



Senate

General Assembly

File No. 195

February Session, 2006

Substitute Senate Bill No. 351

Senate, March 29, 2006

The Committee on Commerce reported through SEN. LEBEAU of the 3rd Dist., Chairperson of the Committee on the part of the Senate, that the substitute bill ought to pass.

AN ACT CONCERNING THE ESTABLISHMENT OF A CONNECTICUT HYDROGEN ROADMAP AND IMPLEMENTING A HYDROGEN DEMONSTRATION PROGRAM.

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

1 Section 1. (NEW) (*Effective from passage*) The Connecticut Center for
2 Advanced Technology, in consultation with the Connecticut
3 Hydrogen-Fuel Cell Coalition, the Department of Economic and
4 Community Development, the Renewable Energy Investment Fund,
5 established pursuant to subsection (c) of section 16-245n of the 2006
6 supplement to the general statutes and other appropriate state
7 agencies, upon request of the center, shall develop a Connecticut
8 Hydrogen Roadmap. The Hydrogen Roadmap shall include an
9 implementation plan to (1) facilitate the commercialization of
10 hydrogen-based technologies and fuel cells; (2) enhance energy
11 reliability and security; (3) promote the improved efficiency and
12 environmental performance of transportation and electric generation
13 with reduced emissions, reduced green house gases, more efficient use
14 of nonrenewable fuels, and increased use of renewable and sustainable

15 fuels; (4) facilitate the installation of infrastructure for hydrogen
16 production, storage, transportation and fueling capability; (5)
17 disseminate information regarding the benefits of hydrogen-based
18 technologies and fuel cells; and (6) develop strategies to retain and
19 expand hydrogen and fuel cell industries in Connecticut.

20 Sec. 2. (NEW) (*Effective from passage*) As part of the development of
21 the Connecticut Hydrogen Roadmap, the Connecticut Center for
22 Advanced Technology, in consultation with the Department of
23 Transportation, shall identify areas within the state transportation
24 system that would benefit from the integration of potential mass
25 transit and fleet transit locations with hydrogen or natural gas and
26 hydrogen mixture refueling stations.

27 Sec. 3. (NEW) (*Effective from passage*) As part of the Connecticut
28 Hydrogen Roadmap the Connecticut Center for Advanced
29 Technology, in consultation with electric and natural gas service
30 providers, shall identify areas in the electric and natural gas
31 distribution system of the state that would benefit from the
32 development of distributed generation through hydrogen or fuel cell
33 technology as a reliability asset necessary for voltage control, grid
34 security, or system reliability, or for the provision of required
35 uninterruptible service at customer sites.

36 Sec. 4. Subsections (a) and (b) of section 32-235 of the 2006
37 supplement to the general statutes are repealed and the following is
38 substituted in lieu thereof (*Effective July 1, 2006*):

39 (a) For the purposes described in subsection (b) of this section, the
40 State Bond Commission shall have the power, from time to time to
41 authorize the issuance of bonds of the state in one or more series and
42 in principal amounts not exceeding in the aggregate five hundred
43 [five] twenty-five million three hundred thousand dollars, provided
44 five million dollars of said authorization shall be effective July 1, 2006.

45 (b) The proceeds of the sale of said bonds, to the extent of the
46 amount stated in subsection (a) of this section, shall be used by the

