based on four-year periods rather than compliance periods and requires Ecology to establish a protocol for EITE facilities to request changes to their reduction schedule and allocation baselines.

Finally, the CCA rule requires Ecology to review and approve EITE allocation baseline submissions from new EITE facilities within 90 days.

Electric utilities – Regulatory Baseline

For electric utilities (section 230) the existing rule requires Ecology to allocate no-cost allowances to qualifying electric utilities to mitigate the cost burden of the Cap-and-Invest Program. Only electric utilities subject to the Clean Energy Transformation Act (“CETA”; chapter 19.405 RCW) qualify for no-cost allowances. The rule specifies the calculation of no-cost allowances for each utility is based on utility-specific forecasts of retail demand and resources supplying retail load (e.g. natural gas or non-emitting resources like hydro or solar). The rule specifies that load served by “PURPA”⁵² resources and resources supporting voluntary renewable energy purchases should be excluded from allocation calculations.

The rule specifies default emissions factors to be used for resource categories, processes for allowance schedule publication, and how allocation may be adjusted. The existing rule provides allowances to mitigate administrative costs based on documented costs in financial statements. The CCA statute requires Ecology mitigate administrative costs of an electric utility’s participation in the Cap-and-Invest Program through no-cost allowance allocation.⁵³

It also requires Ecology to allocate allowances to a voluntary renewable electricity reserve account, to reflect voluntary renewable electricity purchases. Finally, the rule specifies that allocated no-cost allowances may be consigned for the benefit of ratepayers, transferred to an electric generating facility, and/or deposited for compliance. They may not be traded or transferred otherwise.

⁵² Public Utility Regulatory Policies Act, 16 U.S.C. ch. 46 § 2601 et seq.

⁵³ See RCW 70A.65.010(21) and RCW 70A.65.120(1). The CCA statute also directs allocation to natural gas utilities and EITEs, but does not direct Ecology to provide no-cost allowances to mitigate administrative costs to natural gas utilities and EITEs.

The CCA statute requires Ecology to adopt rules for no-cost allowance allocation to electric utilities. It also requires Ecology to adopt rules governing how many no-cost allowances must be consigned to auction for the second compliance period onwards.

Under CETA, “On or before December 31, 2025, each electric utility must eliminate coal-fired resources from its allocation of electricity.”⁵⁴

Natural gas utilities – Regulatory Baseline

The CCA statute requires that allocation to natural gas utilities decline proportionally with the cap. Under existing rule (section 240), no-cost allowance allocation is determined consistent with statute and existing allowance budgets as:

- 93% of allocation baseline in 2023.
- Additional reductions of 7% of allocation baseline each year in 2024 – 2030.
- Additional reductions of 1.8% of allocation baseline each year in 2031 – 2042.
- Additional reductions of 2.6% of allocation baseline each year in 2043 – 2049.

The CCA rule also includes requirements related to compliance with the rest of the rule and specifies that no-cost allowances may be consigned to benefit ratepayers and/or deposited for compliance. They may not be traded, transferred, or sold.

Waste-to-energy facilities – Regulatory Baseline

RCW 70A.65.135 in the CCA statute, as amended by HB 2416 (2026), requires Ecology to allocate no-cost allowances between 2027 and 2030 to a waste-to-energy facility constructed before 1992, sets minimum required consignment, and directs Ecology to establish requirements for the use of consignment revenues.

- No-cost allocations must be equal to 100% of the facility’s baseline emissions for 2027 and 2028. This decreases to 93% for 2029, and then to 86% in 2030.
- 40% of allocated no-cost allowances must be consigned to auction.
- Before spending revenues from consigned allowances, the owner or operator of the facility must submit a written proposal to Ecology. The proposal must explain how the investments in projects or programs will reduce greenhouse gas emissions associated with the facility.
- Before developing a proposal, the owner or operator of the facility may consult with Ecology and the Department of Commerce to understand the information that will be needed to adequately review the proposal.
- Within 90 days of receipt, Ecology must complete its review of the proposal. The owner or operator of the facility must address the department's comments and get final approval of the revised proposal from Ecology.

⁵⁴ RCW 19.405.030

- The owner or operator of the facility must take reasonable steps toward implementation of the proposal consistent with the proposal timeline and requirements.
- A proposal may take the form of a project or program in the greenhouse gas reduction plan required in RCW 70A.65.137, once approved by the department.

RCW 70A.65.137 requires the owner or operator of the waste-to-energy facility to submit a two-part plan to Ecology and the Department of Commerce by December 1, 2030.

- The plan must include a proposed greenhouse gas emissions reduction plan and a waste reduction and material recovery plan.
- The greenhouse gas emissions reduction plan must outline how the facility will achieve emissions reductions consistent with the state emissions limits for 2040 and 2050 under chapter 70A.45 RCW.
- The waste reduction and material recovery plan must be consistent with the state's waste management hierarchy established in RCW 70A.205.005, take into consideration the organic material management policies in RCW 70A.205.540 and 70A.205.545 and the expected impacts of chapter 70A.208 RCW, and consider the local solid waste plan under chapter 70A.205 RCW.
- Plan development must consider social, environmental, and health factors in overburdened communities and vulnerable populations, and consult with local municipally created stakeholder and community advisory groups.
- Within 180 days of receipt, Ecology must complete review of the plan. The owner or operator of the facility then has to address Ecology's comments and finalize the plan within 120 days of receiving Ecology's comments.
- The owner or operator of the facility must take reasonable steps toward implementation of the plan. They must also operate the facility and take other actions consistent with the goals of the plan.

Adopted amendments – Budgets and allowance baselines

The rule amendments to total program baselines (section 200) make several edits to language without independent material change, including:

- Clear use of specific Emissions Years when they do not align with the amended definition of compliance period under a linked market and using "compliance period" when they do align. (See section 2.3.7 for discussion of amendments to definitions.)
- Consistent use of terminology and equation variables to reflect total program allowance budgets, total program baselines, and emissions levels for each year.

They also make more substantive changes, including:

- Changing the Emissions Years for which data is used to calculate subtotal baselines for sectors covered by the rule in the second compliance period to reflect the data available

to calculate the baselines as of the start of the program. This is consistent with how baselines were set for the sectors covered as of the first compliance period. Instead of the regulatory baseline years of 2023 – 2025, these would be 2015 – 2019.

- Changing the Emissions Years that will be used on October 1, 2028, to calculate subtotal baselines for sectors entering the program after the second compliance period (and clarifying Ecology will use data current as of that day). This reflects the data available at the start of the third compliance period instead of the regulatory baseline years of 2027 – 2029.
- Setting total program baseline for the second compliance period as 68,151,068.
- Setting total program baseline for subsequent compliance periods as 68,151,068 plus the average covered emissions from railroad companies from 2023 – 2025, as calculated on October 1, 2028.
- Updating total program allowance budgets for each year through 2050 using methodology aligned with the regulatory baseline, but with updated total program baselines. This also includes transparent presentation of the economy wide emissions level in each year that is used to calculate total allowance budgets.
- Clarifying that compliance periods will be determined upon linkage, given the amended definition of compliance period in section 020.
 - In an unlinked carbon market, allowance budgets beginning in 2031 will be based on the total program baseline for subsequent compliance periods (bullet 4, above).
 - In a linked market, allowance budgets beginning in 2029 will be based on the total program baseline for subsequent compliance periods (bullet 4, above).
- Increasing allowance budgets in the first and second compliance periods as a result of HB 1975.

Adopted amendments – Allocation of no-cost allowances

The rule amendments add or revise how no-cost allowances are allocated to the following sectors:

- EITEs
- Electric utilities
- Waste-to-energy facilities
- Natural gas utilities

EITE facilities – Adopted amendments

The rule amendments to allocation of no-cost allowances to EITE facilities (section 220):

- Change when a new EITE must submit a request for no-cost allowances from March 31st of the year the emissions occurred, to March 31st of the year they

report their emissions as reaching the 25,000 MT CO₂e coverage threshold for the first time.

- Add a protocol for owners or operators to request the transfer of an approved carbon intensity baseline from a closed facility to a new facility located in Washington that is operating under the same North American Industry Classification System (NAICS) code.⁵⁵
- Add a sunset clause on carbon intensity baselines that are transferred from a closed facility to a new facility and allow Ecology to establish a new carbon intensity baseline if the existing facility does not permanently cease operations.
- Allow Ecology to make changes to allocation baselines based on a change in product reporting methods and update criteria for Ecology to approve changes to EITE allocation baselines based on the circumstances specified in the CCA statute.
- Add a protocol for an owner or operator of an EITE facility to request changes to an allocation baseline.
- Update the criteria for Ecology to approve changes to the reduction schedule.
- Add that facilities that receive an upward adjustment to their reduction schedule cannot receive more no-cost allowances for an Emissions Year than their covered emissions for that year and cannot receive more no-cost allowances than required to meet their compliance obligation for that four-year period.
- Enable Ecology to provide a one-time allocation of true-up allowances to new EITE facilities with an estimated mass-based baseline.
- Add that Ecology will deduct allowances from a new EITE facility with an estimated mass-based baseline if necessary to ensure they don't receive more allowances than needed for compliance.
- Add that curtailed or closed facilities must return the equivalent amount of no-cost allowances to Ecology if the true-up value for an Emissions Year is negative.
- Add methods for calculating the number of allowances to be provided to EITE facilities for which Ecology has approved an allocation baseline adjustment.
- Replace the 90-day deadline for Ecology to review and approve allocation baselines for new EITE facilities with August 15th and clarify that Ecology will make determinations on allocation baseline adjustments by this date provided a positive verification statement is obtained by the EITE facility.
- Clarify that Ecology will make determinations on allocation baseline adjustments by August 15th provided a positive verification statement is obtained by the EITE

⁵⁵ NAICS codes are North American Industry Classification System codes. They are used as a standard way to define and categorize industries and subindustries. They are also used in the CCA statute to define EITE facility industries.

facility, and clarify that a subsequent adverse verification statement may result in Ecology revising a decision on an allocation baseline adjustment request and requiring the EITE to return the equivalent number of allowances.

They also make clarifying changes that do not materially affect requirements, including:

- Replacing use of “compliance period” with “four-year period” to maintain consistency with CCA rule requirements for EITE no-cost allowance allocation, to prevent changes associated with the amended definition of compliance period (which would shift to 2-year periods in the event of linkage).
- Clarifying that for facilities to demonstrate that additional reductions in carbon intensity are not technically or economically feasible, those reductions are beyond those achieved since July 25, 2021, and they are not feasible during the next four-year period or part thereof.
- Clarifying that curtailed facilities with a positive true-up value from the Emissions Years in which they were curtailed will receive those allowances from the applicable future vintage.
- Clarifying that upwards adjustments to reduction schedules approved by Ecology expire at the end of the four-year period.
- Removing the requirement that switches to a carbon intensity baseline from a mass-based baseline take effect in the next compliance period.
- Clarifying that activities performed under additional NAICS not defined as EITE under the CCA statute are not eligible to receive no-cost allowances and the associated emissions will be excluded from EITE allocation baselines.

Electric utilities – Adopted amendments

The rule amendments to allocation of no-cost allowances to electric utilities (section 230):

- Set a zero emissions factor for electricity generated using coal resources starting in 2027, consistent with the regulatory baseline CETA.
- Codify an upward allocation adjustment for non-load following utilities with very high forecast renewable percentages, consistent with current implementation of allocation calculations.
- Push back all October 1st deadlines for allocation schedule publication to October 7th, to provide more time for Ecology to review forecast materials before the allocation schedule is published.
- Change the frequency of potential utility forecast updates to every two years, from the regulatory baseline annual.
- Add specifications for when Ecology would or would not pursue an allocation adjustment and the process for pursuing an adjustment.

- Specify a calculated method to replace the regulatory baseline method for providing allowances to mitigate administrative costs, based on utility feedback and utility survey results. Allowances provided to mitigate costs for the 1st compliance period may only be used for compliance, consigned, or transferred to a FPMA. No-cost allowances provided to mitigate costs for the 2nd compliance period onwards may only be consigned or transferred to a FPMA.
- Add minimum consignment requirements for allocated no-cost allowances (other than those allocated to mitigate administrative costs). Consignment requirements are based on equations involving the number of no-cost allowances, various measures of load served, and compliance obligations.
- Specify a process for Ecology to communicate consignment requirements to utilities.
- Require utilities to provide additional information related to allocation or cost burden to Ecology if requested.
- Add a process for allocation of no-cost allowances in the event of a transfer of utility territory, to ensure allocation to eligible electric utilities covered by CETA and serving Washington retail load.

They also make clarifying changes that do not have material impact, including:

- Rewording, reorganizing, and removing duplicative and obsolete language.
- Removing reference to “average hydroelectric conditions” as utility forecasts should be best estimates of forecast resource supply, which would include accounting for climate change. This term is otherwise unnecessarily specific while being unclear as to what average means in this context.
- Specifying that an emissions factor of zero is used in allocation calculations for qualifying facilities under the federal Public Utility Regulatory Policies Act of 1978 in operation before May 7, 2019, and resources supporting a voluntary renewable energy purchases by a retail electric customer, consistent with outcomes under the regulatory baseline
- Removing language related to voluntary renewable electricity as the amendments would move it to a separate section (new rule section 245) without material change.

Waste-to-energy facilities – Adopted amendments

The amendments add a new section to the rule (section 235) to reflect requirements in the CCA statute, as amended by the HB 2416 (2026), to allocate no-cost allowances between 2027 and 2030 to a waste-to-energy facility constructed before 1992, to establish minimum required consignment, and establish requirements for the use of consignment revenues. The amendments:

- Add a no-cost allowance allocation schedule as specified in the CCA statute.

- Require 40% consignment as specified in the CCA statute.
- Specify requirements for use of consignment revenues as specified in the CCA statute.
- Specify a process for submitting investment proposals for the expenditure of consignment revenues, including proposal review process, and requirements to take reasonable steps toward implementation per the proposal timeline and to report progress.
- If actual emissions exceed no-cost allowance allocation during 2027 – 2030, require the facility to acquire additional compliance instruments to meet their compliance obligation. Ecology may also make adjustments to allocation in limited circumstances.
- Require development and submittal of a two-part plan to Ecology and the Department of Commerce by December 1, 2030, including:
 - A greenhouse gas emissions reduction plan, and
 - A waste reduction and material recovery plan.

Natural gas utilities – Adopted amendments

The amendments to allocation of no-cost allowances to natural gas utilities (section 240):

- Clarify that eligible utilities supply natural gas to Washington.
- Change allocation for 2027 – 2030 from reducing by 7% of baseline to reducing by 6.1% of baseline each year, consistent with statute and the rate of decline in the updated total program allowance budgets through 2030.
- Change allocation for 2031 – 2050 from reducing by 1.8% or 2.6%, to reducing by 2.3% each year, consistent with statute and the rate of decline in the updated total program allowance budgets.

Expected impact – Budgets and allowance baselines

The rule amendments contribute to costs and benefits as compared to the baseline. Amendments to program baselines and their resulting impacts on allowance budgets affect the supply of allowances in the market. Economic theory indicates that increasing allowance supply puts downward pressure on market prices, and reducing supply puts upward pressure on them, in and of themselves. For years that the regulatory baseline specified quantified allowance budgets, the rule amendments increase allowance supply. However, the amendments also make other changes, such as the allocation of no-cost allowances, and these factors interact with allowance demand, consignment requirements and choices, and the numbers of allowances placed in reserves. We expect the amendments to collectively inform how much entities pay for compliance, how much revenue is received by the state, and how much revenue is put toward the purposes required for no-cost allowance consignment revenues.

In Chapter 3, we develop a quantitative model to account for various factors, including changes to allowance budgets, to assess impacts over time on emissions and compliance costs over time. Broadly speaking, if compliance costs increase in a given year, this is a cost, while years in which they decrease would see cost-savings (benefit). Similarly, in Chapter 4's benefits discussion, if emissions increase in a given year, this is a cost to society through their contribution to climate change, and through any associated impact on other harmful emissions, while years in which they decrease reduce contributions to climate change and its impacts (a benefit).

Costs and benefits that we were not able to reflect quantitatively in chapters 3 and 4 are qualitatively discussed separately in those chapters.

Expected impact – Allocation of no-cost allowances

EITE facilities – Expected impact

Changes to no-cost allowance allocation to EITE facilities (section 220) are likely to result in the following costs or benefits:

- The ability to transfer a carbon intensity baseline to a new facility is likely to result in cases where EITE industries are incentivized to replace existing infrastructure with new, best-in-class facilities. When a facility considers relocating, it would have more incentive to stay in the state using more emission-efficient production techniques. We do not expect associated costs, as facilities would choose to do this only if they expect a net benefit from doing so.
- Shifting the date by which EITE facilities would need to submit allocation requests to the year emissions occurred would create a benefit of ensuring compliance with eligibility for no-cost allowances. Facilities will not be able to demonstrate eligibility to receive no-cost allowances and confirm their status as a covered entity until they have reported emissions following the completion of the first Emissions Year they are covered by the program. We do not expect associated costs, as reporting activity would be delayed as compared to the regulatory baseline.
- Adding a sunset clause to transferred carbon intensity baselines and increasing repercussions for failure to close the existing facility from which a baseline was transferred, will generate a benefit of preventing facilities from transferring a carbon intensity baseline without closing the original facility. As this would not be possible at all under the regulatory baseline, these amendments are likely to result in benefits of avoided excess emissions from the closed facility's continued operation.
- Allowing Ecology to make changes in the allocation baseline based on a change in product reporting methods will result in benefits of having a baseline that accurately reflects not only the production characteristics of the facility (as with regulatory baseline changes to NAICS code or product metric), but also the method used to measure product data. This allows the reporting baseline to

accurately reflect emissions, avoiding over or under allocation of no-cost allowances, and helps maintain incentives to reduce the emissions intensity of production. Updating criteria for Ecology to approve changes to allocation baselines generates similar benefits.

- Adding a protocol for requesting changes to an allocation baseline will generate benefits of having a clear means by which to approve or deny a change requested, facilitating the benefits above. Absent a protocol under the regulatory baseline, the process for requesting changes could require more interactions between facilities and Ecology, incur potential delays, and be unclear in its approval standards and expectations.
- Adding a protocol for EITE facilities to request transfer of an approved carbon intensity baseline from a closed facility to a new facility will support efficiently achieving the benefits of these transfers without repeated interactions, potential delays, or a lack of clarity in approval standards and expectations.
- Removing the requirement that switches to a carbon intensity baseline from a mass-based baseline take effect in the next compliance period will generate benefits of potential earlier switching. Given four-year compliance periods, if a change were to be based on the required three years of data supporting it, making the change at the next compliance period could mean lags of 5-6 years instead of three. This will support a benefit of cost-savings in the form of avoided lags in potential output changes that are possible under a carbon intensity baseline.
- Adding a requirement to return no-cost allowances for negative true-up for curtailed or closed facilities will generate benefits of returning allowances to market availability, reducing upward price pressures and providing clarity in what must be done with these excess allowances. As these allowances would not be used by the facility, we do not expect an associated cost of an emissions impact.
- Adding a requirement for curtailed facilities with a positive true-up value for the years they were curtailed to receive those allowances in a future vintage will generate benefits of compensating curtailed facilities for their past coverage of extra emissions.
- Allowing Ecology to deduct allowances from a facility with an estimated mass-based baseline to ensure they don't receive more allowances than needed for compliance provides the benefit of having a mechanism by which to meet the regulatory baseline requirement to not receive more allowances than needed for compliance.
- Changing the deadline for Ecology to approve allocation baselines for new EITE facilities from 90 days to August 15th is not expected have significant impacts because it means EITEs would only need to wait an extra 45 days to receive notice of their approved allocation baseline from Ecology. Moreover, new EITE

facilities are entitled to receive no-cost allowances equal to their covered emissions during the compliance period when they first enter the program, so this delay has limited if any impacts on their compliance strategy for the applicable emissions years.

We do not expect the amendments to result in a difference in no-cost allowance allocation that can be quantified at this time. Differences over time might arise from the changes above, but we cannot confidently predict the degree or timing of these changes. Clarifications to language and statutory applicability facilitate understanding of rule requirements and eligibility to receive no-cost allowances.

Electric utilities – Expected impact

Changes to no-cost allowance allocation to electric utilities (section 230) are likely to result in the following costs or benefits:

- Setting a zero emissions factor for electricity generated using coal resources is not likely to result in impacts to allocation of no-cost allowances or associated costs or benefits. This change is consistent with the regulatory baseline, which includes CETA, under which utilities can no longer attribute coal generation to retail electricity supply.
- Adding an upward allocation adjustment for non-load following utilities with very high renewable percentages is a change in rule but not in implementation of allocation adjustments under the regulatory baseline.
- Shifting deadlines for allocation schedule publication will allow Ecology more time to review forecast materials before the schedule must be published. This may result in a minor lag in information timing for utilities and their planning (8 days) but will likely generate a benefit of improved quality in published allocation schedules.
- Reducing the frequency of utility forecast updates will generate a benefit of increasing decarbonization incentives, at the cost of associated decarbonization undertaken. Under the regulatory baseline, Ecology publishes a 4-year allocation schedule before each compliance period, and this can be updated with new utility forecasts annually. This enables allocation schedules to closely reflect any expected emissions trajectory, reducing decarbonization incentives.⁵⁶
- Specifying when Ecology would or would not pursue an allocation adjustment provides a clear process description reflecting current implementation of adjustments. These specifications strengthen decarbonization incentives for the utilities, by providing certainty that downward allocation adjustments would not be pursued for overachievement of emissions reductions beyond forecasts

⁵⁶ While we do not reflect cost impacts to Ecology as part of our Regulatory Analyses, we note that existing annual updates of utility forecasts are a large administrative burden on Ecology and the WA Utilities and Transportation Commission that would be reduced under the amended rule.

reflective of the best available information at the time. This certainty also enables an opportunity for utility savings as it supports utilities optimizing purchases of power considering CCA compliance costs. Finally, this clarity allows utilities to better financially plan for whether and how adjustments might be sought.

- Specifying a set calculation to replace the regulatory baseline method for providing allowances to mitigate administrative costs will result in additional no-cost allowances for all utilities. Under the regulatory baseline, these allowances are only distributed based on submitted and verified, detailed financial accounting information. Either because of a lack of detail or perceived net cost of pursuing these allocations, no utility has submitted this information and therefore none have received these no-cost allowances to date. The rule amendments are based on feedback, a survey of utilities, and public comments received during the public comment period for this rulemaking. They enable a standardized and simplified methodology based on already available MWh of retail sales. The adopted amendments reflect additional adjustments for allocation to large utilities, based on public comments received. More entities receiving no-cost allowances to mitigate administrative costs supports reducing cost burden that could be passed on to ratepayers. We note that the CCA statute directs Ecology to provide no-cost allowances to electric utilities to “mitigate” the cost burden (administrative costs) of participating in the program, but does not require those costs to be eliminated.
- Adding minimum consignment requirements will result in costs and benefits related to increased consigned allowances available at auction, and increased consignment revenues being used to mitigate impacts on ratepayers, in cases where a utility is not already choosing to consign allowances in excess of the new requirements. See the paragraph below for discussion of how changes in no-cost allowance consignment affect costs and benefits of the rule amendments.
- Requiring utilities to provide additional information related to allocation or cost burden to Ecology if requested may result in additional labor costs of collecting and providing any requested information, with corresponding accuracy or quality benefits related to allocation or cost burden needs for which Ecology requires more information. Under many circumstances, Ecology is likely to request information already provided to other regulatory agencies, minimizing costs.
- The added process related to Ecology communication of consignment requirements provides clarity for electric utilities on the timing and availability of information about consignment expectations. This facilitates utility planning and minimizes costs associated with uncertainty and related contingency planning, delays, or errors.
- The added process related to allocation of no-cost allowances in the event of a transfer of utility territory provides utilities with clarity as to which utility

involved in the transfer will receive no-cost allowances and the timeline this will occur on. This facilitates allocation of no-cost allowances to only those utilities that are allowed to receive them under the CCA statute (covered by CETA and serving Washington retail electric load) and reduces potential costs of correcting improper allocations or risk of Washington communities not appropriately receiving the benefits of no-cost allowances when utility territory changes.

Amendments to consignment requirements may increase the supply of allowances available at state-run auctions. Increasing allowance supply at auction facilitates more purchases and improves liquidity. Additionally, increasing allowance supply at auction may put downward pressure on auction clearing prices and work to stabilize market prices. This downward pressure may occur because allowance auctions are a liquid source of allowances with transparency in pricing and low transaction costs. However, the amendments also make other changes, such as to program baseline and allowance budgets, and these factors interact with allowance demand, consignment choices, and the numbers of allowances placed in reserves. We expect the amendments to collectively inform how much entities pay for compliance with obligations, how much revenue is received by the state, and how much revenue is put toward the purposes required for no-cost allowance consignment revenues.

In Chapter 3, we develop a quantitative model to account for various factors, including the changes to no-cost allowance allocation and consignment requirements, to assess impacts over time on emissions and compliance costs over time. Broadly speaking, if compliance costs increase in a given year, this is a cost, while years in which they decrease would see cost-savings (benefit). Similarly, in Chapter 4's benefits discussion, if emissions increase in a given year, this is a cost to society through their contribution to climate change, and through any associated impact on other harmful emissions, while years in which they decrease reduce contributions to climate change and its impacts (a benefit).

