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

By

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For the

Climate Pollution Reduction Program
Washington State Department of Ecology
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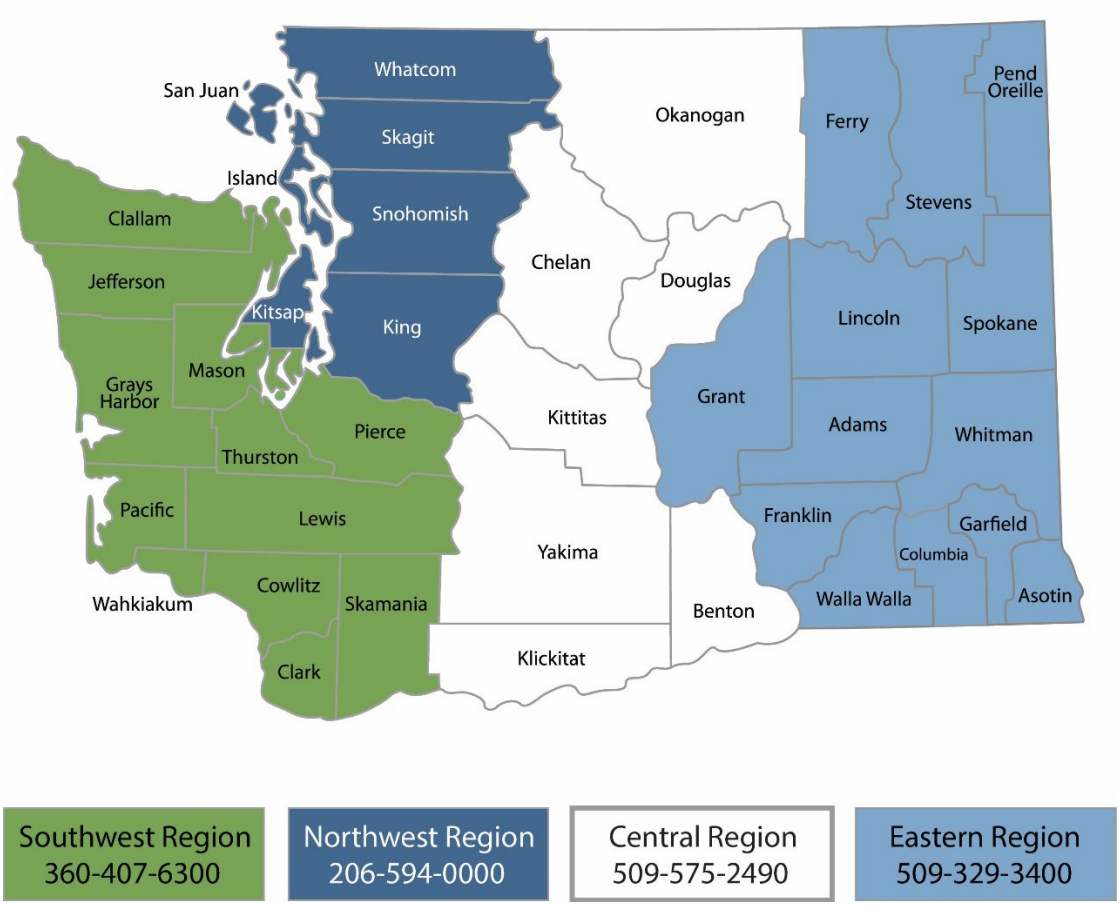

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Chapter 173-446 WAC, Climate Commitment Act Program Rule

Climate Pollution Reduction Program
Washington State Department of Ecology
Olympia, WA

February 2024 | Publication 24-14-032

Table of Contents

Abbreviations and Acronyms

APA	Administrative Procedure Act
APCR	Allowance Price Containment Reserve
CBA	Cost Benefit Analysis
CCA	Climate Commitment Act
CO_2e	Carbon dioxide equivalent
GHG	Greenhouse gas
LBA	Least Burdensome Alternative Analysis
MT	Metric tons
RCW	Revised Code of Washington
RFA	Regulatory Fairness Act
SCC	Social Cost of Carbon
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 Climate Commitment Act Program rule (Chapter 173-446 WAC; the "rule"). This includes the:

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

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

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

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

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

Background

The cap-and-invest program established under the Greenhouse Gas Emissions – Cap and Invest Program law (Chapter 70A.65 RCW; the "CCA law"), and implemented through the Climate Commitment Act Program rule (Chapter 173-446 WAC; the "CCA rule"), establishes a greenhouse gas (GHG) emissions trading market intended to help meet the state's emission limits specified in RCW 70A.45.020. The program relies on a well-functioning market to discover the appropriate price for allowances, given the supply and demand for allowances and the marginal costs of GHG emissions reduction. In this way, the market efficiently allocates allowances and incentivizes GHG emission reductions while minimizing overall costs to the economy and consumers.

In order to ensure the program works as designed, Ecology is required by the CCA law to adopt rules to maintain the integrity of the market and prevent market manipulation. The amendments to the CCA rule adopted in the current rulemaking clarify that allowances distributed from the Allowance Price Containment Reserve (APCR):

- Are subject to holding limits; and
- Can only be used for compliance.

These clarifying changes explicitly limit the number of allowances from the APCR an entity may hold at any given time and ensure that allowances from the APCR cannot be traded on the secondary market.

Without this rulemaking, one entity could arguably be able to hold an unlimited number of allowances from the APCR, and would be able to trade those allowances, giving that entity sufficient market power to unfairly manipulate the market. This would undermine the purpose of the APCR under the CCA law and CCA rule, which is to help contain compliance costs for covered and opt-in entities.

This rulemaking is necessary to ensure market integrity and achieve GHG emissions reductions in an economically efficient way. Without this rulemaking, allowances could be allocated at distorted prices, which could affect not only program participants but the general public as well. This rulemaking guards against such price distortions, consistent with the CCA law's requirement to design the cap-and-invest program to prevent market manipulation.

Rule amendments

The rule amendments explicitly clarify:

- That the existing holding limits specified in WAC 173-446-150(2)(a), which apply to allowances with a "vintage", also apply to the "vintage-less" allowances that are acquired through APCR auctions.[2]
    - This means that a single entity can hold only a limited number of allowances in its account at a time.
- That any allowances purchased in an APCR auction must be deposited directly into the purchasing entity's compliance account under WAC 173-446-370.
    - This change prevents these allowances from being sold or traded on the secondary market, ensuring that the allowances will be used to meet compliance obligations and not for speculative purposes.

[2] An allowance 'vintage' refers to the year in which it becomes eligible for compliance. Entities can cover their emissions with allowances from that same vintage year or any earlier year, but cannot use 'future vintage' allowances. So, 2024 emissions require vintage 2023 or 2024 allowances, and emissions from 2030 can be covered with allowances from any year between 2023 and 2030. APCR allowances have no vintage – meaning they can be used to cover emissions from any year and any compliance period.

Likely costs and benefits

We do not expect the rule amendments to result in significant costs or benefits, as they are intended to be clarifications of the baseline, ensuring smooth and efficient market function. This approach takes into account:

- The CCA law's requirements for consistency with other jurisdictions and prevention of market manipulation.
- The intended contents of compliance and holding accounts.
- Which parties may participate in APCR auctions under the baseline (covered and opt-in entities).
- Differentiation between attributes of allowances from the APCR and regular auction allowances.
- The intent of APCR auctions to allow covered and opt-in entities to purchase additional allowances needed for compliance at a pre-determined, fixed price.
- Attributes of other jurisdictions' allowances from the reserve auctions, which also have no vintage.[3]

By providing clarity, the rule amendments will help avoid market distortions. They do this by giving all market participants a common and clear interpretation of the options available to them and to other participants, and reducing potential strategic behavior that might result from incorrect assumptions or aversion to the risk associated with other entities acting based on a different understanding of the rule.

Alternative interpretation of baseline

We acknowledge that the specific language in the baseline CCA rule could be read as excluding allowances with no vintage from holding limits, and allowing allowances from the APCR to be placed and held in holding accounts. From this perspective, this rule amendment could be read as making a significant change from the baseline. From this alternative perspective, the rule amendments would result in the costs and benefits described below.

