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SERVICES

2009 APR -1 P 4: 21

AZ CORP COMMISSION
DOCKET CONTROL

April 1, 2009

Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007

Re: Decision No. 70315, Docket No. E-04204A-07-0593
2009 Renewable Energy Standard and Tariff Compliance Report

Pursuant to A.A.C. R14-2-1812, each Affected Utility shall file with Docket Control a report that describes its compliance with the requirements of the Renewable Energy Standard and Tariff ("REST") Rules. Decision No. 70315 (April 28, 2008) approved UNS Electric, Inc.'s ("UNS Electric") 2008 REST Plan. Please find enclosed an original and thirteen copies of UNS Electric's 2009 REST Compliance Report for year-end 2008. This report contains confidential information that is being provided to Commission Staff separately.

If you have questions or comments please contact me at (520) 884-3680.

Sincerely,

Jessica Bryne
Regulatory Services

Enclosures: Compliance Report

cc: Compliance, ACC
Shannon Kanlan, ACC

Arizona Corporation Commission
DOCKETED

APR -1 2009

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UNS Electric, Inc.

Response to R14-2-1812 Utility Reporting Requirements

of the

Arizona Corporation Commission

RENEWABLES DATA FOR YEAR-END 2008

**UNS Electric, Inc.
P.O. Box 711
Tucson, Arizona 85702**

Executive Summary

On August 14, 2007, the Renewable Energy Standard and Tariff ("REST") R14-2-1801, became effective, following approval from the Arizona Corporation Commission ("ACC"). The REST rules require that UNS Electric, Inc. ("UNS Electric") and other affected utilities generate or purchase at least 15% of their total annual retail energy requirements from eligible renewable energy resources by 2025, with smaller amounts required in earlier years.¹ This report covers UNS Electric's progress from June 1, 2008 through December 31, 2008, the prorated 2008 REST implementation period.

UNS Electric's REST requirement for this period was **18,371,045** Renewable Energy Credits ("REC"), which reflects 1.75% of UNS Electric's retail energy sales for the period of June 1, 2008, through December 31, 2008.² Ten percent (10%) of this requirement must be met through distributed energy ("DE") renewable resources (1,837,105 kWh); of this amount, 50% must come from residential customer systems, and 50% must come from non-residential, non-utility applications. The remaining portion of the REST requirement (90% of the total goal) includes 16,533,941 kWh of utility-scale renewable energy resources.

UNS Electric has **22.1 million** RECs available to meet the 2008 REST requirement. This REC availability includes RECs that were carried over (not retired) from 2007 and the RECs produced during the 2008 prorated Arizona Environmental Portfolio Standard ("EPS") implementation period. The total REC amount includes actual kWh production from eligible renewable energy resources as well as applicable extra credits that were achieved through the REST multipliers.

Table ES-1, below, summarizes the REST compliance requirements, progress toward those requirements, and the installed capacity for each category of resources: utility-scale resources, residential DE resources, and non-residential DE resources. Additional detail on UNS Electric's progress toward each of these goals is described below.

On April 28, 2008, the ACC approved UNS Electric's REST Implementation Plan ("Program" or "Plan"), including a budget of \$3.15 million. The budgeted amount was prorated for the 2008 REST compliance period (June 1, 2008 through December 31, 2008); this seven-month budget was \$1.78 million.³ Of the \$1.78 million allocated for the REST program, UNS Electric spent \$827,155, including nearly \$500 thousand on customer incentives alone. In addition to REST funds actually spent, \$1.2 million was reserved for residential DE projects. The amount of surcharge collected from customers relative to program expenditures will be deferred and reflected in UNS Electric's financial statements as a regulatory liability. REST funds not spent in a given year are then deducted from the annual approved funding in the following year.

¹ Under REST, eligible renewable energy resources include the following: biogas electricity generation, biomass electricity generation, eligible hydropower resources, fuel cells that use renewable fuels only, hybrid wind and solar electric generation, new small hydro (10 MW or less), solar electric generation, wind generation, and distributed renewable energy resources (these include renewable CHP, commercial solar pool heaters, biomass and biogas thermal systems, biogas electric generation, geothermal space and process heating, solar daylighting, solar HVAC, solar space heating, solar water heating, and small wind generation (1 MW or less).

² One REC is equivalent to one kilowatt-hour (kWh) of production from an Eligible Renewable Energy Resource. Except for RECs from Distributed Energy resources, the energy from an Eligible Renewable Energy Resource that is associated with a REC must be delivered to its retail customers.

³ The RES Tariff for UNS Electric customers includes a \$0.004988 per kWh rate, and caps of \$2.00, \$39.00, and \$500.00 respectively for residential, commercial, and industrial customers.

Table ES-1 - 2008 REST Compliance Summary

	Utility-Scale Resources	Distributed Energy: Residential	Distributed Energy: Non- Residential
Installed Capacity			
Pre-2008 (kW)	0	215	8
2008 New Installations (kW)	0	154	22
Reserved in 2008 but Not Yet Installed (kW)	0	442	0
Renewable Energy Credits			
Carry Over from EPS	20,481,000	440,000	0
RECs Created in 2008	656,069	519,964	26,261
<i>Total Available RECs</i>	<i>21,137,069</i>	<i>959,964</i>	<i>26,261</i>
RECs Needed for Compliance	16,533,941	918,553	918,553
RECs Retired for Compliance	16,533,941	918,553	26,261
2008 Compliance (%)	100%	100%	3%
RECs Carried Forward to 2009	4,603,128	41,411	0

Utility-Scale Renewable Energy Goals

UNS Electric achieved the utility-scale renewable energy goals during the prorated 2008 REST compliance period. The RECs retired for the prorated 2008 compliance period came from these resources: landfill gas, solar photovoltaic ("PV"), and Partial Manufacturing Credits allowed through REST. The surplus RECs available at the end of 2008 were carried forward to be used in future years. No new utility-scale capacity was added during 2008, and UNS Electric continues to lack utility-scale generating capacity.

