

U-15113

Staff Report on Net Metering and Electric Utility Interconnection Issues

October 1, 2007

Appendix 1

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Consumers Energy billing determinants and sample bill:

Net Metering Billing Determinants			
Rate B - Rate Code 010			
	kWhs		
Energy supplied by CECO (inflow)	366		
Customer supply to grid (outflow)	50		
Customer generator output	100		
Total Customer Consumption	416		
Net Excess Generation Credits Carried	100		
CURRENT BILL			
Rate 010 - Current Rates			
ELECTRIC POWER SUPPLY CHARGES	<u>kWhs</u>	<u>Rate</u>	<u>Amount</u>
KWH CHARGE - ENERGY	416	0.062992	\$26.20
POWER SUPPLY COST RECOVERY	416	0.015890	\$6.61
ELECTRIC DELIVERY CHARGES			
ELECTRIC CUSTOMER CHARGE			\$8.00
ELECTRIC DISTRIBUTION CHARGE	416	0.032925	\$13.70
NUCLEAR DECOMMISSIONING	416	0.000185	\$0.08
ECC IMPLEMENTATION	416	0.000901	\$0.37
SECURITY RECOVERY FACTOR	416	0.000256	\$0.11
REGULATORY ASSET RECOVERY	416	0.001600	\$0.67
SECURITIZATION CHARGE	416	0.001265	\$0.53
SECURITIZATION TAX CHARGE	416	0.000456	\$0.19
Total billing before Net Metering Credits			\$56.46
NET METERING CREDITS			
Power Supply Credit *	200	0.062992	\$12.60
PSCR Credit	200	0.015890	\$3.18
Distribution Credit **	50	0.032925	\$1.65
NEG Carried Forward	0		
Total billing after Net Metering Credits			\$39.03
Sales Tax @ 6%			\$2.34
TOTAL ELECTRIC BILLING			\$41.37

Detroit Edison billing determinants:

Billing Determinants Base Residential Rate	
Billing Determinant (BD) Name	How the Determinant is typically determined
Base Rate	
first 17 kWh/day of consumption	$17 * (\text{end date} - \text{start date})$ not greater than total delivered power
excess consumption over 17 kWh/day	$(\text{Inflow} + \text{Generator} - \text{Outflow}) - 17 * (\text{end date} - \text{start date})$ not less than zero
Consumption for Power Supply surcharges	
Consumption for Power Supply Cost Recovery Factor (PSCR)	
Consumption for Delivery Charge	
Consumption for Energy Delivery Surcharges	
	the billing determinant calculation for these four charges is the same $(\text{Inflow} + \text{Generator} - \text{Outflow})$
Rider 16 Net Metering Credits	
first 17 kWh/day of consumption Eligible for credit	$17 * (\text{end date} - \text{start date})$ not greater than total delivered power
excess consumption over 17 kWh/day Eligible for credit	$(\text{Net Electric Generation delivered back to site} - \text{Generator} - \text{Outflow} - 17 * (\text{end date} - \text{start date}))$
Total Rider 16 Generation Eligible for Credit	$(\text{Net Electric Generation delivered back to site} + \text{Generator} - \text{Outflow})$
Consumption Eligible for the Delivery Surcharge Credit	Generation Utilized in current billing period which equals $(\text{Generator} - \text{Outflow})$
Consumption Eligible for the Generation Surcharge Credit	$(\text{Net Electric Generation delivered back to site} + \text{Generator} - \text{Outflow})$
Consumption Eligible for the Program Credit	Generation Utilized in current billing period which equals $(\text{Generator} - \text{Outflow})$

Detroit Edison sample bill calculation:

The billing determinants are calculated from the metered values for inflow, outflow and generation																																																																																									
metered value = (meter reading at the end of the period - meter reading at the beginning of the period) * a meter constant																																																																																									
Rider 16 Net Metering Requires keeping track of energy generated and sent to the utility This is called Net Electric Generation or NEG								NEG = outflow																																																																																	
NEG balance = the summation of NEG less what has been delivered back to the site by the electric utility																																																																																									
NEG delivered back to the site by the electric utility is the lesser of (the site requirement not supplied by the generator) or (the NEG balance)																																																																																									
For the example that follows the beginning NEG balance is				80	Generation Utilized on site = (Generator-Outflow) is				951	all meter constants are one.																																																																															
the site requirement not supplied by the generator is				86	The previous month's bill of \$10.38 was paid in full				meter costs were paid up front																																																																																
Detail Charges																																																																																									
1234 Ang Street AngTown, MI, 48xxx-zxxx						Current Billing Information																																																																																			
Detroit Edison Residential Electric Service Current						Service Period	7-Nov-06	-	6-Dec-06																																																																																
						Days Billed	29																																																																																		
Power Supply Charges						Inflow Meter Number	9999991																																																																																		
Energy Charge	first 17kwh/day	493	KWH @	0.04531	\$	22.34	Meter Reading	394	Act 480 Act																																																																																
Energy Charge	excess over 17 kwh/day	544	KWH @	0.05941	\$	32.32	KWH delivered 86																																																																																		
Power Supply surcharges*		1037	KWH @	0.002274	\$	2.36	Generator Meter Number	9999992																																																																																	
Power Supply Cost Recovery Factor (PSCR)		1037	KWH @	0.00545	\$	5.65	Meter Reading	522	Act 1550 Act																																																																																
Delivery Charges						KWH generated 1028																																																																																			
Delivery Charge		1037	KWH @	0.04284	\$	44.43	KWH Net Excess Generation 77																																																																																		
Energy Delivery Surcharges**		1037	KWH @	0.006232	\$	6.46	KWH Usage (Inflow-Generator-Outflow) 1037																																																																																		
Residential Michigan Sales Tax			@	4%	\$	4.54	Outflow Meter Number	9999993																																																																																	
Total Detroit Edison Current Charges						Meter Reading	273	Act 350 Act																																																																																	
Before Rider 16 Net Metering Credits \$ 118.10																																																																																									
<table border="0" style="width:100%"> <tr> <td style="width:40%">Total Electric Generation</td> <td style="width:10%">Current Month</td> <td style="width:10%">12 mo. cycle</td> <td style="width:10%">KWH</td> <td style="width:10%">KWH</td> <td style="width:10%">KWH</td> <td colspan="4">Site Usage History - Average per day</td> </tr> <tr> <td>Net Electric Generation Beginning balance ***</td> <td>1028</td> <td>4270</td> <td></td> <td></td> <td></td> <td></td> <td>Current Month</td> <td>Last Month</td> <td>Last Year</td> </tr> <tr> <td>Net Electric Generation returned to site</td> <td>80</td> <td>682</td> <td></td> <td></td> <td></td> <td>KWH Usage</td> <td>35.76</td> <td>37.69</td> <td>33.81</td> </tr> <tr> <td>Net Electric Generation delivered to DECo</td> <td>77</td> <td>695</td> <td></td> <td></td> <td></td> <td>Change</td> <td></td> <td>-5%</td> <td>6%</td> </tr> <tr> <td>Net Electric Generation Ending balance ***</td> <td>77</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Generation Utilized in current billing period (Generator-Outflow)</td> <td>951</td> <td>3575</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Generation Credit (Net Electric Generation returned to site+Generator-Outflow)</td> <td>1031</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>NEG transferred to DECo ***</td> <td>0</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>										Total Electric Generation	Current Month	12 mo. cycle	KWH	KWH	KWH	Site Usage History - Average per day				Net Electric Generation Beginning balance ***	1028	4270					Current Month	Last Month	Last Year	Net Electric Generation returned to site	80	682				KWH Usage	35.76	37.69	33.81	Net Electric Generation delivered to DECo	77	695				Change		-5%	6%	Net Electric Generation Ending balance ***	77									Generation Utilized in current billing period (Generator-Outflow)	951	3575								Generation Credit (Net Electric Generation returned to site+Generator-Outflow)	1031									NEG transferred to DECo ***	0								
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Rider 16 Net Metering Credits						Summary of Charges																																																																																			
Power Supply Energy Charge Credit first 17 kwh/day	493	KWH @	0.04531	\$	22.34	Account Balance	November 7, 2006	\$ 10.38																																																																																	
Power Supply Energy Charge Credit excess over 17 kwh/day	538	KWH @	0.05941	\$	31.96	Payment Received	Thank	\$ (10.38)																																																																																	
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Delivery Portion of the Surcharge Credit	951	KWH @	0.006232	\$	5.93	Detroit Edison Residential Electric	\$ 118.10																																																																																		
Power Supply Portion of the Surcharge Credit	1031	KWH @	0.002274	\$	2.34	Detroit Edison Net Metering Credit	\$ (109.89)																																																																																		
						Total Current Charges \$ 8.21																																																																																			
Program Credit	951	KWH @	0.04284	\$	40.74	Account Balance	December 6, 2006	\$ 8.21																																																																																	
Residential Michigan Sales Tax adjustment		@	4%	\$	4.23																																																																																				
Total Rider 16 Net Metering Credits \$ 109.89																																																																																									
* Power supply surcharges include Regulatory Asset Recovery Surcharges (RARS)						*** Net Electric Generation beginning balance Set to 0 after billing period with 1-Aug consumption																																																																																			
**Delivery Surcharges include Nuclear Decommissioning Surcharge (NDS), Securitization Bond Charge (SBC), Securitization Bond Tax Charge (SBTC), Choice Implementation Surcharge (CIS), and a Rate Reduction Credit (RRC)																																																																																									
<p>In the example provided above the customer would have paid \$118.10 for electric power without his on site generation and the net metering rider. The net metering rider provides credits totalling \$109.89. Consequently the customers net bill is \$8.21.</p>																																																																																									

UPPCO Net Metering

Assumptions		
Customer Onsite Generation	400	kWh
Customer Home Consumption	900	kWh
Customer Generation Delivered to Company	100	kWh
Customer Purchases from Company	600	kWh

Billing - UPPCO Residential Customer- A-1

Distribution Charges	Units	Rate	Charge	
Customer Charge	1	\$ 8.00	\$ 8.00	
Energy Charge	600	\$0.06074	36.44	
				\$ 44.44
Power Supply Charges				
Energy Charge	600	\$0.07120	42.72	
PSCR	600	\$0.00240	(1.44)	
				\$ 41.28
Net Metering - Credit				
Energy Charge	100	\$0.07120	\$ 7.12	
PSCR	100	\$0.00240	(0.24)	
				\$ (6.88)
Net Customer Payment				\$ 78.84

Attachments to Electric Utility Responses in Case No. U-15113

We Energies sample calculation showing determinants and typical bill:

Typical Net Metered Customer Bill

kWh Delivered to Customer:	700
kWh Delivered to Utility:	250
Difference:	450

Customer Retail Energy Rate:		Billed Amount
Distribution Charges:		
Facilities Charge:	\$ 9.60	\$9.60
Delivery Charge/kWh:	\$ 0.0389	\$17.51
Power Supply Charges:		
Non-space heating/kWh:	\$ 0.0381	\$17.15
PSCR/kWh:	\$0.01958	\$8.81
Sales Tax @ 4%:		\$2.12
		\$55.18
		Total Bill

April 16, 2007 Comments

Under 10 kW Net Metering & Interconnection Procedures Workgroup

Faster & Less Complex Interconnection Procedures

[Staff Draft Interconnection Procedures Document](#)
[Staff Draft Interconnection Standards Revisions Document](#)

Net Metering

[Staff Draft Net Metering Proposal](#)

Comment Summary

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Steve Collini

Julie, Brian

I put into service an inverter based 3k wind system in 1999. At that time the utility (Consumers Energy) required any excess generation sell back to be classified as a NUG with exorbitant costs to qualify. I was forced to use a large battery bank for storage purposes. The cost of batteries, maintenance, etc. makes this type of system not very user friendly for any one considering alternate energy. I applaud the efforts to make things much simpler. This leaves me with a dilemma though. In 1999 I bought a very high end inverter with the safeguards for utility interconnection. The inverter is one of the most expensive parts of any system so one does not want to replace them if not absolutely necessary. The proposed rules use the IEEE 1547 standard. This standard was developed after the manufacture date of my inverter, so there is no way to get my inverter to comply with the standard. The manufacturer of my unit is Trace engineering, Model # SW4048. Trace has since been bought by a company called Xantrex and they continue to support the product. My question would be is there any way in the ruling to incorporate equipment that is known as safe to use in interconnections but was manufactured prior to the IEEE 1547 standard? I've sent all my inverter specs to Consumers Energy to try and get an answer from them, about 3 weeks ago and haven't heard back yet. It would be very nice if the rules could be made to address this type of situation.

Thank You
Steve Collini
1290 Harold Ave.
Roscommon, MI 48653
989-821-5900
steve.collini@charter.net

David C. Tarsi PE

Dear Sir,

I live in the western part of the upper peninsula of Michigan in the northwest corner of Iron county. I live off grid and have a 4.3KW set of solar panels. My home is a standard home and even in this remote area of Michigan I get almost 95% solar coverage. Who says solar does not work in Michigan. I am a retired engineer from Consumers Energy and understand the workings of a utility system. ***I believe we should not stop at net metering.*** This just does not offer the investment opportunity to the individual. They can only defray their yearly electric load. ***When you are on the grid, installing either a solar system or a wind generation system, this just does not even come close to the economics of service from the grid.*** Its better and cheaper to buy green energy through the utility companies and still participate in lowering our consumption of fossil fuels. As an example, I have reduced my dependency of over 1400 gallons of propane per year through solar. I hope to increase this when I install a solar hot water system this year. However, my electric system has cost me near \$15,000. ***How can we expect the average to invest \$10,000 to \$20,000 to just eliminate their electric draw from the utility.*** Solar and wind generation costs have really gone up in the last two years. The European demand. What we need is the opportunity to invest in a renewable generation system that can effectively produce an offset to the initial capital cost. Of course one way is to have state and federal rebates, but the existing federal system is a weak attempt to promote an incentive to reduce a dependency on fossil fuels. ***The real Michigan incentive is to promote a fair system of energy sell-back to the utility.*** Such a system would provide a better way for one to offset costs. The equipment today provides for a safe inter-connect with the utility. They make grid-tie inverters that immediately disconnect themselves in the event of a loss of system. ***A fair system will provide a reasonable rate of sell-back KWH and at the same time not overload the dispersed generation with unreasonable costs in disconnect equipment costs.*** I truly believe the utilities can pitch in and work through different operational and maintenance procedures that would allow for more of these connections. It is just a different set of problems. ***I believe if we are going to make headway in promoting the use of renewable resources, we must solve these problems.*** I would appreciate any status you can provide or any other information you would like from me.

David C. Tarsi PE
dtarsi@sbcglobal.net
906.367.9251

Tom Basso
National Renewable Energy Laboratory

-----Original Message-----

From: Basso, Thomas [mailto:Thomas_Basso@nrel.gov]

Sent: Monday, April 02, 2007 3:53 PM

To: Stanton, Thomas S (DLEG)

Cc: bwjohnson@acninc.net

Subject:

Tom,

See below for background/up-to-date approach for interconnection of distributed resources, especially in that is the approach to 10 kW and less.

Let me know if you have questions on below.

Brad Johnson, NREL contractor, and I have been involved with various state activities for interconnection (not necessarily for rate design/tariff activities - however, separately, Brad has, and continues to be involved with tariff/rate design issues).

Generally, states have been separating "net metering" and "interconnection requirements/procedures/agreements" and "tariff issues" and RECs. Generally, net metering by definition simply means in a colloquial sense "run the meter backwards."

It seems the net metering guidelines you are proceeding under get fairly complex (unduly complex?) when you (state legislation?) start bringing rate design and RECs into "net metering" arena. The basic philosophy of net metering is simplicity. Perhaps the standard term/definition of "net metering" needs to be addressed/clarified for your purposes/approach. It appears that in one fast-track rule-making you are addressing much more than net metering. That appears as an interesting problem(s) but maybe for instance, opting as a net metering customer means giving up potential RECs.

[At March 22, 2007 MD Interconnection working group meeting unanimous consensus was reached by the stakeholders for new statewide interconnection rules and standard interconnection agreements. These rules and agreements reflect enhancements of the MADRI model and draw heavily from recent use of the MADRI model in Pennsylvania and Oregon. Highlights include the following:](#)

1) [A provision for expedited review for "field approved" interconnection equipment in addition to "certified equipment". \(To become field approved, identical interconnection equipment must have been previously approved by an EDC under a study process\). What this means is that a 250 kW micro turbine would qualify for expedited review, even if it did not have an inverter or a UL listing, if it used identical interconnection equipment already approved by the utility.](#)

2) A provision that small generators up to 10 MW qualify for expedited review if they do not export power (50kW if they connect to area networks)

3) Technical requirements based on IEEE 1547, no exceptions and no additions.

