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AZ CORP COMMISSION  
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BEFORE THE ARIZONA CORPORATION COMMISSION

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COMMISSIONER

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SUSAN BITTER-SMITH  
COMMISSIONER

11 **IN THE MATTER OF THE**  
12 **APPLICATION OF ARIZONA PUBLIC**  
13 **SERVICE COMPANY FOR**  
14 **APPROVAL OF NET METERING**  
**COST SHIFT SOLUTION**

**DOCKET NO. E-01345A-13-0248**  
**SOLAR ENERGY INDUSTRIES**  
**ASSOCIATION'S (SEIA) NOTICE OF**  
**FILING DATA REQUESTS AND**  
**RESPONSES**

15 On August 21, 2013 Commissioner Susan Bitter-Smith requested that the parties file all  
16 data requests and responses in the above referenced docket. Solar Energy Industries Association  
17 hereby files the attached data requests and responses it has received or sent upon others to date.

18 Respectfully submitted this 20<sup>th</sup> day of August, 2013.

ROSE LAW GROUP pc

Court S. Rich  
Attorney for SEIA

Arizona Corporation Commission  
**DOCKETED**

AUG 30 2013

DOCKETED BY

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1 Original and 13 copies filed on  
2 this 20<sup>th</sup> day of August, 2013 with:

3 Docket Control  
4 Arizona Corporation Commission  
5 1200 W. Washington Street  
6 Phoenix, Arizona 85007

7 A copy of the foregoing mailed this  
8 20<sup>th</sup> day of August, 2013 to:

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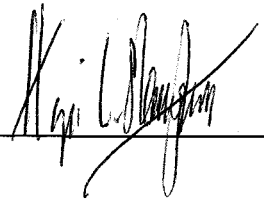
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ARIZONA CORPORATION COMMISSION

August 1, 2013

Mr. Court S. Rich  
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*Via E-mail and United States Mail*  
[crich@roselawgroup.com](mailto:crich@roselawgroup.com)

Re: Staff's **First Set of Data Requests to Solar Energy Industries Association**  
Docket No. E-01345A-13-0248

Dear Mr. Rich:

Please treat this as Staff's **First Set of Data Requests to Solar Energy Industries Association** in the above-referenced matter.

For purposes of this data request set, the words "SEIA," "Company," "you," and "your" refer to Solar Energy Industries Association and any representative, including every person and/or entity acting with, under the control of, or on behalf of Solar Energy Industries Association. For each answer, please identify by name, title, and address each person providing information that forms the basis for the response provided.

These data requests are continuing, and your answers or any documents supplied in response to these data requests should be supplemented with any additional information or documents that come to your attention after you have provided your initial responses.

Please respond within **ten** calendar days of your receipt of the copy of this letter. However, if you require additional time, please let us know.

*Please provide one hard copy as well as searchable PDF, DOC or EXCEL files (via email or electronic media) of the requested data directly to each of the following addressees via overnight delivery services to:*

- (1) Richard Lloyd, Utilities Division, Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, [rlloyd@azcc.gov](mailto:rlloyd@azcc.gov).
- (2) Connie Fitzsimmons, Paralegal, Legal Division, Arizona Corporation Commission, 1200 West Washington Street, Phoenix, Arizona 85007, [cfitzsimmons@azcc.gov](mailto:cfitzsimmons@azcc.gov).

Sincerely,

A handwritten signature in black ink, appearing to read "Maureen A. Scott".

Maureen A. Scott, Senior Staff Counsel  
Charles H. Hains, Attorney  
Matthew Laudone, Attorney  
Legal Division  
(602) 542-3402

MAS:CCH:ML:klc  
Enclosure

**ARIZONA CORPORATION COMMISSION  
STAFF'S FIRST SET OF DATA REQUESTS TO  
SOLAR ENERGY INDUSTRIES ASSOCIATION  
Docket No. E-01345A-13-0248  
August 1, 2013**

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**Subject: All information responses should ONLY be provided in searchable PDF, DOC or EXCEL files via email or electronic media.**

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**BENEFITS OF SOLAR**

**RL 1-1:** Please respond to Arizona Public Service Company's ("APS") assertion that Crossborder's estimate of 21.5 to 23.7 cents per kWh (\$2014) of benefits from Solar DG on the APS system is twice the amount of APS' current cost of service? Is it realistic to believe that solar DG will save APS twice the amount of its current cost of service?

**CROSSBORDER ASSUMPTIONS:**

**RL 1-2:** Please provide your rationale for using a 50% capacity value for DG, and for not showing any decline in capacity value as penetration levels increase.

