Senate Fiscal Agency

State Notes

TOPICS OF LEGISLATIVE INTEREST

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ALTERNATIVE ENERGY DEVELOPMENTS

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Current and Developing Energy Systems

Modern society uses vast amounts of fossil fuels. For over a century, the internal combustion engine, using petroleum-based gasoline and diesel fuel, has been the dominant device used to power vehicles and other types of transportation. At the same time, oil, coal, and natural gas have been burned at large, centrally located power plants for conversion to and distribution of electricity, to satisfy the ever-increasing demands of consumers for this highly useful type of energy. Many people would agree that dependence on oil, gas, and other fossil fuels for the production of usable power, to run vehicles and machines and to heat or cool structures, is problematic in that these resources are finite and will one day become scarce. Further, many would agree that the burning of these fuels over a period of time has polluted the air, increased the "greenhouse" effect on the atmosphere, and caused a number of other environmental problems.

Though opinions vary widely concerning the length of time existing resources will last and the degree of environmental damage to date, given the widespread belief that increased use of nonrenewable fuels is unwise, and perhaps damaging, numerous individuals, private concerns, and governments have spent many years and millions of dollars searching for and researching alternative energy sources. While the development of alternative energy technologies has advanced, none of these energy sources has replaced traditional power production on a mass scale. Nevertheless, some believe that the conversion from fossil fuel dependence to alternative energy sources may be near.

A study conducted for the Michigan Economic Development Corporation (MEDC) addresses this issue, particularly as it relates to vehicles and the implications it may have for the future of this State. In "Positioning the State of Michigan as a Leading Candidate for Fuel Cell and Alternative Powertrain Manufacturing"[1], the author states the following:

> The automotive industry enters the 21st century on the verge of a new powertrain paradigm. Recent technological developments suggest the internal combustion engine (ICE), which has been the driving force over the first 100 years, may have a major competitor within the coming decades. Many industry participants believe that fuel cell technology has the potential to replace the ICE as the

[1] Brett C. Smith, Senior Industry Analyst, the Center For Automotive Research at Erim, Inc., August 2001

primary source of propulsion for automotive applications. Although there are significant hurdles yet to be overcome in the development of a cost-effective automotive fuel cell and a viable infrastructure, the implications for the automotive industry and the State of Michigan could be truly profound. Currently there are 33 engine plants and 14 transmission plants in North America. Importantly, there are 10 engine plants and 5 transmission plants in Michigan and nearly 27,000 people are employed in these facilities (Harbour 2000). The development of a cost-competitive automotive fuel cell would likely make many of those powertrain facilities obsolete. As these plants close, they could be replaced by out-of-state facilities specially built for the new fuel cell technology.

Recent reports show that experimental models are already in production. In California, Honda has announced that it will begin leasing hydrogen-powered FCX (fuel cell experimental) four-passenger vehicles to government and institutional users (although Honda evidently has no plans to mass-market its FCX to consumers). The vehicles carry 41 gallons of hydrogen, have a top speed of 96 mph and a range of 220 miles, and have been certified as having zero emissions (*Detroit Free Press*, July 26, 2002). Despite these achievements, and the benefits displayed by fuel cells, there are technological barriers to their development that must be overcome.

A fuel cell is a device that consists of an anode, cathode, and electrolyte, and operates by converting chemical energy into electrical energy. Unlike batteries, fuel cells do not run down and do not require recharging, but do require fuel. When hydrogen is used as the fuel, reportedly the only byproduct from the conversion to electricity is water, and because a fuel cell has no moving parts, this method of producing energy is clean and efficient. While an individual fuel cell produces a small amount of electricity, cells may be stacked to produce greater, usable outputs. Because hydrogen appears to be the most abundant element in the universe, some people view its use in fuel cells as a solution to the need to reduce dependence on fossil fuels and the pollution that results.

NextEnergy Proposal

Governor Engler addressed the issue of alternative energy in his 2002 State of the State Message, stating, “It is no longer a question of whether, but when, we will leave behind an economy powered by fossil fuels.” The Governor further stated that it cannot be assumed that Michigan will maintain its dominant place in the auto industry, and that the State must develop a strategy to prepare for the transformation of the auto industry, and society in general, from fossil fuel dependence to alternative energy sources.

