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BEFORE THE ARIZONA CORPORATION COMMISSION

KRISTIN K. MAYES
Chairman
GARY PIERCE
Commissioner
PAUL NEWMAN
Commissioner
SANDRA D. KENNEDY
Commissioner
BOB STUMP
Commissioner

Arizona Corporation Commission

DOCKETED

JUN -3 2010

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IN THE MATTER OF SOLON CORPORATION REGARDING ITS REQUEST FOR SPECIAL CONTRACT APPROVAL FOR SOLAR SERVICES AGREEMENT

DOCKET NO. E-20729A-10-0086

DECISION NO. 71721

ORDER

Open Meeting
May 26 and 27, 2010
Phoenix, Arizona

BY THE COMMISSION:

FINDINGS OF FACT

A. BACKGROUND

1. On March 10, 2010, SOLON Corporation ("SOLON") filed an application for approval of rates for a Solar Services Agreement ("SSA" or "Agreement"). On March 24, 2010, SOLON waived the 30-day time clock for Commission consideration through the May 26 and 27, 2010 Open Meeting.

2. The SSA that is included in this Track 1.3 application is an agreement between SOLON PM1, LLC and Pima County. Staff has learned through communication with SOLON, that SOLON PM1, LLC is a wholly owned subsidiary of SOLON. Within this document, SOLON and SOLON PM1, LLC will each be referred to as SOLON as if they are the same entity.

3. In a data request to SOLON, Staff asked SOLON to confirm that the application seeks approval of the SSA rate rather than the SSA. SOLON responded that "The Application seeks approval of the SSA rate with an accompanying Order indicating that the SSA rate is not

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1 subject to change based on the Commission's decision in what is commonly known as the
2 SolarCity Docket."¹ Staff would note that the SolarCity proceeding is a separate docket dealing
3 with another company and that Commission Orders from the SolarCity Docket (Docket No. E-
4 20690A-10-0012) will not apply to this docket (Docket No. E-20729A-09-0346).

5 **B. STAFF ANALYSIS – SOLON'S SSA WITH PIMA COUNTY**

6 **General Provisions Relating to the SSA**

7 4. SOLON and Pima County have entered into an SSA for a photovoltaic project for
8 Pima County's Roger Road Waste Water Reclamation Facility.

9 5. The costs to provide and install the photovoltaic ("PV") systems would be borne by
10 SOLON, and Pima County would receive energy produced by the systems for a period of 20 years
11 at a contract rate of \$0.0959 per kWh. SOLON would retain ownership of the PV equipment.

12 6. At the end of the 20 year contract period, Pima County will have an option to
13 purchase the system at the higher of the specified contract price or fair market value.
14 Alternatively, the County can ask that the equipment be removed.

15 7. The instant application seeks approval of a contract rate of \$0.0959 per kWh. Staff
16 inquired of SOLON whether it would be better served by approval of a rate range in the event that
17 an adjustment to the contract prices was needed. SOLON replied that because the rebates have
18 been reserved, SOLON is seeking approval of the stated rate of \$0.0959 per kWh and no rate range
19 is necessary.

20 **Specific Provisions relating to the SSA**

21 8. The Renewable Energy Credit Purchase Agreement included in the application
22 describes the system as a 1 MW system.

23 9. Pima County has in the past purchased its electric power for Roger Road Waste
24 Water Reclamation Facility from Tucson Electric Power Company ("TEP") under TEP's PRS-13
25 rate schedule. Recently, the Roger Road Waste Water Reclamation Facility has begun service
26 under TEP's PS-40 rate schedule. Representatives of TEP and Pima County have communicated
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28 ¹ SOLON Corporation's Response to Staff's First Set of Data Requests, STF 1.10 SOLON, April 7, 2010

1 to Staff that the Roger Road Waste Water Reclamation Facility will continue to be served under
2 TEP's PS-40 rate schedule after installation of the PV equipment.

3 10. The TEP PS-40 rates are currently as follows:

4

5 Table I

6	7 Summer (May – Oct.)	8 Winter (Nov. – April)
9 <u>Delivery Charge per kWh</u>	\$0.057530	\$0.053159
10 <u>Base Power Supply Charge per kWh</u>	\$0.032245	\$0.024745

11 11. SOLON provided Staff with two cost-benefit analyses of the SSA.

