



DEPARTMENT OF
ECOLOGY
State of Washington

Final Regulatory Analyses

Including the:

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

Chapter 173-444 WAC

Clean Energy Transformation Rule

January 2021

Publication 21-02-003

Publication and Contact Information

This report is available on the Department of Ecology's website at <https://apps.ecology.wa.gov/publications/summarypages/2102003.html>

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Chapter 173-444 WAC

Clean Energy Transformation Rule

by

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Acronyms

APA	Administrative Procedure Act
CBA	Cost Benefit Analysis
CETA	Washington Clean Energy Transformation Act
Commerce	Washington State Department of Commerce
DCFC	Direct-Current (DC) Fast Charging
EIA	Energy Information Administration
EVCS	Electric Vehicle Charging Station
EPA	Environmental Protection Agency
ETP	Energy Transformation Projects
GDP	Gross domestic product
GHG	Greenhouse gas
LBA	Least Burdensome Alternative Analysis
MWh	Megawatt hour
PUD	Public Utility District
PV	Present value
RCW	Revised Code of Washington
RTF	Regional Technical Forum
SCC	Social cost of carbon
USD	US dollars
UTC	Washington Utilities and Transportation Commission
WAC	Washington Administrative Code
WPUDA	Washington Public Utility Districts Association

Executive Summary

This report presents the determinations made by the Washington State Department of Ecology (Ecology) as required under Chapters 34.05 RCW and 19.85 RCW, for the Clean Energy Transformation Rule (Chapter 173-444 WAC; the “rule”). This includes the:

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

Chapter 173-444 WAC – the Clean Energy Transformation Rule implements parts of the Washington Clean Energy Transformation Act (CETA, Chapter 19.405 RCW), which the Washington Legislature passed and the Governor signed into law in 2019.

Ecology has a limited role in implementing CETA because the statute assigns most of the tasks to the Washington State Department of Commerce (Commerce) and the Washington Utilities and Transportation Commission (UTC).

The rule is limited to two parts:

- Part I - Establishes calculation methods to estimate the GHG emissions content in electricity that an electric utility supplies to its retail electric customers in Washington.
- Part II - Establishes requirements for Energy Transformation Projects (ETPs) that electric utilities may use as an option to meet the GHG-neutral electricity standard required under CETA. These include the processes for:
 - Identifying eligible project categories under CETA.
 - Developing comprehensive protocols including detailed criteria, standards, and methodologies for the identified eligible project categories.
 - Validating, monitoring, reporting, and verifying the GHG reduction and/or clean energy benefits of ETPs.

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.”

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.

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.

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.

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

Scope

An electric utility will be subject to the requirements of Part II of the rule only if it chooses to invest in ETPs as a compliance mechanism (rather than buying unbundled renewable energy credits (RECs) or paying an administrative penalty). Utilities that exceed using fossil fuels for over 20 percent of their power during 2030 – 2044 will need to consider using one of the alternative compliance mechanisms during that time period to comply with the GHG neutral standard.

According to Washington state electric utility fuel mix disclosure reports for calendar year 2018 there are seven electric utilities currently using coal and/or natural gas as their planned (allocated) resource.¹ These utilities are likely to need the alternative compliance mechanisms, and may choose to use ETPs to comply with CETA.

The other utilities currently purchase energy from the Bonneville Power Administration (BPA) and have a share of natural gas of 0.01 percent claimed by BPA in 2018.

Another category of utilities that may be interested in implementing the alternative compliance option(s) is utilities that have unspecified electricity² in their reported fuel mix, which was 12.9 percent statewide in 2018. Utilities buying electricity from BPA inherit a share (about 2.8 percent in 2018) of unspecified electricity. One of BPA's strategic goals is to provide carbon-free energy to its customers.³

We identified the following number of affected entities:

- Seven utilities that have fossil fuels in their allocation of electricity resources (fuel mix) and likely need the alternative compliance mechanisms, and may choose to use ETPs to comply with CETA;
- Twenty-two utilities that have fossil fuels or unspecified electricity in their fuel mix and may want to use ETPs as potential compliance options under particular supply market conditions.

Being conservative and taking into account several uncertainties that affect possible decisions of the utilities, we also estimated costs for all 68 utilities.

¹ Washington state electric utility fuel mix disclosure reports for calendar year 2018.

<https://www.commerce.wa.gov/wp-content/uploads/2020/04/Energy-Fuel-Mix-Disclosure-2018.pdf>

² "Unspecified electricity" means an electricity source for which the fuel attribute is unknown or has been separated from the energy delivered to retail electric customers.

³ <https://www.bpa.gov/news/pubs/FactSheets/fs-201901-The-carbon-free-footprint-of-BPA-hydropower-supply.PDF>

Costs

There are no costs associated with Part I of the rule.

We considered two cost perspectives on Part II of the rule. The first one is through the administrative costs that utilities that choose to implement ETPs will potentially incur. Those costs consist of expenditures on project plan preparation, validation, and verification.

- The total costs of project plan preparation in present value (PV) for seven utilities are between \$30,164 and \$603,284, for 22 utilities – between \$94,802 and \$1,896,035, for all utilities – between \$293,024 and \$5,860,473. In all groups, the range reflects complexity of projects and plans.
- For seven utility companies the 20-year present value of validation costs is between \$0 if no utility chooses third-party validation and \$46,968 if all of them choose it for a complex project, for 22 – between \$0 and \$147,613, for all 68 – up to \$456,258.
- We estimated a total 15-year verification cost in 20-year PV is between \$3,847 and \$1,371,643 for seven utilities, between \$12,090 and \$4,310,879 - for 22 utilities, and between \$37,370 and \$13,324,536 – for all utilities, depending on the project's complexity, frequency of verification and number of utilities implementing ETPs.
- The total administrative costs in 20-year present value for one ETP are between \$4,859 and \$288,842. The estimated costs reflect different assumptions on the project's complexity, willingness to choose third party validation over Ecology, frequency of verification.
- Annualized value of administrative costs per one ETP over 20-year period is between \$269 and \$15,974.

The other perspective is the cost a utility will incur, if Ecology does not adopt this rule. In this case, many factors affect a utility's decision to invest in ETPs. The most critical one is the cost of the other alternative compliance options. As the price and availability of unbundled RECs is unknown for 2030, we conclude that a utility would invest in ETP if a cost of a project would be less than \$84 or \$60 per MWh administrative penalties, depending on the type of natural gas power plant used to generate electricity above the 20 percent limit. We are assuming no or very limited electricity from coal power plants after 2030, because of the policy of the state to eliminate coal-fired electricity by 2025 (RCW 19.405.030(1)(a)). If some of the utilities choose alternative compliance mechanisms like RECs, it would compress or reduce the ranges of costs estimated above, because of the smaller number of utilities implementing ETP.

The project could cost more in some cases, for example if there were a shortage in availability of unbundled RECs on the market, or a utility decides to invest in future infrastructure to avoid fuel price shocks and regulatory uncertainty, or for marketing purposes.

Overall, the purpose of ETP compliance option is to create such mechanism that will be both cost-savings, provide benefits of GHG reduction, and technological modernization. The degree to which this could be a cost-savings depends on future development of technological improvements or emerging technologies, REC market adjustments, and exogenous factors such as climate change and fuel market shocks or structural change.

Benefits

Part I of the rule provides the tools for consistent information on the GHG emissions content in electricity consumed in Washington State, supporting Commerce and UTC's CETA implementation, and making consistent and relevant information available to Washington's electric customers, agencies and the Legislature. Availability of more accurate data leads to improved decisions at all levels – from utilities' customers, utilities, agencies, to Legislature.

Part II of the rule provides the mechanism to identify, develop, and evaluate certain energy-related projects that meet the criteria established by the rule. The implementation of this rule will create opportunities for electric utilities to invest in ETPs to help them comply with the GHG-neutral electricity standard CETA requires.

From one perspective, Part II of the adopted rule establishes only the processes and requirements for:

- Identifying eligible project categories.
- Developing the comprehensive protocol.
- Evaluating the GHG reduction and clean energy benefits of projects.

Ecology plans to develop the comprehensive protocol, as part of the implementation of this rule. The protocol will incorporate the detailed criteria, standards, methodologies, and procedures for guiding the development and evaluation of ETPs. This provides the clarity for ETP investors, resulting in less time spent on the preparation of the project plan and proposal - the benefit of reduced administrative costs.

With the other perspective, option of investing in ETPs creates a potentially cost-effective compliance option compared to buying unbundled RECs or paying an administrative penalty. It is difficult to analyze the cost-effectiveness of ETPs at this point, as it would depend on the types of projects and stringency of the detail requirements that Ecology will establish in the comprehensive protocol. Ecology also expects the price of unbundled RECs to vary over time. One of the criteria for eligible project categories is a requirement to provide additional GHG reductions and clean energy benefits to a level beyond what is required in existing regulations, or beyond business as usual scenario, i.e. what is not usually feasible if it is not for the investment by electric utilities. The implementation of ETPs creates a group of benefits associated with the reduction of GHG and other pollutants that will not happen without this rule. Multiple rigorous analyses demonstrate that the value of health benefits far exceeds the costs of reducing pollution.

Cost-benefit

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

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

Based on our costs estimation and minor cost threshold for this industry sector (\$356,687 annually) Ecology is not required to prepare a Small Business Economic Impact Statement under the RFA.

