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Arizona Corporation Commission

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MAR 23 2011

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IN THE MATTER OF THE APPLICATION  
OF MORENCI WATER & ELECTRIC COMPANY –  
ELECTRIC DIVISION – FOR APPROVAL OF ITS  
2011 RENEWABLE ENERGY STANDARD TARIFF  
IMPLEMENTATION PLAN AND REQUEST FOR  
PARTIAL WAIVER

DOCKET NO. E-01049A-10-0364

**NOTICE OF FILING  
COMPLIANCE  
(Decision No. 72230)**

Morenci Water & Electric Company (“MWE”) files its Final 2011 Renewable Energy Standard and Tariff Implementation Plan (“2011 REST Plan”) in compliance with and consistent with the revisions ordered in Decision No. 72230 (March 9, 2011). MWE also submits its Renewable Energy Surcharge schedule consistent with that decision.

RESPECTFULLY submitted this 23<sup>rd</sup> day of March, 2011.

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1 Original + 13 copies of the foregoing  
2 filed this 23<sup>rd</sup> day of March, 2011 with:

3 Docket Control  
4 ARIZONA CORPORATION COMMISSION  
5 1200 West Washington  
6 Phoenix, Arizona 85007

6 Copies of the foregoing hand-delivered/mailed  
7 this 23<sup>rd</sup> day of March, 2011, to:

7 Lyn Farmer, Esq  
8 Chief Administrative Law Judge  
9 Hearing Division  
10 Arizona Corporation Commission  
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12 Phoenix, Arizona 85007

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# MORENCI WATER & ELECTRIC COMPANY

## 2011 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN ("2011 REST PLAN")

### 1. INTRODUCTION

The Morenci Water & Electric Company ("MWE") submits its 2010 REST Plan to comply with the Renewable Energy Standard and Tariff Rules ("REST Rules"). The REST Rules are codified at A.A.C. R14-2-1801 to R14-2-1816. Decision No. 71469 (January 26, 2010) requires MWE to submit its 2011 REST Plan on September 1, 2010, outlining how it intends to comply with the REST Rules. The REST Plan must include the following information, as required under A.A.C. R14-2-1813:

- A description of Eligible Renewable Energy Resources to be added per year for the next 5 years. A description of each technology, the kW and kWh to be obtained and the estimated cost per kWh and total cost per year.
- A description of how each Eligible Renewable Energy Resource is to be obtained.
- A proposed evaluation of whether MWE's existing funding will allow it to recover its reasonable and prudent costs of complying with the REST Rules requirements.
- A line-item budget allocating specific funding for eligible Distributed Renewable Energy Resources, for the Customer Self-Directed Renewable Energy Option, for power purchase agreements, for utility-owned systems, and for each Eligible Renewable Energy Resource described in the REST Plan.

The REST Rules require that 3.00% of total kWh retail sales come from Eligible Renewable Energy Resources in 2011, 3.50% in 2012, 4.00% in 2013, 4.50% in 2014, and 5.00% in 2015. The REST Rules further requires that 25% of the total Annual Renewable Energy Requirement come from eligible Distributed Renewable Energy Resources in 2011, 30% in 2012, 30% in 2013, 30% in 2014 and 30% in 2015.

### 2. BACKGROUND INFORMATION

In terms of number of customers, MWE is a small electric utility that serves about 2,372 customers in and around the town-site of Morenci and the town of Clifton, Arizona. Its customer base consists of approximately 2,104 residential customers and 266 non-residential customers (as of December 2009). Currently, about 1,171 of the residential customers are renters within the Morenci town-site. Only 2 of the non-residential customers have demand over 3 MW per month for three consecutive months. Presently, MWE owns no generation and procures all of its power from the wholesale market to meet load.

MWE's Energy Sales in 2009 – including sales for Freeport McMoRan Copper &

Gold Morenci, Inc. ("FMI Morenci") and Freeport McMoRan Copper & Gold Safford, Inc. ("FMI Safford") – equaled 1,479,823,848 (about 1,479,824 MWh).<sup>1</sup> In 2008, MWE's energy sales were 2,246,888,027 kWh (about 2,246,888 MWh).<sup>2</sup> MWE's energy sales declined approximately 767,064 MWh (34.14%) in 2009 from 2008 – mostly due to the loss in mining load because of the recent economic climate. Approximately 1,451,036 MWh (98.95%) of total energy sales were to FMI Morenci and FMI Safford.

MWE forecasts its Energy Sales for 2010 to be approximately 1,600,000 MWh. Based on that forecast, MWE anticipates that its Annual Renewable Energy Requirement will be as follows – if energy sales to FMI Morenci and FMI Safford are included in the requirement:

- approximately 48,000,000 kWh in 2011;
- approximately 56,000,000 kWh in 2012;
- approximately 64,000,000 kWh in 2013;
- approximately 72,000,000 kWh in 2014;
- approximately 80,000,000 kWh in 2015; and
- approximately 240,000,000 kWh after 2024.

MWE anticipates – based its 2010 forecasted energy sales – its annual Distributed Renewable Energy Requirement would be as follows:

- approximately 12,000,000 kWh in 2011;
- approximately 16,800,000 kWh in 2012;
- approximately 19,200,000 kWh in 2013;
- approximately 21,600,000 kWh in 2014;
- approximately 24,000,000 kWh in 2015; and
- approximately 72,000,000 kWh after 2024.

MWE requested and received a partial waiver excluding the load to FMI Morenci and FMI Safford from the calculation of the Annual Renewable Energy Requirement under A.A.C. R14-2-1804 and annual Distributed Renewable Energy Requirement under A.A.C. R14-2-1805 each year through 2010. MWE is requesting that the waiver remain in effect for 2011. This is because MWE's load profile is and remains unique and significantly different from any other electric utility in the state. No other utility has had 98 to 99 percent of its energy sales come from two customers. MWE anticipates that approximately 98.5 percent of its energy sales will be to FMI Morenci and FMI Safford in 2010.

To include sales to FMI Morenci and FMI Safford would either mean the MWE would have to raise rates and caps to unsustainable levels for its customers; or the amount MWE obtained through the RESS would be insufficient to cover the cost to procure energy from Eligible Renewable Energy Resources to meet the

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<sup>1</sup> See MWE's Arizona Corporation Commission Utilities Division Annual Report for Year Ending 2009.

<sup>2</sup> See MWE's Arizona Corporation Commission Utilities Division Annual Report for Year Ending 2008.

requirements in the REST Rules. The premium for renewable energy is still at a level where costs to procure it will be substantial in 2011.

Under MWE's proposal, FMI Morenci and FMI Safford would still provide funding in accordance with MWE's RESS described below. FMI Morenci and FMI Safford would also be eligible to participate in MWE's Plan for Distributed Renewable Energy Resources also described below.

Without the partial waiver, MWE believes it would need to spend approximately \$1,260,000 to purchase renewable energy – assuming a \$35 per MWh premium for 36,000 MWh – to meet its 2011 Annual Renewable Energy Requirement. Further, to meet its annual Distributed Renewable Energy Requirement (predicted to be 12,000 MWh in 2011 without the partial waiver) through the installation of solar photovoltaic systems, MWE anticipates that it would need to expend \$24,871,740.<sup>3</sup> This means MWE would have to spend about \$26.13 million in 2011 from 2,372 customers (only two of which are large industrial customers) to have the funding available to meet the 2011 REST Rules requirements if the partial waiver is not granted.<sup>4</sup> At the proposed rates and caps MWE could collect a maximum of \$590,592. It is not likely, however, that MWE would collect the maximum amount through its RESS in 2011, even with the proposed increases. For these reasons, MWE sought a waiver for 2011.