12 12. The first cost-benefit analysis performed by SOLON was calculated using TEP's
13 PRS-13 rate schedule. The PRS-13 rate schedule has historically been the rate schedule under
14 which the Roger Road Waste Water Reclamation Facility has been served. Very recently, the
15 Roger Road Waste Water Reclamation Facility was reassigned to a new TEP rate schedule PS-40
16 which is a pricing plan for municipal customers.

17 13. The SOLON cost-benefit analysis calculates the cost-benefit of the SSA for each
18 year of a 20 year period. The analysis also aggregates cost-benefit from each year into a total and
19 applies a net-present-value calculation to the total to determine the net-present-value of operation
20 of the SSA over a 20 year period.

21 14. The SOLON analysis includes in its calculation of annual utility costs an 'escalator'
22 that raises the modeled utility costs by 4.7 percent in each of the 19 years that follow the first year
23 of the calculation.

24 15. Results of the second SOLON analysis, which is based on the current TEP PS-40
25 rate, are included as Attachment A to the Staff memorandum. Only resultant data and select
26 supporting figures from the analysis are included in Attachment A as the workpapers provided to
27 Staff cannot be readily condensed for purposes of inclusion in an Attachment. Results from the
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1 first SOLON analysis, which is based on the PRS-13 rate, are not included as the PRS-13 rate is
2 outdated.

3 16. The SOLON analysis using the TEP PS-40 rate indicates a negative cost-benefit in
4 the first three years followed by 17 years of positive cost-benefit. The SOLON workpapers
5 indicate a 20-year aggregate cost-benefit of \$1,553,155. The workpapers also indicate a net-
6 present-value of the 20-year stream of cost-benefit results of \$735,684.

7 17. Staff has communicated with representatives of Pima County about the subject of
8 the County's knowledge of the updated SOLON cost-benefit analysis findings that use the updated
9 TEP PS-40 rate. Pima County representatives confirmed that they are aware of the new SOLON
10 cost-benefit analysis. Pima County representatives comment about the analysis that

11 "...Pima County is competent to and has performed its own analysis and
12 finds the SSA/SLA rate advantageous at the new revised lower Utility rate
13 cost. The 4.7% annual increase was derived from a US DOE National
14 average, and although Arizona is typically below average at even 1/2 that
15 rate of increase the SSA provides positive benefit. Additionally, all power
16 purchased from the Utility is subject to 10% tax, the power purchased via
17 our SLA is not. The SOLON cost benefit analysis does not include the
18 probable carbon penalty and PPFAC charge of \$0.01 to \$0.03/kwh, does
19 not consider the benefits of reduced/avoided water usage of 1/2 to 3/4
20 gallon/kWh by TEP Brown power generation and the probable future cost
21 to mitigate; and does not consider the additional benefits provided for the
22 30-year expected life, 10-years of additional benefits after the PPA term of
23 20-years. County also has a fiduciary responsibility to support the
24 development of Solar electric solutions."

25 18. Counsel for SOLON has communicated the following to Staff:

26 In May 2007 the Pima County Board of Supervisors adopted their
27 Sustainable Community Resolution (Resolution 2007-84) which requires
28 that County operations provide 15 percent of its power requirements from
renewable energy sources by 2025. This project helps Pima County meet
that requirement. In addition, because SOLON will manufacture the
panels in Pima County itself, this project will be providing jobs in the
County not only on the installation and the maintenance side but also in
manufacturing the panels.

19 19. Representatives from Pima County have confirmed to Staff that the SOLON
statement is accurate.

1 20. Staff also conducted a cost-benefit analysis of the proposed SSA based on the
2 \$0.0959 per kWh rate. Staff's analysis is similar to the SOLON analysis in that it measures cost-
3 benefit over a 20 year period. The Staff analysis uses a 5 percent discount rate for calculation of
4 net present value as this is the rate selected by SOLON. The Staff analysis differs from the
5 SOLON analysis in regard to the annual rate of change in utility rates. In response to a data
6 request regarding the source of the 4.7 percent utility "escalator" rate, SOLON explained to Staff
7 that:

8 SOLON compared this escalator to historical rates from the Official
9 Energy Statistics from the US Government, U.S. Energy Information
10 Administration. According to this data, average increase for Commercial
11 Electricity rates in Arizona was 4.76% from 2003 to 2008.

