

# SENATE BILL No. 583

June 15, 2005, Introduced by Senators ALLEN, OLSHOVE, GOSCHKA, BARCIA and BIRKHOLZ and referred to the Committee on Technology and Energy.

A bill to amend 2002 PA 593, entitled  
"Michigan next energy authority act,"  
by amending section 2 (MCL 207.822).

## THE PEOPLE OF THE STATE OF MICHIGAN ENACT:

Sec. 2. As used in this act:

(a) "Advanced battery cell" means a rechargeable battery cell  
with a specific energy of not less than 80 watt hours per kilogram.

(b) "Alternative energy marine propulsion system" means an  
onboard propulsion system or detachable outboard propulsion system  
for a watercraft that is powered by ~~a fuel cell energy system,~~  
~~photovoltaic energy system, or advanced battery cell energy system~~

**AN ALTERNATIVE ENERGY SYSTEM** and that is the singular propulsion  
system for the watercraft. Alternative energy marine propulsion  
system does not include battery powered motors designed to assist

1 in the propulsion of the watercraft during fishing or other  
2 recreational use.

3 (c) "Alternative energy system" means the small-scale  
4 generation or release of energy from 1 or any combination of the  
5 following types of energy systems:

- 6 (i) A fuel cell energy system.
- 7 (ii) A photovoltaic energy system.
- 8 (iii) A solar-thermal energy system.
- 9 (iv) A wind energy system.
- 10 (v) A CHP energy system.
- 11 (vi) A microturbine energy system.
- 12 (vii) A miniturbine energy system.
- 13 (viii) A Stirling cycle energy system.
- 14 (ix) A battery cell energy system.
- 15 (x) A clean fuel energy system.
- 16 (xi) An electricity storage system.
- 17 **(xii) A BIOMASS ENERGY SYSTEM.**
- 18 **(xiii) A THERMOELECTRIC ENERGY SYSTEM.**
- 19 **(xiv) AN ANAEROBIC DIGESTER SYSTEM.**

20 (d) "Alternative energy technology" means equipment, component  
21 parts, materials, electronic devices, testing equipment, and  
22 related systems that are ~~solely~~ **INTEGRALLY** related to the  
23 following:

24 ~~— (i) The storage or generation of hydrogen for use in an~~  
25 ~~alternative energy system.~~

26 **(i) THE STORAGE, GENERATION, REFORMATION, OR DISTRIBUTION OF**  
27 **CLEAN FUELS INTEGRATED WITHIN AN ALTERNATIVE ENERGY SYSTEM FOR USE**

1 **WITHIN THE ALTERNATIVE ENERGY SYSTEM.**

2 (ii) The process of generating and putting into a usable form  
3 the energy generated by an alternative energy system. ~~Alternative~~  
4 ~~energy technology does not include those component parts of an~~  
5 ~~alternative energy system that are required regardless of the~~  
6 ~~energy source.~~

7 (iii) A microgrid. As used in this subparagraph, "microgrid"  
8 means the lines, wires, **FUEL LINES AND FUEL REFORMERS**, and controls  
9 to connect 2 or more alternative energy systems.

10 (iv) **RESEARCH, DEVELOPMENT, AND MANUFACTURING OF AN ALTERNATIVE**  
11 **ENERGY SYSTEM.**

12 (v) **RESEARCH, DEVELOPMENT, AND MANUFACTURING OF AN ALTERNATIVE**  
13 **ENERGY VEHICLE.**

14 (e) "Alternative energy technology business" means a business  
15 engaged solely in the research, development, or manufacturing of  
16 alternative energy technology.

17 (f) "Alternative energy vehicle" means a motor vehicle  
18 manufactured by an original equipment manufacturer that fully  
19 warrants and certifies that the motor vehicle meets federal motor  
20 vehicle safety standards for its class of vehicles as defined by  
21 the Michigan vehicle code, 1949 PA 300, MCL 257.1 to 257.923, and  
22 certifies that the motor vehicle meets local emissions standards,  
23 that is propelled by an alternative energy system. Alternative  
24 energy vehicle includes the following:

25 (i) An alternative fueled vehicle. As used in this  
26 subparagraph, "alternative fueled vehicle" means a motor vehicle  
27 that can only be powered by a clean fuel energy system and can only

1 be fueled by a clean fuel.