Residential Distributed Energy Goals

UNS Electric achieved its Residential DE goal during the prorated 2008 REST compliance period. The RECs retired for this period, amounting to 918,553, were associated with solar PV installations at residential sites. Additional RECs were generated from small wind and solar hot water installations; these credits will be carried forward to future REST compliance years.

Non-Residential Distributed Energy Goals

UNS Electric fell far short of its Non-Residential DE goals during the prorated 2008 compliance period, achieving only 3% of its non-residential DE REST goal, and retiring 26,261 RECs. Several reasons contributed to this shortfall:

- The lead time to develop and install a non-residential PV system is roughly one year, which was shorter than the prorated 2008 compliance period;
- Uncertainty regarding the renewal of the federal Investment Tax Credit (“ITC”) delayed schedules for projects that may not have been completed by the end of 2008. The bank bailout in October 2008 addressed this issue, but not soon enough to put sufficient projects on track for completion by the end of the year; and
- The commercial market in the UNS Electric service territory is small and undeveloped.

There are currently no commercial reservations awaiting installation for 2009.

1. Introduction to UNS Electric, Inc.

UNS Electric, a subsidiary of UniSource Energy Services, Inc., provides electric service to the communities of Mohave and Santa Cruz counties. UNS Electric was formerly Citizens Communications Company, Mohave Electric Division and Santa Cruz Electric Division.

This report covers UNS Electric's progress from June 1, 2008 through December 31, 2008, the prorated 2008 REST implementation period. It also describes renewable energy production and installations for the full 2008 calendar year, which also includes the EPS compliance period from January 1, 2008 through May 31, 2008.

2. Renewable Energy Standard and Tariff Legislation and Requirements

On August 14, 2007, the REST R14-2-1801 became effective, following approval from the ACC. The REST rules require that UNS Electric and other affected utilities generate or purchase at least 15% of their total annual retail energy requirements from eligible renewable energy resources by 2025, with smaller amounts required in earlier years.⁴

The ACC ruled that REST superseded the EPS. Like REST, the EPS was designed to encourage the development of renewable generation; EPS was adopted by the ACC in 2001. When REST supplanted EPS, the ACC ordered that all remaining EPS funds be transferred to the REST program and that UNS Electric be released from all requirements of the EPS. Accordingly, some of the RECs generated during the EPS program were also transferred into the REST compliance period.

Table 1, below, shows the REST goals disaggregated by category for the period 2008 through 2025.

⁴ Under REST, eligible renewable energy resources include the following: biogas electricity generation, biomass electricity generation, eligible hydropower resources, fuel cells that use renewable fuels only, hybrid wind and solar electric generation, new small hydro (10 MW or less), solar electric generation, wind generation, and distributed renewable energy resources (these include renewable CHP, commercial solar pool heaters, biomass and biogas thermal systems, biogas electric generation, geothermal space and process heating, solar daylighting, solar HVAC, solar space heating, solar water heating, and small wind generation (1 MW or less)).

Table 1 - REST Goals 2008-2025

Year	REST Goals	Year	REST Goals
2008	1.75% (10% DG)	2017	7.00% (30% DG)
2009	2.00% (15% DG)	2018	8.00% (30% DG)
2010	2.50% (20% DG)	2019	9.00% (30% DG)
2011	3.00% (25% DG)	2020	10.00% (30% DG)
2012	3.50% (30% DG)	2021	11.00% (30% DG)
2013	4.00% (30% DG)	2022	12.00% (30% DG)
2014	4.50% (30% DG)	2023	13.00% (30% DG)
2015	5.00% (30% DG)	2024	14.00% (30% DG)
2016	6.00% (30% DG)	2025	15.00% (30% DG)

Source: Renewable Energy Standard and Tariff, Section R14-2-1804 and R14-2-1805

UNS Electric's REST Implementation Plan was approved by the ACC and became effective on June 1, 2008, at which time the RES Tariff was added to customer bills.⁵ After this date, the REST compliance period began, and the EPS compliance period ended.

2.1. UNS Electric 2008 Compliance Requirements

UNS Electric's REST requirement for this period was **18,371,045** RECs, which reflects 1.75% of UNS Electric's retail energy sales for the period of June 1, 2008, through December 31, 2008.⁶ Ten percent (10%) of this requirement must be met through DE renewable resources (1,837,105 kWh); of this amount, 50% must come from residential customer systems, and 50% must come from non-residential, non-utility applications. The remaining portion of the REST requirement (90% of the total goal) includes 16,533,941 kWh of utility-scale renewable energy resources. Table 2, below, shows the breakdown of UNS Electric's REST requirement for 2008.

⁵ The customer RES tariff for 2008 was set at \$0.004988 per kWh, with caps for maximum monthly payment established for each customer class.

⁶ One renewable energy credit (REC) is equivalent to one kilowatt-hour (kWh) of production from an Eligible Renewable Energy Resource. Except for RECs from Distributed Energy resources, the energy from an Eligible Renewable Energy Resource that is associated with a REC must be delivered to its retail customers.

Table 2 - 2008 REST Goal (kWh)

Category	kWh
June-Dec 2008 UNS Electric Retail Sales	1,049,774,000
REST Goal @ 1.75% of Retail Sales	18,371,045
DE @ 10% of REST Goal, including:	1,837,105
50% Residential DE	918,553
50% Non-Residential, Non-Utility DE	918,553
Utility Scale @ 90% of REST Goal	16,533,941

2.2. Extra Credit Multipliers

The REST order allows affected utilities to earn RECs from sources other than actual energy production based on applicable Extra Credit Multipliers ("multipliers"). These multipliers include the Early Installation Extra Credit Multiplier, the In-State Power Plant Installation Extra Credit Multiplier, the In-State Manufacturing and Installation Content Extra Credit Multiplier, and the Distributed Solar Electric Generator and Solar Incentive Program Extra Credit Multiplier.

