



# Senate

General Assembly

**File No. 335**

*January Session, 2003*

Senate Bill No. 796

*Senate, April 14, 2003*

The Committee on Government Administration and Elections reported through SEN. DEFRONZO of the 6th Dist., Chairperson of the Committee on the part of the Senate, that the bill ought to pass.

***AN ACT CONCERNING THE LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN RATING SYSTEM.***

Be it enacted by the Senate and House of Representatives in General Assembly convened:

1 Section 1. Section 16a-38 of the general statutes is repealed and the  
2 following is substituted in lieu thereof (*Effective July 1, 2003*):

3 (a) As used in this section, subsection (e) of section 4b-23, sections  
4 16a-38a and 16a-38b, unless the context otherwise requires: (1) "Major  
5 capital project" means the construction or renovation of a major  
6 facility; (2) "major facility" means any building owned by the state or  
7 constructed or renovated wholly or partly with state funds, including a  
8 state-financed housing project, which is used or intended to be used as  
9 a school or which has ten thousand or more gross square feet, or any  
10 other building so owned, constructed or renovated which is  
11 designated a major facility by the Commissioner of Public Works; (3)  
12 "renovation" means additions, alterations or repairs to a major facility

13 which the Commissioner of Public Works finds will have a substantial  
14 effect upon the energy consumption of the facility; (4) "life-cycle cost"  
15 means the cost, as determined by the methodology identified in the  
16 National Institute of Standards and Technology's special publication  
17 544 and interagency report 80-2040, available as set forth in the Code of  
18 Federal Regulations, Title 15, Part 230, of a major facility including the  
19 initial cost of its construction or renovation, the marginal cost of future  
20 energy capacity, the cost of the energy consumed by the facility over  
21 its expected useful life or, in the case of a leased facility, over the  
22 remaining term of the lease, and the cost of operating and maintaining  
23 the facility as such cost affects energy consumption; (5) "energy  
24 performance standard" means a rate of energy consumption which is  
25 the minimum practically achievable, on a life-cycle cost basis, by  
26 adjusting maintenance or operating procedures, modifying a  
27 building's equipment or structure and utilizing renewable sources of  
28 energy; (6) "energy audit" means an evaluation of, recommendations  
29 for and improvements of the energy consumption characteristics of all  
30 passive, active and operational energy systems and components by  
31 demand and type of energy used including the internal energy load  
32 imposed on a building by its occupants, equipment and components,  
33 and the external energy load imposed on a building by the climatic  
34 conditions at its location; (7) "renewable sources of energy" means  
35 energy from direct solar radiation, wind, water, geothermal sources,  
36 wood and other forms of biomass; (8) "cost effective" means that  
37 savings exceed cost over a ten-year period; (9) "state agency" means  
38 any department, board, commission, institution, or other agency of this  
39 state; and (10) "covered products" means the consumer products set  
40 forth as covered products in the Energy Policy and Conservation Act,  
41 42 USC 6292.

42 (b) (1) Except as provided in subsection (f) of this section, the  
43 Commissioner of Public Works and the Secretary of the Office of  
44 Policy and Management shall jointly establish and publish standards  
45 for life-cycle cost analyses required by this section for buildings owned  
46 or leased by the state. Such life-cycle cost analyses for buildings shall  
47 provide, but shall not be limited to, information on the estimated

48 initial cost of each energy-consuming system being compared and  
49 evaluated, annual operating and maintenance costs of all energy-  
50 consuming systems over the useful life of the building, cost of energy,  
51 salvage value and the estimated replacement cost for each energy-  
52 consuming system or component expressed in annual terms for the  
53 useful life of the building.

54 (2) Except as provided in subsection (f) of this section, the  
55 Commissioner of Administrative Services and the Secretary of the  
56 Office of Policy and Management may jointly establish and publish  
57 standards for life-cycle cost analyses required by this section for  
58 equipment and appliances owned or leased by the state which are not  
59 covered products, and for such equipment and appliances which are  
60 covered products. In establishing such standards, the commissioner  
61 and secretary shall consider the criteria set forth in subsection (j) of this  
62 section.

63 (c) No state agency shall obtain preliminary design approval for a  
64 major capital project unless the Commissioner of Public Works makes  
65 a written determination that the design is cost effective on a life-cycle  
66 cost basis. To make such a determination, the commissioner (1) shall  
67 require documentation that the design meets or exceeds the standards  
68 set forth in the National Bureau of Standards Handbook 135, or  
69 subsequent corresponding handbook of the United States Department  
70 of Commerce and the State Building Code, and (2) may require  
71 additional documentation, including, but not limited to, a life-cycle  
72 cost analysis that complies with the standards established pursuant to  
73 subdivision (1) of subsection (b) of this section.

