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BEFORE THE ARIZONA CORPORATION COMMISSION

DOUG LITTLE – Chairman
BOB STUMP
BOB BURNS
TOM FORESE
ANDY TOBIN

IN THE MATTER OF THE APPLICATION OF
UNS ELECTRIC, INC. 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 UNS ELECTRIC,
INC. DEVOTED TO ITS OPERATIONS
THROUGHOUT THE STATE OF ARIZONA
AND FOR RELATED APPROVALS.

Docket No. E-04204A-15-0142

**VOTE SOLAR'S INITIAL
POST-HEARING BRIEF**

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1 **INTRODUCTION**

2 UNS Electric (“UNSE” or “the Company”) has proposed several rate design changes
3 that would significantly increase net metering customers’ bills and lower the value of solar
4 distributed generation (“DG”). UNSE claims its proposals are necessary because net
5 metering customers cause numerous problems, such as inequitable cost shifts, declining
6 sales, and impacts to the grid. But the facts in this case show this is not true. Just 2% of
7 UNSE’s residential customers are net metering customers, and the evidence shows that
8 these customers are a negligible cause of each of the problems UNSE highlights. Instead,
9 other customers without solar DG cause the vast majority of these issues. In short, UNSE
10 does not have a “DG problem” that must be fixed in this rate case. Consequently, the
11 current net metering program and DG rate design should remain in place.

12 Even if UNSE had shown that its net metering customers are a significant cause of
13 these issues—which they are not—UNSE’s proposals are unlawful and flawed, and they
14 should be rejected. For new net metering customers, UNSE proposes to (1) reduce the
15 compensation for DG exports by nearly 50%, and (2) eliminate the ability to “bank” excess
16 generation to offset usage in future billing periods. This proposal eliminates net metering
17 and would violate the Commission’s rules. In addition, the proposal would unreasonably
18 compensate DG exports based on the price of utility-scale solar, despite the fact that the two
19 are different products operating in different markets. It would also cause substantial pricing
20 uncertainty for net metering customers by periodically changing the compensation rate.

21 In addition, UNSE proposes mandatory demand charges for all residential and small
22 commercial customers. This proposal is unprecedented, as no state-regulated electric utility
23 in the United States requires all residential and small commercial customers to pay a
24 demand charge. UNSE assures the Commission that once the Company has educated its
25 customers, they will fully understand and be able to effectively respond to this new demand
26 charge. But that is unlikely and highly uncertain, as evidenced by the numerous safeguards

1 UNSE and Staff propose. The facts show that imposing the demand charge would create
2 “winners” and “losers,” and net metering and other low-usage customers would
3 disproportionately be among the “losers.”

4 UNSE also proposes to increase monthly fixed charges and eliminate the residential
5 tiers of the current inclining block structure. These regressive rate design proposals should
6 be rejected because they would disincentive DG, energy efficiency, and other distributed
7 energy resources, and they would unduly harm low-income and low-usage customers.

8 If UNSE wishes to address its declining sales and cost recovery issues—which are
9 almost entirely caused by customers without solar—a minimum bill and/or voluntary time-
10 of-use rates would be better options than a demand charge. These rate designs would send
11 more actionable price signals to customers, and they would better address low-usage
12 seasonal customers and vacant homes.

13 For these reasons, Vote Solar recommends that the Commission reject UNSE’s
14 proposals and maintain the current net metering program and DG rate design. However, if
15 the Commission were to approve UNSE’s proposals, it is essential that it fully grandfather
16 existing net metering customers. These customers have invested substantial amounts of
17 money in their solar DG systems, and some have done so based on incentives provided by
18 UNSE. UNSE’s proposals would make their DG investments less economical, and they
19 would be unduly penalized if they are not fully grandfathered.

20 LEGAL FRAMEWORK

21 **I. The Commission Rules Give Net Metering Customers the Right to Receive** 22 **Retail Rate Compensation for DG Exports and to “Bank” Excess Energy.**

23 The foundational principle of net metering is that it gives customers the right to
24 offset the electricity they purchase from their utility on a one-to-one basis with the excess
25 electricity they generate from their DG systems and send to the grid. The Commission’s net
26 metering and renewable energy standard and tariff (“REST”) rules reflect this principle.

1 The net metering rules define net metering as providing customers the right to generate
2 excess electricity that “may be used to offset electric energy provided by the Electric Utility
3 to the [net metering customer] during the applicable billing period.”¹ Similarly, the REST
4 rules define net metering as “a system of metering electricity by which the Affected Utility
5 credits the customer at the full retail rate for each kilowatt-hour of electricity produced by [a
6 DG system].”² The Commission’s rules thus require utilities to compensate net metering
7 customers for their exported energy at retail rates.

8 The Commission’s rules also provide net metering customers the right to “bank”
9 their excess energy, by using excess energy they send to the grid in one billing period to
10 offset electricity purchases in future months. Specifically, the net metering rules state:

11 If the electricity generated by the Net Metering Customer exceeds the
12 electricity supplied by the Electric Utility in the billing period, the Customer
13 shall be credited during the next billing period for the excess kWh generated.
14 That is, the excess kWh during the billing period will be used to reduce the
15 kWh supplied and billed by the Electric Utility during the following billing
16 period.³

15 For example, if a net metering customer generates 100 kilowatt-hours (“kWh”) of excess
16 energy that they deliver to the utility in the current month, the customer can use this energy
17 to offset 100 kWh of subsequent electricity purchases in future months.

18 In addition, the Commission’s rules explicitly state that utilities cannot single out net
19 metering customers for punitive or discriminatory rate treatment. The net metering rules
20 plainly state: “Net Metering charges shall be assessed on a nondiscriminatory basis.”⁴

21 Similarly, the REST rules state that utilities do “not charge the [net metering customer] any
22 additional fees or charges or impose any equipment or other requirements unless the same is
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24

25 ¹ A.A.C. R14-2-2302(11) (emphasis added).

26 ² *Id.* R14-2-1801(M) (emphasis added).

³ *Id.* R14-2-2306(D) (parenthetical omitted).

⁴ *Id.* R14-2-2305.

1 imposed on customers in the same rate class that the [net metering customer] would qualify
2 for if [they] did not have generation equipment.”⁵

3 Finally, the net metering rules state that if a utility seeks to increase the charges paid
4 by net metering customers relative to similar customers without solar, the utility has the
5 burden of justifying the differential treatment with cost of service studies and benefit/cost
6 analyses. Specifically, the rules states:

7 Any proposed charge that would increase a Net Metering Customer’s costs
8 beyond those of other customers with similar load characteristics or customers
9 in the same rate class that the Net Metering Customer would qualify for if not
10 participating in Net Metering shall be filed by the Electric Utility with the
11 Commission for consideration and approval. The charges shall be fully
12 supported with cost of service studies and benefit/cost analyses. The Electric
13 Utility shall have the burden of proof on any proposed charge.⁶

12 **II. The REST Requires Utilities to Acquire Increasing Amounts of DG.**

13 The REST requires Arizona utilities to generate or otherwise obtain certain quantities
14 of electricity from renewable sources. Currently, utilities must acquire 6% renewable
15 energy; and the renewable requirement increases to 15% by 2025.⁷

16 The REST also contains a DG “carve-out,” which requires utilities to acquire certain
17 quantities of distributed renewable energy. This provision states that 30% of a utility’s
18 overall REST requirements must be met with distributed renewable energy.⁸ In addition,
19 one-half of the distributed renewable energy requirement must come from “residential
20 applications,” and the other half from “non-residential, non-utility applications.”⁹ The rule
21 defines “Distributed Renewable Energy Resources” as “technologies that are located at a
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24 ⁵ *Id.* R14-2-1801(M).

25 ⁶ *Id.* R14-2-2305 (emphasis added).

26 ⁷ *Id.* R14-2-1804(B).

⁸ *Id.* R14-2-1805(B).

⁹ *Id.* R14-2-1805(D).

1 customer's premises and that displace Conventional Energy Resources that would otherwise
2 be used to provide electricity to Arizona customers," and include solar, wind, and biomass.¹⁰

3 ARGUMENT

4 **I. DG is a Negligible Cause of Reduced Sales, Cost Shifts, and Grid Impacts in** 5 **UNSE's Territory.**

6 UNSE had 1,716 residential net metering customers as of December 2015.¹¹ These
7 1,716 net metering customers represent approximately 2% of UNSE's overall residential
8 customers. Despite this relatively small proportion of net metering customers, UNSE
9 claims it must dramatically overhaul its rate design because these customers cause a number
10 of cost recovery and grid impact issues.¹² The facts in this case, however, contradict
11 UNSE's claims. Contrary to UNSE's assertions, the evidence shows that net metering
12 customers are not a significant driver of the reduced sales, alleged cost shifts, and alleged
13 grid impacts the Company seeks to address. Instead, other customers and other factors are
14 responsible for the vast majority of UNSE's reduced sales and cost shifts. Moreover, there
15 is no evidence that UNSE is experiencing significant grid problems due to DG. In short,
16 there is no significant DG "problem" that UNSE needs to fix in this rate case. UNSE's
17 attempt to single out net metering customers for disparate rate treatment is unreasonable,
18 arbitrary, and discriminatory. Consequently, the current net metering program and DG rate
19 design should be left in place.

20 **A. DG caused just 6% of the decline in UNSE's retail sales.**

21 UNSE claims that its new rate design proposals are necessary because of a
22 significant decline in retail sales since the last case, equaling a 141,000 megawatt-hour
23

24 ¹⁰ *Id.* R14-2-1802(B).

25 ¹¹ Ex. Vote Solar-2 (UNSE Resp. to TASC 5.1).

26 ¹² *See, e.g.,* Application 3:21-5:9; David Hutchens Direct Test. 3:4-19, 6:14-7:9 (May 5, 2015) ("Hutchens Direct") (Ex. UNSE-3); Dallas Dukes Direct Test. 2:24-3:11 (May 5, 2015) ("Dukes Direct") (Ex. UNSE-28); Carmine Tilghman Direct Test. 3:20-6:23 (May 5, 2015) ("Tilghman Direct") (Ex. UNSE-25).

1 (“MWh”) reduction in sales.¹³ The Company suggests that DG and energy efficiency are
2 the primary drivers of this reduction in retail sales.¹⁴ However, Vote Solar witness Briana
3 Kobor’s analysis shows that DG was a minimal driver of the sales reduction.

4 As Ms. Kobor explains, reductions in the mining and industrial classes were
5 responsible for 75% of the decline in retail sales, driven by the closure of UNSE’s two
6 largest mining and industrial customers.¹⁵ Ms. Kobor further found that the slow pace of
7 economic recovery and energy efficiency were responsible for 19% of the reduction.¹⁶ Ms.
8 Kobor’s analysis showed that DG caused just 8,000 MWh of the overall 141,000 MWh
9 decline in retail sales.¹⁷ Accordingly, DG was responsible for a mere 6% of the decline in
10 UNSE’s retail sales. In contrast, other factors caused 94% of the sales decline. Notably,
11 UNSE has not disputed Ms. Kobor’s findings in its pre-filed testimony or at the hearing.

12 **B. DG caused just 3% of the decline in UNSE’s usage-per-customer.**

13 UNSE also claims that a new rate design is necessary because the Company is
14 experiencing declining usage-per-customer.¹⁸ Once again, UNSE points to DG and energy
15 efficiency as the drivers of this decline in usage.¹⁹ But DG is also a minimal driver of the
16 reduction in usage-per-customer.²⁰

17 Ms. Kobor’s analysis shows that UNSE’s residential usage-per-customer declined by
18 398 kWh per year between 2012 and 2014.²¹ Yet reductions attributable to DG amounted to
19 just 13 kWh per year for the average residential customer during that same time period.²²

21 ¹³ Hutchens Direct 5:16–17 (Ex. UNSE-3); Briana Kobor Direct Test. 9:5–20 (Dec. 9, 2015)
22 (“Kobor Direct”) (Ex. Vote Solar-6).

¹⁴ Hutchens Direct 13:1–2 (Ex. UNSE-3).

23 ¹⁵ Kobor Direct 10:4–7 (Ex. Vote Solar-6).

24 ¹⁶ *Id.* at 11:7–9.

¹⁷ *Id.* at 11:2–4.

¹⁸ Application 3:24; Hutchens Direct 11:9–11 (Ex. UNSE-3).

25 ¹⁹ Hutchens Direct 11:9–11 (Ex. UNSE-3).

26 ²⁰ Kobor Direct 12:1–11 (Ex. Vote Solar-6).

²¹ *Id.* at 12:5–7.

²² *Id.* at 12:7–9.

1 As a result, DG was responsible for less than 5% of the decline in UNSE's usage-per-
2 customer. Other factors were responsible for 97% of the decline in usage-per-customer.²³
3 UNSE has not disputed Ms. Kobar's findings in its pre-filed testimony or at the hearing.

4 **C. Net metering customers caused just 5% of the low-usage bills for 300**
5 **kWh or less.**

6 To illustrate the problem of recovering fixed costs from customers with little to no
7 volumetric usage, UNSE discusses low-usage bills for 300 kWh of usage or less.²⁴ UNSE
8 notes that net metering customers, seasonal customers, and vacant homes are responsible for
9 these low-usage bills.²⁵ However, in discovery the Company acknowledged that net
10 metering customers were responsible for just 5% of the low-usage bills for 300 kWh or
11 less.²⁶ Accordingly, bills for customers without solar accounted for 95% of the low-usage
12 bills that the Company claims are problematic.

13 **D. Net metering bills accounted for just 2% of the bills causing a cost shift**
14 **according to UNSE.**

15 UNSE claims net metering customers do not pay their fair share of the Company's
16 fixed costs under current rates, which causes an inequitable cost shift to customers without
17 solar.²⁷ UNSE, however, has not quantified any cost shift resulting from net metering. The
18 Company conducted a cost of service study for the rate case, which included net metering
19 customers within the overall residential and small commercial classes. But UNSE did not
20 conduct a cost of service study that analyzed the relative cost to serve net metering
21 customers.²⁸ In fact, UNSE does not even have the data with which to conduct such a
22

23 ²³ *Id.* at 12:9-11.

24 ²⁴ Dukes Direct 12:8-17 (Ex. UNSE-28).

25 ²⁵ *Id.* at 12:12-13.

26 ²⁶ Kobar Direct 13:5-8 (Ex. Vote Solar-6).

