

STATE OF MICHIGAN

BEFORE THE MICHIGAN PUBLIC SERVICE COMMISSION

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In the matter, on the Commission's own motion,	)	
to promulgate rules governing interconnection and	)	Case No. U-15787
net metering.	)	
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At the March 18, 2009 meeting of the Michigan Public Service Commission in Lansing, Michigan.

PRESENT: Hon. Orjiakor N. Isiogu, Chairman  
Hon. Monica Martinez, Commissioner  
Hon. Steven A. Transeth, Commissioner

**ORDER APPROVING RULES**

On February 23, 2007, the Commission sought permission from the State Office of Administrative Hearings and Rules (SOAHR) to revise rules governing interconnection standards for small electrical generators. On October 27, 2008, the Commission filed an amended request for rulemaking to include net metering standards as part of the interconnection rules. SOAHR approved the revised request for rulemaking, SOAHR #2007-010, on October 28, 2008. Subsequently the Commission submitted a draft version of the proposed rules to SOAHR and the Legislative Services Bureau (LSB) for their informal approvals, which were granted on February 4, 2009.<sup>1</sup>

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<sup>1</sup>Because the order containing the proposed rules was issued before changes were received from LSB and SOAHR, the Commission issued an erratum on February 25, 2009 noting some non-substantive changes to the proposed rules. The most significant change was the division of R 460.601 (Definitions) into two rules, R 460.601a and R 460.601b.

In continuation of the rulemaking process, the Commission held a public hearing on March 3, 2009, at the Commission offices in Lansing. At the same time, the Commission broadcast the hearing via the Internet providing an opportunity to comment to interested persons attending the 2009 Michigan Wind Energy Conference at Cobo Hall in Detroit, Michigan. The Commission also invited interested persons to submit written comments regarding the rules.

In addition to the public comments made at the hearing, the Commission received written comments from Syndevco, Inc., Heat Transfer International (HTI), Phase 3 Renewables (Phase 3), Nova Cable Management, Inc. (Nova), Sietsema Farms Feeds (Sietsema), the City of Ann Arbor, the Interstate Renewable Energy Council (IREC), Michigan State University (MSU), S.U.R. Energy, LLC (S.U.R.), Fluid Process Equipment (FPE), Michigan Sustainable Energy Coalition (MSEC), the Michigan Electric Cooperative Association (MECA), Solar Winds Power Systems, LLC (Solar Winds), Michigan Environmental Council (MEC), and the Environmental Law and Policy Center (ELPC). Joint comments were submitted by the Michigan Electric and Gas Association (MEGA) on behalf of Consumers Energy Company, The Detroit Edison Company, Alpena Power Company, Edison Sault Electric Company, Indiana Michigan Power Company, Upper Peninsula Power Company, We Energies, Wisconsin Public Service Corporation and Northern States Power, a Wisconsin Corporation and wholly owned subsidiary of Xcel Energy, Inc., Alger Delta Cooperative Electric Association, Cherryland Electric Cooperative, Cloverland Electric Cooperative, Great Lakes Energy Cooperative, HomeWorks Tri-County Electric Cooperative, Midwest Energy Cooperative, Ontonagon County Rural Electrification Association, Presque Isle Electric & Gas Coop, Thumb Electric Cooperative and Wolverine Power Supply Cooperative (collectively, the Electric Providers). Several individuals also commented at the hearing or submitted written comments on the proposed rules.

Rule 460.601a and Rule 460.601b

Proposed R 460.601a and R 460.601b provide definitions of various terms used in the rules. The Electric Providers recommend that R 460.601a(c) be revised to clarify that all applicants must be customers of an electric utility and may also be customers of an alternative electric supplier (AES). The Commission finds this clarification to be reasonable and incorporates the recommended change. The Electric Providers point out that category 1 projects, according to the definition provided in R 460.601a(f), must be inverter based and ask where 20 kilowatt (kW) and under non-inverter based projects are included, if anywhere. The Commission Staff (Staff) has indicated that virtually all 20 kW and under projects are inverter based and that to include small projects that do not conform to the category 1 requirements adds a high level of complexity to the rules to cover a situation that is practically nonexistent. In the rare instance where an applicant proposes a small project that does not fully comply with the category 1 definition, the utility shall process the application using the procedures for category 2 projects.

The Electric Providers also recommend minor syntax revisions to R 460.601a(s), however, the Commission finds that this change is unnecessary.

IREC comments that the proposed definition of “customer-generator” in R 460.601a(o) appears to inadvertently restrict third-party ownership of net metered facilities. IREC observes that almost half of the installed capacity of solar energy facilities in the United States is owned by third parties and that third-party ownership is vital for installations on schools, churches, government buildings, and nonprofits. IREC recommended that the word “owns” be changed to “uses” in R 460.601a(o). The Commission agrees and accordingly revises the definition of “customer-generator” in accordance with IREC’s recommendations to clarify that a customer-generator may or may not be the owner of the generating equipment.

The Electric Providers comment that the Commission should simply incorporate by reference the statutory definition of various terms, in cases where definitions are provided in the statute. The Commission rejects this recommendation. The Staff has endeavored to make rules addressing a sometimes complex technical process as user-friendly as possible. In cases where the statutory definition is particularly long or complex, the Commission has simply cross-referenced the statute. In cases where the statutory definition is short, the Commission repeated it in the rules.

Syndevo recommends that the Commission include a definition of “one line diagram” describing what these diagrams are and what they should minimally include. The Commission disagrees that this change is necessary. “One line diagram” is a term that is commonly used in the electric industry and examples of one line diagrams are readily available from the utilities.

Phase 3 and HTI comment that the term “methane digester” was not defined in the rules, thus causing some uncertainty about whether certain agricultural waste-to-power systems would be considered eligible generators. The Commission notes that the term “methane digester” is a generic term applied to a class of renewable energy systems that use animal or agricultural waste as feedstock for the production of methane gas, which is then burned for the generation of electricity. Accordingly, the particular system referenced by Phase 3 and HTI is considered an “eligible electric generator” for net metering provided that the system is sized to meet the customer’s needs and that it does not exceed the 550 kW limit for methane digesters. To avoid confusion, the Commission adds to the definitions: R 460.101b(e) “‘Methane digester’ means a renewable energy system that uses animal or agricultural waste for the production of fuel gas which can be burned for the generation of electricity or steam.” Subsequent definitions are renumbered accordingly.

The Electric Providers comment that the definition of “uniform net metering application,”

R 460.601b(s) and corresponding R 460.642(1) should leave open the possibility of individual utilities requesting utility specific information on the application. The Commission finds that it is proper to emphasize uniformity in all procedures and forms and that the definitions and rules do not preclude the appending of an additional section to any form or procedure that accommodates specific utility needs, if appropriate.

#### Rule 460.602

The Electric Providers suggest that the definitions already incorporate IEEE and UL standards by reference and that Rule 2 can therefore be substantially truncated. The Commission disagrees and notes that R 460.602 conforms to LSB style requirements for incorporating rules by reference. S.U.R. comments that R 460.602 should be revised to include any subsequent revisions to IEEE or UL standards. The Michigan Administrative Procedures Act (APA), MCL 24.232(4), does not permit automatic updating of standards incorporated by reference. When updates are required, the rules can be amended in accordance with APA procedures.

#### Rule 460.606

The Electric Providers comment that the language requiring “1 initial point of contact” should be changed to “an initial point of contact.” The Commission agrees that this change is appropriate at this time. The Commission cautions the utilities to be more attentive to customer service for customers or potential customers of the interconnection and net metering programs. The Staff reports that one of the most consistent complaints that the Commission has received about the current interconnection and net metering programs has been the poor customer service provided to applicants and the difficulty that applicants have had in reaching someone who can provide basic information about the program or the status of a project. The Commission also received numerous

comments in this proceeding from customers and installers indicating that the processes for establishing an interconnection or signing up for net metering are unduly difficult.

#### Rule 460.608

The Electric Providers comment that while they agree with the concept of alternative dispute resolution (ADR) they are concerned that the language in R 460.608(2) will result in binding, non-appealable arbitration, which is unacceptable to the utilities. The Commission disagrees and notes that this rule is based on other ADR rules promulgated by the Commission. Moreover, R 460.608(3) plainly states that “If a party is dissatisfied with a recommended settlement resulting from the [ADR] process, the party may file a complaint with the commission.”

