BEFORE THE ARIZONA CORPORATION COMMISSION

IN THE MATTER OF THE APPLICATION OF TUCSON ELECTRIC POWER COMPANY FOR THE ESTABLISHMENT OF JUST AND REASONABLE RATES AND CHARGES DESIGNED TO REALIZE A REASONABLE RATE OF RETURN ON THE FAIR VALUE OF THE PROPERTIES OF TUCSON ELECTRIC POWER COMPANY DEVOTED TO ITS OPERATIONS THROUGHOUT THE STATE OF ARIZONA AND FOR RELATED APPROVALS

Docket No. E-01933A-19-0028

DIRECT TESTIMONY AND EXHIBITS OF BRIANA KOBOR ON BEHALF OF VOTE SOLAR

October 28, 2019
Q. Please state your name and business address.

A. My name is Briana Kobor. My business address is 358 S 700 E, Suite B206, Salt Lake City, UT 84102.

Q. On whose behalf are you submitting this direct testimony?

A. I am submitting this testimony on behalf of Vote Solar.

Q. What is Vote Solar?

A. Vote Solar is an independent 501(c)(3) non-profit working to repower the United States with clean energy by making solar power more accessible and affordable through effective policy advocacy. Vote Solar seeks to promote the development of solar at every scale, from distributed rooftop solar to large utility-scale plants. Vote Solar has over 80,000 members nationally, including over 4,000 members in Arizona and over 600 members in Tucson. Vote Solar is not a trade group nor does it have corporate members.

Q. By whom are you employed and in what capacity?

A. I serve as Regulatory Director for Vote Solar. I analyze the development and implementation of policy initiatives related to distributed energy resources. I also review regulatory filings, perform technical analyses, and testify in commission proceedings relating to distributed energy resources and renewable generation.

Q. Please describe your education and experience.

A. I have a degree in Environmental Economics and Policy from the University of California, Berkeley, and I have been employed in the utility regulatory industry since 2007. Prior to joining Vote Solar in 2015, MRW & Associates, LLC ("MRW"), which is a specialized energy consulting firm, employed me for eight years. At MRW, I focused on electricity and natural gas markets, ratemaking, utility regulation, and energy policy development. I worked with a variety of clients including energy policymakers, developers, suppliers, and end-users. My clients included the California Public Utilities Commission, the California Energy
Commission, the California Independent System Operator, and several publicly-owned utilities. I have experience evaluating utility cost-of-service studies, revenue allocation and ratemaking, wholesale and retail electric rate forecasting, asset valuation, and financial analyses. A summary of my background and qualifications is attached as Attachment BSK-1.

Q. Have you previously testified before the Arizona Corporation Commission (the “Commission”)?

A. Yes. A full list of the testimony I have filed is provided in Attachment BSK-1.

Q. What is the purpose of your testimony in this proceeding?

A. The purpose of my testimony in this proceeding is to examine the impacts of recent rate design changes for distributed generation (“DG”) customers and recommend how the Commission should consider this issue going forward.

Q. Please describe the rate design changes that were implemented for customers with DG in the last rate case.

A. In its last rate case, Tucson Electric Power (“TEP”) initially proposed replacing retail rate net metering with a Renewable Credit Rate and requiring that all new DG customers take service on a mandatory three-part rate that included a demand charge.\(^1\) During a similar time period, the Commission was engaged in a generic docket to investigate the value and cost of DG, commonly referred to as the “Value of DG docket.”\(^2\) In order to consider the conclusions from the Value of DG docket, the Commission ultimately bifurcated TEP’s last rate case into two phases, so that rates specific to DG customers could be considered after conclusion of the Value of DG docket, with the expectation that the Value of DG

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\(^2\) Docket No. E-00000J-14-0023.
The docket would evaluate the proposed changes to net metering and rate design for DG customers.³

The Commission ruled in the Value of DG docket that “[n]et metering, and the banking of DG exports associated with net metering, should eventually be eliminated and replaced with a mechanism for the direct purchase by utilities of DG exports.”⁴ The Commission ordered that the then-pending rate cases (such as TEP’s last rate case) should employ the Resource Comparison Proxy (“RCP”) methodology, and stated that in future rate cases the Commission “will have the flexibility to utilize either the Avoided Cost methodology or Resource Comparison Proxy methodology (or a combination of both) in setting a formula for setting the DG export rate.”⁵ In addition, the Commission explicitly declined to issue a ruling on the rates DG customers pay to purchase electricity from their utility, stating: “The ratemaking implications of this separate class treatment shall be determined in each utility’s rate case, supported by a fully vetted cost of service analysis.”⁶