The multipliers are applied to the energy generated by an Eligible Renewable Energy Resource. The energy generated by a given facility during a compliance period is multiplied by the multiplier, producing the Extra Credit earned by that facility. This Extra Credit is then added to the RECs produced by the facility as a result of its energy production to provide the total number of RECs generated by that facility during a given compliance period. The multipliers are additive, but the total multiplier cannot exceed 2.0.

Table 3, below, shows each multiplier and its related value.

Table 3 - REST Extra Credit Multipliers

Extra Credit Multipliers	Value
Early Installation Extra Credit: Installed and Began Operating in	
2001	0.3
2002	0.2
2003	0.1
In-State Power Plant Extra Credit (1997-2005)	0.5
In-State Manufacturing and Installation Content (1997-2005)	0.5 * (% in-state content in installed plant)
DE Solar Electric Generator and Solar Incentive Program (1997-2005)	0.5

Source: Renewable Energy Standard and Tariff, R14-2-1806.

The multipliers only apply to systems installed between January 1, 1997 and December 31, 2005, and, in some cases, the definition is narrower. There is no expiration date for any of the multipliers except the Early Installation Extra Credit Multiplier. The Early Installation Extra Credit Multiplier is only applied during the first five years following a facility's operational startup. As a result, 2008 will be the final year for applying this multiplier. The remaining multipliers can be applied to facility generation for the life of the facility.

3. Overview of 2008 Compliance Status

UNS Electric has **22,123,294** RECs available to meet the 2008 REST requirement. This REC availability includes RECs that were carried over (not retired) from 2007 and the 2008 prorated EPS implementation period. The total REC amount includes actual kWh production from eligible renewable energy resources, applicable extra credits that were achieved through the REST multipliers, and REC purchases from Tucson Electric Power Company ("TEP"). Table 4, below, summarizes the breakdown of the total RECs available to UNS Electric, including those retired to meet each category of the REST 2008 requirements and the amount of surplus RECs. The certificate of retirement for the RECs retired for REST compliance year 2008 can be viewed in Appendix C.

Table 4 - 2008 Renewable Energy Credits for UNS Electric

	Utility-Scale Resources	Distributed Energy: Residential	Distributed Energy: Non- Residential
Installed Capacity			
Pre-2008 (kW)	0	215	8
2008 New Installations (kW)	0	154	22
Reserved in 2008 but Not Yet Installed (kW)	0	442	0
Renewable Energy Credits			
Carry Over from EPS	20,481,000	440,000	0
RECs Created in 2008	656,069	519,964	26,261
<i>Total Available RECs</i>	<i>21,137,069</i>	<i>959,964</i>	<i>26,261</i>
RECs Needed for Compliance	16,533,941	918,553	918,553
RECs Retired for Compliance	16,533,941	918,553	26,261
2008 Compliance (%)	100%	100%	3%
RECs Carried Forward to 2009	4,603,128	41,411	0

As of December 31, 2008, UNS Electric had reserved or installed approximately 811 kW of renewable generating capacity. This amount reflects cumulative capacity, including the amount installed during EPS program years, as well as the amount installed during the prorated 2008 REST program year. No commercial DE projects were either installed or reserved during 2008; the commercial market in the UNS Electric service territory is undeveloped and lacking the similar market potential for renewable energy that exists for TEP.

3.1. 2008 Expenditures and Surcharge

On April 28, 2008, the ACC approved UNS Electric's REST Implementation Plan, including a budget of \$3,146,939. The budgeted amount was prorated for the 2008 REST compliance period (June 1, 2008 through December 31, 2008); this seven-month budget was \$1,777,473.⁷

Of the \$1.78 million allocated for the REST program, UNS Electric spent \$827,155, including nearly \$500 thousand on customer incentives alone. In addition to REST funds actually spent, \$1.09 million was reserved for residential PV projects, \$99,750 was reserved for residential wind projects, and \$53,588 was reserved for solar hot water heating projects.

Table 5, below, shows the breakdown of UNS Electric's 2008 REST expenditures. The 2008 total includes funds collected under REST and GreenWatts.

Table 5 - 2008 REST Collections, Expenditures, & DE Reservations (June 1, 2008-December 31, 2008)

	2008 REST Collections (\$)	Expenditures (\$)	2008 Funds Reserved under RECPP (\$)	2008 kWh Reserved under RECPP (kWh)
Total	1,736,463	\$827,155	\$1,244,986	798,288
Customer Incentives:		\$499,934	\$1,244,986	798,288
Residential Incentives		\$499,934	\$1,244,986	798,288
Commercial Incentives		\$0	\$0	\$0
Program Administration		\$187,033	n/a	n/a
Utility Scale Spending*		\$86,762	n/a	n/a
CC&B Database		\$40,661	n/a	n/a
GreenWatts		\$0	n/a	n/a

*Includes REC purchases in the form of Global Solar Partial Manufacturing Credits

The amount of surcharge collected from customers relative to program expenditures will be deferred and reflected in UNS Electric's financial statements as a regulatory liability. REST funds not spent in a given year are then deducted from the annual approved funding in the following year. In other words, UNS Electric does not keep the unspent REST dollars from 2008; they will be deducted from UNS Electric's net REST funding in 2010.

⁷ The RES Tariff for UNS Electric customers includes a \$0.004988 per kWh rate, and caps of \$2.00, \$39.00, and \$500.00 respectively for residential, commercial, and industrial customers.

Table 6, below, shows the REST surcharge that UNS Electric collected from its customers during the 2008 compliance period. Table 7, below, shows the EPS surcharge that UNS Electric collected from its customers during the 2008 EPS compliance period.

