SENATE
STATE OF MINNESOTA
NINETIETH SESSION

S.F. No. 180

(SENATE AUTHORS: OSMEK)

DATE	D-PG	OFFICIAL STATUS
01/19/2017	354	Introduction and first reading
		Referred to Energy and Utilities Finance and Policy
02/22/2017		Comm report: To pass as amended
		Second reading

A bill for an act

relating to energy; repealing provisions governing hydrogen as an energy source; repealing Minnesota Statutes 2016, sections 216B.8109; 216B.811; 216B.812; 216B.813; 216B.815.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MINNESOTA:

Section 1. **REPEALER.**

Minnesota Statutes 2016, sections 216B.8109; 216B.811; 216B.812; 216B.813; and 216B.815, are repealed.

EFFECTIVE DATE. This section is effective the day following final enactment.

216B.8109 HYDROGEN ENERGY ECONOMY GOAL.

It is a goal of this state that Minnesota move to hydrogen as an increasing source of energy for its electrical power, heating, and transportation needs.

216B.811 DEFINITIONS.

Subdivision 1. **Scope.** For purposes of sections 216B.811 to 216B.815, the terms defined in this section have the meanings given them.

Subd. 2. **Fuel cell.** "Fuel cell" means an electrochemical device that produces useful electricity, heat, and water vapor, and operates as long as it is provided fuel.

Subd. 3. **Hydrogen.** "Hydrogen" means hydrogen produced using renewable energy sources.

Subd. 4. **Related technologies.** "Related technologies" means balance of plant components necessary to make hydrogen and fuel cell systems function; turbines, reciprocating, and other combustion engines capable of operating on hydrogen; and electrolyzers, reformers, and other equipment and processes necessary to produce, purify, store, distribute, and use hydrogen for energy.

216B.812 FOSTERING USE OF HYDROGEN ENERGY.

Subdivision 1. **State purchase and use of renewable hydrogen technologies.** (a) The Department of Commerce, in coordination with the Department of Administration and the Pollution Control Agency, shall identify opportunities for deploying renewable hydrogen, fuel cells, and related technologies within state-owned facilities, vehicle fleets, and operations in ways that demonstrate their commercial performance and economics.

(b) The Department of Commerce shall recommend to the Department of Administration the purchase and deployment of hydrogen, fuel cells, and related technologies, when feasible, in ways that strategically contribute to realizing Minnesota's hydrogen economy goal as set forth in section 216B.8109, and which contribute to the following nonexclusive list of objectives:

(1) provide needed performance data to the marketplace;

(2) identify code and regulatory issues to be resolved;

(3) foster economic development and job creation in the state;

(4) raise public awareness of renewable hydrogen, fuel cells, and related technologies; or

(5) reduce emissions of carbon dioxide and other pollutants.

(c) The Department of Commerce and the Pollution Control Agency shall also recommend to the Department of Administration changes to the state's procurement guidelines and contracts in order to facilitate the purchase and deployment of cost-effective renewable hydrogen, fuel cells, and related technologies by all levels of government.

Subd. 2. **Pilot projects.** (a) In consultation with appropriate representatives from state agencies, local governments, universities, businesses, and other interested parties, the Department of Commerce shall report back to the legislature by November 1, 2005, and every two years thereafter, with a slate of proposed pilot projects that contribute to realizing Minnesota's hydrogen economy goal as set forth in section 216B.8109. The Department of Commerce must consider the following nonexclusive list of priorities in developing the proposed slate of pilot projects:

(1) deploy "bridge" technologies such as hybrid-electric, off-road, and fleet vehicles running on hydrogen or fuels blended with hydrogen;

(2) lead to cost-competitive, on-site renewable hydrogen production technologies;

(3) demonstrate nonvehicle applications for hydrogen;

(4) improve the cost and efficiency of hydrogen from renewable energy sources; and

(5) improve the cost and efficiency of hydrogen production using direct solar energy without electricity generation as an intermediate step.