Chapter 1: Background and Introduction

1.1 Introduction

This report presents the determinations made by the Washington State Department of Ecology (Ecology) as required under Chapters 34.05 RCW and 19.85 RCW, for the Clean Energy Transformation Rule (Chapter 173-444 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 report documents that analysis, when applicable.

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

1.1.1 Background

Chapter 173-444 WAC – the Clean Energy Transformation Rule implements parts of the Washington Clean Energy Transformation Act (CETA, Chapter 19.405 RCW), which the Legislature passed and the Governor signed into law in 2019.

The intent of CETA (the statute) is to address a primary cause of climate change by leading the transition to a clean energy economy. To achieve this transition, the statute aims to:

- Transform the energy supply in Washington.
- Modernize the electricity system in the state.

- Ensure the benefits of this transition are broadly shared throughout the state. (RCW 70.405.010).

To enhance the greenhouse gas (GHG) emissions reduction from the electricity sector, the statute establishes the following policy goals:

- Eliminate the use of coal-fired generating units as the source of electricity by the end of 2025.
- Transition the electricity supply to Washington State retail electric customers to meet a “GHG-neutral” standard by 2030. The statute requires 80 percent of the electricity supplied by utilities to Washington retail electric customers to be from either nonemitting or renewable energy resources, and allows utilities to satisfy the remaining 20 percent of their obligation under the “GHG-neutral” standard using alternative compliance options, including energy transformation projects (ETPs) among other options.
- Transition the electricity supply to Washington State retail electric customers to 100 percent clean energy (nonemitting electric generation and electricity from renewable resources) by 2045.

Ecology has a limited role in implementing CETA because the statute assigns most of the tasks to Washington State Department of Commerce (Commerce) and Washington Utilities and Transportation Commission (UTC). Ecology’s rulemaking authority is limited to:

- Establishing the calculation methods to estimate the GHG emissions content in electricity.
- Putting in place requirements for ETPs.

1.2 Summary of the adopted rule

The rule is limited to two parts:

- Part I - Establishes calculation methods to estimate the GHG emissions content in electricity that an electric utility supplies to its retail electric customers in Washington.
- Part II - Establishes requirements for Energy Transformation Projects (ETPs) that electric utilities may use as an option to meet the GHG-neutral electricity standard required under CETA. These include the processes for:
 - Identifying eligible project categories under CETA.
 - Developing comprehensive protocols including detailed criteria, standards, and methodologies for the identified eligible project categories.
 - Validating, monitoring, reporting, and verifying the GHG reduction and/or clean energy benefits of ETPs.

1.3 Reasons for the rule

The CETA directs Ecology to adopt rules, in consultation with Commerce and UTC, by January 1, 2021, that:

- Establish a GHG emission calculation method for electricity.
- Establish requirements for ETPs, other than electricity generation, that reduce GHG emissions and fossil fuel consumption.

CETA requires the electricity supply to Washington State retail electric customers be one hundred percent clean energy (nonemitting electric generation and electricity from renewable resources) by 2045.

By 2030 at least 80 percent of the electricity supplied by utilities to Washington retail electric customers to come from either nonemitting or renewable energy resources. The remaining 20 percent of their obligation for GHG-neutral electricity may consist of the following alternative compliance options:

- a) Alternative compliance payment of \$60 to \$150 per MWh, based on the source and technology used to generate the electricity they supply. Though administrative penalties are:
 - Sixty \$/MWh for electricity from combined-cycle natural gas power plant,
 - Eighty-four \$/MWh for electricity from natural gas fired peaking power plant, and
 - One hundred and fifty \$/MWh for electricity from coal-fired power plant.

The penalty for coal-fired electricity may not apply in practice, as CETA requires elimination of coal-fired power plants from utilities' resource allocation by 2025.

- b) Using renewable energy like wind or solar power in addition to what utilities may use for the primary (80 percent) standard, by using unbundled renewable energy credits (REC).
- c) Investing in ETPs, as described further in this document.
- d) Contingent on a future analysis, using electricity from an energy recovery facility, if the facility is found to have a net reduction in GHG emissions compared to any other available waste management best practices in that region.

The implementation of Part I of the rule provides consistency across electric utilities on how to calculate the GHG emissions in electricity they supply in Washington as they prepare and submit compliance documents for Commerce and the UTC.

The rule will provide the mechanism for identifying, developing, and evaluating ETPs eligible for compliance with the GHG-neutral electricity standard under CETA. The implementation of this rule:

- Creates opportunities for electric utilities to invest in ETPs to help them comply with the GHG-neutral electricity standard required under CETA.

- Provides market incentives for projects. As electric utilities invest in ETPs to benefit from their GHG emission reduction potentials, the ETPs become more economically attractive, increasing the chances of ETPs implementation.
- Assures energy agencies implementing CETA, interested stakeholders, and the public that ETPs meet the requirements and standards of quality that CETA puts into place.

1.4 Document organization

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

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

Chapter 2: Baseline and Adopted Rule

2.1 Introduction

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

2.2 Baseline

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

2.2.1. GHG emission calculation

CETA requires each:

- Consumer-owned utility to report its GHG content calculation to the Washington State Department of Commerce (Commerce), and each
- Investor-owned utility to report its GHG content calculation to the Washington Utilities and Transportation Commission (UTC).

Ecology's role is to establish the methods electric utilities use to calculate the GHG emissions content in electricity they supply to its retail electric customers in Washington State, in consultation with Commerce. Ecology has no direct role in the reporting of these emissions. Commerce and UTC establish and implement the reporting requirements.

CETA provides a GHG emission factor of 0.437 MT of CO_{2e}/MWh for unspecified electricity in the case Ecology does not establish a different emission factor. CETA allows Ecology to update the GHG emission factor for unspecified electricity periodically, in consultation with Commerce. This rule uses the default value from the statute and Ecology intends to update it in a future rulemaking if needed.

2.2.2. Energy transformation projects

The statute establishes a policy goal to make the electricity supplied to Washington State retail electric customers “GHG-neutral” by 2030. To meet this standard, at least 80 percent of the electricity utilities supply in Washington must be “clean”, i.e., from renewable or nonemitting resources. CETA allows electric utilities to satisfy the remaining 20 percent of their obligation under this standard by using alternative compliance options:

- a) Paying an alternative compliance payment of \$60 to \$150 per MWh, based on the source and technology used to generate the electricity they supply. (RCW 19.405.090(1))⁴
- b) Using renewable energy like wind or solar power in addition to what utilities may use for the primary (80 percent) standard, through the use of unbundled renewable energy credits (RECs).
- c) Investing in ETPs, as described further in this document.
- d) Contingent on a future analysis, using electricity from an energy recovery facility, if the facility provides a net reduction in GHG emissions compared to any other available waste management best practices.

However, option (d) is not available yet, as Ecology and Commerce have not made the conclusion that utilities can use the electricity from an energy recovery facility as an alternative compliance mechanism to meet the GHG-neutral electricity standard.

All of the requirements for Ecology to establish the process and requirements for developing standards, methods, and procedures for evaluating ETPs are defined in RCW 19.405.020(18), RCW 19.405.040 and RCW 19.405.100(7) and (9).

Scope

According to the Washington state electric utility fuel mix disclosure reports for calendar year 2018 there are currently 68 electric utilities in Washington.⁵ There are 48 consumer-owned electric utilities (COU) governed by their individual governing boards or commissions, and three investor-owned utilities (IOU) regulated by UTC. There are also two private businesses and 17 nonprofit organizations.

The report shows that 69.5 percent of the electricity consumed in Washington came from renewable or nonemitting resources, while coal contributed 10.22 percent, natural gas 7.33 percent, and unspecified sources contributed 12.93 percent of the electricity consumed in Washington. As required in CETA, we expect utilities to eliminate electricity from the coal-fired generating units in Washington by the end of 2025.

⁴ As the coal-fired power plant are expected to be eliminated by the end of 2025, the CETA provided emission factor for unspecified electricity is similar to the emission factor for an average single-cycle natural gas power plant, the most likely administrative penalty would be the \$84/MWh that was set gas-fired peaking power plants.

⁵Washington state electric utility fuel mix disclosure reports for calendar year 2018.

<https://www.commerce.wa.gov/wp-content/uploads/2020/04/Energy-Fuel-Mix-Disclosure-2018.pdf>

2.3 Adopted rule

The rule is limited to two parts:

- Part I - Establishes calculation methods to estimate the GHG emissions content in electricity that an electric utility supplies to its retail electric customers in Washington.
- Part II - Establishes requirements for Energy Transformation Projects (ETPs) that electric utilities may use as an option to meet the GHG-neutral electricity standard required under CETA. These include the processes for:
 - Identifying eligible project categories under CETA.
 - Developing comprehensive protocols including detailed criteria, standards, and methodologies for the identified eligible project categories.
 - Validating, monitoring, reporting, and verifying the GHG reduction and/or clean energy benefits of ETPs.

2.3.1 Method for calculating GHG emissions from electricity

Baseline

CETA requires electric utilities to report their GHG emissions to UTC and Commerce. The agencies are currently developing new rules under CETA that will require utilities to report their GHG emissions.

Ecology is required to establish the calculation methods for GHG emissions in electricity supplied to retail electric customers in Washington State. If Ecology were not to establish the GHG emission calculation methods, utilities would likely use guidance provided by Commerce or UTC, likely consistent with current Fuel Mix Disclosure reporting.