27 ²⁷ *See, e.g.*, Hutchens Direct 11:14-26 (Ex. UNSE-3); Dukes Direct 3:1-9 (Ex. UNSE-28);
28 Tilghman Direct 4:1-3 (Ex. UNSE-25).

28 ²⁸ Tr. 2548:23-2549:17 (Jones Test.).

1 study.²⁹ Without such a study, UNSE has not shown that the cost to serve net metering
2 customers differs from the cost to serve other residential and small commercial customers,
3 or the magnitude of a cost shift if one exists.

4 In any event, cost shifts are not unique to solar DG or net metering customers.
5 Rather, cost shifts are an inherent and unavoidable aspect of rate design that occurs across
6 all customer types. Confirming this fact, UNSE acknowledges that under the current rate
7 design, approximately two-thirds of residential bills do not fully recovery the Company's
8 fixed costs.³⁰ While UNSE attempts to narrowly focus on the alleged cost shift attributable
9 to net metering customers, Ms. Kobor conducted a more comprehensive analysis that found
10 that net metering customers are a minimal driver of cost shifts within the residential class.³¹

11 As Ms. Kobor explains, according to UNSE's rationale, residential customers with
12 less than 1,000 kWh consumption per month do not pay their fair share of fixed costs and
13 thus cause a cost shift.³² However, Ms. Kobor's analysis shows that net metering customer
14 bills accounted for just 2% of the bills causing a cost shift due to usage of less than 1,000
15 kWh.³³ Thus, other customer bills were responsible for 98% of the cost shift according to
16 UNSE's rationale. Once again, UNSE has not disputed Ms. Kobor's findings in its pre-filed
17 testimony or at the hearing.

18 **E. UNSE has not quantified any grid impacts or related expenses**
19 **attributable to DG.**

20 In addition to these declining sales and cost recovery issues, UNSE claims that DG
21 causes harmful grid impacts.³⁴ But there is very little evidence that the actual DG on
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24 ²⁹ Tr. 2116:7-19 (Kobor Test.).

25 ³⁰ Dukes Direct 13:6-27 (Ex. UNSE-28).

26 ³¹ Kobor Direct 15:9-13 (Ex. Vote Solar-6).

³² *Id.* at 14:10-15.

³³ *Id.* at 15:11-13.

³⁴ Tilghman Direct 4:12-6:23 (Ex. UNSE-25).

1 UNSE's system cause any noticeable grid impacts. Moreover, UNSE has not shown that it
2 has incurred any additional expense to address grid impacts from DG on its system.

3 First, UNSE claims DG is an intermittent resource that requires the Company to
4 provide back-up energy and ancillary services.³⁵ But as Ms. Kobor explained, while a
5 single DG system may produce electricity intermittently, numerous DG systems spread
6 across a utility's territory are collectively less intermittent due to geographic diversity.³⁶
7 UNSE witness Carmine Tilghman disagrees with this conclusion.³⁷ Yet Mr. Tilghman has
8 not provided any empirical data that undercuts the numerous studies showing the
9 geographic diversity of numerous DG systems results in a smoother load profile than an
10 individual DG system.³⁸ Moreover, Ms. Kobor explained that the issue of intermittency and
11 unpredictable load profiles is not unique to DG. For example, customers with a central air
12 conditioner ("AC") can have large spikes in demand relative to the output of the typical DG
13 system.³⁹ In addition, while UNSE claims that DG's intermittency causes the Company to
14 provide additional ancillary services, it cannot point to a single expense that it has incurred
15 to provide these additional services.⁴⁰ There is simply no evidence that the intermittency of
16 DG on UNSE's system causes significant grid impacts or requires additional expenditures.

17 Second, UNSE claims its inability to monitor and control DG systems forces the
18 Company to "driv[e] blind" regarding DG.⁴¹ This overstates the challenge of monitoring
19 and forecasting DG on UNSE's system. UNSE possesses real-time production data for DG
20 systems larger than 300 kW-ac.⁴² UNSE uses this real-time production data, along with
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22 ³⁵ *Id.* at 4:18-5:13.

23 ³⁶ Kobor Direct 18:1-14 (Ex. Vote Solar-6).

24 ³⁷ Carmine Tilghman Rebuttal Test. 14:4-18 (Jan. 19, 2016) ("Tilghman Rebuttal") (Ex. UNSE-26).

25 ³⁸ Tr. 1247:20-1249:9 (Tilghman Test.).

26 ³⁹ Kobor Direct 19:1-20:5 (Ex. Vote Solar-6).

⁴⁰ Tr. 1246:4-1247:19 (Tilghman Test.).

⁴¹ Tilghman Direct 5:15-23 (Ex. UNSE-25).

⁴² Kobor Direct 20:17-20 (Ex. Vote Solar-6); Tr. 1249:17-21 (Tilghman Test.).

1 other inputs, to forecast the hourly and daily production from smaller DG systems.⁴³ Thus,
2 while the Company claims it is “driving blind” regarding DG, in reality it has real-time DG
3 production data and employs sophisticated forecasting models to predict DG generation.

4 Third, UNSE claims DG sends excess energy flows back to the grid, which results in
5 increased operations and maintenance costs and equipment wear and tear.⁴⁴ But UNSE has
6 documented just a handful of instances of reverse power flows on its system.⁴⁵ And
7 notably, UNSE cannot document a single instance of the Company incurring additional
8 operations and maintenance costs due to excess energy flows from DG.⁴⁶

9 In sum, UNSE’s claims that DG causes harmful grid impacts are based on nothing
10 more than general theories that are not supported by any facts specific to UNSE’s system.
11 There is no evidence that the approximately 1,800 residential DG systems connected to
12 UNSE’s system actually cause significant grid impacts or require any additional expenses.

13 **F. The Commission should maintain the current net metering program and**
14 **DG rate design.**

15 Ultimately, UNSE does not dispute Ms. Kobor’s findings that DG is a negligible
16 driver of reduced sales, cost shifts, and grid impacts. Instead, UNSE claims that these *de*
17 *minimis* impacts will increase and become significant in the future, so the Commission
18 should take action now. However, UNSE makes no attempt to analyze when in the future
19 DG on its system would cause these allegedly significant impacts.⁴⁷ The Company’s
20 speculation regarding future DG impacts is unwarranted. Given the relatively low levels of
21 DG penetration and the negligible DG impacts discussed above, DG penetration could
22 increase substantially in UNSE’s territory before the impacts became significant. Singling
23

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25 ⁴³ Tr. 1249:22–1250:10 (Tilghman Test.).
⁴⁴ Tilghman Direct 5:25–6:23 (Ex. UNSE-25).
⁴⁵ Kobor Direct 22:3–18 (Ex. Vote Solar-6).
26 ⁴⁶ Tr. 1252:4–1253:10 (Tilghman Test.).
⁴⁷ See Tilghman Rebuttal 3:23–4:8 (Ex. UNSE-26).

1 out a group of customers for differential and punitive rate design based on speculation that
2 they might cause significant impacts at a later time is unreasonable and discriminatory.

3 Several parties to this proceeding appear to assume that the status quo regarding net
4 metering and DG is untenable because of the alleged cost shift. According to this line of
5 thinking, the only reasonable course of action here is to change the current net metering
6 program and DG rate design. In fact, UNSE implies that Vote Solar and other parties have
7 acted in bad faith by not proposing their own alternatives to net metering.⁴⁸ But the facts in
8 this case show that the current net metering program is not problematic and it is not creating
9 untenable cost shifts. As detailed above, other customers account for 98% of the bills
10 causing a cost shift in UNSE's service territory. Moreover, for every problem regarding
11 reduced sales and cost recovery issues that the Company highlights, other customers
12 account for 94% to 97% of the problem in each instance. As these numbers demonstrate,
13 there simply is not a DG problem in UNSE's service territory, and thus there is no need to
14 change the current DG rate design and net metering program.

15 **II. The Commission Should Not Approve the Proposed Modifications to the Net**
16 **Metering Tariff.**

17 Net metering customers in UNSE's territory currently receive retail rate
18 compensation for the exported energy they generate and send to the grid. Net metering
19 customers can also "bank" their excess generation to offset electricity purchases from the
20 utility in future billing periods. These two principles are the foundation of net metering and
21 are codified in the Commission's net metering and REST rules.⁴⁹ To address the alleged
22 cost recovery issues caused by DG, UNSE has proposed to eliminate net metering by doing
23 away with both of these important principles. Even if UNSE had shown that DG is a
24 significant contributor to cost shifts in its service territory—which it has not done—the

25 ⁴⁸ See, e.g., David Hutchens Rebuttal Test. 4:9–12 (Jan. 19, 2016) ("Hutchens Rebuttal") (Ex.
26 UNSE-4); Dallas Dukes Rebuttal Test. 20:12–21:4 (Jan. 19, 2016) ("Dukes Rebuttal") (Ex. UNSE-
29).

1 Company's proposal would violate the Commission's net metering and REST rules. In
2 addition, the proposal is severely flawed as a policy matter. As a result, the Commission
3 should not approve UNSE's proposed modifications to the net metering tariff.

4 **A. UNSE's net metering proposal would violate the Commission's net**
5 **metering and REST rules.**

6 UNSE's net metering proposal would violate the Commission's net metering and
7 REST rules in two fundamental ways. First, the rules give net metering customers the right
8 to offset the electricity they purchase from UNSE with the excess electricity they generate
9 and send to the grid, and to receive full retail rate compensation for those exports.
10 Specifically, the REST rules state that net metering requires utilities to compensate
11 customers "at the full retail rate for each [kWh] of electricity" produced by the DG system.⁵⁰
12 Similarly, the net metering rules give customers the ability to generate excess electricity that
13 "may be used to offset electric energy provided by" the utility.⁵¹ UNSE's proposal would
14 violate these rules by compensating net metering customers for exported energy at a much
15 lower rate than the full retail rate. Initially, the Renewable Credit Rate would be
16 5.84¢/kWh, which is nearly 50% less than the retail rate.⁵² UNSE has made no attempt to
17 square its proposal to eliminate retail rate compensation for DG exports with the
18 Commission's rules. Because UNSE's proposal would clearly violate the requirement that
19 DG exports be compensated at retail rates, it should be rejected.

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22 ⁴⁹ See *supra* pp. 2-4.

23 ⁵⁰ A.A.C. R14-2-1801(M).

24 ⁵¹ *Id.* R14-2-2302(11). Staff has explained elsewhere that a net metering customer's right to
25 offset electricity purchases with DG exports on a one-to-one basis is the crux of net metering.
26 Specifically, when evaluating a proposed change to Arizona Public Service Company's ("APS")
net metering program, Staff concluded: "The Bill Credit Option is not equivalent to a [net
metering] arrangement because it denies the residential customer the right to offset energy
purchases from the utility with self-generation on a one-to-one basis." Decision No. 74202 at
10:15-17 (discussing Staff's analysis of APS's proposed alternatives) (emphases added).

⁵² Tilghman Direct 7:12-17 (Ex. UNSE-25).

1 Second, the rules allow net metering customers to bank their excess energy to offset
2 electricity purchases from UNSE in future billing periods. The net metering rules state that
3 if a customer generates more electricity than they purchase from the utility in a billing
4 period, the customer “shall be credited during the next billing period for the excess kWh
5 generated. That is, the excess kWh during the billing period will be used to reduce the kWh
6 supplied and billed by the Electric Utility during the following billing period.”⁵³ UNSE’s
7 proposal would eliminate this banking, as net metering customers would no longer be able
8 to carry-over excess energy credits to future months. Instead, the Company would credit net
9 metering customers for energy exports on their monthly bill, based on the Renewable Credit
10 Rate.⁵⁴ This would eliminate the “net” in net metering, as customers would no longer be
11 able to net their electricity (kWh) purchases and exports, and they instead would receive a
12 credit based on the value UNSE assigns to exports. Accordingly, the proposal would
13 eliminate a foundational principle of net metering in violation of the Commission’s rules.

14 The Company has essentially conceded that its proposal to eliminate banking would
15 violate the Commission’s rules by requesting a “partial waiver” of the rules.⁵⁵ The proposed
16 “partial waiver” of the Commission’s rules is improper for several reasons. While the
17 REST rules and several other articles in Title 14 of the Arizona Administrative Code
18 contain waiver provisions, the net metering rules do not contain a waiver provision.⁵⁶ If the
19 Commission intended to allow utilities to seek waivers from its net metering rules it would
20 have said so, as it did elsewhere.⁵⁷

22 ⁵³ A.A.C. R14-2-2306(D) (parenthetical omitted).

23 ⁵⁴ Tilghman Direct 7:5–7, 8:13–15 (Ex. UNSE-25).

24 ⁵⁵ *Id.* at 7:3–7.

25 ⁵⁶ *See, e.g.*, A.A.C. R14-2-1816 (REST rules waiver provision); *id.* R14-2-806 (waiver
26 provision for article addressing public utility holding companies and affiliated interests); *id.* R14-2-
2419 (same for electric energy efficiency standards); *id.* R14-2-2520 (same for gas utility energy
efficiency standards).

⁵⁷ *See, e.g., Ariz. Dep’t of Revenue v. Gen. Motors Acceptance Corp.*, 937 P.2d 363, 367 (Ariz.
Ct. App. 1996) (“Where the legislature has used a particular term in one place in a statute and has

1 In addition, even if a waiver of the net metering rules could be proper in the absence
2 of an express waiver provision, a waiver would be inappropriate here. Whether good cause
3 exists for a waiver of the Commission's rules is a "case-by-case determination that 'depends
4 on the particular circumstances . . . and considerations of practical convenience.'"⁵⁸ Good
5 cause for a waiver does not exist here. UNSE's request for a "partial waiver" obfuscates the
6 fact that its proposal would actually eliminate net metering by discarding one of the
7 fundamental principles of net metering. Thus, rather than a "partial waiver," UNSE is in
8 fact requesting an outright waiver of net metering. The Commission should not grant a
9 "partial waiver" that would have the effect of broadly and indefinitely nullifying a rule.
10 Moreover, to the extent that UNSE seeks a "partial waiver" based on claims that net
11 metering creates cost shifts and declining sales, it has not provided supporting evidence. To
12 the contrary, the facts here show that net metering is a negligible cause of these issues.

13 In sum, while some parties to this case oppose net metering, the Commission's rules
14 plainly give UNSE's customers the right to net meter. UNSE should not be allowed to
15 simply disregard the rules and regulations that it disagrees with by requesting waivers from
16 such rules, and its attempt to frame its proposal to undo net metering as a "partial waiver" of
17 the rules is misleading. Accordingly, the Commission should not nullify its existing rules
18 by granting a "partial waiver" in this case. It also should not otherwise amend or revisit its
19 statewide net metering and REST rules in the context of this UNSE-specific rate case.