When Phase 2 of TEP’s last rate case reached its final conclusion, the Commission implemented the Value of DG decision for customers in TEP’s service territory. The Commission adopted an export credit rate for DG customers based on the RCP methodology, which was initially set at 9.64¢ per kilowatt-hour (“kWh”).⁷ While TEP had requested implementation of a DG-specific fixed charge called a Grid Access Charge, the Commission found shortcomings in TEP’s class cost-of-service study (“CCOSS”) methodology and ruled “TEP must

⁵ Id. at 177:14–16.
⁶ Id. at 178:9–11.
revise its CCOSS for the Commission to evaluate its proposed DG rates." 8 The Commission determined that new DG customers should be able to take service on any time-of-use ("TOU") rate option available to non-DG customers and adopted a small revision to the DG Meter Fee.9 The Commission did not adopt either a Grid Access Charge nor make demand charge rates mandatory for DG customers. While the Value of DG decision fixed the export credit rate for a period of ten years for individual customers, it was silent on what would occur for an individual customer's export credit rate in years 11 and beyond.10 In TEP's last rate case, Vote Solar recommended the Commission adopt a 10% floor on annual export rate decline that individual customers will experience after the ten-year export rate lock-in expires for their system.11 Vote Solar noted that while the ten-year lock-in allows for some initial pricing certainty for the customer, rooftop solar systems typically have twenty- to thirty-year useful lives. As a result, solar customers face significant pricing uncertainty in Year 11 and beyond, after the ten-year lock-in expires. This pricing uncertainty makes it nearly impossible for a family or small business considering rooftop solar to assess the economic viability of that investment.12 The Commission ultimately did not adopt this proposal, stating:

We do not find it necessary to adopt Vote Solar's proposal for Year 11 and beyond at this time. . . . We anticipate that actual experience operating under the RCP rate will assist us in making a more informed decision whether any action needs to be taken with respect to Year 11.13

8 Id. at 110:23.
9 Id. at 110:26–111:2.
10 Decision No. 75859 at 179:14–16.
12 Id. at 4:13–20.
Q. Have there been any updates to rates for DG customers since the conclusion of TEP’s last rate case?

A. Yes. Per the Value of DG decision, the export credit rate is revised annually according to the approved RCP methodology. On August 19, 2019, the Commission approved a reduction in the RCP rate for customers submitting applications for DG interconnection after October 1, 2019. The new RCP rate is set at 8.68 ¢/kWh.14

Q. What impact have these changes had on customers who would like to invest in rooftop solar in TEP’s service territory?

A. The change from retail rate net metering on the standard tiered two-part rate to mandatory TOU rates with purchase of exports at the RCP represents a monumental shift in rate design for new DG customers. Under retail rate net metering, it was relatively straightforward for a family or small business to understand the implications that an investment in rooftop solar would have on their personal savings or business expenses. With the Commission’s decision in Phase 2 of the last TEP rate case, consideration of an investment in rooftop solar has become exceedingly complex. In order for a family or small business to understand the economic prospects of an investment in rooftop solar, they need to understand how they use energy throughout the day, as well as predict on a second-to-second basis how that energy usage relates to expected production from a solar array. In addition, the value of their exported generation, while fixed for the initial ten years of their investment, is uncertain for more than half the lifetime of their solar system. Taken together, these changes increase the burden on customers who are considering investing private dollars in distributed renewable generation.

Q. Have the economics of a rooftop solar investment changed significantly after the conclusion of TEP's last rate case?

A. Yes. Under retail rate net metering, solar generation exports were compensated at the retail rate. Under the current RCP rate of 8.68 ¢/kWh, exports are valued at roughly 20% less than the current residential retail rate and 28% less than the retail rates requested in this application.\(^{15}\) In addition, under retail rate net metering, a customer could expect retail rates, and thus compensation for exports, to increase over time. In contrast, the RCP stays fixed only for the first ten years, and thereafter the Commission has not defined what will happen to export compensation. As a result, projected value of rooftop solar exports has been reduced more than 50% under current compensation, compared to retail rate net metering.\(^{16}\)

Q. Have these rate changes had an impact on DG adoption in TEP's service territory?

A. It is still fairly early on in the transition from retail rate net metering to the RCP, as the Commission issued its Phase 2 decision on September 20, 2018. But early data indicates that the rate changes have had a significant impact on DG adoption in TEP's service territory. Customers who submitted applications prior to September 20, 2018, were placed on legacy retail rate net metering tariffs while all applications received after that date were given the RCP rate for exports. Since the legacy deadline passed, the number of monthly applications for DG interconnection has decreased by 60%.\(^{17}\)

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15 See Schedules H-1, H-2, H-3.