The statute requires that Ecology “must adopt an emissions rate for unspecified electricity consistent with the emissions rate established for other markets in the western interconnection.” If Ecology does not adopt a rate, the statute establishes a default GHG emissions rate for unspecified electricity of 0.437 MT of CO₂e/MWh.

Adopted

The adopted rule will establish the calculation methods for GHG emissions in electricity supplied to retail electric customers in Washington State and provide instructions on how to calculate the GHG emissions in electricity they supply.

- Ecology based the GHG emission calculation on available information from existing federal reporting programs. Specifically, the calculation methods use information published by: Energy Information Administration (EIA) in Form EIA-923⁶ that include the amount of electricity, and the type and amount of fuel used to generate the electricity.

⁶ https://www.eia.gov/survey/form/eia_923/instructions.pdf

- Environmental Protection Agency (EPA) under its Greenhouse Gas Reporting Program.⁷
- EPA in 40 CFR Part 98, as adopted in Chapter 173-441 WAC, for GHG emissions calculation formula.⁸

As directed under RCW 19.405.020(22) and RCW 19.405.070, Ecology consulted with Commerce and UTC in establishing the calculation methods included in the adopted rule. The adopted rule includes the default emissions rate for unspecified electricity provided in the statute. The rule does not require any individual or party to report GHG calculation results to Ecology. Reporting will be required through rules adopted by the UTC and/or Commerce, and be applicable to the extent the agency implements the rule.

Expected impact

This rule provides instructions on how to calculate GHG emissions content in electricity that utilities supply to their retail electric customers in Washington State, using the publicly available information from Form EIA-923 and EPA’s Greenhouse Gas Reporting Program. Thus, this rule does not impose any additional cost burden on electric utilities, as the calculation methods are using mainstream data sources published by federal agencies, and calculation methods and emission factors established by EPA.

A benefit of the rule is that it will provide the tools for consistent reporting of GHG emissions content in electricity consumed in Washington State. This supports Commerce’s and the UTC’s CETA requirements and improves information available to Washington’s electric customers, and policy makers.

2.3.2 Energy transformation project requirements

Baseline

CETA provides electric utilities with three (and possibly four)⁹ compliance options to meet the GHG-neutrality standard for the electricity they supply to Washington retail customers between 2030 and 2045. These options include:

- Buying unbundled renewable energy credits (RECs).
- Paying administrative penalties based on the type of fuel and technology used to generate the electricity they supplied that does not meet the clean electricity standard.
- Investing in ETPs.

Without this rule, utilities would have only the first two options to meet the GHG-neutrality electricity standards that we considered the baseline for the rule on ETPs.

⁷ <https://www.epa.gov/ghgreporting/ghgrp-methodology-and-verification>

⁸ https://www.ecfr.gov/cgi-bin/text-idx?SID=bcbd62aeb8bcac53ef5796da05d171a6&mc=true&node=se40.23.98_133&rgn=div8

⁹ Using electricity from the Spokane Waste-to-Energy facility might be an option in the future contingent on an analysis by Ecology and Commerce in regards to the lifecycle greenhouse gas emissions from the facility. However, given the uncertainty of the outcome of that analysis this alternative compliance option is not considered here.

CETA sets the following requirements for Ecology:

- ETP-eligible projects categories must meet the requirements under RCW 19.405.020(18) and RCW 19.405.040.
- The comprehensive protocol development must meet the criteria, standards, and requirements in RCW 19.405.020 (18), RCW 19.405.040, and RCW 19.405.100 (7).
- To establish procedures for validation, verification, monitoring and reporting for ETPs as directed under RCW 19.405.100(7).

The statute requires that ETPs:

- Provide energy-related goods or services, other than the generation of electricity.
- Reduce fossil fuels and greenhouse gases.
- Provide benefits to electric utility customers.
- Be associated with the consumption of energy in Washington.
- Not create a new use of fossil fuels that result in a net increase of fossil fuel usage.
- Not be double counted toward the standard.

The statute lays out additional criteria for ETPs in RCW 19.405.040 (2), including that emission reductions must be:

- Real, specific, identifiable, and quantifiable.
- Permanent.
- Enforceable by the state of Washington.
- Verifiable.
- Not required by another statute, rule, or other legal requirement.
- Not reasonably assumed to occur absent investment, or if a utility has already made an investment, not reasonably assumed to occur absent additional funding in the near future.

Adopted

The adopted rule establishes the:

- Process for Ecology to determine the project categories that are ETP-eligible for compliance with the CETA obligation for the GHG-neutral standard.
- Process and requirements for Ecology to develop the comprehensive protocol that will incorporate the criteria, standards, methodologies, and procedures for guiding the development and evaluation of ETPs.
- Procedures for validation, verification, monitoring, and reporting for ETPs for electric utilities.

Expected impact

The option of investing in ETPs applies to all electric utilities during the “GHG-neutral” electricity standard period of CETA, between 2030 and 2044. Part II of the rule creates a potentially cost-effective compliance option compared to buying unbundled RECs or paying an administrative penalty. It is difficult to analyze the cost-effectiveness of ETPs at this point, as it would depend on the types of projects and stringency of the detail requirements that Ecology will establish in the comprehensive protocol. Ecology also expects the price of unbundled RECs to vary over time.

The rule establishes the process for identifying eligible project categories for compliance with CETA. One of the criteria for eligible project categories is a requirement to provide additional GHG reductions and clean energy benefits to a level beyond what is required in existing regulations, or beyond business as usual scenario, i.e., what is not usually feasible. This creates a group of benefits associated with the reduction of GHG and other pollutants that would not happen without this rule.

Besides the least costly compliance option other potential benefits for utilities include:

- Investment in future infrastructure to avoid future fuel price shocks and regulatory uncertainty.
- Promotion their business as innovative or “green”.
- Capturing customers demand early with innovative services and products.

The rule establishes the process and requirements for developing the comprehensive protocol. Ecology plans to develop the comprehensive protocol, as part of implementing the adopted rule. The protocol will incorporate the detailed criteria, standards, methodologies, and procedures for guiding the development and evaluation of ETPs. On one hand, this provides the clarity for electric utilities that invest in ETPs, resulting in less time spent on the preparation of the project plan and proposal - the benefit of reduced administrative costs. On the other, the stringency of the protocol (and therefore, the project plan) requirements directly affects the eligibility of projects or the costs of project documentation.

The other potential costs of the rule requirements are costs to validate and verify the project plan. Utilities can have Ecology or a third party validate their project plan.

As currently envisioned, Ecology’s validation process will be free. If a utility chooses to use third-party validation, instead of Ecology validation, the utility may incur additional cost.

The rule requires third-party verification to confirm the benefits after the utility implements the project. Ecology will detail the exact requirements of the performance verification, which may vary among project types, and which may be required by a regulating agency such as the UTC, in the comprehensive protocol.

Chapter 3: Likely Costs of the Adopted Rule

3.1 Introduction

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

3.2 Cost analysis

The rule is limited to two parts:

- Part I - Establishes calculation methods to estimate the GHG emissions content in electricity that an electric utility supplies to its retail electric customers in Washington.
- Part II - Establishes requirements for Energy Transformation Projects (ETPs) that electric utilities may use as an option to meet the GHG-neutral electricity standard required under CETA. These include the processes for:
 - Identifying eligible project categories under CETA.
 - Developing comprehensive protocols including detailed criteria, standards, and methodologies for the identified eligible project categories.
 - Validating, monitoring, reporting, and verifying the GHG reduction and/or clean energy benefits of ETPs.

3.2.1 Method for calculating GHG emissions from electricity

We do not expect this part of the adopted rule to result in costs compared to the baseline. See Chapter 2 for discussion.

3.2.2 Energy transformation project requirements

3.2.2.1 Decision for ETP implementation

Uncertainty

Although the rule establishes many criteria as defined in statute, there are uncertainties that affect possible behavior of the utilities, and the precision of our analysis. Significant sources of uncertainty include:

- Time horizons for implementing ETPs.
- Climate change impacts on power production.
- Unbundled REC prices.

CETA establishes 2030 – 2045 as the time horizon for implementing ETPs. Estimating the cost effectiveness of technologies, many of which may only be emerging at this point, is difficult to do with sufficient certainty over time. Moreover, available technologies, external impacts on power production, and the long-term availability of unbundled RECs in the market will affect the compliance choices utilities make.

Climate change will impact power production. A significant portion of Washington’s current renewable energy supply relies on the hydroelectric system. Under low water and extreme weather conditions, the state will need additional capacity to maintain at least the current level of available energy.

There are several factors affecting electric utilities decision to implement ETP. To consider ETP option at least 80 percent of the electricity utility supplies in Washington must be “clean”, which also means that they have up to 20 percent of fossil fuels in their fuel mix. Considering this, we can find the number of potentially interested parties. There are 68 utilities, seven of which currently have fossil fuels in their fuel mix.

Compliance criteria

A utility will be subject to the requirements of Part II of the rule only if it chose to use ETPs as a compliance mechanism (rather than unbundled RECs or an administrative penalty). Utilities that include fossil fuels as “planned” specified source in their fuel mix will need to consider one of the alternative compliance mechanisms, if they cannot meet the GHG-neutral standard during 2030 - 2044.

According to “Washington state electric utility fuel mix disclosure reports for calendar year 2018”¹⁰ there are seven electric utilities currently using coal and/or natural gas. These utilities are likely to need the alternative compliance mechanisms, and may choose to use ETPs to comply.