MWE lacks the resources, personnel and expertise to own, operate, or develop renewable generation. Therefore, MWE has no current plans to develop or own any renewable generation for the foreseeable future. Even so, MWE will continue to procure Eligible Renewable Energy Resources and offer incentives for eligible Distributed Renewable Energy Resources.

MWE's anticipates that its energy sales – excluding those to FMI Morenci and FMI Safford – will equal approximately 24,000 MWh in 2011 (i.e. 1.5 percent of total energy sales). MWE anticipates that its Annual Renewable Energy Requirement will be as follows:

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<sup>3</sup> This assumes the cost of installing solar photovoltaic systems with an average installation cost in Arizona of \$7.60 per watt as reported in the Lawrence Berkeley National Laboratory (LBNL) report entitled "Tracking the Sun: The Installed Cost of Photovoltaics in the U.S. from 1998-2007" Ryan Wiser, Galen Barbose and Carla Peterman, (LBNL-1516E, February 2009) available at <http://eetd.lbl.gov/ea/EMS/reports/lbnl-1516e.pdf>. This is lower than the average installation cost of \$8.32 per watt cited in the National Renewable Energy Laboratory ("NREL") Report entitled "Solar Photovoltaic Financing: Residential Sector Deployment" Jason Coughlin and Karlynn Cory, (Technical Report NREL/TP-6A2-44853, March 2009) at 18 (available at <http://www.nrel.gov/docs/fy09osti/44853.pdf>) used in MWE's 2010 REST Plan. The \$7.60 per watt figure is in line with what is indicated in NREL's "Open PV Project" database available at <http://openpv.nrel.gov/>. Further, these figures assumes a 25% annual capacity factor and that MWE provides incentives equaling 60% of the total cost to install the requisite number of systems to meet the requirements each year. Finally, depending on the number of systems already installed still in operation from previous years, the amount in incentives could be significantly less the following year. These figures also assume that the three distributed PV installations mentioned in the first paragraph of MWE's Plan for Eligible Distributed Renewable Resources are installed and operational.

<sup>4</sup> Excluding any costs for administration, commercialization and integration and any other necessary expenses to implement MWE's REST Plan.

- approximately 720,000 kWh in 2011;
- approximately 840,000 kWh in 2012;
- approximately 960,000 kWh in 2013;
- approximately 1,080,000 kWh in 2014;
- approximately 1,200,000 kWh in 2015; and
- approximately 3,600,000 kWh after 2024.

MWE anticipates based on its estimate of 2011 energy sales and excluding sales to FMI Morenci and FMI Safford, its 2011 its annual Distributed Renewable Energy Requirement will be as follows:

- approximately 180,000 kWh in 2011;
- approximately 252,000 kWh in 2012;
- approximately 288,000 kWh in 2013;
- approximately 324,000 kWh in 2014;
- approximately 360,000 kWh in 2015; and
- approximately 1,080,000 kWh after 2024.

### 3. PLAN FOR ELIGIBLE RENEWABLE ENERGY RESOURCES.

For 2011, MWE will continue to procure Eligible Renewable Energy Resources from one or more sources for – including solar, geothermal, wind and/or biomass – to meet requirements. MWE intends to procure such resources through bi-lateral transactions with one or more counterparties. MWE cannot state with any specificity how much it will procure of any one resource. This is because of many factors – including uncertainties related to operational performance, deliverability of such resources and sufficiency of transmission. Further, renewable generation has the potential to not meet scheduled commercial operation and may not match needed delivery schedules and planned quantities. MWE is aware of the potential for renewable contract termination or major delays in delivering renewable energy. Nonetheless, MWE will make best efforts to procure the necessary amount of Eligible Renewable Energy Resources to meet its 2011 requirements.

MWE maintains that the pricing for it to procure and deliver such renewable generation to its service territory is at a premium of approximately \$35 per MWh over generation from Conventional Energy Resources). This is based on the cost of renewable generation and the cost to deliver the energy and meet the requirements of R14-2-1803.F. MWE has and continues to procure Eligible Renewable Energy Resources on a per-kWh (energy) basis. Based on this information, MWE believes the following tables best summarize the description of kWh and cost above conventional resources for MWE in 2010 – excluding the sales to FMI Morenci and FMI Safford:

#### Planned Renewable Generation Procurement (MWh)

Year	2011	2012	2013	2014	2015	Total
Energy – Prospective Procurement	540	588	672	756	840	3,396

## Cost Above Conventional Generation (\$'s)<sup>5</sup>

Year	2011	2012	2013	2014	2015	Total
Total Energy – Prospective Procurement	18,900	20,580	23,520	26,460	29,400	118,860

The above-generation cost is an estimate based upon MWE's experience in its prior renewable energy procurements. Given the uncertainties with MWE procuring eligible renewable generation, costs may vary significantly going forward.

#### 4. PLAN FOR DISTRIBUTED RENEWABLE ENERGY RESOURCES.

MWE understands the importance of eligible Distributed Renewable Energy Resources to the Commission. Therefore, MWE will continue to offer incentives to customers to encourage the promulgation of eligible Distributed Renewable Energy Resources. These payments are designed to defray some of the costs of a system designed to offset a customer's typical load. Many of the incentives MWE will continue to offer are above what is being offered by other Arizona electric utilities. To date, MWE anticipates two non-residential distributed photovoltaic systems within its service territory to be operational before the end of 2010 (the Kempton Chevrolet Ltd. facility at 540 North Coronado Boulevard, and Kempton Chevrolet Ltd. at 556 North Coronado Boulevard). MWE is also aware that the Town of Clifton is considering installing a photovoltaic system – the timing of that installation depends on the availability of grant funding the Town of Clifton needs in addition to incentives from MWE. MWE believes that the Town of Clifton could install its facility as soon as the end of 2010.

#### Types and Requirements for Eligible Distributed Renewable Energy Systems

Eligible distributed renewable energy resources include:

- Photovoltaic Systems;
- Solar Space Cooling;
- Non-Residential Solar Water Heating and Space Cooling;
- Small Residential Solar Water Heating;
- Small Residential Solar Space Heating;
- Biomass/Biogas Cooling;
- Non-Residential Solar Daylight; and
- Small Wind Generator.

An eligible distributed renewable energy system (a system applying one or more of the technologies included in A.A.C. R14-2-1802.B) must include a dedicated performance meter that allows for measurement of system energy production. Systems receiving incentives must be installed according to manufacturers' recommendations and generally accepted industry standards, as well as comply

<sup>5</sup> Based on a premium for renewable generation at about \$35 per MWh.

with all applicable federal, state and local regulations, accepted governmental statutes, codes, ordinances, and accepted engineering and installation practices. Any system must be inspected by the jurisdiction having authority over construction projects in the customer's locale. Any distributed renewable energy system must meet all applicable interconnection requirements. Written confirmation of meeting all applicable standards must be provided to MWE. All major components of the distributed renewable energy system must be purchased no more than 180 days before MWE receives an application for incentive payments from a customer.