Costs and benefits that we were not able to reflect quantitatively in chapters 3 and 4 are discussed separately in the relevant chapter.⁵⁷

Waste-to-energy facilities – Expected impact

New no-cost allowance allocation to waste-to-energy facilities (section 235) is likely to result in the following costs or benefits as compared to the regulatory baseline:

- Specifying a process for submitting consignment proceed investment proposals and reports will result in costs of proposal submission containing required elements on time, and benefits of ensuring proceeds are successfully invested in emissions reductions at the facility, thereby lowering future facility compliance obligations.

⁵⁷ Our quantitative model reflects only those amendments for which we were able to make quantitative assumptions. Other cost impacts are discussed qualitatively in section 3.2.2, and qualitative benefit impacts are discussed in section 4.2.2.

The remaining amendments are either specifically directed in the regulatory baseline or are clarifications. We note that one element of the baseline is specific allocation of no-cost allowances to this facility under RCW 70A.65.135, initially covering their entire baseline emissions and subsequently covering the majority of those emissions through 2030. This serves to substantially mitigate the facility's compliance costs, as well as provide the facility with revenues from the sale of allowances consigned to auction (40% under RCW 70A.65.135(2)(a)).

Natural gas utilities – Expected impact

Changes to no-cost allowance allocation to natural gas utilities (section 240) are likely to result in the following costs or benefits:

- Strictly considering the rule language, changing the rates at which allocation of no-cost allowances decline over time would reduce the rate of decline in 2027 – 2030, increase the rate of decline in 2031 – 2042, and reduce the rate of decline in 2043 – 2049. This would change total no-cost allowance allocation, as well as the number of consigned allowances under (unchanging) percentage consignment requirements in each year.
- We note that the CCA statute requires allocation of no-cost allowances to natural gas utilities to decline in proportion to the allowance budgets over time. As Ecology is revising those budgets in this rulemaking (similarly with partial, but not full, discretion under the law), this allocation of no-cost allowances must correspondingly change to meet requirements in the CCA statute.

Regardless of the degree of Ecology discretion, we included estimates of no-cost allowance allocation in our quantitative model of costs and benefits, and these numeric values would change from their baseline values. Amendments to allocation of no-cost allowances affect the supply of allowances available at state-run auctions. Increasing supply at auction facilitates more purchases and improves liquidity. Additionally, increasing allowance supply at auction may put downward pressure on auction clearing prices and work to stabilize market prices. This downward pressure may occur because allowance auctions are a liquid source of allowances with transparency in pricing and low transaction costs. However, the amendments also make other changes, such as to program baseline and allowance budgets, and these factors interact with allowance demand, consignment requirements and choices, and the numbers of allowances placed in reserves. We expect the amendments to collectively inform how much entities pay for compliance with obligations, how much revenue is received by the state, and how much revenue is put toward the purposes required for no-cost allowance consignment revenues.

In Chapter 3, we develop a quantitative model to account for various factors, including the changes to no-cost allowance allocation, to assess impacts on emissions and compliance costs over time. Broadly speaking, if compliance costs increase in a given year, this is a cost, while years in which they decrease would see cost-savings (benefit). Similarly, in Chapter 4's benefits discussion, if emissions increase in a given year, this is a

cost to society through their contribution to climate change, and through any associated impact on other harmful emissions, while years in which they decrease reduce contributions to climate change and its impacts (a benefit).

2.3.17 CCA rule: Allowance removal and retirement (section 250)

Regulatory baseline

The existing rule sets required calculations to adjust for the use of offsets as compliance instruments by retiring allowances. It also allows Ecology to remove and retire allowances from the next year's allowance budget if analysis of the state's progress toward required greenhouse gas limits set by RCW 70A.45.020 indicates insufficient progress and sets process requirements for these determinations.

Finally, the existing rule requires Ecology to remove and retire allowances from the voluntary renewable electricity reserve to reflect voluntary renewable electricity programs. The rule specifies requirements for eligible electricity generation, renewable energy credits, and requests for the retirement of allowances from owners or operators of generation, owners or purchasers of credits, or end-users claiming voluntary renewable electricity. It also includes requirements for the contents of retirement requests, and for the number, order, and frequency of allowance retirements from the voluntary renewable electricity reserve account.

Adopted amendments

The rule amendments:

- Update how allowances are retired when offsets are used for compliance, to increase predictability of future auction supply. Under the regulatory baseline, allowances are retired in the same amount as offset use, in the next year. Under the amended rule, this amount is spread across three years.
- Add requirements related to how Ecology handles allowances associated with the covered emissions of a dissolved entity. In the case of a dissolved entity with a successor entity, the covered emissions obligation is assumed by the successor entity. In the case of a dissolved entity without a successor entity responsible for the covered emissions, Ecology would retire future vintage allowances in the same amount as the unsurrendered compliance obligation of the dissolved entity.
- Add requirements for allowance budget adjustments related to withdrawal, suspension, or revocation of linkage.

Expected impact

The rule amendments are likely to result in the following costs and benefits:

- Spreading allowance retirements in the same amount as offset use over a longer time period supports a benefit of allowance price stability, because the size of retirements affects allowance supply. A single reduction in supply would have a greater impact on prices in that year, while spreading that reduction across three years would be less likely to significantly affect allowance prices.

- Adding requirements related to allowances held by dissolved entities without successor entities that assume the obligation is not likely to create a cost or benefit but only result in a change in which entity ensures emissions integrity of the Cap-and-Invest market. An existing provision in the regulatory baseline requires Ecology to retire allowances if emissions occur that do not result in an entity surrendering compliance instruments.⁵⁸ In the rule amendments, Ecology retires allowances from the budget equivalent to the unsurrendered compliance obligation if the dissolved entity does not have a successor entity. Thus, while retiring allowances does result in additional upward pressure on prices in isolation, this requirement is only clarifying how allowances equivalent to covered emissions are appropriately retired from the allowance budget to align the allowance budget with the statutory emissions goals.
- Adding requirements for allowance budget adjustments related to withdrawal, suspension, or revocation of linkage is not likely to have an impact because those provisions would only come into effect if Ecology links with another jurisdiction and then later decides to withdraw or suspend that linkage.

2.3.18 CCA rule: Allowance distribution dates (section 260)

Regulatory baseline

The existing rule specifies when Ecology will distribute various no-cost allowances each year to each sector receiving them.

Adopted amendments

The rule amendments reorganize this section for clarity. They also align language with adopted revisions to compliance obligations (section 600; see section 2.3.22 below). The amendments solely relocate language about the use of future vintages for compliance from WAC 173-446-260 to section WAC 173-446-600. In simply relocating this language, rather than removing it from the rule entirely, the amendments preserve existing provisions in chapter 173-446 WAC about the use of future vintages for compliance.

Expected impact

We do not expect the amendments to this section to independently result in costs or benefits as compared to the baseline. Impacts of changes to compliance obligations are discussed in section 2.3.22 below.

2.3.19 CCA rule: Auction requirements (section 300, 315, 317, 320, 330, 335, 350, 365)

Regulatory baseline

⁵⁸ WAC 173-446-250(2)

The existing rule sets requirements related to **auctions of current and prior year allowances (section 300)**. It specifies that auctions will be held four times per year and lists the allowances that may be auctioned. Allowances that can be auctioned include no-cost allowances consigned to auction by electric utilities and natural gas utilities. The rule sets minimum consignment requirements for natural gas utilities, as an increasing percentage of their allocation each year 2023 – 2030, after which all their no-cost allowances must be consigned to auction.

The rule specifies how proceeds from consignments must be used by utilities for the benefit of ratepayers. It also requires Ecology to submit an appropriate number of allowances to auction, considering the allowances in the market due to marketing of no-cost allowances issued to EITE facilities, electric utilities, and natural gas utilities. The rule also requires consigned allowances to be sold first and requires unsold allowances to be auctioned at subsequent auctions. Allowances not sold within 24 months must be placed in the ECR.

Related to **auction registration (section 315)** the existing rule also sets requirements for how entities must register for auctions. These include timing, actions, and content requirements for each auction, related to applying to bid in an auction, bid guarantees, and consultants or advisors. The rule also specifies circumstances under which Ecology must refuse permission to bid in an auction, and requires entities to provide Ecology with any requested information within 5 days.

Section 317 of the rule lists actions that are prohibited in auctions, including, but not limited to collusion and disclosure of bidding information.

As relates to **suspension or revocation of registration for an auction (section 320)**, the existing rule lists reasons that Ecology may cancel or restrict a previously approved auction participation application or reject a new application. These include, but are not limited to, providing false or misleading information, violating auction rules, and coordinating bidding strategies. It clarifies that coordinating bidding strategies is not prohibited if it is among registered entities within a direct corporate association. Entities are also prohibited from bidding if their holding and/or purchase limits allotted within a direct corporate association changes within 39 calendar days before an auction. Cancellations or restrictions may be imposed for multiple auctions or permanently.

Rules related to **purchase limits are also specified in the existing rule (section 330)**. They include 10% of available allowances for covered and opt-in entities that are not members of a direct corporate association, and 4% for general market participants that are not members of a direct corporate association. Covered or opt-in entity members of a direct corporate association are considered single entities that are subject to these limits and must allocate the limits between their members who are not general market participants. General market participants in a direct corporate association must allocate their limits among the other general market participants.

The existing rule sets **auction floor prices and ceiling prices (section 335)**:

- The 2023 floor price is \$19.70, which increases by 5% plus inflation each year.
- The 2023 ceiling price is \$72.29, which increases by 5% plus inflation each year.

- Ecology is required to announce the floor price and ceiling price on the first business day of December each year.

Section 350 governs bids in the existing rule. It specifies what must be included in a bid submitted in an auction. Each bid must be sealed and submitted to Ecology. Participants may submit more than one bid. After bidding, Ecology must reject a registered entity's bids or portions of bids if acceptance of all the entity's bids would result in exceeding its purchase limit. These are rejected in order starting with the lowest price bid until the purchase limit is no longer exceeded.

Regarding **auctions of future year allowances (section 365)**, the existing rule requires Ecology to hold two parallel auctions for future vintage allowances. These auctions follow the same procedures as current vintage and past vintage auctions. The rule sets a schedule for the percentage of allowances from three years in the future, for each year. Finally, the existing rule requires future vintage auctions to occur all at the same time, with identical bidding windows, and bids must be separate for future versus current and past vintage allowances.

The CCA statute, as amended by HB 1975:

- Requires allowance budgets to be set to achieve the share of reductions by covered entities necessary to achieve 2030, 2040, and 2050 statewide emissions limits in the Clean Air Act by December 31 of each of those years.
- Requires the price ceiling for 2026 and 2027 to be \$80.

The CCA statute, as amended by SB 6058, specifies that a covered or opt-in entity may not buy more than 25% of the allowances offered during a single auction.

Also, by statute, if Ecology enters into a linkage agreement, it must amend its rule to synchronize Washington's [second and later] compliance periods with those of the linked jurisdictions."⁵⁹

Adopted amendments

The amendments to **current and prior year allowance auctions (section 300)**:

- Add a consignment deadline to align with other jurisdictions and facilitate linkage.
- Describe how Ecology will introduce additional allowances as a result of HB 1975 into auctions.
- Revise consignment requirements to reference minimum consignment requirements for electric utilities (see section 2.3.20, above).
- Add a limit to the amount of unsold past or current vintage allowances from undersubscribed auctions that can be added to an upcoming auction. Unsold allowances added to an auction cannot exceed 25% of the number of allowances already planned for an auction.

⁵⁹ [RCW 70A.65.070](https://app.leg.wa.gov/RCW/default.aspx?cite=70A.65.070), <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.65.070>

The amendments to **auction registration requirements (section 315)**:

- Add new registration types to reflect exchange clearinghouses and FPMAs added under the amended rule.
- Add that all entities applying to bid would need to disclose investigations.
- Specify that requirements related to consultants and advisors only apply to Washington registered entities.
- Add that Ecology will refuse permission to bid at an auction to entities failing to disclose information required to registrations for covered and opt-in entities, electric utilities, and general market participants.

The amendments to **actions prohibited in auctions (section 317)**:

- Broaden the set of entities restricted from disclosing bidding information to include other individuals or organizations including direct and indirect corporate associations, consultants, and advisors.

The amendments to **suspension or revocation of registration for an auction (section 320)**:

- Clarify cross references without material change.
- Allow Ecology to deregister or limit entities for prohibited actions.

The amendments to **purchase limits (section 330)**:

- Increase the purchase limit for covered and opt-in entities from 10% to 25% as directed by the CCA statute.
- Clarify that, in the event of linkage, purchase limits apply to corporate association groups that cross linked jurisdictions.

The amendments to **auction floor and ceiling prices (section 335)**:

- Add language specific to linkage, that upon the effective date:
 - The auction administrator will set the exchange rate as the most recent daily buy rate.
 - The floor price in Canadian dollars is the highest of minimum prices set, published, and posted in Canadian dollars in the linked jurisdiction operating an external emissions trading system.
 - The auction administrator will announce the rate to convert floor prices to a common currency using values specified in the rule.
- Adjust the price ceiling as directed by the CCA statute, beginning with \$80 in 2026 and 2027.
 - If Washington enters into a linkage agreement and upon the linkage effective date, the price ceiling will be adjusted to align with the linked jurisdictions.

- o If Washington has not entered into a linkage agreement, or the linkage effective date has not occurred, the price ceiling will increase annually starting in 2028 from \$80 by five percent plus the rate of inflation.

The amendments to **bid requirements (section 350)**:

- Clarify that bids are in US dollars, to facilitate market linkage.

The amendments to **auctions of future year allowances (section 365)**:

- Change the frequency of future vintage year allowances from twice a year to four times per year and correspondingly adjust the percentage to auction from 5% per auction to 2.5% per auction.
- Clarify that future vintage allowance offered at auction shouldn't consider the addition of railroads to covered sectors in the third compliance period for the budget.

Expected impact

Introducing new cap-adjusted allowances due to HB 1975 will increase the supply of allowances available at each auction, potentially lowering the price pressure on quarterly auction prices, but will tighten the annual caps in 2031 through 2040.

Limiting the portion of unsold allowances that can be introduced in each auction will have a slight smoothing effect on auction supply as well as price.

Adding exchange clearinghouses may benefit entities due to more efficient trading mechanisms and increase market integrity.

Creating registration requirements and transfer processes for FPMAs may benefit rate payers and consumer-owned electric utilities if a federal power market administration decides to voluntarily participate in the Cap-and-Invest Program.

Auction registration and disclosure requirements increase market security and deterrence of prohibited actions, and bolsters market integrity, but may put additional burden on reporters to provide consistent or updated information to Ecology.

The increase of purchase limits for covered entities from 10% to 25% benefits large compliance entities by allowing them to source more allowances directly from auctions, although this concentration of allowances, or ability to purchase a higher number of allowances at auction, gives more weight to the bidding behavior of larger entities and may have the effect of increasing auction settlement prices.

Information about the how to handle the exchange rate prepares Ecology to be able to hold joint auctions with jurisdictions that operate in Canada (Québec) and aligns Washington with existing practice in the linked jurisdictions, while confirming that bids by Washington entities will still be submitted in USD.

Moving from twice a year to quarterly auctions of future vintage allowances will allow more opportunities for entities to bid for these allowances and have a smoothing effect on price, while the total offered at auction does not change. This will also create internal operational

efficiency, making our quarterly auctions more uniform in their process. Not including railroads in these calculations of quantity of future vintage allowances to offer help ensure that we do not over-commit supply ahead of expansion of the annual caps to accommodate emissions from railroads

2.3.20 CCA rule: Allowance reserves and price control mechanisms (sections 370, 375, 380, 385)

Regulatory baseline

The CCA statute stipulates the creation of the APCR and directs Ecology to choose between 2 and 5 percent of the annual allowance budgets from 2031 through 2040 to be placed into that reserve account. Under current rule, the APCR is funded with 5% of annual allowances through the second compliance period, which ends in 2030.⁶⁰

Allowances from the APCR can be auctioned at two price tiers, Tier 1 and Tier 2. Since November 2023, all APCR allowances have been offered at the lower Tier 1 price. The Tier prices increase annually at 5% plus the rate of inflation, as measured by the consumer price index.

The statute and current rule stipulate that new and expanded EITE facilities must receive allowances from the ECR equal to their greenhouse gas emissions in the first applicable compliance period.

Adopted amendments

The rule amendments to allowance reserves and price control mechanisms:

- Add 5% of the carbon budget allocation for the years 2031 – 2040 to the APCR.
- Add to the APCR 5% of the total new cap-adjusted allowances (increases) due to changing the dates of achieving greenhouse gas emissions limit to December 31 of 2030, 2040, and 2050, from January 1 of those years.
- Add to annual budgets, starting in 2027, allowances created for waste-to-energy facilities covered under the CCA statute and added to the rule as part of this rulemaking (Section 210).
- Increase APCR Tier prices at the same rate each year. The APCR Tier 2 price is a price above Tier 1 but below the price ceiling unit (PCU) price. HB 1975 (2025) set the PCU price at \$80, and, starting in 2027 based on this rulemaking, the Tier 2 will be set as the midpoint between the Tier 1 price and the PCU price. If quarterly auctions settle between tier 1 & Tier 2, Ecology would offer 50% of the APCR allowances at the Tier 1 price and 50% at the Tier 2 price. If quarterly auctions settle above the Tier 2 price, 100% of APCR allowances would be offered at the Tier 2 price. If linked, the Tier 2 price

⁶⁰ [RCW 70A.65.150](https://app.leg.wa.gov/RCW/default.aspx?cite=70A.65.150), <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.65.150>

will align with the Tier 2 price of the linked jurisdictions, and the PCU price will also align with the linked jurisdictions.

- Allow opt-in entities to buy price ceiling units (PCUs), which are compliance instruments issued at the price ceiling price up to the amount needed for the next compliance event, and only useable for compliance obligations, i.e., not tradeable and not bankable.
- Clarify that PCUs can only be purchased by covered entities registered in the Washington program and opt-in entities are also allowed to purchase them.
- Clarify eligibility requirements for new and expanded EITE facilities to receive allowances from the ECR, including the protocol for EITE facilities to request these allowances and the definition of first applicable compliance period.
- Add that new and expanded EITE facilities will not receive allowances from the ECR if they were allocated allowances under Section 220 that were more than their covered emissions for that Emissions Year.

Expected impact

Ecology has limited discretion regarding additional allowance supply to dedicate to the APCR account from the 2031 through 2040 budgets: somewhere between 2 and 5 percent.

By choosing 5%, the upper end of the range, Ecology maintains consistency with past practice for APCR supply in the 2023 to 2030 timeframe and aligns with providing maximum near-term cost relief if needed. Ecology does, to a small degree, reduce the supply of allowances available in the regular auctions in the 2030s. The reduced supply increases the likelihood that an APCR auction may be triggered in the 2030s, but—as soon as 2027—makes more allowances available should that occur. This has the benefit of smoothing potential volatility prior to linkage with a more robust supply available to the market. A possible cost could be a higher average cost of allowances given that more (5% versus 2%, say) are sold at the reserve tier prices, though this is hard to quantify—if the market price would have been above the APCR tiers regardless of how many additional allowances were placed in the APCR, then offering the allowances directly to entities with a compliance obligation at the APCR tier prices represents a reduction in cost.

Using the “if, then” framework to determine how many APCR allowances to offer at each APCR price tier, Ecology will offer 50% of APCR allowances at Tier 1 and 50% at Tier 2 if auction prices settle between those prices (and 100% at Tier 2 if auction prices settle above the Tier 2 price). This ties the supply of allowances offered at each APCR tier price directly to recent auction settlement prices. This helps limit the potential for price shocks caused by APCR auctions and helps to extend the life of the APCR reserve. Conversely, if all allowances were offered at the Tier 1 price that would most likely deplete the APCR reserve too quickly.

The changes regarding new and expanded EITE facilities are procedural clarifications and not expected to produce significant costs, but the benefit of a clearer allowance allocation process. Ensuring that new and expanded EITEs don’t receive more allowances than needed for compliance provides the benefit of having a mechanism by which to meet the regulatory baseline requirement to not receive more allowances than needed for compliance.

2.3.21 CCA rule: Transaction and transfer requirements (sections 400, 410, 412, 415, 425, 426, 430, 435, 440)

Regulatory baseline

These sections cover the rules and procedures for compliance instrument transactions. They include transfers among registered (regulated) entities, and the various accounts instruments may be held in. As with other financial instruments, trading based on privileged, deceptive, or fraudulent information is banned. This includes omitted information relevant to the value of a compliance instrument.

Adopted amendments

Amendments to these sections facilitate Washington joining a linked market.

Many of the changes are clarifying in nature and aim to align with California and Québec's rules. These include rules for transactions involving exchange clearinghouses, which are not currently part of Washington's market, and the transfer of no-cost allowance allocation.

In addition to fraudulent and deceptive practices, trades aimed at cornering the market for compliance instruments are banned, as are trades made by one party on behalf of another.

Expected impact

The expected benefits include increased market integrity and alignment of Washington's rules with those of California and Québec. Amendments regarding beneficial holdings provide market participants additional clarity regarding permissible financing agreements and financial contracts. These changes also increase market integrity to clarify that transactions and financing agreements do not bypass the purchase and holding limits.

Amendments aligning transaction disclosure requirements may have the impact of additional costs to provide the necessary information associated with transactions and to adhere to Ecology's requests for additional information. The amendments provide clarity on the disclosure requirements, so that entities can report accurate information which increases market integrity.

Outlining transfer processes for exchange clearinghouses provides benefits to entities as it increases market efficiency and transparency. Amendments outlining transfer processes for FPMAs may provide benefits, if they voluntarily decide to participate in the Cap-and-Invest Program, by providing more efficient processes and registration requirements for electric utilities receiving no-cost allowances.

Amendments regarding types of prohibited transfer are not likely to increase costs but are likely to increase market integrity.

2.3.22 CCA rule: Compliance obligation requirements (section 600)

Regulatory baseline

This section of the existing CCA rule details the procedural and timeline requirements for regulated and opt-in entities meeting their obligations under the CCA statute.

This section also describes how offset credits can be used for compliance. An entity can meet 5% of its compliance obligation with offset credits during the first compliance period. It is required by statute that these offset projects provide direct environmental benefits (DEBs) to Washington state. An additional 3% of the obligation may be met with offset credits, provided they are generated from projects on Tribal lands.

In the second compliance period and thereafter, these values fall to 4% and 2%, respectively.

For the first compliance period, in a linked market, a minimum of 50% of offset credits would be required to come from offset projects with Washington DEBs, while the rest may come from credits issued by a linked jurisdiction for projects located in a linked jurisdiction.

For the second compliance period, at least 75% of the offset credits used must come from offset projects with Washington DEBs, and the remaining 25% may come from credits issued by a linked jurisdiction for projects located in a linked jurisdiction.

Ecology can reduce these percentage limits for a specific entity if we consult with the EJ Council and determine that the entity has or is likely to significantly impact cumulative air pollution burden in an overburdened community, or to violate air quality permits.⁶¹

Ecology can also limit the use of offsets by an EITE facility to ensure EITEs first meet their compliance obligation over a compliance period using no-cost allowances before they can use offset credits. In practice, this can result in some EITE facilities being ineligible to use offset credits as much as other covered entities.

Adopted amendments

The amended rule adds procedural and timing details for meeting compliance obligations under linkage. This includes detailed descriptions of how compliance obligations can be met using the available compliance instruments.

The overall portion of offsets that can be used for compliance obligations remains unchanged and the Washington DEBs requirements remain unchanged as well.

Ecology is adopting a change in rule to require that this additional 3% (in the first compliance period) and 2% (in the second compliance period and thereafter) of offsets that must be sourced from projects on Tribal lands must also provide DEBs to the state of Washington.

Finally, amendments to this section solely relocate language about the use of future vintages for compliance from WAC 173-446-260 to section WAC 173-446-600. In simply relocating this language without change, rather than removing it from the rule entirely, the amendments preserve existing provisions in chapter 173-446 WAC about the use of future vintages for compliance.

Expected impact

⁶¹ [RCW 70A.65.170](https://app.leg.wa.gov/RCW/default.aspx?cite=70A.65.170), <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.65.170>

Initiated in response to Tribal input, we expect this change could mitigate a potential reduction in demand for Tribal projects that provide DEBs to Washington in a linked market.

The clarifying changes regarding procedures and timing are expected to provide the benefit of greater ease for entities in meeting regulatory requirements.

2.3.23 CCA rule: Enforcement requirements (section 610)

Regulatory baseline

Any entity that fails to meet its compliance obligation must within six months fulfill a penalty obligation, equal to four allowances for every one compliance instrument it did not surrender to Ecology to fulfill its compliance obligation.

If an entity does not fulfill its penalty obligation, Ecology will consider each ton of carbon emissions not covered by allowances as a separate violation carrying an up to \$10,000 fine. Ecology's discretion to reduce fines would be curtailed in a linked market.

Adopted amendments

The amended rule adds the definition of a penalty obligation as a combination of a shortfall obligation, equal to the number of allowances an entity did not surrender to Ecology to fulfill an emissions obligation, and an untimely surrender obligation, equal to three times the shortfall obligation. The amended rule clarifies the process and requirements for fulfilling a penalty obligation and identifies the account to which penalties are deposited, consistent with RCW 70A.65.200(5) and HB 2251 (2026).⁶²

Expected impact

These changes clarify existing enforcement processes and are not expected to add significant costs as Ecology analysis typically assumes compliance with its regulations and the regulations are simply a clarification of enforcement language, not a change in enforcement processes themselves.

These changes bring the benefit of greater regulatory clarity for participating entities.

⁶² For ease of reference we are referring to Chapter 219, Laws of 2026; Engrossed Second Substitute House Bill 2251.

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 regulatory baseline. The rule amendments and the regulatory baseline are discussed in detail in Chapter 2 of this document.

