SUBJECT: Energy conservation and alternatives in state building projects

COMMITTEE: Government Reform — favorable, without amendment

VOTE: 6 ayes — Uresti, Otto, Frost, Gonzales, Hunter, Veasey

0 nays

1 absent — Y. Davis

SENATE VOTE: On final passage, April 28 — 31-0, on Local and Uncontested Calendar

WITNESSES: (*On House companion bill, HB 3467 by Puente:*)
For — Russel Smith, Texas Renewable Energy Industries Association (*Registered, but did not testify:* Travis Brown, Public Citizen; Luke Metzger, Texas Public Interest Research Group)

Against — None

On — James Von Wolske (*Registered, but did not testify:* Dub Taylor, State Energy Conservation Office)

BACKGROUND: Government Code, sec. 447.004, governs design standards for state buildings. Under current law, state agencies or institutions of higher education cannot begin construction of a new building or a major renovation project before the design architect or engineer has:

- certified to the agency or institution that the construction or renovation complies with energy and water conservation standards; and
- provided a copy of the certification to the State Energy Conservation Office.

Before a state building undergoes construction or renovation, the Texas Building and Procurement Commission must prepare a project analysis. The project analysis contains basic information about the project such as a description of the project, the proposed site of the project, the amount of space needed for the agency, and an overall estimate of its cost. The

project analysis also contains an evaluation of the energy alternatives, as required by Government Code, sec. 2166.401, for any project involving the installation or replacement of all or part of an energy system, energy source, or energy-consuming equipment. The evaluation must include information about the economic and environmental impact of various energy alternatives and the identification of the best energy alternative for the project considering economic and environmental costs and benefits.

Government Code, sec. 2166.403 requires, during the planning phase of the proposed construction, that the commission, or the governing body of the appropriate agency or institution, verify in an open meeting the economic feasibility of incorporating into the building's design and proposed energy system alternative energy devices for space heating and cooling, water heating, electrical loads, and interior lighting. The commission or governing body then must determine economic feasibility for each function by comparing the estimated cost of providing energy for the function using conventional design practices and energy systems with the estimated cost of providing energy for the function using alternative energy devices during the economic life of the building.

If the use of alternative energy devices for a particular function is determined to be economically feasible, the commission or governing body must include the use of the alternative energy devices in the construction plans.

The Government Code defines "alternative energy" as a renewable energy resource, including solar energy, biomass energy, and wind energy.

DIGEST:

SB 982 would change the processes and design standards involved in the approval of construction plans for certain state buildings.

Certification. The bill would amend Government Code, sec. 447.004, to require the certification by the architect or engineer concerning a state building construction or renovation project to be directed to the appropriate authority with jurisdiction rather than the agency or institution. In addition to current certification requirements, the architect or engineer also would be required to certify that the construction or renovation complied with the alternative energy and energy-efficient architectural and engineering design evaluation requirements under the Government Code secs. 2166.401, 2166.403, and 2166.408.

In addition, the architect or engineer would have to provide copies of each certification, written evaluation, or detailed economic feasibility study prepared to the appropriate authority with jurisdiction and to the State Energy Conservation Office.

Project analysis. The bill would require all project analyses to include in the overall estimate of the cost of a project the necessary funding for life-cycle costing, whole-building integrated design, commissioning, and post-occupancy building performance verification. In addition, the evaluation of energy alternatives would have to include energy-efficient architectural and engineering design alternatives as required by Government Code, secs. 2166.401, 2166.403, and 2166.408.

For each project undergoing a project analysis, SB 982 would require the Texas Building and Procurement Commission to prepare a written evaluation of energy-efficient architectural or engineering design alternatives for each project in which architectural or engineering design choices would affect the energy-efficiency of the building. The evaluation would include information about the economic and environmental impact of various energy-efficient architectural or engineering design alternatives, including an evaluation of economic and environmental costs both initially and over the life of the architectural or engineering design. In addition, the evaluation would identify the best architectural and engineering design for the project considering economic and environmental costs and benefits.