The other utilities currently purchase energy from the Bonneville Power Administration (BPA) and have share of natural gas of 0.01 percent claimed by BPA in 2018.

Another category of utilities that may be interested in implementing the alternative compliance option(s) is utilities that have unspecified electricity¹¹ in their reported fuel mix, which was 12.9 percent statewide in 2018. Utilities buying electricity from BPA inherit a share (about 2.8 percent in 2018) of unspecified electricity. One of the strategic goals for BPA is to provide carbon-free energy to its customers.¹² For 2019, BPA’s fuel mix shows zero percent of natural gas in their fuel mix.¹³ Therefore, if the fuel mix reports of electric utilities were available for 2019 we would state that there are no fossil fuels used in the produced electricity.

¹⁰ Washington state electric utility fuel mix disclosure reports for calendar year 2018.

<https://www.commerce.wa.gov/wp-content/uploads/2020/04/Energy-Fuel-Mix-Disclosure-2018.pdf>

¹¹ "Unspecified electricity" means an electricity source for which the fuel attribute is unknown or has been separated from the energy delivered to retail electric customers.

¹² <https://www.bpa.gov/news/pubs/FactSheets/fs-201901-The-carbon-free-footprint-of-BPA-hydropower-supply.PDF>

¹³BPA Fuel Mix Percent Summary Calendar Years 2016-2019. <https://www.bpa.gov/p/Generation/Fuel-Mix/FuelMix/BPA-Official-Fuel-Mix-2019.pdf>

For this analysis, we identified 22 utilities that may want to use ETPs as potential compliance options – those that have fossil fuels or unspecified electricity in their planned fuel mix. If a utility were interested in voluntarily implementing ETPs, even if CETA does not require them to do so, they would not necessarily satisfy the criteria of additionality. Recall that additionality means the ETP is both:

- Not required by another statute, rule, or other legal requirement.
- Not reasonably assumed to occur absent utility’s investment, or if a utility has already made an investment, not reasonably assumed to occur absent additional funding in the near future.

We identified the number of affected entities below:

- Seven utilities that have fossil fuels in their fuel mix and likely need the alternative compliance mechanisms, and may choose to use ETPs to comply.
- Twenty-two utilities that have fossil fuels or unspecified electricity in their planned fuel mix and may want to use ETPs as potential compliance options under particular supply market conditions.

Being conservative and taking into account uncertainties that affect possible decisions of the utilities, we also estimated costs for all 68 utilities.

We also assumed that every utility company will implement one ETP, because this allows them to avoid administrative costs. In reality, however, a utility company may choose to develop several projects and nothing in the law restricts the number of ETPs by one entity.

Project costs criteria

From a short-term, financial perspective, the ETP option is only viable for the utilities if this option is less costly than buying unbundled RECs and/or paying penalties.

Long-term changes in the REC market will affect compliance using unbundled RECs generated by renewable energy (e.g., wind, solar) in addition to what a utility might use for the primary (80 percent) clean energy standard. Current unbundled REC prices are approximately \$3 - \$5 per MWh, based on EIA utility reports for 2019.¹⁴ These prices may differ by 2030 and through 2044 due to:

- More stringent renewable energy requirements regionally or nation-wide.
- Retirement of coal-based generation.
- The rate at which projects generating new RECs are developed.
- Weather conditions.

¹⁴ <https://www.commerce.wa.gov/growing-the-economy/energy/energy-independence-act/eia-reporting/>

The only certain cost of a compliance option is the payment of \$60 to \$150 per MWh. The payment is based on the resources and technologies used to generate the electricity they supply:

- One hundred and fifty \$/MWh for coal-fired generation.
- Eighty four \$/MWh for gas-fired peaking power plants.¹⁵
- Sixty \$/MWh for gas-fired combined-cycle power plants.

Since CETA requires the elimination of coal from Washington’s electricity fuel mix by 2025,¹⁶ the \$150 penalty is unlikely to occur, so the most likely maximum penalty will be \$84 per MWh. As the price and availability of unbundled RECs is unknown for 2030, we conclude that a utility will invest in ETP if a cost of a project is less than \$84 or \$60 per MWh depending on the type of gas power plant.

Other factors influencing the decision

In reality, it is most likely that a utility will choose a combination of two or three options to comply with “GHG-neutral” standard. Several factors apart from comparative costs of ETPs option influence utility’s decision to implement ETP. In this case, ETP may cost more than RECs or even penalties, because those projects will bring other benefits that would not otherwise occur. Please see Chapter 4 for expected benefits.

3.2.2.2 Establishing eligible project categories

The rule establishes the process for identifying eligible project categories that electric utilities can invest in, as a compliance option for meeting the statutory requirement for the GHG-neutral standard. The statute establishes the criteria for identifying eligible project types.

The statute requires that ETPs:

- Provide energy-related goods or services, other than the generation of electricity.
- Reduce fossil fuels and greenhouse gases.
- Provide benefits to electric utility customers.
- Be associated with the consumption of energy in Washington.
- Not create a new use of fossil fuels that result in a net increase of fossil fuel usage.
- Not be double counted toward the standard.

¹⁵ Utilities use such power plants to supply power for relatively short periods of time for maintaining reliability of electricity supply in a specific location. Peak load power plants are dispatched in combination with base load power plants, which supply a dependable and consistent amount of electricity, to meet the minimum demand.

¹⁶ CETA requires Washington’s electric utilities to phase out greenhouse-gas emitting generation. The legislation mandates that all coal-fired resources must be eliminated from the portfolio of generation resources used to serve Washington consumers by December 31, 2025.

The statute lays out additional criteria for ETPs in RCW 19.405.040 (2), including that emission reductions must be:

- Real, specific, identifiable, and quantifiable.
- Permanent.
- Enforceable by the state of Washington.
- Verifiable.
- Not required by another statute, rule, or other legal requirement.
- Not reasonably assumed to occur absent investment, or if a utility has already made an investment, not reasonably assumed to occur absent additional funding in the near future.

Eligible projects are required to provide additional GHG reduction and energy benefits beyond what is required in existing regulations, or beyond a business as usual scenario (i.e. what is not usually feasible). The significance of identifying eligible project categories is that it determines the scope of the comprehensive protocol development. The comprehensive protocol will establish the methods, standards, and procedures utilities can use to develop and evaluate projects in these identified eligible project categories.

The rule establishes a public process to gather information for determining eligible project categories. This determination of eligible project categories may not have direct impact on the cost of the eligible project types. However, we do expect the list of eligible categories to influence the number of projects available for which electric utilities to invest.

The only project categories explicitly mentioned in the rule are electric vehicle charging infrastructure and at least one project category pertaining to either the use or supply of renewable hydrogen.

3.2.2.3 Developing comprehensive protocols

The rule also establishes the means for developing comprehensive protocols for methods, standards, and procedures to guide the development and evaluation of ETPs. The protocols will provide the mechanisms for quantifying GHG emissions reductions and clean energy benefits of eligible projects. We will develop the protocols as part of implementing the rule. Absent specific protocols during rulemaking, we could not comprehensively identify and quantify impacts of projects utilities might develop to comply with the statutory GHG-neutral electricity standard.

How stringent the protocol criteria is will influence the types of eligible projects for which electric utilities can invest. If the protocols set very stringent requirements, it could limit GHG emissions reductions and clean energy benefits available from projects chosen to comply with the GHG-neutral electricity standard. As a result, utilities will likely choose other compliance options such as the administrative penalty.

Because Ecology will develop the criteria during rule implementation, it is not possible at this time to identify how stringent the criteria will ultimately be.

3.2.3 Hypothetical Example: Administrative costs

Given the degree of uncertainty about the ultimate implementation of the rule, we cannot quantify or necessarily qualitatively describe a specific project a utility will use as a compliance option under the rule. However, for illustrative purposes we are including an example of the administrative costs of an existing project that could potentially qualify as an ETP, if it meets the additionality criteria and other requirements of CETA for ETPs.

We chose one of the applications from a PUD for a grant program managed by Ecology as an example for this analysis. The project is devoted to developing charging infrastructure for electric vehicles.¹⁷ Although the provided example potentially fits into the list of ETP categories, note, however, that this example project relies on grant funding and might not be eligible unless project proponents are able to demonstrate that it meets additionality criteria.

3.2.3.1 Cost of project plan preparation

The rule requires utilities to prepare and submit to Ecology a project plan describing:

- How the project should work.
- How the project conforms to the criteria and requirements in the comprehensive protocol.

The protocol includes the following parts, which will determine the cost of preparing the project plan:

- Applicability
- Assessment boundaries
- Temporal scope
- Quantification methods
- Baseline procedures
- Fossil fuel effects
- Additionality tests
- Enforcement regimes
- Monitoring procedures
- Reporting strategies
- Verification procedures

Although it is hard to predict the cost of preparing such documentation because we do not have critical information that would make it possible to assess the complexity of the project - a list of

¹⁷ Please read more about the grant program: <https://ecology.wa.gov/About-us/How-we-operate/Grants-loans/Find-a-grant-or-loan/Volkswagen-enforcement-action-grants>

project categories and comprehensive protocol, we based our estimates on comparable applications previously received by Ecology.