47 Department of Economic and Community Development for the
48 purposes of sections 32-220 to 32-234, inclusive, including economic
49 cluster-related programs and activities, and for the Connecticut job
50 training finance demonstration program pursuant to sections 32-23uu
51 and 32-23vv provided, (1) three million dollars shall be used by said
52 department solely for the purposes of section 32-23uu and not more
53 than five million two hundred fifty thousand dollars of the amount
54 stated in said subsection (a) may be used by said department for the
55 purposes of section 31-3u, (2) not less than one million dollars shall be
56 used for an educational technology grant to the deployment center
57 program and the nonprofit business consortium deployment center
58 approved pursuant to section 32-41l, (3) not less than two million
59 dollars shall be used by said department for the establishment of a
60 pilot program to make grants to businesses in designated areas of the
61 state for construction, renovation or improvement of small
62 manufacturing facilities provided such grants are matched by the
63 business, a municipality or another financing entity. The commissioner
64 shall designate areas of the state where manufacturing is a substantial
65 part of the local economy and shall make grants under such pilot
66 program which are likely to produce a significant economic
67 development benefit for the designated area, (4) five million dollars
68 may be used by said department for the manufacturing
69 competitiveness grants program, (5) one million dollars shall be used
70 by said department for the purpose of a grant to the Connecticut
71 Center for Advanced Technology, for the purposes of section 32-237,
72 [and] (6) ten million dollars shall be used by said department for the
73 purpose of grants to the United States Navy or eligible applicants for
74 projects related to the enhancement of infrastructure for long-term, on-
75 going naval operations at the United States Naval Submarine Base-
76 New London, located in Groton, which will increase the military value
77 of said base, and (7) twenty million dollars shall be used for grants to
78 the Connecticut Center for Advanced Technology, for the purposes of
79 development of the plan under section 1 of this act and projects
80 pursuant to the plan, as follows: Five million dollars for the fiscal year
81 ending June 30, 2007, and five million dollars in each fiscal year

82 thereafter until the fiscal year ending June 30, 2010.

83 Sec. 5. (NEW) (*Effective July 1, 2006*) (a) The Commissioner of Public
84 Works, in consultation with Connecticut Innovations, Incorporated,
85 and the Joint Committee on Legislative Management, shall establish a
86 demonstration program designed to encourage and install fuel cells in
87 state buildings and facilities and eligible nonprofit institutions, upon
88 request of such nonprofit institution. As used in this section "eligible
89 nonprofit institutions" means a nonprofit institution that (1) has a
90 national reputation, and (2) had expenditures for electricity of not less
91 than one million dollars in the most recent calendar year.

92 (b) On or before January 1, 2007, Connecticut Innovations,
93 Incorporated, in consultation with the Commissioner of Public Works,
94 shall prepare a plan for implementation of such program which shall
95 include, but not be limited to, (1) identification of state buildings and
96 facilities, which shall include the State Capitol Building and the
97 Legislative Office Building, and nonprofit institutions with facilities
98 suitable for fuel cells, (2) evaluation of potential energy efficiency and
99 reliability of fuel cells in such buildings and facilities, and (3)
100 assessment of potential energy and cost savings from installation of
101 fuel cells in such buildings and facilities.

102 Sec. 6. (NEW) (*Effective July 1, 2006*) The Commissioner of Public
103 Works, in consultation with Connecticut Innovations, Incorporated,
104 shall adopt regulations, in accordance with the provisions of chapter
105 54 of the general statutes, to implement the provisions of section 5 of
106 this act.

107 Sec. 7. (NEW) (*Effective July 1, 2006*) On or before July 1, 2008, and
108 annually thereafter, the Commissioner of Public Works shall submit a
109 report on the program established under section 5 of this act to the
110 joint standing committee of the General Assembly having cognizance
111 of matters relating to commerce in accordance with the provisions of
112 section 11-4a of the general statutes. Such report shall include, but not
113 be limited to, a cost benefit analysis of the application of fuel cell
114 technology in state buildings and facilities and nonprofit institutions,

115 and a detailed report on the status of the program. The report may
116 include recommendations for legislation.

117 Sec. 8. (*Effective July 1, 2006*) (a) For the purposes described in
118 subsection (b) of this section, the State Bond Commission shall have
119 the power, from time to time, to authorize the issuance of bonds of the
120 state in one or more series and in principal amounts not exceeding in
121 the aggregate twenty million dollars.

