
Final Cost Benefit Analysis for Possible EPCA Preemption Issues in the 2021 Washington State Energy Code, Commercial Provisions

I. Code Adoption and Significant legislative Rules

1. Introduction

The Council entered into rulemaking to modify sections in the commercial and residential energy codes to address legal uncertainty stemming from the decision in *California Restaurant Association v. City of Berkeley* recently issued by the Ninth Circuit Court of Appeals. While the requirements in the 2021 Washington State Energy Code are not exactly analogous to the Berkeley prohibition on gas infrastructure, the Council moved forward to address the ruling expanding the scope of the Energy Policy and Conservation Act of 1975 (EPCA) preemption provisions. The Council sought public input on areas where the code may be impacted by a preemption issue and developed a proposed rule addressing those areas while retaining the efficiency gains made towards the goal of RCW 19.27A.160.

2. Amendment of 2021 Washington State Energy Code, Commercial Provisions.

The Washington State Building Code Council (SBCC) filed the Preproposal Statement of Inquiry to initiate the review of possible areas where the Washington State Energy Code, as adopted through WAC 51-11C, on January 5, 2022, may conflict with federal preemption on covered products in 42 USC § 6297. The Energy Policy and Conservation Act (EPCA), 42 U.S.C. § 6292(a), is a federal law that establishes efficiency standards for consumer appliances and contains a list of 19 consumer products that are considered covered products for which the US Secretary of Energy is authorized to establish energy conservation standards. In April 2023, a panel of the Ninth Circuit Court of Appeals invalidated a Berkeley ordinance prohibiting the extension of natural gas pipelines in new buildings, ruling that EPCA “preempts regulations that relate to the quantity of [natural gas] directly consumed by certain consumer appliances at the place where those products are used.”

Under EPCA, building codes are exempt from the preemption rule if they meet seven specified requirements. 42 U.S.C. § 6297(f)(3).

1. The building code permits a builder to meet an energy consumption or conservation objective for a building by selecting items whose combined energy efficiencies meet the objective.
2. The building code does not require that the covered product have an energy efficiency exceeding the applicable energy conservation standard established by the DOE.
3. The credit to the energy consumption or conservation objective allowed by the building code for installing covered products having energy efficiencies exceeding the energy conservation standard established by the DOE is on a one-for-one equivalent energy use or equivalent cost basis.
4. If the building code uses one or more baseline building designs against which all submitted building designs are to be evaluated and such baseline building designs contain a covered product subject to an energy conservation standard established by the DOE, the baseline building designs are based on the efficiency level for the covered product which meets but does not exceed DOE’s standard.
5. If the building code sets forth one or more optional combinations of items which meet the energy consumption or conservation objective, for every combination which includes a covered product the efficiency of which exceeds either standard or level referred to in criteria D., there

also must be at least one combination which includes such covered product the efficiency of which does not exceed the standard or level by more than 5%, except that at least one combination shall include such covered product the efficiency of which meets but does not exceed such standard.

6. The energy consumption or conservation objective is specified in terms of an estimated total consumption of energy (which may be calculated from energy loss- or gain-based codes) utilizing an equivalent amount of energy (which may be specified in units of energy or its equivalent cost)
7. The estimated energy use of any covered product permitted or required in the building code, or used in calculating the objective, is determined using the applicable test procedures prescribed under EPCA, except that the State may permit the estimated energy use calculation to be adjusted to reflect the conditions of the areas where the code is being applied if such adjustment is based on the use of the applicable EPCA appliance test procedures or other technically accurate documented procedure.

In considering amendments to the state energy code, the Council established and consulted with a technical advisory group (TAG) including representatives of appropriate state agencies, local governments, general contractors, building owners and managers, design professionals, utilities, and other interested and affected. On May 24, 2023, the SBCC opened a submittal period for proposals to address these preemption issues within both the residential and commercial provisions of the Washington State Energy Code.

