

GENERAL ASSEMBLY OF NORTH CAROLINA

SESSION 1993

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HOUSE BILL 101*

Short Title: Energy Policy for State Government.

(Public)

Sponsors: Representatives Bowman, Bowen, Brawley, Brubaker, Jeffus, Luebke, and Stewart.

Referred to: Environment.

February 10, 1993

1 A BILL TO BE ENTITLED
2 AN ACT TO EXPAND THE CURRENT ENERGY POLICY FOR STATE
3 GOVERNMENT TO APPLY TO THE CONSTRUCTION, OPERATION, AND
4 RENOVATION OF STATE FACILITIES AND TO THE PURCHASE,
5 OPERATION, AND MAINTENANCE OF EQUIPMENT.

6 The General Assembly of North Carolina enacts:

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

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

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

12 **"§ 143-64.10. Findings of General Assembly. Findings; policy.**

13 (a) The General Assembly hereby finds:

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

16 (1)(2) That state-owned and assisted facilities State facilities and State assisted
17 facilities have a significant impact on the State's consumption of
18 energy;

19 (2)(3) That energy conservation practices adopted for the design,
20 construction, and utilization operation, maintenance, and renovation of
21 these facilities and for the purchase, operation, and maintenance of
22 equipment for these facilities will have a beneficial effect on the
23 State's overall supply of energy;

1 ~~(3)~~(4) That the cost of the energy consumed by these facilities and the
2 equipment for these facilities over the life of the facilities and the
3 equipment must be considered, in addition to the initial cost of
4 ~~constructing such facilities; and cost;~~

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

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

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

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

22 "**§ 143-64.11. Definitions.**

23 For purposes of this Article:

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

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

31 (2a) 'Energy Division' means the Energy Division of the Department of
32 Commerce.

33 (2b) 'Energy-consuming system' includes but is not limited to the following
34 equipment or measures:

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

36 b. Equipment used to heat water in the facility;

37 c. Lighting systems;

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

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

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

- 1 (3) ~~The term 'facility'~~ 'Facility' means ~~any building or facility on which~~
 2 ~~construction is initiated six months or more after July 1, 1975.~~ a building, a
 3 group of buildings served by a central energy distribution system or
 4 components of a central energy distribution system.
- 5 (4) ~~The term 'initial'~~ 'Initial cost' means the required cost necessary to
 6 construct a facility or construct or renovate a major facility.
- 7 (5) ~~The term 'life cycle cost' means the cost of a facility including its~~
 8 ~~initial cost, and the cost, over the economic life of the facility, of the~~
 9 ~~energy consumed and of operation and maintenance of the facility as it~~
 10 ~~affects energy consumption.~~ 'Life-cycle cost analysis' means an
 11 analytical technique that considers certain costs of owning, using, and
 12 operating a facility over its economic life, including but not limited to:
 13 a. Initial costs;
 14 b. System repair and replacement costs;
 15 c. Maintenance costs;
 16 d. Operating costs, including energy costs;
 17 e. Salvage value.
- 18 (6) ~~The term 'major facility' means any building or facility of 40,000 or~~
 19 ~~more gross square feet on which construction or renovation is initiated~~
 20 ~~six months or more after July 1, 1975, and wherein significant energy~~
 21 ~~demands will exist.~~
- 22 (7) ~~The term 'State'~~ 'State agency' means the State of North Carolina or any
 23 board, bureau, commission, department, institution, or ~~other~~ agency of
 24 the State, or any board or governing body of a political subdivision of the
 25 State, ~~including any board of a community college, or an agency,~~
 26 ~~commission, or authority of a political subdivision of the State.~~ State.
- 27 (8) ~~The term 'state assisted facility' or 'major state assisted facility'~~ 'State
 28 assisted facility' means a facility constructed, or ~~major facility~~
 29 ~~constructed or renovated,~~ a facility of 40,000 or more gross square feet
 30 renovated in whole or in part with State funds or with funds
 31 guaranteed or insured by a State agency.
- 32 (9) ~~The term 'State facility' or 'major State facility'~~ means a facility
 33 ~~constructed, or a major facility constructed or renovated, by a State~~
 34 ~~agency."~~