4) Adherence to the requirements for <10kW systems that were developed by FERC with no changes to the review timelines

5) Agreement to use standard application forms and interconnection agreements throughout the entire state. There was considerable debate over the details of these documents. From my perspective, final forms and agreements being sent to the Commission for approval strike a fair and equitable balance between the interests of small generators and utilities.

The Working Group plans to issue its report to the MD Commission along with the final version of the documents by April 1. The MD Commission is expected to issue its order (hopefully a favorable one) by August. I will provide a copy of the working group report and a link to the final documents when they become available in a week or so.

Following is a brief summary of the 4 Levels of review that the Working Group developed (the first 3 are expedited):

Level 1 <10kW Expedited Review . These systems are inverter based and must be tested to IEEE and UL standards by a nationally recognized test laboratory. Household photovoltaic systems are an example of the type of small generator that is expected to qualify for Level 1 expedited review.

Level 2 - 10kW to 2 MW Expedited Review. These systems must use equipment approved by a nationally recognized testing laboratory or must have been previously approved by an electric utility under a study process ([field approval](#)) .Systems in this size range do not have to be inverter based and are expected to use a variety of technologies including, photovoltaics, reciprocating engines, micro turbines, fuel cells, small wind generators and combined heat and power.

Level 3 - 10kW to 10 MW Expedited Review . These systems qualify for expedited review if they use special equipment to ensure they will not export power from the customer premises on to the electric distribution system. The vast majority of small generators that qualify for review under this category are expected to be standby generator facilities that interconnection at distribution system voltages and operate in parallel for more than 100 milliseconds. Net metered small generators are not be eligible for a Level 3 Review.(<50kW systems using lab certified equipment connecting to area networks, also qualify for expedited review under Level 3).

Level 4 - 2MW to 10 MW Study Process. Small generators that do not qualify for expedited review or have not been accepted under an expedited review already conducted will be evaluated under the procedures spelled out in this category. Because the small generators reviewed in this category are larger and are expected to use non-standardized interconnection equipment, there needs to be a more in-depth evaluation of the potential impacts of the small generator on the electric distribution system. For this reason, reviews conducted under a Level 4 evaluation are expected to be more costly and are expected to take more time. distribution network.

-----Original Message-----

From: Mansueti, Lawrence [<mailto:Lawrence.Mansueti@hq.doe.gov>]

Sent: Thursday, March 22, 2007 11:42 AM

To: Hoffman, Patricia; DeBlasio, Dick (NREL); Lippert, Alice; pielli.katrina@epa.gov; Miles Keogh; Lightner, Eric; Bindewald, Gilbert; Rich Sedano; Brad Johnson

Subject: EE/OE statement of best practices on DG interconnection

As posted the other day at EE's solar page of <http://www1.eere.energy.gov/solar/>

Attached... <<doe_interconnection_best_practices.pdf>>

Respectfully, Tom Basso; thomas_basso@nrel.gov

Voice (303) 275-3753; FAX (303) 275-3835

T. Basso: NREL Distribution and Interconnection R&D;

IEEE Secretary SCC21, & 1547 series;

IEC/USNC/TAG/TC8 Technical Advisor & Administrator

NREL Thomas S. Basso MS1614

1617 Cole Blvd.

Golden CO 80401-3393

National Renewable Energy Laboratory

<http://www.nrel.gov/eis/activities.html>

Distributed Energy and Electricity Reliability

<http://www.nrel.gov/programs/oeea.html>

DOE Office of Electricity Delivery and Energy Reliability

<http://www.electricity.doe.gov>

Richard Sloat

Greetings Brian,

The biggest draw back to the net metering issue is the disparity in credits i.e. that Michigan residents who want to interconnect to the grid can only expect to receive 25% discount (being charged \$0.10/kwh for energy being created by the utility company and only getting reimbursed \$0.025/kwh for the energy being created by themselves).

If this country wants to be serious about energy independence a one to one payback e.g. if a persons charge is \$0.10/kwh by the utility company, the utility company should be charged \$0.10/kwh for the energy produced by an individual espically when the utility company charges an additional 38% for "green energy" used by an individual.

Lets get going. I wouldn't worry so much about the utility companies making a profit, lets think more about having individuals creating clean renewable energy.

Sincerely,

Richard Sloat
223 8th Ave.
Iron River, Mi., 49935
(906) 265-0751

Joshua Barclay

I am strongly in favor of the proposed net-metering guidelines primarily because of their simplicity. Simple interconnection policies could make Michigan a haven for those wishing to produce clean, renewable energy. Clear equipment guidelines, simplest metering requirements, and a real net-metering approach make the entire process easier and cheaper for all participants, and make Michigan more attractive to new-energy-economy entrepreneurs, innovators and investors.

Prior to these new proposed guidelines, DTE's "net-metering" billing policy was so complex, I was still unable to understand how it worked after a full half-hour explanation from a very helpful and friendly engineer at DTE (I'm no math slouch either-I teach university level physics). I was confounded by why the interconnection process and billing formula needed to be so difficult, and why anyone would want to discourage me or anyone from making non-polluting, locally-harvested energy. This new proposal is certainly a breath of fresh air, and I mean that literally.

Augmenting the grid with a widely decentralized system of small PV and wind systems dotting the countryside has only advantages. It will increase the efficiency of the grid by lowering line-loss. Peak demand times neatly coincide with the highest power production of PV. Terrorists can't shut down our power grid if it's decentralized. Pollution is reduced. And we don't have to send dollars out of state, nor transport coal or uranium in--we get to power Michigan with local sunlight and wind delivered free, right to our door.

We are inevitably entering a regime where net carbon emissions will be limited-either legislatively, or by technologies competing to bring the world cleaner and safer energy. Michigan could propel itself to the leading edge of this new economy and technology. To do so, we must present clear advantages to the new energy economy entrepreneurs and innovators who could make Michigan a leader rather than a laggard. We must learn from the mistakes of the big three, who not heeding the global demand for lowering carbon emissions, have been surpassed by carmakers that do.

To attract the business of the future, Michigan must compete with New Jersey rebating \$4.40 per watt for builders of PV systems, and Wisconsin where We Energies will buy PV production for 22.5 cents/kwh. The proposed net-metering guidelines are a great start, but we need to go farther to encourage clean energy if we truly want Michigan to be a leader in the economy of the future.

Joshua Barclay
Whitmore Lake, MI

Mel L Barclay

We have recently built a 3.2 KW sun-tracking photovoltaic device along side our home.

The construction was not particularly difficult.

We make a lot of clean, non-polluting electrical energy of which we use only a portion.

The technology for converting DC to AC is mature and the logical processes performed in the intertie curcuitry make the possibility of islanding remote.

Our system works now and the meter sometimes runs backwards. Why do we need two additional meters ?

Our system shows how simple it could be to develop distributed power production given the right incentives.

The power industry should stand aside as it will facilitate these developments. They benefit as well by having more clean electricity to sell.

We should be sure we have learned all the lessons of Carterfone.

Mel L Barclay
Ann Arbor, MI

Chris Coon
Sustainable Systems, Inc.

Hi Julie and Brian-

Thanks for your work on these interconnection and netmetering procedures.

Re: DRAFT Proposal for Simplified Net Metering Program for Inverter-Based Systems 10 kW or Less

Looks good. Two considerations:

1.) I assume that the "minimum monthly fixed charge" referred to in number 4 will be based on rate information that will be examined carefully by MPSC staff to ensure it does contain major extraneous costs.

2.) Since the next level of interconnection / netmetering agreements is 30 - 150 kW, what rules will apply to a 12, 20, or 25 kW inverter-based system?

Re: Generator Interconnection Requirements ... Inverter-Based ... 10 kW or Less

Within the limits of my technical understandings of the implications of the interconnection procedures, it looks okay. I have been attempting to get Bob Pratt to examine these in detail, as he worked for DTE for many years dealing with the issues of interconnection of solar systems. I defer to him and hope that he comments on the interconnection requirements.

Thank you again for your work on these issues.

Sincerely,
Chris Coon
Solar Contractor
Sustainable Systems, Inc.
11994 Pleasant Lake Rd, Manchester, MI 48158
< sustainablesystems@ic.org >
734-428-9249

Don Lee
Independent Biodiesel, LLC

Julie and Brian,

I'm a student in the Master's of Management/Sustainable Business program at Aquinas College. I currently own a building at 700 Wealthy in Grand Rapids where I'm attempting to justify the cost of a carbon-emissions free energy system for my building. To this end I have been researching the implementation of a combination solar PV and thermal system for my facility. I would like to thank you for your effort to create a more fair and less complicated process for consumers to utilize renewable energy. I would like to add some points to the conversation.

The optimal outcome is the use of solar electricity to offset the costs of both the capital investment required for solar equipment, and the external costs of pollution, especially greenhouse gas emissions. Currently there is inequity between the natural gas and electric utilities and the consumer/producer of solar electricity. Presently in Michigan, there is no penalty associated with the external costs of extraction and consumption of fossil fuel-derived electricity and no method of "evaluating competing resources in which the most environmentally disruptive resource (a new coal plant) under the most unfavorable circumstances" creates external costs. (National Academy of Sciences, et al p. 709)

Monetary incentives are low as net metering, (the process of returning solar power that is generated by consumers to the grid) is currently difficult and cost prohibitive. A customer purchasing power from Consumer's Energy will pay an application fee of \$100 to enroll in the program. In addition, the customer must complete and send to Consumers Energy the Net Metering Program application to ensure the proper metering configuration is installed, which will enable the customer to receive "Net Excess Generation Credits." After Consumers Energy has completed the interconnection study and has approved the proposed interconnection and net metering project, the customer will be required to enter into an 'Interconnection and Operating Agreement.' The customer is responsible for any costs associated with the interconnection." (<http://www.consumersenergy.com/welcome.htm>) It's not clear what these "costs" are.

Neither is it clear how much the consumer can expect to receive for electricity that is returned to the power company other than to say that it is defined as a "Net Excess Generation Credit. "Net Excess Generation (NEG) is the amount of electricity generated by a Net Metering participant using a renewable energy source, in excess of the customer's own electric metered use in any billing month. "One NEG Credit equals the Energy Charge portion of the Power Supply Charges – of one kilowatt-hour of electricity as shown on the customer's rate schedule, including the associated Power Supply Cost Recovery, but excludes Surcharges." (<http://www.consumersenergy.com/welcome.htm>)

It is difficult to determine a timeframe to recover the cost of installing a solar PV system. What is the current cost of a kWh of electricity? Why isn't the consumer able to sell that electricity back to Consumer's Energy at an equitable rate? Other considerations for cost include times of peak power output (returning energy to the grid). "...the peaking units, those generating facilities fired up only during the peak periods produce electricity at a much higher marginal cost than do base-load plants, those fired up virtually all the time. Peaking units are typically cheaper to build than base-load plants, but they have higher operating costs." (National Academy of Sciences, et al p. 709) Power returned to the grid during peak operating hours should therefore be eligible for a premium (higher) rate of return. During off peak hours or low sunlight and night time operation when demand is lower and while solar powered units are either not functioning or functioning at diminished capacity and the consumer is drawing energy from the grid, peak and non-peak rates are applicable. To be fair these rates should not be unilateral in favor of utilities, "Since renewable energy and conventional energy are physically indistinguishable, both are sold in the energy market at the same price." (Tietenberg p. 153)

There are incentives for utilities to provide equitable compensation for solar energy producers/consumers during peak periods because "slowing the growth in peak demand may delay the need for new, expensive capacity expansion" (Tietenberg p. 152) by transferring capital costs directly to consumers and reducing the higher marginal costs of peak period energy production. If there is an "environmental adder" (National Academy of Sciences, et al p. 709) for example "New York adds 1.4 cents per kilowatt-hour to the estimated cost of electricity produced from fossil fuel sources to account for the various negative environmental effects." (Tietenberg p. 153) The period of time required by the consumer to recoup those dollars is decreased as the cost of the externality (greenhouse gas emissions) are considered. This will also provide increased demand for renewable energy and bring capital costs down.

In summary, the cost of energy provided from sources that create emissions should have the external costs of greenhouse gas emissions associated with them in order to make renewables more competitive. The benefit to the consumer should also include the substitution of solar electric for natural gas and an “environmental adder” would accomplish that. Investment in solar energy equipment equates to the consumer providing dollars for capital improvement of a utility owned power system which diminishes peak output and reduces costs for utilities. Based on this assertion, the consumer should not be subject to enrollment or metering fees. Additionally, the consumer should receive equitable consideration in the market for the energy they produce.

“Emerging markets for clean technologies could create millions of new American jobs. It’s the single biggest global economic opportunity on the horizon.”

- Democratic Congressman Tom Udall, New Mexico (*Outside*, February 2007)

References

Panel on Policy Implications of Greenhouse Warming, National Academy of Sciences, National Academy of Engineering, Institute of Medicine. Policy Implications of Greenhouse Warming: Mitigation, Adaptation, and the Science Base. The National Academies Press, 1992.

Tietenberg, Tom. Environmental Economics and Policy. 5th ed. Boston: Pearson Education, Inc, 2007.

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<<http://www.consumersenergy.com/welcome.htm>>.

Best Regards,

Don Lee
Independent Biodiesel, LLC

--

Aude Sapere
“Dare to Know”



Lary Bannasch
Great Lake Solar

Hi Julie and Brian

As a new Michigan Small Business I'm pleased to see the focus on less than 10kW net metering Workgroup

As a start up supplier of BIPV Grid Tied Systems to Michigan residents having this focus will be helpfull to all (residents, installers and suppliers)

thank you for your efforts

Lary Bannasch
Great Lake Solar
810 895 1141

MICHIGAN REGULATED ELECTRIC INDUSTRY

MICHIGAN REGULATED ELECTRIC INDUSTRY COMMENTS ON MPSC STAFF INTERCONNECTION AND NET METERING PROPOSALS

These informal comments are submitted by the Michigan Electric and Gas Association on behalf of Michigan regulated electric utilities including MEGA members, the electric distribution cooperatives, Detroit Edison and Consumers Energy. The MPSC Staff circulated proposals for consideration by the "Under 10 kW Net Metering and Interconnection Procedures Workgroup" regarding (1) faster and less complex interconnection procedures, and (2) net metering, with draft documents containing an initial proposal. The electronic notice of the proposals requested comments by e-mail to the Staff with a deadline of Monday, April 16, 2007. The participating regulated electric utilities established a group to coordinate these responses, referred to here as the "Industry Group". These comments reflect the initial joint position of the Industry Group, recognizing that this is part of a working group process with opportunity for further discussion and participation as the informal workgroup procedures continue.

These comments are organized based on the framework of the Staff proposals, with headings adopted based on the proposals. Except where indicated for general Industry comments, the headings and bold language in subheadings below correspond to the order of items in the proposals. The industry comments are developed for each item, without repeating the entire provision in the proposal.

A. GENERAL INDUSTRY COMMENTS

The following comments are directed to the overall process of considering changes in the interconnection and net metering rules and procedures.

1. The working group is just being formed and there have been no meetings to discuss procedures for the small projects. Development of any new procedures is supposed to occur through a working group effort. This response should be part of the framework for discussion at future workgroup meetings.

2. The MPSC Staff (Staff) proposes to start with a model procedure developed by a renewable energy group, Interstate Renewable Energy Council (IREC). The IREC model is a 52 page document described as a compilation of best practices from various sources, with 11 sections and 8 attachments. Staff modified the IREC document to 13 pages and the working group should be given an explanation of why the IREC document is a better starting point than the Michigan procedures with which interested parties are already familiar. There should also be a review and explanation of the specific changes from the original IREC compilation.

3. All determinations must give primary consideration to safety of utility workers and the public. Measures that call for deemed approvals or presumed acceptance must be avoided. The procedures should not create any expectation or impression that projects can be energized without the necessary communication among all parties and appropriate testing.

4. The interconnection rules and related procedures were revised in 2003. These provisions continue to be applied and while there have been developer complaints and varying issues for some projects, there is no indication or finding that

any specific item of the current procedures is functioning as a barrier to development of projects. The pace of development is influenced by many factors, including the degree of interest of customers in generating electricity, the cost of generating equipment, cost-benefit analysis and the level of financial incentives or subsidies. The workgroup process should avoid any "rush to judgment" of changes based on a few complaints because there are indeed projects achieving successful interconnection, as reported in Case No. U-15113. There is time to do this right and avoid measures that will lead to further controversy and calls for revision.

5. A net metering consensus policy was approved by the Commission on March 29, 2005 in Case No. U-14346, implemented through tariff filings that year. The approved net metering policy contained time provisions for duration and the Commission called for an evaluation through the Michigan Renewable Energy Program (MREP) after the fourth year (in 2009). This would allow a reasonable study period based on actual results over time. Early involuntary termination of this program and mandates to provide economic benefits to developers raise fundamental policy questions beyond the scope of a workgroup collaborative. Legislation developed as a result of the 21st Century Energy Plan may affect the net metering program and the interconnection procedures and rules.