The TAG was tasked with reviewing the proposals received and identifying which best addressed the issues with product preemption within the code. These proposals provided language on re-integrating the use of fossil-fuel fired appliances back into the code requirements while maintaining the energy efficiency gains from the previous requirement for heat pump space and water heating. The TAG also discussed whether modifications were needed to ensure the provisions were correlated with other requirements, technically feasible, and commercially available.

Nineteen proposals were submitted during the two-week submittal period. The TAG ultimately recommended that five proposals move forward into the rulemaking process. One of those proposals is moved forward with two different options of where the requirements are located. Most of these proposals have no or minimal cost impact, and add more options in building design and compliance. One proposal was identified as having a possible cost impact.

The final rule adopts Option 1, with all of the requirements for the fossil fuel pathway located in Section C401.3. There were a few modification to Option 1 to introduce language from Option 2 in areas where it adds greater clarity or retains some of the efficiency of the original 2021 energy code adoption.

II. Code Proposals.

1. Summary of Economic Impact.

Code proposals are identified in Table 1. Only 21-GP3-037 (options 1 and 2) was identified as having an economic impact.

TABLE 1
Code Change Proposals

Code Change Log Number	Sections Affected	Description	Small Business Impact	Economic Impact
21-GP3-026	Table C407.2	Deletes HP space heating from mandatory provisions in total building performance compliance method	None	None
21-GP3-027	C503.4.6	Removes reference to C403.1.4; reduces the efficiency upgrade from 10% to 5% for added equipment Modified	None	Provides more appliance choices for designers and builders to select equipment that best fits the needs of the specific building type and use to provide a more affordable installation cost and long term operational costs.
21-GP3-028	C503.5	Removes the limitation on size of replacement gas water heaters Modified	None	Provides more appliance choices for designers and builders to select equipment that best fits the needs of the specific building type and use to provide a more affordable installation cost and long term operational costs.
21-GP3-036	C202, Table C407.2, C407.3, Tables C407.3(1) and (2), C407.3.3.1, C503.4, C503.5, Appendix D	Add definition for district energy efficiency factor; Strikes HP space and water heating from the list of mandatory measures; Strikes the carbon emission factor table and references thereto; Adjusts building performance factors to be based on energy use rather than emissions Modified	None	None. This proposal would remove mandatory requirements in C407 and provides more flexibility for builders to use the performance pathway.
21-GP3-037 Option 1	C401.2, New C401.3	Adds a new fossil fuel compliance path in C401.3	None	Use of the fossil fuel compliance pathway will result in higher construction costs, as the relative inefficiency of fossil fuel equipment is compensated by adding to the required number of additional energy efficiency credits. The existing

				prescriptive code compliance path remains unchanged, with no cost impact.
21-GP3-037 Option 2 This option was not adopted in the final rule	C403.1.4, C404.2.1, C407.3, Table C406.1, Table C406.2, New C406.1.3, New Table C406.1.3(1) and (2)	Adds new fossil fuel path in C403.1.4 and C404.2, with additional credits required from C406 when fossil fuel appliances are used	None.	Use of the fossil fuel compliance pathway will result in higher construction costs, as the relative inefficiency of fossil fuel equipment is compensated by adding to the required number of additional energy efficiency credits. The existing prescriptive code compliance path remains unchanged, with no cost impact.

Modifications made in the final adoption. The following changes were made to the proposed rule at the final adoption.

WAC 51-11C-10100: The effective date under **Section C101.1, Title**, was corrected to March 15, 2024.

WAC 51-11C-40100: Section C401 was amended as follows:

A section reference within **Section C401.2.2, Application to process equipment**, was corrected to C401.3.1 Item 2.

Item 2 of **Section C401.3.1, Modification of code requirements**, was modified to remove a redundant phrase at the end of the paragraph.