74 (d) All design proposals for major capital projects shall include at  
75 least two differing energy systems for space heating, cooling and hot  
76 water to supplement the passive features designed into the building.  
77 Such proposals may include computer or other analytical modeling or  
78 simulation but shall not be construed to require the development of  
79 architectural or mechanical design plans for each such system. All cost  
80 evaluations of the competing energy systems shall be based on life-

81 cycle costs. A life-cycle cost analysis for each competing energy system  
82 determined by the Commissioner of Public Works to meet the  
83 standards of subsection (b) of this section shall be included as part of  
84 the design proposal for all projects. No major capital project shall be  
85 approved by the Commissioner of Public Works or by the State  
86 Properties Review Board pursuant to section 4b-23, after June 30, 1980,  
87 unless the proposed project achieves to the maximum extent  
88 practicable the energy performance standards established in  
89 accordance with subsection (b) or (g) of this section.

90 (e) All applications for state funding of major capital projects shall  
91 be accompanied by a life-cycle cost analysis which the Commissioner  
92 of Public Works has determined complies with the standards  
93 established pursuant to subsection (b) of this section. The  
94 Commissioner of Public Works or the Secretary of the Office of Policy  
95 and Management may require such a life-cycle cost analysis for  
96 projects other than major capital projects.

97 (f) The Commissioner of Economic and Community Development  
98 and the Secretary of the Office of Policy and Management shall jointly  
99 establish and publish energy performance standards for buildings  
100 constructed as part of state-owned and state-financed housing projects  
101 and establish standards for life-cycle cost analyses for such projects. In  
102 establishing such standards, the commissioner and secretary shall  
103 require all projects to meet or exceed the Leadership in Energy and  
104 Environmental Design's Rating System for New Construction, as  
105 established by the United States Green Building Council, as revised  
106 from time to time and consider (1) the coordination, positioning and  
107 solar orientation of the project on its situs, (2) the amount of glazing,  
108 degree of sun shading and direction of exposure, (3) the levels of  
109 insulation incorporated into the design, (4) the variable occupancy and  
110 operating conditions of the facility, (5) all architectural features which  
111 affect energy consumption, and (6) the design and location of all  
112 heating, cooling, hot water and electrical systems.

113 (g) Notwithstanding any provision in this section concerning the

114 review of life-cycle cost analyses by the Commissioner of Public  
115 Works, a life-cycle cost analysis of a major capital project prepared for  
116 the Department of Housing shall be reviewed by the Commissioner of  
117 Economic and Community Development and the Secretary of the  
118 Office of Policy and Management to determine if such analysis is in  
119 compliance with the life-cycle cost analyses standards established for  
120 such project under subsection (f) of this section.

121 (h) Each state agency preparing a life-cycle cost analysis under this  
122 section shall submit a summary of the analysis to the Secretary of the  
123 Office of Policy and Management.

124 (i) Except as provided in subsection (f) of this section, the  
125 Commissioner of Public Works and the Secretary of the Office of  
126 Policy and Management shall jointly establish and publish energy  
127 performance standards for existing and new buildings owned or  
128 leased by the state. Such standards shall require maximum efficiency  
129 in energy use in all such buildings and maximum practicable use of  
130 renewable sources of energy in all such buildings provided the benefits  
131 of achieving such efficiency outweigh the costs, as determined by the  
132 commissioner and the secretary. In establishing such standards, the  
133 commissioner and secretary shall require all projects to meet or exceed  
134 the Leadership in Energy and Environmental Design's Rating System  
135 for New Construction or Existing Buildings, as established by the  
136 United States Green Building Council, as revised from time to time, as  
137 applicable, and consider (1) the coordination, positioning and solar  
138 orientation of the project on its situs, (2) the amount of glazing, degree  
139 of sun shading and direction of exposure, (3) the levels of insulation  
140 incorporated into the design, (4) the variable occupancy and operating  
141 conditions of the facility, (5) all architectural features which affect  
142 energy consumption, and (6) the design and location of all heating,  
143 cooling, hot water and electrical systems.