16 This assumes that retail rates escalate at 2% annually and that the Export Credit Rate transitions to the current Market Cost of Comparable Conventional Generation in year 11.

17 TEP Resp. to VS 2.1(c) (Attach. BSK-2 at 2–3). This 60% decrease excludes applications submitted in September 2018, the final month in which customers were eligible for legacy treatment, due to the unusually large number of applications submitted at that time.
Q. What do you expect for DG adoption going forward?

A. I expect that we will continue to see depressed levels of DG adoption in TEP's service territory as the RCP rate continues to decline. At the time of this writing, data was not yet available on how the recent decline in RCP from 9.64 ¢/kWh to 8.68 ¢/kWh may impact applications. Moreover, TEP's own projections show significant impacts on customer adoption of DG for the next few years. In its recently published Preliminary IRP, TEP states that DG growth is projected to decline 93% for the 2018-2028 period, when compared to the 2008-2018 period, a factor that TEP attributes in part to the rate changes that were implemented.¹⁸

Q. Have the rate design changes had an impact on the local economy?

A. Yes. A vibrant rooftop solar market brings with it local, well-paying jobs. As the rates have changed to make adoption of rooftop solar less beneficial and more complex for customers, it is expected to impact the local businesses that install rooftop solar in Pima County. Like the data on applications, we are only beginning to be able to assess the impact that movement away from retail rate net metering and toward the current RCP rate structure has had on the local economy. In March 2019, the Solar Foundation released its 2018 Solar Jobs Census, which reported that in 2018 the state of Arizona lost 857 solar jobs when compared to 2017.¹⁹ This amounts to a 10% reduction in the solar workforce in the state. This is just the very tip of the iceberg. Because customers who applied for interconnection prior to the September 20, 2018 legacy deadline were given a year to interconnect their system, we were seeing legacy installations until


As the full impact of the rate design changes hits local companies, I expect job losses to increase.

Has TEP proposed any further rate design changes in this case?

No. TEP has not conducted any analysis of the cost of service specific to DG customers, nor have they requested any rate design changes specific to DG customers in this Application. In addition, TEP has proposed continuation of export credit rate valuation at the RCP rate, rather than moving toward an Avoided Cost method in this proceeding. In light of the impacts that we have already seen on application rates and local jobs, this is the most reasonable course of action in the present case.

Do you have any recommendations for this issue going forward?

Yes. Prior to making any further changes that could be additionally detrimental to customers’ ability to invest private funds in local clean energy, the Commission should fully understand the impacts that past changes have had on customer choice and the local economy. Movement away from retail rate net metering to an export credit rate was a monumental change for DG in Arizona. While we are only beginning to see the negative impacts of this change, I expect that the full repercussions will become evident over time. Going forward, I have two recommendations for the Commission:

- **Reporting requirements**: The Commission should require that TEP publish quarterly reports that indicate the number of DG applications received, by rate class.
- **Improving customer confidence**: Once more information is available on the full impacts of the rate design changes, the Commission should revisit

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20 TEP Resp. to VS 2.1 (Attach. BSK-2 at 2–3).
21 TEP Resp. to VS 1.6 (Attach. BSK-2 at 1).
its decision in Phase 2 of TEP's last rate case regarding export credit rates in Year 11 and beyond. At that time, the Commission should consider Vote Solar's proposal for a floor on individual customers' export credit rates.

