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BEFORE THE ARIZONA CORPORATION COMMISSION
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AZ CORP COMMISSION
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IN THE MATTER OF THE COMMISSION'S
INVESTIGATION OF VALUE AND COST OF
DISTRIBUTED GENERATION.

DOCKET NO. E-00000J-14-0023

OSBORN
MALEDON
A PROFESSIONAL ASSOCIATION
OF ATTORNEYS AT LAW

ARIZONA INVESTMENT COUNCIL'S NOTICE OF FILING

Arizona Investment Council ("AIC") hereby provides notice of filing the Rebuttal
Testimony of Michael T. O'Sheasy in the above-referenced matter.

RESPECTFULLY SUBMITTED this 7 day of April, 2016.

OSBORN MALEDON, P.A.

Arizona Corporation Commission
DOCKETED

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BEFORE THE ARIZONA CORPORATION COMMISSION

COMMISSIONERS

DOUG LITTLE – CHAIRMAN
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**IN THE MATTER OF THE)
COMMISSION’S INVESTIGATION) DOCKET NO. E-00000J-14-0023
OF THE VALUE AND COST OF)
DISTRIBUTED GENERATION.)**

Rebuttal Testimony of

Michael T. O’Sheasy

on Behalf of

Arizona Investment Council

April 7, 2016

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1
2
3 **I. INTRODUCTION AND PURPOSE**

4 **Q. Please state your name, business address, and occupation.**

5 **A.** My name is Michael T. O'Sheasy. My business address is 5001 Kingswood
6 Drive, Roswell, Georgia 30075. I am a Vice President with Laurits R. Christensen
7 Associates, Inc.

8
9 **Q. Are you the same Michael O'Sheasy that submitted Direct Testimony on**
10 **behalf of AIC in this docket?**

11 **A.** Yes.

12
13
14 **Q. What is the purpose of your Rebuttal Testimony?**

15 **A.** The purpose of my Rebuttal testimony is to comment upon issues presented by
16 other witnesses regarding topics discussed in my Direct Testimony, including the
17 following witnesses: Briana Kobor on behalf of Vote Solar; Lon Huber on behalf of the
18 Residential Utility Consumer Office ("RUCO"); and B. Thomas Beach on behalf of
19 The Alliance for Solar Choice ("TASC"). The topics I will address include: (1) the
20 extent of distributed generation ("DG") activities to which this docket should pertain;
21 (2) rate design structure and pricing considerations; and (3) the value of DG and its use
22 in ratemaking.
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1 the costs and benefits of DG.³ I agree with this view. In my opinion, it is not sufficient
2 to focus only on the impacts of the DG participant's excess generation beyond its on-
3 site load requirements.

4
5 **III. RATE DESIGN ISSUES**
6

7 **Q. What is the purpose of this section of your testimony?**

8 **A.** I will address the rate design discussions of TASC witness Beach and Vote Solar
9 witness Kobor. Specifically, Mr. Beach proposes to “[a]dopt a monthly minimum bill to
10 recover customer-related costs.”⁴ I will describe why a basic service charge is superior
11 to a minimum bill design. In addition, Ms. Kobor points out the following: “Under the
12 NEM program, participating ratepayers are credited for the kWh they export to the grid
13 on a one-to-one basis with the kWh they take from the grid. This means that exports are
14 valued at the full volumetric retail rate.”⁵ I will argue that the credits for exports should
15 be based upon the utility's avoided cost rather than “the value of the energy provided”
16 as defined by Ms. Kobor, which includes “environmental benefits, economic
17 development benefits, and grid security benefits.”⁶ Finally, Mr. Beach argues against
18 the use of demand charges in residential rates based on concerns about customer
19 acceptance.⁷ I will respond to this by describing why I believe demand charges are an
20 appropriate rate design component for residential customers.

21
22 **Q. Do you agree with TASC witness Beach that a minimum bill should be used**
23 **to recover customer-related costs?**
24
25

26 ³ Huber Direct Testimony at 13, line 10.

27 ⁴ Beach Direct Testimony at 27, line 7.

28 ⁵ Kobor Direct Testimony at 26, lines 23-26.

⁶ *Id.* at 49, line 18 and at 50, lines 10-11.

⁷ Beach Direct Testimony at 28, lines 16-17.