2 (ii) A fuel cell vehicle. As used in this subparagraph, "fuel  
3 cell vehicle" means a motor vehicle powered solely by a fuel cell  
4 energy system.

5 (iii) An electric vehicle. As used in this subparagraph,  
6 "electric vehicle" means a motor vehicle powered solely by a  
7 battery cell energy system.

8 (iv) A hybrid vehicle. As used in this subparagraph, "hybrid  
9 vehicle" means a motor vehicle that can only be powered by ~~—2—~~ **AN**  
10 **INTERNAL COMBUSTION ENGINE AND 1** or more alternative energy  
11 systems.

12 (v) A solar vehicle. As used in this subparagraph, "solar  
13 vehicle" means a motor vehicle powered solely by a photovoltaic  
14 energy system.

15 (vi) A hybrid electric vehicle. As used in this subparagraph,  
16 "hybrid electric vehicle" means a motor vehicle powered by an  
17 integrated propulsion system consisting of an electric motor and  
18 combustion engine. Hybrid electric vehicle does not include a  
19 retrofitted conventional diesel or gasoline engine. A hybrid  
20 electric vehicle obtains the power necessary to propel the motor  
21 vehicle from a combustion engine and 1 of the following:

22 (A) A battery cell energy system.

23 (B) A fuel cell energy system.

24 (C) A photovoltaic energy system.

25 (vii) **A HYDRAULIC HYBRID VEHICLE. AS USED IN THIS**  
26 **SUBPARAGRAPH, "HYDRAULIC HYBRID VEHICLE" MEANS A MOTOR VEHICLE**  
27 **POWERED BY A REGENERATIVE HYDRAULIC DRIVE SYSTEM OR POWERED BY AN**

1 INTERNAL COMBUSTION ENGINE ASSISTED BY A REGENERATIVE HYDRAULIC  
2 DRIVE SYSTEM.

3 (g) "Alternative energy zone" means a renaissance zone  
4 designated as an alternative energy zone by the board of the  
5 Michigan strategic fund under section 8a of the Michigan  
6 renaissance zone act, 1996 PA 376, MCL 125.2688a.

7 (H) "AMTEC ENERGY SYSTEM" MEANS A SYSTEM THAT CREATES ENERGY  
8 BY DIRECTLY PROCESSING WASTE HEAT OR DIRECT HEAT GENERATED BY A  
9 CLEAN FUEL ENERGY SYSTEM THROUGH A THERMALLY REGENERATIVE  
10 ELECTROCHEMICAL PROCESS.

11 (I) "ANAEROBIC DIGESTER ENERGY SYSTEM" MEANS A DEVICE OR  
12 SYSTEM OF DEVICES FOR OPTIMIZING THE ANAEROBIC DIGESTION OF BIOMASS  
13 FOR THE PURPOSE OF RECOVERING BIOFUEL FOR ENERGY PRODUCTION.

14 (J) ~~—(h)—~~ "Authority" means the Michigan next energy authority  
15 created under section 3.

16 (K) ~~—(i)—~~ "Battery cell" means a closed electrochemical system  
17 that converts chemical energy from oxidation and reduction  
18 reactions directly into electric energy without combustion and  
19 without external fuel and consists of an anode, a cathode, and an  
20 electrolyte.

21 (L) ~~—(j)—~~ "Battery cell energy system" means 1 or more battery  
22 cells and an inverter or other power conditioning unit used to  
23 perform 1 or more of the following functions:

24 (i) Propel a motor vehicle or an alternative energy marine  
25 propulsion system.

26 (ii) Provide electricity that is distributed within a dwelling  
27 or other structure.