3.2 Cost analysis

Changes to the reporting rule

The rule amendments to the greenhouse gas reporting rule:

- Clarify and add definitions to facilitate linkage and support program efficiency and stability.
- Clarify program applicability and exit conditions, facilitate linkage, and align with statutory changes.
- Update reporting methodologies to align with statutory changes, facilitate linkage, and ensure accurate and consistent reporting.
- Update monitoring, reporting, recordkeeping, and verification to facilitate linkage and improve clarity.
- Update verification requirements to facilitate linkage and improve program efficiency and stability.
- Change calculation methods.

Changes to the CCA rule

The rule amendments to the CCA rule:

- Add or amend definitions for clarity or to support alignment with statutory changes, facilitate linkage, and support program efficiency and stability.
- Update program coverage and compliance periods.
- Change registration requirements to support program efficiency and stability.
- Add exchange clearinghouse registration requirements to facilitate linkage and to support program efficiency and stability.
- Clarify use of future vintage allowances for compliance obligations.
- Add linkage processes and timing requirements to facilitate linkage.
- Update program accounts to facilitate linkage.
- Change corporate association requirements.
- Update corporate disclosure requirements to facilitate linkage, increase transparency for market participants and prevent unequal market advantage.
- Change account representative and viewing agent designation requirements.
- Update accounts and limits to facilitate linkage and support program efficiency and stability.

- Update allowance supply and allocation procedures to update total program baseline to reflect sectors entering the program in second and third compliance periods, establish allowance budgets for future years and update no-cost allowance provisions to EITs, electric utilities, natural gas utilities and waste-to-energy facilities to align with statutory requirements.
- Reorganize Voluntary Renewable Electricity reserve account requirements for clarity.
- Update allowance removal and retirement attestations to support program efficiency and stability and to facilitate linkage.
- Reorganize allowance distribution dates with other sections for clarity.
- Change auction requirements.
- Change allowance reserve requirements and price control mechanisms.
- Change transaction and transfer requirements.
- Establish clearinghouse transaction processes to facilitate linkage and to support program efficiency and stability.
- Update compliance obligation requirements for clarity, to facilitate linkage, align with statutory changes related to offsets.
- Add and clarify enforcement requirements to support program efficiency and stability, to facilitate linkage, and to align with statutory changes.
- Update contact information to reflect current information.

Amendments facilitating market linkage

In analyzing the costs and benefits of the rule amendments, Ecology identified that while many of the amendments are intended to align Washington's carbon market with the California-Québec market to facilitate market linkage, this rulemaking does not officially link the three programs. Market linkage would only occur after the other jurisdictions adopt regulations to recognize and accept compliance instruments from Washington starting on a specified linkage effective date as provided for in the linkage agreement between the jurisdictions. Many of the amendments would only be triggered by market linkage and only have effect after the linkage effective date. Amendments that would be relevant and applicable for an unlinked market will remain in place until that linkage effective date.

This left Ecology facing two scenarios under which to consider the impacts of the adopted amendments: (1) an amended and aligned but unlinked market and (2) an amended and aligned and linked market. The amendments themselves will only directly result in an aligned but unlinked market. However, as the statutory and rulemaking intent is to facilitate linkage and as Ecology has signed a linkage agreement with California and Québec and expects to start operating a linked market in 2027, presenting only impacts of an unlinked scenario would not necessarily reflect realistic expectations of costs or benefits. As a result, our discussion of likely impacts in this chapter addresses both unlinked and linked scenarios.

How this chapter is organized

To capture the interaction between many of the rule amendments, we have organized our analysis into two groups (see Chapter 2 for discussion of each amendment, its regulatory

baseline, and associated costs and/or benefits). In this chapter, we assess the costs associated with:

- **Amendments interacting to affect carbon market function or outcomes.** These include amendments that affect allowance supply, allowance demand, no-cost allowance allocation, and use of compliance instruments. These are amendments that we incorporated into a model of the carbon market to assess potential impacts on allowance prices and emissions.
- **Amendments that independently or largely independently cause impacts.** These include amendments that would affect administrative or documentation tasks. This category also includes amendments potentially affecting the treatment of complex or conglomerate entities and corporate associations that may impact distributional outcomes, and changes to timing or deadlines that we could not feasibly incorporate in a carbon market model but may affect compliance choices.

3.2.1 Costs of amendments that interact to affect market outcomes

Because costs of compliance and greenhouse gas emissions may increase or decrease in different years under the amendments as compared to the regulatory baseline, it is important for readers to understand our use of the words “cost” and “benefit” for the purposes of structuring the discussion in this document. Broadly speaking, the benefits of the Cap-and-Invest Program are emissions reductions and auction revenues, and the costs are the financial costs borne by regulated entities that must purchase compliance instruments. In evaluating the costs and benefits of this rulemaking (recalling from section 2.2.2 that the impacts of the amendments are not fully analytically separable from the regulatory baseline), we have attempted to analyze changes in these two categories of costs and benefits as follows:

- Costs include impacts to compliance costs. As such, impacts that reflect cost-savings are also discussed as cost impacts (i.e., negative costs or decreased costs) in this document.
- Benefits include impacts to emissions and their related effects, including the social cost of carbon. As such, impacts that reflect an increase in emissions are also discussed as benefit impacts (i.e., negative benefits or a decrease in benefits) in this document.

Our chosen approach also allows us to comprehensively describe the methodologies used to estimate impacts to compliance costs in one chapter, and to comprehensively describe the methodologies used to estimate impacts to emissions and resulting climate impacts in another chapter.

3.2.1. Forecasting emissions and allowance prices – the carbon market model

To analyze the cost of the rule amendments, we began by forecasting the emissions and carbon market prices for the regulatory baseline conditions through 2037. To accomplish this, we utilized a market model created for Ecology by a team from the University of California (UC Team). Specifically, we used modeling results produced in August 2026.

Uncertainties are unavoidable when designing a forecast. This means that modeled outcomes are heavily assumption-dependent and therefore represent only part of the range of possible market and greenhouse gas emissions outcomes. For example, models do not easily capture unpredictable macroeconomic factors like pandemics or recessions. And as modeled timeframes extend into the future, assumptions compound, making the range of possible outcomes even more uncertain. The UC Team model developed for Ecology serves as a valuable analytical tool, but models have limitations and will very likely not accurately or precisely predict the future. This is especially true for outcomes predicted over a longer time horizon. The modeling results included in this document are for the purpose of understanding potential impacts of linkage and do not constitute a forecast of a standalone or linked market by Ecology.

At a high level, the model predicts the price of allowances by intersecting a projected supply of allowances with an estimated demand for allowances. The demand for allowances is based upon a forecast of greenhouse gas emissions, while the supply is based on a combination of the number of allowances available in the Program and a forecast of emissions abatement. In this document, abatement refers to economic activity that reduces greenhouse gas emissions.

The model takes two steps in estimating emissions:

- **First step (business-as-usual emissions demand model):** The model forecasts greenhouse gas emissions covered by the Program. Specifically, the model estimates “business-as-usual” (BAU) emissions, which represent emissions in a future where emissions continue their current trajectory, without influence from the Cap-and-Invest Program or other climate policies. I.e., because the BAU model uses greenhouse gas emissions data through 2024, it does not effectively capture emissions impacts from recently passed major climate policies. Programs such as the Clean Fuel Standard (CFS) and the CCA did not take effect until 2023.
- **Second step (supply model emissions reductions):** The model applies emissions reductions from major climate policies, including the Cap-and-Invest Program, to BAU emissions.

There are separate supply/demand models for the regulatory baseline and linked scenarios.

To estimate BAU emissions, the demand model uses an econometric time series⁶³ that applies data from 1990-2024 to forecast future emissions. Specifically, the model is a Dynamic Factor Model (DFM)⁶⁴.

Greenhouse gas emissions regulated under the Cap-and-Invest Program result from economic activity. Therefore, the demand model uses data on high-emitting economic activities across multiple sectors, including electricity, natural gas, transportation fuels, and industrial processes. These sectors capture the downstream economic activity that drives emissions, such as transportation, building heating and cooling, and consumption of manufactured and industrial

⁶³ Time series are commonly used to track existing trends and extrapolate those trends into the future.

⁶⁴ A DFM is a time series model that captures the dynamics of different variables as they move towards a long-term equilibrium.

goods. Specifically, the model includes a set of eleven variables that attempt to capture the range of economic activity generating greenhouse gas emissions in Washington.⁶⁵

The model then uses the output from the time series forecast to build a distribution of possible BAU greenhouse gas emissions outcomes. The distribution is estimated using a Monte Carlo simulation that takes 1,000 draws based on the standard errors of the variables in the model.

Supply Model: Cap-and-Invest and Complementary Policy Emissions Reductions

The supply model estimates the supply of allowances plus the supply of emissions abatement. The supply curve consists of three main components:

- Non-price-responsive abatement – Reductions in emissions to account for abatement driven by policies other than the Cap-and-Invest Program.
- Price-responsive abatement – Additional emissions reductions driven by the Cap-and-Invest Program carbon price.
- Compliance instruments – Allowances of various types that covered entities must acquire to cover their emissions.

The model predicts the price of allowances by estimating BAU emissions, reducing emissions to account for policy-driven emissions reductions, then examining how many and what type of allowances must be acquired to cover the remaining emissions.

If “standard” allowances (allowances sold at quarterly auctions, distributed through no-cost allocation⁶⁶, and banked allowances⁶⁷) are enough to meet the demand, then the modeled price is estimated at the price floor. If allowances from cost containment (APCR or price ceiling units) are required, then the price rises to those rates.⁶⁸

In setting the price, the current model assumes that the behavior of market participants is myopic, meaning that the prices do not arrive at the price ceiling until demand for allowances meets or exceeds the supply of allowances.⁶⁹

⁶⁵ For further discussion of the market model, please see [Cap-and-Invest Linkage Criteria Findings](#) Appendix F.

⁶⁶ Under the Climate Commitment Act, electric utilities, natural gas utilities, emissions-intensive trade-exposed industries, and waste-to-energy facilities receive allowances at no cost. Each of these groups receives differing amounts of no-cost allowances and is subject to different requirements on how they use their no-cost allowances.

⁶⁷ “Banked” or “unused” allowances are allowances that market participants have in their accounts because they have not needed to use them for compliance

⁶⁸ If some APCR allowances are required to meet the demand, then the price rises to the tier I price. If more than half of APCR allowances are required to meet demand, then the price rises to the tier II price. If price ceiling units are required to meet demand, the price rises to the ceiling.

⁶⁹ The UC Team notes that this myopic assumption is a departure from previous versions of their model which have assumed that participants will engage in arbitrage related to any differences between current prices and expectations of real future allowance prices. Using a myopic assumption, prices will be based only upon the current year’s cumulative net supply of allowances, including any allowances banked from previous years. The myopic assumption appears to be more consistent with current behavior observed in the joint California-Québec market.

Non-price-responsive emissions reductions (abatement)

Non-price-responsive abatement represents greenhouse gas reductions driven by other climate policies in Washington, exclusive of the Cap-and-Invest Program.

Ecology expects other policies, such as CETA and CFS, to impact overall emissions. For example, fuel suppliers that might be incentivized to invest in low carbon transportation fuels to reduce allowance purchases may have made some of those investments due to CFS. These non-price policies carry uncertainty with respect to whether they will meet goals over time. The model thus simulates the degree to which these goals are achieved. This uncertainty is part of the Monte Carlo simulation discussed in the Business-as-Usual Emissions Model section. The UC Team assigns probabilities in the simulation, and the model adds uncertainty to this assumption by assigning a probability representing the likelihood of reaching that goal for each draw of the simulation.

Price-responsive emissions reductions (abatement)

The Cap-and-Invest Program is a market-based policy that requires that covered entities acquire allowances equal to their greenhouse gas emissions, effectively placing a cost on emitting greenhouse gases. This may result in businesses and consumers factoring in price changes from this additional cost when making spending choices. As the cap decreases, this upward price pressure on carbon-emitting economic activity will increase.

The primary price-response mechanism used in the supply model is the feedback between energy consumption and changes to energy prices due to the Cap-and-Invest Program. In economics, elasticities depict the percentage change of one variable in response to another. The UC team uses elasticities of energy markets to estimate emissions abatement resulting from allowance value.

Compliance Instruments

The primary compliance instrument in Washington's Cap-and-Invest Program is an allowance. One allowance is an instrument used to demonstrate compliance for the emission of one metric ton of carbon dioxide equivalent (MT CO₂e). The availability of allowances decreases over time as Ecology reduces the annual allowance budget to align emissions reductions by sectors covered by the Cap-and-Invest Program with statewide greenhouse gas limits.⁷⁰

The Program also includes the Allowance Price Containment Reserve (APCR), a cost-containment measure. The APCR is a separate pool of allowances pulled aside from future allowance budgets and therefore those APCR allowances are still within the overall established emissions limits, or "under the cap."

Another cost containment mechanism is the price ceiling unit (PCU). Covered entities are permitted to purchase as many PCUs as they need to cover their emissions obligation at the end of the compliance period, if all other avenues to purchase allowances have been exhausted

⁷⁰ Sectors that are covered by the Cap-and-Invest Program make up approximately 70% of state-wide emissions. The Climate Commitment Act directs Ecology to set allowance budgets that decline on a yearly basis to ensure covered sectors' emissions are consistent with the emission limits in statute. RCW 70A.65.070(2).

and they still have an outstanding compliance obligation. PCUs are not part of the Program allowance budget and therefore represent emissions beyond the established limits, or “above the cap.” The CCA accounts for this by requiring that proceeds from the sale of PCUs are applied towards corresponding emissions reductions on at least a ton-for-ton basis.⁷¹

The Cap-and-Invest Program also allows covered entities to use offset credits for a portion (currently up to 8%) of their compliance obligation. The CCA statute requires that offset credits come from offset projects that result in greenhouse gas reductions that are real, permanent, quantifiable, verifiable, and enforceable. In Washington, offsets are ‘under the cap’ – meaning that Ecology removes allowances from future allowance budgets equivalent to the number of offset credits used by covered entities. Because of this, the use of offset credits is not separately factored into this model.

Under the CCA, electric utilities, natural gas utilities, and emissions-intensive, trade-exposed (EITE) industries currently receive no-cost allowances, with some restrictions. No-cost allowances are taken from the annual allowance budgets. Therefore, they are included in the model but are not separately modeled from other allowances.

Overall, the UC Team does not model the various types of compliance instruments differently. They are each treated as a means to account for one metric ton of greenhouse gas emissions.

Combined supply model

The supply curve combines the supply of allowances with the supply of emissions abatement. The model then determines the allowance price by intersecting the business-as-usual (BAU) emissions result with the supply curve.

If the combination of non-price-responsive abatement and “standard” allowances (allowances sold at quarterly auctions, distributed through no-cost allocation, and banked allowances⁷²) are enough to meet the BAU emissions, then the modeled price is estimated at the price floor. If allowances from cost containment (APCR or price ceiling units) are needed to meet BAU emissions, then the model estimates the price at or near the relevant step of cost containment.⁷³ The amount of price-responsive emissions abatement depends on the allowance price. An allowance price estimated at the ceiling or APCR drives more price-responsive abatement than an allowance price estimated at the floor.

The model developed by the UC Team takes a conservative approach when predicting technology adoption (e.g. renewable energy, zero-emissions vehicles). It does this by including confidence parameters that add uncertainty that existing complementary climate policy targets will be achieved. Finally, because the model is primarily based on past emissions data, it cannot

⁷¹ RCW 70A.65.160(3)

⁷² “Banked” or “unused” allowances are allowances that market participants have in their accounts because they have not needed to use them for compliance.

⁷³ If some APCR allowances are required to meet the demand, then the price rises to the tier I price. If more than half of APCR allowances are required to meet demand, then the price rises to the tier II price. If price ceiling units are required to meet demand, the price rises to the ceiling.

account for transformational technologies that would change the future pace of decarbonization.

Further, the model does not account for greenhouse gas reductions from the investments funded by the state of Washington using Cap-and-Invest auction proceeds. Direct investment of auction revenue into energy efficiency programs, clean technologies, and transformational infrastructure can lead to considerable greenhouse gas reductions in addition to those achieved by the influence of the Program's carbon price. Years in which auction revenue falls as compared to the regulatory baseline would see less funding available for these additional emissions reductions, and the inverse would hold in years auction revenues rise.

Linked Model

To estimate the linked scenario, the UC team created a model of the California-Québec market with a parallel structure to the Washington model.

To create the linked model, the UC Team combined the allowance demand and supply forecasts for the Washington and California-Québec markets to generate a combined allowance supply and demand forecast, and from this derived a combined allowance price forecast. In the regulatory baseline (unlinked) model, the allowance price for the Washington market is determined separately. Non-price-responsive abatement is forecast using the same methods in the linked and regulatory baseline models. However, the emissions from price-responsive abatement vary because the allowance price estimates are different between the two scenarios.

To determine the estimated costs of the rule amendments, the results for emissions and the price and quantity of allowances were compared to the regulatory baseline model results.

Calculation methodology

In the market model, the total revenue generated by the market (number of allowances sold at auction times the price per allowance) represents the aggregate compliance costs borne by the market participants. The difference between the total revenue generated in the regulatory baseline scenario and the total revenue generated in the linked scenario quantifies the impact of linkage for the purposes of this regulatory analysis.⁷⁴ If revenues increase, this indicates that aggregate costs for market participants increased. If revenues decrease, this indicates that aggregate costs for market participants decreased. A decrease in costs therefore represents cost-savings for participants in the market. This represents an upper bound on compliance cost impacts given that auction revenue is returned through CCA investments, including some investments directed towards decarbonization that reduce compliance cost over time of market participants (these reductions are not quantified in this cost analysis).

⁷⁴ Ecology notes that the difference in total revenue between the linked and regulatory baseline scenario more strictly represents entity compliance costs rather than the costs to society for Washingtonians as a whole. This is because the market model does not include the impact on Washingtonians of revenue generated by the Cap-and-Invest Program that is then spent on CCA-funded programs. The indirect impacts of changes to Cap-and-Invest Program revenues on state spending are included in the REMI model used to assess impacts on employment and output in Chapter 7 of this analysis.

If allowance prices differ between the two scenarios, the amount of emissions will also differ. The Cap-and-Invest Program is intended to create a financial incentive for entities to reduce their emissions. The model incorporates emissions reduction from Cap-and-Invest due to allowance price responsive reductions based on elasticities from academic literature. These can be thought of as extra reductions in emissions that are applied when the modeled price reaches each cost-containment step.

Market model results discussion

Throughout the analytic timeframe of 2027 – 2037, the market model incorporates all of the factors discussed above related to supply of, and demand for, allowances to estimate allowance prices and emissions. Comparing the model’s results under the regulatory baseline to the rule amendments, the modeling found:

- Both prices and emissions in the linked scenario vary relative to the regulatory baseline, across different years in the analysis.
- No substantial difference between the regulatory baseline and the unlinked market scenario.

Lower allowance prices represent cost-savings. However, lower allowance prices correspondingly lead to a decrease in the amount of emissions abatement incentivized through the carbon market (price responsive emissions reduction, described above). This increase in emissions represents a foregone benefit to society that comes from the contribution emissions make to climate change. The inverse is true for higher allowance prices.

3.2.1.2 Estimating cost impacts of the rule amendments under a linked market based on market model results

In many of our analyses of amended rules, Ecology has been able to present detailed tables of quantified costs and benefits under the regulatory baseline and under the amended rule (and any additional scenarios). In this analysis, however, we have limited presentation of quantified results to relatively high-level, aggregated results, and only of the difference between the rule amendments and the regulatory baseline to the extent they were analytically separable. This is for two reasons. First, if results were included at a more granular level, model input leading to results could be extrapolated and used by market participants to influence auction results or secondary market activity. Additionally, more disaggregated results could provide too much insight into specific industries or entities and their potential compliance obligations, which could create unfair trading practices.

Second, there are inherent uncertainties and limitations to modeling carbon markets. For example, the market model takes a conservative approach when predicting technology adoption (e.g. renewable energy, zero-emissions vehicles). It does this by including confidence parameters that add uncertainty that existing complementary climate policy targets will be achieved. Estimates from the model also cannot account for unpredictable external factors, such as national and international economics and politics, or transformative technologies that may drastically lower the cost of decarbonizing. The model also does not account for greenhouse gas reductions from the investments funded by the state of Washington using Cap-

and-Invest auction proceeds. Direct investment of auction revenue into energy efficiency programs, clean technologies, and transformational infrastructure can lead to considerable greenhouse gas reductions in addition to those achieved by the influence of the Program's carbon price.

To estimate cost impacts and break them out by who receives the spending (the state, offset project developers, entities consigning no-cost allowances), we began with the emissions and allowance price forecasts under the regulatory baseline (unlinked) scenario and the linked carbon market scenario. We made the following simplifying assumptions consistent with rule requirements:

- Entities would use offset credits to meet their compliance obligations at the maximum rate of 6% of covered emissions.⁷⁵
- Offset credits would be available at a 7% discount from allowance prices.⁷⁶
- No-cost allowances
 - EITEs would receive allowances based on the requirements specified in RCW.70A.65.110, which directs Ecology to provide no-cost allowances equal to 100% of each EITE facility's allocation baseline for 2023-2026, 97% of the allocation baseline in 2027-2030, and 94% from 2031-2034.⁷⁷ The number of allowances is based on an emissions forecast prepared for Ecology by the UC Team and assumes minor improvements in efficiency by EITEs in response to the incentive provided by existing EITE allocation policy.⁷⁸
 - Natural gas utilities would receive no-cost allowances based on established allocation baselines and applying the rate of decline specified in the existing or amended CCA rule.
 - Consistent with existing and amended rule, electric utilities would receive no-cost allowances equal to estimated emissions associated with serving Washington load as modeled by the UC Team (see section 3.2.1). This estimate made by the UC Team assumes electricity serving Washington load follows a CETA-compliant path including:
 - For 2027 through 2029, emissions decrease from historic values to the emissions level in 2030 needed to achieve CETA compliance.

⁷⁵ This is the limit on the use of offset credits starting in the second compliance period (from 2027 through 2050).

⁷⁶ Ecology has previously used a 7% discount on offset credit prices compared to carbon allowance prices. We note that our assumption is likely conservative, since recent offset credits in California are priced approximately 14% lower (Nodal Exchange Environmental End-of-Day Settlement Prices for April 02, 2026).

⁷⁷ It also assumes EITEs receive allowances equal to 94% of allocation baselines from 2035 onwards, which is the default level of allocation until the legislature specifies a reduction schedule for 2035-2050.

⁷⁸ The existing policy provides more allowances relative to compliance obligations to EITE facilities that improve their carbon-intensity per unit of production. This incentive is affected by allowance prices, so the forecast assumes a different trajectory of efficiency improvements under the linked and unlinked market scenarios.

- For 2030 through 2037, 74% of the generation and 80% of electricity sales meeting Washington load is met by non-emitting sources and the remainder by natural gas.

Allocation to electric utilities does not vary between the existing and amended rules except for a small amount of additional no-cost allowances that are provided to mitigate administrative costs as specified in the amended CCA rule.⁷⁹

- For the years 2036 to 2037, due to insufficient allowance availability within annual budgets, the number of no-cost allowances to EITs, natural gas utilities, and electric utilities was adjusted downwards proportionate to each sector's share of total allocation when calculated according to the policies described above.
- Utilities receiving no-cost allowances would consign the minimum percentage required to auction in each year.

We estimated total compliance costs in each year 2027 through 2037 under the regulatory baseline scenario and under the scenario that includes the adopted amendments in a linked market. Estimated total compliance costs are the sum of entity spending on offset credits and allowances, accounting for allocation of no-cost allowances.

Total cost = (offset credits purchased x offset price) + (allowances purchased x allowance price)

Where:

offset credits purchased = 0.06 x emissions

offset price = 0.93 x allowance price

allowances purchased = 0.94 x emissions – no-cost allowance allocation + consigned allowances

To address the rule amendments' impact on carbon market revenues going to different entities, we calculated the following:

consignment revenues = consigned allowances x allowance price

market revenues = (0.94 x emissions – no-cost allowance allocation) x allowance price

offset credit revenues = 0.06 x emissions x 0.93 x allowance price

Changes under the amended rule (difference between the linked market model and the regulatory baseline model results) to offset credit purchases and to the allocation and associated consignment of no-cost allowances would be relatively small compared to the overall size of the emissions. Therefore, under the amended rule, we estimated relatively small

⁷⁹ Recall that Ecology's quantitative estimates reflect only those amendments for which we were able to make quantitative assumptions. Other cost impacts are discussed qualitatively in section 3.2.2, and qualitative benefit impacts are discussed in section 4.2.2.

changes to spending on offset credits and consigned allowances. Revenues to the state from auctioned allowances have a larger estimated change.⁸⁰

The table below summarizes the impacts of the amended rule on different streams of compliance cost spending and total present value costs of the rule amendments. The table includes values based on discount rates aligned with discounting of present value benefits in Chapter 4.⁸¹ Overall, impacts to total present value costs range from cost-savings of \$1.64 billion to cost-savings of \$1.85 billion, depending on the discount rate, over the 10-year period.⁸²

Table 3: Total present value cost impact 2027 - 2037, compared to regulatory baseline (billions of 2026\$)

Cost Category	1.50% Discount Rate	2% Discount Rate	2.50% Discount Rate
State revenues	-\$1.38	-\$1.48	-\$1.58
Offset revenues	-\$0.26	-\$0.27	-\$0.27
Consignment revenues	\$0.79	\$0.74	\$0.70
Total costs	-\$1.64	-\$1.75	-\$1.85

It is important to note that revenue from consigned no-cost allowances would return to the entities that consign them, so when considering net overall cost impacts at the aggregate level (program-wide across all entities), these costs net out to zero and do not contribute to aggregate cost impacts. As specified in CCA statute, any proceeds from consigned no-cost allowances that are returned to utilities must be used for the benefit of ratepayers, prioritizing low-income customers.⁸³ We note that our estimated consignment spending and revenues are positive while other costs fall. This is due to a combination of factors, including assumed changes in allocation of no-cost allowances, new consignment requirements, and the magnitude of price changes.

