

ORIGINAL NEW APPLICATION



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Arizona Corporation Commission  
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IN THE MATTER OF THE APPLICATION  
OF AJO IMPROVEMENT COMPANY  
ELECTRIC DIVISION – FOR APPROVAL OF  
ITS 2010 RENEWABLE ENERGY STANDARD  
TARIFF IMPLEMENTATION PLAN

DOCKET NO. E-01025A-09-

**APPLICATION**

**E-01025A-09-0339**

Ajo Improvement Company (“AIC”) hereby submits is proposed 2010 Renewable Energy Standard Tariff Implementation Plan (“2010 REST Plan”) – which includes its Plan for Distributed Renewable Energy Resources – required by A.A.C. R14-4-1801 *et. seq.* AIC requests approval of its 2010 REST Plan.

**I. INTRODUCTION**

AIC is a small electric utility that serves about 1,020 customers in and around the town of Ajo, Arizona. Its current customer base consists of approximately 852 residential customers, 167 non-residential customers and one resale customer. None of the 167 non-residential customers has demand over 3 MW per month for three consecutive months. Many of AIC’s residential customers are retired or on fixed incomes. Presently, AIC owns no generation and procures all of its power from the wholesale market to meet load. Further, AIC does not anticipate any significant customer growth to occur in its service territory between now and 2025. Therefore, funds collected through its Renewable Energy Standard Surcharge (“RESS”) for renewable energy resources and distributed renewable energy resources will be largely limited to existing customers. The RESS was established in AIC’s 2008 REST Plan (Decision No. 70304 (April 24, 2008)) and continued unchanged in AIC’s 2009 REST Plan (Decision No. 70700 (January 20, 2009)). AIC is requesting no changes to the RESS in this Application.

1 **II. RENEWABLE ENERGY STANDARD**

2 AIC intends and plans to make best efforts to meet the requirements put forth in the RES.  
3 AIC's Energy Sales in 2007 and 2008 was 12,630,592 kWh and 12,487,799 respectively.<sup>1</sup> AIC  
4 believes that its Energy Sales for 2009 will be approximately 12,500,000 kWh. Based on this  
5 average, AIC anticipates its Annual Renewable Energy Requirement being as follows:

- 6 • approximately 312,500 kWh in 2010;
- 7 • approximately 375,000 kWh in 2011;
- 8 • approximately 437,500 kWh in 2012;
- 9 • approximately 500,000 kWh in 2013;
- 10 • approximately 562,500 kWh in 2014; and
- 11 • about 1,875,000 kWh after 2024.

12 AIC's first REST Plan (for 2008) was approved in Decision No. 70304. Its 2009 REST Plan  
13 was approved in Decision No. 70700. By the time this Application is filed, the Company will have  
14 approximately 14 months of experience implementing the REST Rules requirements through its  
15 2008 and 2009 REST Plans. There is still much uncertainty with regards to whether AIC can  
16 consistently procure enough renewable energy, while meeting all of the requirements in the REST  
17 Rules, and whether customers are willing and able to engage in acquiring and installing eligible  
18 Distributed Renewable Energy Resources. AIC's service territory is remote and the Company  
19 possesses limited expertise and personnel that it can dedicate to developing additional strategies to  
20 procure renewable resources as required in the REST Rules. Moreover, its customer base is primarily  
21 low-to-middle-income residential customers, with little (if any) discretionary income. Even so, in its  
22 proposed 2010 REST Plan, AIC is proposing measures to improve the potential to meet the REST  
23 Rules requirements, including possible development of generation in its service territory.

24 **III. AIC's REQUEST FOR PROPOSAL (RFP)**

25 Because of the uncertainty and the Company's lack of expertise in procuring Eligible  
26

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27 <sup>1</sup> Based on AIC's Arizona Corporation Commission Utilities Division Annual Reports for the years ending 2007 and 2008 respectively.

1 Renewable Energy Resources, AIC issued an RFP for Renewable Energy Resources on February 27,  
2 2009. The objective of this RFP is to receive competitive proposals for renewable energy resources  
3 that will provide environmental attributes and meet the requirements in the REST Rules. In the RFP,  
4 AIC explains that it is seeking proposals for renewable energy generation behind the meter at two  
5 potential locations: AIC's 69 kV/2.4kV Substation (AIC's delivery point for power purchased on  
6 the wholesale market), or into the Phelps Dodge Ajo – Well B – 44kV/2.4kV substation (located  
7 north of AIC's service territory). The RFP clearly indicates that several technologies (e.g. solar,  
8 wind, geothermal) are acceptable, but that any proposal must include guaranteeing the deliverability  
9 of the associated energy along with the renewable energy credits (RECs). Further details regarding  
10 AIC's RFP can be found in Section 3 of its proposed 2010 REST Plan.

11 At this point, based on responses AIC received to its RFP, the ten-year system cost would be  
12 significantly higher than the current renewable energy premium that AIC anticipates in 2009 for grid-  
13 tied renewable resources (approximately \$36.8 per MWh). AIC cannot obtain up-front financing to  
14 fund any projects contained within the responses to its RFP. Therefore, because of how  
15 uneconomical it would be to move forward at this time, AIC has deferred consideration of proposals  
16 received in response to AIC's RFP until the beginning of 2010. At that time, it will re-review the  
17 responses and determine whether financing exists to move forward at that time. This will also allow  
18 AIC time to explore other opportunities to finance projects, including determining whether it can  
19 receive any funding through programs stemming from the American Recovery and Reinvestment Act  
20 ("ARRA") – and to determine whether any responses can be tailored to finding creative solutions  
21 towards meeting the annual Distributed Renewable Energy Requirements over the long-term –  
22 including community-based residential and non-residential distributed renewable generation.

#### 23 **IV. DISTRIBUTED RENEWABLE ENERGY RESOURCES**

24 Regarding the Distributed Renewable Energy Requirement, AIC does not have the experience  
25 of the larger utilities in Arizona. Even so, the Company's 2010 REST Plan includes incentive  
26 payments to customers to develop and install eligible Distributed Renewable Energy Resources.