Further, some technology-specific criteria reference third-party standards. The requirements of those standards are fully applicable when referenced as part of technology specific criteria. Rapid growth in national and international renewable energy programs is resulting in greater need for the development of standardization in design, implementation, performance measurement, system integrity, and installation. New standards may possibly develop in the near future for technologies included below; MWE may add these new standards may be added as they become available. The following standards or standard development bodies are referenced below as part of the technology criteria for specific eligible Distributed Renewable Generation Resources:

- The Active Solar Heating Systems Design Manual developed by the American Society of Heating, Refrigerating, and Air Conditioning Engineers, Inc. ("ASHRAE") in cooperation with the Solar Energy Industries Association ("SEIA") and the ACES Research and Management Foundation (the Design Manual)
- Arizona state boiler regulations (see R4-13-406)
- The select technology specific qualification developed by the California Energy Commission ("CEC")
- Solar Rating and Certification Corporation ("SRCC"). The SRCC criteria and ratings can be viewed at [www.solar-rating.org](http://www.solar-rating.org).
- The Underwriters Laboratory ("UL").
- IEEE-929 standard for utility interconnection of PV systems.

The eligible distributed renewable energy system must meet Company and Arizona Corporation Commission interconnection requirements for self-generation equipment.

See <http://images.edocket.azcc.gov/docketpdf/0000074361.pdf> for these requirements.

Further, MWE reserves the right to modify standards as technology changes on a case by case basis, pending independent laboratory analysis, Professional Engineer ("PE") stamp, or MWE engineering analysis.

For certain systems, MWE may require proper labeling of all system components, including AC & DC disconnects, service panel (outside cover) and breakers (inside the service panel).

## Technology Specific Criteria

The following equipment qualifications listed are mandatory requirements which must be met at the time of project commissioning to receive an incentive from MWE. The installation guidance is intended to provide consumers with information on installation and operation practices which are most likely to achieve the systems designed output. MWE now mandates that all projects to be installed according to installation guidance in order to receive an incentive; this is because the installation guidance reflects both industry and utility concurrence on those practices that are important for a technology to best achieve the designed output. MWE may consider additional installation guidance items may be considered for inclusion as part of future requirements.

### **Photovoltaic Systems**

#### Equipment Qualifications

##### *All Systems*

- The Customer System components must be certified as meeting the requirements of IEEE-929 - Recommended Practice for Utility Interface of Photovoltaic Systems
- The Customer System components must be certified as meeting the requirements of UL-1741 - Power Conditioning Units for use in Residential Photovoltaic Power and be covered by a non-prorated manufacturer's warranty of at least two years.
- Photovoltaic components must be certified by a nationally recognized testing laboratory as meeting the requirements of UL-1703 - Standard for Flat Plate Photovoltaic Modules and Panels Systems and be covered by a non-prorated manufacturer's warranty of at least 20 years.
- The inverter must be certified as meeting the requirements of IEEE-1547 - Recommended Practice for Utility Interface of Photovoltaic Systems and it must be UL-1741 certified. Inverters must be covered by a manufacturer's warranty of at least ten years.
- The Customer System design and installation must meet all requirements of the latest edition of the National Electrical Code, including Article 690 and all grounding, conductor, raceway, over-current protection, disconnect and labeling requirements
- All other electrical components must be UL listed. The Customer System and installation must meet the requirements of all federal, state and local building codes and have been successfully inspected by the building official having jurisdiction. Accordingly, the installation must be completed in accordance with the requirements of the latest edition of National Electrical Code in effect in the jurisdiction where the installation is being completed (NEC), including, without limitation, Sections 200-6, 210-6, 230-70, 240-3, 250-26, 250-50, 250-122, all of Article 690 pertaining to Solar Photovoltaic Systems, thereof, all as amended and superseded.
- The utility meter, inverter, and utility disconnect will be installed in a location readily accessible by MWE during normal business hours.
- Other equipment qualifications may be specifically required as determined by MWE.

*Off Grid Systems are not included in this program*

Installation Guidance

- A grid-connected Residential Customer System must have a total solar array nameplate rating of at least 1,200 watts DC and no more than 20,000 watts AC.
- The Customer System installation must meet the following requirements:

"AN AC DISCONNECT MEANS SHALL BE PROVIDED ON ALL UNGROUNDED AC CONDUCTORS and SHALL CONSIST OF A LOCKABLE GANG OPERATED DISCONNECT CLEARLY INDICATING OPEN OR CLOSED. THE SWITCH SHALL BE VISUALLY INSPECTED TO DETERMINE THAT THE SWITCH IS OPEN. THE SWITCH SHALL BE CLEARLY LABELED STATING "DG SERVICE DISCONNECT."

- The utility meter and utility disconnect will be installed in a location readily accessible by MWE during normal business hours.
- Products must be installed according to manufacturers' recommendations.
- The Customer System photovoltaic panels and modules must face within +/- 100 degrees of true south, and be substantially unshaded from 9 am to 3 pm. System arrays which are facing at an azimuth angle of more than 20 degrees from true south or shaded for more than one hour per day may be subject to a reduced amount of incentive payment. This reduced amount will depend on the array azimuth angle from due south as well as the number of shaded hours.
- The Customer System photovoltaic panels and modules must be fitted at an angle of 0 degrees to 60 degrees from horizontal. System arrays which are fitted with an elevation angle of less than 20 degrees or more than 35 degrees above horizontal may be subject to a reduced amount of incentive payment.
- For Residential Customer Systems, Company will provide a meter and meter socket that will be installed in a readily accessible outdoor location by the Customer between the DC to AC converter and the connection to the over-current device in the Customer's electric service panel. For Non-Residential Customer Systems, Company shall provide the meter only, to be installed in a Customer supplied meter socket to be installed in a readily accessible outdoor location by the Customer between the DC to AC converter and the connection to the over-current device in the Customer's electric service panel. Installer must notify MWE of wiring configuration so that MWE may provide the appropriate 3-phase meter.
- Total voltage drop on the DC and AC wiring from the furthest PV module to the AC meter will not exceed 2%.
- PV panels and DC to AC inverter will be installed with sufficient clearance to allow for proper ventilation and cooling. At a minimum, manufacturer clearance recommendations will be observed. PV modules may be mounted less than 4 inches above any surface and an additional inch of clearance for each foot of continuous array surface area beyond four feet in the direction parallel to the mounting support surface,

only in cases when arrays are flush-mounted to roof pitch. Otherwise, the four-inch spacing and an additional inch of clearance for each foot of continuous array surface area minimum is required.

- Storage Batteries are not allowed as part of the Customer System unless the inverter is a separate component and MWE can locate the Solar Meter at the inverter's output. If configured otherwise, battery losses will adversely reflect in the annual AC metered energy output. Customer's solar energy generation and energy storage system must meet all of the applicable requirements for Photovoltaic Systems contained within this section.
- The DC to AC inverter used must provide maximum power point tracking for the full voltage and current range expected from the photovoltaic panels used and the temperature and solar insolation conditions expected in MWE's service territory.
- The DC to AC inverter must be capable of adjusting to "sun splash" from all possible combinations of cloud fringe effects without interruption of electric production.
- MWE reserves the right to modify standards as technology changes on a case by case basis, pending independent laboratory analysis, Professional Engineer ("PE") stamp, or MWE engineering analysis.

