ORIGINAL

BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS
MIKE GLEASON – CHAIRMAN
WILLIAM A. MUNDELL
JEFF HATCH–MILLER
KRISTIN K. MAYES
GARY PIERCE

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR APPROVAL OF ITS RENEWABLE ENERGY STANDARD AND TARIFF IMPLEMENTATION PLAN.	DOCKET NO. E-01933A-07-0594

Tucson Electric Power Company ("TEP" or the "Company"), through undersigned counsel, submitted its Renewable Energy Standard and Tariff ("REST") Implementation Plan for the Arizona Corporation Commission's consideration on July 1, 2008, in compliance with Arizona Administrative Code R14-2-1813. TEP hereby submits a revised Attachment 2 to its REST Full Compliance Plan, identified as Attachment 2 to Exhibit 1.

RESPECTFULLY SUBMITTED this 14th day of August 2008.

TUCSON ELECTRIC POWER COMPANY

By: Michelle Livengood

Michelle Livengood
Tucson Electric Power Company
One South Church Avenue, Suite 2030
Tucson, Arizona 85701

and

Michael W. Patten
Roshka DeWulf & Patten, PLC
One Arizona Center
400 East Van Buren Street, Suite 800
Phoenix, Arizona 85004

Original and 13 copies of the foregoing
filed this 14th day of August 2008 with:

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

Copy of the foregoing hand-delivered/mailed
this 14th day of August 2008 to:

Lyn Farmer
Chief Administrative Law Judge
Hearing Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Janice M. Alward, Esq.
Chief Counsel, Legal Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

Ernest G. Johnson
Director, Utilities Division
Arizona Corporation Commission
1200 West Washington Street
Phoenix, Arizona 85007

C. Webb Crockett
Patrick J. Black
FENNEMORE CRAIG, PC
3003 North Central Avenue, Suite 2600
Phoenix, Arizona 85012-2913

Peter Q. Nyce, Jr
General Attorney, Regulatory Law Office
Department of the Army
901 North Stuart Street, Room 713
Arlington, Virginia 22203

Timothy M. Hogan
Arizona Center for
Law in the Public Interest
202 E. McDowell Road, Suite 153
Phoenix, Arizona 85004

David Berry
Western Resource Advocates
P.O. Box 1064
Scottsdale, Arizona 85252

Dan Neidlinger
Neidlinger & Associates
3020 North 17th Drive
Phoenix, Arizona 85015

John Kromko
717 North 7th Avenue
Tucson, Arizona 85705

By: Debbie Amaral

Attachment 2
to Exhibit 1
(Revised)

Attachment 2

Five Year Renewable Energy and Capacity Forecast with Cost Estimates (Full Compliance Plan)