27 Eligible Distributed Renewable Energy Resources include:

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

Incentive payments will be an 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 AIC. The following chart highlights the incentives per type of eligible Distributed Renewable Energy Resources that AIC is offering in its proposed 2010 REST Plan:

Type	2010 – 2012	2013 – 2014
Biomass/Biogas (Electric, Thermal, Cooling)	TBD	TBD
Biomass/Biogas CHP (Electric, Thermal) <sup>2</sup>	TBD	TBD
Daylighting <sup>3</sup>	\$0.20 / kWh	\$0.18 / kWh
Geothermal (Electric)	\$0.50 / Watt	\$0.45 / Watt
Geothermal (Thermal)	\$1.00 / Watt	\$0.90 / Watt
Hydroelectric	TBD	TBD
Small Wind	\$2.50 / Watt AC	\$2.25 / Watt AC
Solar Electric – Residential <sup>4</sup>	\$4.00 / Watt DC	\$2.70 / Watt DC
Solar Electric – Non-Residential <sup>5</sup>	\$3.50 / Watt DC	\$2.25 / Watt DC
Solar Space Cooling <sup>6</sup>	TBD	TBD
Non-Residential Solar Water Heating / Space Heating <sup>7</sup>	TBD	TBD
Residential Solar Water Heating / Space Heating <sup>8</sup>	\$1.20 / kWh for first year savings only.	
Non-Residential Pool Heating	TBD	TBD

TBD – To Be Determined

<sup>2</sup> The CHP incentives may be used in combination for the appropriate components of one system.

<sup>3</sup> Rate applies to first year energy savings only.

<sup>4</sup> Some installations may require an adjustment of the incentive.

<sup>5</sup> Some installations may require an adjustment of the incentive.

<sup>6</sup> Solar space heating and cooling incentives may be used in combination for the appropriate components of one system.

<sup>7</sup> Solar space heating and cooling incentives may be used in combination for the appropriate components of one system.

<sup>8</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. 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.

1 Those incentives are based on the Uniform Credit Purchase Program (“UCPP”) Working Group  
2 Incentive Matrix, but are updated to include what has been recently been ordered for previous AIC  
3 REST Plans (e.g. the incentive payments for solar hot water heating and photovoltaic systems). For  
4 those categories where the incentive is “To Be Determined”, the incentive amounts will be  
5 determined on a case-by-case basis and will include consideration of capital costs, capacity (kW) and  
6 estimated annual production (kWh). Applicants must submit a report demonstrating energy savings  
7 and that projected output will be achieved. Inspections to ensure proper installation and operation  
8 will be required. Incentives will be on a first-come first-served basis and it is the intent of AIC to  
9 split incentive payments evenly between residential and non-residential applicants.

10 AIC anticipates its annual Distributed Renewable Energy Requirement will be the following  
11 – based on the average of Energy Sales in 2007 and 2008:

- 12 • approximately 62,500 kWh in 2010;
- 13 • approximately 93,750 kWh in 2011;
- 14 • approximately 131,250 kWh in 2012;
- 15 • approximately 150,000 kWh in 2013;
- 16 • approximately 168,750 kWh in 2014; and
- 17 • approximately 562,500 kWh after 2024.

18 AIC is committed to making best efforts to meet these goals, but much of its ability to meet  
19 the goals depends on the willingness and interest of customers in installing distributed renewable  
20 energy systems, particularly with respect to the residential component of the annual Distributed  
21 Renewable Energy Requirement. Qualified contractors must also be willing and able to provide  
22 installation and other services within AIC’s service territory. To date, AIC is not aware of any such  
23 contractors. If needed, AIC may consider establishing additional eligible Distributed Renewable  
24 Energy Resources on its own initiative to meet its annual Distributed Renewable Energy  
25 Requirement, such as installation of distributed generation at its own operations facilities in  
26 connection with the RFP discussed above.

27

1 **V. FUNDING**

2 Currently, AIC collects a RES Surcharge (“RESS”). The RESS was established in Decision  
3 No. 70304 – Docket No. E-01025A-07-0598 – as part of its 2008 REST Plan (its first REST Plan).

4 The Company currently collects – through the RESS - \$0.004988 per kWh capped at:

- 5 • \$1.05 per month for each residential customer;
- 6 • \$39.00 per month for each non-residential customer; and
- 7 • \$117.00 per month for each non-residential customer with demand over 3 MW per  
8 month for three consecutive months.

9 The RESS is shown as a separate item on customer bills. AIC’s RESS Schedule – Sheet No.  
10 36.0 – was approved as being in compliance with Decision No. 70304.

11 For 2010, the Company proposes no change to the RESS per-kWh charge. Further, AIC does  
12 not propose any changes to the caps. In other words, AIC proposes no increase for both residential  
13 and non-residential customers for 2009. AIC further notes both the per-kWh rate and the caps are  
14 equal to the charges set forth in the Sample Tariff in the REST Rules.

15 From April 2008 through December 2008, AIC collected approximately \$16,245.16 – or  
16 about \$1,805.02 per month – through the RESS. That would equal – for a twelve month period –  
17 approximately \$21,660.24.

18 Based on its number of customers as of December 31, 2008, for 2010, AIC can collect –  
19 through the RESS – a maximum of:

- 20 • \$10,735.20 per year from residential customers;
- 21 • \$78,156.00 per year from non-residential customers; and
- 22 • Zero dollars per year from non-residential customers with demand over 3 MW per month  
23 for three consecutive months; for
- 24 • A total anticipated amount no greater than \$88,891.20.

25 AIC, however, does not anticipate that all of its customers will use the requisite amount of  
26 kWh’s so that AIC will collect the maximum amounts through the RESS. Given the average  
27 collection through 2008 of \$1,805.02 per month, AIC anticipates that it will likely collect between

1 \$21,000 and \$22,000 in 2010. That range is approximate because the number of customers has  
2 changed slightly since 2008<sup>9</sup>.