#### Additional Guidance

The following resources provide information regarding system installation and performance forecasting:

The California Energy Commission's Guide to Buying a Photovoltaic Solar Electric System at [http://energy.ca.gov/reports/2003-03-11\\_500-03-014F.PDF](http://energy.ca.gov/reports/2003-03-11_500-03-014F.PDF)

The Arizona Consumers Guide to Buying a Solar Electric System at [www.azsolarcenter.com/design/azguide-1.pdf](http://www.azsolarcenter.com/design/azguide-1.pdf)

Additional requirements may apply to photovoltaic systems larger than 100 kW.

### **Biomass/Biogas Electric, Hydroelectric and Geothermal Electric**

#### Equipment Qualifications

- Biomass system installations involving a regulated boiler or pressure vessel are required to comply with all Arizona state boiler regulations; provide a qualifying boiler inspection identification number; and keep all applicable permits in good standing.
- System must include a dedicated performance meter to allow for monitoring of the amount of electricity produced.
- Energy savings and designed output for the system will be verified by submitting either a testing certification for a substantially similar system prepared by a publicly funded laboratory or by submitting an engineering report stamped by a registered professional engineer. The engineering report must provide a description of the system and major components, design criteria and performance expectations, applicable standards and/or codes, and a brief history of components in similar applications. This

- certification or engineering report must be provided in Step #6 of the Application Process detailed below.
- The system must have a material and labor warranty of at least five (5) years.
  - The system must meet Arizona Department of Environmental Quality (“ADEQ”) environmental standards.

#### Installation Guidance

Because of the individual nature of biomass systems, care should be taken to make sure the system complies with all applicable permitting and regulatory requirements, including but not limited to air emission standards and air permit regulations.

### **Solar Non-Residential Daylighting**

#### Equipment Qualifications

All systems shall include the following components as part of the day lighting system:

- Skylights must adhere to the 2009 International Energy Conservation Code with regard to the U-factor and solar heat gain coefficient and must have a minimum visible transmittance based on the California Public Utilities Commission (CPUC) Savings by Design program (Note: U-value and SHGC ratings should be based on a 20 degree ratings, now standard through the National Fenestration Rating Council (NFRC)):
  - Maximum U-factor of 0.75
  - Maximum solar heat gain coefficient of 0.35
  - Minimum visible transmittance of 0.45
- Skylight can be in a toplighting configuration only.
- Skylight area may not exceed 3% of the gross roof area.
- Skylights must be certified by the National Fenestration Rating Council (NFRC).
- If artificial lighting systems remain a part of the installation, the system shall include automated lighting control(s) which are programmed to keep electric lights off/dimmed during daylight hours of sufficient solar insolation to provide minimum design illumination levels.
- The system will have a material and labor warranty of at least five years.

#### Installation Guidance

All systems should be installed such that the skylight dome is substantially unshaded and have substantially unobstructed exposure to direct sunlight between the hours of 9 a.m. and 3 p.m.

## Small Wind Generator

A small wind generator is a system with a nameplate rating of one MW or less. The technology criteria described below are intended for small wind generators with a nameplate rating of 100kW or less. Larger systems will be required to submit a detailed package describing site selection, energy production modeling, and an engineered system design and installation report.

### Equipment Qualifications

- Eligible small wind systems must be certified and nameplate rated by the CEC<sup>6</sup>. See [www.consumerenergycenter.org/erprebate/equipment.html](http://www.consumerenergycenter.org/erprebate/equipment.html) for a list of certified generators. For grid tied or off-grid wind generators where an inverter is used, the CEC listed nameplate rating of the wind generator will be multiplied by the CEC approved weighted efficiency percentage listed for the inverter in the "List of Eligible Inverters" at [www.consumerenergycenter.org/cgi-bin/eligible\\_inverters.cgi](http://www.consumerenergycenter.org/cgi-bin/eligible_inverters.cgi) to calculate the wind turbine nameplate rating for use in determining the UFI payment.
- Grid connected inverters used as part of the system shall carry a UL listing certifying full compliance with Underwriter's Laboratory ("UL")-1741
- A system must include a dedicated performance meter installed to allow for measurement of the amount of electricity produced.
- The performance meter and utility disconnect will be installed in a location readily accessible to MWE during normal business hours.
- The tower used in the installation must be designed by an Arizona registered engineer and must be suitable for use with the wind generator. Tower installation must be designed and supervised by individuals familiar with local geotechnical conditions.
- The wind generator and system must include a 10-year manufacturer's warranty and a material and labor warrantee of at least 5 years.

### Installation Guidance

- Location: a wind turbine hub should be at least 20 feet above any surrounding object and at least 28 feet above the ground within a 250-foot radius. Wind generators should be installed in locations with an elevation at or above the general elevation of the surrounding terrain.
- Lot Size: should be at minimum one-half acre. Municipalities and public facilities such as schools and libraries are exempt from the minimum lot size requirements.
- The Applicant should demonstrate its proposed system is able to obtain at least a 15% annual capacity factor. The following are readily available methods for helping to demonstrate the potential for a 15% capacity factor, but other methods may be used. The installation location should have a demonstrated average annual wind speed of at least 10 MPH as measured at a height of no more than 50 feet above the ground. Average annual wind speed can be demonstrated by wind speed records from an airport, weather station or university within 20 miles of the proposed wind generator location, or by a 50 meter wind power density classification of

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<sup>6</sup> MWE notes that the Uniform Credit Purchase Program ("UCPP") Working Group recommends review of the SWCC standards for rating small wind generators once they become available for purposes of supplanting the CEC requirement in this Technology Criterion.

Class 2 "Marginal" or higher on the "State of Arizona Average Annual Wind Resource map dated July 16, 2005 or later as published by Sustainable Energy Solutions of Northern Arizona University. Northern Arizona University provides detailed wind resource maps as well as other resource services. For more information contact Northern Arizona University at <http://wind.nau.edu/maps/>.

## **Solar Space Cooling**

### Equipment Qualifications

- The minimum cooling capacity of the system will be 120,000 BTU (10 tons) per hour.
- Solar collector panels used will have a Solar Rating and Certification Corporation ("SRCC") OG-100 rating or laboratory documentation showing the panel energy output under controlled and replicable test conditions.
- Energy savings and designed output for the system will be verified by submitting either a testing certification for a substantially similar system prepared by a publicly funded laboratory or by submitting an engineering report stamped by a registered professional engineer. The engineering report shall provide a description of the system and major components, design criteria and performance expectations, applicable standards and/or codes, and a brief history of components in similar applications.
- System must include a dedicated performance meter to allow for monitoring of the amount of heat input to the thermal cooling device or system. Energy production will be calculated at one kW-hr per 3,415 Btu of metered heat delivered to the thermal cooling device or system.
- The system must have a material and labor warranty of at least 5 years.

### Installation Guidance

- The horizontal tilt angle of the collector panels should be between 20 and 60 degrees and the panel orientation should be between +/- 45 degrees of south.
- All systems should be installed such that the energy collection system is substantially unshaded and should have substantially unobstructed exposure to direct sunlight between the hours of 9 a.m. and 3 p.m.
- The system installation should comply with the design manual.

## **Non-residential Solar Water Heating and Space Heating**

### Equipment Qualifications

- Solar collector panels used will have a SRCC OG-100 certification or laboratory documentation showing the panel energy output under controlled and replicable test conditions.
- The system must include a dedicated performance customer-supplied meter to allow for monitoring of the amount of useful heat produced – if annual energy production is expected to exceed 10,000 kWh or equivalent. Otherwise, compliance reporting production will be based on the design energy savings submitted at the time of application.

