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DEPARTMENT OF ENERGY, LABOR & ECONOMIC GROWTH  
PUBLIC SERVICE COMMISSION

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COMMISSIONER      CHAIRMAN      COMMISSIONER

July 30, 2009

Mr. John Vial, Senior Environmental Engineer  
Thermal Process Unit Permit Section  
Air Quality Division  
Department of Environmental Quality

<mailto:vialj@michigan.gov>

Dear Mr. Vial:

Attached is a summary of Michigan Public Service Commission (MPSC or Commission) Staff's analysis of relevant sections of 2008 PA 295, with respect to consideration of possible sources of energy that originate wholly or partially as biomass waste materials.

All readers should understand this analysis does not constitute legal advice. It reflects MPSC Staff analysis of the recent legislation, and guidance MPSC Staff has already provided or expects to provide to the Commission, if questions arise about these issues. To date, the Commission has addressed these issues in only a single Commission Order, as described and quoted in the attachment. And, there are no Michigan court decisions MPSC Staff is aware of, which provide more guidance relevant to this analysis.

If Michigan Department of Environmental Quality (MDEQ) Staff is aware of any court decisions or administrative determinations on the part of any other governmental agency which are pertinent to MPSC Staff understanding of the issues discussed in this attachment, please let me know so we can continue to update the attachment and make it as thorough and definitive as possible. Also, please let us know if you recommend any editing of the attachment.

Thank you, in advance, for your cooperation in this matter. We appreciate the continuing effort to maintain regular communications between our agency and MDEQ staff about all issues related to the determinations discussed in the attachment.

Sincerely yours,

Tom Stanton, Manager  
Renewable Energy Section, Electric Reliability Division

Cc      Randall Telesz, MDEQ Air Quality Division  
         Duane RosKoskey, MDEQ Waste Management Division  
         Paul Proudfoot, MPSC Electric Reliability Division Director  
         Christine Battiste, Renewable Energy Section Policy Analyst

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## **MPSC Staff July 2009 Guidance and Answers to Frequently Asked Questions**

### **Renewable Energy and Advanced Cleaner Energy Classification and Certification for Electricity Generation from Refuse Derived Fuels and other Biomass Under Public Act 295, Michigan's Clean, Renewable, and Efficient Energy Act of 2008**

Michigan Public Service Commission (MPSC) Staff have received inquiries from several parties, asking whether and how various forms of biomass, refuse derived fuels, or waste-to-energy conversion might be classified as either renewable energy or advanced cleaner energy, under the provisions of 2008 PA 295 (the Act). The purpose of this memorandum is to explain MPSC Staff's analysis and understanding of the provisions of the Act.

All readers should be aware that this analysis does not constitute legal advice. It reflects MPSC Staff's understanding of the meaning of the recent legislation, and the guidance MPSC Staff has already provided or expects to provide to the Commission, if questions arise about these issues.

All readers are requested to contact MPSC Staff with any additional questions that are not adequately explained in this document. Questions may be addressed to Staff in the Renewable Energy Section, Electric Reliability Division, by telephone to (517) 241-5753 or by email; <mailto:mrep@michigan.gov>.

#### **Determining Whether Energy Generated by a Particular Energy System will be Eligible for Classification as Either Renewable or Advanced Clean Energy**

From its analysis of the Act, MPSC Staff draws the following conclusions:

1. Credits for the production of energy apply only to generated electricity. Energy used for purposes other than the generation of electricity is not eligible for classification as either renewable or advanced cleaner energy.
2. Energy used for purposes other than the generation of electricity could possibly qualify for the production of Energy Optimization Credits (as defined in Sec. 5), and Energy Optimization Credits can be substituted for Renewable Energy Credits if such substitution is approved by the Commission (under the provisions of Section 27(6) and (7)). To qualify for the production of Energy Optimization Credits, a determination will be required that energy conservation or energy efficiency (as defined in Sec. 5) is achieved through the use of such energy.
3. Electricity generated from municipal solid waste qualifies for consideration as renewable energy only under the provisions of Sec. 11(k)(iii). This provision of the Act qualifies electricity generated from pre-existing municipal solid waste incinerators only. For purposes of this portion

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of the Act, municipal solid waste means comingled household or commercial waste, such as garbage trucks deliver to landfills or qualifying municipal solid waste incinerators. For purposes of this portion of the Act, municipal solid waste does not mean any material that has been separated out of the municipal solid waste stream for recycling or any other commercial purpose including energy recovery. Nor is municipal solid waste any material that could be eligible to enter the municipal solid waste stream, but is separated prior to becoming comingled in the municipal solid waste stream.