3 In other words, while the *maximum* AIC could collect through the RESS is \$88,891.20, the  
4 amount AIC is anticipates that it will only collect approximately \$21,000 to \$22,000 (based on the  
5 amounts AIC actually collected through the RESS in 2008). This is further shown through the data  
6 AIC provided to Staff through the process in evaluating AIC's 2008 REST Plan application regarding  
7 sample AIC customers reproduced below:

8 Sample Customer	Average kWh per Month	Monthly RESS (\$'s)
9 School	64,009	39.00
10 Restaurant	3,574	17.83
11 Church	3,180	15.86
12 Health Clinic	16,763	39.00
13 Bank	4,440	22.15
14 Municipal Building	8,880	39.00
Pharmacy	2,733	13.63
Distributing Co	8,620	39.00
Dentist Office.	2,956	14.74
Residential	940	1.05

15 Although there is substantial uncertainty about the costs of its 2010 REST Plan, the RESS  
16 may provide sufficient funding for AIC to meet a portion of the REST Rules requirements for 2010 –  
17 particularly the purchase of required grid-tied Eligible Renewable Energy Resources. The RESS  
18 funding, however, will likely not be sufficient to meet the annual Distributed Renewable Energy  
19 Requirement, assuming there is sufficient participation by AIC customers in the distributed  
20 generation program. AIC may file to amend the RESS should it become apparent that more funding  
21 is needed to meet the REST Rules requirements in future years. In the alternative, AIC may seek a  
22 partial waiver of the RES Requirements if the RESS does not generate sufficient funds to meet the  
23

24 \_\_\_\_\_  
25 <sup>9</sup>In AIC's 2008 REST Plan AIC indicate that it was "a small electric utility that serves about 1,042 customers in and  
26 around the town of Ajo, Arizona. Its customer base consists of approximately 831 residential customers and 211 non-  
27 residential customers. Many of [AIC's] residential customers are retired or on fixed incomes. None of the 211 non-  
residential customers has demand typically over 3 MW per month for three consecutive months." See Final AIC 2008  
REST Plan, Docket No. E-01025A-07-0598 (May 1, 2008) at 2.

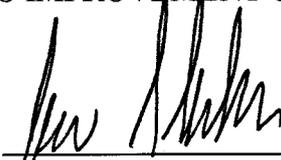
1 requirements within the REST Rules. Currently, AIC anticipates that it will require approximately  
2 \$181,191 to meet the REST Rules requirements (for both grid-tied and distributed renewable  
3 generation) for 2010.

4 **VI. CONCLUSION**

5 AIC commits to working with the Commission and intends to make best efforts to meet the  
6 REST Rules set forth in A.A.C. R14-2-1801 *et. seq.* AIC therefore requests that the Commission  
7 approve its 2010 REST Plan – including its Plan for Distributed Renewable Energy Resources and  
8 maintain the funding levels AIC as currently set for the RESS.

9  
10 RESPECTFULLY SUBMITTED this 1<sup>st</sup> day of July, 2009.

11 AJO IMPROVEMENT COMPANY

12  
13  
14 By 

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22  
23 Original and thirteen copies of the foregoing  
24 filed this 1<sup>st</sup> day of July, 2009, with:

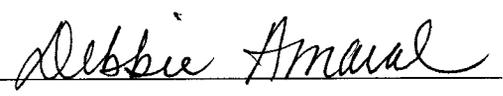
25 Docket Control  
26 ARIZONA CORPORATION COMMISSION  
27 1200 West Washington Street  
Phoenix, Arizona 85007

1 Copy of the foregoing hand-delivered  
2 this 1<sup>st</sup> day of July, 2009, to:

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4 Chief Administrative Law Judge  
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## **AJO IMPROVEMENT COMPANY**

### **2010 RENEWABLE ENERGY STANDARD IMPLEMENTATION PLAN ("2010 REST PLAN")**

#### **1. INTRODUCTION**

Ajo Improvement Company ("AIC") submits 2010 REST Plan to comply with the Renewable Energy Standard Tariff Rules ("REST Rules"). The REST Rules are codified at A.A.C. R14-2-1801 to R14-2-1816. The Commission approved the REST Rules in Decision No. 69127 (November 14, 2006). The Arizona Attorney General's Office then certified the REST Rules on June 15, 2007, meaning that they became effective August 14, 2007.

AIC's 2008 Renewable Energy Standard Tariff Implementation Plan ("REST Plan") was approved in Decision No. 70304 (April 24, 2008). Its 2009 REST Plan was approved in Decision No. 70700 (January 20, 2009). Per the REST Rules at A.A.C. R14-2-1813, AIC is required to submit an REST Plan annually on July 1<sup>st</sup> outlining how it intends to comply with the Rules. The REST Plan must include the following information:

- A description of Eligible Renewable Energy Resources to be added per year for the next five (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 AIC's existing funding will allow it to recover its reasonable and prudent costs of complying with the RES.
- A line-item budget allocating specific funding for Distributed Renewable Energy Resources, for the Customer Self-Directed Renewable Energy Option, for power purchase agreements, for utility-owned systems, and for each Eligible Energy Resource described in the REST Plan.

The REST Rules require that 2.50% of total kWh retail sales be from eligible Renewable Energy Resources in 2010, 3.00% in 2011, 3.50% in 2012, 4.00% in 2013 and 4.50% in 2014. The REST Rules further require that 20% of the total Renewable Energy Resource Requirement come from Distributed Renewable Energy Resources in 2010, 25% in 2011, 30% in 2012, 30% in 2013 and 30% in 2014.

## 2. BACKGROUND INFORMATION

AIC is a small electric utility that serves about 1,020 customers in and around the town of Ajo, Arizona. Its current customer base (per its 2008 Utilities Division Annual Report) consists of approximately 852 residential customers, 167 non-residential customers and 1 resale customer. This represents a net loss of 2 residential customers and 7 non-residential customers from 2007. Many of AIC's residential customers are retired or on fixed incomes. None of the 167 non-residential customers has demand typically over 3 MW per month for three consecutive months. Presently, AIC owns no generation and procures all of its power from the wholesale market to meet load. It is interconnected with the transmission grid only at the Ajo 69 kV substation. Further, not much customer growth is anticipated to occur in AIC's certificated service area between now and 2025. Therefore, funds collected for renewable resources and distributed generation will be largely limited to existing customers.

