GENERAL ASSEMBLY OF NORTH CAROLINA

SESSION 1993

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HOUSE BILL 101*
Committee Substitute Favorable 3/10/93
State Senate Personnel and State Government Committee Substitute Adopted 3/30/93

Short Title: Energy Policy for State Government. (Public)

Sponsors:

Referred to:

February 10, 1993

A BILL TO BE ENTITLEBill

AN ACT TO EXPAND THE CURRENT ENERGY POLICY FOR STATE GOVERNMENT TO APPLY TO THE CONSTRUCTION, OPERATION, AND RENOVATION OF STATE FACILITIES AND TO THE PURCHASE, OPERATION, AND MAINTENANCE OF EQUIPMENT FOR SUCH FACILITIES.

The General Assembly of North Carolina enacts:

Section 1. The title of Article 3B of Chapter 143 of the General Statutes reads as rewritten:

"ENERGY POLICY FOR STATE ~~AGENCIES CONCERNING MAJOR CONSTRUCTION OR RENOVATION OF BUILDINGS.~~ GOVERNMENT."

Sec. 2. G.S. 143-64.10 reads as rewritten:

"§ 143-64.10. ~~Findings of General Assembly.~~ Findings; policy.

(a) The General Assembly hereby finds:

(1) That the State should take a leadership role in aggressively undertaking energy conservation in North Carolina;

~~(1)~~(2) That ~~state-owned and assisted facilities~~ State facilities have a significant impact on the State's consumption of energy;

~~(2)~~(3) That energy conservation practices adopted for the design, construction, ~~and utilization~~ operation, maintenance, and renovation of these facilities and for the purchase, operation, and maintenance of

equipment for these facilities will have a beneficial effect on the State's overall supply of energy;

~~(3)~~(4) That the cost of the energy consumed by these facilities and the equipment for these facilities over the life of the facilities must be considered, in addition to the initial ~~cost of constructing such facilities; and~~ cost;

~~(4)~~(5) That the cost of energy is significant and facility designs must take into consideration the total life-cycle cost, including the initial construction cost, and the cost, over the economic life of the facility, of the energy consumed, and of operation and maintenance of the facility as it affects energy ~~consumption.~~ consumption; and

(6) That State government should undertake a program to reduce energy use in State facilities and equipment in those facilities in order to provide its citizens with an example of energy-use efficiency.

(b) ~~The General Assembly declares that it~~ It is the policy of the State of North Carolina to ~~insure~~ ensure that energy conservation practices are employed in the ~~design of state-owned and assisted facilities. To this end the General Assembly encourages State agencies to analyze the cost of energy consumption of each facility constructed or each major facility constructed or renovated, over its economic life, in addition to the initial construction or renovation cost.~~ design, construction, operation, maintenance, and renovation of State facilities and in the purchase, operation, and maintenance of equipment for State facilities."

Sec. 3. G.S. 143-64.11 reads as rewritten:

"**§ 143-64.11. Definitions.**

For purposes of this Article:

(1) ~~The term 'economic~~ 'Economic life' means the projected or anticipated useful life of a facility.

(2) ~~The term 'energy-consumption~~ 'Energy-consumption analysis' means the evaluation of all energy-consuming systems and components by demand and type of energy, including the internal energy load imposed on a facility by its occupants, equipment and components, and the external energy load imposed on the facility by climatic conditions.

(2a) 'Energy Division' means the Energy Division of the Department of Commerce.

(2b) 'Energy-consuming system' includes but is not limited to the following equipment or measures:

a. Equipment used to heat, cool, or ventilate the facility;

b. Equipment used to heat water in the facility;

c. Lighting systems;

d. On-site equipment used to generate electricity for the facility;

e. On-site equipment that uses the sun, wind, oil, natural gas, liquid propane gas, coal, or electricity as a power source; and

f. Energy conservation measures in the facility design and construction that decrease the energy requirements of the facility.

(3) ~~The term 'facility'~~ 'Facility' means ~~any building or facility on which construction is initiated six months or more after July 1, 1975.~~ a building or a group of buildings served by a central energy distribution system or components of a central energy distribution system.

(4) ~~The term 'initial~~ 'Initial cost' means the required cost necessary to ~~construct a facility or~~ construct or renovate a ~~major~~ facility.