**RL 1-3:** How did you arrive at a REC value of 4.5 cents? How are market costs impacted as market prices increase?

**RL 1-4:** When is the appropriate time to begin counting capacity savings from distributed generation?

**RL 1-5:** What if solar does not defer as much generation as previously thought? How will ratepayers be impacted?

**RL 1-6:** Why use a Combustion Turbine as the marginal unit for energy?

**RL 1-7:** Is Crossborder obtaining a much higher levelized rate for generation than what is included in APS's IRP plan? If so, why?

**RL 1-8:** Please provide details of your rationale for the statement "...the costs for APS ratepayers will be lower if it is customers, instead of APS, who install renewable [DG] generation."

**RL 1-9:** How is the customer's capital investment valued in the Crossborder model?

**RL 1-10:** How are O&M costs of customer-sited DG valued in the Crossborder model?

**RL 1-11:** Is targeted deployment of wholesale DG of more value than rooftop solar?

**RL 1-12:** How do you address APS's criticism regarding the threshold reasonableness check?

**ARIZONA CORPORATION COMMISSION  
STAFF'S FIRST SET OF DATA REQUESTS TO  
SOLAR ENERGY INDUSTRIES ASSOCIATION  
Docket No. E-01345A-13-0248  
August 1, 2013**

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**Subject: All information responses should ONLY be provided in searchable PDF, DOC or EXCEL files via email or electronic media.**

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- RL 1-13:** The Crossborder study utilizes the Ratepayer Impact Measure ("RIM") test to calculate cost / benefit valuations. Please perform an analysis utilizing the five (5) traditional utility cost-benefit tests (i.e., Total Resource Cost, Ratepayer Impact Method, Societal Cost, Utility Cost, and Participant Cost) and present the results in a table comparing the five methods. Clearly explain your assumptions for each test.
- RL 1-14:** If electric system costs are collected through a utility's energy charge, how should the utility collect those fixed costs when it sells less energy because of a Commission mandate?

**SAIC ASSUMPTIONS:**

**COSTS OF SOLAR DG**

- RL 1-15:** Crossborder estimates the costs of commercial DG on APS' system to be between 9.2 to 11.5 cents and the costs of residential DG on APS' system to be between 19.9 to 20.5 cents. Crossborder then estimates a weighted average cost (13.7 cents) for all solar DG on APS' system, assuming the current mix of DG (44% residential versus 56% commercial) will persist in the future.
- RL 1-16:** Is it reasonable to assume the current DG mix will persist in the future given current trends? [e.g. 2012 and 2013 residential versus commercial installed capacity]
- RL 1-17:** Since APS has limited its proposed net metering solution to residential DG, what is the applicable benefit to cost comparison, 21.5 to 24.7 cents to 13.7 cents per kWh, or 21.5 to 24.7 cents to 19.9 to 20.5 cents per kWh?
- RL 1-18:** Is it accurate to say that Crossborder estimates that APS realizes net benefits of 10 to 14.5 cents per kWh for commercial DG but only 1 to 3.8 cents per kWh for residential DG? If so, should APS make adjustments such that residential DG produces comparable net benefits to commercial DG?
- RL 1-19:** Does Crossborder dispute the cost estimates APS has produced for residential solar DG?

**ARIZONA CORPORATION COMMISSION  
STAFF'S FIRST SET OF DATA REQUESTS TO  
SOLAR ENERGY INDUSTRIES ASSOCIATION  
Docket No. E-01345A-13-0248  
August 1, 2013**

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**Subject: All information responses should ONLY be provided in searchable PDF, DOC or EXCEL files via email or electronic media.**

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**SOLAR PPA QUESTIONS**

- RL 1-20:** APS asserts that it can install solar PV (via utility ownership or PPA) on the subtransmission grid and produce all the same benefits estimated for Solar DG in the Crossborder study at less the cost that it would pay for the same capacity of solar DG. Does AriSEIA agree with APS' assertion that APS can install solar PV at the subtransmission level either through utility ownership or through a PPA in a manner that will produce the same benefits estimated for Solar DG in the Crossborder study?
- RL 1-21:** Does AriSEIA agree with APS' assertion that APS can acquire such a system at lower total cost than APS would otherwise pay for a comparable amount of Solar DG?
- RL 1-22:** Would central planning and the targeted deployment of subtransmission level PV, in a manner described by APS, likely produce greater value on a capacity basis than solar DG? Wouldn't this allow for APS to deploy solar PV where it has the greatest opportunity to defer distribution and transmission capital investments compared to the the current regime of Solar DG, where customers, not APS decide where to deploy Solar PV?
- RL 1-23:** Should APS pursue the benefits estimated for solar PV in the least expensive way?