3.2.1.3 Aligned but unlinked market

The market model results for a scenario that includes the rule amendments in an unlinked market do not vary substantially from the model results for the regulatory baseline scenario.

⁸⁰ Ecology notes that reduced aggregate auction revenues create second-order impacts to the programs, incentives, infrastructure, or other actions those funds support, and so may reduce additional emissions reductions or resilience improvements that the CCA otherwise creates using market revenues. To the extent that spending of allowance market revenues would support investments and implementation of other climate policies (e.g., transportation electrification or electric vehicle charging accessibility), reduced revenues could mean reduced or delayed investments supporting those other programs.

⁸¹ Present values reflect the value of future funds accounting for inflation and the opportunity cost of having funds later rather than now. This adjustment is made using a discount rate.

⁸² During the public comment period for this rulemaking, Ecology received comment letters with alternative analytic approaches and results. These included analysis over a longer timeframe and varying assumptions about CCA compliance behaviors and emissions. These analyses represent a range of findings, but indicate that, compared to an unlinked market, linkage results in lower allowance prices in the near term. Long run results vary more widely between the different analyses. See NERA Consultants, 2025 and Greenline Insights, 2026.

⁸³ RCW 70A.65.120(4), RCW 70A.65.130(2)(a)

Therefore, without linkage, the rule amendments would not create quantifiable costs using the market model methodology, as they would not substantially alter emissions or allowance prices. Despite this, the rule amendments that do not impact the market model results may have independent costs, as discussed below in section 3.2.2.

3.2.2 Costs of amendments that independently cause impacts

Concerning the overall costs and benefits of the amended rule, we expect that estimates based on results of the market model likely capture most impacts to costs and benefits.

The costs described below are largely from the administrative, procedural, disclosure and transparency requirements of the rule amendments. Many of these changes are intended to align Washington's rules with those of California and Québec. This alignment is necessary for Washington to join the California-Québec linked market, which the Legislature has directed Washington to pursue. Some of these amendments are triggered by market linkage, while others apply regardless of linkage (see discussion of each amendment in Chapter 2). As such, the costs listed below reflect both the unlinked and linked scenarios. We developed quantitative estimates for these impacts to the extent possible with a reasonable degree of confidence and available information and otherwise discuss them qualitatively with illustrative information where possible. Recall that in Chapter 2 we discussed the full scope of amendments and identified that amendments not listed below either do not reflect a change from the regulatory baseline, or are not expected to result in costs.

In Chapter 2, we identified the amendments below as creating costs independent of market functions and outcomes captured in the market model. Here we discuss these costs and provide additional information or quantification where possible.

- **Reporting rule: Program applicability and exit conditions** (rule section 030; see Chapter 2 section 2.3.2).

We expect minor reporting costs for importers of electricity with associated emissions below 10,000 MT CO₂e. The threshold for reporting CO₂e amounts is reduced to zero in 2027, from the current 10,000 MT CO₂e. This impact is largely driven by the statutory requirement to cover electricity importers who import any unspecified electricity. We expect this change would affect a relatively small number of entities, but as this information is not currently reported, we cannot confidently quantify the number of affected entities. If entities report other emissions, we do not expect these amendments to significantly impact reporting effort. Entities that do not report other emissions (these could be, e.g., small utilities) would also see costs mitigated by a FPMA's participation in the program if they take on compliance obligations for imported electricity.

- **Reporting rule: Calculation methods** (rule sections 120, 122, 124; see Chapter 2 section 2.3.6)

We expect these changes to produce relatively minor increases to labor and reporting costs. These would fall on a limited number of biomass derived fuel suppliers using

landfill gas or anaerobic digestion. There are currently 4 natural gas suppliers reporting natural gas derived from biomass. These entities can also report biogas using reporting requirements related to pipeline injected biogas and delivery points in Washington. Approximately 80% of 75 existing fuel suppliers also reported biomass derived fuels (primarily ethanol, biodiesel, and renewable diesel).

Entities covered by or participating in the state's Clean Fuels Program could potentially use information and methodologies they already use for lifecycle assessment to generate clean fuel credits. In discussion with Clean Fuels program staff, we identified that while for some reporters these amendments may require an extra step, the actual amount of reported biomass derived fuels is not likely to change (it is likely to already meet statutory goals of how much their fuels reduce greenhouse gas emissions compared to petroleum-based fuels).

- **CCA rule: Definitions – compliance period changes** (rule section 010; see Chapter 2 section 2.3.7)

The rule amendments change the compliance period length from 4 years to a combination of 2-year and 3-year compliance periods. The compliance period change would only go into effect in a linked market. We expect a change in the length of compliance periods to affect how covered and opt-in entities in the Cap-and-Invest Program plan their compliance. Depending on how entities choose to optimize compliance choices (when and how many allowances or offset credits to purchase, what emissions abatement to undertake and when, associated supply chain changes, banking compliance instruments, consignment to auction), the rule amendments may reduce the timeframe over which they are able to optimize. This reduced flexibility would not be reflected in the market model and our quantified results in previous sections, as the market model is not able to account for compliance periods. However, shorter compliance periods may redistribute compliance costs over time, potentially smoothing market demand compared to longer compliance periods and reducing price variability.

- **CCA rule: Registration requirements** (rule sections 050, 052, 053, 054, 055, 056; see Chapter 2 section 2.3.9)

We expect covered and opt-in entities to incur increased administrative costs, specifically around registration requirements. Exchange clearinghouses that voluntarily choose to register in the Cap-and-Invest Program would also face registration costs as part of establishing Washington operations though participating directly in the Cap-and-Invest Program is likely to simplify their operations, resulting in an unknown cost-savings.

We estimated collective costs of changes to administrative requirements, discussed in the section below. These include costs expected to result from these amendments.

- **CCA rule: Designation requirements** (rule sections 130, 140; see Chapter 2 section 2.3.14)

We expect these amendments to result in likely costs associated with submitting additional information related to designated account representatives or account viewing agents, though many of these changes are clarifications and overall increases in information are expected to be relatively minor in the context of overall designation effort. Requirements for general market participants to have a business registered agent with Washington Secretary of State may result in additional costs for these registered entities, though many of these entities are likely to already have this established. We do not expect these changes to significantly affect the ability of registered entities to find at least two account representatives and their chosen number of account viewing agents.

We estimated collective costs of changes to administrative requirements, discussed in the section below. These include costs expected to result from these amendments.

- **CCA rule: Transaction and transfer requirements** (rule sections 400, 410, 412, 415, 425, 426, 430, 435, 440; see Chapter 2 section 2.3.21)

In these sections, the amendments aligning transaction disclosure requirements may have the impact of additional costs to provide the necessary information associated with transactions and to adhere to Ecology's requests for additional information.

We estimated collective costs of changes to administrative requirements, discussed in the section below. These include costs expected to result from these amendments.

- **CCA rule: Enforcement requirements** (rule section 610; see Chapter 2 section 2.3.23)

These changes would clarify existing enforcement processes and are not expected to add significant costs as they represent a clarification of enforcement language and not a change in the enforcement processes themselves.

Costs of administrative requirements

Many of these amendments would result in additional information being provided to Ecology about consultants, associations, or other business or structural relationships of which the Cap-and-Invest Program is not currently aware under the regulatory baseline. As such, we could not confidently assume the degree to which any given entity would have to make additional effort under the rule amendments. Some entities may have little or no additional information that would need to be provided, while others may have large amounts of additional disclosures and information to submit.

Considering the scope of additional procedural and administrative changes that would be required under the rule amendments, as compared to the regulatory baseline, we assumed each affected entity would incur costs of 2 weeks of attorney time, for two attorneys, to implement these changes. We used an hourly attorney wage rate of \$107.66 and applied this cost across each of 275 likely impacted entities.^{84,85} We also assumed this cost would be

⁸⁴ BLS wage data for May 2024, 75th percentile Lawyer hourly wage, inflated by the Services PPI up to March 2026. US Bureau of Labor Statistics, 2026. Occupational Employment and Wage Statistics; US Bureau of Labor Statistics, 2026. Producer Price Index for final demand, services.

⁸⁵ [Greenhouse Gas Reporting Program Publication | Data.WA | State of Washington](#)

incurred immediately. This resulted in a **one-time total cost of approximately \$4.7 million in 2027.**

For amendments that would require ongoing updating of information as it changes, we assume existing administrative systems would be able to absorb this minor cost, as they are already required to update registration, reporting, disclosure, and other information when changes occur. We also could not predict the frequency with which changes in associations, consultants, staffing, designations, or other relationships will occur over time.

3.2.3 Environmental justice cost gains and losses⁸⁶

We have organized this document so that this chapter considers “costs” as referring to compliance costs. For discussion of environmental justice implications associated with impacts from greenhouse gas or other emissions, see section 4.2.3.

As described in previous sections of this chapter, the rule amendments under a linked carbon market would result in changes to compliance costs that vary from year to year, but over the full analytic timeframe would reduce costs by a total present value of \$2.23 billion to \$2.45 billion over 2027 - 2037. Recall that the rule amendments are not analytically separable from statutory requirements in the regulatory baseline, so these cost impacts are not necessarily entirely due to Ecology exercising its discretion in the adopted amendments.

To the extent that compliance costs incurred by entities are passed through to consumers, any cost decreases or increases an entity experience could disproportionately impact (positively or negatively) low-income communities.⁸⁷ Low-income communities and households have less disposable income (income after taxes) and discretionary income (income after spending on necessities like housing, food, and utilities). This means costs that are passed through to them from covered and opt-in entities are more likely to affect their ability to afford necessities or to afford additional goods that they enjoy (affecting quality of life), compared to communities and households with higher disposable and discretionary income.

Below is a summary of a potential process and decisions that would need to happen to disproportionately reduce costs for low-income communities and households when compliance costs are lower:

- Covered and opt-in entities have lower compliance costs under the amended rule in a linked market compared to the regulatory baseline.
- Under the regulatory baseline, entities choose to pass some or all of their compliance costs along to wholesalers (or purchasers that use their product as an input), who then

⁸⁶ Input received from likely impacted communities helped to inform the rule amendments and our analysis of costs and benefits. See Chapter 6 for discussion of alternative rule content suggested during rule development, that was not included in the rule.

⁸⁷ We focus on low-income communities here, but note that they overlap significantly with overburdened communities and vulnerable populations in the state. As such, the impacts discussed here also apply to those communities and populations, but low-income communities may include additional communities in the state.

pass them along to some degree to the consumers. These additional costs do not exist under the amended rule in a linked market, so they are not passed through.

- Compliance costs are passed along uniformly across communities in the state or are at least passed along to low-income communities to some degree. If the rule amendments and carbon market linkage result in lower costs, but those costs would not have been passed along to low-income communities under the regulatory baseline, the amended rule under a linked scenario would not benefit low-income communities by reducing costs passed to them.

An example of how the above might occur is if under the regulatory baseline a fuel supplier would have passed some portion of compliance costs on to fuel wholesalers, who passed them along to retailers, who passed them along to consumers across the state or specifically in low-income communities. If compliance costs were lower under the rule amendments in a linked market, the cost passed through to consumers may also be lower. Even if costs were passed through uniformly across communities in the state, low-income communities would still disproportionately see cost-savings in terms of how much of their disposable or discretionary income they would have spent on fuel. This could be transportation fuel but could also be heating or cooking fuel.

The rule amendments related to HB 1975 include provisions that are intended to provide stability to the Cap-and-Invest market. Increased price stability may help reduce economic uncertainty for utilities, industries, and consumers which may result in reducing cost-burdens for low-income households.

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 regulatory baseline. The rule amendments and the regulatory baseline are discussed in detail in Chapter 2 of this document.

4.2 Benefits analysis

Changes to the reporting rule

The amendments to the greenhouse gas reporting rule:

- Clarify and add definitions to facilitate linkage and support program efficiency and stability.
- Clarify program applicability and exit conditions, facilitate linkage, and align with statutory changes.
- Update reporting methodologies to align with statutory changes and facilitate linkage and ensure accurate and consistent reporting.
- Update monitoring, reporting, recordkeeping, and verification to facilitate linkage and improve clarity.
- Update verification requirements to facilitate linkage and improve program efficiency and stability.
- Change calculation methods.

Changes to the CCA rule

The amendments to the CCA rule:

- Add or amend definitions for clarity or to support alignment with statutory changes, facilitate linkage, and support program efficiency and stability.
- Update program coverage and compliance periods.
- Change registration requirements to support program efficiency and stability.
- Add exchange clearinghouse registration requirements to facilitate linkage and to support program efficiency and stability.
- Clarify use of future vintage allowances for compliance obligations.
- Add linkage processes and timing requirements to facilitate linkage.
- Update program accounts to facilitate linkage.
- Change corporate association requirements.
- Update corporate disclosure requirements to facilitate linkage, increase transparency for market participants and prevent unequal market advantage.
- Change account representative and viewing agent designation requirements.
- Update accounts and limits to facilitate linkage and support program efficiency and stability.

- Update allowance supply and allocation procedures to update total program baseline to reflect sectors entering the program in second and third compliance periods, establish allowance budgets for future years and update no-cost allowance provisions to EITs, electric utilities, natural gas utilities and waste-to-energy facilities to align with statutory requirements.
- Update allowance removal and retirement attestations to support program efficiency and stability and to facilitate linkage.
- Reorganize allowance distribution dates with other sections for clarity.
- Change auction requirements.
- Change allowance reserve requirements and price control mechanisms.
- Change transaction and transfer requirements.
- Establish clearinghouse transaction processes to facilitate linkage and to support program efficiency and stability.
- Update compliance obligation requirements for clarity, to facilitate linkage, align with statutory changes related to offsets, and align with changes required by statute over time.
- Add and clarify enforcement requirements to support program efficiency and stability, to facilitate linkage, and to align with statutory changes.
- Update contact information to reflect current information.

Amendments facilitating market linkage

In analyzing the costs and benefits of the rule amendments, Ecology identified that while many of the amendments are intended to align Washington's carbon market with the California-Québec market to facilitate market linkage, this rulemaking does not officially link the three programs. Market linkage would only occur under an official linkage agreement and after the other jurisdictions adopt regulations to recognize and accept compliance instruments from Washington starting on a specified linkage effective date. Many of the amendments would only be triggered by market linkage and only have effect after the linkage effective date. Changes that would be relevant and applicable for an unlinked market will remain in place until that linkage effective date.

This required Ecology to consider two scenarios for the impacts of the amendments: (1) an amended and aligned but unlinked market^{88, 89} and (2) an amended and aligned and linked market. The amendments themselves will only directly result in an aligned but unlinked market. However, as the statutory and rulemaking intent is to facilitate linkage and as Ecology has signed a linkage agreement with California and Québec and expects to start operating a linked market in 2027, presenting only impacts of an unlinked scenario would not necessarily reflect

⁸⁸ Note that some of the rule amendments are triggered by market linkage, and so would not change in the unlinked scenario. Other amendments create changes regardless of market linkage. See Chapter 2 for discussion of each amendment.

⁸⁹ As discussed in section 4.2.1.3 below, the market model did not identify significantly different emissions under the unlinked market as compared to the regulatory baseline.

realistic expectations of costs or benefits. As a result, our discussion of likely impacts in this chapter addresses both unlinked and linked scenarios.

How this chapter is organized

To capture the interaction between many of the rule amendments, we have organized our analysis into two groups (see Chapter 2 for discussion of each amendment, its regulatory baseline, and associated costs and/or benefits). In this chapter, we assess the benefits associated with:

- **Amendments interacting to affect carbon market function or outcomes.** These include amendments that would affect allowance supply, allowance demand, no-cost allowance allocation, and use of compliance instruments. These are amendments that we incorporated into a model of the carbon market to assess potential impacts on allowance prices and emissions.
- **Amendments that independently or largely independently cause impacts.** These include amendments that affect administrative or documentation tasks. This category also includes amendments potentially affecting the treatment of complex or conglomerate entities and corporate associations that may impact distributional outcomes, and changes to timing or deadlines that we could not feasibly incorporate in a carbon market model but may affect compliance choices.

4.2.1 Benefits of amendments that interact to affect market outcomes

It is important for readers to understand our use of the words “cost” and “benefit” for the purposes of structuring the discussion in this document. Broadly speaking, the benefits of the Cap-and-Invest Program are emissions reductions and auction revenues, and the costs are the financial costs borne by regulated entities that must purchase compliance instruments. In evaluating the costs and benefits of this rulemaking, we have attempted to analyze changes in these two categories of costs and benefits as follows:

- Costs include impacts to compliance costs, in this case purchases of allowances and offset credits. As such, impacts that reflect cost-savings are also discussed as cost impacts (i.e., negative costs or decreased costs) in this document.
- Benefits include impacts to emissions and their related effects. As such, impacts that reflect an increase in emissions are also discussed as benefit impacts (i.e., negative benefits or a reduction in benefits) in this document.

Our chosen approach also allows us to comprehensively describe the methodologies used to estimate impacts to compliance costs in one chapter, and to comprehensively describe the methodologies used to estimate impacts to emissions and resulting climate impacts in another chapter.

4.2.1.1 Forecasting emissions – the carbon market model

To analyze the cost and benefits of the rule amendments, we began with forecasting the emissions and carbon market prices for the baseline conditions through 2037. To do this, we

utilized a market model created for Ecology by a team from the University of California (UC Team) and the modeling results produced in August 2026.

The model is described in detail in section 3.2.1.1 of this document. Section 3.2.1.1 distinguishes between price-responsive and non-price responsive emissions. Only price-responsive emissions differ between the regulatory baseline (unlinked) and linked scenarios.

4.2.1.2 Estimating benefits under a linked market based on market model results

In many of our analyses of amended rules, Ecology has been able to present detailed tables of quantified costs and benefits under the regulatory baseline and under the amended rule (and any additional scenarios). In this analysis, however, we have limited presentation of quantified results to relatively high-level, aggregated results, and only of the difference between the rule amendments and the regulatory baseline to the extent they were analytically separable. This is for two reasons. First, if results were included at a more granular level, model input leading to results could be extrapolated and used by market participants to influence auction results or secondary market activity. Additionally, more disaggregated results could provide too much insight into specific industries or entities and their potential compliance obligations, which could create unfair trading practices.

Second, there are inherent uncertainties and limitations to modeling carbon markets. For example, the market model takes a conservative approach when predicting technology adoption (e.g. renewable energy, zero-emissions vehicles). It does this by including confidence parameters that add uncertainty that existing complementary climate policy targets will be achieved. Estimates from the model also cannot account for unpredictable external factors, such as national and international economics and politics, or transformative technologies that may drastically lower the cost of decarbonizing.

To estimate the impacts of the amended rule on benefits (positive or negative), we estimated the value of the difference in emissions under the amended rule under a linked carbon market, as compared to the regulatory baseline rule market model scenario. The value of greenhouse gas emissions to society is reflected in the Social Cost of Carbon (SCC). The SCC is a dollar valuation of the damage caused by one MT CO_{2e} of carbon pollution and represents the monetary value today of carbon emissions in the future. The SCC is a comprehensive damages metric that includes the value of future climate change impacts, including changes in net agricultural productivity, energy use, human health, property damage from increased flood risk, as well as nonmarket damage, such as the services from natural ecosystems to society. It is estimated for each year, reflecting the damage associated with emissions happening in that year.

However, these models are not all-encompassing—they are limited to what can be modeled related to climate and its relationship to economic activity with a reasonable degree of confidence. Despite recent improvements, it is likely that the SCC still underestimates the full

cost of emissions.⁹⁰ (See Appendix B for discussion of values missing from monetized SCC values in current use, as well as examples of costs associated with climate hazards that have happened in Washington, and which are forecasted to occur with greater frequency and intensity due to climate change.⁹¹)

SCC trajectories are based on a combined set of models that forecast the impacts of climate change on climate hazards, and models that forecast the damage that climate hazards due to economic activity and societal wellbeing. Many modeling choices affect the value of SCC. The various SCC models are based on research and expertise from many different fields, such as climate science, demography, and economics. Additionally, the modeling must incorporate inherently uncertain information, such as projections of future economic growth.⁹²

Each SCC model includes ranges of values, and for simplicity we present only central estimates, but we do note that, generally, SCC uncertainty ranges are skewed upward, indicating values are more likely to be higher than lower than their central estimates.

Because the models used in calculating the SCC convert future damage estimates into present-day values, a discount rate must be used to determine how much weight is placed on impacts that occur in the future. A larger discount rate implies less weight is placed on future impacts and results in a smaller SCC estimate.

Various approaches and estimates of the SCC exist in literature. Two comprehensive sources listing a SCC value for each year of emissions are an analysis performed by the US Environmental Protection Agency in 2023 (the “EPA model”) and collaborative work between Resources for the Future and the University of California at Berkeley (the “RFF model”).^{93,94} The literature also contains research using alternative methodologies or research that was a step in the development of current models.⁹⁵

⁹⁰ See, e.g., Moore FC, MA Drupp, J Rising, S Dietz, I Rudik, and G Wagner, 2024. Synthesis of evidence yields high social cost of carbon due to structural model variation and uncertainties. *Proceedings of the National Academy of Sciences*. Vol. 121, No. 52. This synthesis of results from 20 years of literature, reweighted to address omissions in SCC, found a central estimate for 2020 of \$283 with a 95% confidence interval of \$32 to \$874.

⁹¹ WA Department of Ecology (with support from the University of Washington Climate Impacts Group, 2025. 2025 Summary Report on the Science of Human Caused Climate Change and Recommendations for Washington State’s Greenhouse Gas Emission Reduction Limits. August 2025. Publication 25-14-064.

<https://apps.ecology.wa.gov/publications/documents/2514064.pdf>

⁹² [Social Cost of Carbon 101](#)

⁹³ 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.

⁹⁴ Prest, BC, K Rennert, RG Newell, and J Wingenroth, 2022. Social cost of Carbon Explorer. September 1, 2022. And Prest, B, K Rennert, RG Newell, B Pizer, and D Anthoff, 2023. Updated Estimates of the Social cost of Greenhouse Gases for Usage in Regulatory Analysis Related to EPA Emissions Guidelines from Existing Fossil fuel-Fired Generating Units. Resources for the Future.

⁹⁵ See, for example: Tol SJ, 2018. The impact of climate change and the social cost of carbon. Working paper Series 1318. Department of Economics, University of Sussex Business School; Nordhaus, 2014. Estimates of the Social

The EPA model built on recent research and incorporated recommendations made by the National Academies of Science, Engineering, and Medicine. The model uses a modular approach, with modules for: socioeconomics and emissions, climate, damage, and discounting. Each drew on recent expertise in each area, including projections for population, income, and greenhouse gas emissions developed by Resources for the Future. They also use a climate model recommended by the National Academies, and a three-part damages model reflecting subnational, national, and meta-analysis approaches to estimating the damage resulting from emissions and climate impacts. The model approaches discounting using dynamic discount rates calibrated to recent literature and addressing uncertainty. The EPA model provides SCC values by year for discount rates of 1.5%, 2% and 2.5%.

The RFF model uses similar modules reflecting socioeconomic scenarios, climate modeling, damages, and discounting. Each module offers multiple options, with a set of default options (used for this analysis), and draws on expertise in each field. The damages module default uses three approaches to calculate undiscounted marginal damages: a sectoral approach and two aggregate approaches developed in the SCC literature and newly developed damages modeling. The RFF model provides SCC values by year for discount rates of 2% and 3%.

Ecology typically discounts social values using an estimate of the real social rate of time preference. This rate reflects the opportunity cost of capital, accounting for expected inflation. While the actual rate is difficult to directly observe, we approximate it using a long-term average rate of return on US Treasury I Bonds and their associated inflation estimates.⁹⁶ Averaged over a rolling 20-year period, this rate is currently approximately 1%.⁹⁷ Because SCC value estimates are developed using a discounting module, the values must also be discounted at the same rate when used in analysis. Choosing from recent literature with annual estimates, we would therefore choose the EPA model values using a 1.5% discount rate. Because we found that the present value of net benefits (benefits impact minus cost impacts in each year, discounted to current dollar values) is sensitive to our SCC assumption, however, we chose to include other sets of SCC values based on low discount rates to examine their contribution and impact on this analysis.

Cost of Carbon: concepts and results from the DICE-2013 Model and Alternative Approaches. Journal of the Association of Environmental and Resource Economists 1 (1/2). Spring/Summer 2014. Revesz RL, JA Schwartz, PH Howard, K Arrow, MA Livermore, M Oppenheimer, and T Sterner, 2017. The Social Cost of Carbon: A Global Imperative. Review of Environmental Economics and Policy. March 11, 2017; Interagency Working Group on Social Cost of Carbon, 2015. Technical Support Document: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis under Executive Order 12866. May 2013. United States Government. May 2013, revised July 2015; Interagency Working Group on Social Cost of Greenhouse Gases, 2021. Technical Support Document: Social Cost of Carbon, Methane, and Nitrous Oxide Interim Estimates under Executive Order 13990. United States Government. Rennert K, BC Prest, WA Pizer, RG Newell, A Anthoff, C Kingdon, L Rennels, R Cooke, AE Raferty, H Sevcikova, and F Errickson, 2021. The Social Cost of Carbon: Advances in Long-Term Probabilistic Projections of Population, GDP, Emissions, and Discount Rates. Brookings Papers on Economic Activity. Fall 2021.

