DOE Guidance on the Statutory Definition of Energy/Water Conservation Measures (ECMs), and Determining Life-Cycle Cost-Effectiveness for ESPCs with Multiple or Single ECMs

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This document provides guidance on the statutory definition of "energy conservation measure" (ECM) for the purpose of an energy savings performance contract (ESPC), including clarification that multiple ECMs under the same ESPC may be "bundled" when evaluating life-cycle cost-effectiveness. Additionally, this document clarifies that an ESPC may include, or be limited to, a single ECM applied across multiple Federal buildings and facilities.

Background and Introduction

The term "energy savings performance contract," as defined by statute, means:

> [A] contract for the performance of services for the design, acquisition, installation, testing, and, where appropriate, operation, maintenance, and repair, of an identified energy or water conservation measure or a series of measures at 1 or more locations.

42 U.S.C. § 8287c(3). The term "energy conservation measures" is defined by statute as:

> [M]easures that are applied to a Federal building that improve energy efficiency and are life cycle cost effective and that involve energy conservation, cogeneration facilities, renewable energy sources, improvements in operations and maintenance, or retrofit activities.

Id. § 8259(4); *see id.* § 8287c(4).

The references to the term "energy conservation measure" (ECM) in both the singular and the plural have raised questions as to how the elements of the statutory definition of the term are to be applied, specifically as to the permissibility of "bundling" multiple measures in order to meet the lifecycle cost-effectiveness element of the definition. Additionally, questions have arisen as to whether an ESPC may consist of one ECM applied across multiple Federal buildings or facilities.

Qualification as an ECM

As discussed above, each ECM under an ESPC must (1) be applied to a Federal building; (2) improve energy efficiency; (3) be life-cycle cost-effective; and (4) involve energy conservation, cogeneration activities, renewable energy sources, improvements in operations and maintenance, or retrofit activities. The following discussion provides guidance on each of the four statutory elements:

(1) "Applied to a Federal building." The term "Federal building," as defined in the context of an ESPC, means:

> [A]ny building, structure, or facility, or part thereof, including the associated energy consuming support systems . . . , which consumes energy; such term also means a collection of such buildings, structures, or facilities and the energy consuming support systems for such collection.

42 U.S.C. § 8259(6). Given the inclusion of the term "facility" in the statutory definition, an ECM that supplies energy or improves energy efficiency, and is installed onsite, but is not necessarily located on or in an actual structure, would be considered to be "applied to a Federal building."[1] The reference in the definition to "a collection of buildings, structures, or facilities" also allows for a single energy conservation measure that is applied across multiple locations (including geographically-dispersed locations).[2]

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[1] A measure in which the only arrangement is the provision of energy to a Federal building from an offsite source would not satisfy the "applied to a Federal building" element of the statutory definition.

[2] This position is further supported by the statutory definition of "energy conservation measure," which contemplates the implementation of one or more ECMs at one or more locations. *See* 42 U.S.C. § 8287c(3).

(2) "Improve energy efficiency." Improving energy efficiency can be demonstrated in one of two ways. First, if the arrangement resulted in reduced energy consumption while allowing the same level of building performance, the arrangement would be considered to improve energy efficiency. Secondly, an arrangement is considered to "improve energy efficiency" when it reduces the use of conventional energy in a Federal building by substituting conventional energy fuels with renewable energy. In the context of an ECM, energy efficiency may be calculated on a "source energy" basis, which accounts for the embedded inefficiencies of transmission, distribution, and conversion. *See* FEMP Building Cost and Performance Metrics: Data Collection Protocol, Section 5.2.1.2.

(3) "Lifecycle cost-effective." As noted above, the term "energy conservation measures" is defined, in part, to mean "measures that . . . are life-cycle cost-effective." 42 U.S.C. § 8259(4). The term "life-cycle cost" is defined to mean "the total costs of owning, operating, and maintaining a building over its useful life." *Id.* § 8259(7); *see id.* § 8254.

Given that life-cycle cost-effectiveness is discussed in the context of individual measures under section 8259(4) while "life cycle cost" is evaluated in the context of buildings, lifecycle cost-effectiveness may be determined in accordance with Part 436, Subpart A, of Title 10 of the Code of Federal Regulations either using an approach that views individual ECMs in isolation or in the context of all contemplated ECMs within a "Federal building" under the same ESPC. Evaluating lifecycle cost-effectiveness using a Federal building-wide approach thus may account for the relationship of multiple ECMs under the same ESPC that are located either within a single building, structure, or facility or among a collection of buildings, structures, or facilities (including geographically-dispersed locations). *See* 42 U.S.C. § 8259(6).

(4) "Involve cogeneration facilities, renewable energy sources, improvements in operations and maintenance, or retrofit activities." An ECM must "involve energy conservation, cogeneration facilities, renewable energy sources, improvements in operations and maintenance, or retrofit activities. The terms "energy conservation," "improvements in operations and maintenance," and "retrofit activities" are to be applied within the common understanding of these terms. "Cogeneration facility" is defined as "a facility which produces (i) electric energy, and (ii) steam or forms of useful energy (such as heat) which are used for industrial, commercial, heating, or cooling purposes." 16 U.S.C. § 796(18)(A); *see* 42 U.S.C. § 8259(3). "Renewable energy sources include, but [are] not limited to, sources such as agriculture and urban waste, geothermal energy, solar energy, and wind energy." *Id.* § 8259(8).