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August 6, 2013

**SENT BY ELECTRONIC MAIL**

Richard Lloyd  
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rlloyd@azcc.gov

Connie Fitzsimmons, Paralegal  
Legal Division  
Arizona Corporation Commission  
1200 W. Washington Street  
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**RE: Solar Energy Industries Association's Response to Staff's First Set of Data Requests/Docket No.: E-01345A-13-0248**

Dear Mr. Lloyd and Ms. Fitzsimmons:

Please find enclosed the Solar Energy Industries Association's ("SEIA") response to Staff's First Set of Data Requests in the above-referenced matter. As you know, SEIA is yet to intervene in the attached docket and as such, it is happy to provide these responses as a courtesy to the Commission Staff at this time. Since we are still in the early stage of this proceeding, SEIA hereby reserves the right to revisit the positions taken in the attached responses and, if and changes are made, SEIA will update the responses accordingly and provide such changes to Staff.

Should you have any questions or comments, please feel free to contact me directly at 480-505-3937.

Sincerely,

 2  
Court S. Rich

Enclosure

**SOLAR ENERGY INDUSTRIES ASSOCIATION'S RESPONSE TO  
STAFF'S FIRST SET OF DATA REQUESTS  
DOCKET NO.: E-01345A-13-0248**

AUGUST 6, 2013

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**BENEFITS OF SOLAR**

**RL 1-1:** Please respond to Arizona Public Service Company's ("APS") assertion that Crossborder's estimate of 21.5 to 23.7 cents per kWh (\$2014) of benefits from Solar DG on the APS system is twice the amount of APS' current cost of service? Is it realistic to believe that solar DG will save APS twice the amount of its current cost of service?

**SEIA Response:** First, APS's assertion is based on an apples-to-oranges comparison of 20-year levelized numbers to single-year numbers. As is clearly set forth in Crossborder's study, Crossborder's estimate of 21.5 to 23.7 cents per kWh of benefits from Solar DG is a 20-year levelized number which should not be compared to today's cost of service, which is a single-year value. The values for APS's costs of service which are comparable to Crossborder's solar DG benefits are the 20-year levelized costs of solar DG presented in the Crossborder study. As stated in the study, Crossborder's solar DG benefits are 54% higher than APS's costs on a 20-year levelized basis. This is an apples-to-apples comparison and is not "twice" as high.

Second, APS's cost of service is based on the utility's average costs to supply power across all hours using its existing assets. The benefits of solar DG are based on avoiding the marginal costs to serve the most expensive, marginal unit of energy and to build new infrastructure to provide capacity. Solar DG also provides clean, renewable generation that allows the utility to avoid additional costs to obtain energy supplies that are cleaner than its existing portfolio.<sup>1</sup> In other words, on a per unit basis, solar is more valuable than APS's average cost because it provides:

1. Peaking generation when power is most valuable. The energy costs avoided by solar are higher than APS's average energy costs over all hours.
2. Solar supplies valuable peaking capacity. Solar today provides capacity value at approximately 50% of its nameplate capacity even though it produces at only a 20% capacity factor, so on a per unit basis the capacity value of solar is higher than APS's average capacity costs.
3. Avoided capacity costs reflect expensive new generation and transmission that would be built "but for" the solar capacity, while APS's average costs are based on its depreciated existing assets.
4. Solar costs are fixed up front, and avoid APS's costs to manage the volatility of fossil fuel prices and electric market prices. The Crossborder study did not include APS's typical costs to hedge the volatility in the costs of its natural gas supplies; however, if it had included these actual costs, the benefits of solar DG would have increased by another 0.7 to 1.0 cents per kWh.

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<sup>1</sup> Large-scale and wholesale solar also have this effect, but these resources are not the topic of discussion within the study or the NEM debate. Therefore, this response has not focused on them.



**SOLAR ENERGY INDUSTRIES ASSOCIATION'S RESPONSE TO  
STAFF'S FIRST SET OF DATA REQUESTS  
DOCKET NO.: E-01345A-13-0248**

**AUGUST 6, 2013**

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**CROSSBORDER ASSUMPTIONS:**

**RL 1-2:** Please provide your rationale for using a 50% capacity value for DG, and for not showing any decline in capacity value as penetration levels increase.

**SEIA Response:** Crossborder's study focuses on the value of solar to be developed in the next several years (2013-2015). Over this period, the penetration of solar is not expected to be so large that there would be a significant decline in capacity value. As a result, Crossborder used essentially the same capacity value for 2015 assumed in the R.W. Beck and SAIC studies and the same capacity value that APS itself has assigned to solar when testifying before the Commission in the recent hearing on its Integrated Resource Plan.

In Crossborder's view, solar DG built in 2015 should be assigned the capacity value that applies in 2015 when that solar unit is installed. It is unfair to attribute to that solar unit built in 2015 the lower forecasted capacity value of a solar unit installed in 2020 or 2025 under an assumption that large amounts of solar are installed after 2015. Similarly, if a new utility generating unit is cost-effective when it enters operations in 2015, it would be unfair to penalize the utility if subsequent changes (a drop in capital costs, technological change, lower demand, or lower energy prices, for example) make that unit not cost-effective in future years.