122 (b) The proceeds of the sale of said bonds, to the extent of the
123 amount stated in subsection (a) of this section, shall be used by
124 Connecticut Innovations, Incorporated, for the purpose of the fuel cell
125 demonstration program established pursuant to section 5 of this act,
126 including costs of preparation of the plan required under subsection
127 (a) of said section 5.

128 (c) All provisions of section 3-20 of the general statutes, or the
129 exercise of any right or power granted thereby, which are not
130 inconsistent with the provisions of this section are hereby adopted and
131 shall apply to all bonds authorized by the State Bond Commission
132 pursuant to this section, and temporary notes in anticipation of the
133 money to be derived from the sale of any such bonds so authorized
134 may be issued in accordance with said section 3-20 and from time to
135 time renewed. Such bonds shall mature at such time or times not
136 exceeding twenty years from their respective dates as may be provided
137 in or pursuant to the resolution or resolutions of the State Bond
138 Commission authorizing such bonds. None of said bonds shall be
139 authorized except upon a finding by the State Bond Commission that
140 there has been filed with it a request for such authorization which is
141 signed by or on behalf of the Secretary of the Office of Policy and
142 Management and states such terms and conditions as said commission,
143 in its discretion, may require. Said bonds issued pursuant to this
144 section shall be general obligations of the state and the full faith and
145 credit of the state of Connecticut are pledged for the payment of the
146 principal of and interest on said bonds as the same become due, and
147 accordingly and as part of the contract of the state with the holders of

148 said bonds, appropriation of all amounts necessary for punctual
 149 payment of such principal and interest is hereby made, and the State
 150 Treasurer shall pay such principal and interest as the same become
 151 due.

152 Sec. 9. (*Effective July 1, 2006*) The sum of seven hundred fifty
 153 thousand dollars is appropriated to the Department of Economic and
 154 Community Development, from the General Fund, for the fiscal year
 155 ending June 30, 2007, for a grant to the Connecticut Center for
 156 Advanced Technology for the purposes of (1) development of the plan
 157 under section 1 of this act and programs pursuant to the plan, and (2)
 158 the administration of the Connecticut Hydrogen-Fuel Cell Coalition.

This act shall take effect as follows and shall amend the following sections:		
Section 1	<i>from passage</i>	New section
Sec. 2	<i>from passage</i>	New section
Sec. 3	<i>from passage</i>	New section
Sec. 4	<i>July 1, 2006</i>	32-235(a) and (b)
Sec. 5	<i>July 1, 2006</i>	New section
Sec. 6	<i>July 1, 2006</i>	New section
Sec. 7	<i>July 1, 2006</i>	New section
Sec. 8	<i>July 1, 2006</i>	New section
Sec. 9	<i>July 1, 2006</i>	New section

CE *Joint Favorable Subst.*

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:

Agency Affected	Fund-Effect	FY 07 \$	FY 08 \$
CT Innovations Inc. (quasi-public)	None	See Below	See Below
Department of Transportation	TF - None	See Below	See Below
Legislative Mgmt.	GF - Cost	See Below	See Below
Department of Economic & Community Development	GF - Cost	750,000	See Below
Pub. Works, Dept.	GF - Cost	375,000	227,000
Comptroller Misc. Accounts (Fringe Benefits)	GF - Cost	57,500	103,500
Treasurer, Debt Serv.	GF - Cost	See Below	See Below

Note: TF=Transportation Fund; GF=General Fund

Municipal Impact: None

Explanation

The bill authorizes \$20 million in General Obligation (GO) bonds, which will be provided to the Connecticut Center for Advanced Technology as a \$5 million annual grant between FY 07 and FY 10. The interest cost to bond \$20 million for 20 years, assuming a 5% interest rate, is \$10.5 million.