- Energy savings and designed output for the system will be verified by submitting either a testing certification for a substantially similar system prepared by a publicly funded laboratory or by submitting an engineering report stamped by a registered professional engineer. The engineering report shall provide a description of the system and major components, design criteria and performance expectations, applicable standards and/or codes, and a brief history of components in similar applications.
- The solar collector, heat exchangers and storage elements must have an equipment warranty of at least 10 years and the entire system must have a material and full labor warranty of at least 5 years.

#### Installation Guidance

- The horizontal tilt angle of the collector panels should be between 20 and 60 degrees and the panel orientation should be between +/- 45 degrees of south.
- All systems should be installed such that the energy collection system is substantially unshaded and should have substantially unobstructed exposure to direct sunlight between the hours of 9 am and 3 pm.
- The system installation should comply with the design manual.

### **Small Residential Solar Water Heating and Space Heating**

#### Equipment Qualifications

- Residential (*i.e.*, Domestic) Solar Water Heating systems will be rated by the SRCC and meet the OG-300 system standard. Systems that include OG-100 collectors but are not certified under OG-300 will need to be verified by submitting either a testing certification for a substantially similar system prepared by a publicly funded laboratory or by submitting an engineering report stamped by a registered professional engineer detailing annual energy savings. Solar Space Heating systems will utilize OG-100 collectors.
- Residential Water Heating systems shall be selected and sized according to the geographic location and hot water needs of the specific application. Reservation requests will include a manufacturer's verification disclosing that the system size and collector type proposed is appropriate for the specific application. The manufacturer's verification may be presented as a manufacturer's product specification sheet and will be included in the reservation request.
- Solar Space Heating systems will be sized in conformance with the Solar Space Heating Incentive Calculation Procedure attached to MWE's REST Plan as Exhibit 1.
- Active, open-loop systems are not eligible for any incentives except for active, open-loop systems that have a proven technology or design that limits scaling and internal corrosion of system piping, and includes appropriate automatic methods for freeze protection and prevents stagnations temperatures that exceed 250 degrees Fahrenheit under all conditions at the location of installation. Details disclosing conformance with this exception shall be submitted as part of the manufacturer's verification documentation.
- Integrated Collector System ("ICS") systems shall have a minimum collector piping wall thickness of 0.058 inches. Details disclosing conformance with this

requirement must be submitted as part of the Manufacturer's verification documentation. ICS units must include certification that collector stagnation temperature will never exceed 250 degrees Fahrenheit under any possible conditions at the location of the installation.

- The 'high' limit on all Residential Water Heating controllers shall be set no higher at 160 degrees Fahrenheit.
- Active thermal storage for solar space heating systems shall use water as the storage element.
- Contractors must provide minimum of a five-year equipment warranty as provided by the system manufacturer, including a minimum warranty period of 5 years for repair/ replacement service to the customer.
- Residential Water Heating systems that are installed as an addition to an existing system or are submitted as a customer-designed system or not certified to OG-300 must be specifically reviewed and approved by the utility.
- The solar collector, heat exchangers and storage elements must have an equipment warranty of at least 10 years.

#### Installation Guidance

- The system shall be installed with a horizontal tilt angle between 20 degrees and 60 degrees, and azimuth angle of +/- 60 degrees of due south. It is recommended that collectors be positioned for optimum winter heating conditions at a minimum tilt angle of 45 degrees above horizontal, or as recommended by the manufacturer for the specific collector type and geographic location of installation.
- All systems should be installed such that the energy collection system is substantially unshaded and should have substantially unobstructed exposure to direct sunlight between the hours of 9 a.m. and 3 p.m.
- Heat exchange fluid in glycol systems should be tested and flushed and refilled with new fluid as necessary or every 5 years or sooner per manufacturer's recommendations.
- It is recommended that the anode rod be checked and replaced per manufacturer's recommendations, but no less frequently than every 5 years.
- It is recommended that the system design include a timer, switch, or other control device on the backup element of the storage tank.
- The collectors and storage tank should be in close proximity to the backup system and house distribution system to avoid excessive pressure or temperature losses.
- It is recommended that in areas where water quality problems are reported to have reduced expected life of a solar water heater, that a water quality test is performed for each residence to screen for materials that through interaction with the materials of the proposed system may reduce the expected operational life of the system components. The customer should consider contacting the manufacturer to determine if warranty or operational life will be affected.
- In areas subject to snow accumulation, sufficient clearance will be provided to allow a 12" snowfall to be shed from a solar collector without shadowing any part of the collector.
- Each system should have a comprehensive operation and maintenance manual at the customer's site – including a spare parts list, data sheets, and flow diagrams indicating operating temperatures and pressures, maintenance

schedules and description of testing methods. Further, each customer must complete an initial start up and operation training review with the contractor at the time of system start up.

- Ball valves should be used throughout the system. Gate valves should not be used.
- Pipes carrying heated fluids shall be insulated for thermal energy conservation, as well as personnel protection when exposed to ambient conditions, although this is highly recommended in either situation.

## **Biogas/Biomass Thermal, Geothermal – Space Heating and Process Heating (including Residential or Commercial Ground Source Heat Pumps)**

### Equipment Qualifications

- Biomass/Biogas or geothermal system installations involving a regulated boiler or pressure vessel are required to comply with all Arizona state boiler regulations; provide a qualifying boiler inspection identification number; and keep all applicable permits in good standing.
- Energy savings and designed output for the system will be verified by submitting either a testing certification for a substantially similar system prepared by a publicly funded laboratory or by submitting an engineering report stamped by a registered professional engineer. The engineering report shall provide a description of the system and major components, design criteria and performance expectations, applicable standards and/or codes, and a brief history of components in similar applications.
- Energy production for space heating, space cooling and process heating will be calculated as one kWh of energy per 3,415 Btu of useful heat delivered by the system as measured by a dedicated heat delivery measuring meter and used by the building space or process.
- The system will have a material and labor warranty of at least five years.
- The system must meet ADEQ environmental standards.
- For Residential and Commercial Ground Source Heat Pumps, the most current Energy Star Standards must be achieved. These can be found at: <http://www.energystar.gov/index.cfm?c=geoheat.prccritgeoheatpumps>.

### Installation Guidance

Because of the individual nature of biomass/biogas or geothermal systems, care should be taken to make sure the system complies with all applicable permitting and regulatory requirements including, but not limited to, air emission standards and air permit regulations.

## **Technologies without Technology Specific Criteria and Non-Conforming Projects**

MWE is not aware of any technology-specific criteria developed for the following qualifying technologies:

- Biogas/Biogas Combined Heat and Power (“CHP”)
- Fuel Cells
- Other

For applicants requesting incentives for the above technologies or for applicants requesting installation of a technology with conforming project technology criteria but where some criteria cannot be met, the applicant will need to submit design and output documentation.

Applicants installing these systems will, at a minimum, need to provide an energy savings and designed output report for the system. The report must include either a testing certification for a substantially similar system prepared by a publicly funded laboratory or an engineering report stamped by a registered professional engineer. The engineering report and/or testing certification shall provide a description of the system and major components, design criteria and performance expectations, applicable standards and/or codes, and a brief history of components in similar applications. Additional information may be required as part of the utility specific Uniform Credit Purchase Program (UCPP) requirements.