#### Rule 460.610

The Electric Providers comment that the assignment of expert panel costs to the utility is unfair and could lead to frivolous litigation. The Electric Providers contend that the rule should be revised so that a utility is only required to pay for experts if the utility does not prevail in the dispute. The Commission disagrees and notes that the unequal access to information about the utility system, that overwhelmingly favors the utility, makes this rule appropriate. The appointment of experts is at the discretion of the Commission, thus the likelihood of a frivolous claim is limited. The Commission also points out that the cost of experts is recoverable as part of the cost of the net metering program.

#### Rule 460.615

ELPC comments that R 460.615 permits each utility to develop its own procedures and forms for the interconnection process. ELPC urges the Commission to adopt uniform interconnection procedures and forms to be used by all utilities statewide. The Commission observes that the

proposed rules contain detailed guidelines, process steps, fees, and deadlines that all utilities and AESs must comply with. As such, the Commission expects that the approved forms and procedures will be uniform. To assure uniformity and expedite the approval process, the Commission encourages utilities to jointly file interconnection application forms and agreements. The Commission agrees with ELPC that the utilities should look to standard agreements used in other states and by the Federal Energy Regulatory Commission (FERC) for guidance in developing an appropriate interconnection application and agreement form.

The ELPC and IREC also recommend that the Commission adopt screening criteria to fast track projects that can be interconnected safely without additional reviews or studies. The Commission observes that the proposed rules require an expedited and low-cost process for interconnection of category 1 projects, which currently comprise the great majority of interconnections. The Commission agrees that as part of the interconnection procedures submitted to the Commission the utilities should include basic criteria (e.g., equipment type and certification, project capacity relative to the distribution system at the interconnection location and the customer's load, network type, etc.) for determining whether an engineering review or distribution study will be required for a proposed category 2 through 5 project. The Commission agrees with the ELPC and IREC that the availability of these interconnection criteria will provide more transparency to the interconnection process and provide substantially more information to potential applicants during the early planning stages of a project when economic feasibility is being evaluated.

Syndevo comments that it seemed unnecessary to require separate applications for interconnection and net metering. Syndevo recommended that the two applications be combined into one. Because not all applicants for interconnection will be net metering and because applicants

who receive their power supply from an AES will need to apply separately to the AES's net metering program, the Commission finds that separate forms need to be used for interconnection and net metering.

#### Rule 460.618

The Electric Providers comment that R 460.618 addresses fee schedules for both net metering and non-net metering applicants. The Electric Providers maintain that subrule (2) should be moved to the net metering part of the rules to avoid confusion. The Commission disagrees. This rule addresses costs associated with interconnection, and those costs vary depending on whether a customer plans to participate in the net metering program.

The Electric Providers also comment that the proposed caps on fees for reviews and studies are not authorized by Act 295. The Commission disagrees and notes that interconnection engineering studies are currently capped at the lesser of 5% of the total cost of the project or \$10,000.

MSEC comments that the public should be involved in assisting the Commission in setting maximum fees for studies and reviews. The Commission notes that proposals for these fees will be submitted by the utilities as part of their interconnection procedures. Rule 460.615(7) provides for a public comment period on these proposals.

#### Rule 460.620

MSEC comments that although R 460.618 provides that a utility cannot charge for an engineering review for project categories 1 through 3 and cannot charge for a distribution study for a category 1 project, R 460.620(5) and (7) do not refer to these exceptions. The Commission agrees that for clarification, MSEC's recommended revision to R 460.620(5) and R 460.620(7) should be incorporated into these rules.

Syndeenco recommends a change to R 460.620(2) to provide that an electrical contractor or a licensed professional engineer (PE) can sign and seal the one line diagram and that the contractor should provide an electrical contractor's license number. The Commission agrees that this provides an additional option for the applicant and revises the rule in accordance with Syndeenco's recommendation.

The Electric Providers recommend that a one line diagram should also be required of category 1 projects where additional metering will be installed so the utility is advised of meter placement by the electrician. The Commission finds that this circumstance is reasonably accommodated under R 460.606(4), which requires each applicant to provide a contact for the utility to address any questions regarding a proposed interconnection. If a one line diagram is required, the utility can communicate with the customer or his contact and request a diagram.

The Electric Providers also comment that R 460.620(5) appears to assume that category 1 projects do not require engineering reviews, studies, or distribution upgrades. The utilities contend that although this is normally the case, there are instances where some additional reviews or studies are required. The utilities recommend that the phrase "For category 1 projects" be deleted from the second sentence in R 460.620(5). The Commission disagrees and finds that if a category 1 project for some reason does require additional reviews or upgrades, the utility interconnecting the project should request a waiver as provided under R 460.612.

The Electric Providers comment that the provision in R 460.620(5) that allows an applicant one year to decide whether to proceed with an engineering review is too long. The Commission agrees and notes that for larger projects placed on hold, this could delay implementation for other applicants connecting to the same network who are ready to proceed. The Commission therefore revises the rule to limit the time to request an engineering review to six months. For the sake of

consistency, the Commission also limits the time for requesting a distribution study to six months in R 460.620(7).

Frank Gaunt makes a number of recommendations for decreasing the time limits for the steps in the application and interconnection process. Conversely, the Electric Providers contend that the time limits for distribution studies are too short. The Electric Providers comment that larger projects that affect both distribution and transmission systems require coordinated studies with the regional transmission system operator and these studies can extend to 300 days. The Commission observes that the deadlines in the proposed interconnection rules provide more time for utilities to complete interconnection than the current rules require because the Staff indicates that the timelines in the current rules were so short as to be unworkable. The Commission further observes that interim deadlines have been added to the proposed rules, which will allow applicants to be more informed about the status of their projects in the interconnection process. The Commission finds that the timelines set out in the proposed rules are reasonable at this time. As the utilities become more efficient in performing interconnections, the rules may be amended in the future. The Commission points out that for category 4 and 5 projects, timelines for distribution studies may be extended by mutual agreement, and a utility interconnecting a particularly large or complex project that requires more time for a transmission and distribution study may request a waiver of the time limits under R 460.612.

The Electric Providers comment that the provision for signing the interconnection agreement should be moved from subrule (12) to subrule (10). The Electric Providers maintain that this is necessary before distribution system upgrades are performed. The Commission disagrees. The interconnection agreement should be uniform and should not be expanded to address the specific requirements and costs for distribution upgrades for individual projects. Distribution system

upgrades, when required, should be addressed in separate contracts entered into between the utility and the customer.

The Electric Providers request that R 460.620(11) be revised to allow a utility to “witness or perform” a commissioning test. The Commission agrees that this is reasonable and revises the rule accordingly.

Syndevo comments that the rules should preempt local units of government from preventing installation of solar or wind generation on zoning, nuisance, or other grounds. Syndevo points to statutes passed in Wisconsin and California that prevent local units of government from restricting the installation of renewable energy systems except under very narrow circumstances. The Commission responds that it must have specific statutory authority to preempt local codes and ordinances and that this authority is not included in Act 295.

Sietsema and Phase 3 comment that electric utilities should not be permitted to benefit financially from distribution system upgrades or additions that are paid for by the applicant. The Commission observes that contributions in aid of construction, such as the distribution system upgrades referred to here, are accounted for in a utility’s rate case. Utilities do not earn a financial return on distribution components paid for by ratepayers.

#### Rule 640.622

Syndevo commented that it was not clear whether the addition of more generating capacity, that does not exceed the rating of the inverter for a category 1 system, would require additional approval by the utility. For example, a homeowner initially installs solar panels with a capacity of 2.5 kW connected to an inverter with a rating of 10 kW. A few years later, the homeowner installs additional panels with a capacity of 5 kW, for a total capacity of 7.5 kW. The Commission finds that this hypothetical does not present a “material modification” to the project as defined in

R 460.601b(c), thus R 460.622 does not apply. The Commission finds that a customer who proposes to increase generation capacity, even if a larger inverter is not required, should apprise the utility of his plans. Because this specific scenario does not describe a material modification to the project, a new application or additional fee is not required.

#### Rule 460.624

Phase 3 and Sietsema comment that a \$1 million general liability policy for category 3 through category 5 projects is unreasonable in light of the fact that all protective equipment is under the control of the utility. The Commission disagrees and finds that this requirement is reasonable. Systems in the category 3 through category 5 size range are typically operated by commercial or agricultural businesses with access to liability insurance through commercial insurance providers. The Staff, in consultation with renewable energy installers and advocacy groups determined that amount of liability insurance was readily available at a reasonable cost to these generators.