In April, the Governor presented an economic development plan referred to as "NextEnergy", designed to promote the research, development, commercialization, and manufacture of alternative energy technologies, such as hydrogen fuel cells. As developed by the MEDC, the major components of the NextEnergy plan are, in part, to establish a NextEnergy zone in which to build a cluster of alternative energy industries; establish a NextEnergy center; provide incentives to alternative energy technology companies to locate in Michigan; and market Michigan as the location for the alternative energy technology industry.

In response to the Governor's proposal, legislation was introduced to create in statute a tax-free alternative energy zone on parcels of State-owned land in York Township in Washtenaw County; create an authority to oversee the zone and an alternative energy technology park; and provide tax exemptions and credits for certain alternative energy systems and businesses against personal property taxes, the single business tax, the sales tax, and the use tax.

Some components of the legislative package have been enacted. Public Act 512 of 2002 (House Bill 6071) amended the Michigan Renaissance Zone Act to allow the Michigan Strategic Fund board to designate one renaissance zone as an alternative energy zone for up to 20 years. Within the alternative energy zone, eligible businesses that promote, research, and develop alternative energy technologies may be eligible to claim certain exemptions against property and single business taxes. Public Act 531 (Senate Bill 1322) amended the Single Business Tax Act to allow a taxpayer to claim a credit against the tax for certain qualified business activity (research, development, or manufacturing of an alternative energy system, vehicle, or technology, or renewable fuel) if certified by the Michigan Next Energy Authority as a taxpayer eligible to claim the credit. Public Act 549 (House Bill 6074) amended the General Property Tax Act to exempt from personal property taxes alternative energy personal property if certified by the Michigan Next Energy Authority.

Bills to create the Authority and grant exemptions from the sales tax and use tax have not been enacted to date. The major bill in the package has passed both the Senate and the House of Representatives, and is currently in the House pending concurrence in Senate amendments. This bill (Senate Bill 1316) would create the Michigan Next Energy Authority Act and the Next Energy Authority, prescribe the powers and duties of the Authority, and transfer to the Authority parcels of State-owned land in York Township for the alternative energy zone.

An analysis of a recent version of the legislative package is available through the Senate Fiscal Agency website (www.senate.state.mi.us/sfa/). As the legislation changes, the analysis will be updated.

Present Activity

Unless, or until, Senate Bill 1316 (or similar legislation) is enacted, progress toward building a cluster of alternative energy industries may be limited. While the property tax and single business tax exemptions are in place as an incentive for businesses to locate in the alternative energy zone, apparently taxpayers will not be able to claim the exemptions until certified by the Authority, which is proposed by Senate Bill 1316. If the bill is enacted, the Authority will not be operational until the Governor appointed its board, which also is proposed by the Senate bill.

Under Public Act 512, the Michigan Strategic Fund board may designate an alternative energy zone. Although it has not done so yet, and the land for the zone has not yet been transferred from the State to the Authority (as proposed by Senate Bill 1316), the MEDC reports that its representatives have met with the York Township board to seek approval of the zone's designation (which is required to create a zone within a local unit's boundaries), and that the township board will meet on the issue in the near future.

Further, the MEDC reports that even though the Authority, which would be charged with developing and operating the zone property, has not been created, progress continues with other local units close to the proposed zone. Reportedly, the Ypsilanti Community Utility Authority provides water and sewer services to the property, and the sewage eventually flows to Pittsfield Township. Service agreements are being negotiated with the utility authority and the township. The MEDC also is in contact with various Federal agencies regarding possible Federal funding for alternative energy activities in the zone, and Federal regulations that may be pertinent to it.

Some people believe that if the legislation to establish the Next Energy Authority and zone is enacted, it will help the State to encourage alternative energy companies to locate alternative energy research and development facilities within the zone. Other states also are striving to become a center of research and development for alternative energy systems, especially systems that will be practical to power vehicles. While General Motors has a fuel cell research facility in Warren, Michigan, it recently opened a new fuel cell research center in New York. In addition, other states, such as California and Ohio, reportedly have been aggressively recruiting automotive companies to locate fuel cell research centers within their borders.