20 **B. UNSE's proposed Renewable Credit Rate is significantly flawed.**

21 Even if UNSE's net metering proposal complied with the Commission's rules—
22 which it does not—the proposal is significantly flawed and should be rejected.
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25 excluded it in another place in the same statute, a court should not read that term into the provision
from which the legislature has chosen to omit it.").

26 ⁵⁸ *Sierra Club-Grand Canyon Chapter v. Ariz. Corp. Comm'n*, 354 P.3d 1127, 1133 (Ariz. Ct. App. 2015) (quoting *City of Phoenix v. Peterson*, 462 P.2d 829, 834 (Ariz. Ct. App. 1969)).

1 1. *Utility-scale solar prices are not an appropriate proxy for*
2 *compensating DG exports.*

3 a. *Solar DG and utility-scale solar are not fungible resources.*

4 Rather than compensating net metering customers for their exported energy at retail
5 rates, UNSE proposes to compensate new net metering customers at the Renewable Credit
6 Rate. UNSE would set the Renewable Credit Rate based on the price UNSE paid for the
7 most recent utility-scale solar system connected to the UNSE or Tucson Electric Power
8 (“TEP”) distribution system.⁵⁹ UNSE claims compensating net metering customers for DG
9 exports based on utility-scale solar prices is more appropriate than retail rate compensation,
10 because utility-scale solar prices better reflect “the cost of energy produced by DG.”⁶⁰

11 UNSE’s attempt to conflate DG compensation with utility-scale solar prices is
12 flawed because solar DG and utility-scale solar are not identical and fungible resources.
13 Solar DG systems that customers install on their rooftops are different than large,
14 centralized utility-scale solar projects. While utility-scale solar projects may often be more
15 cost-effective due to economies of scale, the smaller and decentralized nature of solar DG
16 provides unique benefits that a utility-scale solar project does not. These benefits include:
17 (1) higher generation capacity value due to the geographic diversity of DG systems spread
18 across UNSE’s territory, (2) potentially greater avoided distribution costs and grid services
19 from DG, and (3) greater local employment benefits.⁶¹ As discussed above, Mr. Tilghman
20 has argued that DG does not provide higher generation capacity value due to geographic
21 diversity.⁶² But his opinion is not supported by any empirical studies, and it is contrary to
22 numerous studies showing the geographic diversity of multiple DG systems results in a
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25 ⁵⁹ Tilghman Direct 7:14–17 (Ex. UNSE-25); Tilghman Rebuttal 7:12–15 (Ex. UNSE-26).

26 ⁶⁰ Tilghman Rebuttal 7:4–6 (Ex. UNSE-26).

⁶¹ Kobor Direct 30:9–19 (Ex. Vote Solar-6).

⁶² See *supra* p. 9.

1 smoother load profile than an individual DG system.⁶³ In addition, Mr. Tilghman concedes
2 that DG provides additional avoided losses when compared to utility-scale solar, which
3 must travel greater distances to serve load.⁶⁴

4 Tellingly, the Commission and several other states have recognized that solar DG
5 and utility-scale solar are not interchangeable resources. The REST includes a DG “carve-
6 out,” which requires utilities to meet 30% of the overall renewables requirements with DG
7 solar or other distributed resources.⁶⁵ The renewable energy standards of several other
8 states contain similar DG carve-outs.⁶⁶ If solar DG and utility-scale solar were truly
9 fungible resources as UNSE suggests, there would be no reason for Arizona and other states
10 to specifically require minimum levels of DG. The fact that multiple states have enacted
11 DG carve-outs is strong evidence that all solar resources are not identical, and solar DG in
12 particular does in fact provide unique benefits.

13 Ideally, UNSE’s resource portfolio would consist of a significant amount of all forms
14 of solar, including DG, utility-scale solar, and community solar. UNSE attempts to conflate
15 these various forms of solar together by using utility-scale solar prices as a proxy for
16 determining DG compensation. This would undercut DG by compensating smaller DG
17 systems at an unreasonably low rate based on the costs of a much larger and centralized
18 solar facility. But solar DG is not interchangeable with utility-scale solar (or utility-scale
19 generation more broadly)—just as a local “mom-and-pop” restaurant is not identical to a
20 chain restaurant, and a local brewery’s beer is not the same as a Bud Light. Because solar
21 DG and utility-scale solar are not fungible resources and DG provides unique benefits, the
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23 ⁶³ Tr. 1247:20–1249:9 (Tilghman Test.).

24 ⁶⁴ Tilghman Rebuttal 10:25–11:1 (Ex. UNSE-26).

25 ⁶⁵ A.A.C. R14-2-1805(B).

26 ⁶⁶ See, e.g., Colo. Rev. Stat. § 40-2-124(1)(c)(I)(E), (1)(c)(II)(A) (3% DG carve out by 2020, with half of that requirement from retail DG); 20 Ill. Comp. Stat. 3855/1-56(b) (1% DG carve out, with half of that requirement from systems smaller than 25 kW); Minn. Stat. § 216B.1691 subdiv. 2f(a) (1.5% solar carve out, with 10% of that requirement from DG systems smaller than 20 kW); N.M. Code R. § 17.9.572.7(G) (3% DG carve out).

1 price UNSE pays for large, centralized utility-scale solar should not set the price UNSE
2 pays net metering customers for DG exports.

3 *b. The Renewable Credit Rate proposal draws a false comparison*
4 *between distributed solar and utility-scale solar.*

5 UNSE and other parties also claim that compensating net metering customers at the
6 Renewable Credit Rate is reasonable because the price of utility-scale solar reflects the
7 market price of solar.⁶⁷ As APS witness Ashley Brown states, the Renewable Credit Rate
8 would use the “last arms-length transaction” to purchase utility-scale solar, and thus “not
9 lock in a higher than market standard offer for solar DG.”⁶⁸ In addition, numerous parties
10 attempt to frame the issue by asking why customers should pay more for distributed solar
11 than utility-scale solar.⁶⁹ These arguments falsely equate two distinct resources. They also
12 inappropriately conflate the value of DG from the perspective of the utility with the value of
13 DG from the perspective of the non-participating ratepayer.

14 Contrary to the assumptions underlying the Renewable Credit Rate, there is no
15 singular, theoretically pure market for solar power that net metering customers and utility-
16 scale solar developers participate in alike. The reality is that net metering customers and
17 utility-scale solar developers operate in very different markets. For example, utility-scale
18 solar developers can strategically choose where to develop their projects to maximize their
19 profits. Utility-scale developers can also sell the electricity they generate to numerous
20 buyers by bidding into a number of utility requests for proposals.⁷⁰

21 The situation is very different for customers who install solar panels on their roof.
22 Net metering customers cannot strategically site their DG system as utility-scale developers
23 can—the DG is necessarily located on the customer’s premises under the Commission’s

24 ⁶⁷ See, e.g., Tilghman Rebuttal 9:1–5 (Ex. UNSE-26).

25 ⁶⁸ Ashley Brown Surrebuttal Test. 35:13–16 (February 23, 2016) (“Brown Surrebuttal”) (Ex.
26 APS-1).

⁶⁹ See, e.g., Tr. 2144:1–5 (Kobor Test.).

⁷⁰ Tr. 2121:18–2123:5 (Kobor Test.).

1 rules.⁷¹ Moreover, there is no competitive market that net metering customers participate in.
2 The only possible buyer of a net metering customer's excess electricity is UNSE. Net
3 metering customers cannot enter into a contract with another individual or entity to purchase
4 their excess electricity. The lack of a competitive market for net metering customers' DG
5 exports is illustrated by the fact that UNSE proposes to adjust the rate it pays net metering
6 customers every year, and to do so in a manner that would be difficult for customers to
7 accurately predict. Utility-scale solar developers are not forced to accept such uncertain and
8 variable prices for the electricity they generate. Yet net metering customers would have no
9 choice but to be subject to this highly variable pricing regime under UNSE's proposal.

10 In addition, net metering customers and utility-scale solar developers are not
11 similarly-situated participants in the market for solar power. UNSE customers who install
12 rooftop solar likely do so for numerous reasons, such as reducing their electricity bills or
13 "greening" their electricity use.⁷² But these customers almost certainly do not install solar
14 with the primary aim of earning a profit in the electricity market. In fact, the Commission
15 rules limit net metering to systems "intended primarily to provide part or all of the
16 [customer's] requirements," and they must be sized to provide no more than 125% of the
17 customer's total load.⁷³ By design, a net metering customer participates in the electricity
18 market only incidentally, which stands in stark contrast to a utility-scale solar developer.

19 Moreover, comparing utility-scale pricing with distributed-scale pricing from the
20 perspective of the utility ignores the fact that while utility-scale contracts may be cheaper,
21 no one is offering the non-participating ratepayer access to utility-scale solar at 5.8¢/kWh.
22 The only product available to the non-participating ratepayer is delivered energy available at
23 the full retail rate. These customers are indifferent to, and unaware of, whether the electrons
24 they are consuming come from their neighbor's DG system or from a distant power plant.

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26 ⁷¹ A.A.C. R14-2-2302(13)(a).

⁷² See Brown Surrebuttal 9:21-24 (Ex. APS-1).

1 For these reasons, UNSE should not set the price of DG exports based on the market price
2 of utility-scale solar.

3 2. *The Renewable Credit Rate would be highly variable.*

4 An additional flaw in the proposed Renewable Credit Rate is that it would be highly
5 variable, which would make it difficult for new net metering customers to accurately predict
6 the future compensation rate for DG exports. Initially, UNSE proposed to update the
7 Renewable Credit Rate annually, based on the most recent utility-scale renewable purchase
8 at that time.⁷⁴ In rebuttal, the Company indicated that while it still proposes to reset the rate
9 annually, it is willing to discuss alternatives to adjusting the credit every year.⁷⁵ If the
10 Commission approves the Renewable Credit Rate despite its illegality and many flaws, the
11 credit in effect when a new net metering customer submits an interconnection application
12 should be locked in for a period of twenty years for that customer.

13 In addition, the customer should have the option to move to a new Renewable Credit
14 Rate that may be implemented in the future and to lock in that rate for twenty years. This
15 would be consistent with UNSE's proposal for Community Solar customers.⁷⁶ Community
16 Solar customers can lock in their rate for 20 years, and UNSE has proposed that these
17 customers should be able to terminate their contracts and sign-up again to take advantage of
18 the more favorable rate UNSE requested in this case.⁷⁷

19 Even if UNSE updates the Renewable Credit Rate less frequently than every year, if
20 the rate is not locked in for the life of the DG system it would still be highly variable
21 because it would be based on the single most recent utility-scale solar purchase by UNSE.
22 For example, the initial rate would be set at 5.84¢/kWh because that reflects the price UNSE
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24 ⁷³ A.A.C. R14-2-2302(13)(b), (c).

25 ⁷⁴ Tilghman Direct 8:5-9 (Ex. UNSE-25).

26 ⁷⁵ Tilghman Rebuttal 15:16-17 (Ex. UNSE-26).

⁷⁶ Craig Jones Direct Test. 51:4-8 (May 5, 2015) ("Jones Direct") (Ex. UNSE-31).

⁷⁷ Jones Direct at 51:13-17.

1 paid for the most recent utility-scale PPA at the time of its application.⁷⁸ But if UNSE used
2 a different utility-scale solar purchase from 2013 to set the rate, the credit would be
3 10.87¢/kWh.⁷⁹ A Renewable Credit Rate that could vary so significantly and unpredictably
4 would expose net metering customers to undue pricing uncertainty and volatility.

5 3. *UNSE has not analyzed the value of DG exports.*

6 While UNSE and other parties claim that net metering overcompensates customers
7 for their energy exports, UNSE has conducted no analysis of the value of energy exports
8 from net metering customers.⁸⁰ Consequently, UNSE does not know whether the current
9 retail rate does in fact overcompensate net metering customers, or whether the Renewable
10 Credit Rate would more accurately compensate customers for DG exports.

11 Solar DG provides numerous benefits, such as (1) avoided energy benefits, (2)
12 system losses, (3) generation capacity, (4) transmission and distribution capacity, (5) grid
13 support services, (6) financial services, (7) security services, (8) environmental services, and
14 (9) social services.⁸¹ UNSE and other parties either ignore these benefits, or assume they
15 provided zero value.⁸² UNSE thus attempts to compensate net metering customers based
16 only on the estimated cost to produce utility-scale solar, which is an entirely different
17 product than DG. Instead, the compensation for DG exports should reflect the value (also
18 defined as the long-term avoided cost) that energy provides to other ratepayers who
19 consume it, which UNSE effectively ignores. As a result, UNSE's claim that net metering
20 overcompensates DG exports is arbitrary because it failed to analyze a crucial factor for
21 determining appropriate compensation.

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24 ⁷⁸ Tr. 1277:7-13 (Tilghman Test.).

25 ⁷⁹ *Id.* at 1277:18-1278:25; Kobor Direct 31:11-14 (Ex. Vote Solar-6).

26 ⁸⁰ *See, e.g.*, Tilghman Rebuttal 7:4-10 (Ex. UNSE-26); Brown Surrebuttal 22:4-22 (Ex. APS-1).

⁸¹ *See, e.g.*, Kobor Direct 27:16-28:13 (Ex. Vote Solar-6).

⁸² *See, e.g.*, Brown Surrebuttal 36:5-9 (Ex. APS-1); Tr. 1445:16-1447:7 (Overcast Test.).

1 Had UNSE analyzed the value of DG exports, it may well have shown that retail rate
2 compensation for DG exports appropriately compensates DG, or even undercompensates
3 DG. Numerous state governments have recently conducted similar analyses, and the studies
4 show that DG's net benefits often exceed retail rates.⁸³ Moreover, The Alliance for Solar
5 Choice ("TASC") witness Mark Fulmer analyzed the value of solar in UNSE's territory and
6 found that the levelized long-term avoided costs related to DG are 10–14¢kWh.⁸⁴

7 One of UNSE's central premises for the Renewable Credit Rate is that it more
8 appropriately compensates net metering customers for DG exports than the full retail rate.
9 This premise, however, is unsupported by the record and arbitrarily ignores long-term
10 avoided costs related to DG exports. Accordingly, the Renewable Credit Rate should be
11 rejected and full retail rate compensation should be maintained.