B. Proposed Interconnection Procedures for Inverter-Based Generators of 10kW or Less (IREC Model as modified)

1. Organization and Table of Contents: See general comment No. 2 above regarding the draft. Further, the document uses a number of capitalized terms (e.g. Project Developer, Point of Common Coupling, Customer, Spot and Area Network) that are not specifically defined in the definitions section. There should be a discussion by the workgroup regarding the role of the "Customer" versus that of the "Developer" (or installer). In many cases the installer rather than the customer will control the interconnection process and have the expertise regarding equipment. This should be recognized in the procedures and agreements. The table and list of attachments should be revised to reflect changes in the contents as the procedures are modified. It appears that section (e) regarding special screening criteria for interconnection to distribution networks may not be needed as a separate section. If all interconnections covered by these procedures are to distribution systems, as expected, the requirements for different distribution networks can be addressed as separate items in the listed criteria, particularly if each requirement applies to a defined type of network (e.g. "Spot" or "Area" networks).

2. Scope (section a): No comments at this time.

3. Standard for Certification (b): There are related concepts of "qualification" (for these procedures) and "certification" (of equipment, as a requirement for qualification). Defining these terms might aid in understanding the differences.

4. Certified Equipment (c): This section is written as if it applied to all sizes of projects as a general matter, rather than the "under 10kW" generators.

Provisions like this one in the proposal need to be worded so they cannot be construed to limit the right of utilities to test facilities to be interconnected, and for consideration of the entire interconnection package as a unit, as opposed to accepting that the use of pre-certified equipment as items of the package automatically means that the entire interconnection as a unit is qualified or certified.

Is it intended that this provision deal with "pre" certified equipment?

5. General Technical Screening Criteria (d): Some of the measures included in this section are restatements and possibly modifications of the IEEE provisions. If the IEEE standard is incorporated by reference, there is no need to repeat its provisions and many of the subsections in (d) could be eliminated as redundant. Subsections (d)(2, 3, 4 and 7) could be omitted for this reason. If the provisions are retained and there are wording variations from the IEEE, these need to be identified and discussed in the working group.

Subsections (d)(2,3,4,7 and 8) are listed here but are not identified as "applicable" screens in subsection (f)(2), which is confusing. In fact, the entire concept of screening calls for more explanation and perhaps definitions.

For subsection (d)(1), if fuses are used as automatic sectionalizing devices, installed on a single phase tap, the fused tap would be a line section (perhaps only serving 2 or 3 customers). The section peak load in this instance can't be measured at the substation and if estimated the permissible generation for the section could be a very low amount. Subsection (d)(10) is a potential source of controversy, insofar as the question whether a proposed generator requires improvements to utility facilities may be difficult to answer.

6. Special Screening Criteria ... (e): This section introduces undefined terms such as Area and Spot Networks. Items (e)(2, 3) are not listed as applicable screens in section (f)(2) and should therefore be eliminated here. These provisions may not need to be identified as "special" criteria in a separate section in the document since they would apply generally for the identified situations.

7. Screening Criteria and Process ... (f): The acknowledgment of application per (f)(1) should take place in 3 "business" days after receipt by the utility, rather than calendar days measured from "submission" (to avoid a mailbox rule). The 10 day evaluation period (and all identified processing periods for that matter) should also be measured in "business" days. The determination of incomplete application should occur in the 10 business day period, as well as any determination that the project is not eligible (with explanation).

These time frames may be appropriate for a modest pace of projects seeking interconnection as presently experienced. If there is a significant increase or wide fluctuations in the number of requests for interconnection requiring more dedicated personnel, the costs and time requirements would need to be addressed. Permanent staffing at the levels required to address a sudden short-term increase in the number of applications within the timeline would not be an efficient use of utility resources. Projects take months to develop, plan and install and in some cases the time frames for response could be too short as proposed. One utility reported that developers have dropped off applications late on the day before the Christmas holiday, for example. A

procedure should be developed that allows a longer time period in some circumstances instead of putting the utility in a noncompliance situation.

Including the list of “applicable screens” here in (f)(2) seems confusing – why wouldn’t that be addressed in sections (d) and (e)?

The additional language in (f)(4) about a possible fully executed interconnection agreement is not needed. No time benefit is gained using a pre-executed agreement by one party.

Section (f)(6) with its concept of automatic approval for non-response by a utility should be removed entirely. There is no reasonable basis to provide for “deemed approval” allowing interconnection to proceed without consent or knowledge of all parties. There are other ways to deal with refusals to respond and there is little indication that this has been a problem in the investigation reports. With proper consideration of safety of the public and utility workers, as well as preventing harm to the distribution system, the procedures should not embrace concepts that can be characterized as default approval.

8. General Provisions and Requirements ... (g): Section (g)(4) is one sided and too restrictive. It should be entirely eliminated from the draft. Incorporating a concept of “presumed compliance” will be an invitation to energizing projects prematurely without adequate testing and communication. In consideration of any matter that involves public and employee safety and protecting the system, there must not be a measure in the standards that absolutely bars additional testing and possible controls, or gives the entire discretion to developers. The unreasonable and one-sided nature of this provision calls into question the use of the IREC model as a starting point for the working group discussions. Further, this section introduces the liability insurance issue with a restriction on requiring it, a matter which needs to be fully aired in the working group process. Persons who enter into commercial activities and seek the right to use the utility grid, creating additional risks to others, should not be given blanket exemptions from liability insurance requirements.

There is an issue regarding the requirement for an external disconnect switch that allows utility workers to disconnect the generator without pulling the meter and cutting off all service to the location. Developers object to the costs associated with this switch. This is a safety and reliability issue and deserves full discussion as opposed to adopting language that simply bars the requirement and resolves the issue in favor of complaining developers.

Section (g)(5) calls into question what protection equipment is included in a “certified equipment package.” It incorporates a standard that restricts use of additional protective equipment if the developer equipment performance is “negatively impacted in any way” which is a very broad and undefined standard.

Section (g)(8) is worded as a limitation on the ability of a utility to require additional testing (after “approval under this rule”). Utilities reserve the right to require and/or observe testing before interconnection to their systems and to inspect the interconnection and these procedures should not restrict that right. To follow the 1547 standard, the customer will have to perform the commissioning tests. The utility should

also have the option to see the proposed test plan, witness the testing, and/or review the results of the tests at its discretion.

Section (g)(9) is worded to require both noncompliance with IEEE 1547 and adversity to safety and reliability of the distribution system as the basis for disconnecting a project. The latter situation (safety and reliability) alone should be a basis for disconnection.

9. Attachment 1 – Definitions: As noted above, there are many terms that call for definition. Some were defined in the IREC source document but these were removed.

The definition of "Equipment Package" (or sections where this term is used) should explain the need for both the system and components to be IEEE compliant and also compliant with the interconnection policy.

A definition of U.L should be included.

10. Attachment 2 – Application: The application should identify both the customer and the developer/installer if different.

Identification and contact information for the inverter (salesperson, supplier) should be included.

The inverter serial number may not be available at the application stage. There may be a need to have identification of multiple inverters for some projects (larger systems or 3 phase output).

A one-line diagram and site drawing should be included with the application.

The "meter removal non-liability" wording should be changed to recognize that it is the utility, not the developer, who may elect not to require an accessible manual disconnect device.

The applicable certification standard should be included in the table for components.

11. Attachment 3 – Interconnection Agreement: This is a complex document that requires full consideration in the working group, since this draft was prepared by nonparticipants (IREC).

The 2 hour limit on operational testing in Section 1.0 should be removed.

The phrase "at its own expense" in Section 2.3.1 should be removed.

The deemed waiver of the witness test in Section 2.3.2 should be removed and this section and 2.3.3 should require any waivers to be in writing to eliminate future contention.

In section 2.4 the written explanation of improper installation should be due in 5 business days after disconnection instead of at the time of disconnection. Problems may warrant immediate disconnection and time should be allowed for the report.

The indemnification language in Section 6.0 was not acceptable and there have been several suggestions of alternative approaches attached hereto. This issue requires full discussion.

Why is the draft proposing to have no insurance requirement for developers (Section 7.0)? New risks are associated with these projects and indemnity provisions alone provide little protection if many of the developers are just homeowners. Some states require \$300,000 as was recognized in the IREC model rules.

In general, the provisions on indemnity, insurance and limitation of liability require more discussion and the use of the proposed draft should not create any presumptions

that its provisions are reasonable. One utility suggests adding a provision to escalate the level of coverage over time to keep up with inflation. See language added at the end of Attachment A.

The provision in Section 10.0 should provide for termination if the new owner does not accept the agreement in writing.

Consideration should be given to having the installer and the customer sign the agreement, since the installer will be responsible for the interconnection at least up to the time the project starts operating.

12. Attachment 4 – Certificate of Completion: The only comment so far is to add a heading for the “Witness Test” waiver.

C. Proposed Interconnection Rule Revision

The only proposal is to add the “under 10kW facility” item in Rules 3 and 6. The primary comment so far is to define “qualified inverter-based projects” or refer to the definition.

In Rule 6, the change leads to a longer period (20 days) for the smallest projects, with a shorter period (2 weeks) for other projects under 30 kW. The procedures under Rule 3 would cover the “under 30 kW” group, for most situations.

As indicated in the earlier interconnection investigation, utilities believe the time deadlines in general need revision and this issue would be addressed in the rulemaking proceedings as well, along with other possible rule changes applicable generally and not just to small projects.

D. Simplified Net Metering Program Proposal

The numbers below correspond to the numbered paragraphs in the Staff proposal. See also general comment No. 5 in Part A.

1. Pre-certified Inverters: Use of the standards is acceptable; however, utilities reserve the right to require testing and inspection of all projects, which should not be limited.

2. Inverter Listing: Individual utilities should not be assigned the task of identifying and listing inverter models. A statewide effort through MEGA, Staff, utilities and developers could be developed. Otherwise, the manufacturers should contact the utilities to pre-certify equipment. Important requirements include passing the anti-islanding test and providing test results.

3. Additional Equipment: This issue should be handled on a project specific basis through the interconnection agreements. The identification of acceptable equipment could be included in a statewide coordinated effort as for the inverter listing above.

4. Net Metering Charges: The current net metering policy established by consensus contains provisions for alternate methods of metering and describes the method of charging and crediting customers for various meter configurations. One of the permitted methods allowed use of a single meter measuring flow in both directions, with the customer to pay for transmission and distribution costs through a separate rate charge. This concept is similar to the proposal and the separate charge could be the

delivery component of the customer's base rate charged against the site use. Site use could either be estimated or established through metering of power in and generation at the site. Thus, the existing consensus does provide the framework for the simplified approach for small projects although the option to elect the full metering configurations should be left to the customer. There is benefit to the customer in knowing the site generation amount, for example. The current 3-meter option used by Detroit Edison provides data the customer can use for selling RECs.

As described in reports filed previously, various utilities have developed different metering configurations under the net-metering consensus agreement scheduled to run through at least 2009. Why not continue to allow alternate measures that comply with the consensus agreement, to provide data to determine customer preferences and workability of the different approaches?

Any agreement regarding a new net metering consensus such as the one proposed should contain a provision recognizing that the minimum monthly fixed charge is not a matter of absolute discretion but should be set at a level adequate to recover the customer's share of all appropriate costs. In other words, once an arrangement is established, the proponents of net metering should not be able to argue that the Commission should set the minimum bill at zero as an incentive measure to promote net metering with costs borne by other utility customers.

5. Reverse Meter Rule Change: Use of a single meter set to run backwards can create significant billing problems. If the end reading is less than the start reading, some billing systems would recognize this as meter rollover causing incorrect bills for the net metering customer. Customers with a concern about costs associated with metering could be allowed the option to have flow measured in and out, without separate metering of the generation under the existing consensus agreement.

6. Net Metering Single-Meter Approach: The comments above apply to this section.

7. Additional Metering Data – Utility Request: This issue needs further discussion. If power quality issues and the need for troubleshooting arise, it is unclear that policy should favor assigning all metering costs to the utility. This matter may be more appropriate for case-by-case evaluation.

8. Net Excess Generation Carrying: The existing consensus agreement provided for reducing the NEG balance to zero at year-end to: (1) provide a disincentive to over-sizing units, and (2) provide a potential source of funds to offset program costs. Eliminating the annual reset may remove all consequences to disregarding the provision requiring that units be sized based on the customer's annual energy needs. Net metering customers benefit from the use of excess funds for program costs. An alternative approach to consider may be to allow customers to time the billing month for the NEG balance reset, since their balance should approach zero at some point during the year if the unit is properly sized.

Utilities have not yet developed a consensus position on this issue, which requires further discussion in the workgroup.

Comments compiled for:

April 16, 2007
ASSOCIATION

MICHIGAN ELECTRIC AND GAS ASSOCIATION
MICHIGAN ELECTRIC COOPERATIVE

CONSUMERS ENERGY COMPANY
THE DETROIT EDISON COMPANY

Attachment A – Ideas for Liability/Indemnity Language

Detroit Edison provided the following provisions in order of preference:

17. INDEMNIFICATION

A. Customer covenants and agrees that it shall defend, indemnify and hold Company, and all of its officers, agents and employees harmless for any claim, loss, damage, cost, charge, expense, lien, settlement or judgment, including interest thereon, whether to any person, including employees of Customer, its Subcontractors and Suppliers, or property or both, arising directly or indirectly out of or in connection with Customer's or any of its Subcontractor's or Supplier's performance of the Agreement or in connection with the performance of the Agreement, to which Company or any of its officers, agents or employees may be subject or put by reason of any act, action, neglect or omission on the part of Customer, any of its Subcontractors or Suppliers or Company, or any of their respective officers, agents and employees.

Without limiting the foregoing, said obligation includes claims involving Customer's, Supplier's or Subcontractor's employees injured while going to and from the premises. If the Agreement is one subject to the provisions MCL 691.991, then Customer shall not be liable under this section for damage to persons or property directly caused or resulting from the sole negligence of Company, or any of its officers, agents or employees.

B. In the event any suit or other proceedings for any claim, loss, damage, cost, charge or expense covered by Customer's foregoing indemnity should be brought against Company or any of its officers, agents or employees, Customer hereby covenants and agrees to assume the defense thereof and defend the same at Customer's own expense and to pay any and all costs, charges, attorney's fees, and other expenses, and any and all judgments that may be incurred by or obtained against Company or any of its officers, agents, or employees in such suits or other proceedings. In the event of any judgment or other lien being placed upon the property of Company in such suits or other proceedings, Customer shall at once cause the same to be dissolved and discharged by giving bond or otherwise.

The following is the full Indemnity provision taken from the IREC Model Rules, with some minor clarifying modifications that don't change the meaning of the Model Rules, as proposed).

12. Liability Provisions

12.1 Limitation of Liability

Each Party's liability to the other Party for any loss, cost, claim, injury, liability, or expense, including reasonable attorney's fees, relating to or arising from any act or omission in its performance of this agreement, shall be limited to the amount of direct damage actually incurred. In no event shall either Party be liable to the other Party for any indirect, special, consequential, exemplary or punitive damages of any kind whatsoever. This provision does not limit the obligations identified in Paragraph 12.2.

12.2 Indemnification

a. The Company shall assume all liability for and shall indemnify the Customer for any claims, losses, costs, and expenses of any kind or character to the extent that they result from the Company's negligence in connection with the design, construction, or operation of its facilities as described on Exhibit A; provided, however, that the Company shall have no obligation to indemnify the Customer for claims brought by claimants who cannot recover directly from the Company. Such indemnity shall include, but is not limited to, financial responsibility for:

(a) the Customer's monetary losses; (b) reasonable costs and expenses of defending an action or claim made by a third person; c) damages related to the death or injury of a third person; (d) damages to the property of the Customer; (e) damages to the property of a third person; (f) damages for the disruption of the business of a third person.

In no event shall the Company be liable for consequential, special, incidental or punitive damages, including, without limitation, loss of profits, loss of revenue, or loss of production. The Company does not assume liability for any costs for damages arising from the disruption of the business of the Customer or for the Customer's costs and expenses of prosecuting or defending an action or claim against the Company. This paragraph does not create a liability on the part of the Company to the Customer or a third person, but requires indemnification where such liability exists. The limitations of liability provided in this paragraph do not apply in cases of gross negligence or intentional wrongdoing.

b. The Customer shall assume all liability for and shall indemnify the Company for any claims, losses, costs, and expenses of any kind or character to the extent that they result from the Customer's negligence in connection with the design, construction, or operation of its facilities as described on Exhibit A; provided, however, that the Customer shall have no obligation to indemnify the Company for claims brought by claimants who cannot recover directly from the Customer. Such indemnity shall include, but is not limited to, financial responsibility for:

(a) the Company's monetary losses; (b) reasonable costs and expenses of defending an action or claim made by a third person; (c) damages related to the death or injury of a third person; (d) damages to the property of the Company; (e) damages to the property of a third person; (f) damages for the disruption of the business of a third person. In no event shall the Customer be liable for consequential, special, incidental or punitive damages, including, without limitation, loss of profits, loss of revenue, or loss of production.