(5) ~~The term 'life-cycle cost' means the cost of a facility including its initial cost, and the cost, over the economic life of the facility, of the energy consumed and of operation and maintenance of the facility as it affects energy consumption.~~ '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:

a. Initial costs;

b. System repair and replacement costs;

c. Maintenance costs;

d. Operating costs, including energy costs; and

e. Salvage value.

~~(6) The term 'major facility' means any building or facility of 40,000 or more gross square feet on which construction or renovation is initiated six months or more after July 1, 1975, and wherein significant energy demands will exist.~~

(7) ~~The term 'State~~ 'State agency' means the State of North Carolina or any board, bureau, commission, department, institution, or ~~other~~ agency of the ~~State, or any board or governing body of a political subdivision of the State, including any board of a community college, or an agency, commission, or authority of a political subdivision of the State.~~ State.

(8) ~~The term 'state-assisted facility' or 'major state-assisted facility'~~ 'State-assisted facility' means a facility ~~constructed, or major facility~~ constructed or ~~renovated,~~ renovated in whole or in part with State funds or with funds guaranteed or insured by a State agency.

(9) ~~The term~~ 'State facility' ~~or 'major State facility'~~ means a facility ~~constructed, or a major facility~~ constructed or renovated, by a State agency."

Sec. 4. G.S. 143-64.12 reads as rewritten:

"**§ 143-64.12. Authority and duties of State agencies.**

(a) The General Assembly authorizes and directs that State agencies shall carry out the construction and renovation of State facilities, ~~and the construction and renovation of major State facilities,~~ under their jurisdiction ~~or programs for the construction of state-assisted facilities and the construction and renovation of major state-assisted facilities~~ in such a manner as to further the policy declared herein, insuring that life-cycle cost analyses

and energy-conservation practices are ~~employed in new state-owned and assisted facilities and in new or renovated major state-owned and assisted facilities.~~ employed.

(b) ~~Each State agency having jurisdiction over any state-owned or assisted facilities' construction program shall evaluate each project, and if consistent with good architectural, engineering, and economic practice, require life-cycle cost analysis. Nothing in this Article shall deprive or limit any State agency which has review authority over design or construction plans from requiring a life-cycle cost analysis.~~ The Department of Administration, in consultation with the Energy Division, shall develop and implement policies, procedures, and standards to ensure that State purchasing practices improve energy efficiency and take the cost of the product over the economic life of the product into consideration. The Department of Administration, in consultation with the Energy Division, shall adopt and implement Building Energy Design Guidelines. These guidelines shall include energy-use goals and standards, economic assumptions for life-cycle cost analysis, and other criteria on building systems and technologies. The Department of Administration shall modify the design criterion for construction and renovation of facilities to require that a life-cycle cost analysis be conducted pursuant to G.S. 143-64.15. The Department of Administration, as part of the Facilities Condition and Assessment Program, shall identify and recommend energy conservation maintenance and operating procedures that are designed to reduce energy consumption within the facility and that require no significant expenditure of funds. State departments, institutions, or agencies shall implement these recommendations.

The Energy Division shall develop a comprehensive energy management program for State government. Each State agency should develop and implement an energy management plan that is consistent with the State's comprehensive energy management program.

The State Building Commission shall modify its selection process of design teams of architects, engineers, and other consultants in order to assure that the process provides for the selection of design teams who are qualified to provide comprehensive design services including energy analysis services as specified in the Building Energy Design Guidelines, and shall require its use.

~~(c) This life-cycle cost analysis shall include but not be limited to such elements as:~~

~~(1) The coordination, orientation and positioning of the facility on its physical site;~~

~~(2) The amount and type of fenestration employed in the facility;~~

~~(3) Thermal characteristics of materials, and the amount of insulation incorporated into the facility design;~~

~~(4) The variable occupancy and operating conditions of the facility, including illumination levels;~~

~~(5) Architectural features which affect energy consumption; and~~

~~(6) An energy-consumption analysis of the major facility's heating, ventilating, and air-conditioning system, lighting system, and all other energy-consuming systems. The energy- consumption analysis of the~~

~~operation of energy-consuming systems in the major facility should include but not be limited to:~~

~~a. The comparison of two or more system alternatives;~~

~~b. The simulation or engineering evaluation of each system over the entire range of operation of the major facility for a year's operating period; and~~

~~c. The engineering evaluation of the energy consumption of component equipment in each system considering the operation of such components at other than full or rated outputs.~~

~~(d) The life-cycle cost analysis performed for each major facility shall provide but not be limited to the following information:~~