Based on prior analysis of the CCA program and likely allowance market price trajectories, we estimated the costs of the amendments could range from $2.81 to $54.86 per allowance (across all scenarios) and span a timing range between purchase and sale of between 3 and 7 years, for a limited subset of entities.[4] This range of costs per allowance is likely to be an

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[3] Consistency with other jurisdictions is beneficial in terms of facilitating potential linkage with other jurisdictions. The CCA law directs Ecology to consider opportunities to implement the CCA program in a manner that allows for program linkage, and to evaluate whether linkage would allow more cost-effective compliance options for covered entities. Consistency across jurisdictions also facilitates clear understanding of the program, particularly for entities that operate in multiple jurisdictions.

[4] Range of cost per allowance and time span are based on allowance price differentials between year of purchase and the next modeled price peak (sometimes called "buying low and selling high"), allowing for variable choice in year of purchase, and across 13 modeled market scenarios.

overestimate, however, since it does not reflect upward pressure on compliance costs (resulting, e.g., from immediate resale in secondary markets or signaling that excess allowances are being banked) or downward pressure on the future price (resulting from reduced demand when accrued allowances from the APCR would be used for compliance).

The rule amendments limit the potential for allowance market manipulation, thus preserving allowance price trajectories and emissions reductions that reflect actual marginal costs of GHG emissions abatement that meet statutory requirements over time, i.e.:

- Avoided costs of artificially high allowance prices in some years, resulting in higher compliance costs.
- Avoided costs of artificially low prices in other years, resulting in reduced incentive to reduce GHG emissions and meet statutory emissions reduction requirements.
- Avoiding potentially large market distortions, in which upward or downward pressures on allowance prices push settlement prices toward the price floor or price ceiling when this would not be the efficient trajectory based on emissions reduction requirements and/or marginal costs of emissions abatement. This would significantly drive up overall costs of the program while also potentially failing to meet the emissions reduction requirements in law.

To illustrate the benefits of avoided market distortions and potential impacts to emissions reductions, we considered the difference in the Social Cost of Carbon (SCC, developed by the federal Interagency Working Group on the Social Cost of Greenhouse Gases) across years. The range of years an entity might choose to hold excess allowances from the APCR – between the year the market price exceeds the APCR Tier I trigger price and the nearest price peak – was considered to be between 3 and 7 years. The benefit (avoided cost) of avoiding delays in emissions reductions for this time is $3.04 to $10.19 per MT CO_2e. Using updated SCC values adopted by the EPA in 2023 (while the federal Interagency Working Group continues work toward updating their SCC values to reflect current scientific and economic knowledge), this range is $10.55 to $38.68.

We note that these ranges are likely underestimates, as the SCC captures a subset of the overall costs associated with climate change. Please see Ecology's analysis of the CCA program for a full listing of additional qualitative benefits of avoided climate change, as well as illustrative costs associated with extreme events such as heat domes.[5] We note also that SCC estimates are based on sets of economic and climate change models, which develop over time as more is understood about the nature and impacts of GHG emissions and climate change.

Least-burdensome alternative

Due to the limited scope of this rulemaking, prompted by necessity to make specific provisions more clear in order to maintain market stability and minimize potential for market

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

manipulation, the only alternative we considered during this rulemaking was that of not making amendments at this time.

This alternative would not have met the statutory objective of preventing market manipulation. Potential variable interpretations of the baseline rule language could have resulted in entities attempting to accumulate large quantities of allowances, resulting in distortions to the market price in the short and long runs, and affecting program compliance costs and incentives to reduce GHG emissions. Prevention of allowance market manipulation further facilitates the success of the cap-and-invest program in efficiently achieving the following additional statutory objective:

- 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, in order to ensure the reduction of greenhouse gas emissions consistent with the limits established in RCW 70A.45.020.

This alternative would also have been inconsistent with the statutory objective of considering opportunities to implement the program in a manner that allows linking the state's program with those of other jurisdictions.

An alternative to rulemaking would have been addressing these clarifications in guidance. This approach would not have offered complete certainty to market participants and would therefore have been less protective against market manipulation and price distortions.

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

Regulatory Fairness Act

The rule amendments are not likely to result in costs or benefits as compared to the baseline, considering the following in conjunction with the baseline rule:

- The CCA law's requirements for consistency with other jurisdictions and for prevention of market manipulation.
- The intended contents of compliance and holding accounts.
- Which parties may participate in APCR auctions under the baseline (covered and opt-in entities).
- Differentiation between attributes of allowances from the APCR and regular auction allowances.
- The intent of APCR auctions to allow covered and opt-in entities to purchase additional allowances needed for compliance at a pre-determined, fixed price.
- Attributes of other jurisdictions' allowances from reserves, which have no vintage.

In the absence of the above considerations, we also do not expect the amendments to result in costs to small businesses. During the initial rulemaking for the baseline rule, we chose to

complete the requirements under the RFA out of an abundance of caution, though it was not likely that small businesses would incur compliance costs under the rule.[6] In the current rulemaking, from the alternative perspective that reads the adopted changes to rule language as significant changes from the baseline, a business that could potentially incur costs would likely be large and have significant resources and assets to be able to make additional strategic purchases of allowances from the APCR.

As the rule amendments are not likely to impose compliance costs on small businesses, this rulemaking is exempt from the requirements of the RFA under RCW 18.85.025(4), which states, "This chapter does not apply to the adoption of a rule if an agency is able to demonstrate that the proposed rule does not affect small businesses."

[6] WA Department of Ecology, 2022. Final Regulatory Analyses for Chapter 173-446 WAC, Climate Commitment Act Program. Ecology publication no. 22-02-047. September 2022. See Chapter 7 for discussion of business sizes.

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 (Chapter 173-446 WAC; the "rule"). This includes the:

- Final Cost-Benefit Analysis (CBA).
- Least-Burdensome Alternative Analysis (LBA).
- Administrative Procedure Act Determinations.
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The Washington Administrative Procedure Act (APA; RCW 34.05.328(1)(d)) requires Ecology to evaluate significant legislative rules to "determine that the probable benefits of the rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the law being implemented." Chapters 1 – 5 of this document describe that determination.

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

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

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

1.1.1 Background

The cap-and-invest program established under the Greenhouse Gas Emissions – Cap and Invest Program law (Chapter 70A.65 RCW; the "CCA law") is implemented through the Climate Commitment Act Program rule (Chapter 173-446 WAC; the "CCA rule"). The program caps and reduces greenhouse gas (GHG) emissions from Washington's largest emitting sources and industries, allowing businesses to find the most efficient path to lower carbon emissions. The program works by setting an emissions limit, or cap, and then lowering that cap over time to ensure Washington meets the GHG reduction commitments also set in state law (RCW 70A.45.020). The program uses a GHG emissions allowance trading market, and so relies on a well-functioning market to discover the appropriate price for allowances, given the supply and demand for allowances and the marginal costs of GHG emissions reduction. In this way, the

market efficiently allocates allowances and incentivizes GHG emission reductions while minimizing overall costs to the economy and consumers.

In order to ensure the program works as designed, Ecology is required by the CCA law to adopt rules to maintain the integrity of the market and prevent market manipulation. The adopted amendments to the CCA rule clarify that allowances distributed from the Allowance Price Containment Reserve (APCR):

- Are subject to holding limits; and
- Can only be used for compliance.

These clarifying changes explicitly limit the number of allowances from the APCR an entity may hold at any given time and ensure that allowances from the APCR cannot be traded on the secondary market.

Without this rulemaking, one entity could arguably be able to hold an unlimited number of allowances from the APCR, and would be able to trade those allowances, potentially giving that entity sufficient market power to unfairly manipulate the market. This would undermine the purpose of the APCR under the CCA law and CCA rule, which is to help contain compliance costs for covered and opt-in entities.

This rulemaking is necessary to ensure market integrity and achieve GHG emissions reductions in an economically efficient way. Without this rulemaking, allowances could be allocated at distorted prices which could affect not only program participants but the general public as well. This rulemaking guards against such price distortions, which is consistent with the CCA law's requirement to design the cap-and-invest program to prevent market manipulation.

Emergency rule

On June 8, 2023, Ecology adopted an emergency rule to make the above amendments to the CCA rule, and adopted subsequent emergency rules during this permanent rulemaking, on September 7, 2023 and January 4, 2024. The current emergency rule expires on May 3, 2024, or when the permanent rule is adopted (whichever is earlier). Emergency rules must be necessary "for the general welfare" under the APA. The amendments under the emergency rule were necessary to have in place before an APCR auction was held, to prevent market manipulation. The requirement to hold an APCR auction is automatically triggered under RCW 70A.65.150(3)(a) when the settlement prices in the preceding auction exceed the adopted reserve auction floor price. The May 2023 quarterly allowance market auction settlement price exceeded the Tier I APCR trigger price, resulting in a need to have amendments protecting market integrity in place before the August 9, 2023 APCR auction.