35 Sec. 4. G.S. 143-64.12 and G.S. 143-64.13 are repealed.

36 Sec. 5. Article 3B of Chapter 143 of the General Statutes is amended by
 37 adding the following new sections to read:

38 **"§ 143-64.15. Life-cycle cost analysis for State assisted facilities.**

39 The General Assembly encourages any entity to conduct a life-cycle cost analysis
 40 pursuant to G.S. 143-64.17 for the construction of any State assisted facility or the
 41 renovation of any State assisted facility of 40,000 or more gross square feet.

42 **"§ 143-64.16. Duties of State agencies.**

1 (a) The Department of Administration shall include as a design criterion the
2 requirement that a life-cycle cost analysis be conducted pursuant to G.S. 143-64.17 for
3 the construction or renovation of any State facility.

4 (b) The Energy Division shall develop a comprehensive energy management
5 program for State government and shall coordinate the development of State agency
6 energy management plans.

7 (c) The Department of Administration, in consultation with the Energy Division,
8 shall develop and implement policies, procedures, and standards to ensure that State
9 purchasing practices improve energy efficiency and take the cost of the product over
10 the economic life of the product into consideration.

11 (d) The Department of Administration, as part of the Facilities Condition and
12 Assessment Program, shall identify and recommend energy conservation maintenance
13 and operating procedures that are designed to reduce energy consumption within the
14 facility and that require no significant expenditure of funds. The department,
15 institution, or agency is encouraged to implement these recommendations.

16 (e) The Department of Administration, in consultation with the Energy Division,
17 shall adopt and implement Building Energy Design Guidelines. These guidelines shall
18 include energy-use goals and standards, economic assumptions for life-cycle cost
19 analysis, and other criteria on building systems and technologies.

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

25 **"§ 143-64.17. Life-cycle cost analysis.**

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

- 28 (1) The coordination, orientation, and positioning of the facility on its
29 physical site;
- 30 (2) The amount and type of fenestration employed in the facility;
- 31 (3) Thermal characteristics of materials and the amount of insulation
32 incorporated into the facility design;
- 33 (4) The variable occupancy and operating conditions of the facility,
34 including illumination levels; and
- 35 (5) Architectural features which affect energy consumption.

36 (b) The life-cycle cost analysis performed for any State facility of 20,000 or more
37 gross square feet shall, in addition to the requirements set forth in subsection (a) of this
38 section, shall provide, but not be limited to, the following:

- 39 (1) An energy-consumption analysis of the facility's energy-consuming
40 systems in accordance with the provisions of subsection (f) of this
41 section;
- 42 (2) The initial estimated cost of each energy-consuming system being
43 compared and evaluated;
- 44 (3) The estimated annual operating cost of all utility requirements;

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

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

5 (c) The life-cycle cost analysis shall be certified by a registered professional
6 engineer or bear the seal of a North Carolina registered architect, or both. This engineer
7 or architect shall be particularly qualified by training and experience for the type of
8 work involved, and in conformance with the provisions of G.S. 133-1.1.

9 (d) In order to protect the integrity of historic buildings, no provision of this
10 Article shall be interpreted to require such analysis with respect to any property eligible
11 for, nominated to, or entered on the National Register of Historic Places, pursuant to the
12 National Historic Preservation Act of 1966, P.L. 89-665; any historic building located
13 within an historic district as provided in Chapters 160A or 153A of the General Statutes;
14 any historic building listed, owned, or under the jurisdiction of an historic properties
15 commission as provided in Chapter 160A or 153A; nor any historic property owned by
16 the State or assisted by the State.

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

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

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

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

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

29 Sec. 6. G.S. 143-64.14 is recodified as G.S. 143-64.18.

30 Sec. 7. This act is effective upon ratification and applies to all construction
31 and renovation projects for State facilities that start the design process on or after that
32 date.