Table 6 - REST Surcharge Collections from Customers, 2008

<u>Date</u>	<u>Residential</u>	<u>Small Commercial</u>	<u>Large Commercial</u>	<u>Total</u>
May-08	\$94.19	\$2.39	\$0.00	\$96.58
Jun-08	\$134,909.24	\$104,605.52	\$2,312.00	\$241,826.76
Jul-08	\$149,447.83	\$124,931.26	\$2,351.00	\$276,730.09
Aug-08	\$141,333.88	\$116,516.63	\$2,351.00	\$260,201.51
Sep-08	\$141,636.43	\$115,650.02	\$2,351.00	\$259,637.45
Oct-08	\$142,221.48	\$108,371.84	\$2,351.00	\$252,944.32
Nov-08	\$116,117.32	\$84,816.35	\$1,812.00	\$202,745.67
Dec-08	\$132,866.47	\$95,454.12	\$1,195.00	\$229,515.59
Total	\$958,626.84	\$750,348.13	\$14,723.00	\$1,723,697.97

Table 7 - EPS Surcharge Collections from Customers, 2008

<u>Date</u>	<u>Residential</u>	<u>Small Commercial</u>	<u>Large Commercial</u>	<u>Total</u>
Jan-08	\$24,797.12	\$24,407.99	\$247.00	\$49,452.11
Feb-08	\$23,650.52	\$21,824.45	\$247.00	\$45,721.97
Mar-08	\$23,160.22	\$20,609.08	\$247.00	\$44,016.30
Apr-08	\$23,501.45	\$23,068.25	\$247.00	\$46,816.70
May-08	\$22,633.15	\$21,860.61	\$247.00	\$44,740.76
Jun-08	\$99.80	\$546.49	\$0.00	\$646.29
Jul-08	\$6.50	\$36.96	\$0.00	\$43.46
Aug-08	\$3.31	\$84.72	\$0.00	\$88.03
Sep-08	\$4.19	\$527.24	\$0.00	\$531.43
Oct-08	\$2.26	\$365.73	\$0.00	\$367.99
Nov-08	(\$0.05)	\$39.00	\$0.00	\$38.95
Dec-08	\$0.07	\$109.74	\$0.00	\$109.81
Total	\$117,858.54	\$113,480.26	\$1,235.00	\$232,573.80
Life-to-Date				\$2,567,223.37

4. Utility-Scale Renewable Energy Resources

In 2008, 90% of UNS Electric's REST goal was for utility-scale renewable energy resources. UNS Electric met this goal with past purchased RECs that originated with TEP's Landfill Gas and Springerville Solar resources. Section 4.1, below, describes the process that both TEP and UNS Electric use to procure new utility-scale renewable energy resources; the competitive bid process as conducted

through requests for proposals. Section 4.2, below, describes UNS Electric's compliance position relative to the 2008 REST utility-scale goals and breaks down these results along technology lines.

4.1. Acquiring RECs from Utility-Scale Resources - Request for Proposals

UNS Electric and TEP issued two requests for proposals ("RFP") for Eligible Renewable Energy Resources. The first RFP was released in 2007 and sought to procure cost-effective energy and RECs from projects of at least 1 MW in size to diversify UNS Electric's and TEP's internal fuel resources and reduce the environmental impact of new resources. UNS Electric and TEP received 17 bids utilizing four different technologies. Accion Group, an independent auditor, found the RFP process and its results to be reasonable, fair, and transparent; Appendix B includes Accion Group's statement to this effect.

UNS Electric short-listed three of the proposals received in response to the 2007 RFP. As of the date of this report, UNS Electric has agreed to terms with one of the DE providers and continues to negotiate with one wind and one biomass provider. The contract with the DE provider, SunEdison, was signed in August 2008 for 3 MW of distributed PV capacity per year for five years; the contract is for RECs only.

The second RFP for Eligible Renewable Energy Resources was issued in 2008. Like the 2007 RFP, the 2008 RFP solicited projects with a minimum capacity of 1 MW and was a competitively-bid process open to all bidders. Projects lasting a minimum of 10 years were preferred; although, all bids were considered. All proposals were required to include all RECs that would be associated with the project capacity and energy production. The RFP requested up to 250,000 MWh of both energy and RECs per year. In response to the 2008 RFP, UNS Electric received bids for 38 projects. Table 8, below, summarizes the breakdown of proposals by technology for the 2007 and 2008 RFP processes.

Table 8 - Number of Bids Received in Response to 2007 and 2008 RFPs by Technology

Technology	2007 RFP		2008 RFP	
	# of Bids Received	# of Bids Short-Listed	# of Bids Received	# of Bids Short-Listed
Wind	4	1	6	0
Biomass	1	1	2	1
Utility-Scale Solar (PV)	7	0	21	1
Utility-Scale Solar Thermal	4	0	3	2
Distributed Energy	1	1	6	1
Total Number of Bids	17	3	38	5

4.2. RECs from Utility-Scale Resources

UNS Electric does not currently have utility-scale eligible renewable energy resources with which it can meet its utility-scale REST requirement. In 2007, as documented in the UNS Electric EPS 2007 Program filing, UNS Electric purchased 11,000 MWh of utility-scale RECs that had been generated from TEP's Springerville solar array, as well as 7,500 MWh of utility-scale landfill gas RECs. Both sets of REC purchases were from TEP. The documentation of these past purchases was included in the UNS Electric 2007 EPS compliance filing.

Together with these purchased credits and an internal surplus of UNS Electric RECs, UNS Electric has a total of 22,123 MWh of RECs that were carried over from 2007 and are available for retirement to meet the REST requirement in 2008. This includes 805,009 RECs that are derived from the Global Solar Manufacturing Partial Credit. Documentation of the REC retirements can be found in Appendix C.