Conversely, the Electric Providers recommend that category 1 projects be required to have a minimum of \$500,000 in general liability insurance and that category 2 through category 5 projects be required to have a minimum of \$1 million in general liability coverage, with higher levels required for certain projects. As the Commission discussed in the Regulatory Impact Statement (RIS), onerous insurance requirements have consistently been a barrier to distributed renewable energy generation, especially in areas where small residential generation systems are still uncommon and unfamiliar to insurance providers. Over the past 25 years, small solar and wind systems have proven to be very safe and the risk of a claim for personal or property damage is exceptionally small. The Commission rejects the changes proposed by the Electric Providers. The Commission does, however, make a small syntax change to the rule to clarify that utilities (only) cannot require additional liability insurance for category 1 and category 2 projects.

## Rule 460.640

Several commenters expressed disappointment with the language in R 460.640(7) and R 460.644. Rule 460.640(7) limits the size of generation for net metering program applicants to no more than the amount that meets the customer's needs. This limit conforms to the statutory requirements in MCL 460.1005(b) and MCL 460.1173(1). Similarly, R 460.644 references MCL 460.1173(2), which limits the size of the net metering program to 1% of a utility's in-state peak load for the preceding year. Because the Legislature has expressly defined the eligibility criteria and size limits for the net metering program, the Commission cannot alter or expand these definitions through rulemaking. The Commission emphasizes however, that nothing in the rules restricts the interconnection of larger systems or prevents generators from selling any or all excess power to any properly authorized wholesale purchaser, under the terms of a bilateral contract or at wholesale market rates. Alternatively, customers may interconnect larger systems and sell any or all excess power back to the utility under the terms and conditions of any other utility tariff for which they qualify. In some cases, these options could provide a greater financial benefit to the customer than participating in the net metering program.<sup>2</sup>

Several commenters questioned what would happen if an applicant installed a project in compliance with R 460.640(7)(a) and (b) and later engaged in extensive energy efficiency improvements. As a result, energy usage could be reduced to the extent that the project became oversized and no longer in compliance with the rule. In a similar vein, Mark Ritz asked whether it

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<sup>2</sup>In 2008, Consumers reported an average Midwest Independent Transmission System Operator, Inc. (MISO) wholesale rate of \$0.05113 per kilowatt hour (kWh). *See*, Consumers Energy's Historical Hourly LMP Price Information <http://www.consumersenergy.com/products/index.asp?ASID=792#Historical>. In addition, federal production tax credits, currently at \$0.01 to \$0.0021 per kWh, are available to certain small electric generators. *See*, 26 USC 45, PL 110-343: Div B, Sec 101-102 (The Energy Improvement and Extension Act of 2008), and PL 111-5: Div. B, Sec. 1101 & 1102 (The American Recovery and Reinvestment Act of 2009).

would be possible to size projects in anticipation of increased usage at some time in the future. In response to Mr. Ritz, the Commission finds that the statute and the rules are clear on how projects participating in net metering are to be sized and that the estimate of customer usage must be based on past usage (or a reasonable estimate of past usage) and projects cannot be sized to anticipate future higher usage.

In response to the comments regarding a properly sized project that subsequently becomes oversized because of a decrease in customer usage; the Commission first observes that this is an unlikely scenario. Customers are likely to maximize the use of energy efficiency improvements before adding generation, simply because improving energy efficiency is substantially less expensive than adding a renewable generation system. In the rare instance where this might occur, the proposed rules do not contain a provision for removal of a customer from the net metering program because of excess generation, nor should they. Rule 460.626 of the Interconnection Standards does provide for disconnection of a project under certain circumstances, and the Commission finds that R 460.626(c) should be revised to clarify that disconnection can only occur in the case of a violation of a technical or contractual requirement in the interconnection agreement.

Dr. Stephen B. Harsh of MSU and Randal Huckins comment that the use of nameplate capacity in determining the generation capacity of a system treats wind turbines differently than some other renewable energy systems. According to these commenters, wind turbine capacity is rated under higher wind conditions than are typical in Michigan. Thus, a wind turbine rated at 20 kW would have an actual average capacity in Michigan of approximately 20% of that amount or 4 kW. As such, the commenters contend that the rules should be modified to remove the penalty on wind turbines so that customers with this type of generation can fully utilize the true net

metering program. The commenters suggest that a wind generator with a nameplate rating of 50 kW could be installed and the average capacity in Michigan would be approximately 10 kW, below the 20 kW limit for true net metering.

The Commission finds that although the reasoning of Dr. Harsh and Mr. Huckins is sound, the Commission's rules for net metering are constrained by the limits in Act 295. Specifically, MCL 460.1173(5)(d) provides that "[n]et metering customers with a system capable of generating 20 kilowatts or less qualify for true net metering." (Emphasis supplied). As the commenters point out, a 50 kW wind system in most areas of Michigan would have an actual average capacity of about 10 kW. Nevertheless the equipment would still be "capable" of generating over 20 kW under certain conditions.

The Electric Providers point out that net metering tariff sheets are due 30 days after the effective date of the rules but the interconnection procedures and forms are not due for 90 days after the effective date of the rules. The Commission disagrees and observes that tariff sheets reflecting new rates are routinely required within 30 days of the rate order. The utilities are often able to comply within 10 days. In this case, the tariff sheets required for the net metering program set out the rates paid for different net metering programs (true and modified) and information about meters and meter costs for customers who require new or additional meters. The interconnection and net metering procedures and forms are not part of the tariff, but will be incorporated into a utility's rate book after approval. The Commission sees no reason to extend the time limit in this rule.

Regarding R 460.640(7), the Electric Providers comment that the rule is difficult to understand and appears to cede control over the size of generation equipment and the determination of the applicant's usage to the applicant. The Commission disagrees and finds that the methods for

determining usage and capacity, described in subrule (7), are reasonable, transparent, and an objective means of determining whether a system should be approved for net metering. The Commission rejects the revisions to R 460.640(7) recommended by the Electric Providers.

#### Rule 460.642

The Electric Providers comment that the concept of “uniformity” in R 460.642(1) requires some clarification. The Electric Providers recommend that the utilities be permitted to use forms that are substantially similar to a uniform application, but that provide for some utility specific information. The Commission disagrees and points out that its intention is to have one simple net metering application form for all utilities and all customers as required by MCL 460.1175(c). As IREC points out, many states and the FERC have developed standard application forms, utility procedures, and interconnection agreements that have not resulted in difficulties for individual providers. The Commission is not persuaded by the Electric Providers’ position on this issue.

The Electric Providers comment that R 460.642(6) should be revised to conform to MCL 460.1175(1), which provides that a utility or AES may charge a net metering application fee “not to exceed \$100 to process an application for net metering.” The Commission disagrees and observes that the statute sets a ceiling and not a floor for the net metering application processing fee. The Commission finds that the fee of \$25 in the proposed rules is reasonable.

#### Rule 460.644

The Electric Providers comment that permitting net metering applicants to enter the net metering program, if the program closes while these applications are pending, does not comport with Act 295. The Commission disagrees and observes that the limit set under MCL 460.1173(2) is based on 1% of a utility’s “in-state peak load for the preceding calendar year.” The Commission notes that the limit set by the statute is something of a moving target, and

it is highly likely that customers in the queue fall well within the margin of error of the 1% limit set by Act 295.

#### Rule 460.646

Syndeveco comments that R 460.646(1) should be revised to include examples of acceptable documentation to demonstrate that new generation and net metering equipment is certified to IEEE 1547.1 testing standards. The Commission disagrees that this change is necessary. Verification of equipment by model number or serial number is readily available for UL certified equipment. Other national testing laboratories are in the process of creating databases for verification. According to the Staff and the utilities, documentation that equipment meets particular IEEE standards is not an issue.

#### Rule 460.648

The Electric Providers comment that R 460.648(1), which requires utilities to use a customer's existing meter if it is capable of reverse registration, conflicts with the requirements of MCL 460.1177(1), because it does not permit the utilities to install a single meter with separate registers measuring electricity flow in both directions or to install separate meters measuring flow in each direction. The Commission does not agree that the rule conflicts with MCL 460.1177(1) because the statute is silent on the metering equipment required for category 1 customers. The Commission agrees that if a utility prefers to install a new meter that measures and records the flow of energy in both directions, it should be permitted to do so. The language in the subrule is revised accordingly.

Mr. Gaunt commented that electrostatic meters that are capable of reverse registration are not always accurate when operating in reverse. The Commission agrees that this is a concern and

revises R 460.648(1) to require that bi-directional meters be tested and calibrated in both directions.

#### Rule 460.650

The Electric Providers point out that “Rule 50” is designated as “Rule 650” in the text of the rule. The Commission corrects this rule accordingly.