Q. Does this conclude your testimony?

A. Yes. It does.
Attachment BSK-1

Statement of Qualifications
PROFESSIONAL EMPLOYMENT

Regulatory Director, Vote Solar
August 2015-present
- Analyze policy initiatives, development, and implementation related to distributed solar generation
- Review regulatory filings, perform technical analyses, and testify in commission proceedings relating to distributed solar generation

Senior Associate, MRW & Associates
April 2007-August 2015
- Develop and sponsor expert witness testimony for numerous clients to assist intervention in the utility regulatory process including investor-owned utility general rate cases, policy rulemakings, utility applications for power plant and transmission development, and other rate-related proceedings
- Represent clients at regulatory workshops, hearings and settlement discussions
- Perform in-depth quantitative analysis of utility models and testimony in support of general rate case and other regulatory proceedings
- Conduct extensive analysis of energy policy, regulation, economics, and emerging energy trends
- Build and maintain spreadsheet models to forecast utility rates and rate components tailored to client needs
- Create analytical models to assess generator production, profitability and electricity costs under a variety of regulatory and market scenarios and conduct pro forma analyses and technical assessments of infrastructure development in support of business decisions
- Provide analyses to investors and developers on the impact of laws, regulations, and procurement practices on potential sales of generation in various markets, assess current procurement progress, estimate pricing expectations for power sales, identify potential considerations that affect the marketability of project generation
- Provide policy recommendations to the State of California regarding greenhouse gas reduction, nuclear power generation and natural gas storage

EDUCATION
University of California, Berkeley
Bachelor’s of Science with Honors, Environmental Economics and Policy

PREPARED TESTIMONY
- CPUC Application A.14-06-014
  Testimony of Briana Kobor on behalf of the Coalition for Affordable Streetlights Concerning SCE’s Proposed Street Light Rates. March 13, 2015.
- CPUC Application A.14-11-003
- ACC Docket No. E-04204A-15-0142
  UNS Electric, Inc. General Rate Case
- ACC Docket No. E-04204A-15-0142
  UNS Electric, Inc. General Rate Case
- ACC Docket No. E-00000J-14-0023
  In the Matter of the Commission’s Investigation of Value and Cost of Distributed Generation
- ACC Docket No. E-00000J-14-0023
  In the Matter of the Commission’s Investigation of Value and Cost of Distributed Generation
  Rebuttal Testimony of Briana Kobor on Behalf of Vote Solar. April 7, 2016.
  TEP General Rate Case
  TEP General Rate Case
- ACC Docket No. E-01345A-16-0036
  APS General Rate Case
- ACC Docket No. E-01345A-16-0036
  APS General Rate Case
  UNSE/TEP General Rate Case Phase 2
  Phase 2 Direct Testimony of Briana Kobor on Behalf of Vote Solar. May 19, 2017.
  UNSE/TEP General Rate Case Phase 2
- IPUC Case No. IPC-E-17-13
  Application of Idaho Power Company for Authority to Establish New Schedules for Residential and Small General Service Customers with On-Site Generation
- IPUC Case No. IPC-E-17-13
  Application of Idaho Power Company for Authority to Establish New Schedules for Residential and Small General Service Customers with On-Site Generation
- MPSC Case No. D2018.2.12
  In the Matter of the Application by NorthWestern Energy for Authority to Increase Retail Electric Utility Service Rates and for Approval of Electric Service Schedules and Rules and Allocated Cost of Service and Rate Design
- MPSC Case No. D2018.2.12
  In the Matter of the Application by NorthWestern Energy for Authority to Increase Retail Electric Utility Service Rates and for Approval of Electric Service Schedules and Rules and Allocated Cost
of Service and Rate Design
Cross-Intervenor Testimony of Briana Kobor on Behalf of Vote Solar and the Montana Renewable

SELECTED PUBLICATIONS AND PRESENTATIONS

Attachment BSK-2

Discovery Responses Referenced in Testimony
VS 1.6

In Mr. Jones’ direct testimony on page 16, lines 5-7 it states: “The Company has not separated DG customers into an independent rate class and is not proposing to change existing DG rate options in this case. Therefore, the NCP of the entire residential or SGS class is being used to allocate distribution costs.”

a. Please indicate how DG customers’ usage is measured within the residential class in the CCOSS.

b. In calculating the NCP for the residential class inclusive of DG customers, did the Company rely on delivered load, exported load or some other measure for the DG customers? Please explain.

RESPONSE:

a. DG customers’ usage is measured within the residential class in the CCOSS by using metered kWh delivered by TEP.

b. The Company’s COSS incorporates standard load research practices that have historically served as the basis of utility cost allocation for all classes of customer, whether or not they contain DG customers. The calculation of the NCP uses delivered load data in the same manner for all customers.