12 21. Rather than using 4.76 percent as the utility escalator rate in Staff's analysis, Staff
13 applied a rate of 1 percent as it more closely reflects TEP's actual recent history. Other less
14 notable differences in inputs between the Staff and SOLON analysis exist as a result of differing
15 methodologies. Staff's analysis does include consideration of differences in application of taxes
16 and fees that would occur should energy supplied by TEP be replaced with energy supplied by
17 SOLON.

18 22. Staff's analysis indicates a 20 year net cost-benefit of \$30,979. This 20 year net
19 cost-benefit of \$30,979 is comprised of 9 years of negative annual cost-benefit followed by 11
20 years of annual positive cost-benefit. The net present value of the 20-year stream of annual cost
21 benefit results is calculated as negative \$23,753. Staff also calculated the threshold rate that would
22 be needed to produce a positive net present value cost benefit. The SSA rate is \$0.0959/kWh.
23 Comparatively, Staff's analysis indicates that a rate of \$0.09506/kWh would result in a 20 year net
24 present value cost benefit of \$192.00. The difference in these rates is \$0.00084/kWh.

25 23. Staff notes that there are inherent uncertainties in the assumptions used to model a
26 20-year cost-benefit analysis. It is impossible to have foreknowledge of the utility rates that will
27 apply to the Roger Road Waste Water Reclamation Facility 20 years from this time. One cannot
28 know if, when, and at what level a carbon tax will be implemented. Other variables that introduce
uncertainties and consequently the potential for error in the cost benefit analysis include but are

1 not limited to the discount rate, taxes, kWh consumption, and the service life of the PV equipment.
 2 These circumstances make the cost benefit model an imprecise tool. While cost benefit models are
 3 helpful, the very narrow SSA rate difference of \$0.00084/kWh that would cause the cost benefit
 4 model to indicate a positive rather than negative net present value of cost benefit suggests that the
 5 results of the model should not be considered determinative.

6 24. Results of Staff's analysis are contained in Attachment B of the Staff
 7 Memorandum. Only resultant data and select supporting figures from the analysis are included in
 8 Attachment B as the Staff workpapers cannot be readily condensed for purposes of inclusion in an
 9 Attachment.

10 25. Staff notes that other considerations mentioned by both SOLON and Pima County
 11 may enter into the Commission's evaluation of this matter. The Commission may choose to weigh
 12 in the value of externalities such as avoided production of nitrogen oxides ("NOx"), sulfur oxides
 13 ("SOx"), and avoided use of water by TEP in thermal generation. Another consideration is the
 14 potential for the introduction of a carbon tax that could increase the cost of electricity provided by
 15 TEP.

16 26. Staff has in the past received information from TEP quantifying the effects and
 17 savings associated with these factors for the TEP system. The information is as seen below:

18 Table II

19	SOx	2.3 lbs produced/MWh
20	NOx	3.97 lbs produced /MWh
21	Water	233 gallons consumed /MWh
	Carbon Tax	\$0.0149/kWh

22 27. Assuming a 20 year kWh production of 41,716,613 kWh by the SOLON facility at
 23 the Roger Road Waste Water Reclamation Facility, the avoided production, consumption, and
 24 taxes for these factors respectively over a 20 year period are as follows:

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Table III

SOx	95,948 lbs of production avoided
NOx	165,615 lbs of production avoided
Water	9,719,971 gallons consumption avoided
Carbon Tax	\$621,578 charged to TEP

28. The water rate charged by the Central Arizona Groundwater Replenishment District for the Tucson area in 2010/11 is \$377 per acre-foot². The water rate charged by the Central Arizona Project to Municipal and Industrial customers in 2010/11 is \$137 per acre-foot³. Staff believes that an average of these figures, \$257, is a reasonable measure of the societal cost associated with consumption of water by TEP. Given an avoided consumption of 9,719,971 gallons of water and a societal cost of \$257 per acre-foot, the societal benefit of the avoidance of the consumption of water associated with replacing generation of electricity by TEP with generation of electricity by the solar facility is \$7,666.