(iii) Provide electricity to operate a portable electronic device including, but not limited to, a laptop computer, a personal digital assistant, or a cell phone. For purposes of this subparagraph only, a battery cell energy system shall only use advanced battery cells.

**(M) "BIOMASS ENERGY SYSTEM" MEANS A SYSTEM THAT CREATES ENERGY FROM A PROCESS USING RESIDUES FROM WOOD AND PAPER PRODUCTS INDUSTRIES, FOOD PRODUCTION AND PROCESSING, TREES AND GRASSES GROWN SPECIFICALLY TO BE USED AS ENERGY CROPS, AND GASEOUS FUELS PRODUCED FROM SOLID BIOMASS, ANIMAL WASTES, MUNICIPAL WASTES, OR LANDFILLS.**

**(N)** ~~—(k)—~~ "Board" means the governing body of an authority under section 4.

**(O)** ~~—(l)—~~ "CHP energy system" means an integrated unit that generates power and either cools, heats, or controls humidity in a building or provides heating, drying, or chilling for an industrial process that includes and is limited to both of the following:

(i) An absorption chiller, a desiccant dehumidifier, or heat recovery equipment.

(ii) One of the following:

(A) An internal combustion engine, an external combustion engine, a microturbine, or a miniturbine, fueled solely by a clean fuel.

(B) A fuel cell energy system.

**(P)** ~~—(m)—~~ "Clean fuel" means 1 or more of the following:

(i) Methane.

(ii) Natural gas.

(iii) Methanol neat or methanol blends containing at least 85%

1 methanol.

2 (iv) Denatured ethanol neat or ethanol blends containing at  
3 least 85% ethanol.

4 (v) Compressed natural gas.

5 (vi) Liquefied natural gas.

6 (vii) Liquefied petroleum gas.

7 (viii) Hydrogen.

8 (ix) **RENEWABLE FUELS.**

9 (Q) ~~—(n)—~~ "Clean fuel energy system" means a device that is  
10 designed and used solely for the purpose of generating power from a  
11 clean fuel. Clean fuel energy system does not include a  
12 conventional gasoline or diesel fuel engine or a retrofitted  
13 conventional diesel or gasoline engine.

14 (R) ~~—(o)—~~ "Department" means the department of management and  
15 budget.

16 (S) ~~—(p)—~~ "Electricity storage device" means a device,  
17 including a capacitor, that directly stores electrical energy  
18 without conversion to an intermediary medium.

19 (T) ~~—(q)—~~ "Electricity storage system" means 1 or more  
20 electricity storage devices and inverters or other power  
21 conditioning equipment.

22 (U) ~~—(r)—~~ "Fuel cell energy system" means 1 or more fuel cells  
23 or fuel cell stacks and an inverter or other power conditioning  
24 unit. A fuel cell energy system may also include a fuel processor.  
25 As used in this subdivision:

26 (i) "Fuel cell" means an electrochemical device that uses an  
27 external fuel and continuously converts the energy released from

1 the oxidation of fuel by oxygen directly into electricity without  
2 combustion and consists of an anode, a cathode, and an electrolyte.

3 (ii) "Fuel cell stack" means an assembly of fuel cells.

4 (iii) "Fuel processor" means a device that converts a fuel,  
5 including, but not limited to, methanol, natural gas, or gasoline,  
6 into a hydrogen rich gas, without combustion for use in a fuel  
7 cell.

8 (V) ~~—(s)—~~ "Microturbine energy system" means a system that  
9 generates electricity, composed of a compressor, combustor,  
10 turbine, and generator, fueled solely by a clean fuel with a  
11 capacity of not more than 250 kilowatts. A microturbine energy  
12 system may include an alternator and shall include a recuperator if  
13 the use of the recuperator increases the efficiency of the energy  
14 system.

15 (W) ~~—(t)—~~ "Miniturbine energy system" means a system that  
16 generates electricity, composed of a compressor, combustor,  
17 turbine, and generator, fueled solely by a clean fuel with a  
18 capacity of not more than 2 megawatts. A miniturbine energy system  
19 may also include an alternator and a recuperator.