Table 9 - Technology-Specific Breakdown of Utility-Scale Resources

	Landfill Gas	PV	Concentrated Solar Power	Partial Manufacturing Credit (kWh)
Installed Capacity				
Pre-2008 (kW)	0	0	0	0
2008 New Installations (kW)	0	0	0	0
Reserved in 2008 but Not Yet Installed (kW)	0	0	0	0
Cumulative Capacity	0	0	0	0
Energy Production				
Annualized Energy Production (kWh)				
Renewable Energy Credits (RECs)				
Carry Over from EPS	9,481,000	11,000,000	0	0
RECs Created in 2008 From Energy Production	0	0	0	0
RECs Created in 2008 From Extra Credit Multipliers	0	0	0	805,009
<i>Total Available RECs</i>	<i>9,481,000</i>	<i>11,000,000</i>	<i>0</i>	<i>805,009</i>
RECs Retired under GreenWatts Program	148,940	0	0	0
RECs Retired for Compliance	9,332,060	7,201,881		0
RECs Carried Forward to 2009	0	3,798,119	0	805,009

5. Distributed Energy Resources

The REST rules place special priority on DE resources and ramp up their contribution toward the total REST goal during the first five years of the standard. In 2008, DE accounted for 10% of the total REST goal. Of this amount, half of the RECs must come from systems sited on residential customer sites and half must come from systems sited on non-residential, non-utility sites. UNS Electric achieved this goal using a combination of RECs produced by existing and new resources in addition to the carry-over of RECs from the EPS program.

Section 5.1, below, describes the process that UNS Electric uses to procure RECs from new DE systems, the Renewable Energy Credit Purchase Program ("RECCP"). Section 5.2, below, summarizes UNS Electric's compliance position for RECs from DE installations, breaking down the results by the types of programs offered to different classes of customers. While a suite of technologies are eligible to participate in the DE program, only PV projects have been developed to date.

5.1. Acquiring RECs from Distributed Energy Resources - Renewable Energy Credit Purchase Program

In accordance with REST, UNS Electric developed and received approval for the RECCP. RECCP is UNS Electric's Uniform Credit Purchase plan ("UCPP"), which is required under REST. The goal of RECCP is to create a program that will provide incentives for affordable, environmentally sensitive, customer-sited renewable energy generation systems to supplement customers' energy needs. This approach is intended to ensure that UNS Electric meets its 2008 REST DE requirement. The ACC approved UNS Electric's RECCP as part of the 2008 Implementation Plan, effectively deeming it reasonable, fair, and transparent to all ratepayers.

The RECCP provides two primary forms of incentives to customers:

- **Up-Front Incentive ("UFI").** The UFI is based on installed capacity. The customer is given a one-time payment in exchange for UNS Electric's right to the RECs. The UFI is generally for residential customers, though commercial projects smaller than 20 kW are also eligible.
- **Performance-Based Incentive ("PBI").** The PBI is based on actual annual energy production, measured in kWh. The PBI provides a stream of payments to the customer for up to 20 years in exchange for UNS Electric's right to the RECs. The PBI is generally for commercial customers and is required for all commercial projects larger than 20 kW.

RECCP incentives can be applied to systems designed to serve only the typical load of the customer with whom the incentive agreement has been established. The assessment of that typical load does not preclude the periodic production of electricity in excess of the customer's demand. Under some circumstances it is understood that select customer installations will be designed to serve loads greater than that of the customer. Under those circumstances, the RECCP incentive will be applied only to the fraction of the generation which is used to serve the typical customer load.

In exchange for the financial rebates that UNS Electric provides to the customer, the customer transfers the rights to the RECs to UNS Electric. UNS Electric then applies the RECs toward the DE portion of the REST requirement. In return for UNS Electric's payment of a UFI, UNS Electric will be given complete and irrevocable ownership of the RECs until December 31st of the 20th full calendar year after completion of installation of the system. Operational life during that time frame must be supported by system warranty or planned maintenance schedules. UNS Electric's payment of a PBI will assure UNS Electric complete and irrevocable ownership of the REC for the full duration of the PBI agreement. The

agreement duration must fully coincide with the PBI payment schedule and the system must be supported by system warranty or planned maintenance schedules for the term of the agreement.

The RECPP provides for a uniform procedure and a transparent timeline to facilitate project realization. In order to receive an incentive from UNS Electric, the customer must first submit a project request. Upon approval of this request, the customer receives a reservation confirmation, which reserves REST funds for that project. If the project is subsequently built within the required timeframe and meets all of the UNS Electric RECPP conforming project guidelines, the customer is approved for the incentive for which it applied. The incentive rate depends on several factors: customer sector, capacity size of system (kW), technology type, and the year in which the reservation was approved.

See Appendix D for the 2008 RECPP Incentive Matrix for both UFI and PBIs for all eligible renewable energy technologies as approved in the 2008 REST implementation plan.

5.2. RECs from Distributed Energy Resources

UNS Electric segments its DE programs according to the size of the system and the customer class. Commercial systems smaller than 20 kW are grouped with residential projects, which are typically below this threshold. The selection of these projects is governed by the RECPP project described earlier in Section 5.1. The RECs acquired through the development of these projects contribute to the residential or non-residential REST goals, depending on the site at which the system is located.

Commercial projects larger than 20 kW are considered separately from the SunShare / Solar Hot Water / Wind program. These larger projects are either selected through the competitive solicitation process outlined earlier in Section 4.1, or apply for a PBI through the RECPP. However, UNS Electric does not currently have any large commercial projects operational or in the application process.