Sections 5 through 7 require the Department of Public Works (DPW) to administer a fuel cell technology demonstration program, do a cost-benefit analysis and provide annual reports. Assuming that the program is established 7/1/06 (full year effect), the cost FY 07 will be \$375,000 for DPW and \$57,500 in fringe benefits¹ (\$432,500 total cost)

¹ The fringe benefit costs for state employees are budgeted centrally in the Miscellaneous Accounts administered by the Comptroller. The estimated first year fringe benefit rate as a percentage of payroll is 23.6%, effective July 1, 2005. The first year fringe benefit costs for new positions do not include pension costs. The state's pension contribution is based upon the prior year's certification by the actuary for the State Employees Retirement System (SERS). The SERS 2005-06 fringe benefit rate is 34.7%, which when combined with the non pension fringe benefit rate would total 58.3%.

for: (1) \$250,000 in Other Expenses to hire a consultant with expertise in fuel cell technology to help DPW establish the program, (2) \$115,000 in Personal Services for one lead engineer position (\$65,000 plus \$32,500 in fringe benefits) and one administrative assistant position (\$50,000 plus \$25,000 in fringe benefits), (3) \$10,000 in Other Expenses (\$5,000 per person) for miscellaneous expenses like office supplies. The cost in FY 08 will be \$227,000 for DPW and \$103,500 in fringe benefits (\$330,500 total cost) for: (1) \$207,000 in Personal Services to cover the ongoing costs of the lead engineer and administrative assistant positions established in FY 07 and for two staff engineer positions (\$46,000 per position plus \$23,000 in fringe benefits) and (2) \$20,000 in Other Expenses (\$5,000 per person) for miscellaneous expenses like office supplies.

The legislation appropriates \$750,000 to the Department of Economic and Community Development (DECD) from the General Fund for the fiscal year ending June 30, 2007 for a grant to the Connecticut Center for Advanced Technology. The funds are provided to develop the plan required under Sec. 1 of the bill and to administer the Connecticut Hydrogen Fuel Cell Coalition. HB 5007, the governor's recommended budget does not provide funds for this purpose.

It is anticipated that the Connecticut Innovations, Inc. (CII) can undertake the additional responsibilities under the fuel cell demonstration program within existing resources. It is also anticipated that the Department of Transportation can consult on the Hydrogen Roadmap within existing agency resources.

It is anticipated that the Office of Legislative Management (OLM) can consult with DPW and CII on the development of the plan to install fuel cells within its normal budgetary resources. It is anticipated that a sufficient portion of the \$20 million in bond funds

will be provided to OLM for any costs incurred with installing or using fuel cells, otherwise the agency will incur costs, the extent of which are unknown.

The Out Years

The annualized ongoing fiscal impact is the debt service payments over 20 years. If the \$20 million in GO bonds were issued 7/1/06, the principal and interest payments would range between \$2.0 million in FY 08 and \$1.1 million in FY 27.

The annualized ongoing fiscal impact identified above for DPW, and the other agencies involved would continue into the future subject to inflation because the bill does not specify any end date for the fuel cell demonstration program.

**OLR Bill Analysis
sSB 351*****AN ACT CONCERNING THE ESTABLISHMENT OF A CONNECTICUT HYDROGEN ROADMAP AND IMPLEMENTING A HYDROGEN DEMONSTRATION PROGRAM.*****SUMMARY:**

This bill establishes two programs for promoting hydrogen and fuel cell technologies. It authorizes \$20 million in bonds for preparing and implementing a plan to bring these technologies into the marketplace (i.e., Connecticut Hydrogen Roadmap). The nonprofit Connecticut Center for Advanced Technologies (CCAT) must do this upon request and in consultation with specified organizations. The bill appropriates \$750,000 to CCAT to develop the plan and administer a coalition that promotes hydrogen and fuel cell technologies.

The bill also establishes a program to demonstrate fuel cell technology by installing them in state buildings and eligible nonprofit institutions. It authorizes up to \$20 million in bonds for this purpose. The public works commissioner must run the program in consultation with Connecticut Innovations, Inc. (CII) and the Legislative Management Committee. He must also adopt implementing regulations and submit annual reports detailing costs and benefits of the fuel cells the program installed.