The Electric Providers comment that R 460.650, which provides for billing and credits for customers with systems capable of generating 20 kW and under at full retail rates, improperly allows these customers to avoid paying for transmission and distribution (T&D) charges. According to the Electric Providers, R 460.650, which provides credit at the “full retail rate” for generation including excess monthly generation, is an unreasonable interpretation of the statute and denies the utilities their statutory right to recover T&D costs from net metering customers. The utilities further argue that if the number of net metering customers increases, the utilities will face a growing loss of revenue and other customers will be forced to increasingly subsidize customers in the net metering program. The Electric Providers urge the Commission to revise the definition of “full retail rate” to include only the variable charges associated with the power supply component of electric generation and specifically exclude T&D charges.

The recommendation of the Electric Providers is not well taken. Act 295 is ambiguous as to how the true net metering crediting should be calculated. The Act defines “True net metering” as:

a utility billing method that applies the full retail rate to the net of the bidirectional flow of kilowatt hours across the customer interconnection with the utility distribution system, during a billing period or time-of-use pricing period. A negative net metered quantity during the billing period or during each time-of-use pricing period within the billing period reflects net excess generation for which the customer is entitled to receive credit under section 177(4). MCL 460.1013(c).

As the Electric Providers point out, “full retail rate” is not defined in the statute; however, the commonly understood meaning of this term is both the power supply and distribution components of electric service. The Commission’s definition of “full retail rate” is reasonable.

The Legislature was very clear that it expected two different crediting methods to apply to systems below 20 kW and systems above 20 kW, mandating “true” net metering for the former, and “modified” net metering for the latter. The Commission cannot modify this aspect of the legislation. Act 295 contains only one section that describes the calculation of net metering credits, which states that net metering customers “shall not receive credits for electric utility transmission or distribution charges.” MCL 460.1177(4). This language is consistent with a “modified” net metering program because customer credits are not valued at “full retail rate.” “True” net metering, in contrast, provides credits at full retail rates, which, as discussed above, include transmission and distribution charges. In order to reconcile the definition of “true net metering” with section 177(4), the limitation in that section must be interpreted to apply only to generators larger than 20 kW, who qualify for modified net metering. If section 177(4) were interpreted broadly, to apply to all net metering customers, it would conflict with the mandate to create a “true” net metering program for systems below 20 kW.

The Electric Providers assert that the net metering program will provide unfair subsidies to net metering participants through mandated purchases and cost avoidance/shifts to non-participating customers. The Commission disagrees. As the Commission discussed in the RIS, non-participating customers do benefit from net metering because the great majority of the costs of additional generating capacity are paid for by program participants. Non-participating customers do not pay for the substantial costs associated with new utility-owned generation.

The Electric Providers comment that the rules do not address non-bypassable surcharges that are defined by statute and must be paid by all customers. As discussed in the companion order issued today in Case No. U-15803, each utility shall make a proposal in its next rate case regarding how these charges should be treated for net metering customers.

The Electric Providers comment that the crediting mechanism for excess generation is unclear and that Act 295 does not address the payment of excess credits at the end of the year. The utilities recommend that excess credits up to \$50 may be carried forward, but that credits in excess of \$50 should be cancelled. The Commission agrees in part with the Electric Providers, noting that continuing to carry utility credits forward is preferable to having to make an accounting and issue checks to the handful of customers who have a net excess at the end of the year. The Commission does not agree that any credit in excess of \$50 should be eliminated and notes that there is nothing in Act 295 that permits the cancellation of net metering credits. The Commission finds that subrules (3) and (4) of R 460.650 and subrules (4) and (5) of R 460.652 should be deleted and the remaining subrules renumbered. The Commission notes that this addresses the concerns raised by the cooperatives and AESs regarding contract impairment if actual payments are made to net metering customers.

#### Rule 460.652

HTI, Sietsema, and Phase 3 comment that the standby charges to be paid by customers with systems generating more than 150 kW will actually increase the total cost of energy because of the crediting limited to power supply only coupled with the imposition of standby charges.<sup>3</sup>

MCL 460.1007 provides the following definition of standby charges: “Standby charges for modified net metering customers . . . shall be equal to the retail distribution charge applied to the

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<sup>3</sup>The standby charges provided for under R 460.652 apply to customers on an energy rate only. Customers on a demand rate can take advantage of a standby tariff.

imputed customer usage during the billing period. The imputed customer usage is calculated as the sum of the metered on-site generation and the net of the bidirectional flow of power across the customer interconnection during the billing period.” MCL 460.1007(j). The Commission agrees that under the definition of standby charges contained in Act 295, customers on an energy only rate face an economic barrier to participation in the net metering program. As discussed previously, however, the Commission may not alter or limit a statutory definition through rulemaking.

Conversely, the Electric Providers comment that all net metering customers with systems generating more than 20 kW should be required to pay standby charges. The Commission disagrees. Although the definition for “modified net metering” includes a definition of standby charges, MCL 460.1175 provides, “A customer with a system capable of generating more than 150 kilowatts shall pay standby costs.” Applying the principle of statutory construction, *expressio unius est exclusio alterius* (the expression of one thing is the exclusion of another) the explicit requirement that a customer with a system capable of generating 150 kW or greater shall pay standby charges contains the reasonable inference that customers with systems capable of generating less than 150 kW shall be excluded. Furthermore, Act 295 must be read *in pari materia*, and it is a fundamental rule of construction that “every word of a statute should be given meaning and no word should be treated as surplusage or rendered nugatory if at all possible.” *Feld v Robert & Charles Beauty Salon*, 435 Mich 352, 362-363; 459 NW2d 279 (1990). If the Commission were to require standby charges to be applied to all systems capable of generating 20 kW or more, the requirement in MCL 460.1175 that systems capable of generating more than 150 kW “shall pay standby costs” would be meaningless. The Commission rejects this recommendation by the Electric Providers.

### Additional Comments

Several commenters had questions about situations where a customer has multiple meters at one site. For example, a customer could have one meter for residential service and a second (or third) meter connected to a geothermal system or located at an outbuilding. Syndevo asked who would decide which service would use net metering or whether both meters could be interconnected to the generator. The Commission finds that this circumstance should be addressed in the planning stages of the project. If it is technically feasible and cost effective for the customer to do so, the Commission does not include any prohibition in the rules to permitting a customer to size his system to meet the load at more than one meter location on the customer's premises.

Several commenters questioned the need for external disconnect switches and requested that the Commission include a rule prohibiting the utilities from requiring these switches. At this juncture, the Commission is not inclined to include a rule prohibiting external disconnect switches, but encourages utilities to only require these switches where the project size or distribution network characteristics require them.

In compliance with Act 295, MCL 460.1173, the Commission is required to have net metering rules in place 180 days from the effective date of the act, or by April 4, 2009. Because the precise date that the rules will be adopted remains in doubt, and to avoid delays in implementing the program, the Commission has revised R 460.615 to provide that interconnection procedures must be filed within 90 days of the effective date of the rules or by July 3, 2009, whichever comes first. Similarly, R 460.640 has been revised to require that tariff sheets must be filed within 30 days of the effective date of the rules or by May 4, whichever comes first.

As discussed in the order issued today in Case No. U-15803, the Commission finds that because of the current demand by potential applicants for interconnection and net metering of

category 1 projects, the Commission directs the utilities, by May 4, 2009, to submit proposed interconnection application forms, interconnection agreements, and net metering applications, for category 1 projects only, in Case No. U-15919. AESs are also directed, by May 4, 2009, to submit proposed net metering application forms for category 1 projects in Case No. U-15919.

Any additional comments that are not specifically addressed here may be considered in future interconnection and net metering procedures or utility tariffs. Other comments that address issues that are outside the scope of these rules are not discussed.

THEREFORE, IT IS ORDERED that:

A. The revised version of the Electric Interconnection and Net Metering Standards, attached to this order as Exhibit A, is approved and shall be submitted to the Legislative Service Bureau and the State Office of Administrative Hearings and Rules for their formal approvals.

B. Upon formal approval of the revised version of the Electric Interconnection and Net Metering Standards by the Legislative Service Bureau and the State Office of Administrative Hearings and Rules, that version shall be transmitted to the Joint Committee on Administrative Rules.

The Commission reserves jurisdiction and may issue further orders as necessary.

MICHIGAN PUBLIC SERVICE COMMISSION

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Orjiakor N. Isiogu, Chairman

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Monica Martinez, Commissioner

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Steven A. Transeth, Commissioner

By its action of March 18, 2009.