1 A. No, I do not. I believe that a monthly basic service charge is a superior method
2 for collecting customer-related costs.

3

4 **Q. Please explain the advantages of a basic service charge relative to a**
5 **minimum bill.**

6 A. As I discussed in my direct testimony, there are three major cost drivers for an
7 electric utility: customer-related, energy-related, and demand-related. Traditional
8 regulation is based upon the cost of serving customer groups, and the rate design for
9 these customer groups normally has component prices based upon these cost drivers.
10 For example, customer-related costs do not vary with the volume of electricity used by
11 the customer. However, these fixed costs (e.g., the cost of a meter) must be recovered
12 and, since they do not vary with usage, an efficient way to collect customer-related
13 costs is with a fixed monthly billing component called a basic service charge. By
14 collecting these fixed customer-related costs in this manner, the tariff can then provide
15 usage-based pricing components that collect usage-based costs. This process of
16 collecting fixed costs using a fixed charge and usage-related costs using volumetric
17 charges would send efficient price signals to the customer, allowing him or her to make
18 decisions that reflect cost-causation.

19

20 **Q. What is the problem with a minimum bill provision?**

21 A. A minimum bill provision typically operates in a two-step manner: the
22 customer's bill is calculated using the standard tariff components and the customer pays
23 the greater of this calculated bill or the minimum bill amount. The minimum bill "floor"
24 may be set with a consideration of recovering at least the customer-related costs.
25 Therefore, when the minimum bill applies, the utility will implicitly recover its targeted
26 customer-related costs but not all (or perhaps any) of its usage-based costs. This under-
27 recovery of usage-based costs will need to be collected from usage-based charges that
28 apply to customers who use more than the amount required to exceed the minimum bill

1 amount. This means that the usage-based price signal is higher than it should be in
2 order to simply recover the usage-related cost per kWh.

3
4 **Q. Can you give an example of the problem with minimum bill provisions?**

5 **A.** Yes. Assume that the customer group to which the rate will be targeted has a
6 fixed customer-related cost of \$10/month, an energy-related cost of \$0.08/kWh, and a
7 demand-related cost of \$7/kW. Also assume that the average customer to whom the rate
8 is targeted uses 1,000 kWh/month and 6 kW/month. Finally, assume that the tariff is
9 based upon costs and therefore charges these exact cost components to the applicable
10 customers. The resulting average monthly bill would be \$132, and the pricing
11 components in the tariff would be sending cost-based price signals to the customer.
12 Now imagine instead that the tariff design had a minimum bill provision of \$10/month,
13 an energy charge of \$0.09/kWh, and a demand charge of \$7/kW. For simplicity, I
14 assume that all customers are average and therefore the minimum bill does not apply to
15 any of them. (The conclusion of this example is not altered if the example is made more
16 complex such that the minimum bill applies to a small percentage of customers.) In this
17 case, the average customer would still pay \$132/month, but the energy price is now
18 above the energy-related costs (\$0.09/kWh vs. \$0.08/kWh). The result of this rate
19 design is to over-charge high-use customers within the class relative to their cost to
20 serve and distort customer price signals.

21
22 **Q. What are some of the reasons stated for favoring minimum billing?**

23 **A.** TASC witness Beach provides two attributes of minimum bill provisions. In
24 both cases, I argue that a basic service charge would perform better than the minimum
25 bill provision.

26 i) Mr. Beach argues that a minimum bill can ensure that all customers
27 make a minimum contribution and “can be set to cover the utility’s
28 customer-related costs (for metering, billing, and customer account

1 services) which clearly do not vary with usage.”⁸ While he is correct that
2 a minimum bill can be set at an amount equal to the utility’s fixed
3 customer-related costs, my example above illustrates that doing so would
4 result in an energy charge above usage-related cost. In contrast, a basic
5 service charge can also be set at the amount of the utility’s fixed
6 customer-related costs and a usage charge per kWh for all usage at the
7 correct usage-based cost.

8 ii) Non-discrimination: Mr. Beach asserts that adverse bill impacts that
9 might occur under higher fixed charges may be avoided with minimum
10 billing, particularly for low-usage and/or low-income customers.⁹

11 However, there are other ways that utilities have found to moderate the
12 effect of higher basic service charges on low usage, low income
13 customers such as waivers or modifications to the basic service charge for
14 qualifying customers, or blocking of basic service charge (i.e., charging a
15 higher basic service charge to customers with higher usage levels).