The APA limits the time emergency rules may be effective to 120 days after filing (RCW 34.05.350(2)). It also requires Ecology to have filed a notice of intent to adopt the rule as permanent and to actively undertake rulemaking for a permanent rule, in order to adopt subsequent identical or substantially similar emergency rules. These amendments are a part of the required permanent rulemaking.

1.2 Summary of the rule amendments

The rule amendments explicitly clarify:

- That the existing holding limits specified in WAC 173-446-150(2)(a), which apply to allowances with a "vintage", also apply to the "vintage-less" allowances that are acquired through APCR auctions.[7]
    - This means that a single entity can hold only a limited number of allowances in its account at a time.
- That any allowances purchased in an APCR auction must be deposited directly into the purchasing entity's compliance account under WAC 173-446-370.
    - This change prevents these allowances from being sold or traded on the secondary market, ensuring that the allowances will be used to meet compliance obligations and not for speculative purposes.

1.3 Reasons for the rule amendments

The cap-and-invest market

In 2021, the Washington Legislature adopted a historic package of legislative and budget proposals to combat climate change and prepare the state for the future low-carbon economy. The Legislature provided Ecology with the authority and funding to develop rules and requirements to implement three major climate bills:

- Climate Commitment Act, codified in Chapter 70A.65 RCW, Greenhouse Gas Emissions – Cap and Invest Program.
- Clean Fuel Standard, codified in Chapter 70A.535 RCW, Transportation Fuel – Clean Fuels Program.
- An expanded hydrofluorocarbons management program: Hydrofluorocarbons – Emissions Reduction (Engrossed Second Substitute House Bill 1050), Chapter 315, Laws of 2021.

Together with existing policies advancing clean energy and zero-emission vehicles, these new laws put Washington on a path toward achieving the greenhouse gas limits set in state law:

- 45% below 1990 levels by 2030.
- 70% below 1990 levels by 2040.

[7] An allowance 'vintage' refers to the year it in which it becomes eligible for compliance. Entities can cover their emissions with allowances from that same vintage year or any earlier year, but cannot use 'future vintage' allowances. So, 2024 emissions require vintage 2023 or 2024 allowances, and emissions from 2030 can be covered with allowances from any year between 2023 and 2030. APCR allowances have no vintage – meaning they can be used to cover emissions from any year and any compliance period.

- 95% below 1990 levels and net-zero carbon emissions by 2050.

The Climate Commitment Act's cap-and-invest program sets a limit, or cap, on overall carbon emissions from covered sectors in the state and requires entities that are covered by the program to obtain compliance instruments (such as allowances and offset credits) equal to their covered greenhouse gas emissions. Allowances can be obtained through quarterly auctions hosted by Ecology, or bought and sold on a secondary market.

The emissions cap will be reduced over time to ensure covered entities in Washington achieve their proportionate share of the 2030, 2040, and 2050 emissions-reduction commitments, which means Ecology will issue fewer emissions allowances each year.

Roughly 75% of statewide emissions are covered under this program. Generally, entities are covered under the program if they generate covered emissions that exceed 25,000 metric tons of CO_2 equivalent per year. Covered entity types include, but are not limited to, manufacturers, fuel suppliers, first jurisdictional deliverers of electricity, waste-to-energy facilities (starting in 2027), and railroads (starting in 2031).

In general, entities with emissions below the 25,000 metric ton threshold are not covered by the cap-and-invest program. In addition, some types of fuel emissions are exempt under the law; entities do not need to purchase allowances to cover those emissions, which reduces their compliance costs. Exempted emissions include those from fuels used for agricultural purposes, aviation fuels, and marine fuels combusted outside of Washington. Emissions from fuels exported out of Washington are also excluded.

Cap-and-invest is a market-based program — as fewer allowances are issued, they become more valuable due to the powers of supply and demand. Entities that do not sufficiently reduce their emissions will be faced with increasing compliance costs, so investing in cleaner operations is good for the planet and their bottom line. The Legislature determined that three types of entities should be issued allowances at no cost: "emissions-intensive, trade exposed" industries (EITEs), natural gas utilities, and electric utilities. The number of no-cost allowances a covered EITE receives depends on the type of entity, its annual production, and the entity's total baseline emissions or carbon intensity, so the exact amount will vary. Likewise, the number of no-cost allowances a natural gas utility and an electric utility receive vary over time.

The APCR

The APCR is a separate pool of allowances taken from the annual allowance budgets that can be released into the market when increased demand at a quarterly auction pushes prices above a certain level. This mechanism is designed to ensure covered and opt-in entities can obtain additional allowances at a fixed, pre-determined price.

APCR Auctions are only open to covered and opt-in entities.[8] APCR auctions are not open to investors or other entities that do not have a compliance obligation ("general market participants").

[8] An opt-in entity voluntarily opts into the CCA program.

Reasons for the rule amendments

The rule amendments prevent potential market manipulation through APCR allowance accumulation and price distortion by:

- Explicitly clarifying that holding limits apply to allowances purchased in an APCR auction: This will prevent accumulation of allowances from the APCR (e.g., for use in future compliance periods) that could otherwise result in market distortions while more allowances are pulled from the program and banked over time.
- Explicitly clarifying that allowances purchased in an APCR auction cannot be traded: This will prevent strategic purchases of excess allowances in APCR auctions (i.e., one entity purchasing more allowances than needed for compliance) for the purpose of resale in the secondary market (trading allowances outside of cap-and-invest market auctions) which could otherwise result in distorted allowance prices over time (e.g., higher prices in the short term and lower prices in the long term).

Without the amendments, market manipulation would affect not only allowance prices in a given auction, but also:

- Allowance prices in future years.
- Compliance costs faced by different parties over time.
- Real emissions reductions achieved under the program.

For example, an entity that expects future allowance prices to be higher could accumulate excess allowances from the APCR in the short run, with the intent of selling them at a profit in subsequent years. This would drive up short-term compliance costs for entities purchasing allowances and could disincentivize or delay additional short-run emissions reductions for entities facing high marginal GHG emissions abatement costs.[9] It could also increase the secondary market allowance supply in later years, putting downward pressure on market prices and disincentivizing emissions reductions over time, compared to the most efficient compliance trajectory (absent market manipulation, and reflecting the marginal GHG emissions abatement costs faced by covered and opt-in entities).

1.4 Document organization

The chapters of this document are organized as follows:

[9] We note entities facing marginal abatement costs below the distorted high market price would be incentivized to reduce emissions rather than purchase allowances. But because this allowance price and distribution would be inherently inefficient (distorting the relationship between market prices, marginal abatement costs, and actual allowance supply), the aggregate compliance costs of the program would be higher than needed to attain the same emissions reductions over time in a well-functioning market.

- **Chapter 2 - Baseline and the rule amendments:** Description and comparison of the baseline, including the rule requirements and the results if the amended rule is not adopted.
- **Chapter 3 - Likely costs of the rule amendments:** Analysis of the types and sizes of costs we expect impacted entities to incur as a result of the rule amendments.
- **Chapter 4 - Likely benefits of the rule amendments:** Analysis of the types and sizes of benefits we expect to result from the rule amendments.
- **Chapter 5 - Cost-benefit comparison and conclusions:** Discussion of the complete implications of the CBA.
- **Chapter 6 - Least-Burdensome Alternative Analysis:** Analysis of considered alternatives to the contents of the rule amendments.
- **Chapter 7 - Regulatory Fairness Act Compliance:** When applicable. Comparison of compliance costs for small and large businesses; mitigation; impact on jobs.
- **Appendix A - APA Determinations:** RCW 34.05.328 determinations not discussed in chapters 5 and 6.

Chapter 2: Baseline and Rule Amendments

2.1 Introduction

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

2.2 Baseline

The baseline for our analyses generally consists of existing laws and rules. This is what allows us to make a consistent comparison between the current state and changes if the amendments are adopted.

For this rulemaking, the baseline includes:

- Greenhouse Gas Emissions – Cap and Invest Program law, Chapter 70A.65 RCW.
- Limiting Greenhouse Gas Emissions law, Chapter 70A.45 RCW.
- Climate Commitment Act Program rule, Chapter 173-446 WAC.

