

HOUSE SUBSTITUTE FOR
SENATE BILL NO. 583

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:

1 Sec. 2. As used in this act:

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

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

8 **AN ALTERNATIVE ENERGY SYSTEM** and that is the singular propulsion
9 system for the watercraft. Alternative energy marine propulsion

1 system does not include battery powered motors designed to assist
 2 in the propulsion of the watercraft during fishing or other
 3 recreational use.

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

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

20 (d) "Alternative energy technology" means equipment, component
 21 parts, materials, electronic devices, testing equipment, and
 22 related systems that are ~~solely related to~~ **SPECIFICALLY DESIGNED,**
 23 **SPECIFICALLY FABRICATED, AND USED PRIMARILY FOR 1 OR MORE OF** the
 24 following:

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

27 **(i) THE STORAGE, GENERATION, REFORMATION, OR DISTRIBUTION OF**

1 CLEAN FUELS INTEGRATED WITHIN AN ALTERNATIVE ENERGY SYSTEM OR
2 ALTERNATIVE ENERGY VEHICLE, NOT INCLUDING AN ANAEROBIC DIGESTER
3 ENERGY SYSTEM OR A HYDROELECTRIC ENERGY SYSTEM, FOR USE WITHIN THE
4 ALTERNATIVE ENERGY SYSTEM OR ALTERNATIVE ENERGY VEHICLE.

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

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

13 (iv) **RESEARCH AND DEVELOPMENT OF AN ALTERNATIVE ENERGY VEHICLE.**

14 (v) **RESEARCH, DEVELOPMENT, AND MANUFACTURING OF AN ALTERNATIVE**
15 **ENERGY SYSTEM.**

16 (vi) **RESEARCH, DEVELOPMENT, AND MANUFACTURING OF AN ANAEROBIC**
17 **DIGESTER ENERGY SYSTEM.**

18 (vii) **RESEARCH, DEVELOPMENT, AND MANUFACTURING OF A**
19 **HYDROELECTRIC ENERGY SYSTEM.**

20 (e) "Alternative energy technology business" means a business
21 engaged solely in the research, development, or manufacturing of
22 alternative energy technology.

23 (f) "Alternative energy vehicle" means a motor vehicle
24 manufactured by an original equipment manufacturer that fully
25 warrants and certifies that the motor vehicle meets federal motor
26 vehicle safety standards for its class of vehicles as defined by
27 the Michigan vehicle code, 1949 PA 300, MCL 257.1 to 257.923, and

1 certifies that the motor vehicle meets local emissions standards,
2 that is propelled by an alternative energy system. Alternative
3 energy vehicle includes the following:

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

8 (ii) A fuel cell vehicle. As used in this subparagraph, "fuel
9 cell vehicle" means a motor vehicle powered solely by a fuel cell
10 energy system.

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

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

18 (v) A solar vehicle. As used in this subparagraph, "solar
19 vehicle" means a motor vehicle powered solely by a photovoltaic
20 energy system.

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

1 (A) A battery cell energy system.

2 (B) A fuel cell energy system.

3 (C) A photovoltaic energy system.

4 (vii) **A HYDRAULIC HYBRID VEHICLE. AS USED IN THIS SUBPARAGRAPH,**
 5 **"HYDRAULIC HYBRID VEHICLE" MEANS A MOTOR VEHICLE POWERED BY A**
 6 **REGENERATIVE HYDRAULIC DRIVE SYSTEM OR POWERED BY AN INTERNAL**
 7 **COMBUSTION ENGINE ASSISTED BY A REGENERATIVE HYDRAULIC DRIVE**
 8 **SYSTEM.**

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

13 (H) **"ANAEROBIC DIGESTER ENERGY SYSTEM" MEANS A DEVICE OR**
 14 **SYSTEM OF DEVICES FOR OPTIMIZING THE ANAEROBIC DIGESTION OF BIOMASS**
 15 **FOR THE PURPOSE OF RECOVERING BIOFUEL FOR ENERGY PRODUCTION.**

16 (I) ~~(h)~~ "Authority" means the Michigan next energy authority
 17 created under section 3.