12 4. *It would be premature to reduce compensation for DG exports before*
13 *the Commission issues guidance in the Value of Solar docket.*

14 The Commission is currently undertaking a "Value of Solar" proceeding to examine
15 the benefits and costs of solar DG (Docket No. E-00000J-14-0023). In that proceeding,
16 Chairman Little has requested that the parties discuss a methodology for valuing solar that
17 considers many of the DG benefits discussed above. Specifically, Chairman Little lists the
18 following seven categories of costs and benefits to be discussed: (1) utility distributed solar
19 costs, (2) energy generation savings, (3) generation capacity savings, (4) transmission
20 capacity savings, (5) distribution capacity savings, (6) environmental benefits, and (7)
21 economic development benefits.⁸⁵ While it is unclear at this time what the eventual
22 outcome of the Value of Solar proceeding will be, it is likely that the Commission will
23 provide some form of guidance to UNSE and other utilities on how to value solar DG.

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25 ⁸³ Kobor Direct 28:14–29:9 (Ex. Vote Solar-6).

⁸⁴ Mark Fulmer Surrebuttal Test. 33:20 – 34:10 (Feb. 23, 2016) (Ex. TASC-21).

26 ⁸⁵ Letter from Doug Little, Comm'r, Ariz. Corp. Comm'n, to Comm'rs and Interested Parties
(Dec. 22, 2015) (Docket No. E-00000J-14-0023).

1 Given this pending proceeding, it would be premature for UNSE to eliminate net
2 metering and reduce compensation for DG exports at this time. If UNSE eliminates net
3 metering in this rate case and its actions conflict with the Commission's decision in the
4 Value of Solar proceeding, net metering customers may have to undergo yet another
5 significant rate design change soon after the conclusion of this rate case. Rather than
6 subject net metering customers to multiple rounds of substantial rate design changes, the
7 Commission should leave the current net metering program in place in this rate case. Doing
8 so would allow UNSE to potentially revisit the issue in its next rate case, after the
9 Commission has offered further guidance on the issue.

10 **C. UNSE's claims that net metering customers receive a subsidy are**
11 **arbitrarily one-sided and based on unreasonable assumptions.**

12 UNSE witness Dr. Overcast and other parties claim that under current rates, net
13 metering customers receive a subsidy from customers without solar because net metering
14 customers do not fully pay UNSE for the suite of services the Company provides.⁸⁶ But
15 even if this was true, these claims present just one half of the overall picture. As discussed
16 above, net metering customers also provide a suite of values and benefits to UNSE when
17 they export excess DG to the grid. Thus, UNSE and customers without solar would receive
18 a subsidy if they do not fully pay net metering customers for the range of benefits DG
19 provides. Accordingly, in order to look at the entire picture related to any net metering-
20 related subsidies, it is necessary to determine the value of DG exports and how that value
21 compares to the compensation net metering customers receive for exports. The parties who
22 claim that net metering customers receive a subsidy have not conducted such an analysis.
23 Their conclusions are thus arbitrarily one-sided and should be given no weight.

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26 ⁸⁶ See, e.g., Edwin Overcast Rebuttal Test. 8:3-8 (Jan. 19, 2016) ("Overcast Rebuttal") (Ex. UNSE-34); Brown Surrebuttal 5:11-14 (Ex. APS-1).

1 Specifically, Dr. Overcast claims that the “total subsidy from the Delivery Services
2 rate and the Base Power is over \$91 per kW.”⁸⁷ This conclusion is flawed for numerous
3 reasons. First, Dr. Overcast’s conclusion reflects the one-sided analysis discussed above
4 because he effectively ignores the many benefits provided by DG. For multiple categories
5 of benefits—generation capacity savings, transmission capacity savings, distribution
6 capacity savings, and economic development benefits—Dr. Overcast assumed that the value
7 provided by DG is zero.⁸⁸ Dr. Overcast thus claims that net metering customers receive a
8 subsidy, while simply ignoring most of the benefits that net metering customers provide to
9 other customers and to UNSE. This alone invalidates his conclusion.

10 Second, Dr. Overcast bases his analysis on production data from the Rio Rico utility-
11 scale solar facility, rather than production data from actual net metering customers.⁸⁹ While
12 the Rio Rico production data may provide helpful information on generation from DG
13 systems, it does not provide important data on the timing and seasonality of net metering
14 customers’ DG exports, or system deliveries to these customers.⁹⁰ This information is
15 necessary to understand how net metering customers impact UNSE’s costs. Without this
16 information, Dr. Overcast’s looked at just one piece of a more complicated picture.⁹¹

17 Third, Dr. Overcast claims that DG exports typically occur at times when the
18 avoided energy cost is less than the marginal cost of energy used by net metering
19 customers.⁹² This is incorrect. As Ms. Kobor explains, the work papers underlying Exhibit
20 HEO-2, which Dr. Overcast cites for this point, do not estimate the temporal relationship
21 between net metering customers’ exports and usage.⁹³ There is thus no basis for Dr.
22 Overcast’s claims. In addition, UNSE’s own data contradicts Dr. Overcast’s conclusion.

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24 ⁸⁷ Overcast Rebuttal 19:13–14 (Ex. UNSE-34).

⁸⁸ Tr. 1445:16–1447:7 (Overcast Test.).

25 ⁸⁹ Tr. 1442:6–1443:15 (Overcast Test.).

⁹⁰ Kobor Surrebuttal Test. 14:19–22 (Feb. 23, 2016) (“Kobor Surrebuttal”) (Ex. Vote Solar-7).

26 ⁹¹ *Id.*

⁹² Overcast Rebuttal 13:9–14 (Ex. UNSE-34).

1 As Ms. Kobor demonstrates, UNSE's data shows the marginal cost of energy is higher when
2 net metering customers export excess generation to the grid and lower when net metering
3 customers consume energy from the grid.⁹⁴ This is the opposite of Dr. Overcast's
4 conclusion, and it is an important short-term benefit provided by DG that he ignored.

5 In addition to Dr. Overcast's claim that net metering customers receive a \$91 per kW
6 subsidy, he also concludes that net metering customers receive an "annual delivery subsidy .
7 . . [of] over \$44 per kW of installed solar capacity."⁹⁵ This alleged subsidy should also be
8 given no weight because it is based on a very questionable assumption. Dr. Overcast arrives
9 at the \$44 per kW subsidy based on the customer usage assumptions outlined in Table 1 of
10 his rebuttal testimony.⁹⁶ Dr. Overcast bases these customer usage assumptions on a
11 hypothetical customer who consumes 35,040 kWh annually, or 2,920 kWh per month.⁹⁷
12 However, the average UNSE residential customer consumes 10,011 kWh annually, or 834
13 kWh per month.⁹⁸ Accordingly, Dr. Overcast bases his analysis on a customer that
14 consumes three and half times as much electricity as the average residential customer. This
15 significantly skews the resulting "delivery subsidy," because it assumes that all of the
16 consumption reductions from a net metering customer will offset energy in the upper, most
17 expensive tier under the current inclining block rates.⁹⁹ This is also inconsistent with
18 UNSE's claims that most net metering customers offset 100% of their load.¹⁰⁰ For these
19 reasons, UNSE's claims that net metering customers receive a subsidy should be rejected.

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23 ⁹³ Kobor Surrebuttal 15:17-19 (Ex. Vote Solar-7).
24 ⁹⁴ *Id.* at 15:24-16:4.
25 ⁹⁵ Overcast Rebuttal 16:3-4 (Ex. UNSE-34).
26 ⁹⁶ Tr. 1447:22-1448:7 (Overcast Test.).
⁹⁷ Tr. 1448:8-17 (Overcast Test.).
⁹⁸ Kobor Surrebuttal 18:14-15 (Ex. Vote Solar-7).
⁹⁹ *Id.* at 18:17-23.
¹⁰⁰ *Id.*

1 **D. Vote Solar supports UNSE's commitment to withdraw the net metering**
2 **proposal if the Commission approves mandatory demand charges.**

3 As discussed below, in addition to its proposal to eliminate net metering, UNSE has
4 proposed mandatory demand charges for all residential and small commercial customers. In
5 its rebuttal testimony and at the hearing, UNSE stated that it will withdraw its net metering
6 proposal if the Commission approves the demand charges requested by the Company.¹⁰¹ As
7 Mr. Tilghman explained, "Staff has proposed a three-part rate structure that, if properly
8 designed and implemented in a timely manner, would eliminate the need to specifically
9 address the current NEM policy."¹⁰² As discussed in detail below, the Commission should
10 reject UNSE's demand charge proposal. However, if the Commission were to approve the
11 requested demand charges, Vote Solar supports the Company's decision to withdraw its net
12 metering proposal.

13 Moreover, the net metering proposal should remain withdrawn in the event the
14 Commission were to implement mandatory demand charges for net metering customers only
15 (as UNSE originally proposed). Mr. Tilghman has explained that UNSE believes the
16 proposed demand charges would eliminate the need to modify the current net metering
17 program because adding a demand charge would significantly address UNSE's cost
18 recovery concerns by reducing the kWh retail rate net metering customers receive for DG
19 exports.¹⁰³ This reasoning applies regardless of whether the Commission requires all
20 customers to pay mandatory demand charges, or whether it requires only net metering
21 customers to pay the demand charge. Consequently, if net metering customers are required
22 to pay a demand charge, the current net metering program should remain in place.

23 ¹⁰¹ Tilghman Rebuttal 3:14-21 (Ex. UNSE-26); Tr. 1266:14-1267:20 (Tilghman Test.).

24 ¹⁰² Tilghman Rebuttal 3:16-18 (Ex. UNSE-26); *see also* Tr. 1267:16-20 (Tilghman testifying:
25 "So I would agree that, yes, if in fact a well designed three-part rate proposal, such as the one that I
26 believe is on the table today, were implemented, it would not be necessary to immediately address
the net metering policy."); Tr. 1517:9-11 (Overcast testifying: "The three-part rate does solve the
problem when it's properly designed").

¹⁰³ Tilghman Rebuttal 3:16-18 (Ex. UNSE-26); Tr. 1266:14-1267:20 (Tilghman Test.).

1 **III. The Commission Should Not Approve Mandatory Demand Charges.**

2 UNSE has proposed to implement mandatory demand charges for residential and
3 small commercial customers, although the details of the proposal have changed dramatically
4 throughout the course of this proceeding. Requiring residential and small commercial
5 customers to pay demand charges would be unprecedented, unjust, and unreasonable. As a
6 result, the Commission should not approve mandatory demand charges for UNSE's
7 residential and small commercial customers in any form.

8 **A. The Commission should reject mandatory demand charges for all**
9 **residential and small commercial customers.**

10 UNSE proposes to move all residential and small commercial customers to a three-
11 part rate; which would require these customers to pay a demand charge.¹⁰⁴ UNSE proposes
12 a \$5.15/kW demand charge, which would be based on a customer's demand during the peak
13 period and linked to a proportion of generation-related costs.¹⁰⁵ The Company has proposed
14 a transitional two-part rate structure until it has the technology in place to implement the
15 three-part rate, which it plans to do by February or March of 2017.¹⁰⁶ Tellingly, UNSE did
16 not originally propose a mandatory demand charge for all residential and small commercial
17 customers because doing so "seemed somewhat aggressive."¹⁰⁷ This proposal is not just
18 "aggressive," it would be unprecedented and subject UNSE's customers to highly uncertain
19 results and bill impacts. Accordingly, the Commission should reject the proposal.

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25 ¹⁰⁴ Craig Jones Rebuttal Test. 12:18 (Jan. 19, 2016) ("Jones Rebuttal") (Ex. UNSE-32).
26 ¹⁰⁵ *Id.* at 12:25–26, 13:1–6.
¹⁰⁶ UNSE Exhibit CAJ-R-4, Schedule H-3, at 4.
¹⁰⁷ Dukes Rebuttal 4:15–19 (Ex. UNSE-29).

1 1. *UNSE's proposal is unprecedented and would subject its customers to*
2 *a risky experiment in customer responsiveness to mandatory demand*
3 *charges.*

4 No state-regulated electric utility in the United States requires residential and small
5 commercial customers to pay a mandatory demand charge.¹⁰⁸ Yet despite this fact, UNSE
6 and Staff have proposed to apply demand charges across the board for UNSE's small rural
7 customer base, which is comprised of a large percentage of low-income customers.
8 Moreover, the Company has not even installed the smart metering technology for all
9 customers in its service territory that would make it possible to provide customers with
10 adequate information about their demand throughout the year.¹⁰⁹

11 Notably, even UNSE's witnesses admit the impacts of moving to a demand charge
12 are unknown.¹¹⁰ In response to this uncertainty, UNSE has included several mitigation
13 measures that attempt to minimize harmful impacts. Specifically, UNSE proposes to (1)
14 leave the rate case open for 18 months to address any unintended results, (2) request
15 vulnerable customer groups to self-identify, (3) implement a 15% load factor ceiling on the
16 demand charge, (4) provide existing net metering customers a 15% bill credit, and (5) offer
17 new net metering customers a 15% incentive.¹¹¹ The inclusion of so many safeguard
18 measures is perhaps the best evidence of the major problem with this proposal: the impacts

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20 ¹⁰⁸ During the hearing, there were suggestions that one or two state-regulated utilities in other
21 states have mandatory demand charges. However, there is no evidence that this is the case. For
22 example, Chairman Little suggested that an electric co-op in Georgia, named Cobb EMC, has a
23 mandatory demand charge. Tr. 452:19-453:5. However, it appears the demand charge is not
24 mandatory for all customers and Cobb EMC is not a fully-regulated utility, as the Georgia
25 Commission states it "has limited regulatory authority over the 42 electric membership corporations
(EMCs) . . . in the state." Ga. Pub. Serv. Comm'n, Electric,
<http://www.psc.state.ga.us/electric/electric.asp> (last visited Apr. 22, 2016). In any event, even if one
26 or two state-regulated utilities elsewhere do have mandatory demand charges, it would do little to
undercut the fact that UNSE's proposal is exceptionally rare and virtually untested.

¹⁰⁹ See Dukes Rebuttal 4:16-17 (Ex. UNSE-29).

¹¹⁰ Jones Rebuttal 6:14-16 (Ex. UNSE-32).

¹¹¹ Thomas Broderick Surrebuttal Test. 2:2-13 (Feb. 23, 2016) ("Broderick Surrebuttal") (Ex. S-17).

1 of applying mandatory demand charges to all residential and small commercial customers
2 are simply unknown, untested, and inappropriate for this small, predominantly rural utility.