Equation I

$$\frac{1 \text{ acre foot}}{325,851 \text{ gallons}} \times \frac{257 \text{ dollars}}{1 \text{ acre foot}} \times \frac{9,719,971 \text{ gallons}}{1} = \$ 7,666$$

29. Staff notes that Pima County is a government that represents the public residing in Pima County and is funded with public funds that emanate from Pima County residents. Staff also notes the PV facilities that will operate as a result of the SSA will provide Pima County residents with the benefits of avoiding externalities associated with conventional generation. While Staff has not determined or quantified the value of each of the externalities that should be applied to the cost benefit analysis of the SSA, it is reasonable and appropriate to consider the added value of externalities in combination with results of the cost benefit analysis when making a determination in this matter. The externalities discussed above weigh in favor of approval of the SSA rate.

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² <http://www.cagr.com/rates/>

³ <http://www.cap-az.com/financials/> Comprised of \$122 fee plus \$15 Capital Charge. Long-term Subcontract rate.

1 In consideration of all of the information received by Staff in its analysis, Staff believes
2 that a rate of \$0.0959 per kWh is just and reasonable and should be approved by the Commission.

3 **Fair Value Analysis**

4 30. Staff also considered the fair value implications of this matter. Staff obtained
5 information from SOLON indicating that an estimated fair value for the assets to be used to serve
6 the Pima County would be approximately \$6.6 million. While Staff considered the fair value
7 information submitted by SOLON, this information should not be given substantial weight in this
8 analysis. The rates contained in the SSA are heavily influenced by the availability of stimulus
9 funds, other federal incentives, utility rebates, and certain market conditions. Staff believes that
10 the proposed \$0.0959 per kWh rate, under the circumstances presented herein, is just and
11 reasonable.

12 **C. STAFF RECOMMENDATIONS**

13 31. In consideration of all of the information received by Staff in its analysis, Staff
14 believes that a rate of \$0.0959 per kWh is just and reasonable and should be approved by the
15 Commission.

16 32. Staff has recommended approval of the proposed SSA rate as a special contract rate
17 between SOLON and Pima County for solar facilities at its Roger Road Waste Water Reclamation
18 Facility in order to provide a means for the Pima County and SOLON to move forward with these
19 projects.

20 **CONCLUSIONS OF LAW**

21 1. The Commission, having reviewed the application and Staff's Memorandum dated
22 March 11, 2010, concludes that it is in the public interest to extend preliminary relief to SOLON,
23 in the absence of a determination whether SOLON is acting as a public service corporation when it
24 provides the services described in the Solar Services Agreement.

25 2. The rate of \$0.0959 per kWh is just and reasonable and should be approved by the
26 Commission.

27 3. If it is ultimately determined at some future time that the Applicant's relationship
28 with Pima County as set forth in the SSA does not cause the Applicant to act as a Public Service

1 Corporation pursuant to Article 15, Section 2 of the Arizona Constitution, then this Order will be
2 void and of no further effect.

3 4. If Applicant is later determined to be a Public Service Corporation under Article 15,
4 Section 2 of the Arizona Constitution when providing services under the SSA, then the
5 Commission's approval of the rate set forth in the SSA as a special contract herein shall survive
6 that determination.

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ORDER

IT IS THEREFORE ORDERED that the \$0.0959 per kWh rate contained in the Solar Service Agreement between SOLON Corporation and Pima County for a photovoltaic project at Roger Road Waste Water Reclamation Facility be and hereby is approved as a special contract rate as discussed herein.

IT IS FURTHER ORDERED that this Decision shall become effective immediately.

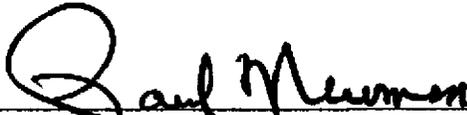
BY THE ORDER OF THE ARIZONA CORPORATION COMMISSION



CHAIRMAN



COMMISSIONER



COMMISSIONER



COMMISSIONER

EXCUSED
Kennedy

COMMISSIONER

IN WITNESS WHEREOF, I, ERNEST G. JOHNSON, Executive Director of the Arizona Corporation Commission, have hereunto, set my hand and caused the official seal of this Commission to be affixed at the Capitol, in the City of Phoenix, this 3rd day of June, 2010.



ERNEST G. JOHNSON
EXECUTIVE DIRECTOR

DISSENT: _____

DISSENT: _____

SMO:SPI:lhm\CH

1 SERVICE LIST FOR: SOLON Corporation
2 DOCKET NO. E-20729A-10-0086

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