4. Any household, commercial, or industrial waste material that has never entered the municipal solid waste stream or has been separated out of the municipal solid waste stream for any commercial purpose might produce either renewable energy or advanced cleaner energy under the provisions of Act 295. For such material to generate renewable energy, the material must meet the definition of “biomass” in Section 11(i), as further defined in Section 3(f). For such material to generate advanced cleaner energy, the material must be converted into electricity using an advanced cleaner energy system as defined by Section 3(c).
5. As defined in Section 3(c), advanced cleaner energy systems may employ gasification technology, industrial cogeneration, or “technologies not in commercial operation on the effective date of [Act 295]” (October 6, 2008). The first two of these technology types are defined in Section 7(a) for gasification facility and Section 7(d)-(e)-(f) for industrial cogeneration facility. A wide variety of “carbon-based feedstocks” may be converted to electricity for commercial use by means of an advanced cleaner energy system. Such feedstocks are described in Section 7(a).
6. Advanced cleaner energy credits, energy optimization credits, and renewable energy credits may all be substituted for one another under certain circumstances, as described in Section 27(6) and (7) and Section 77(6) and (7). Substitutions of advanced cleaner energy credits must be approved by the Commission, but Commission approval is not required for substitution of credits from industrial cogeneration that are used to substitute for renewable energy credits. Approval for substitution, if required, will occur only after a contested case hearing that results in a Commission determination “that the substitution is cost-effective and, if the substitution involves advanced cleaner energy credits, that the advanced cleaner energy system provides carbon dioxide emissions benefits” (Section 77(6)). The contested case hearing shall include consultation with the Michigan Department of Environmental Quality on the issue of carbon dioxide emissions benefits, which are defined for the purposes of this Act in Section (3)(h). Parties intending to produce advanced cleaner energy credits are cautioned to read carefully Section 27(6) through (8), Section 29(3), Section 77(6) and (7), and Section 79.
7. Energy conversion systems that utilize both renewable and non-renewable fuels may be granted renewable energy credits based on the percentage of electricity generated from the renewable energy resource. Section 39(1) provides guidance on this issue.
8. An energy system may be capable of producing either renewable energy credits, advanced cleaner energy credits or both. However, Sections 41(4)(g) and 43(1) and (4)(g) provide that only one type of credit or the other, not both, shall be awarded for each megawatt hour of energy produced.

### **Commission Order in Case No. U-15806**

Case No. U-15806 involves the application of The Detroit Edison Company (Detroit Edison), requesting Commission approval of its renewable energy plan (REP) and energy optimization plan (EOP) pursuant to the provisions of 2008 PA 295, MCL 460.1001 et seq. (Act 295). The Commission issued a June 2,

2009 Order in this case, approving the Company's REP as modified by Commission decisions provided in this Order.<sup>1</sup> One subject addressed in this Order is a Detroit Edison proposal to utilize what the Company terms "tire fractionation (vaporizing organics from whole tires)" to generate renewable energy credits (RECs). Detroit Edison claimed that electricity generated from its proposed tire fractionation project should qualify as renewable energy because the Company believed scrap tires would be considered to be "municipal solid waste" and municipal solid waste is one of the renewable energy resources defined under Section 11(i) (MCL 460.1011(i); see Order, p. 4). Multiple parties to this case, including the MPSC Staff, argued that "hydrocarbons fractionated from tires do not meet the global definition of 'renewable energy resource' under MCL 460.1011(i) and that they are not 'municipal solid waste' under MCL 460.1011(i)(vi). (Order, p. 10).<sup>2</sup> MPSC Staff acknowledged that if all relevant criteria were met, conversion of waste tires to energy for use in electricity production might qualify for the production of advanced cleaner energy credits. Alternatively MPSC Staff considered that it might be possible that a fraction of the energy derived from tires would be construed as having originated from biomass (i.e., from natural rubber), and therefore some fraction of the energy might be able to be certified as renewable.<sup>3</sup> In its June 2 Order in Case No. U-15806, the Commission concludes:

The Commission agrees that the inclusion of municipal solid waste as an example of a renewable energy resource refers to an aggregated waste stream from households and that the industrial or commercial collection of scrap tires is not considered household waste. The Commission further agrees that if Detroit Edison decides to move forward on the proposed tire fractionation project and if all qualifications are met, the company might request certification of ACECs for the energy produced. (Order, p. 19).<sup>2</sup>

### Definitions

MPSC Staff believes the following definitions from the Act are pertinent to this analysis:

Sec. 3. As used in this act:

- (a) "Advanced cleaner energy" means electricity generated using an advanced cleaner energy system.
  - (b) "Advanced cleaner energy credit" means a credit certified under section 43 that represents generated advanced cleaner energy.
  - (c) "Advanced cleaner energy system" means any of the following:
    - (i) A gasification facility.
    - (ii) An industrial cogeneration facility.
- \* \* \*
- (iv) An electric generating facility or system that uses technologies not in commercial operation on the effective date of this act.
- \* \* \*
- (f) "Biomass" means any organic matter that is not derived from fossil fuels, that can be converted to usable fuel for the production of energy, and that replenishes over a human, not a geological, time frame, including, but not limited to, all of the following:
    - (i) Agricultural crops and crop wastes.

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<sup>1</sup> The docket file is <http://efile.mpsc.state.mi.us/efile/viewcase.php?casenum=15806>. The June 2 Order file is <http://efile.mpsc.state.mi.us/efile/docs/15806/0150.pdf>.

