



STATE OF WASHINGTON
DEPARTMENT OF COMMERCE

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February 22, 2022

Members of the Washington State Building Code Council,

We write in support of the package of proposals voted forward by the Technical Advisory Group (TAG) to include in the 2021 Washington State Energy Code (WSEC) for non-residential structures. These proposals reflect necessary changes for the 2021 non-residential energy code to make forward progress in meeting the requirements of RCW 19.27A.160 and put the state on the path towards meeting our greenhouse emissions limits. These proposals align with the recommendations of the state energy strategy for the building sector, published by the department of Commerce in 2021, as required by law.

We specifically would like to express support for amendment [21-GP1-156](#) to the 2021 non-residential WSEC which proposes an updated carbon emissions factor for electricity in table C407.3(1) as it applies to total building performance requirements. An updated emissions standard better reflects where state long term energy use is headed under the Clean Energy Transformation Act¹, a 100 percent clean electricity standard enacted in 2019. This proposal simply aligns carbon emissions factors in the code with current state law.

TABLE C407.3(1)
CARBON EMISSIONS FACTORS

Type	CO2e(lb/unit)	Unit
Electricity	0.70 0.44	kWh
Natural Gas	11.7	Therm
Oil	19.2	Gallon
Propane	10.5	Gallon
Other	195.00	mmBtu
On-site renewable energy	0.00	

CETA and the need for an updated electricity emissions factor

The Clean Energy Transformation Act (CETA) became law in Washington State in 2019. CETA applies to all electric utilities serving retail customers in Washington and sets specific milestones to reach the required 100 percent clean electricity supply. By 2025, utilities must eliminate coal-fired electricity from their state portfolios. The first 100 percent clean standard applies in 2030. The 2030 standard is greenhouse gas neutral, which means utilities have flexibility to use limited amounts of electricity from

¹ [Chapter 19.405 RCW](#)



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natural gas if it is offset by other actions. By 2045, utilities must supply Washington customers with electricity that is 100% renewable or non-emitting, with no provision for offsets.

Given that electricity emissions rates will now be driven by state law and the timelines specified in CETA, the carbon emissions factors for electricity used in table C407.3(1) should be representative of current law and where the state is headed. Long-run marginal emission rate for end-use electricity consumed in the state was used in the analysis for this proposal and reflects the timeframe of mechanical systems installed in newly constructed non-residential buildings. Long-run marginal emissions rate is a forward looking emissions rate that accounts for new electric load and the evolution of the grid.

Determining the carbon emissions rate

This code proposal uses analysis from the National Renewable Energy Lab (NREL) and is in alignment with the California Energy Commission's 2022 Energy Code update by using the long-run marginal emissions rate for electricity. The emissions rate remains above zero, despite the 100 percent clean requirement, due to the transition provisions of CETA and the effect of Washington's electricity consumption on emissions in other states.

The proposed carbon emissions rate for electricity of 0.44 CO₂e lbs/kWh is the same emissions rate that will be used to calculate carbon emissions reductions from the state's Clean Buildings Act² reporting for large commercial buildings. This emissions factor will also be incorporated into the Office of Financial Management's Life Cycle Cost Tool as part of the annual update of this resource. The rate should be reduced in the future as the effective date of the 2030 standard approaches.

Updating the carbon emissions factor for electricity is a necessary change that aligns our state energy code with CETA. We urge the State Building Code Council to adopt this proposal in the 2021 non-residential Washington State Energy Code.

Thank you,

Luke Howard, Commerce Building Performance Specialist, TAG committee member

If you have any questions about this proposal, please contact Glenn Blackmon at glenn.blackmon@commerce.wa.gov

² [Chapter 19.27A RCW](#)