TEP-2009	Item	2009	2010	2011	2012	2013
TEP & REST Program Factors	RES Annual Renewable Energy Percentage	2.00%	2.50%	3.00%	3.50%	4.00%
	Energy Sales - MWh Growth @ 1.52%/yr	9,935,957	10,135,006	10,325,861	10,519,779	10,679,680
	Expected DSM Program Annual Energy Reductions	63,837	97,308	131,815	167,496	220,257
	Expected DG Program Annual Energy Reductions	9,943	29,587	50,041	76,080	107,900
	Net Retail Energy Sales in MWh per Year	9,862,177	10,008,111	10,144,005	10,276,203	10,351,522
	Renewable Energy - MWh	197,244	250,203	304,320	359,667	414,061
	Minimum Distributed Energy %	15.00%	20.00%	25.00%	30.00%	30.00%
	Minimum Distributed Energy MWh	29,587	50,041	76,080	107,900	124,218
	Minimum Residential Distributed Energy %	7.50%	10.00%	12.50%	15.00%	15.00%
	Minimum Residential Distributed Energy MWh	14,793	25,020	38,040	53,950	62,109
	Maximum Commercial Distributed Energy %	7.50%	10.00%	12.50%	15.00%	15.00%
	Maximum Commercial Distributed Energy MWh	14,793	25,020	38,040	53,950	62,109
Renewable Resource Energy and Power Conversion	Residential Distributed Generation - MWp Total New 60% Solar PV	4.814	9.359	15.145	22.217	25.843
	Residential Distributed Energy - MWp Total New 40% Solar Hot Water/Space Heating & Wind	5.917	10.008	15.216	21.580	24.844
	Commercial Distributed Generation - MWp Total New 75% Solar Electric PV in 2008, 50% in 2009, 25% after	4.351	3.679	5.594	7.934	9.134
	Commercial Distributed Generation - MWp Total New 25% in 2008, 50% in 2009, 75% after, Non Solar Electric @ avg. 50% CF	1.689	4.284	6.514	9.238	10.635
	Distributed Solar Elect MWp Old With Multipliers	1.76	1.76	1.76	1.76	1.76
	Utility Solar Elect MWp Old With Multipliers	11.11	11.11	11.11	11.11	11.11
	Utility Fueled Generation - MWp Old With Multipliers	3.938	3.938	3.938	3.938	3.938
	Utility Generated @ 80% NonDispatchable Energy - MWp New No Multipliers - Wind	47.489	60.997	72.666	82.444	98.267
	Utility Generated @ 20% Fueled - MWp New No Multipliers	2.609	3.351	3.992	4.529	5.399
	Resulting Total Solar Electric Capacity in MW	15.315	19.188	26.890	36.300	41.127
	Resulting Total Solar Electric Annual Energy in MWh	23,965	28,960	40,026	53,550	60,485
	Incremental Solar Capacity Watts Installed per Year per Person	8.153	4.842	9.627	11.764	6.033
	Resulting Total Distributed Solar Water Heating Capacity in MW	9.616	16.263	24.726	35.068	40.371
	Resulting Total Distributed Solar Water Heating Annual Energy in MWh	9,616	16,263	24,726	35,068	40,371
	Resulting Total Distributed Non Solar Electric Dispatchable or Displaced Generation Capacity in MW	1.689	2.856	4.342	6.159	7.090
	Resulting Total Distributed Non Solar Electric Dispatchable or Displaced Generation Annual Energy in MWh	7,397	12,510	19,020	26,975	31,055
	Resulting Total Wind Electric Generation Capacity in MW	47.489	60.997	72.666	82.444	98.267
	Resulting Total Wind Electric Generation Annual Energy in MWh	91,416	117,420	139,882	158,704	189,164
	Resulting Total Biomass Electric Generation Capacity in MW	6.034	6.776	7.417	7.954	8.823
	Resulting Total Biomass Electric Generation Annual Energy in MWh	52,854	59,355	64,971	69,676	77,291
	Total Renewable Generating Annual Energy in MWh	**185,247**	**234,508**	**288,626**	**343,972**	**398,366**
	Total Renewable Generating Capacity in MW	**80.141**	**106.081**	**136.041**	**167.924**	**195.678**
Annual Credit Balances MWh	Residential Distributed Electric Credit Balance	3,483	3,483	3,483	3,483	3,483
	Commercial Distributed Energy Credit Balance	0	0	0	0	(0)
	Utility Generated Electric Credit Balance	117,100	115,500	113,800	112,000	110,200
Assumption	Residential Distributed Generation Solar Electric %	60.00%	60.00%	60.00%	60.00%	60.00%
Residential Solar Electric Up Front Subsidy Payment UCPP Plan	Residential Distributed Genration Up Front Solar Electric Subsidy Program $/Watt DC	$4.50	$4.05	$4.05	$3.60	$3.60
	Additional Residential Distributed Solar Electric Capacity Needed in MWp given Year	4.365	4.545	5.787	7.071	3.626
	Subtotal Cost of Residential Distributed Solar Electric Subsidies	$19,643,103	$18,408,625	$23,435,535	$25,456,072	$13,054,509