<sup>2</sup> Errata correcting the June 2, 2009 Commission Order were issued on August 3, 2009.

<sup>3</sup> MPSC Staff's position on this issue is summarized in Staff's Initial Brief in Case No. U-15806, pp. 25-28; pp 29-32 of the PDF copy, <http://efile.mpsc.state.mi.us/efile/docs/15806/0136.pdf>.

- (ii) Short-rotation energy crops.
- (iii) Herbaceous plants.
- (iv) Trees and wood, but only if derived from sustainably managed forests or procurement systems, as defined in section 261c of the management and budget act, 1984 PA 431, MCL 18.1261c.
- (v) Paper and pulp products.
- (vi) Precommercial wood thinning waste, brush, or yard waste.
- (vii) Wood wastes and residues from the processing of wood products or paper.
- (viii) Animal wastes.
- (ix) Wastewater sludge or sewage.
- (x) Aquatic plants.
- (xi) Food production and processing waste.
- (xii) Organic by-products from the production of biofuels.

\* \* \*

- (h) “Carbon dioxide emissions benefits” means that the carbon dioxide emissions per megawatt hour of electricity generated by the advanced cleaner energy system are at least 85% less or, for an integrated gasification combined cycle facility, 70% less than the average carbon dioxide emissions per megawatt hour of electricity generated from all coal-fired electric generating facilities operating in this state on January 1, 2008.

\* \* \*

Sec. 7. As used in this act:

- (a) “Gasification facility” means a facility located in this state that uses a thermochemical process that does not involve direct combustion to produce synthesis gas, composed of carbon monoxide and hydrogen, from carbon-based feedstocks (such as coal, petroleum coke, wood, biomass, hazardous waste, medical waste, industrial waste, and solid waste, including, but not limited to, municipal solid waste, electronic waste, and waste described in section 11514 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.11514) and that uses the synthesis gas or a mixture of the synthesis gas and methane to generate electricity for commercial use. Gasification facility includes the transmission lines, gas transportation lines and facilities, and associated property and equipment specifically attributable to such a facility. Gasification facility includes, but is not limited to, an integrated gasification combined cycle facility and a plasma arc gasification facility.

\* \* \*

- (d) “Industrial cogeneration facility” means a facility that generates electricity using industrial thermal energy or industrial waste energy.
- (e) “Industrial thermal energy” means thermal energy that is a by-product of an industrial or manufacturing process and that would otherwise be wasted. For the purposes of this subdivision, industrial or manufacturing process does not include the generation of electricity.
- (f) “Industrial waste energy” means exhaust gas or flue gas that is a by-product of an industrial or manufacturing process and that would otherwise be wasted. For the purposes of this subdivision, industrial or manufacturing process does not include the generation of electricity.
- (g) “Integrated gasification combined cycle facility” means a gasification facility that uses a thermochemical process, including high temperatures and controlled amounts of air and oxygen, to break substances down into their molecular structures and that uses exhaust heat to generate electricity.<sup>4</sup>

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<sup>4</sup> As MPSC Staff understands, this definition means that an IGCC facility uses synthesis gas or a mixture of synthesis gas and methane to generate electricity for commercial use, and also uses exhaust heat to generate electricity.

Sec. 9. As used in this act:

- (b) "Plasma arc gasification facility" means a gasification facility that uses a plasma torch to break substances down into their molecular structures.

\* \* \*

Sec. 11. As used in this act:

- (a) "Renewable energy" means electricity generated using a renewable energy system.

\* \* \*

- (d) "Renewable energy credit" means a credit granted pursuant to section 41 that represents generated renewable energy.

\* \* \*

- (i) "Renewable energy resource" means a resource that naturally replenishes over a human, not a geological, time frame and that is ultimately derived from solar power, water power, or wind power. Renewable energy resource does not include petroleum, nuclear, natural gas, or coal. A renewable energy resource comes from the sun or from thermal inertia of the earth and minimizes the output of toxic material in the conversion of the energy and includes, but is not limited to, all of the following:

- (i) Biomass.

\* \* \*

- (vi) Municipal solid waste.

- (vii) Landfill gas produced by municipal solid waste.

\* \* \*

- (k) "Renewable energy system" means a facility, electricity generation system, or set of electricity generation systems that use 1 or more renewable energy resources to generate electricity. Renewable energy system does not include any of the following:

\* \* \*

- (iii) An incinerator unless the incinerator is a municipal solid waste incinerator as defined in section 11504 of the natural resources and environmental protection act, 1994 PA 451, MCL 324.11504, that was brought into service before the effective date of this act, including any of the following:

- (A) Any upgrade of such an incinerator that increases energy efficiency.

- (B) Any expansion of such an incinerator before the effective date of this act.

- (C) Any expansion of such an incinerator on or after the effective date of this act to an approximate design rated capacity of not more than 950 tons per day pursuant to the terms of a final request for proposals issued on or before October 1, 1986.