AIC's Energy Sales (total kilowatt-hours sold) in 2008 was 12,487,799<sup>1</sup>. In 2007, AIC's Energy sales were 12,630,592 kWh.<sup>2</sup> AIC believes that its Energy Sales for 2009 will be approximately 12,500,000 kWh. Based on that average, AIC anticipates that its Annual Renewable Energy Requirement will be as follows:

- approximately 312,500 kWh in 2010;
- approximately 375,000 kWh in 2011;
- approximately 437,500 kWh in 2012;
- approximately 500,000 kWh in 2013;
- approximately 562,500 kWh in 2014; and
- approximately 1,875,000 kWh after 2024.

AIC anticipates its annual Distributed Renewable Energy Requirement will be the following – based on the average of Energy Sales in 2007 and 2008:

- approximately 62,500 kWh in 2010;
- approximately 93,750 kWh in 2011;
- approximately 131,250 kWh in 2012;
- approximately 150,000 kWh in 2013;
- approximately 168,750 kWh in 2014; and
- approximately 562,500 kWh after 2024.

AIC's first REST Plan was approved April 24, 2008. By the time AIC's proposed 2010 REST Plan is filed (July 1, 2009), the Company will have approximately 14 months of experience in implementing its REST Plan. There is still much

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<sup>1</sup> Based on AIC's Arizona Corporation Commission Utilities Division Annual Report for Year Ending 2008.

<sup>2</sup> Based on AIC's Arizona Corporation Commission Utilities Division Annual Report for Year Ending 2007.

uncertainty with regards to whether AIC can consistently procure renewable energy in the manner required in the REST Rules. Further, whether customers are willing and able to install and own eligible Distributed Renewable Energy Resources also remains uncertain at best. AIC's service territory is remote and the Company does not possess extensive expertise or personnel that can be dedicated to developing additional strategies to procure renewable resources as required in the REST Rules. Even so, AIC is taking measures to better determine the potential to meet the requirements including possible development of generation in its service territory.

### **3. AIC's REQUEST FOR PROPOSAL (RFP)**

Because of the uncertainty and the Company's lack of expertise in procuring Eligible Renewable Energy Resources, AIC issued an RFP for Renewable Energy Resources on February 27, 2009. The objective of the RFP was to receive competitive proposals for renewable energy resources that will provide environmental attributes and meet the requirements in the REST Rules. In the RFP, AIC explains that it is seeking proposals for renewable energy generation behind the meter at two potential locations: AIC's 69kV/2.4kV substation (AIC's delivery point for power purchased on the wholesale market) or the Phelps Dodge Ajo – Well B – 44kV/2.4kV substation (located north of AIC's service territory). The RFP clearly indicates that several technologies (e.g. solar, wind, geothermal) are acceptable, but that any proposal must include guaranteeing the deliverability of the associated energy along with the renewable energy credits (RECs).

Proposals to deliver energy at any other locations can be made, but such responses must include specifying points of delivery. All proposals, furthermore, must include needed transmission, distribution, substation and/or switchyard interconnection (including construction and ownership requirements), line extensions or upgrades, and other equipment needed to maintain system stability.

In considering the proposals, AIC explicitly stated that it will seek the proposal(s) that provide the best overall value, and not necessarily select those with the lowest price. AIC will consider both economic and non-economic factors – including proposed energy costs, delivery points, operational and technical attributes, delivery terms, transmission impacts, economic development opportunities, timeliness of project completion and several other factors detailed in the RFP. An independent monitor may be used to ensure fairness and equity in the evaluation of any proposals.

At this point, based on the responses to the RFP, the ten-year system cost would be significantly higher than the current renewable energy premium that AIC anticipates in 2009 of about \$36.8 per MWh for grid-tied renewable resources.

AIC cannot obtain up-front financing to fund any projects contained within the responses to its RFP. Therefore, because of how uneconomical it would be to move forward at this time, AIC has deferred consideration of proposals received in response to AIC's RFP until the beginning of 2010. At that time, it will re-review the responses and determine whether financing exists to move forward at that time. This will also allow AIC time to explore other opportunities to finance projects, including determining whether it can receive any funding through programs stemming from the American Recovery and Reinvestment Act ("ARRA") – and to determine whether any responses can be tailored to finding creative solutions towards meeting the annual Distributed Renewable Energy Requirements over the long-term – including community-based residential and non-residential distributed renewable generation.

#### **4. GENERAL PLAN TO PROCURE ELIGIBLE RENEWABLE ENERGY RESOURCES.**

AIC is still exploring any opportunities to procure Eligible Renewable Energy Resources from one or more sources – including solar, geothermal, wind and/or biomass. At this time, the Company is determining to what extent it can develop and/or procure specific Eligible Renewable Energy Resources.

AIC hopes to meet or exceed the minimum targets in the RES, but faces risks including operational performance, reliability, efficiency, sufficiency of transmission and deliverability of renewable energy resources. AIC is also aware of the potential for renewable contract termination and/or major delays in procuring these resources.

Further, AIC believes the pricing for such renewable generation is still at a premium of approximately \$36.8 per MWh over generation from Conventional Energy Resources. This is based on the cost of generation and the cost to deliver the energy and meet the requirements of R14-2-1803.F. AIC had been able to procure eligible energy from generation on per-kWh basis. Based on this information, AIC believes the following tables best summarize the description of kWh, and cost above conventional resources for AIC:

##### **Planned Renewable Generation Procurement (MWh)**

Year	2010	2011	2012	2013	2014	Total
Energy – Prospective Procurement <sup>3</sup>	250.0	281.25	306.25	350.0	393.75	1,581.25

<sup>3</sup> Based on AIC's belief that its 2009 Energy Sales will equal approximately 12,500,000 kWh.

## Cost Above Conventional Generation (\$'s)<sup>4</sup>

Year	2010	2011	2012	2013	2014	Total
Total Energy – Prospective Procurement	9,200	10,350	11,270	12,880	14,490	58,190

The above –generation cost is an estimate based upon AIC’s experience in its prior renewable energy procurements. However, this market is still not mature – in AIC’s estimation – and the cost estimates may vary significantly. Therefore, figures are still preliminary estimates at this time.