144 (j) Except as provided in subsection (f) of this section, the  
145 Commissioner of Administrative Services and the Secretary of the  
146 Office of Policy and Management may jointly establish and publish



The following fiscal impact statement and bill analysis are prepared for the benefit of members of the General Assembly, solely for the purpose of information, summarization, and explanation, and do not represent the intent of the General Assembly or either House thereof for any purpose:

**OFA Fiscal Note**

**State Impact:**

<b>Agency Affected</b>	<b>Fund-Type</b>	<b>FY 04 \$</b>	<b>FY 05 \$</b>
Policy & Mgmt., Off.; Pub. Works, Dept.	GF - Cost	Minimal	Minimal
Treasurer, Debt Serv.	GF - Cost	Potential Significant	Potential Significant
Treasurer, Debt Serv.	TFBonds - Cost	Potential Significant	Potential Significant
Pub. Works, Dept.; Judicial Dept.; UConn	GF - Savings	None	Potential Significant
Transportation, Dept.; Motor Vehicle Dept.	TF - Savings	None	Potential Significant

Note: GF=General Fund; TFBonds=Transportation Fund bonds; TF=Transportation Fund

**Municipal Impact:** None

**Explanation**

The bill requires the Secretary of the Office of Policy and Management (OPM) and the Commissioner of the Department of Public Works (DPW) to adopt regulations that would require all new construction to meet or exceed the standards as established by the United States Green Building Council. Currently, DPW has the equivalent of 1½ positions dedicated to their energy conservation program. DPW estimates that the costs of construction could increase by 5% to 10%, while the Department of Transportation estimates that the costs for many of their maintenance facilities could increase by 10% or more.

The additional construction costs could be offset by savings in the operations of the new buildings over their lifetime, especially in heating and ventilation costs. Industry sources estimate these savings to be up to 30% of annual utility costs. Any General Fund operating budget savings would be achieved through the Department of Public

Works, the Judicial Department and the University of Connecticut. Any Transportation Fund operating budget savings would be achieved through the Department of Transportation and the Department of Motor Vehicles.

The bill allows OPM, in consultation with DPW to exempt any buildings from these new standards when the cost of compliance significantly outweighs the benefits. Therefore, it is anticipated that these additional construction costs will only be incurred when they exceeded by operational savings over the life of the building. DPW is anticipated to incur minimal costs from adopting regulations and updating such regulations as necessary. Both DPW and OPM are anticipated to incur minimal costs from their cost/benefit analysis of new construction projects.

It is anticipated that the Secretary of the Office of Policy and Management and the Commissioner of Economic and Community Development can establish energy efficiency standards for certain housing projects within the current budgetary resources of each agency, thus there is no fiscal impact. To the extent these standards increase the construction cost for state owned or state-financed housing projects future costs may be incurred.

**OLR Bill Analysis**

SB 796

***AN ACT CONCERNING THE LEADERSHIP IN ENERGY AND ENVIRONMENTAL DESIGN RATING SYSTEM*****SUMMARY:**

This bill requires the Office of Policy and Management (OPM) secretary and other officials to adopt more stringent energy standards for state-owned and -funded buildings. By law, the secretary and the Department of Public Works (DPW) commissioner must adopt energy performance standards for existing and new buildings the state owns or leases, other than housing projects. The secretary and the Department of Economic and Community Development must adopt such standards for state-owned or -funded housing projects. They also must also establish standards for the life cycle cost analyses required by law for such projects, which estimate a building's capital and operating costs over its lifetime.

The bill requires housing projects to at least meet the Leadership in Energy and Environmental Design's Rating System (LEEDS) for new construction. It requires other state projects to meet the LEEDS system for new construction or existing buildings, as applicable. The bill's effect is unclear (see COMMENT). The system was developed by the U.S. Green Building Council, a nonprofit organization, and the requirements apply to the system as amended from time to time.

Under current law, the OPM/DPW standards must require the maximum energy efficiency and practicable use of renewable energy in state buildings. The bill limits this requirement to apply only when the benefits of taking these steps outweigh their costs, as determined by the officials.

EFFECTIVE DATE: July 1, 2003

**COMMENT*****Unclear Effect***

The LEEDS system addresses a wide range of environmental factors

beyond energy efficiency, including the siting of buildings, indoor air quality, and stormwater management. Buildings get points for specific measures incorporated into their design and construction, and can earn one of four ratings (certified, silver, gold, or platinum) depending on the number of points they receive. It is unclear (1) how a building can meet a rating system, as distinct from achieving a specific rating and (2) whether the bill requires buildings to incorporate the system's environmental provisions as well as its energy performance provisions.

**COMMITTEE ACTION**

Energy and Technology Committee

Joint Favorable Change of Reference

Yea 11    Nay 0

Government Administration and Elections Committee

Joint Favorable Report

Yea 11    Nay 4