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Mary Jo Kunkle, Executive Secretary

DEPARTMENT OF ENERGY, LABOR AND ECONOMIC GROWTH

PUBLIC SERVICE COMMISSION

ELECTRIC INTERCONNECTION AND NET METERING STANDARDS

Filed with the Secretary of State on

These rules become effective immediately upon filing with the Secretary of State unless adopted under sections 33, 44, 45a(6), or 48 of 1969 PA 306. Rules adopted under these sections become effective 7 days after filing with the Secretary of State.

(By authority conferred on the public service commission by section 6 of 1909 PA 106, MCL 460.556, section 5 of 1919 PA 419, MCL 460.55, sections 4, 6, and 10e of 1939 PA 3, MCL 460.4, 460.6, and 460.10e, and section 173 of 2008 PA 295, MCL 460.1173.)

R 460.481, R 460.482, R 460.483, R 460.484, R 460.485, R 460.486, R 460.487, R 460.488, and R 460.489 are rescinded from the Michigan Administrative Code, and R 460.601a, R 460.601b, R 460.602, R 460.604, R 460.606, R 460.608, R 460.610, R 460.612, R 460.615, R 460.618, R 460.620, R 460.622, R 460.624, R 460.626, R 460.628, R 460.640, R 460.642, R 460.644, R 460.646, R 460.648, R 460.650, R 460.652, R 460.654, and R 460.656 are added to the Code as follows:

PART 1. GENERAL PROVISIONS

R 460.601a Definitions; A-I.

Rule 1a. As used in these rules:

(a) "Alternative electric supplier" means that term as defined in section 10g of 2000 PA 141, MCL 460.10g(1)(a).

(b) "Alternative electric supplier net metering program plan" means a document supplied by an alternative electric supplier that provides detailed information to an applicant about the alternative electric supplier's net metering program.

(c) "Applicant" means the legally responsible person applying to an electric utility to interconnect a project with the electric utility's distribution system or a person applying for a net metering program. An applicant must be a customer of an electric utility and may be a customer of an alternative electric supplier.

(d) "Application review" means a review by the electric utility of the completed application for interconnection to determine if an engineering review is required.

(e) "Area network" means a location on the distribution system served by multiple transformers interconnected in an electrical network circuit.

(f) "Category 1" means an inverter based project of 20 kW or less that uses equipment certified by a nationally recognized testing laboratory to IEEE 1547.1 testing standards and in compliance with UL 1741 scope 1.1A.

(g) "Category 2" means a project of greater than 20 kW and not more than 150 kW.

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- (h) "Category 3" means a project of greater than 150 kW and not more than 550 kW.
- (i) "Category 4" means a project of greater than 550 kW and not more than 2 MW.
- (j) "Category 5" means a project of greater than 2 MW.
- (k) "Certified equipment" means a generating, control, or protective system that has been certified as meeting acceptable safety and reliability standards by a nationally recognized testing laboratory in conformance with UL 1741.
- (l) "Commission" means the Michigan public service commission.
- (m) "Commissioning test" means the procedure, performed in compliance with IEEE 1547.1, for documenting and verifying the performance of a project to confirm that the project operates in conformity with its design specifications.
- (n) "Customer" means a person who receives electric service from an electric utility's distribution system or a person who participates in a net metering program through an alternative electric supplier or electric utility.
- (o) "Customer-generator" means a person that uses a project on-site that is interconnected to an electric utility distribution system.
- (p) "Distribution system" means the structures, equipment, and facilities operated by an electric utility to deliver electricity to end users, not including transmission facilities that are subject to the jurisdiction of the federal energy regulatory commission.
- (q) "Distribution system study" means a study to determine if a distribution system upgrade is needed to accommodate the proposed project and to determine the cost of an upgrade if required.
- (r) "Electric provider" means any person or entity whose rates are regulated by the commission for selling electricity to retail customers in this state.
- (s) "Electric utility" means as that term is defined in section 2 of 1995 PA 30, MCL 460.562(e).
- (t) "Eligible electric generator" means a methane digester or renewable energy system with a generation capacity limited to the customer's electric need and that does not exceed the following:
  - (i) 150 kW of aggregate generation at a single site for a renewable energy system.
  - (ii) 550 kW of aggregate generation at a single site for a methane digester.
- (u) "Engineering review" means a study to determine the suitability of the interconnection equipment including any safety and reliability complications arising from equipment saturation, multiple technologies, and proximity to synchronous motor loads.
- (v) "Full retail rate" means the power supply and distribution components of the cost of electric service. Full retail rate does not include a system access charge, service charge, or other charge that is assessed on a per meter basis.
- (w) "IEEE" means institute of electrical and electronics engineers.
- (x) "IEEE 1547" means IEEE "Standard for Interconnecting Distributed Resources with Electric Power Systems."
- (y) "IEEE 1547.1" means IEEE "Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems."
- (z) "Interconnection" means the process undertaken by an electric utility to construct the electrical facilities necessary to connect a project with a distribution system so that parallel operation can occur.
- (aa) "Interconnection procedures" mean the requirements that govern project interconnection adopted by each electric utility and approved by the commission.

R 460.601b Definitions; J-Z.

Rule 1b. As used in these rules

- (a) “kW” means kilowatt.
- (b) “kWh” means kilowatt-hours.
- (c) “Material modification” means a modification that changes the maximum electrical output of a project or changes the interconnection equipment, including either of the following:
  - (i) Changing from certified to noncertified equipment.
  - (ii) Replacing a component with a component of different functionality or UL listing.
- (d) “Methane digester” means a renewable energy system that uses animal or agricultural waste for the production of fuel gas that can be burned for the generation of electricity or steam.
- (e) “Modified net metering” means a utility billing method that applies the power supply component of the full retail rate to the net of the bidirectional flow of kWh across the customer interconnection with the utility distribution system during a billing period or time-of-use pricing period.
- (f) “MW” means megawatt.
- (g) “Nationally recognized testing laboratory” means any testing laboratory recognized by the accreditation program of the U.S. department of labor occupational safety and health administration.
- (h) “Parallel operation” means the operation, for longer than 100 milliseconds, of a project while connected to the energized distribution system.
- (i) “Project” means electric generating equipment and associated facilities that are not owned or operated by an electric utility.
- (j) “Renewable energy credit” means a credit granted pursuant to the commission’s renewable energy credit certification and tracking program in section 41 of 2008 PA 295, MCL 460.1041.
- (k) “Renewable energy resource” means that term as defined in section 11(i) of 2008 PA 295, MCL 460.1011(i).
- (l) “Renewable energy system” means that term as defined in section 11(k) of 2008 PA 295, MCL 460.1011(k).
- (m) “Spot network” means a location on the distribution system that uses 2 or more inter-tied transformers to supply an electrical network circuit.
- (n) “True net metering” means a utility billing method that applies the full retail rate to the net of the bidirectional flow of kW hours across the customer interconnection with the utility distribution system, during a billing period or time-of-use pricing period.
- (o) “UL” means underwriters laboratory.
- (p) “UL 1741” means the “Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources.”
- (q) “UL 1741 scope 1.1A” means paragraph 1.1A contained in chapter 1, section 1 of UL 1741.
- (r) “Uniform interconnection application form” means the standard application forms, approved by the commission under R 460.615, to be used for category 1, category 2, category 3, category 4, and category 5 projects.
- (s) “Uniform interconnection agreement” means the standard interconnection agreements, approved by the commission under R 460.615 and used for all category 1, category 2, category 3, category 4, and category 5 projects.

(t) “Uniform net metering application” means the net metering application form approved by the commission under R 460.642 and used by all electric utilities and alternative electric suppliers.

(u) “Working days” means days excluding Saturdays, Sundays, and other days when the offices of the electric utility are not open to the public.

R 460.602 Adoption of standards by reference.

Rule 2. (1) The standards specified in these rules are adopted in these rules by reference.

(a) UL 1741 Standard for Inverters, Converters, Controllers and Interconnection System Equipment for Use With Distributed Energy Resources, November 7, 2005 revision, is available from COMM 2000, 1414 Brook Drive, Downers Grove, IL 60515, USA, telephone number: 1-888-853-3503 or via the internet website: [www.comm-2000.com](http://www.comm-2000.com) at a cost of \$385.00 at the time of adoption of these rules.

(b) The following standards are available from IEEE by telephone at 1-800-678-4333 or from the internet website [www.standards.ieee.org](http://www.standards.ieee.org).

