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AZ CORP COMMISSION
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BEFORE THE ARIZONA CORPORATION COMMISSION

**IN THE MATTER OF THE
COMMISSION'S INVESTIGATION OF
VALUE AND COSTS OF DISTRIBUTED
GENERATION.**

) Docket No.: E-00000J-14-0023
)
) **POST-HEARING BRIEF ON BEHALF OF**
) **INTERVENORS IBEW LOCAL UNIONS**
) **387, 1116, AND 769**

Pursuant to the instructions of Administrative Law Judge, Teena Jibilian ("ALJ"), at the close of the recent hearing, Intervenors, the International Brotherhood of Electrical Workers, AFL-CIO, CLC (the "IBEW Locals") Local Unions 1116, 387, and 769 (the "IBEW Locals" or the "Unions"), by and through undersigned counsel, hereby provide the ALJ with their final thoughts regarding the above-captioned matter. There are two overarching reasons why the IBEW Locals intervened in this matter. Those reasons are: (i) the safety and well-being of the Unions' members and (ii) the equitable treatment of all patrons of the public utilities.

I. THE INTERESTS OF PUBLIC UTILITY WORKERS ARE EXPRESSLY PROTECTED UNDER THE ARIZONA CONSTITUTION.

Article XV, §3 of the Arizona Constitution expressly states that the interests of public service employees are on par with those of patrons:

1 two-way traffic.⁴ These updates are costly and present new safety concerns for utility workers.
2 One major new concern is commonly referred to as back feed and is unique to solar DG
3 customers. During the recent hearing, IBEW Local 1116 Business Manager/Financial Secretary,
4 Scott Northrup, explained that “employees that were working on [a rooftop solar customer’s] line
5 could get electrocuted or injured . . . from the back feed of the electricity on that [bidirectional]
6 line.”⁵ This is different from a non-solar DG customer’s line where energy only flows in one
7 direction. The utility companies have implemented a safety device called the disconnect switch
8 to ensure that utility workers are not injured (or worse, killed) by this back feed. According to
9 Mr. Northrup, “TEP mandates that solar companies put a switch on the lines so that we can
10 disconnect them completely from the line and it shows that it is isolated.”⁶

11 Undoubtedly, these switches are an essential part of a utility worker’s ability to safely
12 perform his or her job duties. Indeed, both APS and TEP have emphatically expressed the
13 importance of the disconnect switch. As a matter of fact, this switch is so important to utility
14 worker safety that TEP has provided (and continues to provide) them to rooftop solar customers,
15 free of charge.⁷ Certainly, the Unions do not take issue with the mandate that these switches be
16 used; however, TEP’s subsidization of this switch exclusively for solar DG customers is
17 problematic. This is because either non-solar DG ratepayers have paid, or the utility has
18 absorbed, the cost of this disconnect switch for solar DG customers to safely connect to the grid.
19 These subsidies continue to grow each day. Solar DG customers should not receive this essential

20 ⁴ *Id.* (“While wires can carry electrons both up and downstream as easily as pavement can carry cars one
21 way or another, keeping traffic flowing smoothly is another story. If all the signs, on- and off- ramps and stoplights
point in only one direction, disaster is almost inevitable.”).

22 ⁵ Tr. at 224, ln. 20-22.

23 ⁶ Tr. at 224, ln. 12-15.

24 ⁷ Tr. at 226, ln. 5-10.

1 safety mechanism for free. Rather, they should pay for the disconnect switch themselves or its
2 cost should be taken into account when determining the cost and value of solar. This is just one
3 example of the safety implications and costs that solar DG has introduced.

4 In addition to back feed, solar DG customers have created additional safety concerns.
5 According to an article that appeared in Home Power Magazine entitled PV Safety and
6 Firefighting, “[f]ire safety is typically the last thing people think of when planning their rooftop
7 solar electric system, but it quickly becomes a hot topic when a blaze ignites.”⁸ The article then
8 outlines the potential hazards of PV systems when a fire breaks out. Those hazards include the
9 following: (i) makes cutting through the roof more challenging; (ii) limits firefighters’ access
10 points; (iii) requires time-consuming and dangerous work to move rooftop PV systems; (iv)
11 restricts ventilation options; and (v) presents shock and trip hazards.⁹ For example, “[i]f a
12 firefighter accidentally or deliberately axed through a string of twelve 44-volt DC modules, he or
13 she will experience a potentially deadly surge of 528 volts.”¹⁰ Preventing against these
14 additional hazards is not free, and those costs should be included when making a valuation of
15 solar DG.

16 **II. THE INEQUITABLE TREATMENT OF PUBLIC UTILITY PATRONS IS**
17 **DETRIMENTAL TO THE UNIONS’ MEMBERS AND TO ARIZONA AS**
18 **A WHOLE.**

19 It is no secret that solar DG does not reduce the distribution costs of providing service.¹¹
20 There are several reasons for this. Number one, solar DG is intermittent and can be unreliable at

21 ⁸ Tr. 1901, ln. 1-4.

22 ⁹ Tr. 1901, ln. 9-18.

23 ¹⁰ Tr. 1902, ln. 2-5.

24 ¹¹ Direct Testimony of Scott Northrup, pg. 6, ln. 14-16.