IREC MR-I2005: IREC Model Interconnection Standards
Limitation of Liability

The Customer does not assume liability for any costs for damages arising from the disruption of the business of the Company or for the Company's costs and expenses of prosecuting or defending an action or claim against the Customer. This paragraph does not create a liability on the part of the Customer to the Company or a third person, but requires indemnification where such liability exists. The limitations of liability provided in this paragraph do not apply in cases of gross negligence or intentional wrongdoing.

Consumers Energy presented the following based on the IREC language and its current interconnection operating agreement, to be project specific:

Each Party shall at all times assume all liability for, and shall indemnify and save the other Party harmless from, any and all damages, losses, claims, demands, suits, recoveries, costs, legal fees, and expenses for injury to or death of any person or persons whomsoever occurring on its own system, or for any loss, destruction of or damage to any property of third persons, firms, corporations or other entities occurring on its own system, including environmental harm or damage arising out of or resulting from, either directly or indirectly, its own Interconnection Facilities, or arising out of or resulting from, either directly or indirectly, any electric energy furnished to it hereunder after such energy has been delivered to it by such other Party, unless caused by the sole negligence or intentional wrongdoing of the other Party.

The provisions of this Section 6 shall survive termination or expiration of this Agreement.

Consumers Energy insurance provision language:

Insurance: Project Developer shall obtain and continuously maintain throughout the term of this Agreement liability insurance covering bodily injury and property damage liability with a per occurrence and annual policy aggregate amount of at least:

Project Capacity

Less than 30 kW

Minimum Limit

\$500,000

When requested in writing by Consumers, said limit shall be increased each year that this Agreement is in force to a limit no greater than the amount arrived at by increasing the original limit by the same percentage change as the Consumer Price Index - All Urban Workers (CPI-U.S. Cities Average). Such policy shall include, but not be limited to, contractual liability for indemnification assumed by Project Developer under this Agreement.

Evidence of insurance coverage on a certificate of insurance shall be provided to Consumers upon execution of this Agreement and thereafter within ten (10) days after expiration of coverage; however, if evidence of insurance is not received by the 11th day, Consumers has the right, but not the duty, to purchase the insurance coverage required under this Section and to charge the annual premium to Project Developer.

Consumers shall receive thirty (30) days advance written notice if the policy is cancelled or substantial changes are made that affect the additional insured. At Consumers' request, Project Developer shall provide a copy of the policy to Consumers.

JOHN SARVER
MICHIGAN ENERGY OFFICE

COMMENTS ON UNDER 10 KW
NET METERING & INTERCONNECTION PROCEDURES
U-15113
BY JOHN SARVER
MICHIGAN ENERGY OFFICE
April 16, 2007

The Commission's February 27, 2007 Order, in Case No. U-15113, directed the Engineering Section of the Commission's Operations and Wholesale Markets Division to establish a workgroup to develop faster and less complex interconnection procedures for 10 kW and under interconnection projects. The Commission additionally directed the Michigan Renewable Energy Program (MREP) Ratemaking and Net Metering Committee to form a task force to seek a new consensus and report to the Commission within 90 days on a simplified approach for net metering for inverter based systems smaller than 10 kW.

These comments pertain to draft staff documents prepared in response to the Commission order. Small photovoltaic and wind energy systems can provide clean, renewable power while reducing demands on the electric distribution system and, in the case of photovoltaic systems, providing power at peak times when power is most needed. Michigan citizens, businesses, and public institutions are making investments in small electric renewable energy systems in order to reduce electric costs but also to capture the societal benefits that come from clean, renewable energy. State policies should encourage these investments whenever possible.

Draft staff documents provide a more simplified approach for net metering and interconnection for inverter based systems smaller than 10 kW. Staff has addressed the key issues that can make net metering a viable program in Michigan.

- All inverters certified under UL 1741 shall be considered pre-certified, with no additional testing or certifications required.
- A rule change to R480.3605 to allow meters to reverse register (that is, to spin backward).
- Customer credit per kWh for net excess generation shall be based on the retail price paid by the customer, including all energy and power supply cost recovery charges.
- If a participating utility seeks additional metering data, the utility could be allowed to install and operate additional meters, but all costs associated with the additional meters would not be the responsibility of the net metering customer.
- At the end of a net metering year, the utility will carry the customer's net excess generation forward to the next year or issue a check to the customer with the net excess generation valued at the utility's average annual avoided cost rate for the year.

The Energy Office supports these proposed revisions and believes they can make net metering a viable program in Michigan. Thank you for the opportunity to make comments.

Garth Ward
Michigan Wind Power

Hi,, I think the Drafts look great,, In the "Interconnection Requirements" draft,, I am going to assume with more of these smaller household units that the "Project Developer" will in some cases be the homeowner...Right???

Garth Ward, Michigan Wind Power - Power to the people

See us at, www.michiganwindpower.net

Tom Kervin

Julie Baldwin,

First, thank you for your efforts on this important project. I am a home owner who would like to be environmentally friendly. Someday, if conditions are right, I would like to put a small solar (photovoltaic) system up at my residence for electricity creation. With that in mind, I would like to see any policies put into place that would assist a home owner on a small project of this nature. I would also like to see "solar" as an official part of the documentation. Any advice for me at this time?

Thanks Again,

Tom Kervin
tkkervin@hotmail.com

Pierre Marcotte

Julie Baldwin

Line item #4 states that net metering customers will pay a minimum amount each month to cover an appropriate portion of customer- based fixed charges.

Are customers paying this charge right know

What is this based fixed charge?

As it is right know the customer electricity that he or she produces is consumed on site and excess is credited to the customers at the end of the month.

If the system is not producing more than it peak power output or more than one megawatts

Why is the customer paying additional fees?

Line item #6 as it is the customer has to purchase this meter, what is wrong with the meter that he already has on his house, it is an electromechanical energy-only meter.

Explain why I need to purchase a new meter.

What dose the last line in paragraph 6 mean (including all energy power supply cost recovery charges?)

Please respond

Pierre Marcotte

Sr. Field Operation Tech.

cell: 269-804-9565

Kalamazoo MI.

PIERRE.J.MARCOTTE@SPRINT.COM



S.U.R. ENERGY SYSTEMS, LC
Suburban Urban Rural

Design, Sales, and Installation of Renewable
Energy Systems

In the matter, on the Commission's own)
Motion, to commence an investigation)
Into the interconnection of independent
Power producers with a utility's system)

Case No. U-15113

COMMENTS OF S.U.R. ENERGY SYSTEMS, LC- UNDER 10K INTECONNECTION
PROCEDURE

We would like to thank the commission for the recent attention given to the matter of the ease of interconnection for small residential scale systems, and the improvements that the IREC model brings to the current interconnection procedure. The 4 hours or so required to fill out the current document, even for those with the expertise to do so, seems more than a little excessive for a simple inverter based system with standard listings, especially when the size is unlikely to exceed the energy use in the home or business. The two page IREC form is much more reasonable.

I was not sure of the exact meaning of the table in section (d) General Technical Screening Criteria, under paragraph 4. The second block in the table reads “if a three-phase (effectively grounded) or single-phase generator, interconnection must be line to neutral”. I wonder why this appears. Listed inverters can be bought with AC outputs of 120V, 208V, 277V, and larger units at 480V (three phase output, primarily with larger inverters). The meaning of this table is unclear to me. We have interconnected many units at 208V that do not have a neutral wire. An inverter of this sort would be connected to two of the three phases of a 120/208V panel. We try to use 3 inverters whenever possible to keep the output balanced but have successfully used only 2 in the past, on at least one occasion. I understand that the new generations of inverters may all have neutral wires, even for 208V, but I would hope this table does not mean that a 120V inverter, or a transformer between the inverter and the panel, would be required in a building that was 120/208VAC. A single 208V inverter should be able to go in a building that is 208V between two of the phases. I know of no reason why it should not be allowed. To change this would restrict the design of the systems where a 208V inverter is optimal, unnecessarily adding expense.

Also, the only nice thing about the old form was that it was uniform from one utility to the next. Please continue this policy with the new, simpler format. We appreciate this.

I applaud the inclusion of section (g) number 4 that precludes the utilities for charging for additional equipment. It is my understanding that this requirement is being removed in the areas of the country where utilities have been allowed to add this equipment. My main concern is that meters have not been EXPLICITLY included in paragraph (g)5. Instead, they are mentioned in line 6, which says meters will be covered in the tariffs. The meters, and the ridiculous notion of having three, or even two, should be expressly eliminated at this time with this current action. Waiting for changes to the tariffs to take place, and to ensure that the elimination of multiple meters will be included explicitly in each tariff at whatever time in the future seems too risky. This is the time to make that hindrance go away.

Thank you again for your attention to these matters.

Sincerely,

John Wakeman

Owner, SUR Energy Systems, LC

From: "EricLipson@yahoo.com" <ericlipson@yahoo.com>
Date: April 15, 2007 9:36:35 PM GMT-04:00
To: baldwinj2@michigan.gov, millsb2@michigan.gov
Subject: Proposed net metering rules

Congratulations and thanks to the PSC for the proposed revisions which are head and shoulders above the current non-functional, counter-productive process of 19 page forms, three meter systems, unwarranted fees and general obstructionism which the big energy companies have been trying to use as dis-incentives to alternative energy. The proposed rules go a long way to making net metering a workable system. Thanks for listening to those of us who spoke and wrote to the PSC on this issue. Excellent ideas: One Meter that goes backwards and forwards. Read once a year. No cost or reasonable costs to apply and hook up. UL certified equipment as a substitute for the current ridiculous and unnecessary individual certification. Simplified applications. And requiring the utility to buy back the excess. All long overdue.

Still needed: property tax abatement for renewable energy systems, rebates per kw hour for wind solar and geo-thermal systems and other incentives for installing renewable energy systems. Together this will help create jobs in this sector as well as making the grid more robust by encouraging distributed energy rather than central generating stations, reduce our dependence on fossil fuels and imported fuels, and reduce greenhouse emissions. Thanks to the PSC for representing the best interests of the whole state and not just rolling over for the big energy producers.

Eric Lipson



Northeast Michigan Council of Governments

121 E. Mitchell St. * P.O. Box 457
Gaylord, MI 49734
Voice: 989.732.3551
Fax: 989.732.5578
Web: www.nemcog.org

June 18, 2007

RECEIVED
MICHIGAN PUBLIC SERVICE COMMISSION

JUN 22 2007

An
Equal
Opportunity
Employer

Ms. Julie Baldwin, Staff Engineer
Michigan Public Service Commission
PO Box 30221
Lansing, MI 48909

OPERATIONS & WHOLESALE
MARKETS DIVISION

Dear Ms. Baldwin:

On behalf of the Northeast Michigan Council of Government's (NEMCOG), Board of Directors I would like to express the Board's support for the Public Service Commission's Staff Draft Proposal for Simplified Net Metering Program for Inverter-Based Systems 10KW or less.

Renewable energy projects are gaining support and momentum in northeast Michigan. As an example, a community project in Hillman, MI involved the redevelopment of a Grist Mill on the Thunder Bay River. In recreating the hydroelectric portion of the project, the community also chose to add solar, and geothermal as alternative energy sources. The Grist Mill will generate under the 10KW threshold, however under the current rules the Mill will lose any excess energy credit at the end of the year and when selling power to the grid, and will not receive retail price.

The Net Metering proposal was brought to the attention of the Board at its meeting on May 17, 2007. The Board, after reviewing the Draft Staff proposal unanimously supported the draft proposal. In particular, the Board is supportive of customers who provide power to the grid to receive retail price, and in addition allowing utilities to either carryover the customer's net excess generation forward to the next year or issue a check to the customer with the net excess generation valued at the utility's average annual avoided cost rate for the year. .

We appreciate the efforts of the staff of the Public Service Commission in addressing the concerns of small renewable energy generators providing power to the grid.

Sincerely,

Diane Rekowski
Executive Director

Regional
Cooperation
Since
1968

Alcona * Alpena * Cheboygan * Crawford * Emmet * Montmorency * Oscoda * Otsego * Presque Isle

WISCONSIN ELECTRIC POWER COMPANY

M.P.S.C. No. 2 – Electric
(Rate Case)

Second Revised Sheet No. 68
Cancels **First Revised** Sheet No. 68

**CLASS OF SERVICE: CUSTOMER GENERATING SYSTEMS –20 KW OR LESS - RATE CGS 2
EFFECTIVE IN ALL AREAS SERVED IN MICHIGAN**

AVAILABILITY

To customers taking service under one of the Company's full requirements rate schedules who own generating systems with an aggregate rating of 20 kW or less who desire to sell electrical energy to Wisconsin Electric Power Company. For the purposes of this schedule, Company is defined as Wisconsin Electric Power Company and customer is defined as the person or corporate entity who desires to sell electrical energy to the Company.

Net metering is an accounting mechanism whereby retail electric utility customers who generate a portion or all of their own retail electricity needs are billed for generation (or energy) by their electric utility for only their net energy consumption during each billing period.

Net energy consumption during a billing period is defined as the amount of energy delivered by the Utility and used by the customer, minus the amount of energy, if any, generated by the retail customer and delivered to the utility at the location of the eligible unit.

HOURS OF SERVICE

Twenty-four.

CHARACTER OF SERVICE

Alternating current, 60 Hertz, single-phase or three-phase at any Company standard voltage available at the customer-owned generating system site.

RATE

Facilities Charge

No additional facilities charge is assessed to customers taking service on this rate schedule. All customers must pay the monthly facilities charge applicable to their class of service even during those months when energy supplied to the Company exceeds the energy consumed.

Energy Rate

- (a) ***If a customer is served by the Company either on a time-of-use rate, a demand rate or three-phase service, a second meter must be installed. The customer will be billed for the net amount of energy consumed during the month at the regular applicable rate schedule as a purchaser of energy from the Company. For Conditions affecting interconnection costs, see Conditions of purchase (8).***

(Continued on Sheet No. 69)

Issued **05/23/07** by
Roman Draba
Vice President
Milwaukee, Wisconsin

Michigan Public Service Commission
June 15, 2007
Filed _____ 

Effective for electric service
rendered on and after **05/23/07**
Issued under authority of the
Michigan Public Service Commission
Dated **05/23/07** in Case No. **U-15071**

WISCONSIN ELECTRIC POWER COMPANY

M.P.S.C. No. 2 – Electric
(Rate Case)

Second Revised Sheet No. 69
Cancels First Revised Sheet No. 69

CLASS OF SERVICE: CUSTOMER GENERATING SYSTEMS –20 KW OR LESS - RATE CGS 2
EFFECTIVE IN ALL AREAS SERVED IN MICHIGAN

RATE (cont.)

Continued from Sheet No. 68

Energy Rate

(b) If a customer is served by the Company *either* on a rate other than a time-of-use rate *or a demand rate, or three phase*, the customer may request that the electric meter be allowed to run backwards when the customer's generation facilities are producing energy. *In this case, the customer would be billed for the net amount of energy consumed during the month at the regular applicable rate schedule as a purchaser of energy from the Company.*

For those customers with a renewable generating source, if the amount of energy supplied to the Company exceeds the amount of energy consumed during a billing period, the customer will receive a credit on his bill equal to the net excess kilowatthours of energy received by the Company multiplied by the Appropriate Energy Purchase Rate (shown below) including the applicable power supply cost recovery factor or other mechanism established by the Commission. The customer will receive a check for the amount of the credit whenever it exceeds \$25. Time-of-use customer's on-peak purchase and sales will be netted separately from off-peak purchases and sales.

APPROPRIATE ENERGY PURCHASE RATE

Customer's Operation Over the Preceding 12 Months

Net Purchaser

Customer's Energy Rate

Net seller (or zero)

CGS 1 rate (a) or (b) or (c)

- (a) *If a customer generation is non-renewable fueled and without Time-of-Use meters, the Customer will be paid a rate equal to 35% of the On-peak plus 65% of the Off-peak CGS 1 rate.*
- (b) *If a customer is on a non-renewable and Time-of-Use rate, then this customer receives the CGS 1 rate.*
- (c) *Customers with a renewable generating source and customers operating generating systems by contractual arrangement with Wisconsin Electric under this tariff prior to January 1, 1989, will be paid the Customer's Energy Rate. A renewable energy source is defined as energy generated by solar, wind, geothermal, biomass, including waste-to-energy and landfill gas, or hydroelectric [as provided in 2000 PA 141, section 10g(1)(f)(MCL460.10g(1)(f)).*

If a customer has both a renewable and a non-renewable generator on site, in order to collect at the renewable energy rate, the customer must have separate meters installed on the renewable generator(s), and non-renewable generator(s).