Distributed Solar Hot Water & Wind Up Front Subsidy Payment UCPP Plan	Residential Distributed Solar Hot Water & Wind Up Front Subsidy Program $/Watt AC Equivalent	$1.0000	$0.9000	$0.9000	$0.8000	$0.8000
	Additional Residential Distributed Solar Hot Water & Wind Capacity Needed in MWp given Year	3.929	4.091	5.208	6.364	3.264
	Subtotal Cost of Residential Distributed Solar Hot Water & Wind Subsidies	$3,928,621	$3,681,725	$4,687,107	$5,091,214	$2,610,902
Assumption	Distributed Generation Solar Electric %	50.00%	25.00%	25.00%	25.00%	25.00%
Distributed Generation Solar Electric Performance Based Incentive Plan - Applies to all non residential solar electric in all years. UCPP & Self-Directed Funding	SubTotal Cost of Distributed Solar Electric Generation Performance Based Incentive	$2,746,395	$3,495,312	$5,035,932	$6,897,210	$9,039,975
	Unit Built in 2008	$1,150,596	$1,150,596	$1,150,596	$1,150,596	$1,150,596
	Unit Built in 2009	$1,331,394	$1,331,394	$1,331,394	$1,331,394	$1,331,394
	Unit Built in 2010		$1,013,321	$1,013,321	$1,013,321	$1,013,321
	Unit Built in 2011			$1,540,621	$1,540,621	$1,540,621
	Unit Built in 2012				$1,861,277	$1,861,277
	Unit Built in 2013					$2,142,765
	Unit Built in 2014					
	Unit Built in 2015					
	Unit Built in 2016					
	Unit Built in 2017					
	Unit Built in 2018					
	Unit Built in 2019					
	Unit Built in 2020					
	Unit Built in 2021					
	Unit Built in 2022					
	Unit Built in 2023					
	Unit Built in 2024					
	Unit Built in 2025					
	Performance Based Incentive Rate for 20 years $/kWh	$0.1800	$0.1620	$0.1620	$0.1380	$0.1380
Distributed Generation Non Solar Electric Energy Performance Based Incentive Plan - Solar Thermal, Solar Cooling, Wind, Biomass & Daylighting. Applies to all non residential solar electric in all years. UCPP & Self-Directed Funding	SubTotal Cost of Non Solar Electric Distributed Energy Performance Based Incentive	$500,850	$1,320,803	$2,604,653	$4,223,155	$6,086,429
	Unit Built in 2008	$106,537	$106,537	$106,537	$106,537	$106,537
	Unit Built in 2009	$369,832	$369,832	$369,832	$369,832	$369,832
	Unit Built in 2010		$844,434	$844,434	$844,434	$844,434
	Unit Built in 2011			$1,283,851	$1,283,851	$1,283,851
	Unit Built in 2012				$1,618,502	$1,618,502
	Unit Built in 2013					$1,863,274
	Unit Built in 2014					
	Unit Built in 2015					
	Unit Built in 2016					
	Unit Built in 2017					
	Unit Built in 2018					
	Unit Built in 2019					
	Unit Built in 2020					
	Unit Built in 2021					
	Unit Built in 2022					
	Unit Built in 2023					
	Unit Built in 2024					
	Unit Built in 2025					
	Performance Based Incentive Rate for 20 years $/kWh	$0.0500	$0.0450	$0.0450	$0.0400	$0.0400
TEP Generated Renewable Power	Above Market Premium of Self Generated or Purchased Renewable Power	$0.0431	$0.0431	$0.0431	$0.0431	$0.0431
	Purchased Transmission	$480,000	$1,920,000	$1,920,000	$1,920,000	$1,920,000
	Cost of Self Generated or Purchased Renewable Power	$6,694,977	$9,535,263	$10,744,825	$11,758,333	$13,398,587
Other RES Program Costs	Grid Integration Rate in $/MWh	$0.00	$0.00	$2.00	$3.00	$4.00
	Large Scale Grid Integration Costs in $	$0.00	$0.00	$228,240	$377,650	$579,685
	Administrative Costs & Integration Costs & Outreach and Advertising & Net Metering costs	$4,995,290	$6,695,787	$8,630,410	$10,865,010	$12,136,382
GreenWatts Projects	Distributed non-residential community sited PV UFI projects funded with GreeWatts proceeds	$127,047	$135,517	$143,987	$152,456	$152,456
Self-Directed Funding	Self-Directed Funding Projects at same $/kWh as Feed-In Tariff Plan above. Included in that item, broken out seprately here.	$210,000	$400,000	$1,000,000	$1,000,000	$1,000,000
DG Program Subtotal	Distributed Generation & DG Admin and DG Integration Program Costs	$31,941,306	$33,737,768	$44,309,384	$52,307,467	$42,500,968
Distributed Program % of Total Program	DG Percent of Total REST Program Costs	82.67%	77.96%	80.15%	81.17%	75.25%
Total Program Expenses	Total REST Program Cost	$38,636,283	$43,273,031	$55,282,449	$64,443,451	$56,479,239
Program Revenue Streams	Credit Sales MWh	0	0	0	0	0
	Green Sales MWh	1,500	1,600	1,700	1,800	1,800
	Credit Sales $/MWh	$0	$0	$0	$0	$0
	Green Sales $/MWh	$85	$85	$85	$85	$85
	Renewable Product Sales Income - GreenWatts for Community Sited Commercial UFI PV only	$127,047	$135,517	$143,987	$152,456	$152,456
	EPS Carryover Revenue	$0	$0	$0	$0	$0
	REST Surcharge/Sample Tariff Income	**$37,900,000**	**$40,800,000**	**$53,050,000**	**$62,300,000**	**$54,850,000**
	Value of TEP PV Energy at $50/MWh (incl SGSSS)	$429,250	$429,250	$429,250	$429,250	$429,250
	PV O&M Exp @ $50/MWh	($40,000)	($40,000)	($40,000)	($40,000)	($40,000)
	Investment Tax Credit	$0	$0	$0	$0	$0
	Finance Cost @ 10% or Investment @ 5%	($630)	$20,802	$213,549	$362,115	$486,078
	Total REST Program Revenue	$38,415,667	$41,345,569	$53,796,785	$63,203,821	$55,877,784