2.3 Rule amendments

- That the existing holding limits specified in WAC 173-446-150(2)(a), which apply to allowances with a "vintage", also apply to the "vintage-less" allowances that are acquired through APCR auctions.[10]
    - This means that a single entity can hold only a limited number of allowances in its account at a time.
- That any allowances purchased in an APCR auction must be deposited directly into the purchasing entity's compliance account under WAC 173-446-370.
    - This change prevents these allowances from being sold or traded on the secondary market, ensuring that the allowances will be used to meet compliance obligations and not for speculative purposes.

[10] An allowance 'vintage' refers to the year in which it becomes eligible for compliance. Entities can cover their emissions with allowances from that same vintage year or any earlier year, but cannot use 'future vintage' allowances. So, 2024 emissions require vintage 2023 or 2024 allowances, and emissions from 2030 can be covered with allowances from any year between 2023 and 2030. APCR allowances have no vintage – meaning they can be used to cover emissions from any year and any compliance period.

2.3.1 Holding limits apply to allowances from the APCR

Baseline

Chapter 70A.65 RCW requirements include, but are not limited to:

- A requirement to ensure that GHG reductions are achieved by covered entities consistent with the limits in RCW 70A.45.020.
- Purpose of APCR: "The reserve must be designed as a mechanism to assist in containing compliance costs for covered and opt-in entities in the event of unanticipated high costs for other compliance instruments."[11]
- Definition and application of compliance accounts: "A compliance account is where the compliance instruments are transferred to [Ecology] for retirement. Compliance instruments in compliance accounts may not be sold, traded, or otherwise provided to another account or person."[12]
- Definition and application of holding accounts and holding limits: "A holding account ... is used when a registered entity is interested in trading allowances. Allowances in holding accounts may be bought, sold, transferred to another registered entity, or traded. The number of allowances a registered entity may have in its holding account is constrained by the holding limit as determined by [Ecology] by rule. Information about the contents of each holding account, including but not limited to the number of allowances in the account must be displayed on a regularly maintained and searchable public website established and updated by [Ecology]."[13]
- Direction for Ecology to seek to enter into linkage agreements (subject to conducting an environmental justice assessment, determining if criteria have been met, and conducting a public comment process) with other jurisdictions in order to:[14]
    - Allow for the mutual use and recognition of compliance instruments issued by Washington and other linked jurisdictions.
    - Broaden the greenhouse gas emission reduction opportunities to reduce the costs of compliance on covered entities and consumers.
    - Enable allowance auctions to be held jointly and provide for the use of a unified tracking system for compliance instruments.
    - Enhance market security.
    - Reduce program administration costs.

[11] RCW 70A.65.150(2).
[12] RCW 70A.65.090(7)(a).
[13] RCW 70A.65.090(7)(b).
[14] RCW 70A.65.210(1).

    - Provide consistent requirements for covered entities whose operations span jurisdictional boundaries.

- Direction for Ecology to adopt rules that are consistent with those in other jurisdictions:
    - "[Ecology] shall design allowance auctions so as 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."[15]
    - "[Ecology] shall consider opportunities to implement the program in a manner that allows linking the state's program with those of other jurisdictions. [Ecology] must evaluate whether such linkage will provide for a more cost-effective means for covered entities to meet their compliance obligations in Washington while recognizing the special characteristics of the state's economy, communities, and industries."[16]
- Direction for Ecology to adopt rules that prevent market manipulation and price distortions, including designing the program with provisions to minimize the potential for market manipulation, including under linkage. [17,18]

Chapter 70A.45 RCW establishes required statewide emissions reductions:[19]

- Reduction to 1990 levels by 2020.
- 45 percent below 1990 levels by 2030.
- 70 percent below 1990 levels by 2040.
- 95 percent below 1990 levels by 2050.

WAC 173-446-150 in the baseline CCA rule specifies holding limit requirements. It includes, but is not limited to, the formulas for determining the maximum total number of allowances of the current or prior vintage that a registered entity may hold in its holding and compliance accounts, and across both accounts.

Adopted

The rule amendments would clarify that the calculations and limits set forth in WAC 173-446-150 apply not only to current vintage allowances and prior vintage allowances, but also to allowances that have no vintage. Ecology considered making this clarification in guidance, but determined that guidance would not provide allowance market participants sufficient certainty and clarity on which to base their expectations about their own and other market participants'

[15] RCW 70A.65.100(11).
[16] RCW 70A.65.060(3).
[17] RCW 70A.65.100(8).
[18] RCW 70A.65.210(2)(c).
[19] RCW 70A.45.020(1)(a).

compliance choices. This uncertainty would affect their expectations for potential allowance settlement prices and the compliance costs they would ultimately result in.

Expected impact

This rule amendment codifies in rule Ecology's assumptions and intent of the original (baseline) rule. As written, the baseline rule does not explicitly address the applicability of holding limits to allowances that have no vintage, resulting in a lack of clarity and consistency in expectations for how the rule is implemented and how the allowance market is run. Adding to potentially variable interpretations of holding limit requirements is the inconsistency with how allowances with no vintage are treated in cap-and-invest programs in other jurisdictions (e.g., California and Québec [20]), and the CCA law's requirement that the program be consistent with other jurisdictions to the maximum extent practicable.

We do not expect this amendment to result in significant costs or benefits, as it is intended to clarify the baseline, ensuring smooth and efficient market function.

We acknowledge that the specific language in the baseline CCA rule could be read as excluding allowances with no vintage from holding limits. From this perspective, this rule amendment could be read as making a significant change from the baseline. From this alternative perspective, it would work in tandem with the other adopted amendment (requiring allowances from the APCR to be placed directly in the compliance account), to prevent price distortions and market manipulation and therefore result in:

- Costs to covered and opt-in entities that would have chosen to purchase and accrue excess allowances from the APCR for either future compliance or resale.
- Benefits for remaining covered entities, opt-in entities, and the public, in the form of allowance price trajectories and emissions reductions that reflect actual marginal costs of GHG emissions abatement that meet statutory requirements over time, i.e.:
    - Avoided costs of artificially high allowance prices in some years, resulting in higher compliance costs.
    - Avoided costs of artificially low prices in other years, resulting in reduced incentive to reduce GHG emissions and meet statutory emissions reduction requirements.
    - Avoiding potentially large market distortions, in which upward or downward pressures on allowance prices push settlement prices toward the price floor or price ceiling when this would not be the efficient trajectory based on emissions reduction requirements and/or marginal costs of emissions abatement. This would significantly drive up overall costs of the program while also potentially failing to meet the emissions reduction requirements in the law.

[20] We note that while the Québec cap-and-invest program uses different terminology, Québec subjects reserve allowances to its holding limits (Q-2 r.46.1 section 60) and places purchased reserve allowances directly into the purchaser's compliance account (Q-2 r.46.1 section 62).

We note also that simply by clarifying the rule language – regardless of the interpretation of the baseline rule – the rule amendments also facilitate the above benefit of avoiding market distortions. The rule amendments are meant to avoid market distortions by giving all market participants a common and clear interpretation of the options available to them and to other participants and reducing potential strategic behavior that might result from incorrect assumptions or aversion to the risk.

2.3.2 Allowances from the APCR placed directly in compliance account

Baseline

Chapter 70A.65 RCW requirements include, but are not limited to:

- Requirement to ensure GHG reductions are achieved by covered entities consistent with the limits in RCW 70A.45.020.
- Purpose of APCR: "The reserve must be designed as a mechanism to assist in containing compliance costs for covered and opt-in entities in the event of unanticipated high costs for other compliance instruments."[21]
- Definition and application of compliance accounts: "A compliance account is where the compliance instruments are transferred to [Ecology] for retirement. Compliance instruments in compliance accounts may not be sold, traded, or otherwise provided to another account or person."[22]
- Definition and application of holding accounts and holding limits: "A holding account … is used when a registered entity is interested in trading allowances. Allowances in holding accounts may be bought, sold, transferred to another registered entity, or traded. The amount of allowances a registered entity may have in its holding account is constrained by the holding limit as determined by [Ecology] by rule. Information about the contents of each holding account, including but not limited to the number of allowances in the account must be displayed on a regularly maintained and searchable public website established and updated by [Ecology]."[23]
- Direction for Ecology to seek to enter into linkage agreements (subject to conducting an environmental justice assessment, determining if statutory criteria have been met, and conducting a public comment process) with other jurisdictions in order to:[24]
    - Allow for the mutual use and recognition of compliance instruments issued by Washington and other linked jurisdictions.