Ultimately, AIC must find entities willing to offer renewable power to it, given AIC’s small size and remote location. Further it must do so at a reasonable cost to it and its customers. Further, renewable generation has the potential to not meet scheduled commercial operation and may not match needed delivery schedules and planned quantities. AIC is aware of the potential for renewable contract termination or major delays in delivering renewable energy.

### **5. GENERAL PLAN FOR DISTRIBUTED RENEWABLE ENERGY RESOURCES.**

Regarding the Distributed Renewable Energy Requirement, AIC does not have the experience of some of the larger utilities in Arizona. Even so, AIC understands the importance of Distributed Renewable Energy Resources to the Commission and offers the opportunity for incentive payments 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.

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

Examples of eligible Distributed Renewable Energy Resources include:

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

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<sup>4</sup> Based on a premium for renewable generation at about \$36.8 per MWh.

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 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 AIC. All major components of the distributed renewable energy system must be purchased no more than 180 days before AIC 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. 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.

### **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 AIC. 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. Although installation guidance is not currently mandated in order for a project to receive an incentive, it does reflect both industry and utility concurrence on those practices which are important for a technology to best achieve the designed output. In the future installation guidance items may be considered for inclusion as part of the equipment qualifications.

## **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 daylighting system:

- A roof mounted skylight assembly with a dome having a minimum 70% solar transmittance.

- A reflective light well to the interior ceiling or a minimum 12" below roof deck in open bay areas.
- An interior diffusion lens.
- A minimum of one thermal break/dead air space in the system between the skylight dome and the interior diffuser.
- 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 during daylight hours.
- The system must provide a minimum of 70% of the light output of the artificial lighting system which would otherwise be used for all of the claimed period of energy savings as measured in foot-candles.
- 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 reporting stamped by a registered professional engineer or accredited AEE Measurement and Verification professional. 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 system must have a material and labor warranty of at least five (5) 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>5</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

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<sup>5</sup> AIC 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.

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 AIC during normal business hours.
- The tower used in the installation must be designed by an 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 five (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 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/>.

## Photovoltaic Systems

### Equipment Qualifications

#### *All Systems*

- All systems shall be installed with a horizontal tilt angle between 0 degrees and 60 degrees, and azimuth angle of +/- 100 degrees of due south. The eligibility for the full incentive payment will be determined by the installation configurations for some systems and subject to AIC's discretion.
- A system must include a dedicated performance meter to allow for monitoring of the amount of electricity produced.
- Photovoltaic modules must be covered by a manufacturer's warranty of at least 20 years.
- Inverters must be covered by a manufacturer's warranty of at least 10 years.

#### *Grid-Connected Systems*

- The minimum PV array size shall be no less than 1,200 W-DC
- All photovoltaic modules must be certified by a nationally recognized testing laboratory as meeting the requirements of UL Standard 1703.
- All other electrical components must be UL listed.
- 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.
- The utility meter, inverter, and utility disconnect will be installed in a location readily accessible by AIC during normal business hours.
- Other equipment qualifications may be specifically required as determined by AIC.

*Off Grid Systems are not included in this program*

### Installation Guidance

The Customer will be directed to the following resources to gain information regarding industry reference documents for 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)

## **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 five (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 five (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 Domestic Solar Water Heating and Space Heating**

#### Equipment Qualifications

- 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.
- Domestic 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 AIC's REST Plan as Exhibit A.
- 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 Domestic 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 five (5) years for repair/ replacement service to the customer.
- Domestic 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 five (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 five (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.

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

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

- Biogas/Biomass Thermal
- Biogas/Biogas Combined Heat and Power ("CHP")
- Fuel Cells
- Geothermal – Space Heating and Process Heating
- Non-Residential Pool Heating

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 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 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 AIC's certificated service area. AIC's inspections are in addition to, and not instead of, any building and construction-related inspections. AIC must have access to any distributed renewable energy system during normal business hours for any inspection by AIC. AIC will inspect any and all grid-tied systems to ensure the system is connected to the grid in conformance with AIC's interconnection requirements. *Under no circumstances is any grid-tied system to be installed in parallel or otherwise connected with the AIC system until the time that AIC 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 has been performed.*

Further, AIC may conduct further inspections to ensure any distributed renewable energy system continues to conform to applicable codes, regulations and standards. AIC will conduct these inspections solely within its discretion. AIC 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 AIC 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 AIC'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.

### **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 AIC's certificated service area for the period detailed in the AIC's approval of the application, then Applicant will be in default of the terms and conditions of the agreement between Applicant and AIC. Applicant will be responsible for reimbursing AIC the total amount of the incentive payment. In addition, liquidated damages may also apply. AIC, however, has the ability in its sole discretion to determine that the distributed renewable energy system is not operational due to equipment malfunction or other disrepair and Applicant is making best 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 AIC 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 AIC if Applicant sells the property on which the distributed renewable energy system is located by notifying AIC in writing. Applicant may be required to reimburse payment incentive and/or 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 AIC.

## **Renewable Energy Credits**

AIC will receive complete and irrevocable ownership of all Renewable Energy Credits or 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 AIC’s RES targets.

## **Incentives**

Any incentive payment will be an up-front one-time 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 AIC. The following chart highlights the incentives per type of eligible Distributed Renewable Energy Resources:

<b>Type</b>	<b>2010 – 2012</b>	<b>2013 – 2014</b>
Biomass/Biogas (Electric, Thermal, Cooling)	TBD	TBD
Biomass/Biogas CHP (Electric, Thermal) <sup>6</sup>	TBD	TBD
Daylighting <sup>7</sup>	\$0.20 / kWh	\$0.18 / kWh
Geothermal (Electric)	\$0.50 / Watt	\$0.45 / Watt
Geothermal (Thermal)	\$1.00 / Watt	\$0.90 / Watt
Hydroelectric	TBD	TBD
Small Wind	\$2.50 / Watt AC	\$2.25 / Watt AC
Solar Electric – Residential <sup>8</sup>	\$4.00 / Watt DC	\$2.70 / Watt DC
Solar Electric – Non-Residential <sup>9</sup>	\$3.50 / Watt DC	\$2.25 / Watt DC
Solar Space Cooling <sup>10</sup>	TBD	TBD
Non-Residential Solar Water Heating / Space Heating <sup>11</sup>	TBD	TBD
Residential Solar Water Heating / Space Heating <sup>12</sup>	\$1.20 / kWh for first year savings only.	
Non-Residential Pool Heating	TBD	TBD

TBD – To Be Determined

<sup>6</sup> The CHP incentives may be used in combination for the appropriate components of one system.