(i) The IEEE 1547, IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems, 1/1/2003, is available at a cost of \$70.00 at the time of adoption of these rules.

(ii) The IEEE 1547.1, IEEE Standard Conformance Test Procedures for Equipment Interconnecting Distributed Resources with Electric Power Systems, 1/1/2005, is available at a cost of \$55.00 at the time of adoption of these rules.

(2) The standards specified in subrule (1) of this rule are also available for inspection and distribution at cost plus \$25.00 shipping and handling from the Public Service Commission at 6545 Mercantile Way, Suite 7 Lansing, MI 48911.

R 460.604 Prohibited practices.

Rule 4. (1) An electric provider shall not charge an applicant or customer-generator any fee or charge or require additional equipment, insurance, or any other requirement not specifically authorized by the interconnection standards in Part 2 of these rules or under the net metering standards in Part 3 of these rules, unless the fee, charge or other requirement would apply to other similarly situated customers who are not customer- generators.

(2) An electric provider or alternative electric supplier shall provide to net metering customers electric service at nondiscriminatory rates that are identical, with respect to rate structure, retail rate components and any monthly charges, to the rates that the net metering customer would be charged if the net metering customer were not participating in the net metering program.

R 460.606 Designated points of contact.

Rule 6. (1) Within 30 days of the effective date of these rules, each electric utility shall designate and maintain an initial point of contact for all customer inquiries related to interconnection and net metering from which interested parties may obtain information about interconnection and net metering procedures and applications and agreement forms.

(2) Within 30 days of the effective date of these rules, each alternative electric supplier shall designate 1 initial point of contact for all customer inquiries related to net metering from which interested parties may obtain information about net metering programs, applications, and processing. Each electric utility and alternative electric supplier shall have current information concerning its initial point of contact on file with the commission.

(3) Each electric utility shall designate and maintain a point of contact for each applicant to address applicant inquiries about technical issues or interconnection status that may arise during the interconnection process.

(4) Each interconnection applicant or net metering customer shall designate a point of contact with sufficient technical expertise to address any questions regarding a proposed interconnection or net metering application.

#### R 460.608 Alternative dispute resolution.

Rule 8. (1) If there is a dispute between an interconnection applicant and an electric utility or between a net metering applicant and an electric utility or alternative electric supplier, and with consent of all parties, the parties shall attempt alternative means of resolving the dispute.

(2) Any alternative means that will result in a settlement may be used including, but not limited to, settlement conferences, mediation, and other informal dispute resolution methods.

(3) If a party is dissatisfied with a recommended settlement resulting from the alternative dispute resolution process, the party may file a complaint with the commission as provided under R 460.17101 to R 460.17701.

#### R 460.610 Appointment of experts.

Rule 10. (1) If a complaint is filed against an electric utility regarding a technical issue, the commission may appoint from 1 to 3 independent experts to investigate the complaint and report findings to the commission.

(2) The experts shall submit a report to the commission with the results and conclusions of their inquiry and may suggest corrective measures for resolving the complaint. The reports of the experts shall be received in evidence and the experts shall be made available for cross examination by the parties at any hearing.

(3) The reasonable expenses of experts, including a reasonable hourly fee or fee determined by the commission, shall be submitted to the commission for approval and, if approved, shall be funded under subrule (4) of this rule.

(4) The electric utility or alternative electric supplier shall reimburse the experts appointed by the commission for the reasonable expenses incurred in the course of investigating the complaint.

#### R 460.612 Waivers.

Rule 12. An electric utility, alternative electric supplier, or applicant may apply for a waiver from 1 or more provisions of these rules. The commission may grant a waiver upon a showing of good cause and a finding that the waiver is in the public interest.

## PART 2. INTERCONNECTION STANDARDS

#### R 460.615 Electric utility interconnection procedures.

Rule 15. (1) Each electric utility shall file applications for approval of proposed interconnection procedures and forms within 90 days of the effective date of these rules or by July 3, 2009, whichever date is sooner. Two or more electric utilities may file a joint application proposing interconnection procedures for use by the joint applicants. All procedures and forms shall be written in plain English.

(2) The application for interconnection of a category 1 project shall contain all of the following:

- (a) A description of the proposed procedure for an applicant to apply for interconnection of a category 1 project.
- (b) A uniform interconnection application form for category 1 projects.
- (c) A uniform interconnection agreement for category 1 projects.
- (3) The application for interconnection of category 2 to category 5 projects shall contain all of the following:
  - (a) Uniform interconnection application forms for each of category 2 to category 5 projects.
  - (b) Uniform interconnection agreements for each of category 2 to category 5 projects.
  - (c) A description of the steps for processing an application for category 2 to category 5 projects that complies with R 460.620.
  - (d) Specific technical, engineering, and operational requirements that are suitable for the electric utility's distribution system.
  - (e) A schedule of application review fees, engineering review fees, distribution system study fees, and testing and site inspection fees that conforms to R 460.618(1).
  - (f) A timeline for notifications as required under R 460.620.
- (4) The interconnection procedures shall include all of the following, if applicable:
  - (a) For projects interconnecting to a spot network circuit where the project or aggregate of total generation exceeds 5 percent of the spot network's maximum load, a requirement that the project must utilize a protective scheme that will ensure that its current flow will not affect the network protective devices, including reverse power relays or a comparable function.
  - (b) For projects that use inverter-based protective functions for an interconnection to an area network, a requirement that the project, in aggregate with other projects interconnected on the load side of network protective devices, shall not exceed the lesser of 10 percent of the minimum annual load on the network or 500 kW. For a photovoltaic project without batteries, the 10 percent minimum shall be determined as a function of the minimum load occurring during an off-peak daylight period.
  - (c) For projects interconnecting to area networks that do not use inverter-based protective functions or inverter-based projects that do not meet the requirements of subrule 4(b) of this rule, a requirement that the project use reverse power relays or other protection devices or methods that ensure no export of power from the customer's site including any inadvertent export (e.g. under fault conditions) that could adversely affect protective devices on the network circuit.
- (5) The proposed procedures shall ensure all of the following:
  - (i) Consistency with generally accepted industry practices and guidelines.
  - (ii) Reliability of electric service and safety of customers, utility employees, and the general public.
  - (iii) Suitability for the size and capacity of a project as it affects the technical and engineering complexity of the interconnection.
  - (iv) Compliance with these rules.
- (6) The proposed interconnection procedures may include an informal process for obtaining a waiver to technical requirements described in the interconnection procedures for a specific project provided compliance with these rules is ensured.
- (7) The Commission shall provide a 30-day period for comment before approving the applications for interconnection procedures.

R 460.618 Interconnection fees.

Rule 18. (1) Interconnection application and engineering review, distribution study, distribution upgrade, and testing and inspection fees shall not exceed the following amounts for projects that do not participate in the net metering program:

	Application review	Engineering review	Distribution study	Distribution upgrades	Testing & inspection
Category 1	\$75	\$0	\$0	\$0	\$0
Category 2	\$100	\$0	Actual or maximum approved by commission	Actual or maximum approved by commission	Actual or maximum approved by commission
Category 3	\$150	\$0	Actual or maximum approved by commission	Actual or maximum approved by commission	Actual or maximum approved by commission
Category 4	\$250	Actual or maximum approved by commission	Actual or maximum approved by commission	Actual or maximum approved by commission	Actual or maximum approved by commission
Category 5	\$500	Actual or maximum approved by commission	Actual or maximum approved by commission	Actual or maximum approved by commission	Actual or maximum approved by commission

(2) Net metering application fees for category 1 to category 3 projects that participate in the net metering program shall not exceed \$25. Interconnection application and engineering review, distribution study, distribution upgrade, and testing and inspection fees shall not exceed the following amounts for projects that participate in the net metering program:

	Application review	Engineering review	Distribution study	Distribution upgrades	Testing & inspection
Category 1	\$75	\$0	\$0	\$0	\$0
Category 2	\$75	\$0	Actual or maximum approved by commission	Actual or maximum approved by commission	\$0
Category 3	\$75	\$0	Actual or maximum approved by commission	Actual or maximum approved by commission	\$0

R 460.620 Application and interconnection process.

Rule 20. (1) If requested by the applicant before or during the application process, an electric utility shall provide up to 2 hours of technical consultation at no additional cost to the applicant. Consultation may be limited to providing information concerning the utility system operating characteristics and location of system components.

(2) For category 2 and category 3 project applications, the applicant shall provide a one-line diagram that is signed and sealed by a licensed professional engineer, licensed in the State of Michigan or by an electrical contractor licensed by the state of Michigan with the electrical contractor's license number noted on the diagram.