[21] RCW 70A.65.150(2).
[22] RCW 70A.65.090(7)(a).
[23] RCW 70A.65.090(7)(b).
[24] RCW 70A.65.210(1).

    - Broaden the greenhouse gas emission reduction opportunities to reduce the costs of compliance on covered entities and consumers.
    - Enable allowance auctions to be held jointly and provide for the use of a unified tracking system for compliance instruments.
    - Enhance market security.
    - Reduce program administration costs.
    - Provide consistent requirements for covered entities whose operations span jurisdictional boundaries.
- Direction for Ecology to adopt rules that are consistent with those in other jurisdictions:
    - "[Ecology] shall design allowance auctions so as 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."[25]
    - "[Ecology] shall consider opportunities to implement the program in a manner that allows linking the state's program with those of other jurisdictions. [Ecology] must evaluate whether such linkage will provide for a more cost-effective means for covered entities to meet their compliance obligations in Washington while recognizing the special characteristics of the state's economy, communities, and industries."[26]
- Directions for Ecology to adopt rules that prevent market manipulation and price distortions, including designing the program with provisions to minimize the potential for market manipulation, including under linkage. [27,28]

Chapter 70A.45 RCW establishes required statewide emissions reductions:[29]

- Reduction to 1990 levels by 2020.
- 45 percent below 1990 levels by 2030.
- 70 percent below 1990 levels by 2040.
- 95 percent below 1990 levels by 2050.

WAC 173-446-370 in the CCA rule specifies requirements related to the APCR. It includes, but is not limited to, the number and origin of allowances in the APCR, APCR auction procedures, and attributes of allowances in the APCR and their use.

[25] RCW 70A.65.100(11).
[26] RCW 70A.65.060(3).
[27] RCW 70A.65.100(8).
[28] RCW 70A.65.210(2)(c).
[29] RCW 70A.45.020(1)(a).

Adopted

The rule amendments clarify in WAC 173-446-370 that, "Allowances purchased from the [APCR] are placed directly into the purchaser's compliance account."

Expected impact

This rule amendment is intended to clarify the intent of the baseline rule. As written, the baseline rule does not explicitly address where allowances from the APCR must be placed, preventing the rule from accurately implementing the allowance market and compliance. Given which parties may participate in APCR auctions under the baseline (covered and opt-in entities), and the differences between attributes of allowances from the APCR and regular auction allowances, Ecology assumed that the immediate use of allowances from the APCR for compliance would be implicit in the baseline rule.

However, we acknowledge this is not the only possible interpretation of the baseline rule as written. In addition to potentially variable interpretations of APCR allowance treatment, the baseline rule would also potentially be inconsistent with how allowances purchased from the APCR are treated in cap-and-invest programs in other jurisdictions (e.g., California and Québec); the CCA law requires that the program be consistent with other jurisdictions to the maximum extent practicable.

We do not expect this amendment to result in significant costs or benefits, as it is intended to be a clarification of the baseline, ensuring smooth and efficient market function.

We acknowledge that the specific language in the baseline CCA rule could be read as allowing allowances from the APCR to be placed and held in holding accounts. From this alternative perspective, this rule amendment could be read as making a significant change from the baseline.

Considering this rule amendment from this alternative perspective, it would work in tandem with the other adopted amendment (subjecting allowances with no vintage to holding limits), to prevent price distortions and market manipulation, and therefore result in:

- Costs to covered and opt-in entities that would have chosen to purchase and accrue excess allowances from the APCR for either future compliance or resale.
- Benefits for remaining covered entities, opt-in entities, and the public, in the form of allowance price trajectories and emissions reductions that reflect actual marginal costs of GHG emissions abatement that meet statutory requirements over time, i.e.:
    - Avoided costs of artificially high allowance prices in some years, resulting in higher compliance costs.
    - Avoided costs of artificially low prices in other years, resulting in reduced incentive to reduce GHG emissions and meet statutory emissions reduction goals.
    - Avoiding potentially large market distortions, in which upward or downward pressures on allowance prices push settlement prices to the price floor or price ceiling when this would not be the efficient trajectory based on emissions

reduction requirements and/or marginal costs of emissions abatement. This would significantly drive up overall costs of the program while also potentially failing to meet the emissions reduction requirements in the law.

We note also that simply by clarifying the rule language – regardless of the interpretation of the baseline rule – the rule amendments also facilitate the above benefit of avoiding market distortions. They do this by giving all market participants a common and clear interpretation of the options available to them and to other participants, and reducing potential strategic behavior that might result from incorrect assumptions or aversion to the risk associated with other entities acting based on different understanding of the rule.

Chapter 3: Likely Costs of the Rule Amendments

3.1 Introduction

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

3.2 Cost analysis

- That the existing holding limits specified in WAC 173-446-150(2)(a), which apply to allowances with a "vintage", also apply to the "vintage-less" allowances that are acquired through APCR auctions.[30]
    - This means that a single entity can hold only a limited number of allowances in its account at a time.
- That any allowances purchased in an APCR auction must be deposited directly into the purchasing entity's compliance account under WAC 173-446-370.
    - This change prevents these allowances from being sold or traded on the secondary market, ensuring that the allowances will be used to meet compliance obligations and not for speculative purposes.

As the rule amendments work in tandem to prevent price distortions and market manipulation, we discuss potential costs associated with the combined amendments, below.

We do not expect the rule amendments to result in significant costs or benefits, as they are intended to be clarifications of the baseline, ensuring smooth and efficient market function. This approach takes into account:

- The CCA law's requirements for consistency with other jurisdictions and for prevention of market manipulation.
- The intended contents of compliance and holding accounts.
- Which parties may participate in APCR auctions under the baseline (covered and opt-in entities.
- Differentiation between attributes of allowances from the APCR and regular auction allowances.

[30] An allowance 'vintage' refers to the year in which it becomes eligible for compliance. Entities can cover their emissions with allowances from that same vintage year or any earlier year, but cannot use 'future vintage' allowances. So, 2024 emissions require vintage 2023 or 2024 allowances, and emissions from 2030 can be covered with allowances from any year between 2023 and 2030. APCR allowances have no vintage – meaning they can be used to cover emissions from any year and any compliance period.

- The intent of APCR auctions to allow covered and opt-in entities to purchase additional allowances needed for compliance at a pre-determined, fixed price.
- Attributes of other jurisdictions' allowances from the reserve auctions, with no vintage.

We acknowledge, however, that if the above considerations were set aside, the specific language in the baseline CCA rule could be read differently than Ecology intended: It could be read as excluding allowances with no vintage from holding limits, and allowing allowances from the APCR to be placed and held in holding accounts. From this perspective, the rule amendments could be read as making a significant change from the baseline. Considering the rule amendments from this alternative perspective, they would result in:

- Costs to covered and opt-in entities that would have chosen to purchase and accrue excess allowances from the APCR for either future compliance or resale.

Prior analysis of the costs of the CCA program

In adopting the baseline CCA rule, Ecology analyzed the costs of the CCA program.[31] We did so based on independently modeled allowance market price trajectories reflecting ranges of assumptions about:[32]

- Degree of market foresight.
- Sensitivity to allowance prices among financial participants.
- Minimum acceptable rates of return ("hurdle rates") for financial participants.
- Rate of decarbonization in the power sector.
- Rate of decarbonization in the transportation sector.
- Impacts of complementary policies.
- Expectations for linkage timing and linked market prices.

All of these model variations assumed that allowances from the APCR had no vintage, and were only released in APCR auctions when the forecast settlement price exceeded the APCR trigger price. The modeling also assumed that allowances from the APCR would be subject to holding limits, would not be accumulated in holding accounts for future use or resale, and that they would be used for compliance immediately after they were purchased, consistent with Ecology's intended program design.[33]

[31] WA Department of Ecology, 2022. Final Regulatory Analyses for Chapter 173-446 WAC, Climate Commitment Act Program. Ecology publication no. 22-02-047. September 2022.
[32] Vivid Economics, 2022. Washington State Climate Commitment Act. Summary of market modeling and analysis of the proposed Cap and Invest Program. Economic and market modeling and analysis conducted by Vivid Economics for the Washington Department of Ecology. September 2022. Ecology publication no. 23-02-010.
[33] This design is consistent with other jurisdictions' approaches.