(b) For deployment projects that do not involve a demonstration component, individual system components of the technology should, if feasible, meet commercial performance standards and systems modeling must be completed to predict commercial performance, risk, and synergies. In addition, the proposed pilots should meet as many of the following criteria as possible:

(1) advance energy security;

(2) capitalize on the state's native resources;

(3) result in economically competitive infrastructure being put in place;

(4) be located where it will link well with existing and related projects and be accessible to the public, now or in the future;

(5) demonstrate multiple, integrated aspects of renewable hydrogen infrastructure;

(6) include an explicit public education and awareness component;

(7) be scalable to respond to changing circumstances and market demands;

(8) draw on firms and expertise within the state where possible;

(9) include an assessment of its economic, environmental, and social impact; and

(10) serve other needs beyond hydrogen development.

Subd. 3. **Establishing multifuel hydrogen fueling stations.** The commissioner of commerce may accept federal funds, expend funds, and participate in projects to design, site, and construct multifuel hydrogen fueling stations that eventually link urban centers along key trade corridors across the jurisdictions of Manitoba, the Dakotas, Minnesota, Iowa, and Wisconsin.

These energy stations must serve the priorities listed in subdivision 2 and, as transition infrastructure, should accommodate a wide variety of vehicle technologies and fueling platforms, including hybrid, flexible-fuel, and fuel cell vehicles. They may offer, but not be limited to, gasoline, diesel, ethanol (E-85), biodiesel, and hydrogen, and may simultaneously test the integration of on-site combined heat and power technologies with the existing energy infrastructure.

The hydrogen portion of the stations may initially serve local, dedicated on- or off-road vehicles, but should eventually support long-haul transport.

216B.813 MINNESOTA RENEWABLE HYDROGEN INITIATIVE.

Subdivision 1. **Road map.** The Department of Commerce shall coordinate and administer directly or by contract the Minnesota renewable hydrogen initiative. If the department decides to contract for its duties under this section, it must contract with a nonpartisan, nonprofit organization within the state to develop the road map. The initiative may be run as a public-private partnership representing business, academic, governmental, and nongovernmental organizations. The initiative must oversee the development and implementation of a renewable hydrogen road map, including appropriate technology deployments, that achieve the hydrogen goal of section 216B.8109. The road map should be compatible with the United States Department of Energy's National Hydrogen Energy Roadmap and be based on an assessment of marketplace economics and the state's opportunities in hydrogen, fuel cells, and related technologies, so as to capitalize on strengths. The road map should establish a vision, goals, general timeline, strategies for working with industry, and measurable milestones for achieving the state's renewable hydrogen goal. The road map should describe how renewable hydrogen and fuel cells fit in Minnesota's overall energy system, and should help foster a consistent, predictable, and prudent investment environment. The department must report to the legislature on the progress in implementing the road map by November 1 of each odd-numbered year.

Subd. 2. **Grants.** (a) The commissioner of commerce shall operate a competitive grant program for projects to assist the state in attaining its renewable hydrogen energy goals.

(b) The commissioner shall give preference to project concepts included in the department's most recent biennial report: Strategic Demonstration Projects to Accelerate the Commercialization of Renewable Hydrogen and Related Technologies in Minnesota. Projects eligible for funding must combine one or more of the hydrogen production options listed in the department's report with an end use that has significant commercial potential, preferably high visibility, and relies on fuel cells or related technologies. Each funded technology deployment must include an explicit education and awareness-raising component, be compatible with the renewable hydrogen deployment criteria defined in section 216B.812, and receive 50 percent of its total cost from nonstate sources. The 50 percent requirement does not apply for recipients that are public institutions.

216B.815 REGIONAL ENERGY RESEARCH AND EDUCATION PARTNERSHIP.

(a) The state's public research and higher education institutions should work with one another and with similar institutions in the region to establish Minnesota and the Upper Midwest as a center of research, education, outreach, and technology transfer for the production of renewable energy and products, including hydrogen, fuel cells, and related technologies. The partnership should be designed to create a critical mass of research and education capability that can compete effectively for federal and private investment in these areas.

(b) Initiatives undertaken by the partnership may include:

(1) collaborative and interdisciplinary research, demonstration projects, and commercialization of market-ready technologies;

(2) creation of undergraduate and graduate course offerings and eventually degreed and vocational programs with reciprocity;

(3) establishment of fellows programs at the region's institutes of higher learning that provide financial incentives for relevant study, research, and exchange; and

(4) development and field-testing of relevant curricula, teacher kits for all educational levels, and widespread teacher training, in collaboration with state energy offices, teachers, nonprofits, businesses, the United States Department of Energy, and other interested parties.