EFFECTIVE DATE: July 1, 2006, except for the provisions governing the preparation of the Hydrogen Road Map, which take effect upon passage.

CONNECTICUT HYDROGEN ROADMAP***Implementation Plan***

CCAT must develop the roadmap in consultation with the Department of Economic and Community Development (DECD), the

Renewable Energy Investment Fund, and other appropriate state agencies.

The roadmap must include a plan to:

1. help commercialize fuel cells and hydrogen-based technologies;
2. enhance energy reliability and security in the state;
3. promote ways to make transportation and electric generation systems more efficient and reduce their effects on the environment;
4. increase the use of renewable and sustainable fuels;
5. facilitate the installation of infrastructure for hydrogen production, storage, transportation, and fueling capability;
6. disseminate information about the benefits of hydrogen-based technologies and fuel cells; and
7. develop strategies to retain and expand the state's hydrogen fuel cell industries.

The roadmap must also identify how hydrogen-based and fuel cell technologies could benefit the state's transportation and electric and natural gas distribution systems. CCAT must consult with the Department of Transportation to identify areas where the state could integrate hydrogen or natural gas and hydrogen mixture refueling stations with mass transit and fleet transit locations.

CCAT must also consult with electric and natural gas service providers to identify areas in the electric and natural gas distribution system where hydrogen and fuel cell technology could be used to generate energy for distribution. The reason for doing this is to show how the technology could be used as a reliable way to control voltage, secure the grid, make the system more reliable, or provide uninterruptible service at customer sites.

Funding

The bill authorizes \$20 million in bonds for developing the roadmap and projects to implement it. It does this by increasing the bond authorization for DECD's Manufacturing Assistance Act Program by that amount and, beginning in FY 07, granting \$5 million per year from that total to CCAT.

The bill also appropriates \$750,000 to CCAT in FY 07 to (1) develop the plan and programs to implement it and (2) administer the Connecticut Hydrogen-Fuel Cell Coalition. The coalition promotes the development, manufacturing, and deployment of fuel cell and hydrogen technologies and associated fueling systems. It consists of companies and organizations that do business with each other or share many common needs.

FUEL CELL DEMONSTRATION PROGRAM

The bill authorizes an additional \$20 million in bonds for CII to encourage and install fuel cells in state buildings and facilities and, upon request, nonprofit institutions. The latter qualify if they are known nationally and spent at least \$1 million on electricity during the most recent calendar year.

The bill requires three agencies to develop the program. The public works commissioner must establish the program in consultation with CII and the Legislative Management Committee. And he must adopt implementing regulations in consultation with CII.

CII must identify buildings and facilities that are suitable for fuel cells, determine how efficient and reliable the cells would be if they were installed in the identified buildings and facilities, and determine how much energy and money would be saved if the cells were installed there. CII must do this in consultation with the public works commissioner.

The commissioner must assess the costs and benefits of the fuels that were installed under the program and annually report his findings to the Commerce Committee, beginning on or before July 1, 2008. In

doing so, he may discuss related matters and recommend legislative changes.

BACKGROUND

CCAT

Universities, businesses, and state and federal agencies established CCAT in 2002 with a \$1.5 million grant from the U.S. Air Force. CCAT focuses on developing the next generation of technological systems for military and civilian applications. Its initiatives include creating centers to (1) develop and deploy advanced technologies; (2) help entrepreneurs launch new, technology-based businesses; and (3) encourage colleges and universities to train students for advanced technology fields.

Renewable Energy Investment Fund

CII administers this fund, whose purpose is to promote investments in renewable energy resources, stimulate demand for them, and encourage their deployment.

COMMITTEE ACTION

Commerce Committee

Joint Favorable Substitute

Yea 29 Nay 0 (03/14/2006)