⁹⁶ US Treasury Department, 2026. I bonds interest rates. <https://www.treasurydirect.gov/savings-bonds/i-bonds/i-bonds-interest-rates/> as archived by Ecology since 1998.

⁹⁷ Ibid.

Use of alternative discount rates also gives us more ability to account for additional research findings. Recent literature examining the impact of adding more climate hazards to the SCC model indicates adding three ocean-related hazard impacts could double current SCC estimates.⁹⁸ We therefore also included doubled SCC values in our analysis. To maintain relatively conservative estimates, we chose to double the central of our estimate options, those based on a 2% discount rate.

We note that these quantified SCC values are likely underestimates of actual damage due to climate change. For further discussion of the SCC, including impacts that are not included in its quantified values, please see Appendix B.

The table below shows the values of the SCC using the EPA model with discount rates of 1.5%, 2%, and 2.5%, as well as the RFF model using a discount rate of 2% and a set of values doubling it.

Table 4: SCC Values, various sources and discount rates, 2026\$

Emission Year	EPA 1.5%	Double RFF 2%	RFF 2%	EPA 2.5%
2027	\$474	\$466	\$233	\$174
2028	\$480	\$476	\$238	\$178
2029	\$486	\$484	\$242	\$180
2030	\$492	\$492	\$246	\$184
2031	\$498	\$500	\$250	\$188
2032	\$504	\$508	\$254	\$192
2033	\$509	\$516	\$258	\$196
2034	\$516	\$524	\$262	\$198
2035	\$522	\$532	\$266	\$202
2036	\$527	\$540	\$270	\$206
2037	\$534	\$458	\$229	\$210

The table below shows the estimated impact of the rule amendments under a linked market, as compared to the regulatory baseline under different SCC assumptions. When emissions increase compared to the regulatory baseline, we incur additional SCC costs, which is a negative benefit. When emissions decrease compared to the regulatory baseline, we avoid additional SCC costs, which is a positive benefit. Overall impacts to the cumulative present value of benefits are estimated to range between -\$0.67 billion and -\$1.81 billion. These reductions in benefits (SCC costs society incurs) are associated with smaller reductions in greenhouse gas

⁹⁸Bastien-Olivera BA, O Aburto-Oropeza, LM Brander, WWL Cheung, J Emmerling, CM Free, F Granella, M Tavoni, J Verschuur, and K Ricke. Accounting for ocean impacts nearly doubles the social cost of carbon. *Nature Climate Change* 16. January 15, 2026. See also more-recent articles on higher costs of climate change, e.g.: Tol RS, 2024. A meta-analysis of the total economic impact of climate change. *Energy Policy* 85, February 2024.; Tol RS, 2023. Social cost of carbon estimates have increased over time. *Nature Climate Change* 13. June 2023; Barrage L and W Nordhaus, 2024. Policies, Projections, and the social cost of carbon: Results from the DICE-2023 model. *Proceedings of the National Academy of Sciences* 121 (13. March 19, 2024.

emissions in Washington over our 2027 – 2037 analytic timeframe, as compared to the emissions reductions expected under the regulatory baseline.

Table 5: Present value impacts to benefits, 2027 – 2037, compared to regulatory baseline (billions\$)

EPA 1.5%	Double RFF 2%	RFF 2%	EPA 2.5%
-\$1.81	-\$1.75	-\$0.88	-\$0.67

Potential associated pollutants

Greenhouse gas emissions may be associated with emissions of other pollutants (e.g., fine particulates). This is likely to be the case if fuels are combusted, either by consumers or as part of a production process. If the changes in total greenhouse gas emissions forecasted under the market model are associated with changes in emissions of other air pollutants, the public and environment would gain benefits in years these joint emissions decrease and would forego benefits if these emissions increase.

The relationship between other pollutant emissions and greenhouse gas emissions depends on where and what type of combustion occurs under the rule amendments compared to the regulatory baseline. Some offset credits may also reduce emissions of other pollutants, but this would vary across projects and what types of direct environmental benefits to the state they provide.

4.2.1.3 Aligned but unlinked market

The market model results for a scenario that includes the rule amendments in an unlinked market do not vary substantially from the model results for the regulatory baseline scenario. Therefore, without linkage, the rule amendments do not affect estimated benefits by altering emissions or allowance prices. Despite this, the rule amendments that do not impact the market model results may have independent benefits, as discussed below in section 4.2.2.

4.2.2 Benefits of amendments that independently cause impacts

Concerning the overall costs and benefits of the amended rule, we estimate that the market model results will capture the vast majority of both.

The expected benefits described below include the large number of administrative, procedural, timing and transparency features of the rule amendments. Many of these changes are intended to align Washington's Cap-and-Invest Program rules with California's and Québec's. This alignment is necessary for Washington to join the California-Québec linked market, which the Legislature has directed Ecology to pursue. In addition, we expect these changes to support market integrity and transparency. Some of these amendments are triggered by market linkage, while others apply regardless of linkage (see discussion of each amendment in Chapter 2). As such, the benefits listed below reflect both the unlinked and linked scenarios. A brief qualitative summary of these benefits follows.

In Chapter 2, we identified the amendments below as creating benefits independent of market functions and outcomes captured in the market model. Here we discuss these benefits and provide additional information or quantification where possible.

- **Reporting rule: Program applicability and exit conditions** (rule section 030; see Chapter 2 section 2.3.2)

We expect the benefit of regulatory clarity from incorporating statutory requirements into one location (rather than across statute and rule). Some electricity importers may see cost-savings from being able to stop reporting earlier than under the regulatory baseline. The circumstances for this avoided cost to some electricity importers are specific to either 3 years of reporting zero emissions or having no reportable emissions due to a FPMA taking on the compliance obligation for applicable electricity imports. If an electricity importer has 3 years of zero emissions or does not have reportable emissions due to a FPMA opting into the CCA rule, they would be able to stop reporting and avoid associated costs. The tradeoff for this would be the cost of notifying Ecology, which is likely lower than the cost of reporting. During rule implementation and development, Ecology heard concerns from some small utilities, and also electricity importers, that those with limited staff and resources had difficulty meeting reporting requirements.

- **Reporting rule: Reporting requirements** (rule section 050; see Chapter 2 section 2.3.4)

We expect added specificity and reduced scope of substantive errors to potentially reduce the number of greenhouse gas emissions reports that must be resubmitted due to errors. This has an associated cost-savings (avoided additional labor to develop and submit revised reports) for reporting entities that would otherwise submit revised reports for errors that are no longer deemed substantive or are not identified within specified timeframes. We cannot predict how often substantive errors will occur or within what timeframes they will be identified, so we have included this benefit qualitatively.

- **Reporting rule: Calculation methods** (rule sections 120, 122, 124; see Chapter 2 section 2.3.6)

We expect these changes to provide more accurate and comprehensive greenhouse gas accounting, along with greater regulatory clarity. See Chapter 2 for further discussion.

We expect some changes to reporting of specified source imports will reduce administrative burden for electricity importers. We expect some electricity importers to have cost-savings in aggregated reporting for zero-emission generation resources. We also expect the simplified specified source registration requirements will reduce costs for reporters registering specified sources.

Finally, we expect minor present-value cost-savings for deemed market importers claiming specified sources being allowed to submit additional information to receive a positive verification statement one month later.

- **CCA rule: Registration requirements** (rule sections 050, 052, 053, 054, 055, 056; see Chapter 2 section 2.3.9)

We expect these changes to strengthen market integrity and provide greater regulatory clarity. The expanded registration and personnel disclosure requirements for participating entities enable more thorough evaluation of market participants and personnel that have access to market-sensitive information.

If a FPMA opts in to the Cap-and-Invest Program, these changes enable some small utilities, meeting certain requirements, to no longer need to register with the program. This could reduce or eliminate administrative costs for some small utilities.

- **CCA rule: Program accounts** (rule section 100; see Chapter 2 section 2.3.12)

The change of consolidated accounts for entities in multiple jurisdictions provides benefits of greater administrative flexibility regarding accounts for holding greenhouse gas compliance instruments. These are benefits of managing only one account rather than having an account in each linked jurisdiction and the need to manage and coordinate across both. Entities that do not expect this to be a net benefit would not choose to apply for a consolidated account.

- **CCA rule: Designation requirements** (rule sections 130, 140; see Chapter 2 section 2.3.14)

Associated benefits of changes to designation requirements include strengthened security related to the Cap-and-Invest Program and the carbon market, as it relates to verified documentation, criminal backgrounds, up to date information, and proper use of electronic systems. Additional enforcement options provide further disincentive for actions that could put the market at risk of manipulation. Market manipulation can take the form of deception of market participants causing costs to individual entities that are impacted by market manipulation, or inappropriate exertion of market power that increases the allowance price and elevates the cost of compliance for all covered and opt-in entities. Therefore, the amendments in sections 130 and 140 further strengthen – and align with future linked partners – Washington’s program rule requirements for individuals who will represent market participants in the Cap-and-Invest Program.

- **CCA rule: Accounts and limits** (rule section 150; see Chapter 2 section 2.3.15)

These changes facilitate the participation of exchange clearinghouses for carbon compliance instruments, which would be needed in a linked market. Exchange clearinghouses are central counterparties, acting as intermediaries between buyers and sellers, providing guarantee that transactions will be settled and reducing market risk. These changes also facilitate account creation for waste-to-energy facilities, which is necessary to facilitate their inclusion in the Cap-and-Invest Program, per legislative directive.

- **CCA rule: Allowance supplies and allocation** (rule sections 200, 210, 220, 230, 235, 240; see Chapter 2 section 2.3.16)

Changes to **no-cost allowance allocation to EITE facilities** (section 220) are likely to result in the following benefits:

- The ability to transfer a carbon intensity baseline to a new facility is likely to result in cases where EITE industries are incentivized to replace existing infrastructure with new, best-in-class facilities. When a facility considers relocating, it would have more incentive to stay in the state using more emission-efficient production techniques.
- Shifting the date by which EITE facilities would need to submit allocation requests to the year emissions occurred would create a benefit of ensuring compliance with eligibility for no-cost allowances. Facilities will not be able to demonstrate eligibility to receive no-cost allowances and confirm their status as a covered entity until they have reported emissions following the completion of the first Emissions Year they are covered by the program.
- Adding a sunset clause to transferred carbon intensity baselines and increasing repercussions for failure to close the existing facility from which a baseline was transferred, will generate a benefit of preventing facilities from transferring a carbon intensity baseline without closing the original facility. As this would not be possible at all under the regulatory baseline, these amendments are likely to result in benefits of avoided excess emissions from the closed facility's continued operation.
- Allowing Ecology to make changes in the allocation baseline based on a change in product reporting methods will result in benefits of having a baseline that accurately reflects not only the production characteristics of the facility (as with regulatory baseline changes to NAICS code or product metric), but also the method used to measure product data. This allows the reporting baseline to accurately reflect emissions, avoiding over or under allocation of no-cost allowances, and helps maintain incentives to reduce the emissions intensity of production. Updating criteria for Ecology to approve changes to allocation baselines generates similar benefits.
- Adding a protocol for requesting changes to an allocation baseline will generate benefits of having a clear means by which to approve or deny a change requested, facilitating the benefits above. Absent a protocol under the regulatory baseline, the process for requesting changes could require more interactions between facilities and Ecology, incur potential delays, and be unclear in its approval standards and expectations.
- Adding a protocol for EITE facilities to request transfer of an approved carbon intensity baseline from a closed facility to a new facility will support efficiently achieving the benefits of these transfers without repeated interactions, potential delays, or a lack of clarity in approval standards and expectations.
- Removing the requirement that switches to a carbon intensity baseline from a mass-based baseline take effect in the next compliance period will generate

benefits of potential earlier switching. Given four-year compliance periods, if a change were to be based on the required three years of data supporting it, making the change at the next compliance period could mean lags of 5-6 years instead of three. This will support a benefit of cost-savings in the form of avoided lags in potential output changes that are possible under a carbon intensity baseline.

- Adding a requirement to return no-cost allowances for negative true-up for curtailed or closed facilities will generate benefits of returning allowances to market availability, reducing upward price pressures and providing clarity in what must be done with these excess allowances.
- Adding a requirement for curtailed facilities with a positive true-up value for the years they were curtailed to receive those allowances in a future vintage will generate benefits of compensating curtailed facilities for their past coverage of extra emissions.
- Allowing Ecology to deduct allowances from a facility with an estimated mass-based baseline to ensure they don't receive more allowances than needed for compliance provides the benefit of having a mechanism by which to meet the regulatory baseline requirement to not receive more allowances than needed for compliance.

Changes to **no-cost allowance allocation to electric utilities** (section 230) are likely to result in the following benefits:

- Shifting deadlines for allocation schedule publication will allow Ecology more time to review forecast materials before the schedule must be published. This supports a benefit of improved quality in published allocation schedules.
- Reducing the frequency of utility forecast updates will generate a benefit of increasing decarbonization incentives. Under the regulatory baseline, Ecology publishes a 4-year allocation schedule before each compliance period, and this can be updated with new utility forecasts annually. This enables allocation schedules to closely reflect any expected emissions trajectory, reducing decarbonization incentives.⁹⁹
- Specifying when Ecology would or would not pursue an allocation adjustment provides a clear process description reflecting current implementation of adjustments. These specifications strengthen decarbonization incentives for the utilities, by providing certainty that downward allocation adjustments would not be pursued for overachievement of emissions reductions beyond forecasts reflective of the best available information at the time. This certainty also

⁹⁹ While we do not reflect impacts to Ecology as part of our Regulatory Analyses, we note that existing annual updates of utility forecasts are a large administrative burden on Ecology and the WA Utilities and Transportation Commission that would be reduced under the amended rule.

enables an opportunity for utility savings as it supports utilities optimizing purchases of power considering CCA compliance costs. Finally, this clarity allows utilities to better financially plan for whether and how adjustments might be sought.

- Requiring utilities to provide additional information related to allocation or cost burden to Ecology if requested may result in accuracy or quality benefits related to allocation or cost burden needs for which Ecology requires more information. Under many circumstances, Ecology is likely to request information already provided to other regulatory agencies, minimizing costs.
- The added process related to Ecology communication of consignment requirements provides clarity for electric utilities on the timing and availability of information about consignment expectations. This facilitates utility planning and minimizes costs associated with uncertainty and related contingency planning, delays, or errors.
- The added process related to allocation of no-cost allowances in the event of a transfer of utility territory provides utilities with clarity as to which utility involved in the transfer will receive no-cost allowances and the timeline this will occur on. This facilitates allocation of no-cost allowances to only those utilities that are allowed to receive them under the CCA statute (covered by CETA and serving Washington retail electric load), and reduces potential costs of correcting improper allocations or risk of Washington communities not appropriately receiving the benefits of no-cost allowances when utility territory changes.

New **no-cost allowance allocation to waste-to-energy facilities** (section 235) is likely to result in the following benefits as compared to the regulatory baseline:

- Specifying a process for submitting proceed investment proposals and reports will support benefits of ensuring proceeds are successfully invested in emissions reductions at the facility, thereby lowering future facility compliance obligations.
- **CCA rule: Transaction and transfer requirements** (rule sections 400, 410, 412, 415, 425, 426, 430, 435, 440; see Chapter 2 section 2.3.21)

The expected benefits of changes to transaction and transfer requirements include increased market integrity and alignment of Washington's rules with those of California and Québec.

The changes detail requirements for beneficial holdings and acceptable financial arrangements for holding compliance instruments. Transaction disclosure requirements and transfer process rules for exchange clearinghouses also bring greater transparency to the compliance instrument market.

These changes facilitate market linkage with California and Québec, which the Legislature directed Ecology to seek.

- **CCA rule: Compliance obligation requirements** (rule section 600; see Chapter 2 section 2.3.22):

Ecology is adopting a change in rule to require that the additional 3% (in the first compliance period) and 2% (in the second compliance period and thereafter) of offsets that must be sourced from projects on Tribal lands must also provide DEBs to the state of Washington. Initiated in response to Tribal input, we expect this change to mitigate a potential reduction in demand for Tribal projects that provide DEBs to Washington in a linked market. We consider this an environmental justice benefit.

We expect the benefit of greater regulatory clarity from the other portions of these rule amendments, as the amended rule adds procedural and timing details for meeting compliance obligations under linkage.

- **CCA rule: Enforcement requirements** (rule section 610; see Chapter 2 section 2.3.23)

Adopted changes to enforcement requirements bring the benefit of clarifying existing enforcement processes and greater regulatory clarity for participating entities.

4.2.3 Environmental justice benefit gains and losses¹⁰⁰

We have organized this document so that this chapter considers “benefits” as referring to social impacts of greenhouse gas and other emissions. For discussion of environmental justice implications associated with impacts from compliance costs, see section 3.2.3.

Rule amendments resulting from statutory changes in House Bill 1975 (2025) require Ecology to increase the total supply of allowances in every year and also increase the availability of cost containment mechanisms by allowing additional cost containment allowances to enter the market as soon as the second compliance period (as soon as 2027). Ecology is required to make these cost containment allowances available, although statute gives Ecology some discretion to decide the amount. Economic theory indicates more availability of allowances may reduce the near-term compliance pressure on covered entities to reduce greenhouse gas emissions. If additional APCR allowances are accessed in the second compliance period, this could result in a near-term slower rate at which the Cap-and-Invest Program delivers improvements in local air quality and associated health impacts in communities located near major emission sources. This has potential to impact overburdened communities that have experienced historically disproportionate exposure to local air pollution. However, as discussed further below, Ecology has found the relationship between greenhouse gas emissions and emissions of local air pollutants is complex and dependent on a variety of different factors.¹⁰¹

¹⁰⁰ Input received from likely impacted communities helped to inform the rule amendments and our analysis of costs and benefits. See Chapter 6 for discussion of alternative rule content suggested during rule development, that was not included in the rule.

¹⁰¹ Washington Department of Ecology. March 2026. Facility-Specific Greenhouse Gas Emissions Caps: Evaluation of this Policy and its Potential Application to Washington’s Cap-and-Invest Program. <https://apps.ecology.wa.gov/publications/SummaryPages/2614022.html>.

Greenhouse gases and other air pollutants simultaneously form during processes such as the combustion of fuel, however the relationship between these emissions is complex. For example, operating conditions, types of processes and equipment, installed air pollution control measures, fuels(s), and types of decarbonization measures implemented can all significantly and differentially impact the emissions of greenhouse gases and other air pollutants and what is ultimately released into the atmosphere.^{102,103,104} These complex relationships were additionally observed in Ecology’s analysis of Washington-specific emissions data from 2012 to 2023, which showed instances where reported greenhouse gas and criteria air pollutant emissions at a given facility appeared to simultaneously increase or decrease, as well as instances where these emissions appeared to be unrelated.

Greenhouse gas emissions are a kind of air pollution that does not directly impact local air quality, nor does exposure to greenhouse gas emissions alone pose a direct risk to human health. In 2023 and 2025, Ecology issued two biennial reports to provide information about criteria air pollution concentrations and their health impacts, as well as greenhouse gas emissions in 16 identified communities.^{105,106} At a high level, Ecology’s 2025 biennial report shows that some of the most significant contributors to criteria air pollution in Washington are sectors or activities that are not directly regulated by the Cap-and-Invest Program.

The variability in relationship between greenhouse gas and criteria air pollutant emissions, as well as the range of approaches facilities can choose to decarbonize have led Ecology to conclude that policies specifically targeting criteria air pollutants are essential for addressing air pollution disparities and will be more effective than those targeting greenhouse gases.¹⁰⁷

How climate change hazards affect different communities

As discussed in previous sections of this chapter, our model results show the rule amendments under a linked carbon market would result in higher cumulative costs of greenhouse gas emissions contributing to climate change (measured using the social cost of carbon) over our analytic timeframe, compared to the regulatory baseline. Higher aggregate emissions in

¹⁰² Von Schneidemesser, E. et. al. 2013. Air Quality and Climate: Synergies and Trade-Offs. Environmental Science Processes & Impacts. <https://doi.org/10.1039/C3EM00178D>.

¹⁰³ Jordan, A.B. et al. 2024. Quantifying Air Quality Co-benefits to Industrial Decarbonization: The Local Air Emissions Tracking Atlas. Frontiers Public Health. <https://doi.org/10.3389/fpubh.2024.1394678>.

¹⁰⁴ Bonilla, J., Coria, J., & Sterner, T. (2018). Technical Synergies and Trade-Offs Between Abatement of Global and Local Air Pollution. Environmental Resource Economics. <https://doi.org/10.1007/s10640-017-0117-8>.

¹⁰⁵ Washington Department of Ecology. 2023. 2023 Report: Overburdened Communities Highly Impacted by Air Pollution. <https://apps.ecology.wa.gov/publications/SummaryPages/2302115.html>.

¹⁰⁶ Washington Department of Ecology. 2025. 2025 Report: Overburdened Communities Highly Impacted by Air Pollution. <https://apps.ecology.wa.gov/publications/SummaryPages/2502037.html>.

¹⁰⁷ Washington Department of Ecology. March 2026. Facility-Specific Greenhouse Gas Emissions Caps: Evaluation of this Policy and its Potential Application to Washington’s Cap-and-Invest Program. <https://apps.ecology.wa.gov/publications/SummaryPages/2614022.html>.

Washington over 2027 – 2037 and changes in the timing of emissions would increase social costs by between \$0.67 billion and \$1.81 billion, compared to the regulatory baseline.¹⁰⁸

We note that this analysis focuses on emissions occurring within Washington. Ecology previously found that total emissions across the three linked jurisdictions are likely to fall under a linked market.¹⁰⁹ The contribution of greenhouse gases to climate change (and its impacts on people and the environment) does not depend on where they are emitted, and an aggregate reduction to emissions is a benefit to Washingtonians as well. This means that if we also accounted for the reduction in total emissions across linked jurisdictions, the amended rule would reduce social costs of emitting greenhouse gases instead of increasing them compared to the regulatory baseline.

Greenhouse gas emissions contribute to climate change, which has been shown to disproportionately affect vulnerable individuals, households, and communities. The following list discusses some ways in which climate change hazards can disproportionately affect some communities and populations more than others:

- **Wildfires and air quality**

Wildfires accounted for 25 – 50 percent of fine particulate matter in the US in recent years, with higher levels in the western states,¹¹⁰ and are expected to increase in frequency and severity. Even when wildfire smoke is ubiquitous, it impacts low-income communities (which significantly overlap with overburdened communities and vulnerable populations, but can extend beyond them) more severely, as they may not have good access to air filtration or non-emergency healthcare, and may need to spend more time outside during high heat events that often coincide, since they may have limited access to air conditioning and other cooling options. They are also more likely to reside in areas that absorb more heat and retain it longer, due to reduced greenspace and tree canopy, proximity to industrial activity, and more paved area.¹¹¹

- **Heat-related mortality**

Heat-related death risk also disproportionately affects overburdened communities. A study in British Columbia found that heat deaths in the greater Vancouver area were strongly tied to individuals’ “material and social deprivation” as well as age, sex, and

¹⁰⁸ Recall that the Cap-and-Invest Program reduces social costs of carbon emissions over time under both the regulatory baseline and the rule amendments. This aggregate increase in social costs is an estimate of the difference between the two scenarios.

¹⁰⁹ WA Department of Ecology, 2026. [Cap-and-Invest Linkage Criteria Findings](https://apps.ecology.wa.gov/publications/documents/2614020.pdf). Ecology publication no. 26-14-020. <https://apps.ecology.wa.gov/publications/documents/2614020.pdf>

¹¹⁰ Burke, M, A Driscoll, S Heft-Neal, J Xue, J Burney, and M Wara, 2020. [The changing risk and burden of wildfire in the United States](https://doi.org/10.1073/pnas.2011048118). PNAS 118(2). <https://doi.org/10.1073/pnas.2011048118>

¹¹¹ King County, 2021. [Results of heat mapping project show inequitable impact of hotter summers](https://kingcounty.gov/elected/executive/constantine/news/release/2021/June/23-heat-mapping-results.aspx). <https://kingcounty.gov/elected/executive/constantine/news/release/2021/June/23-heat-mapping-results.aspx>. [Results:](https://www.arcgis.com/apps/webappviewer/index.html?id=84709c65c08a40bbb47d0723ef1c797a&extent=-13604644.7965%2C6019787.1095%2C-13561266.7829%2C6046616.5065%2C102100)

<https://www.arcgis.com/apps/webappviewer/index.html?id=84709c65c08a40bbb47d0723ef1c797a&extent=-13604644.7965%2C6019787.1095%2C-13561266.7829%2C6046616.5065%2C102100>

neighborhood greenness,¹¹² meaning that deaths were more likely to occur in populations that:

- Had lower incomes.
- Had less shade and more impervious or paved surfaces.
- Were unsheltered or had inadequate housing.
- Had less education.
- Lived alone.
- Were elderly.
- Lacked transportation.
- Lacked recreational spaces.
- Experienced more job or income insecurity.

In short, heat deaths are more likely to occur among overburdened communities whose historically lower resource access puts them more at risk of being in one or more of the categories above.

¹¹² Henderson, SB, KE McLean, MJ Lee, and T Kosatsky, 2022. Analysis of community deaths during the catastrophic 2021 heat dome. *Environmental Epidemiology* (2022) 6:e189. DOI: 10.1097/EE9.000000000000189.

Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Summary of costs and benefits of the rule amendments

Timeframe uncertainty

The impacts of the rule amendments were analyzed using a net benefits analysis through the year 2037. Beyond 2037, under the existing and amended total allowance budgets and the existing and amended policies governing no-cost allocation, the allocation of no-cost allowances to electric utilities, natural gas utilities, and emissions intensive trade exposed industries will likely exceed the calculated total number of allowances that were not previously placed in the allowance price containment reserve or sold as future vintage allowances. Ecology cannot allocate allowances that do not exist, and Ecology is directed to revisit allocation and other features of the overall program in future rulemakings, and to provide recommendations to the Legislature on how to ensure no-cost allowances do not conflict with program budgets.¹¹³ Therefore, while projections into the future come with a wide range of uncertainty, projections past 2037 are not illustrative of what will likely ultimately exist as a Cap-and-Invest Program at that time.

Modeling can serve as a valuable analytical tool but is subject to limitations and may not accurately or precisely predict the future. This is especially true the further out in the future, as greater unknowns necessitate more assumptions. As modeled timeframes extend into the future, assumptions compound, making the range of possible outcomes wider and less certain. As we could not confidently quantify and monetize impacts beyond 2037, we include qualitative discussion of impacts that are likely to persist beyond that date and are less likely to be impacted by myriad uncertainties (e.g., improvements in market stability or security).

Market sensitivity and model uncertainty

In many of our analyses of amended rules, Ecology has been able to present detailed tables of quantified costs and benefits under the regulatory baseline and under the amended rule (and any additional scenarios). In this analysis, however, we have limited presentation of quantified results to relatively high-level, aggregated results, and only of the difference between the rule amendments and the regulatory baseline to the extent that they were analytically separable. This is for two reasons. First, if results were included at a more granular level, model input leading to results could be extrapolated and used by market participants to influence auction results or secondary market activity. Additionally, more disaggregated results could provide too much insight into specific industries or entities and their potential compliance obligations, which could create unfair trading practices.

Second, there are inherent uncertainties and limitations to modeling carbon markets. For example, the market model takes a conservative approach when predicting technology adoption (e.g. renewable energy, zero-emissions vehicles). It does this by including confidence parameters that add uncertainty that existing complementary climate policy targets will be

¹¹³ RCW 70A.65.120(2)(d), RCW 70A.65.070(2), [Senate Bill 6246](#).

achieved. Estimates from the model also cannot account for unpredictable external factors, such as national and international economics and politics, or transformative technologies that may drastically lower the cost of decarbonizing.

5.1.1 Quantified results based on the market model

In chapters 3 and 4, we discuss the complex interactions between allowance prices, emissions, offset credits, no-cost allowances (and their consignment), and their impacts on compliance costs or impacts to society and the environment. In this chapter, we bring these impacts together into net benefits, which are total benefits minus total costs.

To reflect streams of net benefits over time, Ecology uses present values. A present value converts a future dollar value into current terms that account for both inflation and the opportunity cost of having funds (or value) later rather than now. An example of opportunity cost is the amount of interest someone could receive if they get a dollar now and invest it for 10 years, rather than getting that same dollar in 10 years. After converting each year's net benefits into present value – so they are all in comparable current terms – we add them together to calculate the estimated net present value of the impacts of the rule amendments. Results are presented in real 2026 dollars, which means they reflect the purchasing power of dollars in all years, adjusted to current purchasing power.

Depending on whether and how much costs and benefits change in any given year compared to the regulatory baseline, the net benefits of the rule amendments can be positive or negative. And how positive (or how negative) they are depends on the underlying assumptions we have made. In developing this analysis, we identified that a significant contributor to the variability of net benefits is our assumption about the value of the social cost of carbon (SCC).

In past analyses, Ecology has used estimates of SCC that are based on discount rates that are closest to the discount rates we use for present values and included discussion of the use of alternative rates and impacts on results. As we identified that net present value is sensitive to assumed SCC values in this analysis, we chose to present results based on various SCC estimates that use discount rates that are somewhat farther from our typical discount rate (which is based on the social rate of time preference), as well as based on recent literature that suggests the SCC may be significantly higher than current quantified estimates. (For detailed discussion of the various SCC values considered, see Chapter 4.) We hope this allows readers to better understand the context of emissions impacts under the rule amendments.

The table below summarizes the present value of net benefits under the rule amendments in a linked market, as compared to the regulatory baseline. These are benefits (either added or avoided SCC) minus costs (either reduced or increased compliance costs). As discussed above, net benefits depend on the relative size of these two components in each year. Because the expected cost reductions of the current rule exceed the expected decrease in benefits from avoided SCC, the expected net benefits identified in Table 6 are positive under two of the four discount rates, and negative under one. Quantifiable costs and benefits are approximately equal in the case of doubled SCC values. The magnitude of positive net benefits under two

discount rate scenarios is approximately five to seven times larger than the magnitude of negative net benefits under the 1.5% discount rate scenario.

Table 6: Total present value (PV) costs, benefits, and net benefits 2027 - 2037, linked market, compared to regulatory baseline (billions 2026\$; by % discount rate)

Impact ¹	EPA 1.5%	Double RFF 2%	RFF 2%	EPA 2.5%
Total social wellbeing impact <i>PV benefit of the rule amendments</i>	-\$1.81	-\$1.75	-\$0.88	-\$0.67
Total compliance cost impact <i>PV cost of the rule amendments</i>	-\$1.64	-\$1.75	-\$1.75	-\$1.85
Total net benefits of the rule amendments <i>PV benefit minus PV cost</i>	-\$0.17	\$0.00	\$0.87	\$1.18
¹ Negative costs imply cost savings from the rule. Negative benefits imply reduced social wellbeing (due to emissions increase) from the rule. Positive net benefits imply that the value of the cost savings exceed the reduced social wellbeing.				

We note that this analysis focuses on emissions occurring within Washington. Ecology previously found that total emissions across the three linked jurisdictions are likely to fall under a linked market.¹¹⁴ The contribution of greenhouse gases to climate change (and its impacts on people and the environment) does not depend on where they are emitted, and an aggregate reduction to emissions is a benefit to Washingtonians as well. This means that **if we also accounted for the reduction in total emissions across linked jurisdictions, it would make the present value of benefits positive under all discount rates**, rather than the negative values reflected in the first row of Table 6 for Washington-only emissions. Therefore, although we conclude that the expected benefits of the rule will likely outweigh its expected costs even without accounting for the reduction in total emissions across linked jurisdictions, if we accounted for those emissions we would expect the net benefits to be even greater.

Unlinked but aligned market

The above impacts are only estimated for a linked carbon market scenario. The market model (as discussed in chapters 3 and 4) did not identify significant differences between modeled carbon market results under an aligned rule but without a linked carbon market compared to and the regulatory baseline case. This means the impacts of the rule amendments reflected in the market model-based results are zero in an unlinked market scenario. This does not mean other amendments could not have independent impacts, however, and these are discussed below in section 5.1.2.

5.1.2 Costs and benefits not captured in the market model

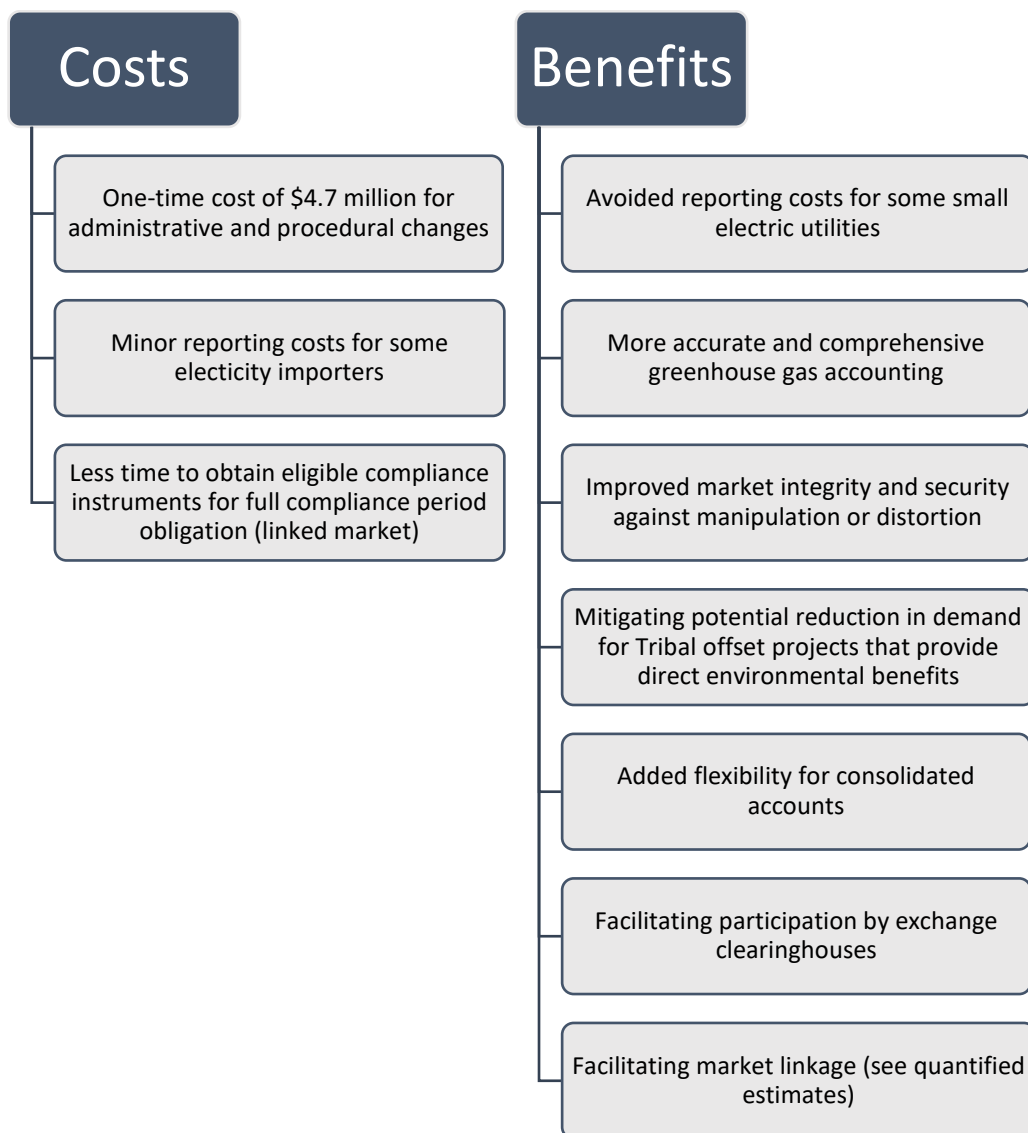
In chapters 3 and 4, we discussed the costs and benefits likely to result from rule amendments that could not be reflected in the market model and quantified cost and benefit estimates in

¹¹⁴ WA Department of Ecology, 2026. [Cap-and-Invest Linkage Criteria Findings](https://apps.ecology.wa.gov/publications/documents/2614020.pdf). Ecology publication no. 26-14-020. <https://apps.ecology.wa.gov/publications/documents/2614020.pdf>

the previous section. Administrative and procedural costs were able to be bundled to provide a collective quantitative estimate, while we were unable to confidently quantify their associated benefits and so we presented them qualitatively.

The figure below summarizes the additional costs and benefits we identified for the rule amendments, compared to the regulatory baseline. Recall that in Chapter 2 we discussed the full breadth of changes and identified that most of them were either in line with the regulatory baseline or would not result in costs or benefits compared to it. See qualitative discussions in sections 3.2.2 and 4.2.2 for more detail and additional minor or potential impacts.

Figure 2: Additional costs and benefits not reflected in the market model



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 regulatory 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)(e) requires Ecology to “[d]etermine, 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.” (a) through (d) state as follows

- (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.

RCW 34.05.328(1)(a)-(d). In other words, to be able to adopt the rule amendments, we must determine that the requirements of the rules are the least burdensome set of requirements that achieve the goals and objectives of the authorizing statutes.

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

6.2 Goals and objectives of the authorizing statute

The authorizing statute for the CCA rule is chapter 70A.65 RCW, Greenhouse Gas Emissions – Cap-and-Invest Program. The authorizing statutes for the reporting rule are: chapter 70A.65 RCW, Greenhouse Gas Emissions – Cap-and-Invest Program; chapter 70A.45 RCW, Limiting Greenhouse Gas Emissions; and chapter 70A.15 RCW, Washington Clean Air Act. The goals and objectives of the authorizing statutes are as follows:

- Chapter 70A.65 RCW, Greenhouse Gas Emissions – Cap-and-Invest Program
 - Implementing 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, to ensure the reduction of greenhouse gas emissions consistent with the limits established in RCW 70A.45.020.

- Establishing annual emission allowance budgets as necessary to achieve the proportionate share of reductions by covered entities necessary to achieve the 2030, 2040, and 2050 statewide emissions limits established in RCW 70A.45.020.
- Seeking to enter into linkage agreements with other jurisdictions with external greenhouse gas emissions trading programs.
- Restoring the health of our forests.
- Positioning Washington's economy, technology centers, financial institutions, and manufacturers to benefit from national and international efforts that must occur to reduce greenhouse gases.
- Creating climate policy that minimizes emissions leakage.
- Adopt provisions to promote a stable and functional market to facilitate emissions reductions including:
 - Guarding against bidder collusion and minimizing the potential for market manipulation
 - Imposing limits if deemed necessary to protect the integrity and functioning of auctions
 - Designing auctions to allow, to the maximum extent practicable, linking with external greenhouse gas emissions trading programs in other jurisdictions and to facilitate the transfer of allowances when the state's program has entered into a linkage agreement with other external greenhouse gas emissions trading programs.
- Recognizing the special nature of emissions-intensive, trade-exposed (EITE) industries and increased life-cycle emissions associated with product imports.
- Encouraging EITE facilities to continue to innovate, find new ways to be more energy efficient, use lower carbon products, and be positioned to be global leaders in a low carbon economy.
- Enhancing market security and providing consistent requirements for covered entities whose operations span jurisdictional boundaries.
- Establishing a coordinated and strategic statewide approach to climate resilience.
- Building an equitable and inclusive clean energy economy.
- Establishing this program in a manner that contributes to a healthy environment for all of Washington's communities.
- In 2020, the legislature updated the state's greenhouse gas emissions limits in RCW 70A.45.020 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.

- Chapter 70A.45 RCW, Limiting Greenhouse Gas Emissions
 - Creating accountability for achieving the emission reductions established in Chapter 70A.45.020 RCW.
 - Reducing emissions of greenhouse gas consistent with the emission reductions established in chapter 70A.45.020 RCW.
 - Participating in the design of a regional multisector market-based system to help achieve those emission reductions.
 - Maintaining and enhancing the state's ability to continue to sequester carbon through natural and working lands and forest products.
 - Ensuring the state has a well-trained workforce for our clean energy future.
 - Having sufficient data to determine whether state emissions are on a trajectory to achieve statutory emissions reduction limits, or whether new or amended policy interventions are necessary to achieve those limits.
 - Minimizing the potential to export pollution, jobs, and economic opportunities.
 - Support industry sectors that can act as sequesterers of carbon.
 - Reducing emissions at the lowest cost to Washington's economy, consumers, and businesses.
 - Recognizing Washington's unique emissions and sequestration portfolio.
 - Using revenues from a market system for the purposes in chapter 70A.65 RCW and to further the state's efforts to achieve the goals established in chapter 70A.45.020 RCW, address the impacts of global warming on affected habitats, species, and communities, promote and invest in industry sectors that act as sequesterers of carbon, and increase investment in the clean energy economy particularly for communities and workers that have suffered from heavy job losses and chronic unemployment and underemployment.
 - Limiting anthropogenic emissions of greenhouse gases to achieve the following emission reductions for Washington state:
 - By 2020, reduce overall emissions of greenhouse gases in the state to 1990 levels.

- By 2030, reduce overall emissions of greenhouse gases in the state to 45% below 1990 levels.
 - By 2040, reduce overall emissions of greenhouse gases in the state to 70% below 1990 levels.
 - By 2050, reduce overall emissions of greenhouse gases in the state to 95% below 1990 levels.
- Chapter 70A.15 RCW, Washington Clean Air Act
 - Preserving, protecting, and enhancing the air quality for current and future generations.
 - Securing and maintaining levels of air quality that protect human health and safety, including the most sensitive members of the population.
 - Preventing injury to plant, animal life, and property.
 - Fostering the comfort and convenience of Washington's inhabitants.
 - Promoting the economic and social development of the state.
 - Facilitating the enjoyment of the natural attractions of the state.
 - Protecting the public welfare.
 - Preserving visibility.
 - Protecting scenic, aesthetic, historic, and cultural values
 - Preventing air pollution problems that interfere with the enjoyment of life, property, or natural attractions.
 - Safeguarding the public interest through an intensive, progressive, and coordinated statewide program of air pollution prevention and control.
 - Providing for an appropriate distribution of responsibilities
 - Encouraging coordination and cooperation between the state, regional, and local units of government.
 - Improving cooperation between state and federal government, public and private organizations, and the concerned individual.

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. Each section below explains why we did not include these alternatives.¹¹⁵

¹¹⁵ At the proposal phase of this rulemaking, we identified the alternative of introducing additional prior year vintaged allowances from the first compliance period created by HB 1975 in 2026 (as opposed to in 2027). While

- Not aligning the Washington market to support linkage.
- Having alternative or no consignment requirement for no-cost allowances provided to electric utilities.
- Adding “poor hydro” to list of conditions for allocation adjustment for electric utilities, or reserving allowances for this purpose.
- Not covering all emissions associated with electricity imports for electricity importers importing unspecified electricity.
- Adding rules addressing potential leakage due to centralized electricity markets.
- Delaying the introduction of additional APCR allowances created by HB 1975 to be introduced in 2028 or later.
- Introducing additional APCR allowances from the expanded 2023-2030 budgets separately from the new APCR allowances sourced from 2031-2040 budgets (as opposed to as a single group).
- Taking a lower percentage of additional allowances created by HB 1975 that are placed into the APCR from each annual budget (as opposed to 5% of the annual budget).
- Using an alternative method to determine the APCR Tier 2 price other than the arithmetic mean of the Tier 1 price and the price ceiling unit price (the midpoint between Tier 1 price and the price ceiling unit price).
- Selling all additional APCR allowances created by HB 1975 at a single tier (as opposed to multiple tiers).
- Introducing 8 million allowances created by HB 1975 in APCR auctions before 2027 and 6 million allowances in following years (as opposed to treating the APCR allowances as a single combined pool of allowances).
- Requiring an exchange clearinghouse to disclose notice of charges or settlement agreements.
- Revising the disclosure requirements for individuals with knowledge of market position
- Changing disclosure requirements for consultants.
- Only clarifying that for a registered entity to be considered located in the United States, they must be incorporated in the United States.

we also chose not to adopt this alternative in the rule language itself, we decided to implement offering the prior year vintaged allowances at auction in 2026 based on consideration of the differential value of allowances eligible for compliance in the first compliance period (the prior-year allowances, from 2023-2026) versus the other ‘current vintage’ allowances on offer in 2027 that would only be eligible for compliance in the second compliance period.

- Requiring consultants and advisors who only provide services to covered or opt-in entities to apply for a shared role exemption.
- Providing a delayed implementation of the corporate association triggers for entities with the same Commodity Pool Operator or Commodity Trading Advisor.
- Additional fuel supplier requirements.
- Alternative implementation of EITE allocation baselines.
- Prohibiting the usage of price ceiling units.
- Restricting allowances eligible to fulfill an under-reported emissions obligation.
- Prohibiting opt-in entities from some price ceiling unit actions.
- Exempting account viewing agents from certain registration requirements.
- Exempting certain allowances from the vintage holding limit.
- Not providing an exemption to the shared role corporate association triggers for consultants and advisors who only provide services to consumer-owned electric utilities.
- Establishing an emissions containment reserve trigger price

6.3.1 Not aligning the Washington market to support linkage

We considered not aligning with California and Québec to support linkage. However, if we did not update the rule, there would be barriers to linkage. This alternative would not have aligned with directives under chapter 70A.65.RCW to seek to enter into linkage agreements with other jurisdictions and to implement the program in a manner that allows linking the state's program with those of other jurisdictions.

Ecology expects that linkage will provide benefits to Washington through more stable and predictable allowance prices and lower compliance costs, while continuing to reduce greenhouse gas emissions.

6.3.2 Having alternative or no consignment requirement for no-cost allowances provided to electric utilities

In this rulemaking we initially proposed an alternative structure for determining consignment requirements for no-cost allowances provided to electric utilities. Based on input received during the public comment period for this rulemaking, we further refined and clarified consignment requirements in the adopted rule. These revisions are intended to further reduce and minimize administrative burden, improve consistency across allocated utilities, and enhance clarity.

However, Ecology could not greatly simplify or remove requirements due to complex goals. The proposed and adopted rules were written to:

- Be consistent with statute relevant to consignment in the near and long-term (RCW 70A.65.120(2)(d) and 3(d)).
- Improve market liquidity.
- Provide certainty for utilities as soon as feasible on consignment requirements.

Public comments suggested that Ecology adopt a requirement that all utilities consign a single specified number or percentage of their no-cost allowances. Ecology did not adopt this simplifying suggestion, which may not be consistent with statute requiring no-cost allowances be able to be used for compliance.

Comments also suggested that Ecology not pursue consignment requirements. Instead, they suggest Ecology reduce a utility's future allowance allocation based on the difference between the number of vintage t no-cost allowances previously provided and that utility's compliance obligation as a first jurisdictional deliverer in emissions year t . Ecology did not adopt this suggestion as:

- The suggestion is not consistent with the allocation framework in rule or statutory direction to mitigate cost burden. Allocation is based on cost burden, and cost burden may differ from a direct compliance obligation.
- Strictly reducing future allowance allocation based on a utility's compliance obligation may also reduce decarbonization incentives. This is in opposition to the goals of the CCA statute and this rulemaking.

By preserving no-cost allowance allocation to utilities but requiring consignment in limited circumstances, the adopted rule amendments ensure utilities are provided allowance value mitigating cost burden for Washington communities consistent with statute, strengthen market liquidity, and preserve decarbonization incentives.

Ecology also considered simplifying consignment requirements by solely determining the consignment requirement for vintage year t no-cost allowances based on the utility's compliance obligation as a first jurisdictional deliverer for emissions year t . However, if Ecology solely relied on a utility's compliance obligation to determine consignment requirements, most utilities would have to wait a year after distribution of no-cost allowances to know whether they would be subject to consignment. Ecology expects the exemptions in WAC 173-446-230(6)(a) will provide certainty to many utilities on consignment requirements at the time allowances are distributed.

Additionally, requiring consignment of any allowances exceeding a utility's compliance obligation, would likely mean many utilities would have to annually consign a relatively small number of allowances, providing limited market liquidity benefit. To minimize administrative burden for utilities, the adopted rule specifies that a utility is not subject to a consignment deadline until at least 100,000 cumulative no-cost allowances are subject to a consignment requirement. Ecology's approach also considers flexibility and fair treatment of utilities both subject to and not subject consignment requirements. The consignment requirements allow

utilities to retain the greater of 100,000 allowances or approximately twice their annual compliance obligation, enabling utilities to continue to flexibly manage costs. Ecology designed consignment equations to help ensure utilities with similar compliance obligations have a similar number of no-cost allowances that are exempt from consignment requirements.

We also considered having no consignment requirement for no-cost allowances provided to electric utilities. Some interested parties are concerned that consignment requirements are expensive and don't provide any meaningful benefit. Ecology planned the consignment design to be minimally burdensome to utilities while still providing benefits of promoting market liquidity and decarbonization incentives. The consignment design was significantly modified after initial concepts based on interested party feedback, including to ensure consistency with statute. Having no consignment requirement at all does not achieve goals of promoting a stable functioning market and strengthening decarbonization incentives in order to support achievement of the state's emission limits.

6.3.3 Adding “poor hydro” to list of conditions for allocation adjustment for electric utilities, or reserving allowances for this purpose

We considered adding “poor hydro” to the list of conditions under which Ecology would consider an allocation adjustment for electric utilities in the rule. We also received public comments requesting that Ecology consider additional reservation and allocation of no-cost allowances for utilities that primarily depend on hydroelectric resources to mitigate the impact of unexpected increases in reliance on higher-emissions generation sources. Hydropower can be unpredictable and outside of utility control and ratepayers could be impacted with insufficient no-cost allowances when hydro conditions do not meet forecasts.

If Ecology were to pursue an adjustment annually based on “poor hydro” conditions in the rule, or to establish a reservation of allowances for this purpose, it would require all utilities to newly report details of hydro assumptions integrated into resource supply forecasts used in allocation and provide information on hydro conditions annually across various resources utilized. It would also require Ecology to define “poor hydro” conditions or other hydropower variability conditions that are likely different for many utilities. This alternative would be more burdensome to covered entities than the adopted rule amendments that include a provision that Ecology will consider an adjustment at the request of a utility when that utility provides supplemental data to demonstrate that they experienced higher than forecast cost burden due to poor hydro conditions. Separately reserving allowances for this purpose would take them out of availability for other covered entities, and be duplicative of existing cost containment mechanisms such as the APCR.