### **Installation**

The installer for any and all distributed renewable energy systems must possess a valid license on file with the Arizona Registrar of Contractors (“AZROC”), with a license classification appropriate for the technology being installed, or the installer must identify use of a contractor holding an appropriate license on file with the AZROC for the technology being installed. The installer must also have proof of liability insurance, which is to be provided when Applicant submits the application. Further, any equipment dealer must provide proof of a business license showing that the dealer is in good standing with the appropriate agency(ies) and must also provide proof of liability insurance.

### **Reporting Requirements**

Applicants must submit a report demonstrating energy savings and that projected output will be achieved. The report must show that the distributed renewable energy system meets all applicable requirements including – if necessary – testing certification and/or an engineering report stamped by a registered professional engineer. The report must also describe the system and its major components and include designed performance and system output.

### **Inspections**

Any and all distributed renewable energy systems must be inspected by the entity having authority to inspect construction projects within MWE’s certificated service area. MWE’s inspections are in addition to, and not instead of, any building and construction-related inspections. MWE must have access to any

distributed renewable energy system during normal business hours for any inspection by MWE. MWE will inspect any and all grid-tied systems to ensure the system is connected to the grid in conformance with MWE's interconnection requirements. *Under no circumstances is any grid-tied system to be installed in parallel or otherwise connected with the MWE system until the time that MWE has inspected the distributed renewable energy system and gives written authorization. This inspection will only take place after the appropriate building and construction-related inspection(s) have been performed.*

Further, MWE may conduct further inspections to ensure any distributed renewable energy system continues to conform to applicable codes, regulations and standards. MWE will conduct these inspections solely within its discretion. MWE may also conduct other inspections to ensure the system is operated in compliance with the Applicant's original request and the Company's approval of the request.

### **Metering**

All distributed renewable energy systems must include a system-dedicated kWh performance meter, which allows MWE to measure system energy production. The Applicant must include performance meters as part of the system designed and the Applicant will be responsible for the cost of the performance meter. The performance meter must be installed according to MWE's meter installation standards and is subject to inspection. These meters are in addition to billing meters and must be calibrated to meet industry standards and provide direct kWh readings.

Those customers who receive distributed renewable generation incentives are also eligible to receive benefits under net metering. The Commission approved Net Metering Rules in Decision No. 70567 (October 28, 2008). Those rules have been filed with the Arizona Secretary of State on March 24, 2009, and became effective May 23, 2009. MWE has filed its proposed Net Metering Tariff with the Commission.<sup>7</sup> That tariff proposal must receive Commission approval before it can take effect.

### **System Operation and Maintenance**

An Applicant must operate and maintain any distributed renewable energy system appropriately and must do so for the duration detailed in his or her request and the Company's approval of such request. If an Applicant fails to maintain and operate the distributed renewable energy system in MWE's certificated service area for the period detailed in the MWE's approval of the application, then Applicant will be in default of the terms and conditions of the agreement between Applicant and MWE. Applicant will be responsible for reimbursing MWE the total amount of the incentive payment. In addition, liquidated damages may also apply. MWE, however, has the ability in its sole discretion to determine that the distributed renewable energy system is not

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<sup>7</sup> See Docket No. E-01025A-09-0444 and <http://images.edocket.azcc.gov/docketpdf/0000102344.pdf>.

operational due to equipment malfunction or other disrepair and that the Applicant is making efforts to repair the system and return it to operation. In that case, the reimbursement requirement will not apply.

Should a system cease to be operational, the Applicant must notify MWE within five (5) business days after the distributed renewable energy system is either removed from the property or fails to be operational. Short outages (lasting less than 30 days) that are for planned maintenance or system repair are not part of this requirement.

An Applicant who has been in default at any time will be completely disqualified for any future funding permanently.

### **Sale of Property**

Applicant must notify MWE if Applicant sells the property on which the distributed renewable energy system is located by notifying MWE in writing. Applicant may be required to reimburse payment incentive and may be determined to be in default – unless the subsequent owner agrees in writing to operate and maintain the distributed renewable energy system per the terms and conditions agreed to between Applicant and MWE.

### **Renewable Energy Credits**

MWE will receive complete and irrevocable ownership of all Renewable Energy Credits (RECs) expected from system production for the effective life of the distributed renewable energy system – when it makes any incentive payment to an Applicant. These RECs will be applied toward MWE's requirements under the REST Rules.

All RECs derived from any Applicant receiving incentive payment(s) for any distributed renewable energy system, including generation and Extra Credit Multipliers, will be applied to satisfy MWE's Annual Renewable Energy Requirement and Distributed Renewable Energy Requirement.

### **Incentives**

Any incentive payment will be a one-time up-front payment and will be determined based on system capacity (Watts) and/or estimated annual production (kWh), as well as based on a 20-year agreement with MWE. The following chart highlights the incentives per type of eligible Distributed Renewable Energy Resource:

Type	2011
Biomass/Biogas (Electric, Thermal, Cooling)	TBD
Biomass/Biogas CHP (Electric, Thermal) <sup>8</sup>	TBD

<sup>8</sup> The CHP incentives may be used in combination for the appropriate components of one system.

Daylighting <sup>9</sup>	\$0.20 / kWh
Geothermal (Electric)	\$0.50 / Watt
Geothermal (Thermal)	\$1.00 / Watt
Hydroelectric	TBD
Small Wind	\$2.50 / Watt AC
Solar Electric – Residential <sup>10</sup>	\$4.00 / Watt DC
Solar Electric – Non-Residential <sup>11</sup>	\$3.50 / Watt DC
Solar Space Cooling <sup>12</sup>	TBD
Non-Residential Solar Water Heating / Space Heating <sup>13</sup>	TBD
Residential Solar Water Heating / Space Heating <sup>14</sup>	\$0.75 / kWh
Non-Residential Pool Heating	TBD

TBD – To Be Determined

Those amounts identified in the chart were largely based on the Uniform Credit Purchase Program (“UCPP”) Working Group Project Incentive Matrix. For those categories where the incentive is “To Be Determined” the incentive amounts will be determined on a case-by-case basis and will include consideration of capital costs, capacity (kW), and estimated annual production (kWh).

Incentives will be dealt on a first-come first-serve basis and it is MWE’s intent to split total annual incentive payments to make best efforts to comply with the requirement that 50% of its annual Distributed Renewable Energy Requirement comes from eligible residential Distributed Renewable Energy Resources. Eligibility requirements for which an Applicant may receive incentive payments to develop and install distributed renewable energy resources are described in the Company’s scheduled entitled “Applications for Distributed Renewable Energy Resources Schedule” – Sheet No. 31.0 – that was approved in Decision No. 71469 and is attached as Exhibit 2.

Funds for incentive payments are made available for distributed renewable energy systems on the first working day after January 1<sup>st</sup> of each calendar year.

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<sup>9</sup> Rate applies to first year energy savings only.

<sup>10</sup> Some installations may require an adjustment of the incentive.

<sup>11</sup> Some installations may require an adjustment of the incentive.

<sup>12</sup> Solar space heating and cooling incentives may be used in combination for the appropriate components of one system.

<sup>13</sup> Solar space heating and cooling incentives may be used in combination for the appropriate components of one system.

<sup>14</sup> This category includes both traditional water heating and those systems combined with residential solar water heating used for space heating. Space heating applications require a report detailing energy savings for the complete system. Rate Applies to First Year Energy Savings Only. Energy savings rating is based on the SRCC OG-300 published rating or the Uniform Credit Purchase Program Space Heating Calculator. The customer contribution must be a minimum of 15% of the project cost after accounting for and applying all available Federal and State incentives.

