

DOE Final Rule Regarding Clean Energy for New Federal Buildings and Major Renovations of Federal Buildings

May 1, 2024

Overview:

DOE [published a final rule](#) to establish revised energy performance standards at 10 CFR parts 433 and 435 for the construction and renovation of federal buildings, including commercial buildings leased to the federal government, and military housing. This rulemaking is intended to implement provisions of the Energy Conservation and Production Act (ECPA), as amended by the Energy Independence and Security Act (EISA) of 2007. This final rule follows a pair of related Obama-era proposals, issued in October 2010 and October 2014 (respectively) to implement EISA section 433.

I. Background

Section 305 of ECPA provides energy conservation requirements for federal buildings, and section 433(a) of EISA amended ECPA section 305 by directing DOE to establish regulations prescribing fossil fuel-generated energy consumption reductions for certain new federal buildings and federal buildings undergoing major renovations. EISA mandates that these buildings be designed so that a building's fossil fuel-generated energy consumption is reduced (as compared with such energy consumption by a similar building in Fiscal Year (FY) 2003) by 55 percent beginning in FY2010, 65 percent beginning in FY2015, 80 percent beginning in FY2020, 90 percent beginning in FY2025, and 100 percent beginning in FY2030. In addition, and upon petition by an agency, EISA permits DOE to adjust the applicable numeric reduction requirement downward with respect to a specific building if: (1) the head of the agency designing the building certifies in writing that meeting such requirement would be technically impracticable in light of the agency's specified functional needs for that building; and (2) DOE concurs with the agency's conclusion.

II. Final Rule

a. Coverage

The final rule applies to a subset of new federal buildings and major renovations to existing federal buildings, defined by statute as "any building to be constructed by, or for the use of, any federal agency, including buildings built for the purpose of being leased by a federal agency, and privatized military housing." The subset of federal buildings for which this rule applies fall under two categories, collectively referred to as "EISA-subject buildings." The first category of subject buildings includes any new federal buildings or major renovations to federal buildings that are "public buildings" (*i.e.*, buildings generally suitable for use as office or storage space or both by one or more federal agencies or mixed-ownership government corporations) for which transmittal of a prospectus to Congress is required. Transmittal of a prospectus to Congress is required if a total expenditure in excess of periodically adjusted dollar figures is required to construct, alter, or acquire the public building. The General Services Administration's (GSA) annual prospectus threshold for FY 2024 is \$3,613,000. GSA also provides a separate dollar threshold for alterations in leased public buildings for which a prospectus is required, which for FY 2024 is \$1,806,500. The second category of buildings that the final rule covers includes any new federal buildings or major renovations to federal buildings that are not public buildings (*i.e.*, for which transmittal of a prospectus to Congress is not required) and for which the construction cost or major renovation cost is at least \$2,500,000 (in 2007 dollars, adjusted for inflation). For the purposes of calculating this threshold, agencies should use the inflated value of \$2,500,000 as of October of the FY during which the design for construction of the project begins. As of

the most recent update (October of FY 2023) \$2.5 million in 2007 dollars, when adjusted for inflation, is \$3,811,583.

b. Performance Standards for Fossil Fuel-Generated Energy Consumption

For purposes of meeting the reduction targets set in EISA section 433, in the proposed version of this rule, DOE sought comment on applying the term “fossil fuel-generated energy consumption” only to energy consumption from *on-site* fossil fuel used by equipment and systems designed to support building operations (also referred to as “Scope 1” uses). DOE also proposed that these initial standards would *not* cover certain process loads, manufacturing and industrial activities, unique research activities, or back-up emergency generators, nor would the standards cover electricity or other purchased utility consumption supplied from the grid and generated using fossil fuels off-site. In the final rule, DOE is adopting the definition of “fossil fuel-generated energy consumption” with two notable revisions: (1) the final rule revises the term to be defined from “Scope 1 fossil fuel-generated energy consumption” to “fossil fuel-generated energy consumption,” which DOE asserts will clarify that the scope of this rule aligns with the directive in section 433 of EISA; and (2) the final rule revises the definition so that it applies to “on-site stationary consumption” of fossil fuels, which DOE asserts is consistent with section 433 of EISA and clarifies that the definition includes the on-site consumption of natural gas.

This final rule provides agencies with two separate, but equivalent, sets of fossil fuel generated energy consumption targets: (1) fossil fuel-generated energy consumption based on a summation of on-site fossil fuel usage, expressed in kBtu per square foot of building gross area; and (2) a new carbon dioxide equivalent (CO₂e) per square foot metric based on the emissions associated with the on-site fossil fuel-generated energy consumption. DOE notes that agencies may use either metric for their design targets, but notes that the kBtu per square foot metric would be most appropriate for when a building is burning fuels other than standard natural gas while the CO₂e metric will be more useful when natural gas is the only fossil fuel being utilized.

DOE is also adopting exemptions and exceptions in the final rule as follows: (1) the standards *only apply* to on-site fossil fuel use or Scope 1 emissions from stationary combustion sources; (2) the rule *does not* apply to emissions associated with natural gas for alternatively fueled vehicles; (3) the scope of the standards *does not* cover manufacturing or industrial process loads; (4) the final rule *does not* apply to the on-site consumption of fossil fuel (or the subsequent emissions) from energy generation associated with the supply of emergency backup electricity; and (5) the final rule *does not* apply to on-site energy generation or Scope 1 emissions associated with biomass fuels because biomass fuels are not fossil fuels.

c. Compliance with Performance Standards for New Construction and Major Renovations of a Whole Building

Under the final rule, DOE developed quantitative requirements to determine compliance with the fossil fuel reduction targets within the revised energy performance standards for new construction and major renovations (*i.e.*, major renovation of on-site fossil fuel-using systems or components in a building) of EISA-subject buildings. DOE is defining the term “major renovation of all Scope 1 fossil fuel-using systems in a building” as a renovation of all Scope 1 fossil fuel-using systems on an existing building that is so extensive that it replaces all scope 1 fossil fuel-using systems in the building. The term “major renovation of all Scope 1 fossil fuel-using systems in a building” includes, but is not limited to, comprehensive replacement or restoration of most or all major systems, interior work (such as ceilings, partitions, doors, floor finishes, etc.), or building elements and features.