6.3.4 Not covering all emissions associated with electricity imports for electricity importers importing unspecified electricity

We considered not covering emissions from specified imports when unspecified imports are greater than zero MT CO₂e but total specified imports are less than 25,000 MT CO₂e. Electric power entities with small amounts of unspecified imports do not want a compliance obligation for less than 25,000 MT CO₂e of specified imports. Some electric power entities have stated that it is very difficult to avoid unspecified imports 100% of the time even while they are trying to get specified imports as much as possible. This alternative would not meet the goal of having consistent treatment of electricity in Washington and California Cap-and-Invest Programs to support linkage. Covering emissions from any specified imports when unspecified imports are greater than zero MT CO₂e is required by statute and consistent with both the current structure for determining covered entities and linkage considerations.¹¹⁶

As required by RCW 70A.65.080(1)(c), the adopted rules specify that an electricity importer will be a covered entity if they report:

- Emissions exceeding zero MT CO₂e associated with imports of unspecified electricity.
- Emissions equal to or exceeding 25,000 MT CO₂e associated with imports of specified electricity.
- Emissions equal to or exceeding 25,000 MT CO₂e associated with imports of qualifying unspecified electricity purchases from a FPMA.¹¹⁷

Once an electricity importer triggers any of the three coverage thresholds, the electricity importer incurs a compliance obligation for all emissions associated with imported electricity, unless those emissions are otherwise exempt from coverage under the Cap-and-Invest Program.¹¹⁸

The proposed alternative would misalign treatment of electricity in Washington and California Cap-and-Invest Programs, weaken coverage of electricity imports, and potentially threaten linkage. Covering emissions from all imported electricity when unspecified imports are greater than zero MT CO₂e, as in the adopted rule, is required by statute and consistent with the current structure for determining covered entities and linkage considerations.

The CCA statute directs Ecology to “consider opportunities to implement the program in a manner that allows linking the state's program with” other jurisdictions.¹¹⁹ The CCA statute also

¹¹⁶ See RCW 70A.65.080(1)(c)(i)(B).

¹¹⁷ Qualifying unspecified electricity is electricity purchased from a federal power marketing administration pursuant to section 5(b) of the Pacific Northwest Electric Power Planning and Conservation Act of 1980, P.L. 96-501, that ecology determines is not from a specified source.

¹¹⁸ Emissions exemptions for the Cap-and-Invest Program are specified in WAC 173-446-124(2)(a)(i). For example under WAC 173-446-124(2)(a)(i) CO₂ emissions from the combustion of biomass or biofuels do not incur a compliance obligation in the Program.

¹¹⁹ RCW 70A.65.060(3)

emphasizes that “climate policies must be appropriately designed, in order to avoid leakage” (RCW 70A.65.005(6)), and notes that emissions leakage should be evaluated relative to Washington State and other linked jurisdictions.¹²⁰

Given the interconnected nature of the western grid, strict coverage of electricity imports is important to prevent emissions leakage in a linked market, where decreases in emissions within either Washington or California would be offset by an increase in greenhouse gas emissions outside the linked jurisdictions. The western grid is an interconnected and liquid market, with electricity flowing across 11 states and two Canadian provinces. Weakening coverage of electricity imports under the CCA increases the risk of electricity imports displacing in-state generation to meet Washington’s electricity needs. This is because all emitting generation within Washington is covered by the Cap-and-Invest Program, either directly at the facility or upstream at the fossil fuel supplier.

6.3.5 Adding rules addressing potential leakage due to centralized electricity markets

We considered accounting for greenhouse gas leakage in electric power entity reported and covered emissions, particularly around imports due to centralized electricity markets. Interested parties have expressed concerns about environmental integrity and the risk of emissions leakage preventing linkage. Some interested parties are concerned that participation in centralized electricity markets, particularly EDAM and Markets+, could redirect existing out-of-state clean electricity into Washington and thereby require additional generation from emitting sources to “back-fill” out-of-state demand.

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 added a requirement in the adopted rule (WAC 173-441-124(3)(a)(v)(E)) for electricity importers, to report, if feasible, additional information on electricity imported via a centralized electricity markets. This additional information will not impact reported or covered emissions but is key for Ecology to assess the risk of emissions leakage for centralized electricity markets operating in Washington.

Ecology anticipates that it may more substantively address leakage at some point in future rulemakings but, as market designs remain in flux and we have no operational data on the outcomes of these markets, we do not have sufficient data to make appropriate changes at this time. Addressing leakage before we have sufficient data could lead to unintended consequences. Pursuing leakage reduction during this rulemaking would not effectively meet the goal of creating climate policy that minimizes leakage.

¹²⁰ RCW 70A.65.010(44)

6.3.6 Delaying the introduction of additional APCR allowances created by HB 1975 to be introduced in 2028 or later

We considered delaying the introduction of 1.08 million allowances resulting from HB 1975's expansion of the first compliance period budget to the allowance price containment reserve (APCR) until 2028 to save greater cost containment for later in the program. If linkage occurs before the November 2027 compliance event, then the 1.08 million Washington APCR allowances are likely to remain unused given the relative sizes of the California-Québec (larger) and Washington (smaller) carbon markets, and expectation that market prices in a linked market will be significantly below the APCR trigger price. If linkage does not occur before the November 2027 compliance event, however, introducing the allowances in 2027 rather than 2028 serves as a partial safety valve for entities' compliance obligation costs for meeting the quadrennial compliance deadline for the first compliance period. Therefore, this alternative (delaying the introduction) would have been more burdensome for covered entities.

6.3.7 Introducing additional APCR allowances from the expanded 2023-2030 budgets separately from the new APCR allowances sourced from 2031-2040 budgets (as opposed to as a single group)

We considered offering 1.08 million APCR allowances from expanded budget years in 2023-2030 separately from the APCR allowances pulled from 2031-2040. Due to the timing of the rulemaking process, expected effective date, and schedule of allowance auctions, it was not feasible to offer this 2023-2030 group of allowances earlier, such as in 2026, or separately from the larger number of allowances that will be added to the APCR and offered at auction in 2027. This alternative would not as effectively have met the goal of providing a predictable supply of allowances at a set price, and since the APCR allowances have no vintage and equal utility, no matter the budget year from when they were sourced, making them available to offer at auction in separate batches at different times would likely have caused confusion in the market and could be seen as arbitrary or without logical justification.

6.3.8 Taking a lower percentage of additional allowances created by HB 1975 that are placed into the APCR from each annual budget (as opposed to 5% of the annual budget)

We considered taking 2% of additional allowances from each of the annual budget from 2031-2040 into the APCR account. Ecology opted for the higher percentage (5%), consistent with past practice in the current rule, to assist in containing compliance costs for covered and opt-in entities. Additionally, market feedback has highlighted that consistency in pricing mechanisms, such as taking an equal percentage of allowances from each year to place into the APCR, is highly important to market participants, so continuing with past practice and maintaining consistency in our approach by taking 5% instead of 2% (or some value in between), supports transparency and predictability, and is responsive to that feedback. This alternative would not

have met the goal of reducing emissions at the lowest cost to Washington's economy, consumers, and businesses.

6.3.9 Using an alternative method to determine the APCR Tier 2 price other than the arithmetic mean of the Tier 1 price and the price ceiling unit price (the midpoint between Tier 1 price and the price ceiling unit price)

We considered pricing the APCR Tier 2 price at any value other than the midpoint between the Tier 1 price and the price ceiling unit price (some value greater than Tier 1 price but below \$80).

Our decision to adopt the mid-point price rather than any other value between the Tier 1 and price ceiling unit price aligns with our existing cost-containment framework and the same logic applied by California and Québec (the methodology, not the specific prices). Ecology does not see a reason to use a number higher than the midpoint, as Tier 2 exists as a cost-containment measure. However, pricing below the midpoint might incentivize entities to purchase allowances because they are a "bargain" rather than because they are needed, thus depleting the reserve. Finally, previous market feedback has highlighted that consistency in pricing mechanisms is more important to market participants than the price itself.

Through discussions with California and Québec, we determined that alignment on cost-containment measures is also essential for linkage. Once linked, the price ceiling and APCR Tier 2 price will be harmonized with linked jurisdictions. Using a different APCR Tier 2 price would not meet the goal of supporting linkage with California and Québec. The benefits of linkage are discussed in 6.3.1.

6.3.10 Selling all additional APCR allowances created by HB 1975 at a single tier (as opposed to multiple tiers)

We considered selling all APCR allowances at a single tier, either Tier 1 or Tier 2, and offering 100% at that price. However, offering allowances at only a single APCR tier, rather than using both tiers, would undermine the purpose of having multiple price levels in APCR auctions. Multiple tiers provide a more accurate signal of market demand and allow that demand to be expressed more effectively. This alternative would not have met the goals of promoting a stable functioning market to ensure the reduction of greenhouse gas emissions.

6.3.11 Introducing 8 million allowances created by HB 1975 in APCR auctions before 2027 and 6 million allowances in the following years (as opposed to treating the APCR allowances as a single combined pool of allowances)

We considered introducing 8 million allowances before 2027 and 6 million after (during the second compliance period). We considered this option to reduce the chances of a price ceiling unit sale but ultimately opted to introduce all, roughly 14 million allowances, in 2027 (1/3 if 1st

2027 auction triggers APCR sale, 1/2 if 2nd 2027 auction triggers APCR sale, entire remaining supply at pre-compliance APCR event in September 2027). This ensures that winning bidders can transfer allowances to compliance accounts in time for the 11/1/27 compliance obligation. This alternative, withholding a portion of these new APCR allowances until after the first compliance event, would not meet the goal of maintaining market and price stability and essentially make it not possible to offer price ceiling units, jeopardizing the ability of compliance entities to acquire sufficient allowances to meet their compliance obligations.

6.3.12 Requiring an exchange clearinghouse to disclose notice of charges or settlement agreements

We considered requiring a registered exchange clearinghouse to disclose if they have issued a notice of charges or entered into a settlement agreement regarding Washington or a linked jurisdiction's carbon allowance derivatives. Ecology decided to require the registered entities rather than the exchange clearinghouses to provide this information because it was more consistent with the organizational structures of the exchange clearinghouses and is consistent with other disclosure expectations for registered entities. This alternative would not have met the goals of promoting a stable functioning market to ensure the reduction of greenhouse gas emissions.

6.3.13 Revising the disclosure requirements for individuals with knowledge of market position

We considered expanding the individuals that must be disclosed for having knowledge of market position, including individuals who are employees of the registered entity and its corporate associates and the consultants or advisors of the party and its corporate associates. To align with California and Québec, we need to have similar disclosure and registration requirements to ensure that registered entities participating in the market are being held to similar standards and that regulations across jurisdictions are being upheld similarly. Since their rule changes were more expansive than our alternative disclosure requirement considerations, we did not further consider this alternative to ensure similar disclosures in a linked market. This alternative would not meet the goal of supporting linkage with California and Québec. The benefits of linkage are discussed in 6.3.1.

6.3.14 Changing disclosure requirements for consultants

We considered changing the disclosure requirement for consultants who are registered in the program to disclose which registered entities they are providing consulting services, by expanding this requirement to all registered entities providing consulting services, not just individuals.

To align with California and Québec, we need to have similar disclosure and registration requirements. Since California did not consider changes to this section, we did not pursue the

changes further. This alternative would not meet the goal of supporting linkage with California and Québec. The benefits of linkage are discussed in 6.3.1.

6.3.15 Only clarifying that for a registered entity to be considered located in the United States, they must be incorporated in the United States

We considered specifying that for a registered entity to be considered located in the United States, they need only be incorporated in the United States. However, to align with California and Québec, we would need to have similar disclosure and registration requirements. California includes more detailed disclosure requirements to prove the location or state of incorporation of the entities. This alternative would not meet the goal of supporting linkage with California and Québec. The benefits of linkage are discussed in 6.3.1.

We also considered an alternative that provided additional documentation alternatives and flexibility for a registered entity to prove their location. However, this alternative reduced clarity about what a registered entity must show to prove they are located in the United States.

6.3.16 Requiring consultants and advisors who only provide services to covered or opt-in entities to apply for a shared role exemption

We considered a version of the shared role corporate association trigger that would create a direct corporate association if covered or opt-in entities shared a consultant or advisor that had knowledge of both of their market positions based on CARB's initial rule draft. If that consultant or advisor only provided services to covered or opt-in entities, those entities would have been eligible to apply for an exemption. This was changed so that consultants or advisors providing services only to covered or opt-in entities and do not have a user account would not have a direct corporate association and therefore would no longer need to apply for an exemption. This alternative would have been more burdensome for covered entities and would not meet the goal of supporting linkage with California and Québec. The benefits of linkage are discussed in 6.3.1.

6.3.17 Providing a delayed implementation of the corporate association triggers for entities with the same Commodity Pool Operator or Commodity Trading Advisor

We considered a version of corporate association triggers based on CARB's initial rule draft where new amendments to the corporate association triggers resulting from entities who share a similar Commodity Pool Operator or Commodity Trading Advisor would have a similar delayed implementation as the shared role corporate association trigger. The delayed implementation for the shared roles trigger was ultimately not adopted since current rules, as clarified in the amended rule, were determined to achieve the same function with regard to corporate associations. This alternative was not adopted since it would create the potential for market

participants controlled by a single entity to exceed the allowance holding and purchase limits prior to the delayed implementation date.

6.3.18 Additional fuel supplier requirements

We considered requiring fuel suppliers to develop fuel pathways and carbon intensity life-cycle assessments independent of requirements already required by the Clean Fuel Standard (CFS) rule to comply with the biofuel emissions reduction requirement. However, establishing separate requirements and additional report requirements, even if already participating in the CFS fuel pathways, was deemed too burdensome and potentially costly for reporters. Additionally, it would prevent leveraging in-house expertise and processes, creating confusion for covered entities.

6.3.19 Alternative implementation of EITE allocation baselines

We considered an alternative option for implementing adjustments to EITE allocation baselines for the criterion addressing significant changes in emissions attributable to a manufactured good by an EITE facility. The alternative approach would establish an 'interim baseline' for the EITE facility until there are at least two full years of emissions and production data since the significant change took effect to establish a new carbon intensity baseline. While this alternative option would have enabled EITE facilities to receive additional allowances until the new allocation baseline can be established, it was rejected on the basis that it would be significantly more complicated to administer by requiring a two-step process for Ecology to approve both an interim and new allocation baseline, and that it would create an incentive for EITEs to operate inefficiently during the interim period in order to maximize the allowances received under the new allocation baseline. This alternative would not as effectively have met the goals of creating climate policy that minimizes leakage by recognizing the special nature of emissions-intensive, trade-exposed industries and encouraging these industries to continue to innovate and find new ways to be more energy efficient.

The adopted approach aims to mitigate both these issues by requiring EITEs to wait until they have at least two full years of emissions and production data since the significant changes take effect before they can request a baseline adjustment. In the interim period they will need to purchase any additional allowances required for compliance and will receive a one-time allocation of true-up allowances to cover the interim period once Ecology has approved a new allocation baseline.

6.3.20 Prohibiting the usage of price ceiling units

We considered prohibiting the use of price ceiling units for the purpose of fulfilling offset invalidation obligations and under-reported emissions obligations when the deadlines to fulfill those obligations fall on the same day as a full compliance period obligation deadline.

The authorizing statute provides that entities may surrender price ceiling units to fulfill their compliance obligations, but only immediately before a full compliance period obligation

deadline; because offset invalidation obligations and under-reported emissions obligations are components of compliance obligations, allowing the usage of price ceiling units to fulfill them would meet the intent of the authorizing statute.

6.3.21 Restricting allowances eligible to fulfill an under-reported emissions obligation

We considered restricting the set of allowances eligible to fulfill an under-reported emissions obligation to the allowances of the vintage of the year for which an entity under-reported their emissions, or any year prior to that year.

Because an under-reported emissions obligation may be due up to seven years after the associated emissions should have been covered, complying with this alternative requirement may be unduly burdensome, if not impossible, given supply constraints for those vintages of allowances.

6.3.22 Prohibiting opt-in entities from some price ceiling unit actions

We considered prohibiting opt-in entities from requesting price ceiling unit sales, purchasing price ceiling units, and surrendering price ceiling units to fulfill their compliance obligations. However, because opt-in entities are subject to all the same requirements as covered entities (except those related to program exit), differential treatment between covered entities and opt-in entities regarding price ceiling units would be overly burdensome for opt-in entities.

6.3.23 Exempting account viewing agents from certain registration requirements

We considered exempting account viewing agents from certain registration requirements similar to those in WAC 173-446-130. However, despite having access to the same market-sensitive information as account representatives, account viewing agents are not explicitly subject to the same certification and registration requirements. Exemptions from these requirements would arbitrarily impose differential treatment between account representatives and account viewing agents and decrease the agency's ability to protect market participants and the public from market manipulation. This alternative would not have met the goal of promoting a stable functioning market to ensure the reduction of greenhouse gas emissions.

6.3.24 Exempting certain allowances from the vintage holding limit

We considered exempting allowances held in an entity's electricity allocation holding account from the current vintage holding limit. This alternative would effectively allow an entity to evade the holding limit and indefinitely accrue allowances without consequence, providing them with the ability to consolidate excess market power and disadvantage covered entities that do not have electricity allocation holding accounts. Furthermore, covered entities with compliance obligations are already allowed to exempt allowances needed for compliance from the current vintage holding limit by transferring the allowances from their electricity allocation

holding accounts to their compliance accounts, rendering this alternative unnecessary to address the concern of electric entities being able to hold sufficient allowances for compliance. This means that the exemption is unnecessary for electric utilities to achieve compliance and decreases the agency's ability to protect market participants and the public from market manipulation via indefinite accrual of allowances necessary to meet compliance obligations. Therefore, this alternative would not have met the goal of promoting a stable functioning market to ensure the reduction of greenhouse gas emissions.

6.3.25 Not providing an exemption to the shared role corporate association triggers for consultants and advisors who only provide services to consumer-owned electric utilities

We considered shared role corporate associated triggers that did not include a specific exemption for consultants and advisors who provide services for consumer-owned electric utilities and may also have a user account. The alternative was not adopted since it would be more burdensome for these smaller covered entities which could increase administrative burden for ratepayers for consumer-owned electric utilities.

6.3.26 Implement an emissions containment reserve trigger price

We considered the recommendation to implement an emissions containment reserve (ECR) trigger price. The ECR trigger price has never taken effect since it was suspended in the CCA rule in 2022 (prior to 2023's first auctions). The effect of the ECR trigger price is described in WAC 173-446-357(3). In order to meet statutory goals of designing the Cap-and-Invest program to facilitate linkage with other jurisdictions, the ECR trigger price remains suspended in the adopted rule. California and Québec do not have an ECR trigger price, which is a feature that needs to be aligned across linked jurisdictions. Failure to align would not support seeking linkage with other jurisdictions as directed in statute.¹²¹ Additionally, based on allowance market modeling (as discussed previously in this analysis) an aligned but unlinked market would not have substantively different price or emissions outcomes than under the regulatory baseline. These higher costs would mean greater compliance burden than under a linked scenario facilitated by program alignment with linked jurisdictions.

Washington maintains a supply of allowances in the ECR and contributed 2% of allowances from each budget year of the first compliance period. Ecology will hold its first auction of allowances from the ECR in September 2026. We note that while this rulemaking does not establish an ECR trigger price (which would have the effect of removing allowances from the market), there are four other pathways that pull allowances from general circulation to be deposited into the ECR account.¹²² The price floor, with its annual escalation factor of 5% plus inflation, also supports a consistently-increasing minimum price of allowances and therefore financial incentive for emissions abatement and decarbonization. Moreover, the allowance

¹²¹ RCW 70A.65.210(1)

¹²² See WAC 173-446-375(1)

price at auctions over the course of the Cap-and-Invest Program so far has not approached the allowance price floor.

6.4 Conclusion

After considering alternative rule contents, within the context of the goals and objectives of the authorizing statute, we determined that the amended rule represents 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; chapter 19.85 RCW) 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 amended rule.
- 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 regulatory 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 analysis, are not evaluated for government agencies.

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 the costs of complying with the rule amendments as compared to the regulatory baseline, per employee.

The impacts of the amended rule would differ significantly across sectors and over time. To scale sectoral compliance costs to the individual business level, we identified specific small businesses and the largest 10% of businesses in each sector and estimated their average share of their sector’s emissions. Based on this step, we identified that the amended rule is not likely to result in compliance cost changes for small businesses in the electricity and natural gas sectors, as despite being identified in Ecology’s database, the small businesses we identified represent zero percent of covered emissions in their respective sectors. They may report other emissions, but these are not covered emissions under the CCA.

The table below shows the median employment at the business level by sector.

Table 7: Employment at a median small and largest businesses, number of employees

Sector	Small Businesses	Largest 10% of Businesses
Fuel suppliers (transportation)	16	8,812
Facilities (industrial)	23	1,487

Since they are the sectors for which we identified small businesses with a nonzero share of emissions, we focused this analysis on the fuel supplier (transportation) and facility (industrial) sectors. Based on relative shares of emissions and cumulative cost estimates in Chapter 3 over the analytic timeframe of 2027 - 2037, we estimated the following reductions in compliance costs per employee, under the amended rule as compared to the regulatory baseline, under a linked carbon market.¹²³

Table 8: Compliance costs per employee, 2027 – 2037, millions 2026\$

Business Size and Sector	Compliance Cost Reduction per Employee
Small, fuels (transportation)	\$0.05
Largest, fuels (transportation)	\$0.01
Small, facilities (industrial)	\$0.71
Largest, facilities (industrial)	\$0.01

Because we estimated net cumulative cost-savings under the rule amendments in a linked market, both sectors would experience net cost-savings per employee. In both sectors, small businesses would receive a disproportionately larger amount of cost-savings than the largest 10 percent of businesses. We note that the level of disproportion depends on relative number of employees and relative cost impact under the rule amendments. In our employment data, we believe employment numbers may be underestimated for small businesses – particularly in the industrial sector – as our data does not capture use of contractors and their employees. If these small businesses have higher employment than found in our data, it would serve to mitigate disproportionate impacts above, and the disproportion reflected in Table 7 is overestimated.

We also separately estimated legal services costs of meeting multiple new or amended requirements for additional information to be provided to Ecology. On a per-entity basis, these costs were approximately \$9,000 and would be incurred by all entities participating in the Cap-and-Invest Program, including general market participants. As this is a point estimate, if we divide it by the employment at a small general market participant, compliance costs per employee will inherently be larger than for the largest general market participants. The median employment for general market participants with fewer than 50 employees was 6 employees. The median employment at the largest 10% of general market participants was 203. This means compliance costs per employee would be \$1,500 at small businesses and \$180 at the largest businesses. We note, however, that small businesses under the RFA definition in this case include large financial businesses and investment funds that may not have the same

¹²³ Recall from Chapter 3 that the UC market model did not identify significant differences in allowance prices or emissions under an aligned but unlinked market.

employment structure and responsiveness to compliance costs that a typical “mom and pop” small business (e.g., a store) would have.

In the scenario of an amended, aligned rule, but with an unlinked carbon market, the rule amendments would not result in any of the impacts estimated using the market model. Only costs related to impacts independently resulting from other amendments would apply.

We concluded that the rule amendments are likely to have disproportionate impacts on small businesses, even if both small and large businesses would experience cumulative net cost-savings. Therefore, Ecology has included elements in the rule amendments to mitigate this disproportion, as far as it is legal and feasible.

7.3 Action taken to reduce small business impacts

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

Based upon the extent of disproportionate impact on small businesses 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 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.

While our ability to modify substantive regulatory requirements of the rule amendments can be limited – as they are often dictated to a large degree by statutes – we note that elements of statutory requirements already serve to reduce the burden of the Cap-and-Invest Program in general on small businesses. Additional cost to comply with the rule amendments may disproportionately impact small businesses that are covered entities under the Cap-and-Invest Program. However, these rule amendments facilitate linkage with the California-Québec

market. If Washington links, we expect those small business covered entities would benefit from lower overall costs to comply with the Cap-and-Invest Program.

While we did not find disproportionate compliance cost impacts to small electricity businesses, we note that elements of statutory requirements already serve to reduce disproportionate burden. In line with statutory requirements, the amendments allow small electricity importers to use existing qualifying reports to comply with the reporting rule, reducing duplicative work effort in recordkeeping and reporting. The rule amendments also create an expedited exit from reporting rule requirements for electric power entities that have zero imported electricity because a FPMA has opted into the Cap-and-Invest Program. The rule amendments also enable a utility that has no compliance obligation and elects to transfer all their no-cost allowances to a FPMA to not have to register in the Cap-and-Invest Program. Together these amendments could help reduce or eliminate administrative costs for some small utilities, if a FPMA opts into the Cap-and-Invest Program.

7.4 Small business and government involvement

We involved small businesses and local governments in development of the rule amendments, using:

- E-mail listservs.
- Gov delivery messages to all rulemaking and Cap-and-Invest subscribers.
- July 2024 linkage informational session and draft language overview meeting.
- July 2024 environmental justice forum and listening session.
- November 2024 electricity public workshop.
- March 2025 electricity public workshop.
- April 2025 Cap-and-Invest informational session and draft language overview meeting.
- April 2025 electricity public workshop.
- May 2025 community forum on Cap-and-Invest topics.
- June 2025 electricity public workshop.
- July 2025 electricity public workshop.
- August 2025 Cap-and-Invest informational session and draft language overview meeting.
- August 2025 combined community forum on Cap-and-Invest topics.
- October 2025 public workshop on House Bill 1975.
- November 2025 electricity public workshop.
- Shared rule language for centralized electricity markets and electricity imports.

Representatives of small businesses, local governments, and Tribal governments were present at and participated in these public workshops, listening sessions, and community forums.

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/>.