The equations under **Section C401.3.3.1, HVAC credit modification**, and **Section C401.3.3.2, Service water heating credit modification**, were modified to better clarify how credits are applied and are prorated based on the amount of heating appliances installed.

The section references in **Section C401.3.4, Renewable energy credit limit**, were corrected.

Section C401.3.6, Electrification readiness, was modified to specify that the conduits required would be supplied for each fossil fuel appliance installed, and at a location where a future replacement heat pump may be installed. References to “utility” equipment were removed since some buildings may be served from primate electrical services. The transformer vault sizing was also clarified.

WAC 51-11C-40314: In Section C403.1.4, Use of electric resistance and fossil fuel-fired HVAC heating equipment, Exceptions 4 and 7 were modified to restore the specification of electric resistance supplemental heating for air-to-air heat pumps and ground-source heat pumps.

WAC 51-11C-40402: Section C404.2, Service water-heating equipment performance efficiency, from Option 2 was included in the adopted language, with the following modifications:

In **Section C402.1**, the Option 2 language outlining the fossil fuel pathway changes were removed (items 1, 1.1, 1.2, 1.3, 1.4, and 2). These changes are duplicative of Section C401.3.1.

Section C404.2.1.1, Primary heat pump system sizing, and **Section C404.2.1.4, Supplemental water heating,** were modified to clarify sizing requirements for both systems. This ensures that 50 percent of the primary load is met by heat pump water heaters.

WAC 51-11C-40600: Extraneous lines in **Table C406.1, Energy Measure Credit Requirements,** were removed. They were left over from the original adoption in April 2022, relating to options in the original proposed rule for the 2021 adoption.

WAC 51-11C-40620: In **Section C406.2, Additional energy efficiency credit measures,** the following modifications were made:

Reference to the second table for fossil-fuel pathway was added, and a method for calculating credits for hybrid systems was added based on language from Option 2.

In **Tables C406.2(1) and C406.2(2),** the “Prorating Flag” column from Option 2 was inserted to be used with the hybrid system credit calculation. The “Heat pump water heating” option 17 were recalculated based on output data using the revised C406.2.6.3 language. The “High efficiency service water heating, gas-fired” option 18 was also added from Option 2.

WAC 51-11C-40625: In Section C406.2.6, Service water measures, the following changes were made:

Section C406.2.6.3, Heat pump water heating, and **Section C406.2.6.3.1, Heat pump water heater,** were revised to better describe the intended outcome of the credit measure. The associated credits in the table were also recalculated.

Section C406.2.6.4, High efficiency service water heating, gas-fired, was added from Option 2 to describe the requirements to obtain this credit option.

WAC 51-11C-50000: In **Section C501.1.1, Existing buildings,** additional language from HB 1042 was added to specify that to be considered an existing building, it must have received a certificate of occupancy at least three years prior to a permit application.

WAC 51-11C-50300: In Section C503, Alterations, the following changes were made:

In **Section C503.4, Building mechanical systems,** and **Section C503.4.3, Alterations or replacement of existing cooling systems,** section references were updated and editorial changes made for clarity.

Section C503.4.6, Addition or replacement of heating appliances, was modified to specify that fossil fuel appliances are allowed to be added when following the fossil fuel pathway and editorial changes for clarity were made to Exception 7.

In **Table C503.4.6, Compliance Options for Mechanical Heating Equipment Alterations,** footnote b was modified to reflect the same change from 10 percent efficiency change to five percent as in items 3 and 4.

Section C503.5, Service water heating equipment, was modified to specify that fossil fuel appliances are allowed to be added when following the fossil fuel pathway.

Fossil Fuel Compliance Path, Proposal 21-GP3-037, There are two options for this proposal. This proposal creates a separate compliance path for buildings utilizing fossil fuel appliances.