Annual Program $ Balance	Total REST Program Annual Balance (Subsidy Program)	($220,616)	($1,927,462)	($1,485,664)	($1,239,630)	($601,455)
Cumulative Program $ Balance	**Cumulative Gain (Loss) (Subsidy Program)**	($208,023)	($2,135,485)	($3,621,150)	($4,860,779)	($5,462,236)
Cumulative Program Cost	**Cumulative REST Program Expenditures**	$49,087,581	$92,360,612	$147,643,061	$212,086,513	$268,565,752

Variable Assumptions		
Landfill Gas MWp	MWp	
Central Solar Conversion Rate	MWh/MWp	
Distributed Solar Conversion Rate	MWh/MWp	
Distributed Renewable Conversion Rate	MWh/MWp	OG Energy Rate
Solar Thermal Conversion	MWh/MWp	
Dispatchable Conversion Rate	MWh/MWp	
Wind Conversion Rate	MWh/MWp	

Program Assumptions

Assumptions:
TEP manages the Distributed Generation ("DG") program.
Residential DG: 60% solar electric; 40% solar hot water and wind - Funded by an up-front subsidy through 2012.
Commercial DG: 25% solar electric; 75% solar hot water heating, solar cooling, wind, biomass or day lighting – Funded by 20-year locked performance-based incentive after 2007 through 2030.
Springerville Solar System has ceased as commercial DG, but multipliers count.

All banked landfill gas credits, including those from multipliers, will be useful in subsequent years for meeting REST or GreenWatts needs, or for sale.
The cost of renewable energy purchased through RFPs and generated by TEP in the future initially will be $0.0455 per kWh above the market price for energy purchase at the same time the renewable energy was generated.
The cost of transmission after 2012 to bring the needed amounts of 50% wind to Tucson will be based on transmission costs of $0.035 cents per kWh on a 20% capacity factor line, in 2013 with reduction to market in 2030.
All renewable generation sources for TEP can be integrated into the existing transmission structure through 2012.
This scenario does not include reductions from Global Solar credit production.
Energy sales and subsidy revenue growth is 1.52% per year: Assumes REST reduces customer energy loan growth due to the new generation installed to meet REST; and DSM reduces load growth.
Annual energy production rates for the various technologies are based on historical data from the first five years of the TEP EPS programs.
The Performance Based Incentive Program has less risk of problems associated with customer generation production than the Up Front Subsidy Program, given that there is no expiration date.

Grid Integration costs are based on Xcel/Minnesota Dept of Commerce Report of 2004, Idaho Power Report of 2007, and British report of 2006.
Other REST Program Costs include: Interconnection application review costs, net metering costs, application processing costs, initial inspections, annual plan and reporting costs and compliance hearing costs.
There is no energy storage anticipated during the 2008 through 2015 time frame.
Storage will be needed after 2015, if unpredictable energy sources, like wind or solar, are supplant coal generation.
Administrative costs assume one person per 500/kWp per year of new commercial or residential solar installations and two technical gurus for all levels of installations.
Ongoing annual inspection and repair work will be contracted out.
Creation of a database with online access for customers and installers will add some costs in future.