~~(1) The initial estimated cost of each energy-consuming system being compared and evaluated;~~

~~(2) The estimated annual operating cost of all utility requirements;~~

~~(3) The estimated annual cost of maintaining each energy-consuming system; and~~

~~(4) The average estimated replacement cost for each system expressed in annual terms for the economic life of the major facility.~~

~~(e) The life-cycle cost analysis shall be certified by a registered architect or registered professional engineer, or by both architect and engineer, particularly qualified by training and experience for the type of work involved, and in conformance with the provisions of G.S. 133-1.1.~~

~~(f) Provided, however, that in order to protect the integrity of historic buildings, no provision of this Chapter shall be interpreted to require such analysis with respect to any property eligible for, nominated to, or entered on the National Register of Historic Places, pursuant to the National Historic Preservation Act of 1966, P.L. 89- 665; any historic building located within an historic district as provided in Chapters 160A or 153A of the North Carolina General Statutes; any historic building listed, owned, or under the jurisdiction of an historic properties commission as provided in Chapter 160A or 153A; nor any state-owned or state-assisted historic property.~~

~~(g) Selection of the optimum system or combination of systems to be incorporated into the design of the major facility shall be based on the life-cycle cost analysis over the economic life of the facility~~."

Sec. 5. G.S. 143-64.13 is repealed.

Sec. 6. Article 3B of Chapter 143 of the General Statutes is amended by adding a new section to read:

"**§ 143-64.15. Life-cycle cost analysis.**

(a) A life-cycle cost analysis shall include, but not be limited to, the following elements:

(1) The coordination, orientation, and positioning of the facility on its physical site;

(2) The amount and type of fenestration employed in the facility;

(3) Thermal characteristics of materials and the amount of insulation incorporated into the facility design;

(4) The variable occupancy and operating conditions of the facility, including illumination levels;

(5) Architectural features which affect energy consumption; and

(6) Where energy management equipment is proposed, the maximum interchangeability and compatibility of equipment components.

(b) The life-cycle cost analysis performed for any State facility shall, in addition to the requirements set forth in subsection (a) of this section, include, but not be limited to, the following:

(1) An energy-consumption analysis of the facility's energy-consuming systems in accordance with the provisions of subsection (f) of this section;

(2) The initial estimated cost of each energy-consuming system being compared and evaluated;

(3) The estimated annual operating cost of all utility requirements;

(4) The estimated annual cost of maintaining each energy-consuming system; and

(5) The average estimated replacement cost for each system expressed in annual terms for the economic life of the facility.

(c) The General Assembly encourages any entity to conduct a life-cycle cost analysis pursuant to this section for the construction of any State-assisted facility or the renovation of any State-assisted facility of 40,000 or more gross square feet.

(d) The life-cycle cost analysis shall be certified by a registered professional engineer or bear the seal of a North Carolina registered architect, or both. The engineer or architect shall be particularly qualified by training and experience for the type of work involved, but shall not be employed directly or indirectly by a fuel provider, utility company, or group supported by fuel providers or utility funds. Plans and specifications for facilities involving public funds shall be designed in conformance with the provisions of G.S. 133-1.1.

(e) In order to protect the integrity of historic buildings, no provision of this Article shall be interpreted to require the implementation of energy-cost measures that conflict with respect to any property eligible for, nominated to, or entered on the National Register of Historic Places, pursuant to the National Historic Preservation Act of 1966, P.L. 89-665; any historic building located within an historic district as provided in Chapters 160A or 153A of the General Statutes; any historic building listed, owned, or under the jurisdiction of an historic properties commission as provided in Chapter 160A or 153A; nor any historic property owned by the State or assisted by the State.

(f) Selection of the optimum system or combination of systems to be incorporated into the design of the facility shall be based on the life-cycle cost analysis over the economic life of the facility.

(g) The energy-consumption analysis of the operation of energy-consuming systems in a facility shall include, but not be limited to:

(1) The comparison of two or more system alternatives;

(2) The simulation or engineering evaluation of each system over the entire range of operation of the facility for a year's operating period; and

(3) The engineering evaluation of the energy consumption of component equipment in each system considering the operation of such components at other than full or rated outputs."

Sec. 7. G.S. 143-64.14 is recodified as G.S. 143-64.16.

Sec. 8. This act is effective upon ratification and applies to all construction and renovation projects for State facilities that start the design process on or after that date.