Consequently, we believe this existing prior economic analysis, which reflects a comprehensive assessment of the potential ranges of costs associated with the CCA program, includes the impacts of the adopted amendments.

Alternative interpretation of the baseline CCA rule

As discussed above, we acknowledge the possibility of the baseline rule being interpreted as not requiring allowances from the APCR to be placed directly in entities' compliance accounts, and allowing them to be accumulated for future use or resale. From this alternative perspective, the rule amendments would result in costs, in the form of losses to any entity that intended to acquire excess allowances from the APCR with the intent of re-selling them or banking them for future compliance. The choice to accumulate excess allowances from the APCR would result in earlier demand for more allowances from the APCR. We note that this behavior:

- Would not be possible for all entities to engage in at the same time, due to limited quantities of allowances from the APCR.
- Would be more attractive to select entities with:
    - Large compliance obligations over time.
    - Less likelihood of being able to reduce marginal costs of GHG emissions abatement over time.
    - Expectation of even higher future market prices.
    - Sufficient resources to accumulate excess allowances from the APCR, even when resulting in short-run losses.

Any such decisions would be based on internal business considerations and expectations of future GHG emissions abatement costs. As a result, we could not forecast the frequency or degree to which this strategic behavior would be undertaken.

We did, however, consider the scope of these potential costs to an entity or group of entities under the rule amendments. Under the amendments, covered and opt-in entities would lose the ability accumulate excess allowances from the APCR to bank for future compliance or to re-sell to other entities. This would mean that under the amendments they would incur costs in the form of lost benefits due to the difference between the market prices they would pay for allowances at different points in time. These costs per metric ton of emissions (MT CO_2e) could be as large as the difference between a given year's APCR Tier I trigger price and subsequent price peaks.

Considering the various allowance price trajectories modeled for our analysis of the CCA program[34] these price differentials range from $2.81 to $54.86 per allowance (across all scenarios) and span a timing range between purchase and sale of between 3 and 7 years, for a limited subset of entities. This range of cost per allowance and time span are based on

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

allowance price differentials between year of purchase and the next modeled price peak (sometimes called "buying low and selling high"), allowing for variable choice in year of purchase or how long allowances would be held based on internal business decisions. The range also captures the different allowance price trajectories over time across modeled market scenarios that reflect different assumptions about sectoral decarbonization rates, planning horizons, and financial sector behaviors. This range of costs per allowance is likely to be an overestimate, however, since it does not reflect upward pressure on compliance costs (resulting, e.g., from immediate resale in secondary markets or signaling that excess allowances are being banked) or downward pressure on the future price (resulting from reduced demand when accrued allowances from the APCR would be used for compliance).

3.2.2 Environmental justice costs

We do not expect the amendments to result in costs to overburdened communities or vulnerable populations, under either our primary or alternative interpretations of the baseline. This is because:

- Under our primary approach, the rule amendments are merely clarifications of the baseline and would not result in any costs.
- Under the alternative approach, costs would only be incurred by a limited number of entities. Absent dominant market share or collusion among these entities – which is prohibited under the baseline CCA law, including the law's direction for Ecology to design the CCA program in rule to prevent collusion – these costs to a limited number of entities are not likely to affect market prices that are passed through to consumers. If an entity (or entities) that would purchase and accumulate excess allowances from the APCR under the baseline holds significant market share and is able to independently affect consumer market prices, these costs could be passed on to consumers (assuming the gains from re-selling excess allowances from the APCR would have been passed on to consumers as a price reduction).

Chapter 4: Likely Benefits of the Rule Amendments

4.1 Introduction

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

4.2 Benefits analysis

- That the existing holding limits specified in WAC 173-446-150(2)(a), which apply to allowances with a "vintage", also apply to the "vintage-less" allowances that are acquired through APCR auctions.[35]
    - This means that a single entity can hold only a limited number of allowances in its account at a time.
- That any allowances purchased in an APCR auction must be deposited directly into the purchasing entity's compliance account under WAC 173-446-370.
    - This change prevents these allowances from being sold or traded on the secondary market, ensuring that the allowances will be used to meet compliance obligations and not for speculative purposes.

As the rule amendments work in tandem to prevent price distortions and market manipulation, we discuss potential benefits associated with the combined amendments, below.

We do not expect the rule amendments to result in significant costs or benefits, as they are intended to be clarifications of the baseline, ensuring smooth and efficient market function. This approach takes into account:

- The CCA law's requirements for consistency with other jurisdictions and for prevention of market manipulation.
- The intended contents of compliance and holding accounts.
- Which parties may participate in APCR auctions under the baseline (covered and opt-in entities.
- Differentiation between attributes of allowances from the APCR and regular auction allowances.

[35] An allowance 'vintage' refers to the year in which it becomes eligible for compliance. Entities can cover their emissions with allowances from that same vintage year or any earlier year, but cannot use 'future vintage' allowances. So, 2024 emissions require vintage 2023 or 2024 allowances, and emissions from 2030 can be covered with allowances from any year between 2023 and 2030. APCR allowances have no vintage – meaning they can be used to cover emissions from any year and any compliance period.

- The intent of APCR auctions to allow covered and opt-in entities to purchase additional allowances needed for compliance at a pre-determined, fixed price.
- Attributes of other jurisdictions' allowances from reserves, with no vintage.

We acknowledge, however, that if the above considerations were set aside, the specific language in the baseline CCA rule could be read as excluding allowances with no vintage from holding limits, and allowing allowances from the APCR to be placed and held in holding accounts. From this perspective, the rule amendments could be read as making a significant change from the baseline. Considering the rule amendments from this alternative perspective, they would result in:

- Benefits for remaining covered entities, opt-in entities, and the public, in the form of allowance price trajectories and emissions reductions that reflect actual marginal costs of GHG emissions abatement that meet statutory requirements over time, i.e.:
    - Avoided costs of artificially high allowance prices in some years, resulting in higher compliance costs.
    - Avoided costs of artificially low prices in other years, resulting in reduced incentive to reduce GHG emissions and meet statutory emissions reduction requirements.
    - Avoiding potentially large market distortions, in which upward or downward pressures on allowance prices push settlement prices toward the price floor or price ceiling when this would not be the efficient trajectory based on emissions reduction goals and/or marginal costs of emissions abatement. This would significantly drive up overall costs of the program while also potentially failing to meet the emissions reduction requirements in the law.

We note also that simply by clarifying the rule language – regardless of the interpretation of the baseline rule – the rule amendments help avoid market distortions. They do this by giving all market participants a common and clear interpretation of the options available to them and to other participants, and reducing potential strategic behavior that might result from incorrect assumptions or aversion to the risk associated with other entities acting based on different understanding of the rule.

Prior analysis of the benefits of the CCA program

In adopting the baseline CCA rule, Ecology analyzed the benefits of the CCA program.[36] We did so based on independently modeled allowance market price trajectories reflecting ranges of assumptions about:[37]

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

[37] Vivid Economics, 2022. Washington State Climate Commitment Act. Summary of market modeling and analysis of the proposed Cap and Invest Program. Economic and market modeling and analysis conducted by Vivid Economics for the Washington Department of Ecology. September 2022. Ecology publication no. 23-02-010.

- Degree of market foresight.
- Sensitivity to allowance prices among financial participants.
- Minimum acceptable rates of return ("hurdle rates") for financial participants.
- Rate of decarbonization in the power sector.
- Rate of decarbonization in the transportation sector.
- Impacts of complementary policies.
- Expectations for linkage timing and linked market prices.

All of these model variations assumed that allowances from the APCR had no vintage, and were only released in APCR auctions when the forecast settlement price exceeded the APCR trigger price. The modeling also assumed that allowances from the APCR would be subject to holding limits, would not be accumulated in holding accounts for future use or resale, and that they would be used for compliance immediately after they were purchased, consistent with Ecology's intended program design and with other jurisdictions' approaches.

Consequently, we believe this existing prior economic analysis reflects a comprehensive assessment of the potential ranges of benefits resulting from emissions reductions under with the CCA program, including the impacts of the adopted amendments.

Alternative interpretation of the baseline CCA rule

As discussed above, we acknowledge the possibility that the baseline rule could be interpreted as not requiring allowances from the APCR to be placed directly in entities' compliance accounts, and allowing them to be accumulated for future use or resale. From this alternative perspective, the rule amendments provide additional benefits in the form of avoiding market distortions that affect all market participants, as well as affecting the size and timing of GHG emissions reductions.