Further, the assumption that larger penetrations of solar will decrease the capacity value of solar assumes no changes to other aspects of the energy market, including no changes to the hourly profile of end-use customer demand, to future levels of peak demand, or to APS's portfolio of resources. Customer demand response, availability of customer-sited storage, impacts from climate change, and new constraints on fossil generation all could have impacts which increase the future value of solar capacity.

**RL 1-3:** How did you arrive at a REC value of 4.5 cents? How are market costs impacted as market prices increase?

**SEIA Response:** APS's 2012 IRP [Attachment F.1(a)] includes an Enhanced Renewable scenario which features additional purchases of renewables in the 2017-2026 time frame (totaling 4,532 GWh of additional renewable generation by 2026). This compares to the Base case with about 500 GWh per year in additional renewable generation in 2026. Based on the annual revenue requirements for both the Base and Enhanced Renewable scenarios [Attachment F.1(b)], the average cost premium for the incremental renewables in the latter scenario is \$46.55 per MWh from 2017-2026, or \$45.39 per MWh on a 10-year levelized basis. See attached workpapers.

SEIA interprets the second question to be "How are REC market costs impacted as energy market prices increase?" REC market values will decrease if energy market prices increase relative to the costs of renewable generation; REC market values will increase if the costs of renewable generation rise relative to energy market prices.

**SOLAR ENERGY INDUSTRIES ASSOCIATION'S RESPONSE TO  
STAFF'S FIRST SET OF DATA REQUESTS  
DOCKET NO.: E-01345A-13-0248**

**AUGUST 6, 2013**

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**RL 1-4:** When is the appropriate time to begin counting capacity savings from distributed generation?

**SEIA Response:** Capacity savings from distributed generation should be counted immediately. Table 2 the 2012 IRP shows that APS expects continued growth in energy efficiency and demand response programs and in distributed solar resources between 2012 and 2017. These new demand-side resources contribute 1,150 MW to meeting APS's expected peak demands in 2017, and thus contribute to deferring any resource need until 2017. Solar DG should be assigned its proportional share (about 13%) of these capacity savings from demand-side resources. In addition, distributed generation also hedges against events that could accelerate the 2017 need, such as faster-than-expected increases in demand or from the unexpected loss of resources.

**RL 1-5:** What if solar does not defer as much generation as previously thought? How will ratepayers be impacted?

**SEIA Response:** SEIA assumes that "generation" means "generation capacity." If solar does not defer as much generation capacity as it was assumed to do in some prior analysis, then solar's value for ratepayers would be lower, all else being the same. However, if the value of capacity is higher than in the prior analysis, solar's value for ratepayers could increase or remain the same, even if solar does not defer as much capacity as was assumed in the initial analysis.

**RL 1-6:** Why use a Combustion Turbine as the marginal unit for energy?

**SEIA Response:** Information provided by APS on its typical loading order, such as Figure 5-3 of the Beck Study, show that solar DG systems on the APS system will displace combustion turbine (CT) generation during the four peak summer months. As shown in Figure 2 of the Crossborder study, the heat rate of a new CT (9,400 Btu/kWh) is the most likely scenario for the market value of the on-peak generation from a solar DG resource during APS's summer season months (June – September) unless APS opts to build additional renewables. This conclusion was based on Palo Verde forward market heat rates for these months. 9,400 Btu per kWh is an average: in some summer on-peak hours, less expensive CCGT power (7,000 – 8,000 Btu/kWh) will be displaced; in others, more expensive generation from older CTs (10,000 – 12,000 Btu/kWh) will be avoided.

**RL 1-7:** Is Crossborder obtaining a much higher levelized rate for generation than what is included in APS's IRP plan? If so, why?

**SEIA Response:** No. Crossborder's study does not include levelized costs for generation such as are included in the APS IRP. The Crossborder study is a Ratepayer Impact Measure (RIM) test. RIM tests do not include levelized costs for generation – the cost side of a RIM test is principally lost utility revenues. The benefit side is principally the utility's avoided fuel, line loss, infrastructure capacity, and environmental costs. Other types of tests (Total Resource Cost

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**AUGUST 6, 2013**

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and Participant) do include the costs of the generation source, but those are not included in the Crossborder study.

**RL 1-8:** Please provide details of your rationale for the statement "...the costs for APS ratepayers will be lower if it is customers, instead of APS, who install renewable [DG] generation."

**SEIA Response:** APS must comply with Arizona's current and future Renewable Energy Standard (RES) requirements. Crossborder understands that solar DG installed by customers with their private capital contributes to meeting those requirements and, assuming that utility incentives are not offered going forward, none of those costs are borne by ratepayers.

**RL 1-9:** How is the customer's capital investment valued in the Crossborder model?

**SEIA Response:** The Crossborder study values the DG customer's capital investment in solar at the capital investment-related costs for the capacity which APS does not have to build or buy as a result of the DG customer's contribution to the infrastructure which serves APS customers.