Table 9: NAICS codes and titles of industries covered by the rule amendments

NAICS	Description
1121	Cattle Ranching and Farming
1151	Support Activities for Crop Production
2111	Oil and Gas Extraction
2121	Coal Mining
2131	Support Activities for Mining
2211	Electric Power Generation, Transmission and Distribution
2212	Natural Gas Distribution
2213	Water, Sewage and Other Systems
2382	Building Equipment Contractors
3112	Grain and Oilseed Milling
3114	Fruit and Vegetable Preserving and Specialty Food Manufacturing
3115	Dairy Product Manufacturing
3116	Animal Slaughtering and Processing
3119	Other Food Manufacturing
3211	Sawmills and Wood Preservation
3212	Veneer, Plywood, and Engineered Wood Product Manufacturing
3219	Other Wood Product Manufacturing
3221	Pulp, Paper, and Paperboard Mills
3222	Converted Paper Product Manufacturing
3241	Petroleum and Coal Products Manufacturing
3251	Basic Chemical Manufacturing
3253	Pesticide, Fertilizer, and Other Agricultural Chemical Manufacturing
3271	Clay Product and Refractory Manufacturing
3272	Glass and Glass Product Manufacturing
3273	Cement and Concrete Product Manufacturing
3274	Lime and Gypsum Product Manufacturing
3279	Other Nonmetallic Mineral Product Manufacturing
3313	Alumina and Aluminum Production and Processing
3314	Nonferrous Metal (except Aluminum) Production and Processing
3315	Foundries
3344	Semiconductor and Other Electronic Component Manufacturing
3359	Other Electrical Equipment and Component Manufacturing
3363	Motor Vehicle Parts Manufacturing
3364	Aerospace Product and Parts Manufacturing
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers

NAICS	Description
4233	Lumber and Other Construction Materials Merchant Wholesalers
4238	Machinery, Equipment, and Supplies Merchant Wholesalers
4244	Grocery and Related Product Merchant Wholesalers
4245	Farm Product Raw Material Merchant Wholesalers
4247	Petroleum and Petroleum Products Merchant Wholesalers
4249	Miscellaneous Nondurable Goods Merchant Wholesalers
4451	Grocery and Convenience Retailers
4552	Warehouse Clubs, Supercenters, and Other General Merchandise Retailers
4571	Gasoline Stations
4572	Fuel Dealers
4592	Book Retailers and News Dealers
4821	Rail Transportation
4832	Inland Water Transportation
4841	General Freight Trucking
4842	Specialized Freight Trucking
4862	Pipeline Transportation of Natural Gas
4869	Other Pipeline Transportation
5223	Activities Related to Credit Intermediation
5231	Securities and Commodity Contracts Intermediation and Brokerage
5239	Other Financial Investment Activities
5416	Management, Scientific, and Technical Consulting Services
5417	Scientific Research and Development Services
5511	Management of Companies and Enterprises
5611	Office Administrative Services
5614	Business Support Services
5621	Waste Collection
5622	Waste Treatment and Disposal
5629	Remediation and Other Waste Management Services
6111	Elementary and Secondary Schools
6113	Colleges, Universities, and Professional Schools
6221	General Medical and Surgical Hospitals
6239	Other Residential Care Facilities
7211	Traveler Accommodation
7225	Restaurants and Other Eating Places
9211	Executive, Legislative, and Other General Government Support
9261	Administration of Economic Programs
9281	National Security and International Affairs

7.6 Loss of sales or revenue and impacts on jobs

Businesses that would incur costs could 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). It is also related to the specific attributes of the markets in which they sell goods, including the degree of influence each firm has on market prices, as well as the relative responsiveness of market demand to

price changes. 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 within and outside of the state, and in the state as a whole will also adjust in response to a change in costs.

We used the REMI E3+ model, version 3.3.0 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, wage, interstate and international trade, and population or labor market changes; and dynamic adjustment of all economic variables over time.

To be able to use the model, we disaggregated costs and benefits into electricity, natural gas, transportation, and industrial sectors based on their estimated emissions in the market model and assumed no-cost allowance allocation over time. To balance the model, transfers across sectors must be captured on the spender and receiver sides. In model inputs, we assumed:

- Sectoral spending on allowances would be spent by each sector and would be received by the state and sectors consigning no-cost allowances.
- Sectoral spending on offset credits would be spent by each sector and would be received by offset developers. The offset market is still developing in Washington, as the Cap-and-Invest Program Rule is revised over time to better allow for and regulate additional types of offsets, including updated regulation of forestry offset credit generation. Although limited forestry offsets have been issued in Washington so far, we assume under a linked market the use of forestry offset credits would be greater (as in other jurisdictions). For this REMI modeling, we made the simplifying assumption that revenues would be received by the forestry sector.
- Consignment revenues would go to the electricity and natural gas sectors, with spending on consigned allowances happening in proportion to sectoral shares of the emissions difference between the amended rule under a linked market and the regulatory baseline.
- SCC impacts would be captured as a perceived amenity value, that is reflected as changes to relative in-state wages in the model and changes the labor market mix attracted to the state. We ran multiple simulations, using the set of 4 SCC value trajectories used in our benefits estimates (Chapter 4).

It is not always straightforward to identify a perfect-fit variable in the model to reflect all types of changes and spending. It is important to note that actual spending of state revenues is determined through appropriation by the state Legislature, and this rulemaking does not affect how funds are spent. In the case of this rulemaking, there is both uncertainty and likely variability in how state revenues will be spent (under the amended rule or regulatory baseline). Spending of CCA revenues to date reflects a broad range of transportation, electrification,

incentives for transit mode switching, energy assistance, heat pump installation, habitat restoration, wildfire resiliency, and other projects.¹²⁴

We ran multiple simulations to better understand the contribution of CCA revenue spending assumptions and SCC assumptions on employment and output impact estimates, including:

- Excluding SCC.
- 1.5% SCC.
- 1.5% SCC excluding state spending impacts.
- 1.5% SCC applying spending changes to the construction and related professional trades (electricians and electrification infrastructure development, landscape construction, remodeling) instead of government spending.
- 2% SCC.
- 2.5% SCC.
- Double 2% SCC.

We found the following modeled employment and output impacts of the amended rule under a linked carbon market, as compared to the regulatory baseline, over the ten-year analytic timeframe. We note that the REMI model did not identify significant impacts to either employment or output under a comparison of the amended rule without linkage, as costs we were able to quantify for this scenario are small compared to overall economic activity. We also note that due to the structure of the UC Davis market model and its results, REMI sectoral inputs were based in part on sectoral emissions that did not account for additional abatement (see discussion of supply model emissions reductions in section 3.2.1) at the sectoral level. Based on the magnitude of this difference across the linked and regulatory baseline scenarios in each year, this means sectoral cost and inter-sectoral transfer inputs for the REMI model were overestimated in some years and underestimated in others. In reviewing underlying annual REMI results, we identified that this means the ranges of impacts presented below are likely to be toward the higher end of the ranges presented.

Across our sensitivity scenarios using different spending and SCC assumptions, the model results estimated the following cumulative impacts over the analytic timeframe of 2027 – 2037:

- Cumulative employment gains of approximately 1,900 to 16,400 private sector jobs. Compared to the regulatory baseline, this is a gain of between 0.04% and 0.35% of statewide employment.

¹²⁴ [Climate Commitment Act Projects and Programs](https://climate.wa.gov/washington-climate-action-work/climate-commitment-act-projects-and-programs); <https://climate.wa.gov/washington-climate-action-work/climate-commitment-act-projects-and-programs>

- Cumulative output gains of approximately \$5.7 billion to \$10.3 billion. Compared to the regulatory baseline, this is a gain of between 0.40% and 0.63% of statewide output.¹²⁵

We note that employment impacts are highly sensitive to inclusion of how state revenues from the carbon market is spent. Estimated employment impacts are aggregations of changes to employment across all sectors in the state, in terms of full-time employee (FTE) equivalents within each year and should not be interpreted as numbers of individuals losing or gaining jobs.

¹²⁵ While the Regulatory Fairness Act does not require additional analysis of consumer prices, and while reporting specifically on price impacts could risk potential market distortions (see discussion in section 5.1), we note that our findings of cumulative output gains in this chapter and cumulative cost-savings found in chapter 3 imply lower levels of aggregate compliance costs that entities could consider passing onto consumers. If entities would choose to pass on some or all of their regulatory baseline costs to consumers buying from them directly – or to wholesalers and retailers that could then also choose to pass them on to consumers – then the amended rule’s reduced aggregate compliance costs under a linked market would reduce the program’s overall impacts on consumers over the course of the 10-year timeframe as well. We note that (as discussed in Chapter 3) estimated compliance cost impacts vary by year, and may increase or decrease in a given year.

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Appendix A: Administrative Procedure Act (RCW 34.05.328) Determinations

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

See Chapter 6.

- B. RCW 34.05.328(1)(b) –**

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

See chapters 1 and 2.

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

Ecology is adopting amendments to chapters 173-446 WAC and 173-441 WAC to make improvements to the implementation of the Cap-and-Invest Program, facilitate the linkage of Washington's carbon market with the California-Québec carbon market, and make other necessary updates including updates required to reflect various amendments to the CCA.

Washington has decided to link its carbon market to the California-Québec carbon market, creating a unified carbon market across the three jurisdictions. In a linked market, allowances issued by California and Québec could be used by Washington entities to cover their emissions, and vice versa. Linkage would also allow for joint allowance auctions, a common allowance price, and trading of allowances across jurisdictions. The rule amendments align certain aspects of the Cap-and-Invest Program rules with those jurisdictions, including compliance periods, allowance price containment provisions, registration requirements, corporate association requirements, and auction processes. The rule includes provisions that would become effective upon linkage with another jurisdiction. The rule also establishes processes for announcing a linkage effective date and adds provisions for Ecology to suspend or revoke linkage with another jurisdiction.

The amendments set the allowance budgets for future compliance periods (2027-2050) and adjust 2023 through 2026 budgets consistent with statutory direction, ensuring that emissions reductions align with Washington's 2030, 2040, and 2050 greenhouse gas emissions limits. This rule also facilitates the entry of additional sectors —waste-to-energy and railroads—to coverage under the Cap-and-Invest Program in future compliance periods, as required by statute.

Ecology is adopting modifications to address topics associated with imported electricity and centralized electricity markets as well as amendments relevant to allowance allocation to electric utilities and natural gas utilities.

The amended rule also implements sections of legislation, including Senate Bill 6058 (2024) to facilitate linkage; House Bill 1975 (2025), which modifies auction price containment mechanisms, allowance supply, and ceiling prices; House Bill 1912 (2025), which addresses

the exemption for fuels used for agricultural purposes; and House Bill 2416 (2026), which concerns the treatment of waste-to-energy facilities.

In addition, the amended rule includes amendments to enhance clarity, strengthen enforcement, and ensure that the market remains effective. These amendments are based on implementation experience from start of the Cap-and-Invest Program (2023) to date.

Overall, Ecology anticipates that these amendments will improve program implementation, facilitate potential future linkage, and ultimately strengthen market stability and confidence, as well as ensure the rule aligns with changes to statute.

Without this rulemaking, Ecology would be in violation of chapter 70A.65 RCW, Greenhouse Gas Emissions – Cap and Invest Program. Ecology would be unable to establish allowance budgets for the second compliance period, resulting in a program that cannot function as intended. In addition, Ecology would be unable to implement key provisions from legislation passed since earlier rulemakings such as SB 6058, HB 1975, HB 1912, and HB 2416.

If this rule is not adopted, it would negatively affect the implementation of the Cap-and-Invest Program. In this rule, Ecology is also aligning policies with California and Québec to support potential carbon market linkage. Without these updates, there would be barriers to linkage.

Without setting an allowance budget, Ecology would be unable to meet its statutory obligations to implement a cap on covered entities consistent with Washington’s greenhouse gas emissions limits. Consistent with CCA statute, Ecology is updating allowance allocation to natural gas utilities to be consistent with the updated budgets.

Rule changes relating to electric power entities updates help to ensure consistent reporting of emissions, resulting in fair and uniform treatment across entities. These updates are especially important given the complexity and evolving nature of electricity markets in the Pacific Northwest. Changes related to electric utility allocation strengthen decarbonization incentives and support market functionality. These changes also improve certainty for electric utilities on implementation of the Cap-and-Invest Program. This enables them to participate in the market with greater confidence and make more informed compliance decisions. Overall, these changes ultimately improve the overall experience of regulated entities, strengthen market confidence in the program, and ensure the program effectively supports achievement of the state’s emission limits.

This rulemaking also includes rule changes that are not required by the statute but are intended by Ecology staff to clarify rule language and improve the program based on implementation experience from start of the program (2021) to date. These updates enhance clarity, strengthen enforcement, improve program usability, and ensure that the market remains accessible and effective. Without these changes, the implementation and operations of the program would not be as efficient.

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.**

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 would not require covered entities 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.**

The compliance obligations in this rule apply to both private and public entities. WAC 173-446-230 and -240 establish methods for allocation of no-cost allowances to electric and natural gas utilities respectively. Both types of utilities include investor-owned (private) and consumer-owned (public) companies. Investor-owned utilities and consumer-owned utilities may receive a different number of no-cost allowances, but those differences do not impose any more stringent requirements on either type of utility. In addition, certain public entities have matching reporting and coverage requirements to privately-owned businesses covered by the Cap-and-Invest Program.

- 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. There is no federal regulation or federal 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 conducting a rulemaking of the Greenhouse Gas Reporting Program (chapter 173-441 WAC) and the Climate Commitment Act Program Rule (chapter 173-446 WAC) at the same time to coordinate changes to the maximum extent feasible. Ecology has identified the scope of this rulemaking to not include sections WAC 173-446-500 through WAC 173-446-595, which are part of a separate rulemaking regarding Ecology's US Forest Offset Protocol. Ecology has coordinated internally to ensure appropriate alignment in the content of these rulemakings. 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, to the extent feasible and where relevant.

Ecology is also working to make the rule consistent where necessary or with similar state laws and regulations in California and similar laws in the Province of Québec, Canada to facilitate potential program linkage, per RCW 70A.65.060(3).

Appendix B: SCC impacts, limitations, and illustrative WA costs of climate change

The EPA model of SCC values captures a number of types of climate damages, including (from the “DSCIM” damages model):¹²⁶

- Heat-and cold-related mortality.
- Expenditures for electricity and other direct fuel consumption.
- Labor disutility costs from labor supply responses to increased temperature.
- Production impacts for six crops: maize, rice, wheat, soybeans, sorghum, and cassava.
- Impacts of sea level rise as realized through inundation, migration, protection, dry and wetland loss, and mortality and physical capital loss.

From the “GIVE” damages model – also used by the RFF model of SCC values – it captures:¹²⁷

- Heat- and cold-related mortality risk.
- Expenditures for space heating and cooling buildings.
- Welfare changes from temperature driven changes in production of four crops: maize, rice, wheat, and soybeans.
- Impacts of sea level rise as realized through inundation, migration, protection, dry and wetland loss, and mortality and physical capital loss.

While the SCC includes values of economic activity and some health impacts, it is not all-inclusive. Estimates exclude the values of other impacts of climate change, which affect quality of life as well as economic activity. Values not included in SCC estimates include:

- Health:
 - Respiratory illness.
 - Lyme disease.
 - Death, injuries, and illnesses from omitted natural disaster and migration.
 - Water, food, sanitation, shelter.
- Agriculture:
 - Weeds, pests, pathogens.
 - Food price spikes.
 - Heat and precipitation extremes.
- Oceans:

¹²⁶ 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.

¹²⁷ Ibid.

- Acidification, temperature, and extreme weather impacts on fisheries, extinction, reefs.
 - Storm surge interaction with sea level rise.
- Forests:
 - Pest infestations.
 - Pathogens.
 - Species invasion and migration.
 - Flooding and soil erosion.
- Wildfire:
 - Burned acreage.
 - Public health.
 - Property losses.
 - Fire management costs.
- Ecosystems:
 - Biodiversity.
 - Habitat.
 - Species extinction.
 - Outdoor recreation and tourism.
 - Ecosystem services.
 - Rising value of ecosystems due to increased scarcity.
 - Accelerated decline due to mass migration.
- Productivity and economic growth:
 - Labor productivity and supply, public health.
 - Infrastructure impacts from severe events.
 - Diversion of resources to climate adaptation.
- Water:
 - Availability and competing needs.
 - Flooding.
- Transportation:
 - Changes to land and ocean transportation.
- Energy:
 - Energy supply disruptions.
- Catastrophic impacts and tipping points:
 - Rapid sea level rise.
 - Methane releases from permafrost.
 - Damages at very high temperatures.
 - Unknown catastrophic events.
- Inter- and intra-regional conflict:
 - National security.
 - Increased violent conflicts.

Wildfires

Climate change and land-use change are projected to make wildfires more frequent and intense, with a global increase of extreme fires of up to 14% by 2030, 30% by the end of 2050 and 50% by the end of the century, according to a recent report by the UN Environment Programme.¹²⁸ The report notes, “the true cost of wildfires – financial, social, and environmental – extends for days, weeks, and even years after the flames subside.” It also recommends developing an understanding of full wildfire costs, noting that, “One assessment estimated the annualized economic burden from wildfire for the United States to be between \$71.1 billion to \$347.8 billion.” That corresponds to \$216 to \$1,056 per every person in the country each year, on average. Based on the 8 million population of Washington,¹²⁹ this would be between \$1.7 billion and \$8.4 billion every year, on average, but this range is likely higher in the western states, since we experience a larger proportion of wildfires than the country in general.

Washington is particularly vulnerable to wildfire losses, not only from direct fire impacts to valuable natural spaces (as we saw in the over 600 thousand acres of Washington burned by just the large and highly significant wildfires in 2021) and human landscapes (as we saw in 2020’s devastation of 85 percent of Malden and Pine City), but also from secondary impacts to forestlands, wildlife and habitat, soil erosion, and stream and river quality and temperature. Wildfires are also a risk to businesses, both private and governmental, as illustrated by our state’s working forests.

In 2018, researchers found that commercial timber forests can burn 30 percent more severely than managed federal forestlands.¹³⁰ A study of the impact of the 2020 Labor Day wildfires in Oregon found that nearly a million acres of burned managed forest lands would have generated end products worth \$30 billion, but could generate only \$2.6 billion in salvage harvests.¹³¹ That reflects a 91.3% value loss of managed timber lands. The same study found that private forest owners would represent 64 percent of that salvage value.

In 2020, the Washington Department of Natural Resources spent an estimated \$20 million on aviation readiness and support for large fires.¹³² That same year they incurred direct costs of nearly \$15 million responding to wildfire incidents in 2020, and estimated additional damages, in current dollars, of:

- \$24 million to utilities.

¹²⁸ United Nations Environment Programme, 2022. Spreading like Wildfire – The Rising Threat of Extraordinary Landscape Fires. A UNEP Rapid Response Assessment. Nairobi

¹²⁹ US Census Bureau, 2025. [QuickFacts: Washington](https://www.census.gov/quickfacts/WA). <https://www.census.gov/quickfacts/WA>

¹³⁰ Zald, HSJ and C Dunn, 2018. Severe fire weather and intensive forest management increase fire severity in a multi-ownership landscape. *Ecological Applications* (2018). DOI: 10.1002/eap.1710.

¹³¹ Oregon Forest Resources Institute, 2021. Economic Impacts to Oregon’s Forest Sector – 2020 Labor Day Fires. September 2021.

¹³² 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.

- \$18 million to state agency infrastructure.
- \$12 million to other government infrastructure.

Wildfires also cause hazardous air quality in broad regions, impacting rural as well as densely populated areas.

Heat impacts

Lessons learned from the extreme northwest heat wave of 2021 include assessment that climate change may result in more heat-related deaths than previously estimated. The 2021 heat dome that brought record-breaking temperatures to the Pacific Northwest and British Columbia, resulted in 138 heat-related deaths in Washington, making it the deadliest weather event in state history.¹³³ Using the risk-based value of avoiding 100 percent risk of death (called “mortality risk valuation” or the “value of statistical life (VSL)”, though it is not the value of any individual’s life, and is statistically extrapolated from individuals’ willingness to accept fatality risks for a premium) as used by the US EPA,¹³⁴ each of these deaths resulted in losses to society of \$12.4 million in current dollars, and the heat dome resulted in at least \$1.7 billion in lost lives during just one event. Extreme heat events are forecast to happen more frequently and be more severe due to climate change.

In addition to fatal events, the US CDC assessed heat-related visits to emergency departments during the heat dome event. They found a nearly 70-fold increase in people seeking emergency care at the peak of the heat event.¹³⁵ Particularly in times of overburdened or overwhelmed medical resources (as we have seen during the COVID-19 pandemic), this size of increased demand for urgent medical care could result in catastrophic delays and increased illness or death. The average cost of a single healthcare visit related to a high heat event is \$14,858 in current dollars.¹³⁶

Ongoing drought and the 2021 heat dome also affected harvests:

- At least 30% impact to raspberries: The aggregate Whatcom County raspberry harvest fell 30% to 40%, with individual growers experiencing losses between 15% and 75%.¹³⁷

¹³³ 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). <https://doh.wa.gov/emergencies/be-prepared-besafe/severe-weather-and-natural-disasters/hot-weather-safety/heat-wave-2021>

¹³⁴ US Environmental Protection Agency, 2022. [Mortality Risk Valuation](https://www.epa.gov/environmentaleconomics/mortality-risk-valuation). <https://www.epa.gov/environmentaleconomics/mortality-risk-valuation>

¹³⁵ Schramm, PJ, A Vaidyanathan, L Radhakrishnan, A Gates, K Harnett, and P Breyse, 2021. [Heat-Related Emergency Department Visits During the Northwestern Heat Wave](https://www.cdc.gov/mmwr/volumes/70/wr/mm7029e1.htm) — United States, June 2021. US Centers for Disease Control and Prevention. Weekly 70(90), pp. 1020-2021. July 23, 2021. <https://www.cdc.gov/mmwr/volumes/70/wr/mm7029e1.htm>

¹³⁶ Knowlton, K, M Rotkin-Ellman, L Geballe, W Max, and GM Solomon, 2011. Six Climate Change-Related Events in the United States Accounted for About \$14 Billion in Lost Lives and Health Costs. *Health Affairs* 30(11), pp. 2167-2176. DOI: 10.1377/hlthaff.2011.0229

¹³⁷ Bratt, C, 2021. June ‘heat dome’ cut raspberry volume 30%. *Lynden Tribune*. December 10, 2021. And US Department of Agriculture, National Agricultural Statistics Service, 2018. 2017 Census of Agriculture – State Data, Washington.

- At least 10% impact to cherries: The overall cherry harvest, largely in the Yakima Valley, fell at least 10%.¹³⁸
- Impact to blueberries: The Washington Blueberry Commission estimated \$100 million in yield loss and quality impacts, in current dollars.¹³⁹

Wheat harvests:¹⁴⁰

- A 34-fold increase in the share of “poor” or “very poor” condition spring wheat.
- A 6-fold increase in the share of “poor” or “very poor” condition winter wheat.

Shellfish harvests:¹⁴¹

- 40% losses of seeded oysters.
- A 56% increase in vibriosis cases. Vibriosis is an illness in humans caused by shellfish contaminated with *Vibrio* bacteria, which are naturally occurring but present in high concentrations in warmer temperatures.
- 5% to 30% oyster mortality in the Salish Sea.
- Higher losses among shellfish species in smaller, sheltered waters, and those that live nearer the surface, such as cockles.

Flood damage

A recent study by the Center for Western Weather and Water Extremes, at the University of California San Diego, modeled the impacts of various climate change scenarios on atmospheric rivers (long, flowing regions of the atmosphere that carry water vapor) impacting western states.¹⁴² Using flood insurance data, the study estimated county-level increases in annual costs of flood damage, through 2090, due to the contribution of climate change to frequency, duration, and magnitude of atmospheric rivers.

- Flood damage due to climate-induced impacts to atmospheric rivers in western Washington (per county):

¹³⁸ Zhou, A, 2021. Western lawmakers seek more federal aid for farmers, ranchers hurt by extreme heat, drought. Seattle Times. July 27, 2021.

¹³⁹ Zhou, A, 2021. Western lawmakers seek more federal aid for farmers, ranchers hurt by extreme heat, drought. Seattle Times. July 27, 2021. And US Department of Agriculture, National Agricultural Statistics Service, 2018. 2017 Census of Agriculture – State Data, Washington.

¹⁴⁰ Ingwersen, J, 2021. ‘Wither away and die:’ US Pacific Northwest heat wave bakes wheat, fruit crops. Reuters. July 12, 2021.

¹⁴¹ Hagenbuch, B, 2021. In hot water: Heat dome recovery looks bleak for small-scale shellfish farms. National Fisherman. August 17, 2021; Royal, T, 2022. Heat dome found to be deadly for some shellfish species, but not for others. Northwest Treaty Tribes. January 10, 2022.

¹⁴² 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](https://doi.org/10.1038/s41598-022-15474-2). Nature Scientific Reports 12:13747. <https://doi.org/10.1038/s41598-022-15474-2>

- \$12 million to \$118 million per year, in current dollars, increases in most Puget Sound-adjacent counties.
- Over \$118 million per year increases in Snohomish, King, and Lewis counties.
- This is at least a doubling of annual flood damage costs in Western Washington, compared to costs in the 1990s.
- Flood damage due to climate-change-induced impacts to atmospheric rivers in eastern Washington (per county):
 - \$1.2 million per year increases in most eastern Washington counties, with some counties incurring up to \$12 million more per year, in current dollars.
 - This is up to a doubling of annual costs for most eastern Washington counties.
 - For Pend Oreille, Spokane, Whitman, Columbia, and Asotin counties, this is between two and four times the size of flood damage costs in the 1990s.