Table 10 - Technology-Specific Breakdown of Distributed Energy Resources

	Residential PV	Residential Solar Thermal	Residential Wind	Non-Residential PV	Non-Residential Solar Thermal	Non-Residential Wind
Installed Capacity						
Pre-2008 (kW)	215	0	0	8	0	n/a
2008 New Installations (kW)	100	21	34	14	0	8
Reserved in 2008 but Not Yet Installed (kW)	367	36	38	0	0	0
Cumulative Capacity	682	57	72	22	0	n/a
Energy Production						
Annualized Energy Production (kWh)	431,568	12,383	10,476	12,076	0	1,405
Renewable Energy Credits (RECs)						
Carry Over from EPS	440,000	0	0	0	0	0
RECs Created in 2008 From Energy Production	431,568	12,383	10,476	12,076	0	1,405
Multipliers	65,536	0	0	12,780	0	0
Total Available RECs	937,104	12,383	10,476	24,856	0	1,405
RECs Retired for Compliance	918,553	0	0	24,856	0	1,405
RECs Carried Forward to 2009	18,551	12,383	10,476	0	0	0
Aggregate Cost						
Aggregate Cost (cents per kWh)-2008	49.3	53.0	129.9	n/a	n/a	n/a
Aggregate Cost (\$ per kW)-2008	\$2,908	\$1,477	\$2,500	0	0	n/a

5.2.1. Residential & Small Commercial Distributed Energy

UNS Electric operates programs targeted at residential and commercial customers seeking to develop projects smaller than 20 kW. The economics of systems on this scale are similar regardless of whether the customer is a residential or commercial customer, which leads to efficiencies in offering a single incentive for the two customer classes. This section describes the two programs that are targeted at these smaller projects. SunShare provides incentives for PV projects of this scale; SunShare is now part of the overall RECPP and includes all eligible renewable technologies. In the UNS Electric service territory, the three technologies that are most common include solar PV, solar hot water and wind.

During 2008, many residential and commercial reservations were restricted by delays and speculation regarding the ITC legislation. The ITC was set to expire at the end of 2008, and developers could not guarantee that the systems would be placed in service by the December 31 deadline. Had the ITC expired, project owners would have to place a significant portion of the capital cost at risk. If the ITC were not extended, customers would have to pay 30% of the system cost that would have otherwise been covered by the ITC. As a result, some potential projects were delayed until the future of the ITC was clear. That did not occur until October 2008. However, when The Energy Improvement and Extension Act was included as part of the first bank bailout, extending the ITC through the end of 2016, creating much more certainty in the marketplace.⁸ The uncertainty around the ITC should not affect project development during 2009.

5.2.1.1. SunShare

UNS Electric has offered the SunShare program to its customers since the ACC approved the program under the EPS in 2004. Now incorporated into the RECPP, this program provides incentives for the installation of customer-sited solar PV systems, including both residential and commercial projects smaller than 20 kW. The SunShare program offers UFIs to qualifying customers to install these systems. In 2008, the incentive payments offered were \$3.00/Watt for solar PV, as outlined in the ACC Staff's Plan approved by the ACC. The incentive payments for all technologies are detailed in Appendix D.

As of the end of 2007, **51** UNS Electric customers had received \$516,979 in incentives since the program's inception in 2004.

In 2008, **53** customers qualified for a SunShare/RECPP incentive payment. This participation increased cumulative participation in the program to 104 since the program's inception in 2004.⁹ Through the residential customers' participation in 2008, 100 kW of new PV was installed as a result of the SunShare Program. Together with existing residential systems, these new systems produced 431,568 kWh during 2008. Table 11, below, shows the SunShare installations for PV, wind, and solar hot water in 2008.

⁸ The ITC legislation extended the 30% tax credit for residential solar systems to 2016, as well as removed the cap. It also ended the utility exclusion that prevented utilities from taking the tax credit.

⁹ This number includes participants in 2008 that qualified for SunShare before June 1, 2008, while the program was still under the EPS requirements.

Table 11 – SunShare Installations, 2008

	PV			Wind			Solar Hot Water		
	<u>Funds Released</u>	<u># of Installed Systems</u>	<u>Installed kW</u>	<u>Funds Released</u>	<u># of Installed Systems</u>	<u>Installed kW</u>	<u>Funds Released</u>	<u># of Installed Systems</u>	<u>Energy Savings</u>
May-08	\$ -	-	-	\$ -	-	-	\$ -	-	-
June-08	\$ 44,460	1	15	\$ -	-	-	\$ 2,950	2	5,800
July-08	\$ 55,920	2	19	\$ 13,500	3	5	\$ 1,425	1	2,700
August-08	\$ 74,820	3	25	\$ 27,750	6	11	\$ 4,375	3	8,500
September-08	\$ 23,985	1	8	\$ 9,000	2	4	\$ 2,850	2	5,400
October-08	\$ 54,228	2	18	\$ 27,000	6	11	\$ 5,681	4	11,000
November-08	\$ 18,030	2	9	\$ -	-	-	\$ 1,375	1	2,500
December-08	\$ 19,110	2	7	\$ 6,500	1	3	\$ 12,425	9	22,700
Total	\$ 290,553	13	100	\$ 83,750	18	34	\$ 31,081	22	58,600

5.2.1.2. Solar Hot Water and Wind

UNS Electric began offering incentives for solar hot water and small wind systems in June 2008 as part of RECPP, the DE component of the REST Implementation plan. The calculated kWh savings from each solar hot water project is based upon the SRCC OG-300 published rating of the system.

In 2008, 22 solar hot water systems, including 22 residential systems and zero commercial systems, received an incentive payment from UNS Electric. The residential systems installed during 2008 resulted in the production of 12,383kWh during 2008, which resulted in 12,383 RECs (the systems were not eligible for any extra credits) that were applied toward 2008 residential DE compliance targets.

In 2008, 18 wind systems—17 residential and 1 commercial—received an incentive payment from UNS Electric. The residential systems that were installed produced 10,476 kWh of both energy and an equivalent number of RECs, and the commercial system produced 1,405 kWh and RECs. The wind systems did not qualify for any extra credits, and all RECs earned from the 18 systems were applied toward the 2008 residential and commercial DE compliance targets.