Customer's Energy Rate is the rate the customer would be charged for energy if the customer were only a purchaser of energy, and were not on the CGS rate.

(Continued on Sheet No. 70)

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Roman Draba
Vice President
Milwaukee, Wisconsin

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WISCONSIN ELECTRIC POWER COMPANY

M.P.S.C. No. 2 – Electric
(Rate Case)

Third Revised Sheet No. 70
Cancels **Second** Revised Sheet No. 70

**CLASS OF SERVICE: CUSTOMER GENERATING SYSTEMS – RATES CGS 1 AND CGS 2
EFFECTIVE IN ALL AREAS SERVED IN MICHIGAN**

Continued from Sheet No. 69

MINIMUM CHARGE

The monthly minimum charge is the applicable facilities charge.

CONDITIONS OF PURCHASE

1. A customer operating electric generating equipment shall not connect it in parallel with the Company's **electrical** system **unless the customer has entered into a standard Distributed Generation Interconnection agreement with the Company and the customer has provided, at customer's expense**, protective and synchronizing equipment satisfactory to the Company.
2. **The Customer must comply with the various applicable national, state and local electrical codes, rules and regulations; the electric service rules and regulations of the Company, as well as the requirements of the Michigan Public Service Commission electric Interconnection Standards R 460.481 through R 460.489. The Company may request proof of such compliance prior to initiation of service. Proof of such compliance consists of a municipal inspection certificate, or in locations where there is not municipal inspection, an affidavit furnished by the contractor or other person doing the work.**
3. The customer shall operate his electric generating equipment in such a manner so as not to unduly affect the Company's voltage waveform. **The Company at its sole discretion, will determine whether the Customer's generating equipment satisfies this criteria.**
4. The customer shall permit the **Company**, at any time as it deems necessary, to install or modify any equipment, facility or apparatus to protect the safety of its employees or the accuracy of its metering equipment as a result of the operation of the customer's equipment. The **Customer** shall reimburse the **Company** for the cost of such installation or modification upon receipt of a statement from the Company.
5. The customer shall permit **Company** employees to enter upon his property at any reasonable time for the purpose of inspecting and/or testing his equipment, facilities or apparatus to ensure their continued safe operation and the accuracy of the Company's metering equipment but such inspections shall not relieve the customer from his obligation to maintain the facilities in satisfactory operating condition.

Continued on Sheet No. 71

Issued **05/23/07** by
Roman Draba
Vice President
Milwaukee, Wisconsin



Effective for electric service
rendered on and after **05/23/07**
Issued under authority of the
Michigan Public Service Commission
Dated **05/23/07** in Case No. **U-15071**

WISCONSIN ELECTRIC POWER COMPANY

M.P.S.C. No. 2 – Electric
(Rate Case)

First Revised Sheet No. 71
Cancels **Original** Sheet No. 71

**CLASS OF SERVICE: CUSTOMER GENERATING SYSTEMS – RATES CGS 1 AND CGS 2
EFFECTIVE IN ALL AREAS SERVED IN MICHIGAN**

Continued from Sheet No. 70

CONDITIONS OF PURCHASE

6. Each of the parties shall indemnify and hold harmless the other party against any and all liability for injuries or damages to person or property caused, without the negligence of such other party, by the operation and maintenance by such parties of their respective electric equipment, lines and other facilities.
7. The customer may simultaneously purchase energy from and sell energy to the Company.
8. The customer is obligated to pay **all costs to interconnect its generation facility to the Company's electrical system. Interconnection costs include, but are not limited to, those specified in the Michigan Public Service Commission Electric Interconnection Standards, as well as transformer costs, line extension and upgrade costs, metering costs and the cost of a second meter if an additional meter is required.**
9. A customer whose aggregate electrical generating capacity is rated above 20 kW has the option of negotiating a facility-specific buy-back rate designed to meet the customer's needs and operating characteristics. The Company will respond to the customer's proposal for a negotiated rate within 30 days of receipt of such a proposal. If the Company is unable to respond to the customer's proposal within 30 days, the Company shall inform the customer of (a) specific information needed to evaluate the customer's proposal, (b) the precise difficulty encountered in evaluating the customer's proposal, and (c) the estimated date that the Company will respond. If the Company rejects the customer's proposal it will make a counter offer relating to the specific subject matter of the customer's proposal.
10. **In order for a customer to sell energy to the Company, a Surplus Energy Agreement between the customer and the Company is required.**
11. The customer has the right to appeal to the Public Service Commission if he believes the contract for customer generating systems is unreasonable.

Continued on Sheet No. 72

Issued **05/23/07** by
Roman Draba
Vice President
Milwaukee, Wisconsin

Michigan Public Service Commission
June 15, 2007
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Dated **05/23/07** in Case No. **U-15071**

WISCONSIN ELECTRIC POWER COMPANY

M.P.S.C. No. 2 – Electric
(Rate Case)

First revised Sheet No. 72
Cancels Original Sheet No. 72

CLASS OF SERVICE: CUSTOMER GENERATING SYSTEMS – RATES CGS 1 AND CGS 2
EFFECTIVE IN ALL AREAS SERVED IN MICHIGAN

Continued from Sheet No. 71

CONDITIONS OF PURCHASE (cont.)

12. Customers who wish to operate electric generation equipment in parallel with the Company's **electrical** system, **and are** using the bulk of **the** energy produced for their own purposes, but who do not wish to be placed on this or any other purchase tariff, nonetheless shall abide by these Conditions of Purchase with the exception of Conditions of Purchase (7) and (9), **In the case where the Company takes action** to prevent the existing **Company** metering facilities from recording any flow of energy from the customer's generation facilities into the **Company's electrical** system, the customer will receive no payment for any energy fed back into the **Company's** system.
13. The customer may contract for supplementary, standby, and maintenance electrical service from the **Company** under the rate schedule corresponding to the customer's class of service. General primary and general secondary customers who contract for supplementary, standby, and maintenance electrical service will be served under the auxiliary service provisions of their respective Conditions of Delivery.
14. For billing periods during which no energy was sold to the Company by a customer on Rate Schedule **CGS** 1 and the customer's bill would reflect only the facilities charge, the billing of such charge may be deferred until the next billing period during which energy is sold. If six consecutive billing periods pass during which no energy is sold to the Company by the customer on Rate Schedule **CGS** 1, or if such customer terminates service under this rate schedule, the Company may bill the customer for the deferred facilities charges.

Issued **05/23/07** by
Roman Draba
Vice President
Milwaukee, Wisconsin

Michigan Public Service Commission
June 15, 2007
Filed _____ 

Effective for electric service
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Michigan Public Service Commission
Dated **05/23/07** in Case No. **U-15071**

PARALLEL GENERATION - NET ENERGY BILLING SERVICE

Effective In All territories served by the Company.Availability Available to any retail electric customer with generation of 20 kW or less for purpose of operating generation interconnected with Company's system, where customer's delivery offsets retail electric consumption at the same site. If a customer has more than one electric generator, the generators' ratings shall be summed and the sum may not exceed 20 kW.Net Energy Billing The retail electric customer may offset electricity usage at the same site each month on a net energy basis. Customer will receive credit for energy delivered each month in excess of the amount used that month. The credit will be given at the prevailing retail rate and applied to the customer's account for retail service at the same site. For non-time-of-day customers, the existing meter used for retail electric service will normally serve to determine net energy usage and no additional charges are required. For time-of-day customers, a separate meter is required for net energy billing and customer must compensate Company for a second meter over a two-year period.RateCustomers with Non-Time-of-Day service

Customer charge per month	No monthly charge
Energy credit per kWh	At existing retail rate

Customers with Time-of-Day service

Customer charge per month	\$1.00/mo. and \$585 plus financing charges over two years
Energy credit per kWh	At existing retail rate

Terms and Conditions of Service See Sheet Number 172.

ISSUED January 1, 1987

BY: E. M. THEISEN
PRESIDENT
EAU CLAIRE, WISCONSINEFFECTIVE FOR SERVICE RENDERED ON
AND AFTER January 1, 1987ISSUED UNDER AUTHORITY OF THE MICHIGAN
PUBLIC SER. COMM. DATED November 4, 1986

IN CASE NO. U-8493

**Michigan Public Service Commission
September 12, 2007**

U-15113 Net Metering Task Force

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**MPSC Staff Net Metering Program Design Proposal
for Inverter Based Systems 10 kW and Less
August 2007**

- **Use a single bi-directional meter to measure and record the following quantities: (1) electricity delivered from the utility (kWh); and (2) electricity delivered to the grid by the customer (kWh).**
- **Bill the customer based on their rate schedule for electricity delivered from the utility.** This part of the bill will not be based on “net” energy usage. Instead, the customer will be billed in the identical manner as a non-net-metering customer, for all electricity delivered by the utility.
- **Provide a net metering credit** on the bill, equal to the utility’s retail generation rate (Retail Rate less distribution charge) for electricity, including all power supply charges and surcharges. Staff expects this will be a credit expressed as a dollar amount for the month. The bill should show kWh delivered, monthly power supply charge credit per kWh, and total \$ amount.
- **Apply the net metering credit toward the customer’s bill total.** Net metering credit can be applied to bring the bill down as low as the minimum bill. Any excess credit will be carried over month to month.

At the end of each year, the utility would either: (1) give the customer a check for the amount of any unused net metering credits; or (2) continue to allow net metering credits to accumulate. MPSC Staff proposes checks might not be written for any amount less than \$50, for example.

The utility may treat net metering credits as a recoverable power supply cost.

- The utility may choose to calculate the distribution and surcharges the customer would have paid, based on their previous year’s usage, absent net metering, but this is done as part of utility accounting for the purpose of making a request to the Commission for future cost recovery and not shown on the customer’s bill.

Customer bills will have a normal billing section for the electricity delivered by the utility and then the following extra lines:

- Carryover net metering credit from past months (in \$).
- Current month net metering credit based on current month electricity deliveries to the utility (in \$). This is the kWh of electricity generated by the customer and delivered to the utility, multiplied by the total power supply charges. (Staff prefers this line item will also indicate the number of kWh and amount of credit per kWh. The per kWh credit is expected to vary each month, along with changes in the utility’s PSCR factor.
- Total net metering credit applied to this month’s bill.
- Net metering credit carried over to the next month.
- Minimum bill/monthly customer charge
- Total bill due

Baldwin, Julie K (DLEG)

From: Ari Ierman-sinkoff [arilerman@gmail.com]
Sent: Tuesday, September 11, 2007 2:24 PM
To: Baldwin, Julie K (DLEG)
Subject: net metering

hi,

i feel that the current "net metering" proposal should be scrapped and re-written. in order to encourage people to switch to green energy sources there should be a fair trade of energy between the power company and individuals operating green energy production.

Mel L. Barclay

To: Michigan State Power Commission, the MPSC staff, and all the members of the work-group

I would like to thank the staff at the Michigan Public Service Commission for making an earnest and honest effort to improve what has been proposed as "net metering" in the State of Michigan.

Having reviewed the proposal in some detail I am both happy and sad. The concept of net metering that exists in many states is much simpler than what is proposed here. It simply requires a single meter that sometimes runs backwards and sometimes runs forward.

What the utility proposes bars entry in the way any monopoly reacts when it is threatened with even potential loss of short term profit. The added production of clean, renewable electricity at no cost to the utility, especially at times of peak need, supplies the same goods the power company makes. In order to maintain monopoly status, the power company must be sure that there are no other reasonable suppliers.

What must happen in order for the Commission to gain real consensus in the interest of both the utilities and new small providers of electricity? The utilities will need to recognize the opportunities presented by the new development and reject the concept that renewable energy is a threat to their existence. Why can't they sell the equipment and install it as well? It would clearly be an inexpensive way for the company to acquire new renewable generation capacity. They already have the personnel, tools, and know-how to provide such services.

Only by thinking in larger terms can power companies help lead the way to Michigan's industrial renewal. Cheap, clean power, supervised and managed by the utility company may provide reasons for industries with large electrical power needs to come to Michigan.

These times are difficult. Difficulties, however, often provide rare opportunities for innovation and invention. Electrical innovations which provide solutions to major problems should not be stifled or excessively hindered.

The Carterphone decision rendered by the FCC in June of 1968 provides an excellent historical example of events that are similar to ours in 2007 and provides parallels relating to access, ownership and the public good.

A Texan, Tom Carter had invented a device that connected mobile radio telephones to the telephone system's grid. The phone company first told him that he could not connect but then told him that he would have to pay for costly equipment and use special more expensive phone lines.

The FCC ruled in Carter's favor for many reasons, highlighting the importance of access to an important network on which many depend. Some have suggested that the Carterphone Decision paved the way for the Internet revolution and means of communication and information exchange which could not have been anticipated in 1968.

How can it possibly be wrong today to foster the development of a system which minimizes the need for fossil fuel, makes the electrical grid more robust, and taps the sun for energy more directly and cleanly than coal?

It's fairly clear to me that the Commission's own publicly-stated goals apply in this matter, and the Commission is bound to act in the public interest. The published goals of the Michigan State Power Commission are noted below:

Establish fair and reasonable rates for regulated services and adopt and administer fair terms and conditions of service for the State's utility customers.

Assure adequate and reliable supplies of regulated services to all Michigan customers, and the safe and efficient production, distribution, and use of the State's energy, telecommunications, and transportation services.

Assure the security of the State's critical infrastructure by promoting homeland security.

Promote the State's economic growth and enhance the quality of life of its communities through adoption of new technologies like broadband telecommunications and efficient renewable energy resources.

Provide customers with the opportunity to choose alternative electric, natural gas, telecommunications, and transportation providers.

Provide regulatory oversight in a prudent and efficient manner while implementing legislative and constitutional requirements. "

As a citizen, I ask that you allow innovation, follow the definition of net metering existing in other states and do what's appropriate for all of Michigan and its citizens as well as for the country and the planet.

Sincerely,

Mel L Barclay

September 10, 2007

From: Joshua S. Barclay

Owner of 3.2 kW tracking PV array in Whitmore Lake, Michigan

Dear Ms. Baldwin and the 10kw and under Workgroup:

This workgroup was established by the MPSC to develop "a simplified approach for net metering for inverter based systems smaller than 10 kW." Sadly, it seems that this focus has been entirely lost in the process. Though the staff's first draft proposal adroitly addressed the Commission's directive, this proposed compromise with the utilities neither simplifies the approach, nor creates net metering.

From the US Department Of Energy website (emphasis mine)

Net metering programs serve as an important *incentive* for consumer investment in renewable energy generation. Net metering enables customers to use their own generation to offset their consumption over a billing period *by allowing their electric meters to turn backwards* when they generate electricity in excess of their demand. This offset means that customers receive retail prices for the excess electricity they generate. *Without net metering, a second meter is usually installed to measure the electricity that flows back to the provider, with the provider purchasing the power at a rate much lower than the retail rate.*¹

It's disingenuous to continue to call what is being proposed "net metering." According to the DOE quote above, the current proposal is the exact opposite of net metering.

As the DOE states, the purpose of offering net metering is as an *incentive*. Net metering policy should *encourage* homeowners, business owners, farmers and just about everyone else to invest their *own money* in renewable technologies and connect them to the grid. We want small renewable generators to grid-intertie because they will bolster the grid, provide production during peak demand times, reduce line loss, foil terrorists by distributing production, and inject money into the local economy instead of sending it out of state where 90% of our energy dollars currently go.

A true net metering policy will save Michigan money in the long run. It is extremely likely that the costs of CO2 emitting technologies are going to increase, by treaty, legislation or market forces. Why would we want to tie Michigan down to an increasingly expensive fuel stock? True net metering would inexpensively encourage faster growth of the renewable

¹<http://www.eere.energy.gov/greenpower/markets/netmetering.shtml>

energy industry in our state, and will save Michigan money when CO2 emissions become heavily tarified in the future.

I believe the current proposal incorrectly refers in the first line to "a single bi-directional meter" which measures two quantities. A meter, by definition, measures a quantity, so if a device measures two quantities like inflow and outflow, it is actually a two-meter system, even if housed in one outer casing with one readout display.

Until DTE forced my family to install such a two-meter system this August, we had an actual single bi-directional electromechanical kWh meter, that ran forward when we drew energy off the grid, and backwards when we sent energy on to the grid. It worked great, and only had one number to be read. This simple, low-cost, pre-existing meter is all that is needed for true net metering. No new meters need to be purchased nor installed, and the paperwork could be literally reduced to one yearly bill.

If simplicity is the goal, true net metering will achieve it. The following would be our family's yearly bill with true net metering, based on our solar array's net excess generation of 510 kWh for the year, assuming a \$7/month utility connection fee and retail buyback of our yearly net excess generation (NEG).