(3) For category 4 and category 5 project applications, the applicant shall provide a one-line diagram that is sealed by a professional engineer licensed by the state of Michigan.

(4) Within 10 working days of receiving a new or revised interconnection application, the electric utility shall notify the applicant whether the interconnection application is complete. If the application is incomplete, the electric utility shall advise the applicant of the deficiency.

(5) Within 10 working days of determining that an application is complete, the electric utility shall complete its application review. For category 1 projects or if the application review shows that an engineering review is not required, the interconnection process shall proceed to subrule (11) of this rule. If the electric utility determines that an engineering review is required, it shall notify the applicant of the need for and cost of that review except for projects that are exempt from engineering review costs under R 460.618. An applicant shall have 6 months in which to request, in writing, that the utility proceed with an engineering review at the cost indicated. The applicant shall provide any changes or updates to the application before the engineering review begins.

(6) Upon receiving applicant's written notification to proceed with the engineering review and applicable payment, the electric utility shall complete an engineering review and notify the applicant of the results within the following time periods:

- (a) Category 2 applications, 10 working days.
- (b) Category 3 application, 15 working days.
- (c) Category 4 application, 25 working days.
- (d) Category 5 application, 45 working days.

(7) If the engineering review indicates that a distribution system study is necessary, the electric utility shall provide, in writing, the cost of the study in its engineering review findings, except for projects that are exempt from distribution study costs under R 460.618. The utility shall also provide the applicant with a list of distribution system upgrades that may be required for interconnection with an estimated cost of each system component if such information is reasonably ascertainable upon completion of the engineering study. This estimate shall be provided to assist the applicant in determining whether to proceed with the project and the utility shall not be bound by the estimate. The distribution system study cost is valid for 6 months and the applicant shall have 6 months from receipt of the engineering review findings in which to notify the electric utility to proceed with the distribution system study. Upon receiving written notification to proceed and payment of the applicable fee, the electric utility shall conduct the distribution system study.

(8) The electric utility shall complete the distribution system study and provide study results to the applicant within the following time periods:

- (a) Category 2 applications, 10 working days.
- (b) Category 3 application, 15 working days.
- (c) Category 4 application, 45 working days unless a different time period is mutually agreed upon.
- (d) Category 5 application, 60 working days unless a different time period is mutually agreed upon.

(9) The electric utility shall notify the applicant of its completed distribution system study findings along with any distribution system construction or modification costs to be paid by the applicant. The cost may include a contingency fee of not more than 10%. Any payment made in excess of actual costs shall be refunded to the applicant.

(10) If the applicant agrees, in writing, to pay the cost identified in subrule (9) of this rule, the electric utility shall complete the distribution system upgrades and the applicant shall pay for the upgrades and install the project within a mutually agreed upon time period.

(11) The applicant shall notify the electric utility when an installation and any required local code inspection and approval is complete and provide an opportunity for the electric utility to schedule a site visit to witness or perform commissioning tests required by IEEE 1547.1 and inspect the project. The electric utility may provide a written waiver of its right to visit the site to inspect the project and witness or perform the commissioning tests. The utility shall notify the applicant of its intent to visit the site, inspect the project, witness the commissioning tests or of its intent to waive inspection within 10 working days after notification that the installation and inspections are complete.

(12) Within 5 working days of the receipt of the completed commissioning test report, the electric utility shall notify the applicant of its acceptance of the commissioning test report and shall notify the applicant of its approval or disapproval of the interconnection. If approved, the electric utility shall also provide to the applicant a written statement of final approval, cost reconciliation, and an interconnection agreement. The applicant shall sign and return the interconnection agreement to the electric utility before beginning parallel operation. If the electric utility does not approve the interconnection, the electric utility shall notify the applicant of the necessary corrective actions required for approval. The applicant, after taking corrective action, may request the electric utility to reconsider the interconnection request.

(13) An applicant for interconnection who receives generation service from an alternative electric supplier and who intends to participate in the alternative electric supplier's net metering program shall provide a copy of the complete interconnection application with the applicant's net metering application to the alternative electric supplier. The alternative electric supplier shall notify the applicant within 10 business days whether the applicant is accepted into the alternative electric supplier's net metering program.

#### R 460.622 Modifications to project.

Rule 22. The applicant shall notify the electric utility of plans for any material modification to the project. The applicant shall provide this notification by submitting a revised uniform application form and application fee along with all supporting materials that are reasonably requested by the electric utility. The applicant may not begin any material modification to the project until the electric utility has approved the revised application, including any necessary engineering review or distribution system study. The application shall be processed in accordance with R 460.620.

#### R 460.624 Insurance.

Rule 24. (1) An applicant interconnecting a category 1 or category 2 project to the distribution system of an electric utility shall not be required by the utility to obtain any additional liability insurance.

(2) An electric utility shall not require an applicant interconnecting a category 1 or category 2 project to name the utility as an additional insured party.

(3) For category 3 to category 5 projects, the applicant shall obtain and maintain general liability insurance of a minimum of \$1,000,000.

R 460.626 Disconnection.

Rule 26. An electric utility may refuse to connect or may disconnect a project from the distribution system if any of the following conditions apply:

- (a) Lack of a fully executed interconnection agreement.
- (b) Termination of interconnection by mutual agreement.
- (c) Noncompliance with technical or contractual requirements in the interconnection agreement after notice is provided to the applicant of the technical or contractual deficiency.
- (d) Distribution system emergency.
- (e) Routine maintenance, repairs, and modifications, but only for a reasonable length of time necessary to perform the required work and upon reasonable notice.

R 460.628 Easements and rights-of-way.

Rule 28. If an electric utility line extension is required to accommodate an interconnection, the applicant is responsible for the cost of providing or obtaining easements or rights-of-way.

### PART 3. NET METERING STANDARDS

R 460.640 Application process.

Rule 40. (1) Each electric provider shall file initial net metering program tariff sheets within 30 days of the effective date of these rules or by May 4, 2009, whichever date is sooner.

(2) Each alternative electric supplier shall file an alternative electric supplier net metering program plan within 30 days of the effective date of these rules or by May 4, 2009, whichever date is sooner.

(3) Electric providers and alternative electric suppliers shall file annual net metering program reports in a form to be determined by the commission, not later than March 31 of each year.

(4) Each electric provider shall maintain records of all applications and up-to-date records of all active eligible electric generators located within its service area. Each alternative electric supplier shall maintain records of all applications and up-to-date records of all eligible electric generators participating in its net metering program.

(5) Selection of customers for participation in the net metering program shall be based on the order in which the applications for the net metering program are received by the electric provider or alternative electric supplier.

(6) An electric provider or alternative electric supplier shall not refuse to provide or discontinue electric service to a customer solely for the reason that the customer participates in the net metering program.

(7) Net metering programs provided by electric providers and alternative electric suppliers shall limit each applicant to generation capacity designed to meet the customer's electric needs.

(a) At the customer's option, the generation capacity shall be determined by 1 of the following methods:

- (i) Aggregate nameplate capacity of the generator(s).
- (ii) An estimate of the expected annual kWh output of the generator(s) determined in a manner approved by the commission and specified on the electric provider's net metering tariff sheet or in the alternative electric supplier's net metering program plan.

(b) At the customer's option, the customer's electric needs shall be determined by 1 of the following methods:

(i) The customer's annual energy usage, measured in kWh, during the previous 12-month period.

(ii) For a customer with metered demand data available, the maximum integrated hourly demand measured in kW during the previous 12-month period.

(iii) In cases where there is no data, incomplete data, or incorrect data for the customer's energy usage or the customer is making changes on-site that will affect total usage, the electric provider or alternative electric supplier and the customer shall mutually agree on a method to determine the customer's electric needs.

#### R 460.642 Net metering application and fees.

Rule 42. (1) A uniform net metering application form and process shall be used by all electric providers and alternative electric suppliers. The uniform net metering application form shall be approved by the commission.

(2) Net metering application processing for electric providers shall be conducted in the following manner:

(a) An applicant applying for net metering shall at the same time apply for an electric provider interconnection or shall indicate on the net metering application that the applicant has applied for interconnection with the electric provider.

(b) If an applicant has an executed interconnection agreement at the time of filing the net metering application, the electric provider shall have 10 working days to complete its review of the net metering application. All other net metering applications shall be processed within 10 days after the applicant's interconnection agreement is executed.

(c) As part of the review, the electric provider shall determine whether the appropriate meter(s) are installed for net metering.