For such a project that has average complexity, we assumed it will take 50 to 100 hours of work by environmental engineer and a project manager. The cost of a project plan preparation will be between about \$4,525 and \$9,049. A more complex project could take up to 1,000 hours in project plan preparation – 250 hours from a project manager and three environmental engineers and cost up to \$90,490. We assumed that utilities will develop ETP documentation in 2025, after Ecology completes the work on ETP protocols. The total costs in present value (PV)¹⁸ for seven business¹⁹ are between \$30,164 and \$603,284, for twenty two²⁰ businesses – between \$94,802 and \$1,896,035, for all utilities – between \$293,024 and \$5,860,473. In all groups the range reflects complexity of projects and plans.

Table 1. Cost of project plan development in 20-year present value.

Project	Simple project	Simple project	Complex project	Complex project
Hours estimate	Low	High	Low	High
For 1 utility	\$4,309	\$8,618	\$43,092	\$86,183
For 7 utilities	\$30,164	\$60,328	\$301,642	\$603,284
For 22 utilities	\$94,802	\$189,604	\$995,390	\$1,896,035
For 68 utilities	\$293,024	\$586,047	\$2,930,236	\$5,860,473

Cost of validation

The rule establishes the validation and verification requirements to confirm whether the project plan conforms to the protocol requirements, which may affect the cost of the project. The rule provides utilities (investor-owned and consumer owned) two options for validating an ETP plan:

- Validation by Ecology.
- Third-party validation.

If a utility chooses Ecology to validate the project plan, there will be no additional cost to the utility. If a utility chooses a third party, they will incur a cost.

Third-party validation costs could make a project less attractive, especially if the project validation costs are significant. Utilities will likely choose the less costly option. Considering only monetary costs, the least-cost option will be Ecology validation with zero cost, but time is also a cost for consideration. It is quite likely third-party validation will be in demand when Ecology’s work to meet statutory deadlines and identify cheap and effective technologies that

¹⁸ Ecology calculates present values based on a real discount rate of 0.98 percent, the historic average real rate of return on US Treasury I-Bonds since 1998. US Treasury Department (2020).

http://www.treasurydirect.gov/indiv/research/indepth/ibonds/res_ibonds_iratesandterms.htm

¹⁹ Seven utilities that have fossil fuels in their fuel mix and likely need the alternative compliance mechanisms, and may choose to use ETPs to comply.

²⁰ Twenty-two utilities that have fossil fuels or unspecified electricity in their planned fuel mix and may want to use ETPs as potential compliance options under particular supply market conditions.

may meet the criteria for eligible ETPs is at its peak. This could strain Ecology’s resources and lead to potential delays.

Ecology staff previously involved in project validation processes provided an estimate of between 16 workhours for straightforward applications and more than 100 workhours for a complex project that will include public notice, public comments, and response to comments.

The mean hourly wages in Washington state in Management, Scientific, and Technical Consulting Services is \$45.16, with 30 percent overheads and 20 percent profit margin (averages between 15 percent and 25 percent) for a consulting company. Ecology estimated the total cost of validation in 2020 through a third party to be between \$1,127 for a simple project and \$7,045 for a complex one. We assumed that validation will take place in 2025, after Ecology completes its work on ETP protocols, utilities develop ETP documentation and submit it for validation. For seven utility companies the 20-year present value²¹ of validation costs is between \$0 if no utility chooses third-party validation and \$46,968 if all of them choose it for a complex project, for 22 – between \$0 and \$147,613, for all 68 – up to \$456,258.

Table 2. Cost of third-party validation in 20-year present value.

Project	Simple project	Complex project
For 1 utility	\$1,074	\$6,710
For 7 utilities	\$7,515	\$46,968
For 22 utilities	\$23,618	\$147,613
For 68 utilities	\$73,001	\$456,258

Cost of verification

If a utility decides to invest in ETPs to comply with the GHG-neutral electricity standard under CETA they will have to go through the process of verification, monitoring, and reporting.

The rule requires third-party verification to confirm the benefits after the utility implements the project. The comprehensive protocol will detail the exact requirements of the performance verification, which may vary among project types. The rule specifies some requirements but it is not sufficient to determine the exact cost of the verification for this analysis.

For this analysis, we use the method run for economic analysis by Ecology for Chapter 173-441 WAC Reporting of Emissions of Greenhouse Gases.²² That analysis involves documentation of:

- Reporting party information.
- Verifier information.

²¹ Ecology calculates present values based on a real discount rate of 0.98 percent, the historic average real rate of return on US Treasury I-Bonds since 1998. US Treasury Department (2020).

http://www.treasurydirect.gov/indiv/research/indepth/ibonds/res_ibonds_iratesandterms.htm

²² Chapter 173-441 WAC. Reporting of Emissions of Greenhouse Gases. Ecology. 2016.

<https://fortress.wa.gov/ecy/publications/documents/1602015.pdf>

- Compliance with the rule requirements limiting extended use of verifier, and prohibiting verifier conflict of interest.
- Verification plan including data and methodologies.
- Corrections to the compliance report.
- Supporting information of findings.
- Certification of accuracy, completeness, and truth.
- On-site visit.

Ecology converted typical costs to 2020 dollars using historical inflation index. The survey analysis also confirmed approximate costs of verification we previously assumed. We estimated a verification to cost approximately \$606 for a simple project and \$20,610 for a complex one. We assumed that there is different frequency of verification that will depend on technical details of a project. For illustration, we give example of the cost of verification that happens once, every five years, or every year. Ecology estimated the present value of verification costs using a 0.98 percent discount rate for the 2030 - 2044 estimate. We estimated a total verification cost is between \$3,847 and \$13,324,536 in PV depending on the project’s complexity, frequency of verification, and number of utilities implementing ETPs.

Table 3. Cost of verification in 20-year present value.

Frequency Project	Once Simple project	Once Complex project	Every 5 years Simple project	Every 5 years Complex project	Every year Simple project	Every year Complex project
For 1 utility	\$550	\$18,695	\$1,571	\$53,458	\$5,760	\$195,949
For 7 utilities	\$3,847	\$130,864	\$11,000	\$374,203	\$40,321	\$1,371,643
For 22 utilities	\$12,090	\$411,286	\$34,572	\$1,176,067	\$126,723	\$4,310,879
For 68 utilities	\$37,370	\$1,271,246	\$106,858	\$3,635,116	\$391,690	\$13,324,536

The total administrative costs in 20-year present value for one ETP are summarized in the Table 4. The estimated costs reflect different assumptions on the project’s complexity, willingness to choose third party validation over Ecology, frequency of verification. Table 5 shows estimated annualized value of administrative costs per one ETP over 20-year period.

Table 4. Total administrative cost of one ETP in 20-year present value.

Project complexity	Simple project	Simple project	Complex project	Complex project	Simple project	Simple project	Complex project	Complex project
Plan development	Hours, low	Hours, high	Hours, low	Hours, high	Hours, low	Hours, high	Hours, low	Hours, high
Validation	Ecology	Ecology	Ecology	Ecology	Third party	Third party	Third party	Third party
One time verification	\$4,859	\$9,168	\$61,787	\$104,878	\$5,932	\$10,241	\$68,496	\$111,588
Verification every 5 years	\$5,881	\$10,190	\$96,549	\$139,641	\$6,954	\$11,263	\$103,259	\$146,351
Verification every year	\$10,069	\$14,378	\$239,041	\$282,132	\$11,143	\$15,452	\$245,750	\$288,842

Table 5. Annualized value of administrative costs per one ETP over 20-year period.

Project complexity	Simple project	Simple project	Complex project	Complex project	Simple project	Simple project	Complex project	Complex project
Plan development	Hours, low	Hours, high	Hours, low	Hours, high	Hours, low	Hours, high	Hours, low	Hours, high
One time verification	\$269	\$507	\$3,417	\$5,800	\$328	\$566	\$3,788	\$6,171
Verification every 5 years	\$325	\$564	\$5,340	\$7,723	\$385	\$623	\$5,711	\$8,094
Verification every year	\$557	\$795	\$13,220	\$15,603	\$616	\$855	\$13,591	\$15,974

3.3 Cost summary and comments

There are no costs associated with Part I of the rule.

We considered two cost perspectives on Part II of the rule. The first one is through the administrative costs that utilities that choose to implement ETPs will potentially incur. Those costs consist of expenditures on project plan preparation, validation, and verification.

- The total costs of project plan preparation in present value (PV) for seven utilities are between \$30,164 and \$603,284, for 22 utilities – between \$94,802 and \$1,896,035, for all utilities – between \$293,024 and \$5,860,473. In all groups, the range reflects complexity of projects and plans.

- For seven utility companies the 20-year present value of validation costs is between \$0 if no utility chooses third-party validation and \$46,968 if all of them choose it for a complex project, for 22 – between \$0 and \$147,613, for all 68 – up to \$456,258.
- We estimated a total 15-year verification cost in 20-year PV is between \$3,847 and \$1,371,643 for seven utilities, between \$12,090 and \$4,310,879 - for 22 utilities, and between \$37,370 and \$13,324,536 – for all utilities, depending on the project’s complexity, frequency of verification and number of utilities implementing ETPs.
- The total administrative costs in 20-year present value for one ETP are between \$4,859 and \$288,842. The estimated costs reflect different assumptions on the project’s complexity, willingness to choose third party validation over Ecology, frequency of verification.
- Annualized value of administrative costs per one ETP over 20-year period is between \$269 and \$15,974.