16 Neither of these methods will distort another pricing component in the
17 same manner as a minimum bill provision.

18
19 **Q. Please expand on your point that the export credits should be based upon**
20 **avoided cost.**

21 **A.** As I described above, Vote Solar witness Kobor described how NEM pays the
22 full retail rate for exported energy. I argue that because the retail rate can include fixed
23 cost recovery, there can be a mismatch between the retail rate and the avoided costs
24 associated with the exported kWh. If the retail rate is higher than the avoided costs, the
25 non-participants will have to pay higher rates for overpaying avoided cost. I believe the
26 credit for exported energy should be at the utility’s avoided cost, possibly on an hourly

27
28 ⁸ *Id.* at 27 lines 19-21.

⁹ *Id.* at 28, lines 20-22.

1 or time-of-use basis (if feasible given metering and information constraints), enabling
2 the non-participants to be held harmless. I agree with RUCO witness Huber that “the
3 Commission’s methodology should strive to be unbiased and not be unduly favorable to
4 either utilities or DG providers.”¹⁰ If the Commission decides that the compensation for
5 DG exports should be higher than avoided costs (perhaps due to a perceived value
6 beyond avoided cost), then I agree with Mr. Huber that this procurement should be
7 addressed by linking into the IRP process.¹¹ The procurement of exports could be
8 treated similar to a cost of procured power and flow accordingly through the ratemaking
9 process.

10
11 **Q. What is your response to TASC witness Beach’s arguments against the use**
12 **of residential demand charges?**

13 **A.** I believe a demand charge can send a more efficient price signal to customers
14 (i.e., a price signal that reflects the underlying cost driver) and help ensure that NEM
15 customers pay the demand-related costs associated with serving them. If the demand
16 charge is designed with a proper consideration of the coincidence factor (i.e., the
17 relationship of the demand driver to the demand billing unit), then I believe that a
18 demand charge sends a better price signal than placing the demand cost into an energy
19 charge and avoids the distortion of energy prices inherent in two-part rates. This was
20 explained in my Direct Testimony comparing a three-part design to a two-part design.¹²

21
22 **Q. Does recovering demand-related costs within a large basic service charge**
23 **lead to rates that reflect the way costs are incurred?**

24 **A.** No, it would not and it would not lead to the efficient use of electricity. Also the
25 customer’s bill would be less reflective of cost. If the utility placed all customer-related
26

27 ¹⁰ Huber Direct Testimony at 8, lines 21-22.

28 ¹¹ Huber Direct Testimony at ii, second paragraph.

¹² O’Sheasy Direct Testimony, Section IV beginning page 13.

1 cost and some or all of the demand-related cost into a fixed monthly basic service
2 charge, it would lead to undercharging customers with low load factor usage and
3 overcharging customers with high load factor usage. Even if the utility has a basic
4 service charge that collects *all* customer-related cost, the resulting two-part rate design
5 would still have the problem of requiring high load factor customers to pay too much
6 demand-related cost and low load factor customers to pay too little. A three-part rate
7 design which includes a demand charge solves this intra-class inequity caused by
8 collected demand cost in an energy charge and enables price signals to be based upon
9 their respective cost drivers.

10
11 **Q. Does a rate design in which demand costs are placed in the energy charges**
12 **encourage energy efficiency?**

13 **A.** Obviously higher energy prices give customers higher incentives to engage in
14 conservation. However, retail rates should be designed to obtain *economic* efficiency
15 (rates that reflect the way costs are incurred) rather than to maximize energy efficiency.
16 One maximizes economic efficiency by sending price signals to customers that reflect
17 the cost of energy, thus letting the customer decide whether his or her energy use is
18 worth the energy price. Likewise, a demand-based price gives the customer an incentive
19 to reduce its demand for electricity. It is important to the overall efficient use of
20 electricity that both energy and demand prices provide cost-based price signals to
21 customers so they can make efficient usage decisions for the benefit of the entire
22 system.

