§ 436.15 Formatting cost data.

In establishing cost data under §§436.16 and 436.17 and measuring cost effectiveness by the modes of analysis described by §436.19 through §436.22, a format for accomplishing the analysis which includes all required input data and assumptions shall be used. Subject to §436.18(b), Federal agencies are encouraged to use worksheets or computer software referenced in the Life Cycle Cost Manual for the Federal Energy Management Program.

§ 436.16 Establishing non-fuel and non-water cost categories.

(a) The relevant non-fuel cost categories are—

(1) Investment costs;
(2) Non-fuel operation and maintenance cost;
(3) Replacement cost; and
(4) Salvage value.

(b) The relevant non-water cost categories are—

(1) Investment costs;
(2) Non-water operation and maintenance cost;
(3) Replacement cost; and
(4) Salvage value.

(c) The present value of recurring costs is the product of the base year value of recurring costs as multiplied by the appropriate uniform present worth factor under §436.14, or as calculated by computer software indicated in §436.18(b) and used with the official discount rate and escalation rate assumptions under §436.14. When recurring costs begin to accrue at a later time, subtract the present value of recurring costs over the delay, calculated using the appropriate uniform present worth factor for the period of the delay, from the present value of recurring costs over the study period or, if using computer software, indicate a delayed beneficial occupancy date.

(d) The present value of non-recurring cost under §436.16(a) is the product of the non-recurring costs as multiplied by appropriate single present worth factors under §436.14 for the respective years in which the costs are expected to be incurred, or as calculated by computer software provided or approved by DOE and used with the official discount rate and escalation rate assumptions under §436.14.

§ 436.17 Establishing energy or water cost data.

(a) Each Federal agency shall establish energy costs in the base year by
§ 436.18 Measuring cost-effectiveness.

(a) In accordance with this section, each Federal agency shall measure cost-effectiveness by combining cost data established under §§ 436.16 and 436.17 in the appropriate mode of analysis as described in § 436.19 through § 436.22.

(b) Federal agencies performing LCC analysis on computers shall use either the Federal Buildings Life Cycle Costing (FBLCC) software provided by DOE or software consistent with this subpart.

(c) Replacement of a building energy or water system with an energy or water conservation measure by retrofit to an existing Federal building or by substitution in the design for a new Federal building shall be deemed cost-effective if—

(1) Life cycle costs, as described by § 436.19, are estimated to be lower; or

(2) Net savings, as described by § 436.20, are estimated to be positive; or

(3) The savings-to-investment ratio, as described by § 436.21, is estimated to be greater than one; or

(4) The adjusted internal rate of return, as described by § 436.22, is estimated to be greater than the discount rate as set by DOE.

(d) As a rough measure, each Federal agency may determine estimated simple payback time under § 436.23, which indicates whether a retrofit is likely to be cost effective under one of the four calculation methods referenced in § 436.18(c). An energy or water conservation measure alternative is likely to be cost-effective if estimated payback time is significantly less than the useful life of that system, and of the Federal building in which it is to be installed.

(e) Mutually exclusive alternatives for a given building energy or water system, considered in determining such matters as the optimal size of a solar energy system, the optimal thickness of insulation, or the best choice of double-glazing or triple-glazing for windows, shall be compared and evaluated on the basis of life cycle costs or net savings over equivalent study periods. The alternative which is estimated to result in the lowest life cycle costs or the highest net savings shall be deemed the most cost-effective because it tends to minimize the life cycle cost of Federal building.