Should funds collected for MWE's distributed renewable energy system not be used during the calendar year, they will be applied to the next calendar year.

Funds for any one project will not exceed 60% of the total cost of the project. This 60% cap will apply to entire system costs for the project (*i.e.*, including financing costs). But at no time will more than \$75,000 be provided in incentives for any one project. This \$75,000 cap will include the costs of financing (*i.e.*, no more than \$75,000 will be provided towards the total system cost of any one project).

### **Distributed Renewable Energy System Program Monitoring**

MWE will track progress toward program goals by compiling data received from conducting maintenance inspections, meter readings and analyzing trends in customer participation and technology installation. New information, changing market conditions, changing assumptions and/or technological innovations may lead to changing certain facets of the REST Plan for eligible Distributed Renewable Energy Resources. MWE will bring those issues to the Commission's attention in a timely manner. MWE will report on the productivity for all distributed renewable energy systems annually by reporting on the total installed capacity and projected productivity. MWE will also continue to participate in the "Go Solar Arizona" website development as ordered in Decision No. 71469 (January 26, 2010).

### **System Removal**

No qualifying system nor any components of that system will be removed (by either the applicant or future owners or occupants of the property) until December 31<sup>st</sup> of the 20<sup>th</sup> full calendar year following completion of system installation of the renewable energy system, without express agreement of MWE. If a system is removed by any party in violation of this provision, then the customer must immediately reimburse MWE all incentive amounts paid to customer by MWE or on behalf of the customer to an authorized third party. Should a distributed renewable energy system be removed before its agreement term expires and without MWE's permission – or if an Applicant does not repair a system – then MWE will continue to reflect in the annual compliance reporting the annual historic energy production for the system until the agreement term for the system has been completed. The actions MWE would take, if any, to address removal of the system contrary to the agreement or failure to make needed repairs to a system would depend on the particular circumstances of the removal. MWE would note – in its annual compliance reporting – that the system had been removed and what the annual historic energy production had been before the system was removed.

MWE will, in its compliance reports, provide the information as required by A.A.C. R14-2-1812. That information includes: (1) actual kWh of energy obtained from Eligible Renewable Energy Resources; and (2) kW of generation capacity.

## Application Process

1. **Applicant submits a Distributed Renewable Generation System Reservation Application to MWE (i.e. "the Application").** This includes any and all required interconnection documents.
2. **Applicant receives approval from MWE.** This approval will be a written agreement between Applicant and MWE, and will constitute the terms and conditions that Applicant must agree to in order to receive any incentive payment. The approval will detail the time period for which the agreement applies. The approval will constitute the entire agreement between the Applicant and MWE regarding the specific distributed renewable energy system contained within the application. The approval will also specify a timeframe for which Applicant has to install and receive all approvals before having to place system in operation. Should Applicant fail to do so, then the approval will be automatically terminated and Applicant will have to submit a completely new application.

If the application is deficient, MWE will inform the Applicant of the nature of the deficiency(ies). Applicant will have an opportunity to correct the deficiency(ies) within a specific time period indicated on MWE's notification of deficiency. If deficiencies are not addressed within that time period to MWE's satisfaction, then the application will automatically be deemed denied. If an application cannot be approved because funding is not available, then the application will be put on a waiting list and MWE will send written notification to the Applicant.

3. **Applicant agrees to terms and conditions contained in the approval through written and signed confirmation explicitly agreeing to those terms and conditions.**
4. **Applicant submits proof – no later than 90 days before installation – that Applicant is going forward with installing the distributed renewable energy system approved.** This is to ensure that funds are reserved to projects that will actually be installed.
5. **Applicant submits a system design for review and approval by MWE.** MWE must approve system design before Applicant proceeds with installation.
6. **Applicant has system installed. MWE inspects the system to ensure it is connected to the grid per MWE's interconnection requirements.** This will take place after MWE receives proof that the system has been inspected by the appropriate entity to inspect construction and building. Applicant also must include proof that installation has been performed pursuant to this REST Plan. MWE

will provide Applicant with written confirmation that the system passed its installation inspection.

At no time will Applicant make any material change from the approved application without prior written consent from MWE. Applicant must submit a Proposed Modification to Application in order to receive such written consent. MWE will then determine whether additional funding is available, should additional funding be requested or required due to the material change. Should additional funding not be available, then Applicant will only receive the incentive payment amount originally approved.

**7. Applicant receives one-time up-front incentive payment.**

**Eligibility Requirements**

Eligibility requirements are set forth in the Company's schedule entitled "Applications for Distributed Renewable Energy Resources Schedule" – Sheet No. 31.0 – that is approved in Decision No. 71469 and attached as Exhibit 2. Any customer of MWE is eligible to apply for and, if approved, receive incentive payment for an eligible Distributed Renewable Energy Resources as defined in A.A.C. R14-2-1802.

1. The Applicant must apply for – and receive approval for – funding in accordance with the procedure set forth above.
2. The distributed renewable energy system must be established physically within the Company's certificated service area.
3. Any project applied for must meet the requirements for a Distributed Renewable Energy Resource described in the Arizona Corporation Commissions' REST Rule A.A.C. R14-2-1802.
4. The Company will assume no liability for any incentive payment subsequently assigned to third party(ies) from the Applicant.

All Renewable Energy Credits ("RECs") derived from any Applicant receiving incentive payment(s) for any distributed renewable energy system, including generation and Extra Credit Multipliers, will be applied to satisfy MWE's Annual Renewable Energy Requirement and annual Distributed Renewable Energy Requirement.

**Customer Self-Directed Renewable Energy Option**

Any customers paying Tariff funds of at least \$25,000 annually for any number of related accounts or services within an Affected Utility's service area are eligible for the Customer Self-Directed Renewable Energy Option. That Schedule – approved in Decision No. 71469 and attached as Exhibit 3 (Sheet No. 32.0) – details the requirements to be met when submitting a written application. One

half of the funding must come from the Eligible Customer for each project proposed. Per A.A.C. R14-2-1809.C., all REC's derived from the project(s) will apply to satisfy MWE's Annual Renewable Energy Requirement. At this time, MWE has two customers – FMI Morenci and FMI Safford – that are "Eligible Customers" as defined in the REST Rules.

The application process will be similar as for other customers applying for incentive payments for eligible Distributed Renewable Energy Resources. Both Eligible Customers may use this option for any distributed renewable energy system either proposes to receive funding, if they pay Tariff funds that equal or exceed \$25,000 annually aggregated for all accounts and services.

## 5. BUDGET

MWE's actual costs remain uncertain and subject to various factors outside of its control. MWE is unsure what Eligible Renewable Energy Resources it will procure in 2011. Much depends on what it can procure and deliver to its remote service territory. For these reasons, MWE also cannot predict with any accuracy separate line-item costs will be for administration, implementation, commercialization and integration, and marketing and outreach.

Further, MWE has seen some customer interest in pursuing installation of eligible Distributed Renewable Energy Resources, but only from non-residential customers. As stated earlier, approximately 1,171 of MWE's residential customers are renters within the Morenci town-site. MWE is not sure how many residential customers are renters within the Town of Clifton. Customers may not be willing or able to finance such systems even after receiving incentives to cover a significant amount of the cost. For these reasons, the figures contained in the following budget, especially regarding procuring eligible Distributed Renewable Energy Resources, remain preliminary estimates – with Energy Sales to FMI Morenci and FMI Safford excluded.