Brief Description: This proposal provides a prescriptive compliance path that expressly permits EPCA-covered fossil fuel-fired HVAC heating and service water heating equipment. To maintain energy use equivalency with the existing prescriptive compliance path, additional C406 efficiency credits are required to compensate for the difference in energy efficiency between fossil fuel and heat pump appliances. Up to 80% of these additional credits are permitted to be renewable energy credits. There are also formulas available to decrease the credit requirements based on exemptions within the code. Further analysis of the point calculations and general assumptions can be found in a slideshow presented to the TAG members.¹ Additional information on the building modeling performed by PNNL can also be found on the website.²

Option 1: This version of the proposed rule provides the majority of the requirements for the Fossil Fuel Compliance Pathway in Section C401.3, with subsequent subsections noting how changes are to be made in other prescriptive code requirements.

Option 2 (Not adopted): This version of the proposed rule provides the Fossil Fuel Path within the specific sections being modified, mainly C403.1.4 for space heating and C404.2 for water heating. This option also does not require the electric readiness provisions in Option 1.

Purpose of code change: EPCA contains only limited exceptions to the general rule of preemption. This proposal is intended to ensure that the 2021 Washington State Energy Code, Commercial Provisions meet the seven requirements required to avoid preemption. The efficiency difference of minimally compliant heating equipment is taken into account (the two tables in C406.3) so that the relative site energy use can be accounted and the energy savings objective is met on a one-for-one equivalent energy use basis in accordance with 42 USC §6297(f)(3) while maintaining the efficiency gained in the adoption of the 2021 Washington State Energy Code.

Review Process: The TAG spent several 6-hour meetings reviewing the various proposals. It was sent back to be revised and reviewed by workgroups, including the proponent and key stakeholders. Through these workgroups and TAG review, modifications were suggested and made to help mitigate impact on small business. Building modeling was done to assess the accuracy of the credit values based on energy savings. There is still some modeling work being done and the final results will be submitted as public testimony. After public testimony, several changes were made, including reinstating some 2018 language for an additional efficiency credit option for high efficiency gas appliances.

Probable Benefits vs Probable Costs: This proposal was deemed to minimize the risk of preempting federal law while maintaining the efficiency gains made under the changes adopted for the 2021 Washington State Energy Code, Commercial Provisions. The change allows the use of covered gas

¹ https://www.sbcc.wa.gov/sites/default/files/2023-08/Jonlin_fossil_fuel_compliance_path_071823.pdf
https://www.sbcc.wa.gov/sites/default/files/2023-08/Kocher_036_037_Presentation_082923.pdf

² https://www.sbcc.wa.gov/sites/default/files/2023-08/PNNL_New_EUI_Based_Credits_037K_Rev3_5_082823.pdf
https://www.sbcc.wa.gov/sites/default/files/2023-08/PNNL_AlternativeCreditCalcs_heat-cool-hpwh_037K_R3_5_082823.pdf

appliances; however, the use of those appliances requires that more efficiency credits be earned to make up the difference in energy use between a heat pump and a fossil-fuel appliance. A heat pump is generally 2-4 times more energy efficient than fossil fuel or electric resistance heating. Those additional efficiency credits come at a cost. The benefit of a higher cost is that it may push a consumer towards the more efficient, less carbon emissions producing heat pump. This aligns with State policy in RCW 19.27A.160 to increase energy efficiency by 70 percent by 2031 and align with State policy in RCW 19.27A.020 to achieve the broader goal of building zero fossil-fuel greenhouse gas emission homes and buildings by the year 2031.

(1)(a) Clearly state in detail the general goals and specific objectives of the statute that the rule implements RCW 19.27A.020 - State energy code—Adoption by state building code council—Preemption of local residential energy codes.

(1) The state building code council in the department of enterprise services shall adopt rules to be known as the Washington state energy code as part of the state building code.