(d) After completing the review, the electric provider shall notify the customer whether the net metering application is approved or disapproved.

(e) If an applicant approved for net metering requires new or additional meters, the electric provider shall make arrangements with the customer to install the meters at a mutually agreed upon time.

(f) Within 10 working days after the necessary meters are installed, the electric provider shall complete changes to the applicant's account to permit net metering credit to be applied to the account.

(3) Net metering application processing for alternative electric suppliers shall be conducted in the following manner:

(a) A customer receiving retail electric service from an alternative electric supplier shall submit the completed net metering application form to the alternative electric supplier and a copy of the form to the electric provider that provides distribution services.

(b) Within the time periods in subrule (2) of this rule, the electric provider shall determine whether the appropriate meter(s) are installed for net metering and, if necessary, contact the customer to arrange for meter installation.

(c) The electric provider shall notify the alternative electric supplier when the interconnection agreement for the eligible generator is executed and installation of the appropriate meter(s) is completed.

(d) Within 10 working days of notification, the alternative electric supplier shall complete changes to the applicant's account to permit net metering credit to be applied to the account.

(4) If a net metering application is disapproved, the electric provider or alternative electric supplier shall notify the customer of the reasons for the disapproval. The customer shall have an opportunity to correct the net metering application. If the application is withdrawn by the customer, the electric provider or alternative electric supplier shall refund the net metering application fee to the customer.

(5) Customers participating in the net metering program under the commission's March 29, 2005 order in case no. U-14346 shall be transferred to the statewide net metering program established under these rules within 30 days of commission approval of the electric provider's net metering tariff. Any remaining net excess generation credits shall be credited to the customer in accordance with R 460.652. Additional application, interconnection, installation fees, or system requirements are waived for customers who transfer to the net metering program authorized by these rules.

(6) The net metering application fee for electric providers and alternative electric suppliers shall not exceed \$25. The fee shall be specified on the electric provider's net metering tariff sheet or in the alternative electric supplier's net metering program plan. The combined total of net metering application fees and interconnection application review fees shall not exceed \$100.

#### R 460.644 Net metering program size.

Rule 44. If an electric provider or alternative electric supplier reaches the net metering program size limits in section 173(2) of 2008 PA 295, MCL 460.1173(2), the electric provider or alternative electric supplier shall provide notice to the commission and to all customers that its net metering program is closed and that no new applications will be accepted. All completed applications that are pending at the time the net metering program closes shall be processed and the applicants shall be allowed to participate in the net metering program.

#### R 460.646 Generation and net metering equipment.

Rule 46. (1) New generation and net metering equipment and its installation must meet all current local and state electric and construction code requirements. Any equipment that is certified by a nationally recognized testing laboratory to IEEE 1547.1 testing standards and in compliance with UL 1741 scope 1.1A and installed in compliance with this part is considered eligible equipment. Within the time provided by the commission in R 460.620 and consistent with good provider practice, protection of electric provider workers, protection of electric provider equipment, and protection of the general public, an electric provider may study, confirm, and ensure that an eligible electric generator installation at the customer's site meets the IEEE 1547 anti-islanding requirements.

(2) Customers with executed interconnection agreements on the effective date of these rules shall be considered eligible generators provided the customer's project complies with R 460.601a(t) and R 460.640(7).

#### R 460.648 Meters.

Rule 48. (1) For a customer with a generation system capable of generating 20 kW or less, the provider may determine the customer's net usage using the customer's existing meter if it is capable of reverse registration or may, at the provider's expense, install a single meter with separate registers measuring power flow in each direction. If the provider uses the customer's

existing meter, the provider shall test and calibrate the meter to assure accuracy in both directions. If the customer's existing meter is not capable of reverse registration and if meter upgrades or modifications are required, the following applies:

(a) An electric provider serving over 1,000,000 customers in this state shall provide a meter or meters capable of measuring the flow of energy in both directions at no additional charge to the net metering customer. The cost of the meter(s) or meter modification shall be considered a cost of operating the net metering program.

(b) An electric provider serving fewer than 1,000,000 customers in this state shall provide a meter or meters capable of measuring the flow of energy in both directions to customers at cost. Only the incremental cost above that for meter(s) provided by the electric provider to similarly situated nongenerating customers shall be paid by the eligible customer.

(c) An electric provider shall provide a generator meter, if requested by the customer, at cost.

(2) For a customer with a generation system capable of generating more than 20 kW and up to 150 kW, the provider shall utilize a meter or meters capable of measuring the flow of energy in both directions and the generator output. If meter upgrades are necessary to provide such functionality, the following applies:

(a) An electric provider serving over 1,000,000 customers in this state shall provide a meter or meters capable of measuring the flow of energy in both directions at no additional charge to a net metering customer. If the provider provides the upgraded meter(s) at no additional charge to the customer, the cost of the meter(s) shall be considered a cost of operating the net metering program.

(b) An electric provider serving fewer than 1,000,000 customers in this state shall provide a meter or meters capable of measuring the flow of energy in both directions to customers at cost. Only the incremental cost above that for meters provided by the electric provider to similarly situated nongenerating customers shall be paid by the eligible customer.

(c) An electric provider shall provide a generator meter. The cost of the meter shall be considered a cost of operating a net metering program.

(3) For a customer with a generation system capable of generating more than 150 kW, the provider shall utilize a meter or meters capable of measuring the flow of energy in both directions and the generator output. If meter upgrades are necessary to provide such functionality the customer shall pay the cost of providing any new meters.

(4) An electric provider deploying advanced metering infrastructure shall not charge the cost of advanced meters to a net metering customer or the net metering program.

R 460.650 Billing and credit for true net metering customers.

Rule 50. (1) Net metering customers with a system capable of generating 20 kW or less shall qualify for true net metering. For customers who qualify for true net metering, the net of the bidirectional flow of kWh across the customer interconnection with the utility distribution system during the billing period or during each time-of-use pricing period within the billing period, including excess generation, shall be credited at the full retail rate.

(2) The credit for excess generation, if any, shall appear on the next bill. Any excess credit not used to offset current charges shall be carried forward for use in subsequent billing periods.

(3) If a customer leaves the provider's system or service is terminated for any reason, an electric provider or alternative electric supplier shall refund to the customer the remaining credit amount.

R 460.652 Billing and credit for modified net metering customers.

Rule 52. (1) Net metering customers with a system capable of generating more than 20 kW qualify for modified net metering. For customers who qualify for modified net metering, a negative net metered quantity during the billing period or during each time-of-use pricing period within the billing period reflects net excess generation for which the customer is entitled to receive credit. Standby charges for modified net metering customers on an energy rate schedule shall equal the retail distribution charge applied to the imputed customer usage during the billing period. The imputed customer usage is calculated as the sum of the metered on-site generation and the net of the bidirectional flow of power across the customer interconnection during the billing period. The commission shall establish standby charges for modified net metering customers on demand-based rate schedules that provide an equivalent contribution to provider system costs. Standby charges shall not be applied to customers with systems capable of generating 150 kW or less.

(2) The credit for excess generation shall appear on the next bill. Any excess kWh not used to offset current charges shall be carried forward for use in subsequent billing periods.

(3) A customer qualifying for modified net metering shall not have net metering credits applied to distribution charges.

(4) If a customer leaves the provider's system or service is terminated for any reason, an electric provider or alternative electric supplier shall refund to the customer the remaining credit amount.

(5) The credit per kWh for kWh delivered into the provider's distribution system shall be 1 of the following as determined by the commission:

(a) The monthly average real-time locational marginal price for energy at the commercial pricing node within the electric provider's distribution service territory, or for a net metering customer on a time-based rate schedule, the monthly average real-time locational marginal price for energy at the commercial pricing node within the electric provider's distribution service territory during the time-of-use pricing period.

(b) The electric provider or alternative electric supplier's power supply component of the full retail rate during the billing period or time-of-use pricing period.

R 460.654 Renewable energy credits.

Rule 54. (1) An eligible electric generator shall own any renewable energy credits granted for electricity generated under the net metering program.

(2) An electric provider may purchase or trade renewable energy certificates from a net metering customer if agreed to by the net metering customer.

(3) The commission may develop a program for aggregating renewable energy certificates from net metering customers.

R 460.656 Penalties.

Rule 56. Upon a complaint or on the commission's own motion, if the commission finds after notice and hearing that an electric provider has not complied with a provision or order issued under part 5 of 2008 PA 295, the commission shall order remedies and penalties as necessary to make whole a customer or other person who has suffered damages as a result of the violation.