**RL 1-10:** How are O&M costs of customer-sited DG valued in the Crossborder model?

**SEIA Response:** The Crossborder study values the O&M costs of customer-sited DG based on the fixed and variable O&M costs which APS does not incur as a result of the DG customer's contribution to the infrastructure which serves APS customers. Variable O&M costs are included in the avoided cost of energy; fixed O&M cost are included in the avoided cost of capacity.

**RL 1-11:** Is targeted deployment of wholesale DG of more value than rooftop solar?

**SEIA Response:** SEIA supports all segments of the solar market, including large-scale, wholesale and retail, behind-the-meter, and solar DG. Each brings significant, yet potentially different benefits. The targeted deployment of wholesale solar DG can produce similar direct value to ratepayers as the value of demand-side solar outlined in the Crossborder study. Targeted deployment of wholesale (or retail) solar DG has the potential to increase the likelihood that solar DG will result in significant transmission and distribution (T&D) savings.

That said, rooftop (retail) solar DG also provides the opportunity for customers to install and/or own solar themselves using their own private capital or financing opportunities available to them. Policymakers thus should also consider:

- Retail solar brings a new source of private capital (from the customers themselves) into the market.
- There is a significant customer demand for the choice to serve some or all of a customer's electricity demand using renewable power generated on their premises.
- Customers want the option to contribute a clean source of generation to the APS system, even if it requires them to make a long-term financial commitment.

**SOLAR ENERGY INDUSTRIES ASSOCIATION'S RESPONSE TO  
STAFF'S FIRST SET OF DATA REQUESTS  
DOCKET NO.: E-01345A-13-0248**

**AUGUST 6, 2013**

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- Competition and customer choice in supplying electricity at the point of use will provide long term benefits for energy consumers.

**RL 1-12:** How do you address APS's criticism regarding the threshold reasonableness check?

**SEIA Response:** The first portion of the APS criticism regarding the "threshold reasonableness check" is the question staff asks in Question RL 1-1, so please see the response to that question. The second portion of this criticism argues that it would be less expensive for APS to purchase wholesale solar. SEIA responds to this argument in its response to Question RL 1-11 above.

**RL 1-13:** The Crossborder study utilizes the Ratepayer Impact Measure ("RIM") test to calculate cost / benefit valuations. Please perform an analysis utilizing the five (5) traditional utility cost-benefit tests (i.e., Total Resource Cost, Ratepayer Impact Method, Societal Cost, Utility Cost, and Participant Cost) and present the results in a table comparing the five methods. Clearly explain your assumptions for each test.

**SEIA Response:** Objection. This request is unduly burdensome. SEIA and Crossborder utilized the RIM Test methodology because it was the best situated to provide the Commission with the information on ratepayer impacts which it needs to make this decision. The other tests requested are not as stringent as the RIM Test (which is often called the "no losers" test), do not measure ratepayer impacts, and will not provide as meaningful information for the Commission's evaluation. In order to run these calculations SEIA would need to commission entirely new studies costing it tens of thousands of dollars. SEIA is happy to work with Staff to help it develop the information needed to perform any of these other tests on its own; however, it is not in a position to commission these additional studies at this time.

**RL 1-14:** If electric system costs are collected through a utility's energy charge, how should the utility collect those fixed costs when it sells less energy because of a Commission mandate?

**SEIA Response:** If, as the result of a Commission mandate, a utility sells less energy than expected to customers who pay rates that collect costs through energy charges, the utility can continue to have the opportunity to recover its full cost of service through revenue decoupling mechanisms such as the Lost Fixed Cost Recovery (LFCR) mechanism adopted with APS's support in its most recent rate case. As in the case of APS, the LFCR mechanism can be targeted at the sales lost as the result of Commission-mandated demand-side programs. Further, in subsequent rate proceedings, the utility's cost of service can be re-set based on the new level of expected sales, which may be somewhat lower than it would have been absent the Commission-mandated demand-side programs.

For example, it is well known that, as the result of a strong focus on demand-side programs, per capita electric use in California has not changed for the last thirty years, while per capita usage in the rest of the U.S. has increased by 50%. The California utilities have also had full revenue decoupling over this period. This focus on using demand-side programs to restrain

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the state's growth in energy use has not adversely impacted the financial health of the California utilities.

Finally, SEIA supports a detailed examination of APS' rate design and cost recovery mechanisms in its next general rate case to address this and other APS rate design issues. In a general rate case the Commission will have the opportunity to design rates and cost recovery mechanisms that address this issue. For example, in its recently concluded rate case APS asked for revenue decoupling and received the Lost Fixed Cost Recovery Mechanism as a way to deal with this issue. Despite the barely-year-old adoption of the LFCR, APS is now seeking to alter the results of the last rate case with its NEM proposals. SEIA believes this reworking of a policy adopted in a rate case should be addressed in a rate case.

