

## CHAPTER 470

### LIFE CYCLE COST ANALYSIS OF PUBLIC FACILITIES

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#### **470.1 Definitions.**

As used in [this chapter](#) unless the context otherwise requires:

1. “*Commissioner*” means the state building code commissioner.
2. “*Director*” means the director of the office of energy independence.
3. “*Economic life*” means the projected or anticipated useful life of a facility as expressed by a term of years.
4. “*Energy system*” includes but is not limited to the following equipment or measures:
  - a. Equipment used to heat or cool the facility.
  - b. Equipment used to heat water in the facility.
  - c. On-site equipment used to generate electricity for the major facility.
  - d. On-site equipment that uses the sun, wind, oil, natural gas, coal, or electricity as a power source.
  - e. Energy conservation measures in the facility design and construction that decrease the energy requirements of the facility.
5. “*Facility*” means a building having twenty thousand square feet or more of usable floor space that is heated or cooled by a mechanical or electrical system or any building, system, or physical operation which consumes more than forty thousand British thermal units (BTUs) per square foot per year.
6. “*Initial cost*” means the moneys required for the capital construction or renovation of a facility.
7. “*Life cycle cost analysis*” means an analytical technique that considers certain costs of owning, using, and operating a facility over its economic life including but not limited to the following:
  - a. Initial costs.
  - b. System repair and replacement costs.
  - c. Maintenance costs.
  - d. Operating costs, including energy costs.
  - e. Salvage value.
8. “*Office*” means the office of energy independence established in [section 469.2](#).
9. “*Public agency*” means a state agency, political subdivision of the state, school district, area education agency, or community college.
10. “*Renovation*” means a project where additions or alterations exceed fifty percent of the value of a facility and will affect an energy system.

[C81, §470.1]

91 Acts, ch 253, §17, 18; 2009 Acts, ch 108, §23, 41

#### **470.2 Policy — analysis required.**

The general assembly declares that energy management is of primary importance in the design of publicly owned facilities. Commencing January 1, 1980, a public agency responsible for the construction or renovation of a facility shall, in a design begun after that date, include as a design criterion the requirement that a life cycle cost analysis be conducted for the facility. The objectives of the life cycle cost analysis are to optimize energy efficiency at an acceptable life cycle cost. The life cycle cost analysis shall meet the requirements of [section 470.3](#).

[C81, §470.2]

### 470.3 Elements of analysis.

1. A life cycle cost analysis shall include but is not limited to the following elements:
  - a. Specification of energy management objectives and health, safety, and functional constraints. The facility design shall comply with applicable state or local building code requirements.
  - b. Identification of the energy needs of the facility and energy system alternatives to meet those needs.
  - c. Cost of the energy system alternatives identified in paragraph “b” of [this subsection](#).
  - d. Determination of amounts and timing of cash flow.
  - e. Calculation of life cycle cost using an economic model such as, but not limited to, rate of return, annual equivalent cost or present equivalent cost.
  - f. Evaluation of design and system alternatives using a method such as, but not limited to, design matrixes, ranking tables, or network analysis.
2. A public agency or a person preparing a life cycle cost analysis for a public agency shall consider the methods and analytical models provided by the office and available through the commissioner, which are suited to the purpose for which the project is intended. Within sixty days of final selection of a design architect or engineer, a public agency, which is also a state agency under [section 7D.34](#), shall notify the commissioner and the office of the methodology to be used to perform the life cycle cost analysis, on forms provided by the office.

[C81, §470.3]

88 Acts, ch 1179, §6; 91 Acts, ch 253, §19; 2009 Acts, ch 108, §24, 41

Referred to in [§470.2](#)

### 470.4 Analysis approved.

The life cycle cost analysis shall be approved by the public agency before contracts for the construction or renovation are let. A public agency may accept a facility design and shall meet the requirements of [this chapter](#) if the design meets the operational requirements of the agency and provides the optimum life cycle cost. The public agency shall retain a copy of the life cycle cost analysis and a statement justifying a design decision both of which shall be available for public inspection at reasonable hours.

[C81, §470.4]

### 470.5 Exceptions.

[This chapter](#) does not apply to buildings used on January 1, 1980 by the division of adult corrections of the department of human services as maximum security detention facilities or to the renovation of property nominated to, or entered in the national register of historic places, designated by statute, or included in an established list of historic places compiled by the historical division of the department of cultural affairs.

[C81, §470.5; 82 Acts, ch 1238, §22]

83 Acts, ch 96, §157, 159

### 470.6 Restriction on use of public funds.

Public funds shall not be used for the construction or renovation of a facility unless the design for the work is prepared in accordance with [this chapter](#) and the actual construction or renovation meets the requirements of the design.

[C81, §470.6]

### 470.7 Life cycle cost analysis — approval.

1. The public agency responsible for the new construction or renovation of a public facility shall submit a copy of the life cycle cost analysis for review by the commissioner who shall consult with the office. If the public agency is also a state agency under [section 7D.34](#), comments by the office or the commissioner, including any recommendation for changes in the analysis, shall, within thirty days of receipt of the analysis, be forwarded in writing to the public agency. If either the office or the commissioner disagrees with any aspects of the life cycle cost analysis, the public agency affected shall timely respond in writing to the commissioner and the office. The response shall indicate whether the agency

intends to implement the recommendations and, if the agency does not intend to implement them, the public agency shall present its reasons. The reasons may include but are not limited to a description of the purpose of the facility or renovation, preservation of historical architectural features, architectural and site considerations, and health and safety concerns.

2. Within thirty days of receipt of the response of the public agency affected, the office, the commissioner, or both, shall notify in writing the public agency affected of the office's, the commissioner's, or both's agreement or disagreement with the response. In the event of a disagreement, the office, the commissioner, or both, shall at the same time transmit the notification of disagreement with response and related papers to the executive council for resolution pursuant to [section 7D.34](#). The life cycle cost analysis process, including submittal and approval, and implementation exemption requests pursuant to [section 470.8](#), shall be completed prior to the letting of contracts for the construction or renovation of a facility.

88 Acts, ch 1179, §7; 89 Acts, ch 315, §28; 91 Acts, ch 253, §20; 2009 Acts, ch 108, §25, 41  
Referred to in [§7D.35](#), [469.3](#)

#### **470.8 Life cycle cost analysis — implementation and exemptions.**

The public agency responsible for the new construction or renovation of a public facility shall implement the recommendations of the life cycle cost analysis.

The commissioner, in consultation with the director, shall, by rule, develop criteria to exempt facilities from the implementation requirements of [this section](#). Using the criteria, the commissioner, in cooperation with the director, shall exempt facilities on a case by case basis. Factors to be considered when developing the exemption criteria shall include, but not be limited to, a description of the purpose of the facility or renovation, the preservation of historical architectural features, site considerations, and health and safety concerns. The commissioner and the director shall grant or deny a request for exemption from the requirements of [this section](#) within thirty days of receipt of the request.

91 Acts, ch 253, §21  
Referred to in [§470.7](#)