<sup>7</sup> Rate applies to first year energy savings only.

<sup>8</sup> Some installations may require an adjustment of the incentive.

<sup>9</sup> Some installations may require an adjustment of the incentive.

<sup>10</sup> Solar space heating and cooling incentives may be used in combination for the appropriate components of one system.

<sup>11</sup> Solar space heating and cooling incentives may be used in combination for the appropriate components of one system.

<sup>12</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. 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.

Those incentives are based on the Uniform Credit Purchase Program (“UCPP”) Working Group Incentive Matrix, but are updated to include what has recently been ordered for previous AIC REST Plans (e.g. the increased incentive payments for solar hot water heating and photovoltaic systems). 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 the intent to split total annual incentive payments evenly between residential and non-residential applicants. Eligibility requirements for which an Applicant may receive incentive payments to develop and install distributed renewable energy resources are described in the Company’s schedule entitled “Applications for Distributed Renewable Energy Resources Schedule” – Sheet No. 34.0 – that was approved in Decision No. 70304 and is attached as Exhibit B.

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

Despite the above, 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 \$11,000 be provided in incentives for any one project. This \$11,000 cap will include the costs of financing (*i.e.*, no more than \$11,000 will be provided towards the total system cost of any one project).

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

AIC 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 regarding Distributed Renewable Energy Resources. AIC will bring those issues to the Commission’s attention in a timely manner. AIC will report on the productivity for all distributed renewable energy systems annually by reporting on the total installed capacity and projected productivity.

Should a distributed renewable energy system be removed before its agreement term expires and without AIC’s permission – or if an Applicant does not repair a system – then AIC 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 AIC 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. AIC 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.

### **Application Process**

1. **Applicant submits a written and signed request to AIC (i.e. “the Application”).**
2. **Applicant receives approval from AIC.** This approval will be a written agreement between Applicant and AIC, 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 AIC 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, AIC 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 AIC’s notification of deficiency. If deficiencies are not addressed within that time period to AIC’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 AIC 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 AIC.** AIC must approve system design before Applicant proceeds with installation.
6. **Applicant has system installed. AIC inspects the system to ensure it is connected to the grid per AIC's interconnection requirements.** This will take place after AIC 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 the REST Plan. AIC 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 AIC. Applicant must submit a Proposed Modification to Application in order to receive such written consent. AIC 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 incentive payment.**

### **Eligibility Requirements**

Eligibility requirements are set forth in the Company's schedule entitled "Applications for Distributed Renewable Energy Resources Schedule" – Sheet No. 34.0 – that is approved in Decision No. 70304 and attached as Exhibit B. Any customer of AIC is eligible to apply for and, if approved, receive incentive payment for an eligible Distributed Renewable Energy Resource 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 Commission's 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 AIC’s Annual Renewable Energy Requirement and Distributed Renewable Energy Requirement.

Further, 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 are eligible for the Customer Self-Directed Renewable Energy Option. That Schedule – approved in Decision No. 70304 and attached as Exhibit C (Sheet No. 35.0) – 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 RECs derived from the project(s) will apply to satisfy AIC’s Annual Renewable Energy Requirement.

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. AIC will have 120 days from May 23, 2009, to file its net metering tariff proposal. That tariff proposal must receive Commission approval before it can take effect.

### **Other**

To the extent that additional distributed renewable energy resources are needed to fulfill its annual Distributed Renewable Energy Requirement, AIC may consider initiating its own distributed renewable energy system(s) to meet its Distributed Renewable Energy Requirement for that calendar year. This may include installation of distributed generation at its own operations facilities.

## **6. BUDGET**

Many uncertainties still exist with the time and efforts to procure renewable resources, especially given AIC’s small size and remote location, AIC cannot state with much certainty what its budget will be to procure renewable resources. AIC still believes it cannot state with any certainty what the separate line-item costs will be for administration, implementation, commercialization and integration, and marketing and outreach.

Further, AIC has not seen much customer interest in pursuing installation of eligible Distributed Renewable Energy Resources, even with the augmented incentives for residential and non-residential solar electric systems. As stated earlier, many of AIC’s customers are low income customers without a lot of ability

to finance a photovoltaic system or other type of distributed renewable generation. These customers may not have the willingness or the ability to finance such systems even after receiving incentives to cover a significant amount of the cost. Further, because of the small size and remote location of AIC's service territory, AIC is not aware of any qualified contractors present and doing business within its service territory able to install eligible distributed renewable energy systems. Given AIC's customer base of only 1,020 customers and its distance from Phoenix and Tucson. AIC is also not aware of any qualified contractors from outside its service territory willing and or able to provide such services within its service territory. For these reasons, the figures in the following budget, especially regarding procuring eligible Distributed Renewable Energy Resources, remain preliminary estimates.

### AIC's Estimated RES Budget (\$'s)

	2010	2011	2012	2013	2014	Total
<b>Renewable Energy Resources</b>						
Total Energy – Prospective Procurement <sup>13</sup>	9,200	10,350	11,270	12,880	14,490	58,190
Utility-Owned Systems	0	0	0	0	0	0
Administration, Implementation, Commercialization & Integration	9,050	9,050	9,050	9,050	9,050	45,250
<b>Renewable Energy – Subtotal</b>	<b>18,250</b>	<b>19,400</b>	<b>20,320</b>	<b>21,930</b>	<b>23,540</b>	<b>103,440</b>
<b>Distributed Renewable Energy Resources</b>						
Incentives <sup>14</sup>	143,171	214,806	300,718	343,649	386,630	1,388,974
Customer Self-Directed Renewable Energy Option <sup>15</sup>	0	0	0	0	0	0
Administration, Implementation, Marketing & Outreach, Commercialization & Integration.	19,770	26,560	41,525	47,455	53,385	188,695
<b>Distributed Energy – Subtotal</b>	<b>162,941</b>	<b>241,366</b>	<b>342,243</b>	<b>391,104</b>	<b>440,015</b>	<b>1,577,669</b>
<b>TOTAL</b>	<b>181,191</b>	<b>260,766</b>	<b>362,563</b>	<b>413,034</b>	<b>463,555</b>	<b>1,681,109</b>

<sup>13</sup> Assuming the renewable premium remains at \$36.8 per MWh.