The quantitative requirements will require agencies to calculate the on-site fossil fuel-generated energy consumption in kBtu of fossil fuels or the Scope 1 GHG emissions in CO₂e of their proposed building design and

compare that estimate to the allowable fiscal year percentage reduction target found in the target tables in appendix A of subpart B to 10 CFR parts 433 and 435. For buildings for which design for construction or whole building renovation began in FY2024 to FY2029, tables of the maximum allowable on-site fossil fuel-generated energy consumption (expressed in both kBtu per square foot and Scope 1 GHG emissions in CO₂e per square foot) by building type and climate zone are provided. For buildings for which design for construction or whole building renovation begins in FY2030 or beyond, the fossil fuel-generated energy consumption of the building must be zero for all building types and climate zones.

For purposes of establishing the targets, the final rule defines 16 categories of commercial buildings and five categories of residential dwelling units which cover all residential buildings, including low-rise (single-family and multi-family), mid-rise apartment buildings, and high-rise apartment buildings. The 16 categories of commercial buildings defined are education, food sales, food service, health care (inpatient), health care (outpatient), laboratory, lodging, mercantile (enclosed and strip shopping malls), office, public assembly, public order and safety, religious worship (not applicable), retail (other than mall), service, and warehouse and storage. DOE notes that many of these commercial building categories are further divided into building types, providing a total of 48 commercial building types. Moreover, the five categories of residential buildings are divided into five building types, which are mobile home, multi-family in 2–4-unit buildings, multi-family in 5 or more–unit buildings, single-family attached, and single-family detached.

d. Compliance with Performance Standards for Major Renovations Within a Building

Under the final rule, a “major renovation within a building” is defined as a major renovation of a Scope 1 fossil fuel-using building system or Scope 1 fossil fuel-using component that provides significant opportunities for energy efficiency or reduction in fossil fuel-related energy consumption. This includes, but is not limited to, replacement of the HVAC system, hot water system, or cooking system, or other fossil fuel-using systems or components of the building that have a major impact on fossil fuel usage.

Specifically, for major renovations in buildings which meet the project cost threshold and coverage requirements that are less than “whole building” renovations (*i.e.*, projects within the existing building comprising of retrofits to a single system or component such as a HVAC system or a chiller), agencies will be required to abide by the following prescriptive requirements: (1) for “component level” renovations, meaning an individual product or piece of equipment, the final rule requires agencies to utilize electric or non-fossil fuel-using Federal Energy Management Program (“FEMP”) designated or ENERGY STAR equipment; and (2) for “system level” renovations, meaning a group of equipment pieces that function together to satisfy a building load, agencies must utilize electric or non-fossil fuel-using FEMP designated or ENERGY STAR equipment and must also meet the system level requirements for the systems being renovated, as specified in the model energy codes used to establish baseline energy efficiency standards for federal buildings.

DOE adds that while this final rule only covers systems and components that utilize on-site fossil fuels, agencies should ensure that projects that could have secondary impacts on fossil fuel-using equipment, such as lighting, appliance, or window replacement projects, are considered. Additionally, DOE encourages on-site renewables such as solar and energy storage systems “as good practice.” DOE does note however, that it is not including on-site solar as a means to offset on-site fossil fuel consumption because it will not reduce the overall on-site contribution even though it is a means to reduce emissions from the electricity use of federal building.

e. Petitions for Downward Adjustment

Under EISA, agencies other than GSA may petition DOE for an adjustment to the fossil fuel-generated energy consumption requirement with respect to a specific building if meeting the requirement is technically impracticable in light of the agency's functional needs for the building. Under the final rule, DOE is establishing a list of information that would be required in a petition for a downward adjustment for a new building and for major renovations that are whole building renovations, including: (1) a description of the building and associated components and equipment; (2) an explanation of why compliance with the requirements is technically impracticable considering the functional needs of the building; (3) a demonstration that all cost-effective energy efficiency and on-site renewable energy measures were included in the building design; (4) the largest feasible reduction in fossil fuel-generated energy consumption that can reasonably be achieved; and (5) a description of measures that were evaluated but rejected. The final rule also includes a provision that will allow GSA tenant agencies with significant control over building design to petition DOE for downward adjustments, despite the fact that GSA is not permitted under EISA to submit petitions.

The final rule includes a separate downward adjustment process for major renovations that are system or component level retrofits under which DOE will provide downward adjustments at a level equal to the energy efficiency level that would be achieved through the use of commercially available systems and/or components by using ENERGY STAR or FEMP designated products.

Finally, in the proposed rule, DOE considered a separate petition process for Department of Defense projects that serve "critical national security functions." However, under the final rule, DOE notes that it intends to review all petitions using the same process, which the Department believes will sufficiently vet buildings and agencies' proposed reasoning as to why achieving the reductions will be technically impracticable.

The final rule is effective beginning July 15, 2024.