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

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

26 (i) Propel a motor vehicle or an alternative energy marine
 27 propulsion system.

(ii) Provide electricity that is distributed within a dwelling 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.

(I) "BIOMASS ENERGY SYSTEM" MEANS A SYSTEM THAT GENERATES 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.

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

(N) —(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.

(O) —(m)— "Clean fuel" means 1 or more of the following:

(i) Methane.

1 (ii) Natural gas.

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

4 (iv) Denatured ethanol neat or ethanol blends containing at
5 least 85% ethanol.

6 (v) Compressed natural gas.

7 (vi) Liquefied natural gas.

8 (vii) Liquefied petroleum gas.

9 (viii) Hydrogen.

10 (ix) **RENEWABLE FUELS.**

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

16 (Q) ~~—(e)—~~ "Department" means the department of management and
17 budget.

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

21 (S) ~~—(q)—~~ "Electricity storage system" means 1 or more
22 electricity storage devices and inverters or other power
23 conditioning equipment.

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

1 (i) "Fuel cell" means an electrochemical device that uses an
2 external fuel and continuously converts the energy released from
3 the oxidation of fuel by oxygen directly into electricity without
4 combustion and consists of an anode, a cathode, and an electrolyte.

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

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

10 (U) "HYDROELECTRIC ENERGY SYSTEM" MEANS A SYSTEM RELATED TO
11 THE PROCESS OF GENERATING OR PUTTING INTO USABLE FORM THE ENERGY
12 PRODUCED SOLELY FROM FLOWING OR FALLING WATER. THE SYSTEM MAY
13 CONSIST OF A TURBINE, GENERATOR, ALTERNATOR, ELECTRONIC DEVICES, OR
14 OTHER DIRECTLY RELATED COMPONENT PARTS.

15 (V) ~~—(s)—~~ "Microturbine 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 250 kilowatts. A microturbine energy
19 system may include an alternator and shall include a recuperator if
20 the use of the recuperator increases the efficiency of the energy
21 system.

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

27 (X) ~~—(u)—~~ "Person" means an individual, partnership,

1 corporation, limited liability company, association, governmental
2 entity, or other legal entity.

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

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

11 (ii) "Photovoltaic module" means an assembly of photovoltaic
12 cells.

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

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

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

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

(BB) ~~—(w)—~~ "Small-scale" means ~~—a—~~ 1 OR MORE OF THE FOLLOWING:

(i) A single energy system with a generating capacity of not more than 2 megawatts or an integrated energy system with a generating capacity of not more than 10 megawatts.

(ii) A SINGLE ENERGY SYSTEM OR AN INTEGRATED ENERGY SYSTEM WITH ANY GENERATING CAPACITY THAT IS 1 OR MORE OF THE FOLLOWING:

(A) A FUEL CELL ENERGY SYSTEM.

(B) A PHOTOVOLTAIC ENERGY SYSTEM.

(C) A WIND ENERGY SYSTEM.

(CC) ~~—(x)—~~ "Solar thermal energy system" means an integrated unit consisting of a sunlight collection device, a system containing a heat transfer fluid to receive the collected sunlight, and heat exchangers to transfer the solar energy to a thermal storage tank to heat or cool spaces or ~~—water—~~ **FLUIDS** or to generate electricity.

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

(EE) "THERMOELECTRIC ENERGY SYSTEM" MEANS A SYSTEM THAT GENERATES ENERGY BY CONVERTING THERMAL ENERGY INTO ELECTRICAL ENERGY USING DIRECT HEAT FROM A CLEAN FUEL ENERGY SYSTEM OR WASTE HEAT FROM ANY SOURCE. A THERMOELECTRIC ENERGY SYSTEM ALSO INCLUDES AN ENERGY SYSTEM THAT UTILIZES ALKALI METAL THERMAL-TO-ELECTRIC

1 **CONVERSION TECHNOLOGY.**

2 **(FF)** ~~—(z)—~~ "Wind energy system" means an integrated unit
3 consisting of a wind turbine composed of a rotor, an electrical
4 generator, a control system, an inverter or other power
5 conditioning unit, and a tower, which uses moving air to produce
6 power.