2006-2007 Detail Charges

**For Service at 4445 Valentine Rd, Whitmore Lake, MI
Net Metering Residential Electric Service**

Current Charges and Credits

Net Metering Credits	510 kWh @ .08815	(\$44.96)
Grid access fee	12 mos. @ \$7/month	\$84.00

Total Current Charges **\$39.04**

Service Period	Sep 1, 2006 – Aug 31, 2007
Meter Reading	48749 Actual – 48239 Actual
KWH Sent to Grid	510 kWh
(yearly net excess generation)	

Your next scheduled meter read date is on or around AUG 31, 2008.

The above bill could be all the paperwork for an entire year. Note, that even with our exceptional efficiency (we consume half that of a typical home²), and our \$40,000 PV tracking array, *the largest tracking array in all of Michigan*, under a true net metering

² http://www.eere.energy.gov/states/us_energy_statistics.cfm#consumption

program, we would still owe a small amount to the utility. I believe most customer-generators are willing to pay a reasonable price for grid interconnection.

By contrast, given the monthly generation data of our PV array, in combination with our monthly single-meter readings, we can calculate what my family's electric bill would be under the current proposal. Here is the monthly data for our PV array's first year of electricity production, and our home's electricity use:

Barclay PV 2006-2007 Generation, Home Energy Demand, and Grid-Flow³

Month	Energy Generated by PV Array (kWh)	Energy Used by Home (kWh)	Net Energy sent to grid (kWh)	Net Energy drawn from grid (kWh)
September-06	292	153	139	
October-06	362	354	8	
November-06	236	503		267
December-06	212	605		393
January-07	191	625		434
February-07	391	748		357
March-07	528	314	214	
April-07	517	430	87	
May-07	698	215	483	
June-07	753	229	524	
July-07	691	382	309	
August-07	561	364	197	
Totals	5433	4923	510 kWh yearly net excess generation	

For the year we generated a total of 5433 kWh but our home used only 4923 kWh, so we thus sent a net 510 kWh to the grid. We have *the largest tracking array in Michigan*, and exceptionally low electricity use, so I predict most systems won't have any NEG. It is worth noting here that our greatest outflow to the grid occurred during the hot summer

³ The PV generation data is for the exact month indicated, but the "Energy used by Home" and the "Net energy sent/drawn from grid" data may be slightly offset in time from the generation data, since we used the closest DTE meter readings to that month. For example, the "July" home use and sent/drawn values were based on DTE meter readings from July 8, 2007 to August 8, 2007. Our complete 10 MB data set including total energy produced, array AC power, grid voltage, AC current out of the inverter, DC array voltage, module temperature, ambient temperature and irradiance for every 5 minute interval from September 2006 to September 2007, is available upon request. Email JoshuaBarclay(at)earthlink.net to request the data set, or a subset.

months when the demand on the grid is highest, and utilities must purchase expensive electricity from out of state.

With our estimate that three quarters of our electric energy use occurs after dark, and the current proposal provisions assuming a \$7/month grid connection fee, ***our annual electric bill under this proposal would be close to \$300.*** Before we even bought our \$40,000 array, our annual electric bill was only about \$360. I welcome anyone to try to show my estimated bill under this proposal to be incorrect.

With "encouragement" like this to grid-intertie, most people will buy a battery-based system instead.

While New Jersey and Wisconsin rapidly distribute and diversify their grid infrastructure with true net metering as well as other clean energy incentives, we in Michigan lag far behind and could soon be faced with even fewer choices: a major utility is threatening to hold generation capacity hostage unless Michigan gives up its electricity provider choice laws and commits to dirty coal. Especially under these circumstances, it's simply insane to discourage people from investing their own private money to contribute energy to the grid and provide for Michigan's increasing energy needs with renewable technologies.

In closing, I am most saddened by the disappointing lack of vision in this proposal. In fifty years, will our grandchildren be telling stories of how way back in 2007 we reduced the cost of electricity by a tenth of a cent per kilowatt-hour? or will they instead tell the inspiring tale of how the grid-tied solar arrays and windmills of their grandfathers and grandmothers (which will likely still be making clean energy then) spurred Michigan's economic rebirth; how investing our energy dollars in ourselves and our own ingenuity saved us billions in the long term, gave us energy independence, gave us an inexhaustible source of energy, saved our environment and health, and made Michigan the renewable energy manufacturing capital of the Midwest.

If we have the vision, we will make it happen.

Respectfully submitted,

Joshua Barclay
4445 Valentine Rd
Whitmore Lake, MI 48189

Baldwin, Julie K (DLEG)

From: Tony D'Alecy [tony@goforsolar.com]
Sent: Monday, September 10, 2007 9:21 AM
To: Baldwin, Julie K (DLEG)
Subject: Public Comment on Net Metering <10k

Dear Julie Baldwin,

The biggest barrier to customer investment in renewable energy right now is cost and access to the grid. Given the current economic state of the STATE of Michigan, state "incentives" are unlikely. That being said, we must have TRUE NET METERING. Not some half baked version that gives the customer a fraction of the price they paid for the same kilowatt purchased from the grid.

The utilities have a monopoly right now, and we the people of the State of Michigan after investing \$15 to \$20,000 in a PV system should be paid for our tiny little overproduction when applicable. This is generally during the middle of the day when they are at work, (if they still have a job). And the energy they are providing the grid is only helping the pathetic utilities get through the most difficult part of the load day.

I implore your and Tom Stanton to fight for a SINGLE bi-directional meter that will make it simple to be grid tied, and provide the maximum benefit for all parties, even the narrow minded, short-term thinking Utilities. (DTE & Consumers).

Take a look at the states leading the way right now in renewable energy right now, NJ, WI, TX, PA.. Michigan should be in this group.

Thank you for all you are doing,

Best Regards,

Tony D'Alecy
Renewable Energy Solutions, LLC
www.GoforSolar.com

"Energy Choices for Michigan"

Baldwin, Julie K (DLEG)

From: Sarver, John H (DLEG)
Sent: Tuesday, August 14, 2007 9:20 AM
To: Baldwin, Julie K (DLEG); 'Thomas J Lavere'; 'freidlinek@dteenergy.com'; 'David G Nick'; 'alvarado@GLREA.ORG'
Cc: Proudfoot, Paul A (DLEG); Poli, Patricia M (DLEG); Stanton, Thomas S (DLEG)
Subject: RE: New Simplified Net Metering Draft Proposal - Early Comments Requested

Hi Julie.....I like what I see, but some issues are not addressed – Who pays for the meter? Is testing and inspection necessary and who pays? Is the interconnection fee still \$100? Are UL listed systems automatically accepted? Will there be a simpler application?John

-----Original Message-----

From: Baldwin, Julie K (DLEG)
Sent: Friday, August 10, 2007 4:05 PM
To: 'Thomas J Lavere'; 'freidlinek@dteenergy.com'; 'David G Nick'; Sarver, John H (DLEG); 'alvarado@GLREA.ORG'
Cc: Proudfoot, Paul A (DLEG); Poli, Patricia M (DLEG); Stanton, Thomas S (DLEG)
Subject: New Simplified Net Metering Draft Proposal - Early Comments Requested

We have updated our net metering proposal for the 10 kW and under inverter based group of generators. Before sending this out to the entire workgroup, we are asking for your comments on the proposal. Please keep in mind that this will only apply to the really small inverter-based projects. (Most of Consumers Energy's net metering customers are around 2 kW.)

The Commission has directed us to simplify the approach to net metering for this type of customer. We feel this proposal is much simpler than the customer site usage method currently used by Consumers Energy and DTE Energy.

We appreciate all of the work Consumers Energy and DTE Energy have put into net metering issues during the U-15113 process.

We have chosen a small group of net metering workgroup members to evaluate our proposal and provide comments. Would you please email comments by Wednesday, August 22? (Please "Reply to All" on this email so Paul, Tom, Pat and I all get copies of your comments. Thank you!

Julie Baldwin, Staff Engineer
Electric Operations Section
Operations & Wholesale Markets Division
Michigan Public Service Commission
(517) 241-6115

<< File: Staff Net Metering August 2007 proposal Final Version.doc >>

Baldwin, Julie K (DLEG)

From: EricLipson@yahoo.com
Sent: Sunday, September 09, 2007 9:44 PM
To: Baldwin, Julie K (DLEG)
Subject: Net Metering

Dear MPSC,

I was extremely disappointed in the latest proposed MPSC rules for "net" metering. My understanding of how net metering was meant to work and how it works in other states is that small generators are given retail credit for what they generate. The proposed "two meter" system, charging small generators retail and buying power back from them only at wholesale is not net metering. It also reduces the incentive to grid-tie those installations. This proposal is counter-productive to the production of alternative energy. This proposal is counter-productive to creating a more robust, distributed grid. No wonder Michigan is falling so far behind in the production of alternative energy. The repeated pattern of the MPSC to cater to the big energy companies is going to destroy alternative energy production in Michigan. Is this your real goal? All generators should be on a level playing field. The answer is so simple: let one meter run forward or backward. Read it once a year. The current proposal is just another boost to big monopoly electrical generators and another kick in the face to the small, alternative generators whom we are supposedly trying to encourage.

Eric Lipson
1318 Rosewood Street
Ann Arbor, MI 48104
(734) 761-2305

Baldwin, Julie K (DLEG)

From: gaia kile [gaia.kile@gmail.com]
Sent: Tuesday, September 11, 2007 10:04 AM
To: Baldwin, Julie K (DLEG)
Subject: Public Comments: Michigan Public Service Commission ruling regarding grid tie-in net metering.

Comments to the Michigan Public Service Commission regarding the final Michigan Public Service Commission ruling regarding grid tie-in net metering.

Dear Ms. Baldwin,

I have been following with some interest the Michigan Public Service Commission's efforts to develop a net metering policy. I have a set of photovoltaic panels that are sitting in my garage while I wait for the outcome of this important development. My panels are not on my roof because the battery system I originally had malfunctioned. As you probably know self contained solar systems are hard to manage. I am deciding between revamping the battery system or purchasing a grid tie-in inverter. While I would prefer the later, a key question is what will the utilities buy my electricity for. If they are only willing to pay half of what they charge, I will be inclined to work with batteries. Micro systems like mine produce electricity during periods of peak demand, this makes it more valuable. Grid tie in systems are the way of the future. You have the power to help them come to Michigan. Please support a fair price for electricity, equal in and out.

Thank you for the consideration of my comments

Sincerely,

Gaia Kile

Baldwin, Julie K (DLEG)

From: Jennifer Alvarado [jenalv13@yahoo.com]
Sent: Thursday, August 23, 2007 4:16 PM
To: Baldwin, Julie K (DLEG)
Subject: Re: FW: New Simplified Net Metering Draft Proposal - Early Comments Requested

Julie-

I have reviewed the net metering document that you sent out. GLREA is very supportive of the net metering program as proposed in the bulleted items. This document does not cover the interconnection costs for customers, though. GLREA is very interested in reviewing any progress being made on decreasing the interconnection costs for net metering customers. Thank you for all your efforts.

Jennifer Alvarado
Great Lakes Renewable Energy Association
Executive Director
517-646-6269
517-646-8584 fax
257 S. Bridge St
PO Box 346
Dimondale MI 48821
www.glrea.org

Building a website is a piece of cake.
Yahoo! Small Business gives you [all the tools to get online.](#)

Baldwin, Julie K (DLEG)

From: garth [winerytech@chartermi.net]
Sent: Thursday, September 06, 2007 10:43 AM
To: Baldwin, Julie K (DLEG)
Subject: Re: MPSC Net Metering Proposal August 2007

Hi Julie,,,,Even though I believe a "Green kWh" is worth more than a "Black kWh",, I think that this proposal will work. It will also allow more small home based units to be employed. As this technology advances, the prices will come down, and the power companies will be less resistant to all inclusive home based plug-n-play units.

Garth, Michigan Wind Power

----- Original Message -----

From: [Baldwin, Julie K \(DLEG\)](#)
To: MPSC-10KWANDUNDER@LISTSERV.MICHIGAN.GOV
Sent: Tuesday, August 28, 2007 4:09 PM
Subject: MPSC Net Metering Proposal August 2007

Staff has developed a new net metering program design proposal for inverter based projects sized 10 kW and less. The proposal is attached to this email message and posted on the 10 kW and Under workgroup webpage (after the 6 pm website cache update):

http://www.michigan.gov/mpsc/0,1607,7-159-16377_47107_47112---,00.html

If you would like to provide comments, please send them to me no later than Monday, September 10. Thank you.

Julie Baldwin, Staff Engineer
Electric Operations Section
Operations & Wholesale Markets Division
Michigan Public Service Commission
(517) 241-6115
<<Staff Net Metering August 2007 proposal.pdf>>

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To leave the Listserv, send an e-mail to: listserv@listserv.michigan.gov with no subject, and the following text in the body of the message (exclude all other text such as signatures, etc.): signoff
MPSC-10KWANDUNDER

Baldwin, Julie K (DLEG)

From: Michael Flynn [electricmic@gmail.com]
Sent: Sunday, September 09, 2007 3:32 PM
To: Baldwin, Julie K (DLEG)
Cc: Flynn, me
Subject: REAL Net Metering

Dear Julie,

I sent this to Governor Granholm and both of my state representatives. This is a pivotal moment for renewable energy which has been stumbling along without realizing its potential since the 1970's. Please see how the federal government defines the benefits of REAL net metering at their site: <http://www.eere.energy.gov/greenpower/markets/netmetering.shtml>
Please do the right thing this month.

Thank you,
Michael Flynn

My letter to my representatives:

Please help steer the "MPSC Net metering design proposal for inverter based systems 10 kw and less August 2007" to encourage small scale, distributed, renewable electricity generation. The MPSC is catering to the utilities and not looking out for the public good. The plan is called "Net Metering" but is not "Net Metering" at all. The Michigan Public Service Commission proposes that utilities charge full price for electricity that flows into my house from the grid and credit me a fraction of that value for the clean energy I generate using solar panels. That will make the installation solar panels a foolish investment because it would never pay for itself in energy savings! The grid is a public resource it should be used for the public good. Real Net Metering could be written out of Michigan Law this month and needs support urgently! The MPSC's short sighted plan will stifle the development of distributed renewable energy production that would reduce carbon emissions and make our grid more robust and more efficient. Their plan would also inhibit our new energy economy that would renew Michigan's manufacturing industries through production and sales of solar panels and wind machines. The contact person at the MPSC is Julie Baldwin: baldwinj2@michigan.gov Thanks, Michael Flynn

Baldwin, Julie K (DLEG)

From: Michael Flynn [electricmic@gmail.com]
Sent: Monday, September 10, 2007 10:00 AM
To: Baldwin, Julie K (DLEG)
Subject: Question about 10kw & under proposal

See the bottom of your 4th bullet point and the entire 5th bullet point. I think this says that the utility can recover their net metering payments and their lost profit by adding a charge to every utility customer so in effect they are getting this green energy for free and then demanding a subsidy to maintain their profit on its "sale"! Who wrote this law? Someone finally found a way to make solar cheaper than coal!

The MPSC mustn't guarantee that net metering will not decrease DTE profit. The utility's business model should begin to move toward being the grid maintainer instead of the energy provider.

I worry that the MPSC is not aggressively defending the people's right to freely use the grid while DTE is aggressively exploiting every aspect of this legislation.

Michael Flynn

Baldwin, Julie K (DLEG)

From: Michael Flynn [electricmic@gmail.com]
Sent: Monday, September 10, 2007 10:16 AM
To: Baldwin, Julie K (DLEG)
Subject: Proposal10 kw and less

Julie,

In the first bullet point the use of the phrase "single bidirectional meter" is inaccurately applied to the equipment being described. Net metering is based on a single, simple, standard meter that spins forward and back at the same rate. The meter that DTE has developed is actually two meters in a conjoined case. It is designed to foil true net metering by allowing the meter to buy and sell at different rates! Please don't let DTE cloak their short sighted profiteering in the lexicon of real net metering. I'm worried that my part-time efforts to steer your committee are no match for DTE's full-time bankers' law team. I hope you will relay my concern to the committee and encourage them to get their guard up and stand up for the people.

Michael Flynn

Baldwin, Julie K (DLEG)

From: Mark [markeritz@sbcglobal.net]
Sent: Monday, September 10, 2007 3:00 PM
To: Baldwin, Julie K (DLEG)
Subject: RE: MPSC Net Metering Proposal August 2007

Julie –

I am a homeowner with a grid interactive photovoltaic electric system, and therefore a prime candidate for net metering. Net metering should be established with rates that provide as much economic incentive as possible for customers to make personal investments in renewable energy. Regarding this draft proposal, I support the customer receiving a credit at the end of each year for the net excess generation. I believe the “minimum bill amount” for each utility should be as low as possible and I would like to know more about how the Commission intends to establish such an amount.