3 For example, the proposal to leave the rate case open for 18 months reveals the
4 extreme uncertainty of the proposed three-part rates. Staff Director Tom Broderick
5 explained that this mitigation measure is in place to address “serious unintended
6 consequences” resulting from over- or under-estimating customers’ kW demand.¹¹²

7 Similarly, the Company admits there is uncertainty regarding whether the three-part rate
8 structure would over- or under-recover expected revenues.¹¹³

9 The mitigation measures UNSE and Staff propose are also insufficient to mitigate
10 the substantial impacts of the demand charge on some customers. For example, UNSE
11 proposes a minimum load factor that would place a cap on the demand charge equal to 15%
12 of the maximum load factor for each customer.¹¹⁴ Yet as discussed below, even with this
13 measure, large and variable bill impacts would occur. Further, this measure would be
14 temporary, as the Company has indicated it does not plan to extend the 15% ceiling beyond
15 the next rate case.¹¹⁵ In addition, net metering customers would not receive the full extent
16 of this protection, as other customers would. This is because in order to determine the
17 ceiling for net metering customers, UNSE proposes to “reach behind the meter” to
18 determine what the customer’s consumption would have been absent the energy produced
19 by the DG system and self-consumed.¹¹⁶ This would be akin to asking customers rip out
20 their attic insulation or replace their efficient AC with a less efficient model before
21 measuring consumption. This approach makes little sense and the result would be that net
22 metering customers could see protections of less than 15% of their load factor.

23
24 ¹¹² *Id.* at 11:19–21. Similarly, Staff witness Howard Solganick stated leaving the rate case open
25 will help “resolve unanticipated customer rate impacts.” Howard Solganick Direct Test. 3:21–22
(Dec. 9, 2015) (“Solganick Direct”) (Ex. S-4).

26 ¹¹³ Jones Rebuttal 7:11–19 (Ex. UNSE-32).

¹¹⁴ *Id.* at 13:8–15:23.

¹¹⁵ *Id.* at 15:21–23.

1 Further, the limited evidence that does exist regarding customer responsiveness to
2 demand charges is inconclusive because the few existing studies are almost entirely
3 comprised of voluntary demand charges and pilot studies.¹¹⁷ As UNSE and Staff have
4 admitted, comparing optional rates with mandatory rates is not particularly instructive, as
5 customers who self-select onto demand charges tend to be the customers who would benefit
6 from demand charges. In other words, only the “winners” would tend to self-select onto a
7 demand charge. For example, UNSE has pointed to APS’s voluntary demand charge as an
8 example of an effective demand charge.¹¹⁸ But APS’s customers who opted in to this
9 demand charge had nearly three times the usage of the average APS customer.¹¹⁹ Notably,
10 even among those customers who self-selected onto APS’s demand charge, 40% actually
11 increased their on-peak demand levels.¹²⁰ This example suggests that customers may not be
12 able to respond to demand charges, because 40% those who self-selected onto a demand
13 charge did not lower their on-peak demand. Given these uncertainties and the
14 ineffectiveness of the proposed mitigation measures, it makes little sense for UNSE’s
15 residential and small commercial customers to be among the first in the nation to pay
16 mandatory demand charges.

17 2. *Demand charges would cause significant bill increases to low-usage*
18 *customers.*

19 The bill impacts of UNSE’s proposal would create “winners” and “losers” among
20 residential customers, and lower-usage customers would disproportionately be the “losers.”
21 While UNSE notes that the move to a demand charge would be revenue neutral overall,
22 low-usage customers would experience significantly higher bills. For example, the move
23 from the transitional two-part rate to three-part rates would cause a 7.6% bill increase for

24 ¹¹⁶ See Broderick Surrebuttal 12:18–21.

25 ¹¹⁷ See Kobor Surrebuttal 38:6–15 (Ex. Vote Solar-7).

26 ¹¹⁸ Dukes Direct 17:7–8.

¹¹⁹ Kobor Direct 38:7–10.

¹²⁰ APS Resp. to RUCO 1.2 (attached as Ex. BK-SR-1, pp. 23–31 to Kobor Surrebuttal).

1 the average “small” residential user with 340 kWh, and a 6.3% increase for the average
2 “extra small” user with 109 kWh.¹²¹ In contrast, the demand charge would provide a 12%
3 bill decrease for the average “extra-large” residential customer.¹²² Examining the total bill
4 impacts of UNSE’s suite of proposals is even more striking. If all of UNSE’s proposals are
5 approved, an “extra-small” customer would see a bill increase of 34.2%, a “small” customer
6 would see a bill increase of 26.7%, and a “medium” customer with 687 kWh usage would
7 see a bill increase of 14%.¹²³ Moreover, when UNSE’s proposals are considered as a whole,
8 nearly one-in-five residential customers would see bill increases of 30% or more, while
9 more than a third of small commercial customers would see bill increases of over 50%.¹²⁴ A
10 proposal with such a disproportionate impact on low-usage customers is unreasonable.

11 In addition, examining bill impacts to the “average” customer in this manner does
12 not tell the whole story. This is because a demand charge adds a “second dimension” to the
13 bill impact analysis. UNSE has traditionally examined bill impacts based on average kWh
14 usage levels. But by adding a demand charge, the impacts for customers with a given level
15 of kWh usage can vary widely based on their kW demand. For example, Ms. Kobor found
16 the bill impacts of moving from the transitional two-part rate to the three-part for an average
17 residential customer with between 700 to 900 kWh of usage would range from an \$11.54
18 decrease to a \$17.17 increase, based on their kW demand.¹²⁵

19 3. *Customers may not be able to effectively respond to a demand charge.*

20 If customers are unable to effectively respond to demand charges, these charges will
21 essentially function like fixed charges.¹²⁶ UNSE believes it can educate customers to
22 effectively respond to demand charges, and it has proposed several passive educational tools
23

24 ¹²¹ Ex. SWEEP-4.

25 ¹²² *Id.*

26 ¹²³ *Id.*

¹²⁴ Kobor Surrebuttal at 44:1-3 (Ex. Vote Solar-7).

¹²⁵ Ex. Vote Solar-8.

1 to further this goal, such as focus groups, website content, and bill inserts.¹²⁷ UNSE has
2 also proposed to provide its customers with access to at least three months of usage data
3 prior to implementing the demand charge.¹²⁸ But notably, these three months of data would
4 likely occur in the winter, as UNSE is proposing to roll out the demand charge in February
5 or March of 2017. This would leave some customers with no information about their
6 summer usage before the demand charge goes into effect.

7 Consider the steps customers would need to take to understand their demand. Staff
8 witness Mr. Solganick described an online portal where he can view his demand levels with
9 a two-day delay.¹²⁹ While this online portal technology has not yet been implemented for
10 UNSE customers,¹³⁰ even if it were to be implemented in the future, customers would need
11 to undertake multiple steps to understand their demand charges. First, customers would
12 need access to the Internet in order to examine their data. If customers do not have such
13 access—and about 24 percent of UNSE’s customers do not¹³¹—the data would appear on
14 their monthly bills, by which time the information would then be a month old. Next,
15 customers would need to look at their historical data to see when their maximum peak
16 demand occurred. Peak demand would likely change month-to-month due to common
17 activities like taking a sick day, hosting a party, or even having friends or family over for
18 dinner. Then, customers would need to remember what was happening at the time their
19 energy use peaked. Since most people do not keep detailed records of their energy use, this
20 would present a difficult task, particularly when data presented to customers is a month old.

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23 ¹²⁶ Tellingly, Dr. Overcast characterized demand charges as fixed charges in a recent Utility
24 Dive article. Ex. Vote Solar-4; Tr. 1458:5–24 (Overcast Test.).

25 ¹²⁷ Dukes Rebuttal, Ex. DJD-R-1 at 135 (Ex. UNSE-29).

26 ¹²⁸ *Id.* at 9:21–23.

¹²⁹ Solganick Direct 8:23–9:1 (Ex. S-4).

¹³⁰ Lon Huber Surrebuttal Test. 10:3–4 (Feb. 23, 2016) (“Huber Surrebuttal”) (Ex. RUCO-6).

¹³¹ *Id.* at 10:19–20.

1 Even if customers could understand why their bills changed due to the demand
2 charge, responding to demand charges would be difficult for many customers.¹³² This is
3 because to respond to a demand charge, customers would need to lower peak demand every
4 day throughout the month. Given the examples of common activities that could cause
5 demand spikes, it is easy to see how it would be hard to prevent such peaks. Even if one
6 household member successfully managed her energy use, controlling the use of friends or
7 family could be quite difficult. Further, work and other obligations could easily interfere
8 with a family's ability to respond to a demand charge if the family members have little
9 choice but to conduct their daily activities during the demand period.

10 4. *The proposed demand charges do not accurately reflect cost*
11 *causation.*

12 UNSE claims that its proposed demand charges would send "accurate, cost-based
13 price signals to all customers."¹³³ However, the demand charge proposal here does not
14 accurately reflect cost causation. For example, UNSE has stated that the current proposed
15 demand charge would be based on customers' on-peak demand and would recover the
16 related generation costs, while distribution costs should be associated with the non-
17 coincident peak ("NCP") (which was UNSE's original proposal).¹³⁴ Yet, for residential
18 customers, individual customer NCP is a poor proxy for the local distribution peak that
19 drives distribution costs. For example, on a typical residential circuit there will be multiple
20 customers engaging in various activities that impact their energy usage, which even out
21 overall to create predictable loads. Some customers working Monday through Friday will
22 rise early for work and return early in the evening, while others will rise later and return
23 later. Other customers will work weekends or the night shift. Still others will remain home
24 throughout the day telecommuting or caring for family members. These customers' loads

25 ¹³² The Company's education plan does not mention enabling technologies, which have not yet
26 gained widespread use. See Dukes Rebuttal, Ex. DJD-R-1 (Ex. UNSE-29).

¹³³ Hutchens Rebuttal 3:10-11 (Ex. UNSE-4).

1 will peak at different times, creating a dependable diversity in their load shapes allowing for
2 shared infrastructure. Therefore, it is the customer's individual contribution to peak load on
3 a particular portion of the distribution system, and not an individual customer's peak, that
4 truly drives costs. UNSE's original proposal to assess distribution-related capacity based on
5 customers' NCP cannot be defended based on cost causation.

6 Further, the mandatory demand charge applicable to all residential customers that
7 applies during peak periods has been criticized by the Company's own witness as not being
8 cost-based. In order to better reflect cost causation, Dr. Overcast proposed a complicated
9 multi-part demand charge that has not been endorsed by the other UNSE witnesses.¹³⁵ Dr.
10 Overcast pointedly criticized the proposed demand charges when he stated that "the Staff
11 proposal does not recognize that the single demand component of a three part rate cannot
12 reflect cost causation for the different components of the functionalized costs."¹³⁶ Dr.
13 Overcast also notes that the embedded costs for generation capacity are likely to be too high
14 and "would create subsidies and promote investments in utility resources inconsistent with
15 the least cost of total utility supply service."¹³⁷ These statements reveal the lack of
16 consensus regarding which costs should be collected in a demand charge, and the
17 uncertainty on whether UNSE's proposals better reflect cost causation than two-part rates.

18 Additionally, there is evidence that the transitional two-part rate proposed by UNSE
19 would better reflect cost causation than the proposed three-part rates. Arizona Utility
20 Ratepayer Alliance ("AURA") witness Scott Rubin found that the proposed three-part rate
21 would do far worse at reflecting customer costs of service than two-part rates.¹³⁸
22 Specifically, for every \$100 by which the costs to serve a customer increases, the proposed
23 three-part rate with a mandatory demand charge would collect only \$63 to \$67 in revenue,
24

25 ¹³⁴ Jones Rebuttal 12:25-13:6.

¹³⁵ Overcast Rebuttal 29:11, 31:2-20 (Ex. UNSE-34).

26 ¹³⁶ *Id.* at 29:5-7 (emphasis added).

¹³⁷ Overcast Rebuttal Test. 32:14-15.

1 the initial optional residential three-part rate (mandatory only for net metering customers)
2 would collect about \$71, the original two-part rate would collect about \$84, and the
3 transitional two-part rate would collect \$88 dollars. This shows that the Company's
4 attempts to justify its proposal based on cost-causation are flawed and should be rejected.

5 **B. The Commission should reject mandatory demand charges for net**
6 **metering customers only.**

7 Initially, UNSE proposed mandatory demand charges for new net metering
8 customers only.¹³⁹ While the proposal has since evolved, UNSE had indicated it still
9 supports its initial proposal as a fall-back position.¹⁴⁰ All of the reasons discussed above for
10 rejecting mandatory charges would still apply if the Commission only required net metering
11 customers to pay the charge, as net metering customers are similarly-situated to other
12 customers regarding their ability to respond to a demand charge.¹⁴¹ This is because solar
13 DG systems have little impact on reducing customer peak demand if the demand period
14 includes non-daylight hours, as UNSE's proposal would.¹⁴²

15 Moreover, requiring only new net metering customers to pay a demand charge would
16 be discriminatory. The Arizona Constitution states that public utility rates "shall be just and
17 reasonable, and no discrimination in charges . . . shall be made."¹⁴³ As the Arizona Supreme
18 Court has explained, a public utility must "furnish[] its service to each patron at the same
19 price it makes to every other patron for the same or substantially the same or similar service.
20 It must be equal in its dealings with all. It must treat the members of the general public
21 alike."¹⁴⁴ In addition, the Commission's net metering rules specifically forbid

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23 ¹³⁸ Scott Rubin Surrebuttal Test. 17:7-11 (Feb. 23, 2016) ("Rubin Surrebuttal") (Ex. AURA-1).

¹³⁹ Application 8:16-19.

24 ¹⁴⁰ Tr. 466:1-5 (Hutchens Test.).

¹⁴¹ Kobor Direct 41:24-25 (Ex. Vote Solar-6).

25 ¹⁴² *Id.* 42:1-9.

¹⁴³ Ariz. Const. art. XV, § 12.

26 ¹⁴⁴ *Town of Wickenburg v. Sabin*, 200 P.2d 342, 343 (Ariz. 1948) (quoting McQuillin, Municipal Corps., 2d Ed., Vol. 4, § 1829) (internal quotation marks omitted)).