**SAIC ASSUMPTIONS:**

**COSTS OF SOLAR DG**

**RL 1-15:** Crossborder estimates the costs of commercial DG on APS' system to be between 9.2 to 11.5 cents and the costs of residential DG on APS' system to be between 19.9 to 20.5 cents. Crossborder then estimates a weighted average cost (13.7 cents) for all solar DG on APS' system, assuming the current mix of DG (44% residential versus 56% commercial) will persist in the future.

**SEIA Response:** There is no question posed. The statement accurately summarizes Crossborder's estimates of the costs of residential and commercial DG on the APS system.

**RL 1-16:** Is it reasonable to assume the current DG mix will persist in the future given current trends? [e.g. 2012 and 2013 residential versus commercial installed capacity]

**SEIA Response:** The future mix of DG customers will depend on ACC policies with respect to net metering, solar DG incentives, and retail rate design. Absent information about these policies, the current DG mix appears to be a reasonable assumption at this time.

**RL 1-17:** Since APS has limited its proposed net metering solution to residential DG, what is the applicable benefit to cost comparison, 21.5 to 24.7 cents to 13.7 cents per kWh, or 21.5 to 24.7 cents to 19.9 to 20.5 cents per kWh?

**SEIA Response:** The first comparison is the applicable benefit to cost comparison if net metering is viewed as a single program that should be available to all customers. The second comparison might be appropriate if net metering were a program focused on residential customers alone (which it is not). It is SEIA's view that net metering should be available to all APS customers, and thus views the first comparison as the appropriate one. SEIA notes that both comparisons indicate that net metering is cost-effective.

**SOLAR ENERGY INDUSTRIES ASSOCIATION'S RESPONSE TO  
STAFF'S FIRST SET OF DATA REQUESTS  
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**RL 1-18:** Is it accurate to say that Crossborder estimates that APS realizes net benefits of 10 to 14.5 cents per kWh for commercial DG but only 1 to 3.8 cents per kWh for residential DG? If so, should APS make adjustments such that residential DG produces comparable net benefits to commercial DG?

**SEIA Response:** The numbers are accurate, but, no, SEIA does not agree that residential DG should produce comparable net benefits to commercial DG. The Crossborder study indicates that net metering produces net benefits when the costs of net metering for residential and commercial customers are considered either collectively for both types of customers or individually for each type. On this basis, net metering should be continued in its current form for all APS customers.

The large net benefits for commercial DG indicate, if anything, that commercial solar customers are subsidizing non-participating ratepayers. If any adjustment were to be made based on these results, the adjustment should result in a closer balance of benefits and costs, so that any subsidy to or from solar customers is minimized. From this perspective, APS should consider adopting commercial rates for solar customers with reduced demand charges, to bring the benefits and costs of net metering for commercial customers into closer balance. San Diego Gas & Electric and Southern California Edison have adopted such commercial rates with reduced demand charges and higher TOU energy rates for solar customers (SDG&E Schedule DG-R and SCE's Option R rates).

**RL 1-19:** Does Crossborder dispute the cost estimates APS has produced for residential solar DG?

**SEIA Response:** No. As stated in Section 3 of the Crossborder study, Crossborder's cost estimates for residential solar DG are based on APS's responses to prior ACC staff data requests.

**Incremental Cost of APS Renewables**

Year	RE + DE (GWh)			Total Rev Req (MM \$)			Discount Rate: 7.2%	
	Base Case	ER Case	Delta	Base Case	ER Case	Delta		
2014	3,057	3,057	-	\$ 2,412.2	\$ 2,412.2	\$ -	\$ -	
2015	3,487	3,487	-	\$ 2,509.4	\$ 2,509.4	\$ -	\$ -	
2016	3,586	3,586	-	\$ 2,664.2	\$ 2,664.2	\$ -	\$ -	6.96
2017	3,662	4,220	558	\$ 2,841.5	\$ 2,855.0	\$ 13.5	\$ 24.19	1
2018	3,718	4,959	1,241	\$ 2,953.1	\$ 3,015.4	\$ 62.3	\$ 50.20	1
2019	4,016	5,806	1,790	\$ 3,086.0	\$ 3,178.7	\$ 92.7	\$ 51.79	1
2020	4,102	6,373	2,271	\$ 3,227.0	\$ 3,326.9	\$ 99.9	\$ 43.99	1
2021	4,859	7,393	2,534	\$ 3,431.7	\$ 3,543.6	\$ 111.9	\$ 44.16	1
2022	5,281	8,302	3,021	\$ 3,681.2	\$ 3,799.3	\$ 118.1	\$ 39.09	1
2023	5,638	8,938	3,300	\$ 3,963.1	\$ 4,109.6	\$ 146.5	\$ 44.39	1
2024	6,025	10,007	3,982	\$ 4,114.7	\$ 4,339.9	\$ 225.2	\$ 56.55	1
2025	6,389	10,920	4,531	\$ 4,340.8	\$ 4,617.9	\$ 277.1	\$ 61.16	1
2026	6,711	11,243	4,532	\$ 4,667.6	\$ 4,894.0	\$ 226.4	\$ 49.96	1
2027	6,785	11,317	4,532	\$ 4,969.0	\$ 5,236.8	\$ 267.8	\$ 59.09	