The choice to accumulate excess allowances from the APCR would result in earlier demand for more allowances from the APCR. We note that this behavior at any given time:

- Would not be possible for all entities to engage in at the same time, due to limited quantities of allowances from the APCR.
- Would be more attractive to select entities with:
    - Large compliance obligations over time.
    - Less likelihood of being able to reduce marginal costs of GHG emissions abatement over time.
    - Expectation of even higher future market prices.
    - Sufficient resources to accumulate excess allowances from the APCR, even when resulting in short-run losses.

Any such decisions would be based on internal business considerations and expectations of future GHG emissions abatement costs. As a result, we could not forecast the frequency or degree to which this strategic behavior would be undertaken.

We did, however, consider the scope of potential benefits to other market participants (including covered and opt-in entities), as well as to the public, under the rule amendments. Under the amendments and their prevention of strategic behavior resulting in market price distortions:

- Other market participants avoid facing higher allowance prices when an entity chooses to accrue excess allowances from the APCR. This maintains the CCA market-based program's intent to efficiently allocate allowances based on marginal GHG emissions abatement costs across market participants. Absent the amendments, strategic behavior by a limited number of entities would increase compliance costs across the CCA program's full set of market participants, though the size of this increase would depend on the amount and timing of additional APCR purchases and their use or resale.
- The public (including businesses impacted by climate change, and publicly held values for environmental goods and services) avoids the impacts of subsequent downward allowance market price distortions. These distortions would result in less incentive to reduce emissions than under the efficient allocation of allowances (based on marginal emissions abatement costs). This could result in failure to meet statutory emissions reduction requirements.

  Downward price distortions could happen in years when allowance market prices are higher – when an entity accruing excess allowances from the APCR would be most likely to retire or sell those allowances – because those high prices reflect underlying high marginal costs of emissions abatement, and competition for allowances when they become more scarce (as the CCA program reduces the total allowance budget according to the requirements of the CCA law and statutory emissions reduction requirements). Entities with marginal abatement costs below the allowance market price will choose to reduce emissions, while entities facing higher marginal abatement costs choose to purchase allowances. So downward price distortion (compared to prices in a competitive market) would result in less incentive for entities to reduce emissions.

  As with the benefit to other market participants of avoided impacts of price distortions resulting from strategic behavior, the degree to which entities would have less incentive to reduce emissions would depend on the amount and timing of additional APCR purchases and their use or resale. In the event that such banking for later use or resale were to drive down future allowance prices significantly, compared to actual marginal emissions abatement costs, the CCA program could fail to meet the state's emissions reduction requirements if entities hold excess allowances from the APCR across multiple years.

To illustrate the benefits described in the second bullet point above (in the form of avoiding delays in GHG emissions reductions), we considered the difference in the Social Cost of Carbon (SCC, developed by the federal Interagency Working Group on the Social Cost of Greenhouse

Gases) across years.[38,39] Corresponding to the range of years an entity might choose to hold excess allowances from the APCR – between the year the market price exceeds the APCR Tier I trigger price and the nearest price peak – of between 3 and 7 years[40], the benefit (avoided cost) of avoiding delays in emissions reductions is $3.04 to $10.19 per MT CO_2e. Using updated SCC values adopted by the EPA in 2023 (while the federal Interagency Working Group continues work toward updating their SCC values to reflect current scientific and economic knowledge),[41] this range is $10.55 to $38.68 (2020 dollars).[42]

We note that these ranges are likely underestimates, as the SCC captures a subset of the overall costs associated with climate change. Please see Ecology's analysis of the CCA program for a full listing of additional qualitative benefits of avoided climate change, as well as illustrative costs associated with extreme events such as heat domes.[43] We note also that SCC estimates are based on sets of economic and climate change models, which develop over time as more is understood about the nature and impacts of GHG emissions and climate change. There is uncertainty inherent to any model, and we note that multiple recent research articles have identified potentially more rapid, or more damaging, impacts of climate change over time than have been reflected existing SCC estimates. For example:

[38] 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. https://www.whitehouse.gov/wpcontent/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitr ousOxide.pdf

[39] Ecology uses SCC values based on discount rates closest to the historic social rate of time preference. Based on the real rate of return on US Treasury I Bonds, averaged from September 1998 to present, this rate is approximately 0.89 percent. Using the federal values (Ibid.) available for estimates of SCC, those based on 2.5 percent are nearest to the social rate of time preference. Using the updated EPA values, those based on 1.5 percent are nearest to the social rate of time preference.

[40] See section 3.2 for discussion. This time span is based on how long excess allowances might be banked, based on allowance price differentials between year of purchase and the next modeled price peak (sometimes called "buying low and selling high"). This range allows for variable choice in year of purchase or how long allowances would be held based on internal business decisions. The range also captures the different allowance price trajectories over time across modeled market scenarios that reflect different assumptions about sectoral decarbonization rates, planning horizons, and financial sector behaviors.

[41] US Environmental Protection Agency, 2023. EPA Report on the Social Cost of Greenhouse Gases: Estimates Incorporating Recent Scientific Advances. Supplementary Material for the Regulatory Impact Analysis for the Final Rulemaking, "Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review". November 2023. Docket ID No. EPA-HQ-OAR-2021-0317.

[42] Ecology uses SCC values based on discount rates closest to the historic social rate of time preference. Based on the real rate of return on US Treasury I Bonds, averaged from September 1998 to present, this rate is approximately 0.89 percent. SCC values in the EPA analysis were available for a 1.5 percent discount rate – the nearest to the social rate of time preference. Using the updated EPA values, those based on 1.5 percent are nearest to the social rate of time preference.

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

- More urgent need for worldwide climate resilient development action (integrating adaptation and emissions mitigation) than previously assessed.[44]
- Increased droughts, wildfires, and extreme rainfall occurring faster than previously estimated.[45]
- Increased risk of earlier slowing or halting of the Atlantic Meridional Overturning Circulation than previously assessed.[46,47,48]
- Risk of multiple tipping points at lower degrees of warming than previously understood.[49,50]

4.2.2 Environmental justice benefits

As discussed in our prior analysis of the CCA program as a whole, overburdened communities and vulnerable populations are likely to be disproportionately affected by climate change. [51] Reasons for this disproportionate burden include:

- Increased exposure or burden – e.g., less tree canopy, fewer green spaces, less air conditioning or filtration, higher likelihood of illness or death based on age, race, income, or multiple aspects of cumulative health burden[52], lack of sufficient shelter, inability to evacuate.

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[44] Intergovernmental Panel on Climate Change, 2023. Climate Change 2023 Synthesis Report.
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[46] Ditlevsen, P and S Ditlevsen, 2023. Warning of a forthcoming collapse of the Atlantic meridional overturning circulation. Nature Communications 14, no. 4254. July 2023. https://www.nature.com/articles/s41467-023-39810-w
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[51] WA Department of Ecology, 2022. Final Regulatory Analyses for Chapter 173-446 WAC, Climate Commitment Act Program. Ecology publication no. 22-02-047. September 2022.
[52] Cumulative health burden relates to cumulative impacts of existing environmental exposures and their effects, socioeconomic factors, and impacts on sensitive populations. Socioeconomic factors include, but are not limited

- Reduced access to resources for adaptation or response – e.g., limited or delayed ability to invest in air conditioning or filtration, limited access to respiratory or cardiac care, inconsistent or lacking access to emergency shelter.
- Increased recovery time – e.g., fewer resources to rebuild after significant fire or flooding events, or to rebuild to a level of greater ongoing resilience.

By reinforcing the benefits of the CCA program, including benefits associated with reduced contribution to climate change, the rule amendments reduce the risk of strategic market behavior and price distortions that would reduce or delay those benefits. This is the case even if the sole benefit of the rule amendments is clarity. From the alternative perspective, which interprets the amendments as having a larger impact as compared to the baseline, this benefit would be further supported.

to, education, race, income, transportation, housing, employment, and other factors that result in or are correlated with higher exposure to environmental harms. Sensitive populations include populations with high rates of cardiovascular disease, low birth weight, or other factors that make people more susceptible to environmental impacts.

Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Summary of costs and benefits of the rule amendments

In Chapter 3 we assessed the likely costs of the rule amendments, and in Chapter 4 we assessed their likely benefits. Please see those chapters for detailed discussion.