1 discrimination against net metering customers, stating: “Net Metering charges shall be
2 assessed on a nondiscriminatory basis.”¹⁴⁵ Further, the REST rules state that utilities cannot
3 “charge the [net metering customer] any additional fees or charges . . . unless the same is
4 imposed on customers in the same rate class that the [net metering customer] would qualify
5 for if [they] did not have generation equipment.”¹⁴⁶

6 The Company’s proposal to single-out net metering customers for a mandatory
7 demand charge violates the prohibition against discriminatory rate treatment. UNSE
8 claimed that requiring only net metering customers to pay a mandatory demand charge
9 would reduce the alleged DG cost shift and improve fixed cost recovery from net metering
10 customers.¹⁴⁷ However, as discussed above, net metering customers are a negligible cause
11 of these problems. In fact, 98% of the customer bills causing a cost shift are not net
12 metering bills.¹⁴⁸ Moreover, for every other problem the Company highlights regarding
13 reduced sales and cost recovery issues, non-net metering customers account for 94% to 97%
14 of the problem in each instance.¹⁴⁹ UNSE thus attempted to single out a small minority of
15 customers for punitive rate treatment, while allowing the large number of customers who
16 actually cause the vast majority of the problems to stay on their current rate design.
17 UNSE’s original proposal would impermissibly discriminate against net metering
18 customers, and the Commission should therefore reject it.¹⁵⁰

19 In addition, even if the proposed demand charges for net metering customers were
20 not discriminatory—which they would be—UNSE has failed to meet its required
21

22 ¹⁴⁵ A.A.C. R14-2-2305.

23 ¹⁴⁶ *Id.* R14-2-1801(M).

24 ¹⁴⁷ Hutchens Direct 10:15–11:26; 13:10–27 (Ex. UNSE-3).

24 ¹⁴⁸ *See supra* pp. 7–8.

24 ¹⁴⁹ *See supra* pp. 5–7.

25 ¹⁵⁰ Dr. Overcast claims it would not be discriminatory to treat net metering customers as a
26 separate class because they have different load characteristics and different cost causation. Overcast
Rebuttal 24:17–18 (Ex. UNSE-34). However, as previously discussed, his attempts to show this are
severely flawed and based on questionable assumptions. *See supra* pp. 23–24. In addition, as

1 evidentiary burden. The net metering rules state that if a utility seeks to increase the charges
2 paid by net metering customers compared to the charges paid by similarly-situated
3 customers without solar, it must justify the differential treatment with cost of service studies
4 and benefit/cost analyses.¹⁵¹ The rules also state that UNSE “shall have the burden of proof
5 on any proposed charge.”¹⁵² UNSE failed to provide the required documentation to justify
6 the demand charge, much less meet its burden of proof for the charge. As discussed above,
7 the Company failed to conduct a benefit/cost analysis for solar DG that meaningfully
8 analyzed the benefits DG provides.¹⁵³ In addition, UNSE did not provide an adequate cost
9 of service study to support singling out net metering customers in this manner. Because
10 UNSE’s cost of service study did not separately analyze the relative costs to serve net
11 metering customers, UNSE has not shown that the cost to serve those customers differs
12 from the cost to serve other customers, or by what magnitude the cost to serve net metering
13 customers may differ. UNSE assumes the cost to serve net metering customers is higher,
14 but this unsupported assumption is insufficient to meet UNSE’s evidentiary burden.¹⁵⁴

15 **IV. The Commission Should Reject UNSE’s Other Regressive Rate Design**
16 **Proposals.**

17 In addition to UNSE’s proposals to eliminate net metering and impose mandatory
18 demand charges, the Company has proposed several other regressive rate design changes.
19 UNSE’s proposals to significantly increase the customer charge and eliminate the upper
20 residential tier are both problematic and should be rejected.

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24 explained below regarding RUCO’s proposal, net metering customers are not categorically different
than their neighbors without rooftop solar. *See infra* pp. 41–42.

25 ¹⁵¹ A.A.C. R14-2-2305.

26 ¹⁵² *Id.*

¹⁵³ *See supra* pp. 20–21.

¹⁵⁴ *See* Tr. 2546:14–2548:22 (Jones Test.).

1 **A. UNSE should not increase fixed charges by adopting the Minimum**
2 **System Method.**

3 UNSE's current rates include a \$10 monthly fixed charge for residential customers,
4 and a \$14.50 to \$16.50 monthly fixed charge for small commercial customers. Initially,
5 UNSE proposed to double the fixed charge for both customer classes.¹⁵⁵ As the
6 Company's proposals evolved, UNSE agreed to reduce the amount by which it would
7 increase the fixed charges, and it now proposes a \$15 monthly fixed charge for residential
8 customers and a \$25 monthly fixed charge for small commercial customers.¹⁵⁶ This fixed
9 charge increase remains unreasonably large and should be rejected.

10 As multiple parties have testified, increasing monthly fixed charges is a regressive
11 rate design measure that disincentives DG, energy efficiency, and other distributed energy
12 resources, and which unduly harms low-income and low-usage customers.¹⁵⁷ For these
13 reasons alone, the Commission should reject the proposed fixed charge increases.

14 In addition, the methodology UNSE employs to increase fixed charges is faulty and
15 should be rejected. An important principle of rate design is that the monthly customer
16 charge should only recover the direct customer costs that vary with the number of
17 customers regardless of their power consumption, such as meter reading and billing.¹⁵⁸ In
18 UNSE's last rate case, it applied a proper methodology for calculating these fixed customer
19 charges, which is a version of the "Basic Customer Method."¹⁵⁹ In this rate case, however,
20 the Company uses the "Minimum System Method."¹⁶⁰ The Minimum System Method

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22 ¹⁵⁵ Jones Direct 40:26–41:1, 43:14–16 (Ex. UNSE-31).

¹⁵⁶ Ex. UNSE-47.

23 ¹⁵⁷ See, e.g., Kobar Direct 62:15–63:10 (Ex. Vote Solar-6); Broderick Direct 9:4–7 (Ex. S-16);
24 Lon Huber Direct Test. 4:2–9 (Dec. 9, 2015) ("Huber Direct") (Ex. RUCO-5); Jeff Schlegel Direct
25 Test. 4:22–6:1 (Dec. 9, 2015) ("Schlegel Direct") (Ex. SWEEP-2); Cynthia Zwick Direct Test.
12:24–20:21 (Dec. 9, 2015) (Ex. ACAA-2); Thomas Alston Direct Test. 5:4–9 (Dec. 9, 2015) (Ex.
AURA-2).

¹⁵⁸ Schlegel Direct 7:4–20 (Ex. SWEEP-2).

26 ¹⁵⁹ Tr. 2536:13–25 (Jones Test.).

¹⁶⁰ *Id.*

1 attempts to calculate the theoretical minimum demand of a customer and estimates the
2 minimum-sized infrastructure necessary to serve this theoretical customer.¹⁶¹ The
3 Minimum System Method thus assigns additional categories of costs to the customer
4 charge, which produces a larger customer charge.¹⁶² Including these additional cost
5 categories unjustifiably inflates the fixed customer charge by including cost categories that
6 do not reflect the direct costs necessary to serve a customer.¹⁶³

7 The Minimum System Method is not a new method, and it has been subject to
8 pointed criticism in the past. For example, the Washington Utilities and Transportation
9 Commission rejected a utility's attempt to use the Minimum System Method and stated:

10 [T]he minimum system method is likely to lead to the double allocation of
11 costs to residential customers and over-allocation of costs to low-use
12 customers. Costs such as meter reading, billing, the cost of meters and service
13 drops, are properly attributable to the marginal cost of serving a single
14 customer. The cost of a minimum-sized system is not.¹⁶⁴

15 Moreover, Professor Bonbright was very specific in his criticism of the Minimum System
16 Method. Bonbright stated that "the inclusion of the costs of a minimum-sized distribution
17 system among the customer-related costs seems to me clearly indefensible."¹⁶⁵

18 Dr. Overcast attempts to bolster UNSE's use of the Minimum System Method by
19 criticizing the Basic Customer Method, but he fails to successfully do so. Dr. Overcast
20 argues that the parties advocating for the Basic Customer Method are "biased" and the
21 method does not account for the full amount of customer account expenses.¹⁶⁶ However,
22 the Company currently uses the Basic Customer Method, and it is hardly biased or

22 ¹⁶¹ Kobor Direct 57:6-8 (Ex. Vote Solar-6).

23 ¹⁶² Tr. 2537:1-13 (Jones Test.).

24 ¹⁶³ Schlegel Direct 6:6-7:2, 7:26-37 (Ex. SWEEP-2).

25 ¹⁶⁴ Kobor Direct 57:17-58:1 (quoting *Wash. Utils. & Transp. Comm'n v. Puget Sound Power
& Light Co.*, 3d Supplemental Order, Docket Nos. U-89-2688-T & U-89-2955-T, at 71 (WUTC
Jan. 17, 1990)) (Ex. Vote Solar-6).

26 ¹⁶⁵ *Id.* at 57:12-16 (quoting James C. Bonbright, *Principles of Public Utility Rates* 348 (1961)
(emphasis added)).

¹⁶⁶ Overcast Rebuttal 38:18-23 (Ex. UNSE-34).

1 improper for parties to argue for its continued use. More importantly, Dr. Overcast's
2 criticisms of the Basic Customer Method are incorrect, as it includes 100% of customer
3 account expenses related to meter reading, billing, and customer service, and it also
4 includes a portion of administrative and general expenses.¹⁶⁷

5 Because the Minimum System Method is flawed and other jurisdictions and
6 commentators have properly rejected and discredited the method, the Commission should
7 reject UNSE's use of the method here. Ms. Kobor used UNSE's cost of service study to
8 calculate what the customer charge would be if the Company continued to use the Basic
9 Customer Method in this rate case.¹⁶⁸ Ms. Kobor's analysis found that the current monthly
10 customer charges for residential and small commercial customers already fully recover the
11 proper level of customer costs under the Basic Customer Method.¹⁶⁹ As a result, UNSE's
12 proposed fixed charge increases are unnecessary and the Commission should leave the
13 existing customer charges in place for these customer classes.

14 **B. UNSE should not eliminate the upper residential tier.**

15 UNSE currently has three consumption tiers for residential customers. UNSE
16 proposes to eliminate the third residential tier for usage above 1,000 kWh and offer only
17 two tiers, with a 400 kWh cut-off between the two tiers.¹⁷⁰ UNSE proposes to eliminate
18 the upper tier because "[i]t adds no cost-based value to the rate class other than
19 exacerbating" cost shift issues.¹⁷¹ However, eliminating the upper tier for high-usage
20 customers is a regressive rate design proposal that would disincentive DG, energy
21 efficiency, and other distributed energy resources. When the Commission implemented
22 this upper tier in 2008, it did so to "promote energy conservation and beneficial load
23

24 ¹⁶⁷ Kobor Surrebuttal 70:21-26 (Ex. Vote Solar-7).

25 ¹⁶⁸ Kobor Direct 60:19-62:7.

26 ¹⁶⁹ *Id.* at 61:15.

¹⁷⁰ Dukes Direct 4:7-8 (Ex. UNSE-28).

¹⁷¹ Jones Direct 42:4-6 (Ex. UNSE-31).

1 shifting.”¹⁷² And it did so with full knowledge of the obvious fact that creating an upper,
2 high-usage tier would result in a cost shift from lower-usage customers to higher-usage
3 customers. The Commission should thus reject UNSE’s proposal to eliminate the third tier.

4 **V. RUCO’s Net Metering Proposal Is Flawed and Should Not Be Approved.**

5 The Residential Utility Consumer Office (“RUCO”) has issued an alternative
6 proposal that would require net metering customers to take service under one of three rate
7 options: a non-export option, an advanced DG Time of Use (“TOU”) Option, and an RPS
8 Bill Credit Option.¹⁷³ RUCO’s proposal is flawed and unnecessarily complicated, and it
9 should not be approved.

10 **A. Net metering customers should not be singled out for differential rate**
11 **treatment.**

12 RUCO’s proposal would effectively single out net metering customers for
13 differential rate treatment and require them to pay different rates than their next door
14 neighbors without solar. RUCO attempts to avoid categorically singling out net metering
15 customers for punitive rate treatment by providing a non-export option. This option would
16 allow net metering customers to take service under any standard residential rate, but those
17 customers would be unable to export any excess energy they generate to the grid.¹⁷⁴ This
18 option would unnecessarily waste the solar energy net metering customers produce when
19 production from their DG system exceeds their consumption. This excess energy would not
20 flow to nearby customers, and it would not benefit UNSE by reducing demand. As multiple
21 parties have noted, the non-export option would be contrary to the public interest.¹⁷⁵

22 Moreover, because customers would have to forego all compensation for their DG exports,
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24 ¹⁷² Decision No. 70628 at 46:22–23 (Dec. 1, 2008).

25 ¹⁷³ Huber Direct 10:12–15 (Ex. RUCO-5).

26 ¹⁷⁴ *Id.* at 13:2–3.

¹⁷⁵ *See, e.g.,* Kobar Surrebuttal 29:22–27 (Ex. Vote Solar-7); Brown Surrebuttal 41:21–42:4
(Ex. APS-1).

1 it is unlikely that many customers would choose this option. Even RUCO itself admits that
2 this rate “will likely not be very popular among DG customers.”¹⁷⁶

3 Because the non-export option is flawed and would likely not be an attractive option,
4 RUCO’s proposal would essentially force customers to choose one of the other two options.
5 Accordingly, RUCO’s proposal would effectively force net metering customers to take
6 service under different rates than their neighbors without solar. RUCO presents several
7 reasons for treating net metering customers as a separate class of customers.¹⁷⁷ However,
8 none of these factors show that net metering customers are substantially different than other
9 customers, and these factors thus do not warrant differential rate treatment.

10 First, RUCO claims that net metering customers mask their load and true demand,
11 and they come in and out of needing service.¹⁷⁸ However, net metering customers are not
12 unique in having varying load and service needs. For example, seasonal customers and
13 customers who leave their home for work or vacation cause spikes in demand when they
14 return home and turn on the lights, AC, and other appliances. Demand spikes also occur
15 when vacant homes become occupied. Moreover, one-third of UNSE customers have
16 central AC units that turn on and off multiple times throughout the day, causing a large
17 spike in demand that may require ancillary services.¹⁷⁹ There is no evidence in this case that
18 net metering customers’ load and service needs differ meaningfully from other customers.

19 Next, RUCO correctly notes that net metering customers export power, while other
20 customers do not.¹⁸⁰ Yet this difference does not warrant singling out net customers for
21 differential treatment. A net metering customer’s exported energy benefits the utility and
22 customers alike by providing energy that flows to nearby customers. This energy
23 potentially avoids generation capacity, distribution, and transmission costs, and it provides a
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25 ¹⁷⁶ Huber Direct 24:8 (Ex. RUCO-5).