\$ 45.39 << 10-year levelized  
 \$ 46.55 << 10-year average

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Scottsdale, Arizona 85250  
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CRich@RoseLawGroup.com  
www.RoseLawGroup.com

August 15, 2013

**SENT BY ELECTRONIC MAIL**

Original sent by regular U.S. mail

Thomas A. Loquvam  
Pinnacle West Capital Corporation  
400 N. 5<sup>th</sup> Street, MS 8695  
Phoenix, Arizona 85004  
[thomas.loquvam@pinnaclewest.com](mailto:thomas.loquvam@pinnaclewest.com)

**RE: SEIA's First Set of Data Requests to Arizona Public Service Corporation  
Docket No. E-01345A-13-0248**

Dear Mr. Loquvam:

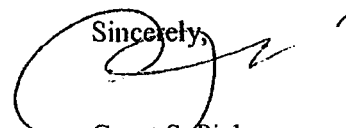
Please find enclosed the First Set of Data Requests from the Solar Energy Industries Association ("SEIA") to Arizona Public Service Corporation (APS) in the above-referenced matter. These requests are submitted pursuant to SEIA's intervention in APS's Application for Net Metering Cost Shift Solution before the Arizona Corporation Commission (the "Commission").

For purposes of this data request set, the words "Company," "you," and "your" refer to Staff, and any representative, including every person and/or entity acting with, under the control of, or on behalf of APS. For each answer, please identify, by name, title, and address each person providing the information that forms the basis for the response provided.

These data requests are continuing, and your answers or any documents supplied in response to these data requests should be supplemented with any additional information or documents that come to your attention after you have provided your initial responses. Please respond within ten (10) business days. Should you require additional time, please contact me immediately.

Please send electronic and regular delivery service of your responses, including all attachments, to: Court S. Rich, Rose Law Group pc, 6613 N. Scottsdale Road, Suite 200, Scottsdale, Arizona 85250, e-mail: [crich@roselawgroup.com](mailto:crich@roselawgroup.com).

Should you have any questions or comments, please feel free to contact me directly at 480-505-3937.

Sincerely,  
  
Court S. Rich

Enclosure



**SEIA'S FIRST SET OF DATA REQUESTS  
TO APS  
Docket No. E-01345A-13-0248**

---

**SEIA 1.1** Provide copies of any and all Data Requests served upon APS from any other Party, including Commission Staff, in the above referenced docket and provide the complete responses provided to any such Data Requests.

**SEIA 1.2** Provide copies of any and all Data Requests served by APS upon any other Party, including Commission Staff, in the above referenced docket and provide the complete responses provided to any such Data Requests.



**JEFFREY W. JOHNSON**  
Regulatory Affairs Manager  
State Regulation

Mall Station 9708  
PO Box 53999  
Phoenix, Arizona 85072-3999  
Tel 602-250-2661  
Jeffrey.Johnson@aps.com

August 22, 2013

Court Rich  
Rose Law Group  
6613 N. Scottsdale Rd., Suite 200  
Scottsdale, AZ 85250

RE: Arizona Public Service Company's Application for  
Approval of Net Metering Cost Shift Solution  
Docket No. E-01345A-13-0248

Attached please find Arizona Public Service Company's Response to SEIA's First Set of Data Requests in the above-referenced matter. The Company will continue to supplement this response throughout the proceeding.

If you have any questions regarding this information, please contact me at (602)250-2661.

Sincerely,

A handwritten signature in black ink, appearing to read "Jeffrey W. Johnson", is written over a printed name.

Jeffrey W. Johnson

JJ/cd  
Attachment

**SOLAR ENERGY INDUSTRIES ASSOCIATION  
SEIA'S FIRST SET OF DATA REQUESTS  
REGARDING THE APPLICATION OF ARIZONA PUBLIC SERVICE  
COMPANY FOR APPROVAL OF NET METERING COST SHIFT SOLUTION  
DOCKET NO. E-01345A-13-0248  
AUGUST 15, 2013**

**SEIA 1.1:** Provide copies of any and all Data Requests served upon APS from any other Party, including Commission Staff, in the above referenced docket and provide the complete responses provided to any such Data Requests.