Alternative energy. SB 982 would require the commission or the agency or institution to present a written evaluation at an open meeting. The evaluation would have to be made available to the public at least 30 days before the open meeting.

The bill also would require the commission or agency or institution to verify the economic feasibility of using energy-efficient architectural or engineering design alternatives. SB 982 would revise the method by which the economic feasibility for each function was determined by requiring comparisons to include alternatives that could meet "all or part of" a particular function.

In addition, the bill would require the comptroller's State Energy Conservation Office, or its successor, to approve any methodology or electronic software used by the commission or governing body, or an

entity contracting with the commission or governing body, to make a comparison or determine feasibility.

Finally, the bill would revise the definition of "alternative energy" to include geothermal energy.

The bill would take immediate effect if finally passed by a two-thirds record vote of the membership of each house. Otherwise, it would take effect September 1, 2005.

SUPPORTERS SAY:

SB 982 would create standards and practices enabling the state to take advantage of free sources of energy, thereby lowering costs while increasing energy efficiency. Buildings are responsible for between 30 percent and 45 percent of energy consumption nationally. Texas currently leads the nation in its capacity to generate electricity through solar energy. By designing buildings that maximize the use of solar energy, the state could realize substantial savings in energy costs.

Certification. Current law requires the agency or institution undertaking a construction project to perform alternative energy evaluations, yet the agency is not required to report compliance to the State Energy Conservation Office. This can lead to failure on the part of the agency to comply with these requirements. SB 982 would ensure these guidelines were met by requiring certification that the construction complied with alternative energy evaluation requirements.

The bill also would ensure that the certification was reported in sufficient detail for the State Energy Conservation Office to determine that the work had been done adequately. Along with copies of each certification, the architect or engineer would provide to the State Energy Conservation Office any written evaluation or detailed economic feasibility study prepared to comply with energy and alternative energy evaluation requirements.

In many cases, the agency or institution undergoing construction may not be the entity with ultimate responsibility over the project, and therefore not the appropriate entity to receive certification. The bill would fix this problem by requiring certification be directed to the "appropriate authority having jurisdiction" over the project.

Project analysis. Under current law, the project analyses need not consider long-term costs over the life of the building. Instead, the analysis typically is based on initial cost calculations that do not always accurately reflect total costs. For instance, while the initial costs of alternative energy systems may be more expensive than the standard system such systems actually may save money over the long term. The bill would require the project analysis to consider cost estimates in a more holistic manner, thereby creating a more accurate analysis of the overall project costs.

The bill also would modernize current law by requiring consideration of architectural and engineering design alternatives in the project analysis. Since the law originally was enacted, there has been a growing awareness that the design of a building can impact energy use and efficiency.

Alternative energy. When determining whether alternative energy devices should be used, current law allows comparisons between standard systems that provide 100 percent of the energy for a function and alternative devices that are designed to provide only a portion of the function. Such an apples-to-oranges comparison likely would show erroneously that the alternative energy source was less cost-effective. SB 982 would remedy this problem by requiring comparisons of estimated costs of providing energy for all or *part* of a particular energy function.

In addition, the bill would require the State Energy Conservation Office to approve the methodology or electronic software used to make a cost comparison or to determine economic feasibility to ensure use of the most precise and effective analysis.

The fiscal note indicates that this bill would not have significant fiscal implications to the state. Any minor increase in costs that initially resulted from the proposed changes would be offset by long term savings due to increased energy efficiency.

OPPONENTS SAY:

The project analysis and written evaluation required by the bill would burden agencies with additional costs and paperwork. Alternative energy sources such as solar panels do not generate enough energy to be cost effective and may cause damage to buildings that end up costing more than the amount saved.

NOTES: The House companion, HB 3467 by Puente, was reported favorably from the Government Reform Committee on April 20.