5.1.1 Likely costs and benefits of the amendments

We do not expect the rule amendments to result in significant costs or benefits, as they are intended to be clarifications of the baseline, ensuring smooth and efficient market function. This approach takes into account:

- The CCA law's requirements for consistency with other jurisdictions and for prevention of market manipulation.
- The intended contents of compliance and holding accounts.
- Which parties may participate in APCR auctions under the baseline (covered and opt-in entities.
- Differentiation between attributes of allowances from the APCR and regular auction allowances.
- The intent of APCR auctions to allow covered and opt-in entities to purchase additional allowances needed for compliance at a pre-determined, fixed price.
- Attributes of other jurisdictions' allowances from the reserve auctions, with no vintage.

By providing clarity, the rule amendments help avoid market distortions. They do this by giving all market participants a common and clear interpretation of the options available to them and to other participants, and reducing potential strategic behavior that might result from incorrect assumptions or aversion to the risk associated with other entities acting based on different understanding of the rule.

5.2.2 Alternative interpretation of baseline

We acknowledge that the specific language in the baseline CCA rule could be read as excluding allowances with no vintage from holding limits, and allowing allowances from the APCR to be placed and held in holding accounts. From this perspective, the rule amendments could be read as making a significant change from the baseline. From this alternative perspective, they would result in the following costs and benefits:

Costs to covered and opt-in entities that would have chosen to purchase and accrue excess allowances from the APCR for either future compliance or resale

Based on prior analysis of the CCA program and likely allowance market price trajectories, we estimated these costs could range from $2.81 to $54.86 per allowance (across all scenarios) and span a timing range between purchase and sale of between 3 and 7 years, for a limited subset of entities. This range of costs per allowance is likely to be an overestimate, however, since it does not reflect upward pressure on compliance costs (resulting, e.g., from immediate resale in secondary markets or signaling that excess allowances are being banked) or downward pressure on the future price (resulting from reduced demand when accrued allowances from the APCR would be used for compliance).

Benefits for remaining covered entities, opt-in entities, and the public

The rule amendments prevent allowance market manipulations, preserving allowance price trajectories and emissions reductions that reflect actual marginal costs of GHG emissions abatement that meet statutory requirements over time, i.e.:

- Avoided costs of artificially high allowance prices in some years, resulting in higher compliance costs.
- Avoided costs of artificially low prices in other years, resulting in reduced incentive to reduce GHG emissions and meet statutory emissions reduction goals.
- Avoiding potentially large market distortions, in which upward or downward pressures on allowance prices push settlement prices toward the price floor or price ceiling when this would not be the efficient trajectory based on emissions reduction requirements and/or marginal costs of emissions abatement. This would significantly drive up overall costs of the program while also potentially failing to meet the emissions reduction requirements in law.

To illustrate the benefits of avoided market distortions and potential impacts to emissions reductions, we considered the difference in the Social Cost of Carbon (SCC, developed by the federal Interagency Working Group on the Social Cost of Greenhouse Gases) across years. Corresponding to the range of years an entity might choose to hold excess allowances from the APCR – between the year the market price exceeds the APCR Tier I trigger price and the nearest price peak – of between 3 and 7 years, the benefit (avoided cost) of avoiding delays in emissions reductions is $3.04 to $10.19 per MT CO_2e. Using updated SCC values adopted by the EPA in 2023 (while the federal Interagency Working Group continues work toward updating their SCC values to reflect current scientific and economic knowledge), this range is $10.55 to $38.68.

We note that these ranges are likely underestimates, as the SCC captures a subset of the overall costs associated with climate change. Please see Ecology's analysis of the CCA program for a full listing of additional qualitative benefits of avoided climate change, as well as illustrative costs

associated with extreme events such as heat domes.[53] We note also that SCC estimates are based on sets of economic and climate change models, which develop over time as more is understood about the nature and impacts of GHG emissions and climate change.

5.2 Conclusion

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

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

Chapter 6: Least-Burdensome Alternative Analysis

6.1 Introduction

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

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

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

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

6.2 Goals and objectives of the authorizing statute

The authorizing statute for this rule is Chapter 70A.65 RCW, Greenhouse Gas Emissions – Cap and Invest Program. Its goals and objectives are:

- 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, in order 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.
- Guarding against market manipulation.
- 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 leakage by recognizing the special nature of emissions-intensive, trade-exposed industries and increased life-cycle emissions associated with product imports.
- Encouraging emissions-intensive and trade-exposed industries 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.
- Considering opportunities to implement the program in a manner that allows linking the state's program with those of other jurisdictions.
- 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 GHG emissions limits that are to be achieved by 2030, 2040, and 2050, based on current science and emissions trends, to support local and global efforts to avoid the most significant impacts from climate change. Achieving the GHG 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 GHG emissions limits.

6.3 Alternatives considered and why they were excluded

Due to the limited scope of this rulemaking, prompted by necessity to make specific provisions more clear in order to maintain market stability and minimize potential for market manipulation, the only alternative we considered during this rulemaking was that of not making amendments at this time.

This alternative would not have met the statutory objective of preventing market manipulation. Potential variable interpretations of the baseline rule language could have resulted in entities attempting to accumulate large quantities of allowances, resulting in distortions to the market price in the short and long runs, and affecting program compliance costs and incentives to

reduce GHG emissions. Prevention of allowance market manipulation further facilitates the success of the cap-and-invest program in efficiently achieving the following additional statutory objective:

- 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, in order to ensure the reduction of greenhouse gas emissions consistent with the limits established in RCW 70A.45.020.

This alternative would also have been inconsistent with the statutory objective of considering opportunities to implement the program in a manner that allows linking the state's program with those of other jurisdictions.

An alternative to rulemaking would have been addressing these clarifications in guidance. This approach would not have offered complete certainty to market participants and would therefore have been less protective against market manipulation and price distortions.

6.4 Conclusion

After considering alternatives, 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

The rule amendments are not likely to result in costs or benefits as compared to the baseline, considering the following in conjunction with the baseline rule:

- The CCA law's requirements for consistency with other jurisdictions and for prevention of market manipulation.
- The intended contents of compliance and holding accounts.
- Which parties may participate in APCR auctions under the baseline (covered and opt-in entities).
- Differentiation between attributes of allowances from the APCR and regular auction allowances.
- The intent of APCR auctions allow covered and opt-in entities to purchase additional allowances needed for compliance at a pre-determined, fixed price.
- Attributes of other jurisdictions' allowances from reserves, with no vintage.

In the absence of the above considerations, we also do not expect the amendments to result in costs to small businesses. During the initial rulemaking for the baseline rule, we chose to complete the requirements under the RFA out of an abundance of caution, though it was not likely that small businesses would incur compliance costs under the rule.[54] In the current rulemaking, from the alternative perspective that reads the adopted changes to rule language as significant changes from the baseline, a business that could potentially incur costs would likely be large and have significant resources and assets to be able to make additional strategic purchases of allowances from the APCR.

As the rule amendments are not likely to impose compliance costs on small businesses, this rulemaking is exempt from the requirements of the RFA under RCW 18.85.025(4), which states, "This chapter does not apply to the adoption of a rule if an agency is able to demonstrate that the proposed rule does not affect small businesses."

[54] WA Department of Ecology, 2022. Final Regulatory Analyses for Chapter 173-446 WAC, Climate Commitment Act Program. Ecology publication no. 22-02-047. September 2022. See Chapter 7 for discussion of business sizes.

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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 considered issuing guidance as an alternative to rulemaking. However, we determined that the requirements for the APCR auction allowances need to be in rule to provide sufficient certainty to market participants.

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

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

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

D. RCW 34.05.328(1)(d) – Determine that probable benefits of this rule are greater than its probable costs, taking into account both the qualitative and quantitative benefits and costs and the specific directives of the statute being implemented.

See Chapters 1 – 5.

E. RCW 34.05.328 (1)(e) - Determine, after considering alternative versions of the analysis required under RCW 34.05.328 (b), (c) and (d) that the rule being adopted is the least burdensome alternative for those required to comply with it that will achieve the general goals and specific objectives stated in Chapter 6.

Please see Chapter 6.

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

The law authorizing this rule (RCW 70A.65) is the only state law regarding a cap-and-invest program and there are no federal laws regarding such programs. Therefore, this rule does

not require those to whom it applies to take an action that violates requirements of any other law.

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.

This rule applies to equally to all entities (both public and private).

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 are no federal regulations regarding 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.

The law authorizing this rule (RCW 70A.65) is the only state or federal law regarding a cap-and-invest program that is applicable in Washington state.