26 ¹⁷⁷ *Id.* at 14:17–21.

¹⁷⁸ *Id.* at 14:17–18, 20.

¹⁷⁹ Kobor Direct 19:7–12 (Ex. Vote Solar-6).

1 host of benefits that the Commission and many parties are currently discussing in the Value
2 of Solar proceeding.¹⁸¹ While UNSE believes exports can cause harmful grid impacts, the
3 Company has not quantified these impacts or provided evidence regarding costs to the
4 system caused by such problems.¹⁸² It is thus inappropriate to single out net metering
5 customers simply because they export energy to the grid.

6 Finally, RUCO claims net metering customers can essentially “zero out” their bills,
7 while they still use the full suite of utility services.¹⁸³ However, while some net metering
8 customers do have bills for zero kWh usage, this fact alone is not evidence of a cost shift, as
9 UNSE has not quantified the value of DG exports. In addition, UNSE provided data
10 showing that only 57% of net metering customer’s bills were for zero kWh usage.¹⁸⁴
11 Therefore, 43% of customers are not “zeroing out” their bills. While RUCO discusses bills
12 for zero kWh, UNSE itself highlights low-usage bills of 300 kWh or less as problematic.¹⁸⁵
13 But as discussed above, 95% of these low-usage bills were not net metering customer
14 bills.¹⁸⁶ Because the vast majority of these low-usage customers are customers without
15 solar, UNSE should not treat customers with solar differently.

16 **B. RUCO’s overly complex proposals would curtail solar DG adoption.**

17 As noted above, RUCO’s non-export option would likely not be an attractive option
18 for net metering customers because it would waste the excess energy produced by DG. That
19 would leave customers with two options under RUCO’s proposal. Both options are overly
20 complicated and would disincentive DG adoption in UNSE’s territory.

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23 ¹⁸⁰ Huber Direct 14:19 (Ex. RUCO-5).

24 ¹⁸¹ See *supra* pp. 20–22.

¹⁸² See *supra* pp. 8–10.

25 ¹⁸³ Huber Direct 14:21 (Ex. RUCO-5).

¹⁸⁴ Kobor Surrebuttal 11:11–13 (Ex. Vote Solar-7).

26 ¹⁸⁵ Dukes Direct 12:8–17 (Ex. UNSE-28).

¹⁸⁶ See *supra* p. 7.

1 The Advanced DG TOU rate option is a three-part rate that would compensate
2 excess energy at 8.5¢/kWh.¹⁸⁷ RUCO admits it based this compensation on a
3 “conservative” attempt to value DG solar.¹⁸⁸ This option would force net metering
4 customers to sell all of the energy they generate from their own solar DG systems to UNSE.
5 Customers would then be credited for both the energy they consume onsite and the energy
6 they export to the grid at the 8.5¢/kWh rate. The proposal would create a complicated
7 billing mechanism that would prevent customers from directly consuming the energy they
8 generate from their own private investments on their own private property. Further, UNSE
9 would need to “reach behind the meter” to see what net metering customers are generating
10 and consuming onsite for billing purposes. As Staff has stated, UNSE should not “reach
11 behind the meter” based on a customer’s energy choices.¹⁸⁹ This option removes the
12 customer’s ability to self-consume, and causes UNSE to interfere in what should be a
13 private matter regarding onsite generation and consumption. Additionally, RUCO’s
14 8.5¢/kWh valuation of DG is too basic, as it fails to include a thorough and detailed analysis
15 of the many benefits provided by solar DG.¹⁹⁰ Finally, this option includes a demand
16 charge, and net metering customers are similarly situated to other residential customers in
17 their inability to effectively respond to demand charges.¹⁹¹

18 Under the RPS Bill Credit Option, customers could select any of UNSE’s traditional
19 rates, and they would be compensated for DG exports at a rate beginning at 11¢/kWh, with
20 a floor set at the Market Cost Comparable Conventional Generation (“MCCCG”) rate.¹⁹²
21 The price paid by UNSE for DG exports would decrease over time, as DG penetration
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23 ¹⁸⁷ Huber Direct 11:1 (Ex. RUCO-5).

24 ¹⁸⁸ *Id.* at 19:21–22. It is also notable that even RUCO’s “conservative” value of DG
calculation is significantly higher than UNSE’s Renewable Credit Rate proposal.

25 ¹⁸⁹ Howard Solganick Surrebuttal Test. 15:17–18 (Feb. 23, 2016) (Ex. S-6).

26 ¹⁹⁰ *See supra* pp. 20–21.

¹⁹¹ *See supra* p. 34.

¹⁹² Huber Direct 11:1 (Ex. RUCO-5). The MCCCG rate changes every year, and is currently
set at 4.2¢/kWh. *See* Kobor Surrebuttal 32:7 (Ex. Vote Solar-7).

1 increases. This is a “buy-all-sell-all” tariff, meaning on-site generation and corresponding
2 self-consumption would be compensated at the same rate as exports.¹⁹³ This option is
3 flawed because the export rate could fall below even the crude solar valuation of 8.5¢/kWh
4 contained in the Advanced DG TOU option. Therefore, DG exports would not be
5 compensated based on their true value, but rather on an MCCCCG rate that changes yearly.
6 Like the DG TOU rate, this rate also forces net metering customers to sell the energy they
7 generate back to UNSE, removing the customers’ ability to self-consume. Because the solar
8 export rate could decrease dramatically, this option could cause net metering customers to
9 lose substantial amounts of money on their DG investments.

10 **VI. Minimum Bills and Time-of-Use Rates Would Be Better Options to Address**
11 **UNSE’s Concerns than Mandatory Demand Charges.**

12 Because there is no DG “problem” in UNSE’s territory, the Commission should
13 leave the current net metering program in place and should not single out net metering
14 customers for differential rate treatment. As detailed above, UNSE’s declining sales and
15 cost recovery issues are caused predominantly by the loss of UNSE’s two largest industrial
16 and mining customers. While this has created a revenue shortfall that must be recovered by
17 the remaining ratepayers, there is no reason why a new rate structure would be necessary to
18 accomplish this.¹⁹⁴ If the Commission wishes to address the other drivers of sales
19 reductions—including the slow economic recovery and seasonal and vacant homes—
20 minimum bills and time-of-use rates would be better options to address these issues than
21 mandatory demand charges.¹⁹⁵

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24 ¹⁹³ RUCO Resp. to VS 1.3 (attached as Ex. BK-SR-1, p. 17 to Kobor Surrebuttal).

¹⁹⁴ Tr. 2237:14–16 (Kobor Test.).

¹⁹⁵ After the hearing concluded, Commissioner Burns filed a letter to the docket on April 13, 2016, requesting that the parties provide additional evidence on minimum bills, time-of-use rates, and other issues. Vote Solar is reviewing these requests and will likely respond separately to Commissioner Burns’ letter at a later date.

1 **A. Minimum bills would better address low-usage bills and could be**
2 **implemented immediately.**

3 Multiple parties have proposed minimum bills as a way to address UNSE's low-
4 usage bills.¹⁹⁶ A minimum bill would bill every customer for a minimum amount of kWh
5 consumption each month, even if the customer's usage was below that amount.¹⁹⁷ A
6 minimum bill would thus guarantee that UNSE recovers a certain amount of revenue from
7 each customer, but it would not reduce the energy-based price signal for DG, energy
8 efficiency, and other distributed energy resources as an increased fixed charge would.¹⁹⁸ A
9 minimum bill would thus be well-suited to address the numerous seasonal customers and
10 vacant homes in UNSE's territory with little to no usage. Moreover, a minimum bill would
11 better address these issues than mandatory demand charges would. If a home is vacant or a
12 seasonal customer is not present, the customer will have little, if any, kW demand during the
13 billing cycle.¹⁹⁹ As a result, even with a demand charge, UNSE would continue to collect
14 little revenues from these customers.

15 UNSE has stated that it would consider a minimum bill, and it could "be a move in
16 the right direction."²⁰⁰ One virtue of a minimum bill is that the Commission could
17 implement it immediately at the conclusion of the rate case, and it would not require the
18 extensive education efforts and implementation period that mandatory demand charges and
19 time-of-use rates should.

20 However, if the Commission were to approve a minimum bill, it is critical that the
21 minimum bill be set at the proper rate. If a minimum bill is set too high, it would harm the
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23 ¹⁹⁶ See, e.g., Kobar Surrebuttal 67:1-69:13 (Ex. Vote Solar-7); Huber Direct 8:11-17 (Ex.
24 RUCO-5); Mark Fulmer Direct Test. 24:17-25:3 (Dec. 9, 2015) ("Fulmer Direct") (Ex. TASC-20);
Ken Wilson Direct Test. 11:1-13:16 (Dec. 9, 2015) ("Wilson Direct") (Ex. WRA-1).

25 ¹⁹⁷ See, e.g., Huber Direct 8:12-13 (Ex. RUCO-5).

26 ¹⁹⁸ *Id.* at 8:13-17.

¹⁹⁹ Kobar Surrebuttal 67:18-25 (Ex. Vote Solar-7).

²⁰⁰ Jones Rebuttal 43:1-13 (Ex. UNSE-32).

1 economics of DG, energy efficiency, and other distributed energy resources.²⁰¹ Fortunately,
2 it is possible to calculate an appropriate minimum bill amount based on the data UNSE
3 provided. As Ms. Kobar explains, while the Company should not use the Minimum System
4 Method to calculate the customer charge, UNSE's analysis using the method is instructive
5 regarding the proper level of a minimum bill.²⁰² Ms. Kobar recommends that the monthly
6 customer charges remain at their current levels (\$10 for residential customers and \$14.50 to
7 \$16.50 for small commercial customers).²⁰³ If that occurs, a monthly minimum bill
8 inclusive of customer charges of \$14.00 for residential customers and \$23.00 for small
9 commercial customers would be appropriate.²⁰⁴

10 **B. Time-of-use rates would better address UNSE's concerns than**
11 **mandatory demand charges.**

12 Multiple parties have also advocated for time-of-use rates as a superior option to
13 mandatory demand charges.²⁰⁵ Under UNSE's current two-part rates, customers pay the
14 same energy charge for each kWh they consume, regardless of the season or time of day
15 when the consumption occurs. Energy and capacity prices, however, can vary widely by
16 season and time of day, and time-of-use rates better capture these variable prices. As the
17 Commission has explained elsewhere, "time-of-day rates trigger an accurate price signal,"
18 and "encourage optimization of the efficiency and utilization of [a utility's] facilities and
19 resources."²⁰⁶ In fact, as Ms. Kobar explains, time-of-use rates have historically been
20 viewed as the best option for capturing the time-varying value of energy consumption.²⁰⁷

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23 ²⁰¹ Kobar Surrebuttal 68:14-15 (Ex. Vote Solar-7).

24 ²⁰² *Id.* at 68:19-69:2.

25 ²⁰³ *Id.* at 69:5-11.

26 ²⁰⁴ *Id.*

²⁰⁵ See, e.g., Kobar Surrebuttal 60:1-66:20 (Ex. Vote Solar-7); Huber Surrebuttal 28:9-15 (Ex. RUCO-6); Fulmer Direct 1:22-2:4 (Ex. TASC-20); Wilson Direct 3:4-5 (Ex. WRA-1).

²⁰⁶ Decision No. 52593 at 7:2-7 (Nov. 9, 1981) (attached as Ex. BK-SR-4 to Kobar Surrebuttal).

²⁰⁷ Kobar Surrebuttal 61:16-17 (Ex. Vote Solar-7).

1 Time-of-use rates are also preferable to demand charges because they send a more
2 actionable price signal to customers. Residential and small commercial customers are well-
3 accustomed to managing their kWh energy usage through existing rates.²⁰⁸ While a demand
4 charge would add an entirely new billing component based on kW demand, a time-of-use
5 rate maintains the familiar two-part rate structure. Thus, to effectively respond to a time-of-
6 use rate, customers would need to understand that their electricity costs more at different
7 times of the day or year. In contrast, to respond to a demand charge, customers would also
8 need to retroactively analyze their consumption patterns to determine which actions cause
9 their peak usage.²⁰⁹ Moreover, a time-of-use charge would provide an effective price signal
10 throughout the billing period, while customers would have less incentive to conserve under
11 a demand charge after setting their monthly peak demand for the billing period.²¹⁰

12 Time-of-use rates would also provide better incentives than demand charges for
13 efficient solar panel orientation. Under current rates, net metering customers generally have
14 an incentive to install panels to maximize the system's kWh output, regardless of when that
15 output occurs. A time-of-use rate would incentivize customers to install panels to maximize
16 the energy they produce during the peak period, because the energy they generate would be
17 more valuable during the peak period. That may mean orienting panels to the west to
18 capture more energy at the end of the day, rather than south.²¹¹

19 While time-of-use rates are a better alternative to mandatory demand charges, they
20 should nonetheless be implemented cautiously and should not be implemented immediately,

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22 ²⁰⁸ *Id.* at 62:25–26.

23 ²⁰⁹ *Id.* at 63:4–7.

24 ²¹⁰ *Id.* at 63:12–18.

25 ²¹¹ *Id.* at 66:1–3. Dr. Overcast claims that demand charges would also provide an incentive to
26 orient panels to increase generation during peak periods. Overcast Rebuttal 17:3–7 (Ex. UNSE-34).
However, this is incorrect. As Ms. Kobar explains, the peak period for the demand charge includes
time periods outside of daylight hours. Because a customer could set their peak demand during
these non-daylight hours, orienting panels to maximize peak period generation would not help the
customer avoid or lessen their peak demand. Thus, peak demand charges would not provide an
incentive for more efficient panel orientation. Kobar Surrebuttal 65:14–24 (Ex. Vote Solar-7).