1 times.¹² Second, solar DG customers cannot completely disconnect from the grid which means
2 that the size of the facilities required to provide service to these customers is exactly the same as
3 non-solar DG customers.¹³ Finally, the metering, transformer, and service drop at a customer's
4 service location is the same for all customers, solar DG or not.¹⁴ In fact, according to the Public
5 Utility Commission of Nevada, net metering creates a significant cost shift to non-solar DG
6 customers.¹⁵ As a result of net metering, non-solar customers are unknowingly absorbing
7 substantial detrimental bill impacts. According to the Public Utility Commission of Nevada,
8 "[a]s a result, [net-metering] ratepayers are subsidized by non-[net-metering] ratepayers when a
9 simple two-part rate design that relies primarily on volumetric rates to recover demand and fixed
10 costs continues to be used."¹⁶ When Nevada addressed this inequity, the response by many of
11 the solar companies was to withdraw from the market.¹⁷ According to Sunrun's 10-K disclosure,
12 its market exit in Nevada was intentional.¹⁸ Not only that, in addition to ceasing operations in
13 Nevada, Sunrun abandoned 12 megawatts of executed net metering contracts.¹⁹

16 ¹² Rebuttal Testimony of Scott Northrup, pg. 3, ln. 21-23.

17 ¹³ *Id.* at pg. 4, ln. 1-4.

18 ¹⁴ *Id.* at pg. 4, ln. 4-6.

19 ¹⁵ Tr. 1883, ln. 7-10. ("Q: Isn't it also the case that Nevada has recently found net metering presented a significant cost shift to customers who did not participate in solar DG? A: Yes.").

20 ¹⁶ Modified Final Order from the Public Utility Commission of Nevada, Docket No. 15-07042 (Feb. 12, 2016).

21 ¹⁷ Tr. 1883, ln. 6-8.

22 ¹⁸ Tr. 1885, ln. 4-9 ("Q: Sunrun's 10-K disclosure indicates that its market exit was intentional. Would you agree: A: In other words, that they made an affirmative decision? Q: To exit the market, correct. A: Yes.").

23 ¹⁹ Tr. 1886, ln. 5-16.

1 Solar DG is not available to those living in apartments or multi-unit low-income housing.
2 Typically, a solar customer must have a single-family home, possess a good credit score, and
3 have the means to either buy or lease the solar unit.²⁰ Those without these abilities cannot access
4 rooftop solar power for their home.²¹ The cost shift from solar DG to non-solar customer has
5 actually become a cost shift from affluent families to low-income families.²² The Unions
6 represent working class families in non-managerial jobs who are directly affected by this
7 imbalance.²³ In addition, solar DG has a negative impact on those individuals living in rural
8 areas serviced by Cooperatives who are incurring higher distribution and fixed costs due to
9 customers with solar DG.²⁴ This has financially burdened many of the Unions' members. To
10 maintain the status quo, as the solar advocates would prefer to do, only ensures the multiplication
11 of these negative impacts and squeezes out more cost-effective, diverse and grid beneficial
12 resources (including solar DG resources) in the future. Currently, low-income customers suffer
13 by paying for delivery and subsidies consumed by solar customers.

14 Finally, the solar advocates argue that solar DG creates additional jobs. These jobs,
15 however, are temporary because they are only created by the installation of rooftop solar.²⁵ In
16 addition, these jobs are among the lowest paid in the country.²⁶ Plus, any jobs that are created

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18 ²⁰ Rebuttal Testimony of Scott Northrup, pg. 5, ln. 2-5.

19 ²¹ Direct Testimony of Scott Northrup, pg. 8, ln. 17-21.

20 ²² *Id.* at pg. 8, ln. 19-21.

21 ²³ *Id.* at pg. 8, ln. 21-22.

22 ²⁴ Rebuttal Testimony of Scott Northrup, pg. 5, ln. 5-8.

23 ²⁵ *Id.* at pg. 5, ln. 20-22.

24 ²⁶ Tr. 1726, ln. 14-18 (“Q: Now, according to this 2015 report, it says in the first paragraph solar installers in the state are among the lowest paid in the country at \$18 per hour. Do you see that? A: I do.”).

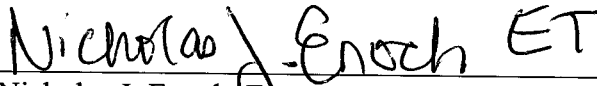
1 are counteracted by what has been referred to as the "long-run/legacy effects."²⁷ One study
2 predicts that over billions of dollars of lost gross state product and thousands of "job years" (i.e.,
3 years of employment) are lost.²⁸ This is a major regression for the state of Arizona and for the
4 Unions' members.

5 In sum, the Unions would like to see a definition and resolution that clearly separates the
6 utilities' cost of service from societal or forward-looking benefits associated with solar. Energy
7 distribution costs are not free, losses incurred are not free, and protecting against increased safety
8 hazards is not free. The Unions hope that these be considered and that equity, safety, and the
9 well-being of their membership be taken into account.

10 **WHEREFORE**, IBEW Locals 387, 1116, and 769 respectfully request the ALJ to render
11 a recommended opinion which incorporates the views set forth above.

12 RESPECTFULLY SUBMITTED this 20th day of June, 2016.

13 LUBIN & ENOCH, P.C.

14 
15 Nicholas J. Enoch, Esq.
16 Attorneys for Intervenors

17 Original and thirteen copies of the IBEW Locals' Rebuttal Testimony filed this 20th day of June,
18 2016, with:

18 Arizona Corporation Commission
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20 Copies of the foregoing transmitted electronically or mailed this same date to those identified on
the attached service list for this docket.

21 /s/ Cristina Gallardo-Sanidad

22 ²⁷ Rebuttal Testimony of Scott Northrup, pg. 5-6, ln. 21, 1.

23 ²⁸ *Id.* at pg. 6, ln. 1-3.