The other perspective is the cost a utility will incur, if Ecology does not adopt this rule. In this case, many factors affect a utility’s decision to invest in ETPs. The most critical one is the cost of the other alternative compliance options. As the price and availability of unbundled RECs is unknown for 2030, we conclude that a utility would invest in ETP if a cost of a project would be less than \$84 or \$60 per MWh administrative penalties, depending on the type of natural gas power plant used to generate electricity above the 20 percent limit. We are assuming no or very limited electricity from coal power plants after 2030, because of the policy of the state to eliminate coal-fired electricity by 2025 (RCW 19.405.030(1)(a)). If some of the utilities choose alternative compliance mechanisms like RECs, it would compress or reduce the ranges of costs estimated above, because of the smaller number of utilities implementing ETP.

The project could cost more in some cases, for example if there were a shortage in availability of unbundled RECs on the market, or a utility decides to invest in future infrastructure to avoid fuel price shocks and regulatory uncertainty, or for marketing purposes.

Overall, the purpose of ETP compliance option is to create such mechanism that will be both cost-savings, provide benefits of GHG reduction, and technological modernization. The degree to which this could be a cost-savings depends on future development of technological improvements or emerging technologies, REC market adjustments, and exogenous factors such as climate change and fuel market shocks or structural change.

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Chapter 4: Likely Benefits of the Adopted Rule

4.1 Introduction

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

4.2 Benefits analysis

The adopted rule consists of two parts:

- Part I - Establishes calculation methods to estimate the GHG emissions content in electricity that an electric utility supplies to its retail electric customers in Washington.
- Part II - Establishes requirements for Energy Transformation Projects (ETPs) that electric utilities may use as an option to meet the GHG-neutral electricity standard required under CETA. These include the processes for:
 - Identifying eligible project categories under CETA.
 - Developing comprehensive protocols including detailed criteria, standards, and methodologies for the identified eligible project categories.
 - Validating, monitoring, reporting, and verifying the GHG reduction and/or clean energy benefits of ETPs.

4.2.1 Method for calculating GHG emissions from electricity

Part I of the adopted rule describes a calculation method with multiple options based on existing reporting programs:

- EIA-Form 923 that include the amount of electricity and the type and amount of fuel used to generate the electricity.
- EPA Greenhouse Gas Reporting Program.
- GHG emissions calculation formula established in the EPA rule, 40 CFR Part 98 as adopted by WAC 173-441.

Multiple calculation options can simplify the reporting process for utilities and minimize their workload associated with reporting to Commerce or UTC. In particular, it provides electric utilities with the:

- Ability to use alternate data sources approved by Commerce or UTC.
- Ability to aggregate reporting units by type or originating utility.

Ecology has adopted the default emissions factor for unspecified electricity established by the CETA. Ecology will update this unspecified electricity factor in the future as needed.

The benefit of this element of the rule is that it will provide the tools for consistent information on the GHG emissions content of electricity consumed in Washington State, supporting Commerce and UTC's CETA implementation and improved information made available to Washington's electric customers and policy makers. The more accurate data leads to estimates that are more precise and therefore improves the decision process at all levels – from agencies to utilities' management, to customers.

4.2.2 Establishes requirements for Energy Transformation Projects as an option for compliance with CETA obligation for the GHG-neutral standard.

Benefit of providing option for compliance with CETA obligation for the GHG-neutral standard.

The rule provides the mechanism to identify, develop, and evaluate certain energy-related projects that meet the CETA criteria and the adopted rule. The implementation of this rule will create opportunities for electric utilities to invest in ETPs to help them comply with the GHG-neutral electricity standard required under CETA. Although these investments by electric utilities will provide market incentives to the projects (based on the GHG emissions reduction potentials) that improve the economic attractiveness of the ETPs, and thus increase their chance of being implemented. Moreover, the implementation of this rule assures state energy agencies, interested stakeholders, and the public that ETPs meet the requirements and standards of quality that CETA requires.

Benefit of reducing GHGs.

One of the ETP criteria established by the statute is that the project should reduce fossil fuels and GHG emissions. Although these kind of projects will happen as long as it is financially valuable for them to do so, the adopted rule creates a credible option for utilities to reduce their GHG emissions through ETPs, especially in comparison with the administrative penalties option. The ETP option also comes with the requirement of lowest cost increase on electric consumers, and without increasing other environmental impacts, especially on vulnerable communities.

As utilities reduce their GHG emissions, society will benefit by avoiding various impacts of climate change. The value of the negative impacts to society caused by GHG emissions is estimated using social cost of carbon (SCC). There are many estimate of SCC based on different assumptions and that grow over time at a different rate.

In 2019 The Legislature passed RCW 80.28.405 - the requirements for including the social cost of carbon of emissions from electricity generation. Consistent with this law, Commerce adopted WAC 194-40-100.²³ Similarly, UTC has adopted the SCC values.²⁴

²³ <https://apps.leg.wa.gov/wAc/default.aspx?cite=194-40-100&pdf=true>

²⁴ <https://www.utc.wa.gov/regulatedIndustries/utilities/Pages/SocialCostofCarbon.aspx>

Both agencies adopted cost estimates produced by the Interagency Working Group on Social Cost of Greenhouse Gases²⁵ and adjusted this rate to the “current” year dollars - 2018 or 2019. Ecology calculated the social cost values for intermediate years (2030 - 2045) using the same method and Appendix A of the Technical Support Document²⁶ to reflect 2020 dollars using the U.S. Dept. of Commerce GDP price index.²⁷

Table 6. Social cost of carbon estimates for 2030 – 2044.

Year	Average Social Cost of Carbon 2007\$/MTCO ₂ e at 2.5%	GDP Index (2007 dollars)	GDP Index (2020 dollars, Q3 average)	Adjusted Social Cost of Carbon Dioxide (in 2020 dollars per metric ton)
2030	\$73	92.498	113.363	\$89
2031	\$74	92.498	113.363	\$91
2032	\$75	92.498	113.363	\$92
2033	\$76	92.498	113.363	\$93
2034	\$77	92.498	113.363	\$94
2035	\$78	92.498	113.363	\$96
2036	\$79	92.498	113.363	\$97
2037	\$81	92.498	113.363	\$99
2038	\$82	92.498	113.363	\$100
2039	\$83	92.498	113.363	\$102
2040	\$84	92.498	113.363	\$103
2041	\$85	92.498	113.363	\$104
2042	\$86	92.498	113.363	\$105
2043	\$87	92.498	113.363	\$107
2044	\$88	92.498	113.363	\$108
2045	\$89	92.498	113.363	\$109

Because of the degree of uncertainty for the covered parties (see discussion in Chapter 3), it is impossible to give an estimate to the potentially avoided SCC for the total amount of reduced GHG.

²⁵ Technical Support Document.: Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis. https://www.epa.gov/sites/production/files/2016-12/documents/sc_co2_tsd_august_2016.pdf

²⁶<https://www.utc.wa.gov/regulatedIndustries/utilities/Documents/Technical%20Support%20Document%20Social%20Cost%20of%20Carbon%20August%202016.pdf>

²⁷ We updated our analysis with the most recent data available - Price Indexes for Gross Domestic Product for the first three quarters of 2020, we used their average to estimate current index.

Benefits of avoided costs of associated emissions.

Depending on what kind of projects will be included into the list of ETP-eligible project categories, there may be associated reductions in other emissions, such as criteria pollutants and toxic air pollutants.

Other associated emissions that ETPs might also reduce include:

- Nitrogen oxides
- Sulfur oxides
- Fine particulates
- Various toxic air pollutants

Avoiding and reducing these emissions improve air quality and reduce associated health conditions, such as asthma and other lung disorders, and contributors to certain cancers.

Estimation of actual avoided costs of associated emissions will require knowledge of (or confident estimates of the methods and locations of the energy transformation projects. Some illustrative estimates of health benefits from Clean Air Act programs that reduce levels of fine particles and ozone can be found at EPA²⁸ and more specific indicators from scenarios of implementing electrical vehicle charging stations - at the Federal Highway Administration.²⁹

Generally, EPA's peer reviewed study³⁰ found that the value of Clean Air Act health benefits far exceeds the costs of reducing pollution. The study's central benefits estimate of \$2 trillion in 2020 exceeds costs by a factor of more than 30-to-1, and the high benefits estimate exceeds costs by 90 times. Even the low benefits estimate exceeds costs by about 3-to-1.

Benefits for utilities beyond cost of compliance option.

There are certain reasons, which will influence utilities decision to implement ETP even if the cost per MWh is higher than the cost of penalties. Those reasons will vary depending on the project's category and we are providing a few of them to illustrate possible benefits for utilities beyond cost efficiency in comparison to other two options.

One of the energy market specifics is the volatility of fuel prices. The prices in this market fluctuate because of many factors: weather, production and imports, delivery constrains, etc. Another specific of the market is its regulatory uncertainty, which influence both – supply and demand of electricity, and prices. Both of those factors directly demand utilities' risk management activities. In case a utility plans to use ETP project that can also contribute for mitigation of fuel price shock or regulatory

²⁸ <https://www.epa.gov/clean-air-act-overview/progress-cleaning-air-and-improving-peoples-health>

²⁹ https://www.fhwa.dot.gov/ENVIRONMENT/air_quality/cmaq/reference/cost_effectiveness_tables/report/costeff02.cfm#toc430165699

³⁰ <https://www.epa.gov/sites/production/files/2015-07/documents/summaryreport.pdf>

uncertainty, it is likely to invest even if the cost is higher than paying the administrative penalties.

