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Marshall Magruder Public Comments UNS Elec
Docket No. E-04204A-15-0142
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Good morning Judge Rodda, and many attorneys. My name is Marshall Magruder, PO Box 1267, Tubac Arizona. I am not an attorney and was surprised there were NO individual intervenors in this case. If anyone wants me as a witness, I'll volunteer.

In 2000, I was appointed an Energy Commissioner and elected Vice-Chair on the Santa Cruz County-Nogales Energy Commission. I felt it was my responsibility to understand all issues. For years I report on utility issues based on experiences in many gas, electric, and water rate cases, line siting, utility acquisitions, and DOE/FERC cases.

I designed my home, built in 1999, to be energy efficiency, for a solar rooftop, 10-foot covered porches on E, S and W sides, double-pane, Low E windows all with roller shutters (more R), 6 skylights, Energy Star roof and roof paint, solar water heater (in 2001) that is tankless with gas backup with recirculation motor to save water.

I have used many UNSE and UNSG rebate programs including duct leakage (from 300 to 0 cu-ft/min), reduced unit sizes, increased SEER ratings above 15, two-cycle blower motors, heat pump replacing HVAC, my LED bulbs are replacing my CFLs, etc.

In 2002, before any REST, rebates, and other incentives, I purchased a 5.5 kW for a $52,000 rooftop solar electric system with two conditions: (1) use standard parts (easy) and (2) tie to the grid (hard). After six months of negotiation with Citizens Utilities, we found they did not know how to connect. We cancelled the contract.

I participated in the transition from EPS to REST workshops, was a member of Congresswoman Gifford's Solar Task Force, took Solar 101, and keep involved.

In 2005, I held the first Santa Cruz Solar Expo in Tubac, with eight local solar companies. UniSource gave presentations on how to apply for a rebate, how to connect, etc. with handouts. Over 125 attended, larger numbers in follow-on Solar Expos.

With decreasing solar costs, improved efficiency, standardized training labor force (many converting from construction to solar), I finally ordered a system in 2010 after hearing the words: "**If you install a 2-D system, it will cost you 25% more but will be 25 to 40% more efficient.**" I checked with UNS Electric, based on my usage, which recommended a 5.25 kW system to cover 80% of our requirements.

My 4.33 kW 2-D system has three solar trees of 8 panels each, covers almost all of my electricity needs with net metering. From just after sunrise to sunset, it is at peak performance. It's production between 55% and 78% higher than a fixed solar system. Is that system a "rooftop?" I don't think so! How would it be charged under this proposal?

The total cost was $33,000. At that time, UNSE's kick start rebate was $13,000 (now zero), IRS a tax credit (30%) or $10,000, thus $10,000 was out of my pocket, my investment.

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I established myself as a "solar electric generator" with a Form 1040 Schedule C. I include solar and energy efficiency rebates and credits from UniSource as income for federal and Arizona income tax purposes.

I am a Registered Professional Tax Preparer with the IRS. I discussed this with my H&R Block District manager who agreed this is legal. She would back me with the company if necessary. Last year, my UNSE "credit" was $102. For a $10,000 investment (from out of my pocket), this is less than a 1% Return on Investment after taxes, obviously not a get rich process, and much less ROI than the utilities!

Here's some things I've learned,

1. UNS recommended using TOU with net metering, because "it would be better." I did this for the first 15 months and lost kWhs almost every month. Why? The UNSE TOU rate schedule has serious design deficiencies. Daily it has 9 winter peak hours while only 8 peak hours during the summer, at the same cost for peak in all seasons. Everyone knows winter electricity costs are less than summer. In the winter, there are just 10 hours of daylight, very hard for any solar system to excel. In fact, summer with 14 hours is easy, winter is much harder. I won't TOU again!!

2. "Demand Charge" is **not measurable by ratepayers**. This is a backdoor charge based on hindsight data accumulated by the utility. Thousands of refrigerators cycle, microwave ovens for a few minutes, brewing coffee all take some energy. These individual minor demands are "lost in the background noise" and do not make any difference!! My home does not add "demand" like a copper rolling plant, or other industrial plant! In fact, demand charges are a major complaint by any small business owner, too! Just ask them!

3. PURPA of 1973 as updated by Energy Policy Act of 2005, required utilities to take all energy generated by "small" qualified facilities, less than a few MW or so, which includes all homeowners I know. This act established a national net metering polity and required public utility commissions to decide if they wanted to net meter. Net metering was adopted in Order No. 69877 (28 Aug 2008). I participated in some workshops and noted there was no general opposition. ACC Order No. 70567 (23 Oct 2008) started the net metering rulemaking process. The Arizona Administrative Code (AAC) R14-2 **Article 23, Net Metering**. In particular R14-2-2305, "*New or Additional Charges*" reads:

> *Net metering charges shall be assessed on a nondiscriminatory basis. Any proposed charge that would increase a Net Metering Customer's costs* ***beyond*** *those of other customers with similar load characteristics or customers in the* ***same rate class*** *that the Net Metering Customer would qualify for in not participating shall be filed by the electric utility with the Commission for consideration and approval The charges shall be fully support with cost of service studies and* ***benefit****/cost analyses. The electric utility shall have the burden of proof on any proposed charge.*

Can the Arizona Administrative Code rules not be followed by this ALJ? If one doesn't like the rules, go through the rulemaking to make such changes.

4. Ms Swick states there are **30,000** lower income USNE customers eligible for CARES. Higher Service Charges impact these customers. Only **6,300** are in the program. Why aren't all 30,000 in the program? Can Ms Denise Smith's team find the missing?

Summary. Drop unique solar charges including demand charge, Revise TOU-net metering to be fair and reasonable, it is now a negative incentive, **continue net metering**.