I note that Detroit Edison has a GreenCurrents program whereby customers may elect to pay a premium to receive electricity generated from renewable sources. I believe this recognition that renewable energy is more valuable should be incorporated into net metering. For example, if both inflow and outflow data is recorded and a customer’s net excess generation is from a renewable energy source, the customer should be credited with the same amount that the utility is charging its customers for renewable energy (i.e. \$0.02 per kilowatt-hour in the case of Detroit Edison’s GreenCurrents) in addition to the normal retail energy price.

Mark Ritz

From: Baldwin, Julie K (DLEG) [mailto:baldwinj2@MICHIGAN.GOV]
Sent: Tuesday, August 28, 2007 4:10 PM
To: MPSC-10KWANDUNDER@LISTSERV.MICHIGAN.GOV
Subject: MPSC Net Metering Proposal August 2007

Staff has developed a new net metering program design proposal for inverter based projects sized 10 kW and less. The proposal is attached to this email message and posted on the 10 kW and Under workgroup webpage (after the 6 pm website cache update):

http://www.michigan.gov/mpsc/0,1607,7-159-16377_47107_47112---,00.html

If you would like to provide comments, please send them to me no later than Monday, September 10. Thank you.

Julie Baldwin, Staff Engineer
Electric Operations Section
Operations & Wholesale Markets Division
Michigan Public Service Commission
(517) 241-6115
<<Staff Net Metering August 2007 proposal.pdf>>

You are subscribed to the MPSC-10KWANDUNDER email subscription list.

Baldwin, Julie K (DLEG)

From: 2bekind2@earthlink.net
Sent: Saturday, September 08, 2007 7:21 PM
To: Baldwin, Julie K (DLEG)
Subject: Get Real Net Metering

Dear Ms. Baldwin:

Please accept my apologies, but I was mistaken on the exact purpose of this email. I have now corrected my posting and would deeply appreciate it if you would update my first posting, dated 8/5/07, by replacing it with this one. Thank you so much!

Please, help make it even possible to avoid future catastrophe by standing up against this obscene abuse of power from Michigan's major utility companies. Say 'No' to this oxymoron of a proposal entitled "Net Metering." We need Real Net Metering (which allows a single meter to run forwards and backwards) in order to even begin to move away from the forms of energy that are destroying our entire planet more every single day. The proposals backed by Michigan's major utility companies show no concern at all for environmental issues, but appear to place all of their efforts towards continuing to earn their already large profits.

How can this kind of thinking leave anything at all intact for our children's children and so on. Please, it is up to the Michigan Public Service Commission and this working group to curb this self-destructive, greed-motivated behavior. This is one of the very few governmental entities that can help to change the future from a bleak, hot-house world outlook to one of a clean energy, planet-saving revolution. The old ways will crumble...the only question is, where will Michigan be positioned in the new energy economy?

Sincerely,

L. Paxton
Ann Arbor, Michigan

Baldwin, Julie K (DLEG)

From: Brian Mroczkowski [b12hh@yahoo.com]
Sent: Monday, September 10, 2007 11:12 AM
To: Baldwin, Julie K (DLEG)
Subject: real net metering now, please

real net metering now, please
sincerely
brian mroczkowski

Sick sense of humor? Visit Yahoo! TV's [Comedy with an Edge](#) to see what's on, when.

**MPSC Staff Net Metering Program Design Proposal
for Inverter Based Systems 10 kW and Less
August 2007**

- **Use a single bi-directional meter to measure and record the following quantities: (1) electricity delivered from the utility (kWh); and (2) electricity delivered to the grid by the customer (kWh).** *This should be the only information needed by the utility for customer billing.*
- **Bill the customer based on their rate schedule for electricity delivered from the utility.** This part of the bill will not be based on "net" energy usage. Instead, the customer will be billed in the identical manner as a non-net-metering customer, for all electricity delivered by the utility. *Acceptable.*
- **Provide a net metering credit** on the bill, equal to the utility's retail generation rate (Retail Rate less distribution charge) for electricity, including all power supply charges and surcharges. Staff expects this will be a credit expressed as a dollar amount for the month. The bill should show kWh delivered, monthly power supply charge credit per kWh, and total \$ amount. *This does not take into account the fact that the PV generation delivered to the utility would likely be used in the immediate area by a nearby customer whose meter would register the usage. That customer would pay the retail rate for receiving the energy. This is energy the utility did not actually generate and which they did not deliver through the bulk of the utility system with its inherent losses. Further, PV generation is at its highest during the mid part of the day when utilities pay high costs for purchased generation and when energy transmission charges are the highest.*
- **Apply the net metering credit toward the customer's bill total.** Net metering credit can be applied to bring the bill down as low as the minimum bill. Any excess credit will be carried over month to month. *A reasonable approach.*

At the end of each year, the utility would either: (1) give the customer a check for the amount of any unused net metering credits; or (2) continue to allow net metering credits to accumulate. MPSC Staff proposes checks might not be written for any amount less than \$50, for example. *Since the main goal is to have the customer generator not generally produce more energy than is actually needed by the customer load OVER THE YEARLY PERIOD, a reasonable approach to controlling that is to limit the amount of net metering credits returned to the customer at the end of the year. Item (1) above could have a cap on it, say \$50 or \$100. That would discourage customers from installing huge PV systems that would become net producers that could overload utility power circuits and be difficult for the utility to control (a TECHNICAL problem, not an administrative one).*

The utility may treat net metering credits as a recoverable power supply cost.

- The utility may choose to calculate the distribution and surcharges the customer would have paid, based on their previous year's usage, absent net metering, but this is done as part of utility accounting for the purpose of making a request to the Commission for future cost recovery and not shown on the customer's bill. *The only way to get meaningful numbers for this is to use the "3 meter" approach now used by the utilities. But installing 3 meters for a simple PV system is a financial burden for customers and the data collection and processing of the extra data places additional costs on the utility (which are passed on to the customer) for determining the "actual" customer load. Besides, what is actually produced by the customer and utilized within his own facility should be of no interest to the utility.*

Customer bills will have a normal billing section for the electricity delivered by the utility and then the following extra lines:

- Carryover net metering credit from past months (in \$). **OK.**
- Current month net metering credit based on current month electricity deliveries to the utility (in \$). This is the kWh of electricity generated by the customer and delivered to the utility, multiplied by the total power supply charges. (Staff prefers this line item will also indicate the number of kWh and amount of credit per kWh. The per kWh credit is expected to vary each month, along with changes in the utility's PSCR factor. **OK, but should be a total net amount, not just based on the generation cost.**
- Total net metering credit applied to this month's bill. **OK.**
- Net metering credit carried over to the next month. **OK**
- Minimum bill/monthly customer charge **OK**
- Total bill due **OK**

Additional thoughts:

- 1) ***This proposal is for PV systems rated at “10 kW and less”. There are also an MPSC proposal for “30 kW and higher”. What happens to the PV system that falls in the middle range of > 10 kW and < 30 kW?***
- 2) ***The state Energy Office administers a program that pays up to \$50,000 for 10 kW or higher PV systems installed on public and educational facilities. When designing a PV system, there must be a suitable electrical match between the strings of PV modules and the chosen inverter. Sometimes a “nominal” 10 kW PV system can’t be designed to be “10 kW or less”, but may actually be slightly higher, perhaps 10.4 kW or so, so that the voltages and currents are properly matched to the inverter’s requirements. That falls beyond the “10 kW or less” requirement. How is this anomaly handled?***

Robert G. Pratt, P.E., President, RGP Pro, Inc.

Baldwin, Julie K (DLEG)

From: Randy Smith [randy@trashbuddy.com]
Sent: Tuesday, September 04, 2007 11:46 AM
To: Baldwin, Julie K (DLEG)
Subject: RE: Net Metering - comments

Julie,

Full retail or greater. I believe policy for small scale renewable energy systems should be encouraged to be incentive based. They will never compete or interfere with "100 megawatt" coal power plants. Policy should encourage renewable power sources, regulation and implementation should be simple to navigate for the small business or residential system.

Randy Smith

From: Baldwin, Julie K (DLEG) [mailto:baldwinj2@michigan.gov]
Sent: Friday, August 31, 2007 8:25 AM
To: Randy Smith
Cc: Stanton, Thomas S (DLEG)
Subject: RE: Net Metering - comments

Randy -
Thank you for your comments. I would like to clarify your comment.

Provide a net metering credit equal to the utilities generation rate or greater (~~retail rate less distribution charge~~)...

Does your above comment mean that you are recommending full retail (generation and distribution) or greater or just the generation rate or greater? (DTE's retail generation rate is about 5.8 cents per kWh.)

I am opting to not comment on your questions regarding the value of renewable energy in this email because we'll most likely have a staff position on this concept in the report due at the end of the month.

Julie Baldwin, Staff Engineer
Electric Operations Section
Operations & Wholesale Markets Division
Michigan Public Service Commission
(517) 241-6115

-----Original Message-----

From: Randy Smith [mailto:Randy@trashbuddy.com]
Sent: Wednesday, August 29, 2007 3:28 PM
To: Baldwin, Julie K (DLEG)
Subject: Net Metering - comments

Hi Julie:

Thanks for keeping everyone informed – I like most of the MPSC Net Metering recommendations. Is there anyway we can get a way from encouraging RE as a "lesser energy" provider and begin to put a preference for clean energy from renewable sources?
I believe we need to change item 3 from the list: ..Provide a net metering credit equal to the utilities generation rate or greater (~~retail rate less distribution charge~~)...
In essence allowing the public and private utilities to encourage renewable energy at par or greater rates

like we have seen in other States and Countries.

Policy needs to allow for Michigan utilities to catch-up to the rest of the world where utilities are paying premiums to dispersed renewable energy electricity producers. This will better serve their customers, reduce foreign oil dependence, reduce financing and meet future growth in customer base...in addition to all the reduction in pollution, mining catastrophes, and health consequences of fossil and nuclear fuels.

Sincerely,

Randy Smith

Renewable Services, LLC

Baldwin, Julie K (DLEG)

From: Christina A. Snyder [CASnyder@ic.org]
Sent: Monday, September 10, 2007 2:23 PM
To: Baldwin, Julie K (DLEG)
Subject: "Net-metering" of <10kw renewable energy systems

Julie, thanks for the work you are doing on behalf of the citizen's of MI,

I wish to make a few comments on the latest "net-metering" proposal:

1. This is still not "net-metering" where the rate at which you are billed is the same as what you are paid when you contribute your costly clean energy. I know the utilities have drawn their line in the sand by insisting that they be allowed to charge transmission and distribution costs, and MPSC may never have the power to over-ride the utilities on this, but if we are never going to get true net-metering out of the utilities, than I don't want them to be able to green-wash their actions by claiming that they have net-metered billing programs. The utilities are totalling up every cost they can think of to soak citizen's with RE systems for under the heading of T&D costs, while at the same time denying all of the costs which net-metering customers incur but can't bill the utilities for, and denying the large benefits that defer some of the utilities costs. What about our installation and maintenance costs? what about the effects of peak shaving, and distributed energy on reducing the utilities costs and helping to stablize the grid with decentralized energy? I'd really like to see some impartial third party studies done on what exactly the costs and benefits of decentralized RE systems are to the utilities, to the state, and to other consumers - I'd bet that the scales are much closer to even or that RE system owners are delivering far more benefits than they are costing the infrastructure. I will never stop lobbying for this to be recognized, so the MPSC and the utilities better be ready for the long haul in hashing out the regulatory environment we must cope with.

2. A single bidirectional meter is an improvement over three, as long as it costs less than two regular meters do - the big problem with everything proposed so far, is that no one is telling us how much it is going to cost us to jump through all the utility's hoops just to have the privilege of sharing our excess with our neighbors when we have it to give. Also, what is the paperwork /red tape burden going to be like in order to comply? I still haven't heard that the utilities have come up with a simplified application for interconnection suitable to systems smaller than 10 kw. The last we saw was a 50 page book asking questions having nothing to do with RE systems that was probably lifted from applications for industrial scale producers. We took that application to electricians, electrical engineers who used to work for the utility in question, and staff of the MPSC, and never found some answers to what was wanted by some of the questions. A homeowner should not have to fill out more than the front and back of a page to get interconnected, and there should be no spurious meters, exorbitant fees, or nit-picking inspections to deal with, or people will end up choosing to either avoid the expense and hassle of RE to begin with, or choose to implement dangerous battery-based, off-grid systems.

3. I do want something to be decided and implemented ASAP that will allow people who are currently in limbo with RE systems that are interconnected to start getting paid for what they are contributing. I have very little faith in the utility companies efforts to change there billing systems to make sure that people get their credits and eventual payments for RE energy put on the grid. From what we've seen, the billing systems are fossilized in a collection of debts owed mode only, and making provisions for credits or payments is a non-priority. How will MPSC make sure the utilities follow through? We've seen the utilities fall behind in credits on the scope of several years before MPSC is successful in dragging something out of them - this is also not something homeowners should have to deal with, just because they are more interested in doing the right thing than the utilities are.

Thanks again,
Christina

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Christina A. Snyder
casnyder@ic.org
voice: 734-428-9249

Memorandum

To: Julie Baldwin, MPSC Staff

From: James A. Ault, Michigan Electric & Gas Association (on behalf of indicated electric utilities)

Date: September 10, 2007

Re: Joint Comments on Staff Proposal for Discussion – Net Metering

I. Introduction

These joint comments are provided on behalf of the following electric utilities: 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, Xcel Energy, and members of the Michigan Electric Cooperative Association. These comments address the MPSC Staff Net Metering Program Design Proposal for Inverter Based Systems 10 kW and Less – August 2007 (Staff Proposal). These comments are generally focused on the proposal elements without revisiting in detail the position of utilities stated previously in this collaborative regarding continuation of the existing agreement through at least 2009 and the merits of the various configurations for net metering now in place. See March 29, 2005 order in MPSC Case No. U-14346 and related tariffs filed to comply with the order. Staff is already familiar with these arrangements and the differing positions regarding net metering independent of the approved agreement and utilities do not waive any positions previously or separately stated. Clearly the proposal revives some of the fundamental policy issues about the degree of support or subsidy to be allowed for customers with small electric generators.

Another question is the degree to which the Staff proposal would replace all elements of the existing program. Matters such as restricting size to the customer's anticipated load and capping participation at some level are not mentioned but utilities would generally favor the retention of such program elements.

These comments will focus on the elements in the sequence contained in the Staff Proposal, with comments on some of the significant new (or even familiar) questions raised. Obviously, if policy issues regarding net metering were resolved in a manner consistent with this design proposal, its elements could be made to work for most situations. We appreciate the opportunity to provide input in this process.

II. Industry Comments

1. Single bi-directional meter: This type of meter is available in the market as a non-standard meter or has already been installed by some companies for net metering customers. For many utilities this would require new meter purchase and installation, or, alternatively the function could be performed using two standard

energy meters (in and out flow). The design proposal should address cost recovery for the meters – is this socialized or covered by the net metering customer? Michigan's two largest electric utilities and some others are actively considering “advanced metering infrastructure” (AMI) programs that would replace traditional energy meters with capability as described in this program element plus measurement of demand and automated meter reading (AMR). The demand measurement capability of AMI could allow other options for measuring and recovering demand related costs. Net metering customers may be placed in front of the line for AMI as it is introduced, provided there is an acceptable program design.

Detroit Edison and We Energies are concerned with this program design for customers served at primary voltages or served on a base rate that contains demand charges.

Detroit Edison proposes that its current “three meter” arrangement continue as the default method for net metering. Qualifying customers (unit size + secondary voltage + no demand components in rates) would have an option to select the bi-directional single meter subject to an acceptable program design regarding recovery of delivery, export and storage services.

2. Billing for delivered electricity: This element allows the customer to avoid all charges associated with the reduced monthly takes from the utility as a result of customer generation. From a mechanical billing standpoint, this can be done but for those utilities seeking recovery of distribution-related costs that would otherwise be recovered from that customer, it reopens the “subsidy” debate.

Detroit Edison is proposing an option that would bill based on energy delivered and credit the customer for energy received subject to an additional fixed charge for delivery, export and storage services based on monthly delivery service rates and surcharges times 1/12 of the customer’s usage for the year prior to installation of the customer’s generator.

3. Net metering credit for customer deliveries to utility in \$/kWh: In combination with avoided delivery charges on the site use generated by the customer, this increases the “subsidy” for net metering. It is also a retail rate paid for wholesale power although this concept resembles what some utilities have implemented. The cooperatives provide a credit for deliveries by the customers to the cooperatives at the “wholesale cost of energy” adjusted for line losses. Is this intended to be the same thing? Again, as a matter of billing mechanics, the credit can be accomplished but the policy debate may be renewed (subject to other comments below). If AMI is introduced, would there be an opportunity to introduce a time measurement to value the customer provided generation?