### MWE's Estimated 2011 REST Plan Budget (\$'s)

	2011
Total Energy – Prospective Procurement (Biomass) <sup>15</sup>	18,000
Energy Power Purchase Agreements (Other Eligible Renewable Resources)	0
Utility-Owned Systems	0
Administration, Implementation, Commercialization & Integration	9,000
<b>Renewable Energy – Subtotal</b>	<b>27,000</b>
Incentives <sup>16</sup>	137,539

<sup>15</sup> Assuming the renewable premium remains at \$35 per MWh.

<sup>16</sup> This assumes the cost of installing solar photovoltaic systems with an installation cost of \$7.60 per watt as stated in the LBNL Report. Further, these figures assume a 25% annual capacity factor for solar photovoltaic systems and that MWE provides incentives equaling 60% of the total

Customer Self-Directed Renewable Energy Option <sup>17</sup>	0
Administration, Implementation, Marketing & Outreach, Commercialization & Integration.	15,000
<b>Distributed Energy – Subtotal</b>	<b>152,539</b>
<b>TOTAL</b>	<b>179,539</b>

MWE may consider participating in existing and future studies to enhance and accelerate the development, deployment, commercialization and use of renewable resource technologies to the benefit of MWE customers.

The funding is intended to cover the cost of utility scale renewable generation in excess of the cost of conventional generation resource alternatives, incentive payments for distributed renewable energy resources, marketing expenses and program implementation and administration.

## 6. FUNDING

Currently, MWE collects a RESS. The RESS was established in Commission Decision No. 70303 (April 24, 2008) – Docket No. E-01049A-07-0599 – as part of its REST Plan for 2008. The Company currently collects – through the RESS – \$0.004988 per kWh capped at:

- \$1.05 per month for each residential customer;
- \$39.00 per month for each non-residential customer;
- \$117.00 per month for each non-residential customer with demand over 3 MW per month for three consecutive months.

The RESS is shown as a separate item on customer bills.

For 2011, the Commission authorized MWE to maintain both the RESS per-kWh rate and the caps for each customer class.

MWE's proposed rate and caps are included in its Sheet 33.0 (attached as Exhibit 4).

A residential customer using an average of 595 kWh per month will pay \$1.05 per month under the RESS. The non-residential customers with demand under 3

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cost to install the requisite number of systems to meet the requirements each year. Depending on the number of systems already installed still in operation from previous years, the amount in incentives could be significantly less the following year. This also assumes that the three distributed PV installations mentioned in the first paragraph of MWE's Plan for Eligible Distributed Renewable Resources are installed and operational.

<sup>17</sup> MWE considers this option to be a subset of the total Distributed Energy Incentive budget. MWE may have two customers – FMI Morenci and FMI Safford – that could be eligible for the Customer Self-Directed Renewable Energy Option. If that turns out to be the case, MWE will make the appropriate allocation(s).

MW (using an average of about 4,722 kWh per month) will pay about \$23.56 per month. Specific non-residential customers may pay the following based on kWh usage:

Sample Customers	Average kWh per Month	Monthly RESS (\$'s) (Present)
PD Store	221,350	\$39.00
High School	93,200	\$39.00
Motel	45,000	\$39.00
Conoco	23,460	\$39.00
Circle K	23,100	\$39.00
LDS Church	5,945	\$29.65
Restaurant	5,225	\$26.06
Florist	1,872	\$9.33
Insurance Company	992	\$4.95
American Legion	306	\$1.53
Fashion Salon	230	\$1.14

Based on its number of customers as of December 31, 2009, for 2011, the maximum amount MWE could collect through the RESS equals approximately:

- \$26,510 per year from residential customers;
- \$75,182 per year from non-residential customers;
- \$2,808 per year from non-residential customers with demand over 3 MW per month for three consecutive months; for
- A total no greater than \$104,501.

But it is unlikely MWE would collect the maximum amount. MWE estimates it will collect between \$50,000 and \$60,000 from customers through the RESS in 2011. With the partial waiver, the RESS may provide sufficient funding for MWE to meet its REST Rules requirements for 2010 – particularly the purchase of required grid-tied Eligible Renewable Energy Resources. Depending on the level of interest in MWE's distributed renewable energy incentives, the funding may be sufficient. MWE may file to amend the RESS should it become apparent that more funding is needed to meet the REST Rules requirements in future years.

If the partial waiver were not granted for 2010, MWE anticipates it would need approximately \$26.13 to meet the REST Rules Requirements, or more than 87 times the amount of funding MWE would need to meet the requirement absent the waiver<sup>18</sup> MWE is aware that the rates and caps for customers for some other electric utilities regulated by the Commission are higher than what MWE currently charges its customers. Even so, the typical MWE residential customer earns less income than the average residential customer for other Arizona electric utilities.

<sup>18</sup> Without the waiver, MWE anticipates needing about \$26.13 million in 2011. \$26.13 million is more than 87 times \$300,000.

Even assuming a rate of \$0.01 per kWh and caps of \$8.00, \$950.00 and \$4,500.00 respectively for residential, commercial customers under 3 MW demand, and customers with over 3 MW of demand, the *maximum* MWE could collect is the following:

- \$201,984 from residential customers;
- \$3,032,400 from non-residential customers under 3 MW demand; and
- \$108,000 per month for each non-residential customer with demand over 3 MW per month for three consecutive months;
- A total of \$3,342,384.

That would also mean increasing the rates MWE's customers are paying, particularly its non-residential customers – most of which are small commercial establishments. In any event, MWE does not anticipate that all of its customers will use the requisite amount of kWhs so that MWE will come close to collecting the maximum amounts through the RESS.

RES TARIFF: RENEWABLE ENERGY STANDARD SURCHARGE SCHEDULE

Applies to: The Morenci Water and Electric Company Service Area  
Greenlee and Graham County, Arizona

MW&E's Renewable Energy Standard Surcharge ("RESS") – established in Decision No. 70303 (April 24, 2008) – will apply to all retail service. All provisions of the customer's current applicable rate schedule will apply in addition to this surcharge. MW&E will evaluate – from time to time – the RES program spending requirements. If necessary the RESS may be increased if it becomes apparent that more funding is needed for MW&E to meet the RES in future years. The Commission must approve any increases to the RESS. Any change to the RESS amounts will be applied in billing cycle 1 beginning in the month following Commission approval and will not be prorated. Additional details regarding the RESS can found in MW&E's Renewable Energy Standard Implementation Plan in Docket No. E-01049A-07-0599, the Commission approved in Decision No. 70303 (April 24, 2008). The RESS rate and caps were affirmed in Decision No. 72230 (March 9, 2011)

Surcharge:

A RESS of \$0.004988 per kWh will be charged to MW&E customers, but capped as follows:

Residential Customers:	\$1.05 per month per service
Non-residential Customers:	\$39.00 per month per service
Non-residential Customers with demand of 3 MW per month for three consecutive months:	\$117.00 per month per service

The RESS will be shown as a separate item on customer bills. The RESS is established pursuant to A.A.C. R14-2-1801 through R14-2-1816, which was approved by the Commission in Decision No. 69127 (November 14, 2006).

Effective: March 19, 2011

ISSUED BY:  
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