**Response:** Attached please find a copy of Staff's First Set of Data Requests. In addition, although APS has not yet completed responses to all of the questions in Staff's First Set, those the Company has completed through August 21, 2013 are attached. The remaining responses will be provided at a later date.

APS will continue to provide data requests and their responses when available throughout this proceeding.

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August 15, 2013

**SENT BY ELECTRONIC MAIL**  
Original sent by regular U.S. mail

Richard Lloyd  
Arizona Corporation Commission  
1200 W. Washington Street  
Phoenix, Arizona 85007  
rlloyd@azcc.gov

Connie Fitzsimmons  
Arizona Corporation Commission  
1200 W. Washington Street  
Phoenix, Arizona 85007  
cfitzsimmons@azcc.gov

**RE: SEIA's First Set of Data Requests to Arizona Corporation Commission Staff  
Docket No. E-01345A-13-0248**

Dear Mr. Lloyd and Ms. Fitzsimmons:

Please find enclosed the First Set of Data Requests from the Solar Energy Industries Association ("SEIA") to Staff in the above-referenced matter. These requests are submitted pursuant to SEIA's intervention in APS's Application for Net Metering Cost Shift Solution before the Arizona Corporation Commission (the "Commission").

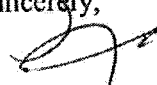
For purposes of this data request set, the words "Company," "you," and "your" refer to Staff, and any representative, including every person and/or entity acting with, under the control of, or on behalf of the Commission. For each answer, please identify, by name, title, and address each person providing the information that forms the basis for the response provided.

These data requests are continuing, and your answers or any documents supplied in response to these data requests should be supplemented with any additional information or documents that come to your attention after you have provided your initial responses. Please respond within **ten (10)** business days. Should you require additional time, please contact me immediately.

Please send electronic and regular delivery service of your responses, including all attachments, to: Court S. Rich, Rose Law Group pc, 6613 N. Scottsdale Road, Suite 200, Scottsdale, Arizona 85250, e-mail: crich@roselawgroup.com.

Should you have any questions or comments, please feel free to contact me directly at 480-505-3937.

Sincerely,



Court S. Rich

Enclosure

**SEIA'S FIRST SET OF DATA REQUESTS  
TO STAFF  
Docket No. E-01345A-13-0248**

---

SEIA 1.1 Provide copies of any and all Data Requests served upon Commission Staff from any other Party, including the Applicant, in the above referenced docket and provide the complete responses provided to any such Data Requests.

SEIA 1.2 Provide copies of any and all Data Requests served by Commission Staff upon any other Party, including the Applicant, in the above referenced docket and provide the complete responses provided to any such Data Requests.

ROSE  
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August 16, 2013

**SENT BY ELECTRONIC MAIL**

Original sent by regular U.S. mail

Thomas A. Loquvam  
Pinnacle West Capital Corporation  
400 N. 5<sup>th</sup> Street, MS 8695  
Phoenix, Arizona 85004  
*thomas.loquvam@pinnaclewest.com*

**RE: SEIA's Second Set of Data Requests to Arizona Public Service Corporation  
Docket No. E-01345A-13-0248**

Dear Mr. Loquvam:

Please find enclosed the Second Set of Data Requests from the Solar Energy Industries Association ("SEIA") to Arizona Public Service Corporation (APS) in the above-referenced matter. These requests are submitted pursuant to SEIA's intervention in APS's Application for Net Metering Cost Shift Solution before the Arizona Corporation Commission (the "Commission").

For purposes of this data request set, the words "Company," "you," and "your" refer to Staff, and any representative, including every person and/or entity acting with, under the control of, or on behalf of APS. For each answer, please identify, by name, title, and address each person providing the information that forms the basis for the response provided.

These data requests are continuing, and your answers or any documents supplied in response to these data requests should be supplemented with any additional information or documents that come to your attention after you have provided your initial responses. Please respond within **ten (10)** business days. Should you require additional time, please contact me immediately.

Please send electronic and regular delivery service of your responses, including all attachments, to: Court S. Rich, Rose Law Group pc, 6613 N. Scottsdale Road, Suite 200, Scottsdale, Arizona 85250, e-mail: [crich@roselawgroup.com](mailto:crich@roselawgroup.com).

Should you have any questions or comments, please feel free to contact me directly at 480-505-3937.

Sincerely,  
  
Court S. Rich

Enclosure

**SEIA'S SECOND SET OF DATA REQUESTS  
TO APS  
Docket No. E-01345A-13-0248**

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SEIA 2.1 Fully explain and support your assertion that each installed residential solar system shifts approximately \$1,000 annually onto non-solar ratepayers. In answering this question please include each and every component of the alleged cost shift, the amount thereof, and the rate mechanism(s) whereby the alleged costs are shifted to the non-solar ratepayer. Include all work papers, supporting data where appropriate, and show all calculations and assumptions.