RESPONDENT:

Jared Dang

WITNESS:

Craig A. Jones
For the following questions please refer to the following statement on page 15, lines 5-6 of Ms. Gray’s Direct Testimony: “Increasing levels of rooftop solar in the distribution system present challenges for system operations.” Please provide responses in Excel format with formulas and links intact.

a. Please provide the number of interconnected distributed generation customers by month for each month beginning in January 2012-present. Please separate the data by rate schedule and indicate how many customers are grandfathered onto retail rate net metering.

b. Please provide the installed capacity in kW-AC of interconnected distributed generation customers by month for each month beginning in January 2012-present. Please separate the data by rate schedule and indicate the level of capacity that is for customers who are grandfathered onto retail rate net metering.

c. Please provide the number of distributed generation applications submitted by month for each month beginning in January 2012-present. Please separate the data by rate schedule and indicate how many customers are expected to be grandfathered onto retail rate net metering.

d. Please provide the proposed capacity in kW-AC of applications for distributed generation customers by month for each month beginning in January 2012-present. Please separate the data by rate schedule and indicate the level of capacity that is for customers who are expected to be grandfathered onto retail rate net metering.


   i. Please provide the data underlying Chart 6 in excel format with formulas and links intact.

   ii. Please describe the methodology and assumptions employed to derive the forecast of solar distributed generation growth from 2019-2030.

   iii. Please specify the assumptions TEP made regarding rate design and export credit rate levels for distributed generation customers to develop the forecast in Chart 6.

RESPONSE: September 16, 2019

ONE OF THE FILES LISTED BELOW CONTAINS CONFIDENTIAL INFORMATION AND IS BEING PROVIDED PURSUANT TO THE TERMS OF THE PROTECTIVE AGREEMENT.

a.-d. TEP objects to this request as irrelevant and overbroad to the extent it requests information prior to the end of the previous rate case test year (June 2015). Without waiver of objection, please see attached file VOTE SOLAR 2.1 a-d – Confidential.xlsx, which contains information from July of 2015 to the present.
TU{SON ELECTRIC POWER COMPANY'S SUPPLEMENTAL RESPONSE (2.1)
TO VOTE SOLAR'S SECOND SET OF DATA REQUESTS
REGARDING THE 2019 TEP RATE CASE - DOCKET NO. E-01933A-19-0028
October 8, 2019

This data is not available by rate schedule and instead is differentiated by residential
and non-residential. TEP did not track kW-AC values for residential systems prior
to 2016. This Excel file is not identified by Bates numbers.

e.

i. See attached file Vote Solar 2.1.e.ii – Chart 6 data.xlsx. This Excel file is not identified by Bates numbers.

ii. As described in the Company's Preliminary IRP the Company uses an econometric
model to generate its DG capacity forecast. The DG capacity forecast uses an
ARIMAX model using the typical time series analysis while incorporating a trend.
That trend in the historical period is based off smoothed values of the actual
installed capacity. In the forecast period, the recent growth rate of installed capacity
is carried forward multiplied by an exponential decay function.

iii. As the response to VOTE SOLAR 2.1.e.ii illustrates, the Company does not
incorporate rate design or export credit rate levels in its DG forecast.

RESPONDENT:
Chris Lindsey and Justin Orkney (a.-d.) / Jeff Yockey and Greg Strong (e)

WITNESS:
Susan M. Gray

SUPPLEMENTAL RESPONSE: October 8, 2019

The Company has determined that the file VOTE SOLAR 2.1 a-d.xlsx is not confidential. In
making this determination, the Company still maintains the objections raised above in its initial
response. The Excel file is not identified by Bates number and has been moved to the public
folder in the Company’s data room.

RESPONDENT:
Regulatory Services

WITNESS:
Susan M. Gray

1 https://docket.images.azpc.gov/F000001561.pdf, p.23

Arizona Corporation Commission ("Commission")
Fortis Inc. ("Fortis")
Tucson Electric Power Company ("TEP" or the "Company")
UNS Energy Corporation ("UNS")

UniSource Energy Services ("UES")
UniSource Energy Development Company ("UED")
UNS Electric, Inc. ("UNS Electric")
UNS Gas, Inc. ("UNS Gas")
Vote Solar ("VS")