<sup>14</sup> This assumes the cost of installing solar photovoltaic systems with an average installation cost of \$8.32 per watt that was taken from 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) available at <http://www.nrel.gov/docs/fy09osti/44853.pdf>. (hereinafter referred to as “NREL PV Financing Report”) at 18 (available at <http://www.nrel.gov/docs/fy09osti/44853.pdf>). Further, these figures assume that AIC 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.

<sup>15</sup> AIC considers this option to be a subset of the total Distributed Energy Incentive budget. AIC has no customers that could be eligible for the Customer Self-Directed Renewable Energy Option.

AIC will also 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 AIC customers.

RES 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.

The Company does not currently have – nor does it anticipate having in 2010 – any customers that pay over \$25,000 in tariff charges annually and in total, for any number of related service accounts within AIC's certificated service area. Therefore, AIC has and will likely have no customers eligible for the "Customer Self-Directed Renewable Energy Option" as codified in A.A.C. R14-2-1809. Its budget for this option is therefore zero.

## **7. FUNDING**

Currently, AIC collects a Renewable Energy Standard Surcharge ("RESS"). The RESS was established in Commission Decision No. 70304 (April 24, 2008) – Docket No. E-01025A-07-0598 – 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. AIC's RESS Schedule – Sheet No. 36.0 – was approved as being in compliance to Decision No. 70304 and is attached as Exhibit D.

For 2010, the Company proposes no change to the RESS per-kWh charge. Further, AIC does not propose any changes to the caps. In other words, the per-kWh increase in the RESS proposed from 2008 to 2009 equals 0% or \$0.00 for both residential and non-residential customers. AIC further notes both the per-kWh rate and the caps equate to the charges set forth in the Sample Tariff in the REST Rules.

From April 2008 through December 2008, AIC collected approximately \$16,245.16 – or about \$1,805.02 per month – through the RESS. That would equal – for a twelve month period – approximately \$21,660.24.

Based on its number of customers as of December 31, 2008, for 2010, AIC can collect – through the RESS – a maximum of:

- \$10,735.20 per year from residential customers;
- \$78,156.00 per year from non-residential customers;
- Zero dollars per year from non-residential customers with demand over 3 MW per month for three consecutive months; for
- A total maximum amount no greater than \$88,891.20.

AIC, however, does not anticipate that all of its customers will use the requisite amount of kWh's so that AIC will collect the maximum amounts through the RESS. Given the average collection through 2008 of \$1,805.02 per month, AIC anticipates that it will likely collect between \$21,000 and \$22,000 in 2010. That range is approximate because the number of customers has changed slightly since 2008<sup>16</sup>.

In other words, while the *maximum* AIC could collect through the RESS is \$88,891.20, the amount AIC is anticipates that it will only collect approximately \$21,000 to \$22,000 (based on the amounts AIC actually collected through the RESS in 2008). This is further shown through the data AIC provided to Staff through the process in evaluating AIC's 2008 REST Plan application regarding sample AIC customers, reproduced below:

Sample Customer	Average kWh per Month	Monthly REST (\$'s)
School	64,009	39.00
Restaurant	3,574	17.83
Church	3,180	15.86
Health Clinic	16,763	39.00
Bank	4,440	22.15
Municipal Building	8,880	39.00
Pharmacy	2,733	13.63
Distributing Co	8,620	39.00
Dentist Ofc.	2,956	14.74
Residential	475	1.05

Although there is substantial uncertainty about the costs of its 2010 REST Plan, the RESS may provide sufficient funding for AIC to meet a portion of the REST Rules requirements for 2010 – particularly the purchase of required grid-tied

<sup>16</sup>In AIC's 2008 REST Plan AIC indicate that it was "a small electric utility that serves about 1,042 customers in and around the town of Ajo, Arizona. Its customer base consists of approximately 831 residential customers and 211 non-residential customers. Many of [AIC's] residential customers are retired or on fixed incomes. None of the 211 non-residential customers has demand typically over 3 MW per month for three consecutive months." See Final AIC 2008 REST Plan, Docket No. E-01025A-07-0598 (May 1, 2008) at 2.

Eligible Renewable Energy Resources. The RESS funding, however, will likely not be sufficient to meet the annual Distributed Renewable Energy Requirement, assuming there is sufficient participation by AIC customers in the distributed generation program. AIC may file to amend the RESS should it become apparent that more funding is needed to meet the REST Rules requirements in future years. In the alternative, AIC may seek a partial waiver of the RES Requirements if the RESS does not generate sufficient funds to meet the requirements within the REST Rules. Currently, AIC anticipates that it will require approximately \$181,191 to meet the REST Rules requirements (for both grid-tied and distributed renewable generation) for 2010.

# EXHIBIT

"A"

# Solar Space Heating UFI Incentive Calculation Procedure.

In Advance, please perform the Design Review and Utility Bill Review (if Applicable) for numbers to enter in Steps #1, #2 and #5.