1 as a minimum bill could. Not all customers will be able to equally modify their behavior in
2 response to time-of-use rates.²¹² As a result, Vote Solar recommends that the Commission
3 initially approve an optional time-of-use rate and an optional time-of-use demand rate, and
4 that the Commission instruct UNSE to implement an educational plan for these optional
5 rates. In the next rate case, the Commission could analyze the success of these educational
6 efforts and the revenue and bill impacts of the time-of-use options. If no significant
7 concerns are raised, the Commission could move toward mandatory or opt-out time-of-use
8 rates at that time. Alternatively, after considerable customer education efforts, the
9 Commission could approve opt-out time-of-use rates that would preserve a customer's
10 ability to take service under a two-part or three-part rate. All customers should be able to
11 opt-out to the existing two-part rates, including net metering customers.²¹³

12 **VII. UNSE's Proposals Would Make Solar DG Less Economical, Which Would Slow**
13 **DG Growth and Require Full Grandfathering of Existing Customers.**

14 If approved, UNSE's proposals would significantly alter the economics of solar DG
15 for UNSE's customers and make it less economical. This would undoubtedly slow DG
16 growth in UNSE's territory. And for existing net metering customers, it would severely
17 undermine their investments in solar DG. Accordingly, if the Commission approves
18 UNSE's proposals, it is essential to fully grandfather existing net metering customers into
19 the existing rate design.

20 **A. UNSE's proposals would make solar DG less economical.**

21 Each of the UNSE proposals discussed above would harm the economics of solar
22 DG. The net metering proposal would reduce the compensation new net metering
23 customers receive for their energy exports by nearly 50%, which obviously makes solar less
24 economical. UNSE's other proposals—such as mandatory demand charges, increased fixed
25 charges, and eliminating the upper residential tier—would also harm the economics of DG

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²¹² Kobor Surrebuttal 64:6-7 (Ex. Vote Solar-7).

1 by decreasing customers' volumetric per-kWh energy charge. The result would be to
2 decrease the amount of the kWh volumetric energy charges that a net metering customer
3 offsets or avoids through their DG systems.

4 Basic economic theory dictates that these proposals will slow DG growth by
5 reducing the returns solar DG provides to customers. Recent experience in Arizona and
6 Nevada confirms this point. When Salt River Project instituted mandatory demand charges
7 for new net metering customers last year, DG applications fell by over 95%.²¹⁴ In addition,
8 when Nevada recently eliminated net metering, solar companies significantly decreased
9 their investments in the state and eliminated hundreds of jobs.²¹⁵

10 Staff and APS have attempted to show that if the Commission approves UNSE's
11 proposals, the impacts on DG and the solar industry will not be as dramatic. However, the
12 parties' attempts to demonstrate this point are flawed. And more importantly, the parties'
13 analysis ultimately confirms the central fact that UNSE's proposals would harm the
14 economics of solar DG and make it less economical.

15 *1. Staff's analysis shows mandatory demand charges would make DG*
16 *less economical.*

17 Staff witness Yue Liu concluded that if the Commission approved the various
18 demand charge proposals in this case, solar DG would remain financially viable.²¹⁶ Staff's
19 analysis is problematic for multiple reasons, and in any event it shows that UNSE's
20 proposals would undercut the economics of DG.

21 First, Mr. Liu's assumptions are flawed because they are not based on data from
22 existing net metering customers in UNSE's territory, and he also did not account for
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25 ²¹³ *Id.* at 64:3-14.

26 ²¹⁴ Kobor Direct 38:22-39:1 (Ex. Vote Solar-6).

²¹⁵ Kobor Surrebuttal 9:4-7 (Ex. Vote Solar-7).

²¹⁶ Yue Liu Surrebuttal Test. 13:20-14:1-2 (Feb. 23, 2016) ("Liu Surrebuttal") (Ex. S-15).

1 variability among customers.²¹⁷ For example, when considering the solar purchase cost,
2 Mr. Liu assumed a price of \$2,750/kW, which was a midpoint number between data
3 provided by TASC and UNSE.²¹⁸ Yet customers who had earlier purchased solar systems
4 very likely paid significantly more, given recent declines in panel prices. Additionally,
5 seasonal shaping of solar generation and the solar system conversion factor would vary
6 among customers, based on the pitch of the roof, orientation of the panels, panel direction,
7 or even whether a nearby tree shades part of the system. But Staff's analysis failed to
8 account for this variability. Staff also did not account for individual customer variability
9 when estimating solar system size.²¹⁹ Further, although individual customers' load shapes
10 directly impact their on-peak demand, Staff failed to account for the variability of customer
11 load factors when measuring kWh and kW by season prior to solar.²²⁰

12 Second, Mr. Liu repeatedly rejected data provided by the solar industry, and instead
13 heavily relied on data provided by UNSE.²²¹ Notably, Mr. Liu failed to independently
14 verify the data provided by either party. But despite this lack of independent verification,
15 Mr. Liu selected UNSE's data over the solar industry's data five times when making his
16 eight major assumptions, taking a mean point between the parties' data in the other
17 instances.²²² As a result, the assumptions on which Mr. Liu based his analysis are
18 unreasonably skewed toward UNSE's position, despite the availability of competing data
19 provided by the solar industry.

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21 ²¹⁷ See *id.* at 4:9–13 (discussing Mr. Liu's assumptions), 4:15–8:3 (assumptions do not include existing customers).

22 ²¹⁸ *Id.* at 7:7–10.

23 ²¹⁹ *Id.* at 4:21–23.

24 ²²⁰ *Id.* at 6:21–22.

25 ²²¹ See *id.* at 3:17–19.

26 ²²² *Id.* at 5:6–7 (using UNSE's number for solar system conversion factor), 6:8–9 (selecting UNSE's number for seasonal shaping of solar by generation), 6:15 (using UNSE's number for solar off-setting load at time of generation), 7:5 (using UNSE number for on-peak solar generation), 7:15 (using UNSE number for percent of taxes and government fees), 4:21–22 (selecting midpoint between UNSE and TASC numbers for solar system size), 7:9–10 (selecting midpoint between UNSE and TASC numbers for solar purchase cost).

1 Third, Staff's analysis comparing a customer's DG investment to other investments
2 also relied on flawed assumptions. For example, when calculating the Internal Rate of
3 Return ("IRR") on DG investments, Mr. Liu made assumptions regarding the rate at which
4 the solar system would degrade over the twenty-year life of the system.²²³ UNSE did not
5 provide any data to Mr. Liu regarding the solar system degradation factor. But Mr. Liu
6 nonetheless choose a midpoint between a "zero" number that he assumed for UNSE and
7 the data provided by the solar industry.²²⁴ Selecting a midpoint between the solar industry
8 number and a number that UNSE never provided was arbitrary.

9 Ultimately, despite these flaws, Mr. Liu's testimony paints a stark picture for DG
10 solar under the demand charges proposals. Mr. Liu found that when compared to current
11 rates, UNSE's proposal to impose mandatory demand charges on all customers would
12 result in a 20.28% bill increase for the average net metering customer, while larger net
13 metering customers would see a 31.82% bill increase.²²⁵ Further, Mr. Liu stated that
14 assuming a zero utility rate escalation, "leasing a rooftop solar system is an economically
15 viable option only under (the existing two-part rate)."²²⁶ While Staff has proposed to
16 mitigate these impacts with a 15% bill credit for existing net metering customers and a
17 15% upfront incentive for new net metering customers, it is unclear how these incentives
18 would play out in reality. Furthermore, the 15% bill credit for existing customers is not
19 based on any actual data on these existing customers. Thus, even with its flaws, Staff's
20 analysis shows that UNSE's proposal would heavily impact net metering customers.

21 2. *APS's analysis of solar leasing companies' profitability is irrelevant.*

22 APS witness Corey Welch conducted an analysis showing that solar leasing
23 companies will remain profitable even if the Commission eliminates net metering, due to
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25 ²²³ *Id.* at 10:20–21.

26 ²²⁴ *See id.* at 10:20.

²²⁵ *Id.* at 14:14–20; 15:3–4.

²²⁶ *Id.* at 16:17–18 (emphasis added).

1 federal incentives and the recent extension of the federal Investment Tax Credit.²²⁷ In
2 short, Mr. Welch concluded that SolarCity could remain profitable if the Commission
3 lowers the DG compensation rate in UNSE's territory to 7.5¢/kWh.²²⁸ Mr. Welch's report
4 has no relevance to this proceeding. Mr. Welch makes clear that he did not analyze how
5 the actual net metering proposal that is at issue here would impact solar companies.²²⁹
6 Thus, his conclusion about SolarCity's profitability with a 7.5¢/kWh export rate tells
7 nothing about whether SolarCity (or any other solar leasing company) could earn an
8 adequate profit if UNSE compensates DG at 5.84¢/kWh, as it proposes. Mr. Welch's
9 report also fails to analyze impacts to other companies. And most importantly, Mr. Welch
10 does not deny the ultimate fact that eliminating net metering would harm the economics of
11 DG for solar companies and reduce their profits. Instead, he conditionally finds that
12 "[d]epending on the magnitude of the rate changes, it is possible that adequate project
13 returns could be maintained."²³⁰ The analysis simply does not support a conclusion that
14 UNSE's proposal would cause minimal harm to the local solar industry.

15 **B. It is essential that the Commission fully grandfather existing net**
16 **metering customers into any rate design changes.**

17 UNSE's approximately 1,800 net metering customers have made significant
18 investments in their solar DG systems, and many have done so in response to incentives
19 provided by UNSE that encouraged them to make those investments.²³¹ The proposals
20 UNSE has put forth in this rate case would make the DG systems installed by these
21 customers less economical, which would undermine those investments if existing net
22 metering customers are forced to move to the new rate designs. Fortunately, it appears that
23 most of the parties agree that as a general matter, the Commission should grandfather

24 ²²⁷ Corey Welch Surrebuttal Test. 4:16-17 (Ex. APS-5).

25 ²²⁸ *Id.* at Attachment CJW-2SR, p. 15.

26 ²²⁹ *Id.* at 4:17-19.

²³⁰ *Id.* at 8:5-6 (emphases added).

²³¹ Tr. 388:14-23 (Hutchens Test.).

1 existing net metering customers into any new rate designs.²³² However, important details
2 on the Company's grandfathering proposals remain problematic and should be improved.

3 1. *The Commission should grandfather customers who have installed DG*
4 *or have applied to do so by the end of the rate case.*

5 UNSE agrees generally that it is important to grandfather existing net metering
6 customers from its rate design changes due to the significant investments they have made
7 in DG.²³³ However, the Company seeks a June 1, 2015 cut-off date for grandfathering for
8 both the proposed net metering modifications and the proposed demand charge.²³⁴
9 Beginning on June 1, 2015, UNSE notified new net metering customers that it asked the
10 Commission to significantly change the rate structure for DG. Despite this notice, these
11 customers should also be grandfathered. As RUCO has explained, "these [post June 1,
12 2015] customers may not fully understand the magnitude of the negative impact to this
13 value proposition that may come from a rate redesign."²³⁵ This is an important point, as
14 even the parties to this case appear to not fully understand and agree upon how the various
15 proposals at issue will impact the economics of solar DG. So while net metering customers
16 applying after June 1, 2015, may have received notice of UNSE's intentions, they almost
17 certainly were unable to ascertain how the numerous and evolving UNSE proposals would
18 actually impact them. As a result, if the Commission approves the proposals, it should
19 grandfather net metering customers who submitted applications prior to the conclusion of
20 this rate case. The equitable considerations for grandfathering these customers is
21 substantial, while the burden on the Company to do so would be minimal due to the
22 relatively small number of net metering customers in UNSE's territory.

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25 ²³² See, e.g., *id.* at 75:1-77:5; Tr. 268:2-5 (Hutchens Test.); Tr. 1321:3-23 (Tilghman Test.);
Huber Direct 16:13-17:3 (Ex. RUCO-5).

26 ²³³ See, e.g., Tr. 268:2-5 (Hutchens Test.); Tr. 1321:3-23 (Tilghman Test.).

²³⁴ Tilghman Direct 8:20-21 (Ex. UNSE-25); Dukes Rebuttal 13:17-25 (Ex. UNSE-28).

²³⁵ Huber Direct 16:21-22 (Ex. RUCO-5).

1 2. *Staff's proposed 15% discount for existing net metering customers is*
2 *not grandfathering and does not go far enough to protect existing*
3 *customers.*

4 Rather than grandfather existing net metering customers from the mandatory
5 demand charges proposed by Staff and UNSE, Staff has proposed a 15% bill credit to net
6 metering customers who adopted DG on or before June 1, 2015.²³⁶ Staff proposed this
7 mitigation measure after Mr. Liu determined that new net metering customers would
8 experience larger bill increases than other customers under the proposed three-part rates.²³⁷
9 Yet Mr. Liu's analysis did not even analyze the impacts to existing net metering customers,
10 many of whom paid substantially higher prices for their DG systems.

11 While Vote Solar appreciates Staff's attempt to address the disparate impacts on net
12 metering customers under three-part rates, the 15% discount does not go far enough and
13 these customers should be fully grandfathered into the existing rate design. Staff itself
14 concedes that its proposed discount would not fully mitigate the impacts to net metering
15 customers under three-part rates.²³⁸ As a result, existing net metering customers would be
16 penalized for their DG investments under Staff's proposal. In addition, Staff has only
17 proposed to apply the 15% discount until UNSE's next rate case, at which time it would be
18 revisited.²³⁹ Staff's proposal would thus be a partial, potentially temporary measure
19 subjecting net metering customers to substantial financial burden and uncertainty. In
20 contrast, full grandfathering would be simpler and would provide more certainty to existing
21 net metering customers regarding their DG investments. For these reasons, the better
22 option is to grandfather existing net metering customers from the new rate design, and to
23 set the grandfathering date as of the conclusion of the rate case.

24
25 ²³⁶ Broderick Surrebuttal 6:2-3 (Ex. S-17).

26 ²³⁷ *Id.* at 5:7-19.

²³⁸ *Id.* at 6:12-14.

²³⁹ *Id.* at 6:25-7:3.

1 minimum bill inclusive of customer charges should be set at \$14.00 for residential
2 customers and \$23.00 for small commercial customers.

- 3 ■ **Time-of-Use Rates**: The Commission should consider implementing time-of-use
4 rates to address UNSE's concerns. The Commission could implement an optional
5 time-of-use rate and an optional time-of-use demand rate, and if it does so it should
6 instruct UNSE to implement an educational plan for these optional rates.
- 7 ■ **Grandfathering**: If the Commission approves mandatory three-part rates, it should
8 fully grandfather existing net metering customers into the new rate design, rather
9 than approve Staff's proposed 15% bill discount. The Commission should also fully
10 grandfather existing net metering customers if the Commission modifies the net
11 metering tariff. In addition, the Commission should not approve UNSE's proposed
12 June 1, 2015 grandfathering deadline, and it should instead set the date of decision as
13 the grandfathering deadline.

14
15 DATED this 25th day of April, 2016.

16
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9 All Parties of Record

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