At the end of 2008, customers had reserved funds for an additional 100,350 kWh equivalent of solar hot water systems. Since these projects were not completed during 2008, the reservation of funds was transferred to the 2009 budget. It is unclear at this time how many of these projects will ultimately be completed.

In total, UNS Electric had reserved \$1,244,986 of UFI funds during 2008 in its RECPP process. Several of those systems will be built and operational in 2009.

5.2.1.3. GreenWatts

GreenWatts is an ACC-approved UNS Electric green power purchase program that enables commercial, industrial, and residential customers to pool funds and invest directly in the creation of green power. UNS Electric's GreenWatts program was approved by the ACC in August 2004, together with the approval of the SunShare program. The renewable energy, as landfill gas, procured through GreenWatts does *not* count toward REST goals because the customers purchase the RECs; therefore, UNS Electric cannot also own and retire the RECs. The purchase of the landfill gas for GreenWatts is funded by non-REST money. The community-based (within the UNS Electric service territory) solar projects that are funded by the customer contribution to GreenWatts contribute energy production that qualifies under REST as eligible commercial DE systems. UNS Electric will count this production toward the commercial DE portion of

their REST requirement when an installed GreenWatts community project is operational. What follows is a short description of the program and summary of its activity during 2008.

Each GreenWatt is sold in blocks of 20 kWh per month (“blocks”). Revenues from GreenWatts are used for installing more community-based solar generation, a program that is unique to UniSource Energy Corporation. At the end of December 31, 2008, UNS Electric had commitments from 3,039 residential customers, amounting to adoption of 7,199 blocks, and 97 commercial customers, amounting to 248 blocks of energy.

The cumulative revenues from GreenWatts amount to \$31,713. Table 12, below, shows the annual revenues generated from the program, which are rolled into REST as a result of the 2007 REST order, as well as the Lifetime revenues. In 2008, 148,940 landfill gas RECs (which were available from the 2007 TEP purchase and EPS carryover) were retired under GreenWatts. These RECs are excluded from retirement under REST. The certificate of retirement for the 2008 GreenWatts RECs can be found in Appendix E.

Table 12 – GreenWatts Revenue, 2008.

GreenWatts	2008 Revenues	2008 Blocks	Life-to-Date Revenues	2008 RECs retired under program
Total	\$12,764.50	7,447	\$31,713	148,940
Commercial	\$422.00	248	\$1,047	4,960
Residential	\$12,342.50	7,199	\$30,666	143,980

Total revenues produced in 2008 are \$1,047 from commercial customers and \$30,666 from residential customers, for year-to-date revenues of \$31,713. All of these funds have been, or will be, applied to installation costs of community based PV systems installed in the UNS Electric service territory. There are no GreenWatts installations yet operational in the UNS Electric service territory, as the funding has not been sufficient to fully fund one.

6. Conclusion

During 2008, UNS Electric achieved its REST goals in all categories except for the DE non-residential category. UNS Electric retired sufficient RECs to comply with both the utility-scale and residential DE components of the target. At the utility scale, purchased landfill gas and solar resources accounted for the bulk of the RECs. On the DE side, PV, wind, and solar hot water were the resources that counted toward the goal.

UNS Electric installed some new DE systems in 2008, but relied heavily on RECs carried over from the EPS program to achieve both the utility-scale and DE goals. UNS Electric customers installed 53 new DE systems during 2008 that would have contributed about 16% of the 2008 DE requirement in 2008, had they all been operational for the entire year. In the meantime, TEP and UNS Electric were negotiating with bidders for additional utility-scale and DE resources during the year.

In December 2008, the ACC approved UNS Electric’s 2009 REST Implementation Plan, including a REST surcharge that is expected to collect \$5.04 million, or approximately \$0.006 per kWh, from retail customers in 2009 to offset the costs of implementing the REST projects and programs. REST

implementation plans and the associated surcharge are submitted annually to the ACC for their review and approval.

Although meeting the DE portion of the REST requirement is more costly per kWh than meeting the utility scale requirement, the external benefits to the local and statewide economy are numerous, due to the increased demand for the associated equipment and skilled labor necessary for quality installations. It will be important for REST compliance in the future for UNS Electric to help develop a greater commercial market for renewable energy resources in order to better meet the commercial category for the DE REST requirement.

Appendix A

Breakout of UNS Electric's 2008 REC's

Category	Production (kWh)	REC Multiplier(s) Applied*	Multiplier Value	Extra credits (from multipliers)	Total REC's	REC's Sold/Retired	REC's Purchased
Utility-Scale (Non-DG)							
Landfill Gas	-					148,940	
Springerville Solar	-						
Global Solar MPC		Manufacturing Partial Credit			805,009		
Total Production							
Subtotal Non-DG					805,009	148,940	
DG							
SunShare (DG Res)***	431,568	Annual kWh Production					
	56,988	In-State Manufacturing and Installation Content	0.15	8,548			
	56,988	In-State Power Plant Installation Credit	0.5	28,494			
	56,988	Distributed Generation Credit	0.5	28,494			
					497,104	0	0
DG-Commercial-2 projects	7,380	Annual kWh Production					
	7,380	In-State Power Plant Installation Credit	0.5	3,690			
	7,380	Distributed Generation Credit	0.5	3,690			
					14,760	0	0
Solar Hot Water-Residential	12,383	n/a					
Wind-Residential	10,476	n/a					
Wind-Non Residential	1,405	n/a					
Solar-Non Residential	4,696	Annual kWh Production					
	4,696	In-State Manufacturing and Installation Content	0.15	704			
	4,696	In-State Power Plant Installation Credit	0.5	2,348			
	4,696	Distributed Generation Credit	0.5	2,348			
					10,096		
Subtotal DG	467,908				546,225		
2008 New Production (DG +NonDG - Sold/Retired)					1,202,294		
Carryover credits from 2007	20,921,000				20,921,000		
TOTAL (2008 new production + 2007 carryover)					22,123,294		