23
24 **Q. Does your argument for economically efficient rates also apply to a**
25 **minimum bill provision?**

26 **A.** Yes, it does. While a minimum bill provision (used in place of a basic service
27 charge and a demand charge) may result in charging higher energy prices (relative to a
28 three-part rate and relative to the cost of energy) that increase customer incentives to

1 reduce usage, the design is not as economically efficient as a three-part rate design with
2 cost-based energy rates. In particular, a minimum bill provision coupled with only high
3 energy prices may indeed result in reduced energy use, but it does not provide
4 customers with an incentive to reduce their demand and over-incentives the customer to
5 reduce their energy at a price above the energy's cost.

6
7 **Q. How do you respond to Mr. Beach's concerns about customer acceptance of**
8 **demand charges?**

9 **A.** Electricity customers are becoming more and more sophisticated in terms of
10 understanding their bills and seeking out ways to lower them. This is a reason why DG
11 is becoming more popular. I believe those customers interested in DG are probably
12 savvier about utility billing and opportunities to save on their electricity bill. Mr. Beach
13 appeared to agree with me on this point when stated: "Customers who have gone
14 through the process to make the long-term investment to install solar learn much about
15 their energy use, about utility rate structures, and about producing their own energy.
16 Given their long-term investment, they will remain engaged going forward."¹³ These
17 types of customers are likely to be less daunted by the concept of a demand charge than
18 the average customer not interested in DG, and I believe they can more readily become
19 comfortable with demand billing. When I was a rate manager with Georgia Power in
20 the early 1990s, we had a residential rate with very few participants (less than 100), and
21 so the rate was terminated. A couple of years ago, Georgia Power felt that their
22 residential customers were now more receptive and interested in an efficient demand
23 rate and began offering one. Today there are thousands of participants on a demand rate
24 and participation is still growing. So I indeed think a demand charge concept is efficient
25 and appropriate for residential customers and certainly DG customers.

26
27
28

¹³ Beach Direct Testimony at 32, lines 14-18.

1 **IV. VALUE OF DG AND ITS USE**

2 **Q. How should the value of DG be determined and used?**

3 **A.** As I explained in my Direct Testimony, the value of solar DG should be
4 separated into two distinctions: the value to the extent it affects Commission-approved
5 financial accounting costs used in rate case proceedings; and the value from an external
6 perspective, outside of ratemaking. The first type of valuation (using financial
7 embedded costs) is appropriate for determining utility revenue requirements. The
8 second type of valuation (including externalities) is not appropriate for utility revenue
9 requirements/ratemaking, but may be more relevant to an Integrated Resource Plan
10 (“IRP”). For example, if, as Ms. Kobor suggests, the price paid for DG exports should
11 consider the value of the energy provided and this value should include not only the
12 impact upon rates but also the incorporation of externalities such as environmental,
13 economic development, and grid reliability benefits,¹⁴ then I believe it is appropriate to
14 evaluate this supply resource through the same IRP process that utilities use to evaluate
15 other supply resources. These additional values associated with DG (if they exist)
16 would then make their way into the ratemaking process in the same manner as other
17 supply procurements. However, I am not suggesting that externalities/social costs
18 should necessarily be included in this type of valuation of exports (or other impacts of
19 DG upon the utility). I am only recommending that if the Commission chooses to
20 include this second type of valuation, the IRP is the most appropriate means to
21 adjudicate it.

22
23 **V. SUMMARY**

24
25 **Q. Please summarize your rebuttal testimony.**

26 **A.** (A) This docket should include all impacts that a DG customer makes upon the
27 utility, including the cost effects on the utility associated with the customer’s self-

28

¹⁴ Kobor Direct Testimony at 50, lines 8-11.

1 generation that serves the customer's on-site needs and the effects associated with the
2 DG customer's exports to the utility network.

3 (B) Basic service charges are superior to minimum bill provisions.

4 (C) Exports should be credited based upon avoided cost.

5 (D) A demand charge is an efficient and appropriate pricing component.

6 (E) Value of DG should be considered in two contexts. Ratemaking should
7 consider only utility financial costs. If the Commission chooses to consider
8 potential additional costs and benefits of DG, the IRP process is the appropriate
9 venue.

10 (F) Finally, the fact that I have not addressed a witness's argument at this time
11 does not imply my agreement.

12
13 **Q. Does this conclude your rebuttal testimony?**

14 **A.** Yes.
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