20 (X) ~~—(u)—~~ "Person" means an individual, partnership,  
21 corporation, limited liability company, association, governmental  
22 entity, or other legal entity.

23 (Y) ~~—(v)—~~ "Photovoltaic energy system" means a solar energy  
24 device composed of 1 or more photovoltaic cells or photovoltaic  
25 modules and an inverter or other power conditioning unit. A  
26 photovoltaic system may also include batteries for power storage or  
27 an electricity storage device. As used in this subdivision:



1           (i) "Photovoltaic cell" means an integrated device consisting  
2 of layers of semiconductor materials and electrical contacts  
3 capable of converting incident light directly into electricity.

4           (ii) "Photovoltaic module" means an assembly of photovoltaic  
5 cells.

6           (Z) "REGENERATIVE HYDRAULIC DRIVE SYSTEM" MEANS A SYSTEM THAT  
7 CAPTURES ENERGY FROM NONPARASITIC VEHICLE SOURCES OR ENERGY WASTED  
8 BY A VEHICLE'S BRAKES OR SUSPENSION TO BE RELEASED TO DIRECTLY  
9 ASSIST VEHICLE PROPULSION OR DIRECTLY PROPEL THE VEHICLE.

10          (AA) "RENEWABLE FUELS" MEANS 1 OR MORE OF THE FOLLOWING:

11          (i) BIODIESEL OR BIODIESEL BLENDS CONTAINING AT LEAST 20%  
12 BIODIESEL. AS USED IN THIS SUBPARAGRAPH, "BIODIESEL" MEANS A  
13 DIESEL FUEL SUBSTITUTE CONSISTING OF METHYL OR ETHYL ESTERS  
14 PRODUCED FROM THE TRANSESTERIFICATION OF ANIMAL OR VEGETABLE FATS  
15 WITH METHANOL OR ETHANOL.

16          (ii) BIOMASS. AS USED IN THIS SUBPARAGRAPH, "BIOMASS" MEANS  
17 WOOD AND PAPER PRODUCTS INDUSTRIES, FOOD PRODUCTION AND PROCESSING,  
18 TREES AND GRASSES GROWN SPECIFICALLY TO BE USED AS ENERGY CROPS,  
19 AND GASEOUS FUELS PRODUCED FROM SOLID BIOMASS, ANIMAL WASTE,  
20 MUNICIPAL WASTES, OR LANDFILLS.

21          (BB) ~~—(w)—~~ "Small-scale" means a single energy system with a  
22 generating capacity of not more than 2 megawatts or an integrated  
23 energy system with a generating capacity of not more than 10  
24 megawatts.

25          (CC) ~~—(x)—~~ "Solar thermal energy system" means an integrated  
26 unit consisting of a sunlight collection device, a system  
27 containing a heat transfer fluid to receive the collected sunlight,

1 and heat exchangers to transfer the solar energy to a thermal  
2 storage tank to heat or cool spaces or ~~water~~ **FLUIDS** or to  
3 generate electricity.

4 (DD) ~~-(y)-~~ "Stirling cycle energy system" means a closed-  
5 cycle, regenerative heat engine that is fueled solely by a clean  
6 fuel and uses an external combustion process, heat exchangers,  
7 pistons, a regenerator, and a confined working gas, such as  
8 hydrogen or helium, to convert heat into mechanical energy. A  
9 Stirling cycle energy system may also include a generator to  
10 generate electricity.

11 (EE) "THERMOELECTRIC ENERGY SYSTEM" MEANS A SYSTEM THAT  
12 CREATES ENERGY BY CONVERTING THERMAL ENERGY CREATED AS DIRECT HEAT  
13 FROM A CLEAN FUEL ENERGY SYSTEM OR WASTE HEAT FROM ANY SOURCE.

14 (FF) ~~-(z)-~~ "Wind energy system" means an integrated unit  
15 consisting of a wind turbine composed of a rotor, an electrical  
16 generator, a control system, an inverter or other power  
17 conditioning unit, and a tower, which uses moving air to produce  
18 power.