Appendix B

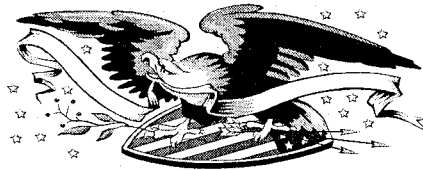
Auditor's Statement of Fair Process and Procedure

(Redacted)

Appendix C

Documentation of UNS Electric REC Retirements for 2008

(Signed Certificate available upon request)



Certificate of Retirement of Renewable Energy Credits

Original Certificate Issue

Certificate No. UNSE/REST: LG0000001 – 9,481,000

Certificate No. UNSE/REST: SPV0000001-7,052,941

Certificate No. UNSE/REST: DERP000001-918,553

Certificate No. UNSE/REST: DECPV000001-10,096

On January, 2009 UNS Electric (UNSE) retired 9,481,000 Landfill Gas Credits, 7,052,941 Utility Scale Solar PV Credits (SPV), 918,553 Distributed Energy-Residential-Solar PV Credits (DERPV), and 10,096 Distributed Energy-Commercial-Solar PV Credits (DECPV) towards meeting its 2008 Renewable Energy Standard requirements.

1. UNSE certifies that it derived the Landfill Credits from application of the Actual Generation of Electricity from the combustion of landfill gas produced at the Los Reales Landfill for the generation of electricity at TEP's Sundt Generating Station.
2. UNSE Certifies that it derived all Utility Scale Solar and Distributed Energy Solar from Actual Generation of Electricity and the application of the multipliers as permitted by the EPS and the RES
3. UNSE further certifies that, at the time of this transfer, it had title to the Credits transferred to UNSE and that such Credits have not previously expired, have not been otherwise used by UNSE to meet its Environmental Portfolio Standard or Renewable Energy Standard requirements, and have not been transferred by UNSE to any other entity.

Attested to:

Name of TEP officer – Philip J. Dion

Title – Vice President, Legal & Environmental Services

Date – January 31, 2009

Signature _____

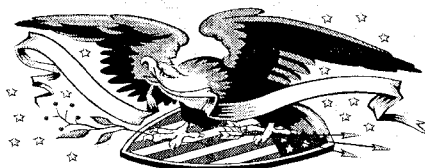
Appendix D

2008-2009 RECPP Conforming Project Incentive Matrix

Technology/Application	UP FRONT INCENTIVE ¹	10-Year REC Agreement ² 10-Year Payment (\$/kWh)	15-Year REC Agreement ² 15-Year Payment (\$/kWh)	20-Year REC Agreement ² 20-Year Payment (\$/kWh)
	20-Year REC Agreement			
BIOMASS/BIOGAS (Electric)	NA	0.060	0.056	0.054
BIOMASS BIOGAS – CHP (Electric) ³	NA	0.035	0.032	0.031
BIOMASS/BIOGAS – CHP (Thermal) ³		0.018	0.017	0.016
BIOMASS BIOGAS (thermal)	NA	0.015	0.014	0.013
BIOMASS BIOGAS (cooling)	NA	0.032	0.030	0.029
DAYLIGHTING (Non-Residential)	\$0.20/kWh ⁷ See this note for clarification	NA	NA	NA
GEOHERMAL – (electric)	NA	0.024	0.022	0.022
GEOHERMAL – (thermal)	1.00/Watt	0.048	0.045	0.043
GEOHERMAL – (cooling)	NA	0.032	0.030	0.029
SMALL HYDRO	NA	0.060	0.056	0.054
SMALL WIND (grid-tied) ⁴	\$2.50/Watt AC	0.145	0.135	0.130
SMALL WIND (off-grid) ⁴	\$2.00/Watt AC	0.116	0.108	0.104
SOLAR ELECTRIC:				
RESIDENTIAL (GRID-TIED)	\$3.00/Watt DC ⁸	0.202	0.187	0.180
Non-Residential (Grid-Tied) 20 kW or less	\$2.50/Watt DC ⁸	0.202	0.187	0.180
NON-RESIDENTIAL (GRID-TIED) More than 20 kW	NA	0.202	0.187	0.180
RESIDENTIAL (OFF-GRID)	\$2.00/Watt DC ⁸	NA	NA	NA
NON-RESIDENTIAL (OFF-GRID)	NA	0.121	0.112	0.108
SOLAR SPACE COOLING ⁵	NA	0.129	0.120	0.115
SOLAR WATER HEATING/SPACE HEATING ⁵ (Non-Residential)	NA	0.057	0.052	0.051
RESIDENTIAL SOLAR WATER/SPACE HEATING ⁶	\$750.00 plus \$0.25/kWh to a maximum of \$1,750.00 ^{9,10}	0.057	0.052	0.051
NON-RESIDENTIAL POOL HEATING	NA	0.012	0.011	0.011

Appendix E

GreenWatts Certificate of Retirement (Signed Certificate available upon request)



Certificate of Retirement of GreenWatts Credits

Original Certificate Issue

Certificate No. UNSE/GW: 000001 - 148,940

On January, 2009 UNS Electric (UNSE) retired 148,940 kWh of Landfill Gas Credits in meeting its 2008 GreenWatts Program Energy requirements.

1. UNSE certifies that it derived the Landfill Credits from application of the Actual Generation of Electricity from the combustion of landfill gas produced at the Los Reales Landfill for the generation of electricity at TEP's Sundt Generating Station.
2. UNSE further certifies that, at the time of transfer, it had title to the Landfill Credits transferred to UNSE and that such Credits have not previously expired, have not been otherwise used by UNSE to meet its Environmental Portfolio Standard or Renewable Energy Standard requirements, and have not been transferred by UNSE to any other entity.

Attested to:

Name of TEP officer – Philip J. Dion
Title – Vice President, Legal & Environmental Services
Date – January 31, 2009

Signature _____