For public-facing projects, it may be important part of the marketing plan – by acquiring new technologies and building innovative value. For example, if a new innovative service is introduced to an existing customer, it will do both: sell the new service and demonstrate its innovative value. This will not only increase customer’s loyalty, but also captures demand early for a new service. As an example for EV charging stations, we can also anticipate that the profits from the sold electricity through EV-charging stations compensate costs and continuously contribute to the increase in electricity demand.

4.3 Benefits summary and comments

Part I of the rule provides the tools for consistent information on the GHG emissions content in electricity consumed in Washington State, supporting Commerce and UTC’s CETA implementation, and making consistent and relevant information available to Washington’s electric customers, agencies and the Legislature. Availability of more accurate data leads to improved decisions at all levels – from utilities’ customers, utilities, agencies Legislature.

Part II of the rule provides the mechanism to identify, develop, and evaluate certain energy-related projects that meet the criteria established by the rule. The implementation of this rule will create opportunities for electric utilities to invest in ETPs to help them comply with the GHG-neutral electricity standard CETA requires.

From one perspective, Part II of the adopted rule establishes only the process and requirements for:

- Identifying eligible project categories.
- Developing the comprehensive protocol.
- Evaluating the GHG reduction and clean energy benefits of projects.

Ecology plans to develop the comprehensive protocol, as part of the implementation of this rule. The protocol will incorporate the criteria, standards, methodologies, and procedures for guiding the development and evaluation of ETPs. This provides the clarity for ETP investors, resulting in less time spent on the preparation of the project plan and proposal - the benefit of reduced administrative costs.

With the other perspective, option of investing in ETPs creates a potentially cost-effective compliance option compared to buying unbundled RECs or paying an administrative penalty. It is difficult to analyze the cost-effectiveness of ETPs at this point, as it would depend on the types of projects and stringency of the detail requirements that Ecology will establish in the comprehensive protocol.

One of the criteria for eligible project categories is a requirement to provide additional GHG reductions and clean energy benefits to a level beyond what is required in existing regulations, or beyond business as usual scenario, i.e. what is not usually feasible if it is not for the investment by electric utilities. The implementation of ETPs creates a group of benefits associated with the

reduction of GHG and other pollutants that will not happen without this rule. Multiple rigorous analyses demonstrate that the value of health benefits far exceeds the costs of reducing pollution.

Chapter 5: Cost-Benefit Comparison and Conclusions

5.1 Summary of costs and benefits of the adopted rule

Costs

In Chapter 3, we identified the following potential costs resulting from the adopted amendments.

There are no costs associated with Part I of the rule.

We considered two cost perspectives on Part II of the rule. The first one is through the administrative costs that utilities that choose to implement ETPs will potentially incur. Those costs consist of expenditures on project plan preparation, validation, and verification.

- The total costs of project plan preparation in present value (PV) for seven utilities are between \$30,164 and \$603,284, for 22 utilities – between \$94,802 and \$1,896,035, for all utilities – between \$293,024 and \$5,860,473. In all groups, the range reflects complexity of projects and plans.
- For seven utility companies the 20-year present value of validation costs is between \$0 if no utility chooses third-party validation and \$46,968 if all of them choose it for a complex project, for 22 – between \$0 and \$147,613, for all 68 – up to \$456,258.
- We estimated a total 15-year verification cost in 20-year PV is between \$3,847 and \$1,371,643 for seven utilities, between \$12,090 and \$4,310,879 - for 22 utilities, and between \$37,370 and \$13,324,536 – for all utilities, depending on the project’s complexity, frequency of verification and number of utilities implementing ETPs.
- The total administrative costs in 20-year present value for one ETP are between \$4,859 and \$288,842. The estimated costs reflect different assumptions on the project’s complexity, willingness to choose third party validation over Ecology, frequency of verification.
- Annualized value of administrative costs per one ETP over 20-year period is between \$269 and \$15,974.

The other perspective is the cost a utility will incur, if Ecology does not adopt this rule. In this case, many factors affect a utility’s decision to invest in ETPs. The most critical one is the cost of the other alternative compliance options. As the price and availability of unbundled RECs is unknown for 2030, we conclude that a utility would invest in ETP if a cost of a project would be less than \$84 or \$60 per MWh administrative penalties, depending on the type of natural gas power plant used to generate electricity above the 20 percent limit. We are assuming no or very limited electricity from coal power plants after 2030, because of the policy of the state to eliminate coal-fired electricity by 2025 (RCW 19.405.030(1)(a)). If some of the utilities choose alternative compliance mechanisms like RECs, it would compress or reduce the ranges of costs estimated above, because of the smaller number of utilities implementing ETP.

The project could cost more in some cases, for example if there were a shortage in availability of unbundled RECs on the market, or a utility decides to invest in future infrastructure to avoid fuel price shocks and regulatory uncertainty, or for marketing purposes.

Overall, the purpose of ETP compliance option is to create such mechanism that will be both cost-savings, provide benefits of GHG reduction, and technological modernization. The degree to which this could be a cost-savings depends on future development of technological improvements or emerging technologies, REC market adjustments, and exogenous factors such as climate change and fuel market shocks or structural change.

Benefits

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

Part I of the rule provides the tools for consistent information on the GHG emissions content in electricity consumed in Washington State, supporting Commerce and UTC's CETA implementation, and making consistent and relevant information available to Washington's electric customers, agencies and the Legislature. Availability of more accurate data leads to improved decisions at all levels – from utilities' customers, utilities, agencies Legislature.

Part II of the rule provides the mechanism to identify, develop, and evaluate certain energy-related projects that meet the criteria established by the rule. The implementation of this rule will create opportunities for electric utilities to invest in ETPs to help them comply with the GHG-neutral electricity standard CETA requires.

From one perspective, Part II of the adopted rule establishes only the process and requirements for:

- Identifying eligible project categories.
- Developing the comprehensive protocol.
- Evaluating the GHG reduction and clean energy benefits of projects.

Ecology plans to develop the comprehensive protocol, as part of the implementation of this rule. The protocol will incorporate the criteria, standards, methodologies, and procedures for guiding the development and evaluation of ETPs. This provides the clarity for ETP investors, resulting in less time spent on the preparation of the project plan and proposal - the benefit of reduced administrative costs.

With the other perspective, option of investing in ETPs creates a potentially cost-effective compliance option compared to buying unbundled RECs or paying an administrative penalty. It is difficult to analyze the cost-effectiveness of ETPs at this point. It depends on the types of projects and the stringency of their requirements Ecology will establish in the comprehensive protocol.

One of the criteria for eligible project categories is a requirement to provide additional GHG reductions and clean energy benefits to a level beyond what is required in existing regulations, or beyond business as usual scenario, i.e. what is not usually feasible if it is not for the investment by electric utilities. The implementation of ETPs creates a group of benefits associated with the

reduction of GHG and other pollutants that will not happen without this rule. Multiple rigorous analyses demonstrate that the value of health benefits far exceeds the costs of reducing pollution.

5.2 Conclusion

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

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Chapter 6: Least-Burdensome Alternative Analysis

6.1 Introduction

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

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

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

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

For additional alternatives suggested during the public comment period, and Ecology’s response, see the associated Concise Explanatory Statement for this rulemaking.

6.2 Goals and objectives of the authorizing statute

The authorizing statute for this rule is Chapter 19.405 RCW, Washington Clean Energy Transformation Act (CETA). Its goals and objectives are:

- Transforming the energy supply in Washington.
- Modernizing the electricity system in the state.

- Ensuring that the benefits of this transition are broadly shared throughout the state.
- Complete rulemaking by January 1, 2021.

The statute requires that ETPs:

- Provide energy-related goods or services, other than the generation of electricity.
- Reduce fossil fuels and greenhouse gases.
- Provide benefits to electric utility customers.
- Be associated with the consumption of energy in Washington.
- Not create a new use of fossil fuels that result in a net increase of fossil fuel usage.
- Not be double counted toward the standard.

The statute lays out additional criteria for ETPs in RCW 19.405.040 (2), including that emission reductions must be:

- Real, specific, identifiable, and quantifiable.
- Permanent.
- Enforceable by the state of Washington.
- Verifiable.
- Not required by another statute, rule, or other legal requirement.
- Not reasonably assumed to occur absent investment, or if a utility has already made an investment, not reasonably assumed to occur absent additional funding in the near future.

For Ecology, the statute requires us to adopt rules, in consultation with the commission and the Department of Commerce, to establish requirements for energy transformation project investments including, but not limited to, verification procedures, reporting standards, and other logistical issues as necessary.

6.3 Alternatives considered and why they were excluded

We considered the following alternatives, and did not include them in the adopted rule for the reasons discussed in each subsection below.

- Timeline for periodic update of the emissions factor for unspecified electricity.
- Complete list of requirements, processes, and project categories.
- Defined list of eligible project categories.
- Forming a group to identify suitable project types, and evaluate and verify projects.
- Exclude third party obligatory verification and optional validation.

6.3.1 Timeline for periodic update of the emission factor for unspecified electricity

Some electric utilities requested the rule include a timeline for periodic update of the emission factor for unspecified electricity to keep it accurate, as the source of electricity is changing with increasing renewable energy and retiring coal power plants.³¹ RCW 19.405.070 (2) allows Ecology to update the emission factor periodically for unspecified electricity. The legislature recently established the emission factor. As required in CETA (RCW 19.405.070), the emission factor in the rule is consistent with the factor used by other markets in the western interconnection. Ecology is committed to update the emission factor if it is determined to be appropriate through a future rulemaking process. As rulemaking priorities are set at agency level and affected by multiple factors, Ecology chose not to include a timeline in the rule to update the emission factor for unspecified electricity. Ecology notes that any person can petition Ecology to request rule adoption per RCW 34.05.330.