(2) The council shall follow the legislature's standards set forth in this section to adopt rules to be known as the Washington state energy code. The Washington state energy code shall be designed to:

(a) Construct increasingly energy efficient homes and buildings that help achieve the broader goal of building zero fossil-fuel greenhouse gas emission homes and buildings by the year 2031;

(b) Require new buildings to meet a certain level of energy efficiency, but allow flexibility in building design, construction, and heating equipment efficiencies within that framework; and

(c) Allow space heating equipment efficiency to offset or substitute for building envelope thermal performance.

This rule adopts standards for the Washington State Energy Code, Commercial provisions, that are in line with federal law, that remain efficient, allow flexibility and help move toward the broader goal of building zero fossil-fuel greenhouse gas emission homes by 2031.

(1)(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:

The Council is required to adopt and maintain the state building code, as provided in chapters 19.27, 19.27A, and 70.92 RCW, and the state legislature. The primary objective of the Council is to encourage consistency in the building code throughout the state of Washington and to maintain the building code consistent with the state's interest as provided in RCW 19.27.020. The Council is further required by RCW 19.27A.160 to adopt state energy codes from 2013 through 2031 that incrementally move towards achieving a 70% reduction in annual net energy consumption in residential and nonresidential construction permitted under the 2031 state energy code using the adopted 2006 Washington state energy code as a baseline. The statewide code adoption process is defined in WAC 51-04 and the Council bylaws. All proposals are submitted in writing on the appropriate form with the indicated supporting documentation. Each proponent must identify where a proposed amendment has an economic impact and estimate the costs and savings of the proposal on construction practices, users and/or the public, the enforcement community, and operation and maintenance. There are no alternatives to this procedure. If

the rule is not adopted, this will be a violation of the State Law, which will affect the promotion of energy efficiency and safety in buildings consistent with accepted standards and as required under law.

(1)(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:

The probable benefits of the adopted rule are greater than its probable costs. The amendments clarify the intent and application of the code and maintain the progress gained towards achieving the statutory goals in RCW 19.27A.020 and RCW 19.27A.160.

(1)(e) Determine, 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 amendments are the least burdensome alternative for those required to comply with it and will achieve the general goals and specific objectives stated above in (1)(a). Failing to make incremental progress on achieving the 2031 energy efficiency goal as required by law in the current code cycle would necessarily require energy efficiency improvements to be more stringent in future cycles. In addition, there are no alternatives to this procedure. If the rules were not adopted, there may be a violation of federal law. If this code were amended to be less stringent, it would be a violation of the State Law, RCW 19.27A.025, which will affect the promotion of energy efficiency and safety in buildings consistent with accepted standards.

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

The Council entered rulemaking to modify sections in the commercial and residential energy codes to address legal uncertainty stemming from the decision in California Restaurant Association v. City of Berkeley recently issued by the Ninth Circuit Court of Appeals. While the requirements in the 2021 Washington State Energy Code are not exactly analogous to the Berkeley prohibition on gas infrastructure, the Council moved forward to address the ruling expanding the scope of the Energy Policy and Conservation Act of 1975 (EPCA) preemption provisions. The Council sought public input on areas where the code may be impacted by a preemption issue and developed a proposed rule addressing those areas while retaining the efficiency gains made towards the goal of RCW 19.27A.160. The adopted rule meets requirements for an exemption from preemption under EPCA and does not require those to whom it applies to take an action that violates requirements of another federal or state law.

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

The amendments adopted for the 2021 Washington State Energy Code, Commercial Provisions, do not impose more stringent performance requirements on private entities than on public entities.

(1)(h) Determine if the rule differs from any federal regulation or statute applicable to the same activity or subject matter and, if so, determine that the difference is justified by the following:

This does not differ from any federal regulations or statute applicable to the same activity.

- (1)(i) A state statute explicitly allows the agency to differ from federal standards; or
- (1)(ii) Substantial evidence that the difference is necessary to achieve the general goals and specific objectives stated under (a) of this subsection; and
- (1)(iii) Coordinate the rule, to the maximum extent practicable, with other federal, state, and local laws applicable to the same activity or subject matter.