4. Apply net metering credit to monthly bill/carry forwards: See comments on other elements – as the customer generation is used to offset the recovery of distribution-related costs, some utility opposition is anticipated due to the lost revenue. Carry forward in dollars and the possible non-recovery (Elements 6-7 below) increase the financial risk with significant participation in the program.

5. Annual payment for unused credits or optional carry forward: One issue raised by this element is the elimination of a way to recover some of the program costs, since the U-14346 program allowed the value of unused credits to go towards program costs (for those utilities electing such a design option). Some utilities are opposed to carry forward beyond the end of a year.

6. Net metering credits as recoverable power supply cost: This would be an improvement over the current program if allowable, since it reduces the utility subsidy. This will require consideration of the legal issues due to court decisions such as Attorney General v MPSC, 269 Mich App 473 (2006). In that decision, the Court of Appeals reversed the Commission's order approving a monthly charge of five cents per meter for all Consumers Energy electric customers to raise funds in support of a voluntary green energy program of the utility in which customers could elect to participate. The Court reasoned that Michigan regulatory law did not authorize the agency to approve charges on utility customers who did not participate in the voluntary green energy program, to support the program. In addition to the legal question this decision also indicates that the Attorney General may challenge the regulatory authority for subsidy programs.

7. Accounting calculation of lost revenue for future rate recovery: This section really emphasizes the change from the existing agreement in U-14346 which allows recovery of the distribution costs and surcharges (some utilities have elected not to seek such recovery for the small net metering programs). In effect this element is saying that the revenue will be "lost" for sure and maybe down the road at the MPSC discretion the lost revenue could be recovered (or more likely shifted to other customers not participating in net metering). The Staff is very familiar with the policy debate in this area and the position of the utilities in general.

8. Extra line items in net metering bills: The form and content of the billing could be affected by the number of customers who sign up for net metering because it may be unreasonably expensive to reprogram systems for relatively few customers, and to a point the bills could be done manually. This issue should be revisited when the more fundamental policy questions are resolved.

Baldwin, Julie K (DLEG)

From: Stephen T Hirsch [shirsch@cmsenergy.com]
Sent: Monday, September 10, 2007 5:38 PM
To: Baldwin, Julie K (DLEG)
Cc: jaault@voyager.net
Subject: Consumers Energy- Net Metering

Julie -

Following are a handful of comments from Consumers on the net metering proposal. These comments are a supplement to those provided by MEGA earlier today. Sorry this is coming so close to your deadline.

Steve Hirsch
Consumers Energy

The Company prefaces these comments to state that we are generally in agreement with the comments of the industry as articulated by MEGA on 9/10/07. Additionally, we are cognizant of, and would ask Staff to consider, recent legislation introduced into the Michigan House (HB 5121) in preparing its report for the Commission.

1. The Company agrees with the use of a single bidirectional meter as an option for small (under 10kW) customers on non-demand rates, provided the incremental meter/installation cost is born by the customer participating in the program, and that Item 2 (fixed distribution charge) is implemented. To the degree we are able to incorporate net metered customers into the early phase roll-out of an AMI program we will attempt to do so. Since these meters will be installed ultimately at all customer locations, at that time, the cost of the meter for the net metered customers may be reduced or eliminated, depending on how those costs are treated. We would also propose to offer the customer the option of installing a utility meter on the generator for a fee.
2. In accord with Item 1, the Company believes that a fixed distribution charge designed to recover our distribution infrastructure investment should be established and assessed all applicable net metering customers in order to avoid subsidizing these customers.
3. Our ability to accommodate the staff's proposal regarding bill format is unclear. With the impending launch of our new enterprise wide computer system (SAP) on 1/1/08, we are not in a position to know what and when modifications will be possible.
4. The Company agrees with the minimum end of year "payment" concept although we share the concern of the industry about valuation of that payment. Additionally, should tariffs change to include a customer charge/system access fee or other similar item, we would consider this the "minimum bill." We believe the "credit" on a monthly basis should be in the form of kWh, not dollars, and that customers be subject to the full value of any surcharges based on the entire amount of energy consumed on site (or a standardized estimate).
5. The Company agrees with the concept of treating net metering credits as a power supply cost, although we share the concern of the industry on the process for implementing this type of recovery mechanism.

**MPSC Staff Net Metering Program Design Proposal
for Inverter Based Systems 10 kW and Less
August 2007**

- **Use a single bi-directional meter to measure and record the following quantities: (1) electricity delivered from the utility (kWh); and (2) electricity delivered to the grid by the customer (kWh).**
 - **Detroit Edison's proposed optional provision:**
 - **Allows qualifying customer's to CHOOSE a single bidirectional meter at the interface.**
 - **Limits the availability to customers billed on a secondary service base rate that does not contain demand components. Detroit Edison would oppose the use of a single by-directional kWh meter for any net metering customer served at primary voltage or served on a base rate that contains demand based charges.**
 - **The 3 meter option is still available to the customer and would be the default choice.**
 - **The three meter option provides the customer with metered generation data the customer may use to market his Renewable Energy Certificates (RECs). This is a customer benefit we do not wish to preclude by stipulating a single bidirectional meter.**
 - **The three meter option provides the customer with an exact calculation of the savings received as a result of the renewable resource generation. This is a customer benefit we do not wish to preclude by stipulating a single bidirectional meter.**
 - **The three meter option allows verifiable data to support program cost recovery.**
 - **Current Advanced Metering Infrastructure (AMI) plans anticipate replacement of EVERY Detroit Edison customer's meter(s) with meter(s) capable of metering inflow and outflow in kWh and kW and employing Automated Meter Reading(AMR). Since the difference between the retail power supply credit provided for Net Excess Generation (NEG) returned to the site and the avoided energy cost is a recoverable quantity, kWh and kW data will be collected for inflow, outflow and generation if metered for all net metering customers. Net metering customers are among the first customers that will have meters replaced.**
- **Bill the customer based on their rate schedule for electricity delivered from the utility.** This part of the bill will not be based on "net" energy usage. Instead, the customer will be billed in the identical manner as a non-net-metering customer, for all electricity delivered by the utility.
 - **Detroit Edison's existing procedure bills the customer for all surcharges, Power Supply and Delivery charges on gross site use and provides full retail**

Power Supply and Power Supply Surcharge credits for ALL energy supplied by the customer's generation. Verifiable recoverable Delivery Surcharge credit and a program credit numerically equivalent to the Retail Delivery charges is also provided to the customer for energy produced and used in the current month even though no reduction in Detroit Edison's electric system delivery costs are attributable to the net metering customer.

- **Detroit Edison's proposed optional provision bills the customer for all Power Supply charges and Power Supply Surcharges on delivered power which some consider net site use. Full retail Power Supply and Power Supply Surcharge credits are provided for energy supplied by the customer's NEG returned to the site. No energy-based delivery charges are paid on energy used on-site or delivered by Detroit Edison to the customer. Instead a fixed charge for delivery, export and storage services provided by Detroit Edison is charged. The fixed charge is 1/12 of the power delivered by Detroit Edison to the customer's site over 12 months prior to installation of generation times the then current delivery rates and Delivery Surcharges in the customer's base rate.**
- **Provide a net metering credit** on the bill, equal to the utility's retail generation rate (Retail Rate less distribution charge) for electricity, including all power supply charges and surcharges. Staff expects this will be a credit expressed as a dollar amount for the month. The bill should show kWh delivered, monthly power supply charge credit per kWh, and total \$ amount.
 - **If the customer is charged only for power delivered by Detroit Edison to the customer as indicated in the Staff's previous bullet, an additional credit for kWh delivered to the Detroit Edison electrical system could result in a zero bill. This is inequitable in combination with the prior bullet that already fails to charge delivery charges for on-site generation. Detroit Edison cannot support this outcome because there are clearly ongoing expenses incurred by the Company to serve net metering customers. Detroit Edison's existing and proposed optional provision both provide full retail Power Supply and Power Supply Surcharge credits for energy supplied by the customer's NEG returned to the site, which is reasonable and equitable.**
- **Apply the net metering credit toward the customer's bill total.** Net metering credit can be applied to bring the bill down as low as the minimum bill. Any excess credit will be carried over month to month. The utility will give the customer a check at the end of the year for any unused net metering credits. Net metering credits paid to customers can be treated as any other recoverable power supply cost.
 - **Detroit Edison cannot support this provision for a variety of reasons.**
 - **Power Supply Credits must not be used to offset Delivery charges. NEG does not even offset utility power supply costs on a real-time basis. Delivery costs are not reduced as a result of net metering customer generation. Delivery costs may even increase as the system must be designed larger than it would absent net metering to accommodate NEG. The net metering customer receives more value from the delivery system than a non-net metering customer as the additional services of export to the Detroit Edison electrical system and financial storage are provided without compensation.**

- **Detroit Edison’s existing procedure and proposed optional provision allow the customer to select a 12-month period during which NEG will be carried over. Since the customer can choose the month to zero out the balance, it can be chosen to optimize NEG on-site use for any technology. Year-end payment based upon avoided cost will provide substantially less value to some technologies (with high NEG balances at year-end) than other technologies (that use NEG balances by year-end) that receive retail credit for a higher percentage of power produced.**
 - **The avoided cost value of any NEG balance at the end of that period is used to pay program costs. The Commission-approved consensus agreement speaks to these costs as follows:**

“The foundation for this consensus agreement is that each Utility will be allowed to recover from its customers all costs associated with its net metering program.

Three kinds of recoverable costs must be considered (eligible costs): program operating costs, transmission and distribution (T&D) costs attributable to the net metering customer, and the above-market costs, if any, of generation credits provided to net-metered customers.” (Page 3 of Exhibit A to the 3/29/2005 Order, MPSC Case No. U-14346.)

Given the ability of the customer to optimize NEG use, the avoided cost value of any NEG balance from properly sized units is unlikely to compensate the utility for even one of these types of costs.

- **The 12 month NEG balance carryover, utility retention or payments for NEG and the requirement to use the value of NEG balances retained to pay program costs are also addressed in the Commission-approved consensus agreement as follows:**

“NEG credits, if any, will be carried over from month to month, limited to a 12-billing-month cycle. At the end of each 12-billing-month cycle, cumulative NEG credits, if any, will be retained by the Utility and the customer’s credit reset to zero. A Utility may voluntarily propose a program where customers are awarded a cash payment for NEG. The value of cumulative NEG credits retained by the Utility will be used to offset costs associated with the Utility’s operation of the net metering program”. (Page 5 of Exhibit A to the 3/29/2005 Order, MPSC Case No. U-14346.)

Given the high level of subsidy provided to net metering customers by the existing program, Detroit Edison cannot support a modification that increases the subsidy and simultaneously reduces the ability to recover the subsidies. With the implementation of AMI and AMR, Detroit Edison will have the ability to determine the exact avoided cost value of NEG. At that time, Detroit Edison would not

oppose a program where retail credit for NEG returned to the site is eliminated and customers are awarded a cash payment at hourly avoided cost for all NEG delivered to the system. This process would reduce or eliminate one of the recoverable subsidies identified in the Commission-approved consensus agreement. Specifically, “the above-market costs, if any, of generation credits provided to net-metered customers.”

- **The Staff’s proposal does not state if the payment for NEG balance should be calculated at utility avoided cost or utility retail sales value. Due to rate structures that charge different rates for different levels of use, a retail sales price-based payment would be problematic. As noted above, a year-end payment based upon avoided cost will provide substantially less value to some technologies as other technologies receive retail credit for a higher percentage of power.**
- **Properly sized generation should produce no more energy than can be utilized on-site within a year. Consequently, properly sized generation should build a NEG balance during the high production season that can be totally utilized during the low production season. Implementing a change that provides an incentive to oversize generation clearly defies the Commission-approved consensus agreement that states:**

“Customer generation systems also will be limited in size, not to exceed the customer’s self-service needs. Non-dispatchable generation systems (e.g., wind and solar) shall be sized not to exceed the customer’s annual energy needs, measured in kilowatt-hours (kWh).”
(Page 6 of Exhibit A to the 3/29/2005 Order, MPSC Case No. U-14346.)

- **Treating net metering credits paid to customers as any other recoverable power supply cost would include these credits in the Power Supply Cost Recovery (PSCR) process. Net metering credits paid to customers are Retail Power Supply credits and are substantially above market costs. Passing these through the PSCR would charge all customers for these above market purchases. Other customer groups not wishing to subsidize the net metering customers would undoubtedly challenge this in PSCR proceedings.**
- The utility may choose to calculate the distribution and surcharges the customer would have paid, based on their previous year’s usage, absent net metering, but this is done as part of utility accounting for the purpose of making a request to the Commission for future cost recovery and not shown on the customer’s bill.
 - **Detroit Edison cannot support this provision. Implementing a change for customers without generation metering stipulating that for such customers, T&D and other eligible costs are NOT recoverable through a separate rate charge designed to assure that the Utility recovers the same share of T&D costs it would have received from the Detroit Edison customer absent net**

metering clearly defies the Commission approved-consensus agreement that states:

“If a Utility chooses to utilize a single meter that is not capable of directly measuring the output of the customer’s generator, then the customer shall be billed and pay for their net energy consumption using the same method ordinarily applied to a customer of the same class, absent net metering. For such customers, T&D and other eligible costs are recoverable through a separate rate charge designed to assure that the Utility recovers the same share of T&D costs it would have received from the customer absent net metering.” (Page 4 of Exhibit A to the 3/29/2005 Order, MPSC Case No. U- 14346.)

Requests to the Commission for cost recovery would be hampered by lack of substantiation of the cost to be recovered. There would be no metered quantities upon which to base the amounts to be recovered.

- Customer bills will have a normal billing section for the electricity delivered by the utility and then the following extra lines:
 - **Detroit Edison cannot support the billing statement provisions below:**
 - **Detroit Edison cannot support any modification stipulating monetary carryover.**
 - **Due to rate structures that charge different rates for different levels of use, monetary carryover would be problematic.**
 - **Ongoing monetary credits could be viewed as a financial obligation on the Company, that may have tax implications and disclosure requirements in annual reports and reports to the financial community.**
 - **Billing systems would require extensive changes.**
- Carryover net metering credit from past months (in \$).
- Current month net metering credit based on current month electricity deliveries to the utility (in \$). This is the kWh of electricity generated by the customer and delivered to the utility, multiplied by the total power supply charges. (Staff prefers this line item will also indicate the number of kWh and amount of credit per kWh.)
- Total net metering credit applied to this month’s bill.
- Net metering credit carried over to the next month.
- Minimum bill/monthly customer charge
- Total bill due

General Comments

Detroit Edison’s net metering program currently provides above value credit to net metering customers.

Program operating costs have been incurred which are not recouped from the net metering customers.

Retail credit is provided for distribution costs attributable to the net metering customer for generation utilized in the current billing period.

Retail Power Supply credit substantially above market power supply costs is provided to net-metered customers for NEG returned to the site.

Since transmission is included in power supply charges, Retail Transmission Service credit is provided for transmission costs attributable to the net metering customer for all generation utilized in the current billing period as well as for NEG returned to the site.

The customer utilizes the system to effectively store NEG without compensation to the utility for this service. The fair market value of this service would roughly equal the cost of the battery storage equipment the customer avoids.

The Company tests and maintains a billing quality generation meter and offers the customer data from that meter to facilitate billing for any RECs the net metering customer wishes to sell. These items are provided at no charge by Detroit Edison and allows any net metering customer to sell RECs without incurring those expenses.

The Company provides the customer with an exact calculation of the savings attributable to his renewable generation.

The Company initiated the program voluntarily based on a Commission-approved consensus agreement. Detroit Edison voluntarily provided Retail credit for transmission and distribution (T&D) costs attributable to the net metering customer for generation utilized in the current billing period and a Retail Power Supply credit substantially above market power supply costs for NEG returned to the site only because a metering mechanism was used that allowed these recoverable costs to be accurately tracked.

When asked to propose a single meter proposal, Detroit Edison voluntarily proposed an optional provision in full compliance with the Commission-approved consensus agreement. Detroit Edison proposed, that for single meter customers, Delivery costs be recovered through a separate rate charge designed to assure that the company recovers the same share of Delivery costs it would have received from the customer absent net metering.

The Staff proposal increases the level of subsidy, removes the ability to accurately track the subsidies provided to net metering customers, increases the risk of cost recovery, increases the complexity of utility operation, and potentially subjects the Company to additional financial monitoring and reporting requirements. The final Staff proposal would expand the availability to primary customers and secondary customers with demand charges in their base rate which the Company would no longer be able to recover. In light of these issues, Detroit Edison cannot support the Staff proposal as presently drafted.

The Company believes that the existing net metering framework arrived at through months of effort by utility, Staff, legislative and renewable energy interests should be afforded an opportunity to work before a proposal to significantly alter the program is enacted.