6.3.2 Complete list of requirements, processes, and project categories

Many electric utilities expressed interest in having all the requirements, processes, and project categories identified in the rule.

The statute sets a deadline of January 1, 2021 to adopt this rule and does not specify which ETP requirements and processes should be included. Ecology decided to focus this rulemaking on establishing the framework requirements and processes that guide the identification of eligible project categories, the development of the comprehensive protocol, and the monitoring and evaluation of projects. Ecology will do the work to identify ETP eligible project categories and develop the comprehensive protocol outside of this rulemaking, using a specified public process in the rule.

The work to develop the comprehensive protocol is highly technical because it involves applying the most recent science and engineering estimates to derive GHG emission and energy benefits. Because science and technology is always evolving, if Ecology had adopted the comprehensive protocol as part of the rule it would be out of date before utilities could implement real ETPs in 2030 - 2045. Moreover, Ecology would need to be in perpetual rulemaking to keep the protocol up to date, impacting resources for both the agency and stakeholders.

6.3.3 Defined list of eligible project categories

Many electric utilities expressed interest in having more eligible project categories (other than related to EVs and renewable hydrogen) included in the rule so that they can incorporate ETPs in their long-term planning at an earlier stage.

³¹ For example, reporting agencies in Washington assign their generic fuel mix to the BPA purchase amount based on their determination of the Northwest power pool region resources.

The rule is limited to the process for identification of ETP-eligible project categories. Keeping this list outside of the rule has a number of advantages. The specific wording of each project category has important implications as to the types of projects that can be included in each category. The wording of each category can also have implications for the wording of other categories, especially as new technologies become feasible. By not including this list in the rule, Ecology has the flexibility to change project category titles as needed as we add more project categories to the list.

To accommodate substantial stakeholder interest in one type of project the rule requires Ecology to include a project category related to electric vehicle charging. Our work with stakeholders shows that this is a noncontroversial and widely supported project type, and is unlikely to cause any future conflicts with other potential types of project category titles in the future.

The rule does not identify specific ETP project categories that will be eligible, but defines the public process by which such determinations will be made. The public process defined in the rule will address the numerous comments regarding the merits of specific project categories received during the rulemaking process, as well as allowing a robust discussion on all aspects of what types of projects should be considered for eligibility.

6.3.4 Forming a group to identify suitable project types, and evaluate and verify projects

With the intention of reducing the burden this rule may cause, some utilities and the Washington Public Utility Districts Association (WPUDA) requested that Ecology consider a modified regulatory approach that involves forming a group to identify suitable project types, and evaluate and verify projects. They suggested a group similar to the Regional Technical Forum (RTF),³² which assesses and verifies energy efficiency measures for the Northwest Power and Conservation Council (NWPCCC).³³

The federal Pacific Northwest Electric Power Planning and Conservation Act of 1980 established the RTF. Moreover, that law and the organizational structure of the NWPCCC, provide the funding and resources necessary to run such an organization. CETA provides no mandate, no funding, and no authority to Ecology to form such an entity. CETA makes clear that Ecology does not play a primary role in implementing the law. That role is reserved for the Department of Commerce and the UTC. Even if such an entity should be formed it would be logical for that entity to be placed under one of the primary implementing agencies for CETA.

6.3.5 Exclude third party obligatory verification and optional validation

The representatives of some utilities asked Ecology to remove the requirement for third-party verification and validation from the rule, for at least some project types. The law

³² <https://rtf.nwcouncil.org/>

³³ <https://www.nwcouncil.org/>

requires that Ecology put in place verification requirements for ETPs (RCW 19.405.100 (7)). So there is clear legislative intent for verification requirement to be in the rule.

As for the verification by the third party, this ensures that the projects are providing the energy and emission benefits that they promise when they are approved. This may require technical measurements and specific tests, depending on the type of projects, so it is more feasible to be accomplished by a specialized entity rather than acquire equipment and/or train staff at Ecology to conduct these technical tasks. The use of third-party verification for this is consistent with project-based programs in a number of areas, but especially with energy efficiency programs in the Pacific Northwest. Utilities are already accustomed to having to have their energy efficiency programs and projects subject to third party verification, and this rule simply extends that traditional practice to a wider range of energy projects.

By providing utilities with the option of third-party validation, Ecology anticipates possible delays in Ecology validation because of the peaking number of projects, for example, this may potentially happen at the end of 2029. The potential delay in Ecology validation could be due to approaching statutory dates (the beginning of the GHG neutral standard), and possible limits on Ecology's resources.

6.4 Conclusion

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

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Chapter 7: Regulatory Fairness Act Compliance

The Regulatory Fairness Act (RFA; RCW 19.85.070) requires Ecology to perform a set of analyses and make certain determinations regarding the rule, if they impose more than minor compliance costs on businesses.³⁴

We analyzed the costs of the rule in Chapter 3 of this document, and listed the covered parties in Chapter 2. Most of the utilities operating in Washington are publicly-owned. There are three investor-owned utilities, and all of them have more than 50 employees. There are also 17 non-profit companies, some of which have less than 50 employees and we consider them small businesses. Not all utilities will incur compliance costs under the rule. During the rule development process, Ecology received input from interested utilities. We also note that none of these interested parties employs fewer than 50 employees.

Based on the costs discussed in Chapter 3, we identified the following compliance costs:

- The total administrative costs in 20-year present value for one ETP are between \$4,859 and \$288,842. The estimated costs reflect different assumptions on the project's complexity, willingness to choose third party validation over Ecology, frequency of verification.
- Annualized value of administrative costs per one ETP over 20-year period is between \$269 and \$15,974.

For Ecology, the RFA defines minor costs as “a cost per business that is less than three-tenths of one percent of annual revenue or income, or one hundred dollars, whichever is greater, or one percent of annual payroll.” This means minor costs are less than either:

- The larger of \$100 or 0.03 percent of annual revenue or income
- 1 percent of annual payroll.

Given the consistent nature of the analyzed industry and minor cost of 0.03 percent of annual revenue threshold for this industry sector (NAICS 221122) is \$356,687, the total costs defined by the analysis are less than minor.

RFA requirements therefore do not apply to this rulemaking.

³⁴ Due to the new information about the scope of businesses covered by the rule we once again considered whether we are required to perform the analyses required under the RFA. At both rule proposal and adoption compliance costs for all impacted parties were presented in Chapter 3, however, we determined that they meet the definition of minor costs and, therefore, RFA requirements do not apply.

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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.

The intent of the Washington Clean Energy Transformation Act (CETA or Chapter 19.405 RCW) is to address the causes of climate change by leading the transition to a clean energy economy. To realize this transition, the legislation aims at:

- Transforming the energy supply in Washington,
- Modernizing the electricity system in the state, and
- Ensuring that the benefits of this transition are broadly shared throughout the state. (RCW 70.405.010)

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

Because the CETA directed Ecology to adopt rules by January 1, 2021, Ecology did not consider alternatives to rulemaking.

Part I Greenhouse gas emission calculation: If Ecology does not determine emission factors that electric utilities must use to calculate GHG emissions content in electricity, there could be variances in emission factors used by utilities, and potentially by the Utilities and Transportation Commission (UTC) and the Department of Commerce (Commerce).

Part II Energy Transformation Projects: If Ecology does not do this rulemaking, electric utilities may potentially lose a cheaper alternative compliance mechanism to meet their obligation to supply GHG-neutral electricity to their retail customers. Similarly, clean energy transformation project proponents may lose potential incentives for the GHG benefits of their projects. Consequences of not adopting rules include potential litigation.

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 final 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 and record for rulemaking.

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

This rule will not require covered parties to violate existing federal and state laws and rules. The first part of this rule establishes GHG emission calculation method based on federal agencies databases, and in consultation with the regulating agencies for the covered parties. The second part of the rule establishes processes and requirements for the development and evaluation of energy-related projects to allow electric utilities can invest on them to use the GHG reductions and clean energy benefits for compliance with the 2030 GHG-neutral electricity goal set in CETA. The second part establishes an optional compliance mechanism.

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

The requirements in this rule apply to both investor-owned utilities that UTC regulates, and consumer-owned utilities governed by their individual governing boards or commissions. As required in the statute, Ecology developed the rule in close consultation with both regulating agencies. There is no different requirement established in this rule that applies for COUs or IOUs only.

- 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.**

Yes

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

(i) A state statute explicitly allows Ecology to differ from federal standards. [If checked, provide the citation included quote of the language.]

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

CETA allows electric utilities to invest on energy-related projects other than electricity generation so that they can use the GHG emission reduction and clean energy benefits to comply with their obligation to supply GHG-neutral electricity in

2030. This rule provides alternative compliance mechanism that electric utilities can voluntarily invest on.

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.

CETA requires Ecology adopt this rule in consultation with Commerce and UTC. Thus, consistent with CETA, we have consulted with these two regulating agencies in the development of this rule. In some cases, like in the GHG calculation method, we depended on the expertise at Commerce, as both the consumer-owned utilities (COUs) and investor-owned utilities (IOUs) are reporting to Commerce on the fuels sources of the electricity they supply to retail customers in Washington.