Min Elevation	Max Elevation	Heating Season Days	Daily Panel Heat Output
-1000	1000	105	0
1001	3000	140	0
3001	5000	175	0
5001	7000	210	0
7001	9000	245	0
9001	11000	280	0

Category:	Delta T	Clear Day
A	-9 Deg. F.	0
B	+9 Deg. F.	0
C	+36 Deg. F.	0
D	+90 Deg. F.	0
E	+144 Deg. F.	0

Enter Solar Panel Make and Model Number Selected for Project:

Step #1:	Enter the result of the Design Review of the Design Annual Building Loss =	0	BTU/Year
Step #2:	Enter the result of the Utility Bill Review of the Actual Annual Building Loss: (If not Electric, Natural Gas or Propane Heat, enter 0) =	0	BTU/Year
Step #3:	Calculate the Lesser of the Result in Step #1 & Step #2 = This is the Annual Building Heat Requirement.	0	BTU/Year
Step #4:	Enter Elevation of the Solar Space Heated Building:	0	Feet AMSL
Step #4 cont:	Number of Heating Days per Heating Season from Elevation Zone Table:	105	Days per Year
Step #4 cont:	Calculate Average Daily Building Heat Requirement =	0	BTU/Day
Step #5:	Enter Passive Heat Storage Specific Heat Capacity from Building Design Review:	0	BTU/Deg. F.
Step #5 cont:	Enter Maximum Daily Room Temperature Variation Allowed by Building Occupants: (Max of 10 Degrees F.)	0	Degrees F.
Step #5 cont:	Calculate Maximum Passive Heat Storage Capacity =	0	BTU
Step #5 cont:	Enter Total Active Heat Storage Heat Capacity from Building Design Review:	0	BTU
Step #5 cont:	Calculate Maximum Total Heat Storage Capacity =	0	BTU
Step #6:	Calculate the Lesser of the Average Daily Building Heat Requirement in Step #4 and the Maximum Total Storage Capacity in Step #5. This is the Maximum Useful Daily Solar Heat Input.	0	BTU/Day
Step #7:	Size the Solar Panels based on a total daily solar heat input no greater than the Maximum Useful Daily Solar Heat Input. Enter the single panel SRCC OG-100 Collector Thermal Performance Rating data in the Table Above.	0	BTU/Day per Panel
Step #7 cont:	Enter the Total number of solar panels to be installed:	0	# of Panels
Step #7 cont:	Calculate the Average Expected Daily Solar Heat Input:	0	BTU/Day
Step #8:	Calculate the Expected Annual Useful Solar KWH Heat Input using the Number of Heating Days times the Average Expected Daily Solar Heat Input / 3415 BTU/KWH:	0	KWH/Year
Step #9:	Enter the UFI per first year KWH UCPP Incentive Rate:	\$0.75	\$/KWH
Step #9 cont:	Calculate the Total Maximum UFI Payment Subject to Possible Limitation by the 50% of Initial Cost Cap & 15% Minimum Customer Contribution:	\$0.00	\$
Step #10:	Enter the Total Solar Space Heating System Initial Cost: This should not include costs for Passive Heat Storage or Building Heating System.	\$0.00	\$
Step #10 cont:	Calculate the Total Expected Federal and Arizona Incentives for this Project:	\$0.00	\$
Step #10 cont:	Calculate the 15% minimum of the Total Solar Space Heating System Initial Cost to be paid by Customer	\$0.00	\$
Step #10 cont:	Calculate the Total Actual UFI Payment:	\$0.00	\$

# EXHIBIT

"B"

APPLICATIONS FOR DISTRIBUTED RENEWABLE ENERGY RESOURCES  
SCHEDULE

Applies to: The Ajo Improvement Company Service Area  
Pima County, Arizona

**ELIGIBILITY REQUIREMENTS:**

Any customer of Ajo Improvement Company is eligible to apply for and if approved receive funding 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 in the Company’s Renewable Energy Standard Implementation Plan – Plan for Distributed Renewable Energy Resources.
2. The distributed renewable energy system must be established physically within the Company’s service territory.
3. Any project applied for must meet the requirements for a Distributed Renewable Energy Resource described in the Arizona Corporation Commissions’ RES 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 Applicants.

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 Ajo Improvement Company’s Annual Renewable Energy Requirement and Distributed Renewable Energy Resource Requirement.

Issued: April 24, 2008

Effective: April 24, 2008

ISSUED BY:  
Ray Romero, On-Site Manager  
Ajo Improvement Company  
P.O. Drawer 9  
Ajo, Arizona 85321

# EXHIBIT

"C"

CUSTOMER SELF-DIRECTED RENEWABLE ENERGY OPTION

Applies to: The Ajo Improvement Company Service Area  
Pima County, Arizona

**ELIGIBILITY REQUIREMENTS:**

Eligible Customers as defined in A.A.C. R14-2-1801.H. will be subject to the terms and provisions in this schedule and A.A.C. R14-2-1809.

1. Potentially Eligible Customers apply for – and receive approval for – funding in accordance with the procedure set forth in the Company’s Renewable Energy Standard Implementation Plan – Plan for Distributed Renewable Energy Resources, subject to the additional provisions contained in this schedule, if either is eligible for Customer Self-Directed Renewable Energy Option per the Arizona Corporation Commission’s Renewable Energy Standard Rules (“RES Rules”). If a customer is determined to be an “Eligible Customer” as defined in the RES Rules, then that entity must apply for funding per this schedule.
2. An Eligible Customer is eligible to receive funds per this schedule if the total of all RES-related payments made to Ajo for service for their respective service accounts total \$25,000 or more in the previous calendar year.
3. Funds an Eligible Customer receives during a calendar year will not exceed RES-related payments made to Ajo during the previous calendar year. No payments made in other Affected Utilities’ service territories count as payments made to Ajo for purposes of receiving funds.
4. An Eligible Customer will provide at least half the funds necessary to complete each proposed project (A.A.C. R14-2-1809.B.)
5. Projects established through this option must be used in the operations of the Eligible Customer and within Ajo’s service territory.

All Renewable Energy Credits (“RECs”) derived from any Applicant receiving funding per this schedule for any distributed renewable energy system, including generation and Extra Credit Multipliers, will be applied to satisfy Ajo Improvement Company’s Annual Renewable Energy Requirement and Distributed Renewable Energy Resource Requirement.

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ISSUED BY:  
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# EXHIBIT

"D"

RES TARIFF: RENEWABLE ENERGY STANDARD SURCHARGE SCHEDULE

Applies to: The Ajo Improvement Company Service Area  
Pima County, Arizona

Ajo's Renewable Energy Standard Surcharge ("RESS") – established in Decision No. 70304 (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. Ajo 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 Ajo 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 Ajo's Renewable Energy Standard Implementation Plan in Docket No. E-01025A-07-0598, the Commission approved in Decision No. 70304 (April 24, 2008).

Surcharge:

A RESS of \$0.004988 per kWh will be charged to Ajo 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 the Commission approved in Decision No. 69127 (November 14, 2006).

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