

**FILED**  
July 28, 2021  
**INDIANA UTILITY  
REGULATORY COMMISSION**

IndianaDG Exhibit 1  
IURC Cause 45505  
Direct Testimony of Benjamin Inskeep

**STATE OF INDIANA**

**INDIANA UTILITY REGULATORY COMMISSION**

**VERIFIED PETITION OF NORTHERN  
INDIANA PUBLIC SERVICE COMPANY  
LLC FOR APPROVAL OF RIDER 889 –  
EXCESS DISTRIBUTED GENERATION  
RIDER FOR THE PROCUREMENT OF  
EXCESS DISTRIBUTED GENERATION  
PURSUANT TO IND. CODE CH. 8-1-40**

**CAUSE NO. 45505**

**DIRECT TESTIMONY OF BENJAMIN D. INSKEEP**

**ON BEHALF OF  
INDIANA DISTRIBUTED ENERGY ALLIANCE**

**JULY 27, 2021**

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**LIST OF ATTACHMENTS**

- BDI-1: *Curriculum Vitae* of Benjamin Inskeep
- BDI-2: SEA 309 Version 1
- BDI-3: SEA 309 Version 2
- BDI-4: SEA 309 Version 3
- BDI-5: SEA 309 Version 4
- BDI-6: SEA 309 Version 5
- BDI-7: Senator Hershman Letter to the Editor
- BDI-8: Rejected, Withdrawn, and Approved Investor-Owned Utility Fixed Fees on Solar DG Customers
- BDI-9: Key Examples of Jurisdictions Studying and Investigating Net Metering
- BDI-10: Referenced NIPSCO Data Request Responses

**I. INTRODUCTION**

1 **Q. Please state your name, business address and current position.**

2 A. Benjamin D. Inskip, 1155 Kildaire Farm Road, Ste. 202, Cary, North Carolina 27511.  
3 My current position is Principal Energy Policy Analyst with EQ Research LLC.

4 **Q. Please describe your educational and occupational background.**

5 A. I earned a Bachelor of Science in Psychology from Indiana University in 2009 and both a  
6 Master of Science in Environmental Science and a Master of Public Affairs from the  
7 O'Neill School of Public and Environmental Affairs at Indiana University in 2012.

8 I was employed at the North Carolina Clean Energy Technology Center at North  
9 Carolina State University from June 2014 through February 2016, where I co-created and  
10 served as lead author and editor of *The 50 States of Solar*, a quarterly report series tracking  
11 net metering policies and rate design changes impacting residential solar. I also conducted  
12 policy research and contributed to the *Database of State Incentives for Renewables and*  
13 *Efficiency (DSIRE)* project. Finally, I provided technical support, conducted analysis, and  
14 led workshops for state and local governments on reducing solar soft costs through the U.S.  
15 Department of Energy's SunShot Solar Outreach Partnership.

16 I have worked for EQ Research LLC, a clean energy policy consulting firm, since  
17 2016. In my current position, I oversee EQ Research's general rate case subscription  
18 service, which includes reviewing and analyzing investor-owned electric utility rate case  
19 filings, providing summaries to clients, and maintaining a client-facing database of rate  
20 case information. I also contribute as a researcher and analyst to other policy service  
21 offerings such as a legislative and regulatory tracking services and perform customized  
22 research and analysis for clients. I also help clients with their participation in regulatory

1 proceedings, including serving as an expert witness on renewable energy policy issues,  
2 such as net metering. My *curriculum vitae* is attached as Attachment BDI-1.

3 **Q. On whose behalf are you testifying?**

4 A. I am testifying on behalf of Indiana Distributed Energy Alliance (“IndianaDG”).

5 **Q. Have you previously testified before the Indiana Utility Regulatory Commission**  
6 **(“IURC” or “Commission”) or as an expert in any other proceeding?**

7 A. Yes. I previously testified before the IURC in Cause No. 45506 (Indiana Michigan Power’s  
8 excess distributed generation case). I have also previously testified before the Kentucky  
9 Public Service Commission in the following cases:

- 10 • Case No. 2020-00174 (Kentucky Power’s 2020 rate case)
- 11 • Case No. 2020-00349 (Kentucky Utilities’ 2020 rate case)
- 12 • Case No. 2020-00350 (Louisville Gas & Electric’s 2020 rate case)

13 **Q. What is the purpose of your testimony in this proceeding, and how is it organized?**

14 A. My testimony responds to the excess distributed generation rider (“EDG Rider”) and  
15 accompanying terms and conditions proposed by Northern Indiana Public Service  
16 Company (“NIPSCO” or the “Company”). It is organized as follows:

- 17 • Section II addresses NIPSCO’s calculation of the EDG Rider credit rate, describes  
18 the flaws in NIPSCO’s methodology, and proposes a more accurate methodology  
19 for crediting EDG. Next, I address NIPSCO’s EDG Rider proposal to end the policy  
20 that allowed DG customers to net electricity produced by their DG systems and  
21 exported to the grid against electricity they imported during a monthly billing  
22 period. I detail the flaws of this proposal and describe why it is inconsistent with  
23 the principles underlying just and reasonable rates. I also explain why maintaining  
24 monthly netting is sound policy, is supported by the plain language of the EDG

1 statutes, and makes logical and practical sense in this case. I then analyze the  
2 impacts of NIPSCO's proposal on the financial value provided by DG and discuss  
3 various alternative policy options.

4 • Section III addresses other concerns I have with the terms and conditions of  
5 participation under the EDG Rider.

6 • Section IV contains my concluding remarks and summarizes my recommendations.

7 **Q. What are your recommendations to the Commission?**

8 A. For many reasons, especially but not exclusively the plain language of the EDG statute,  
9 (Ind. Code ch. 8-1-40 and Senate Enrolled Act 309), I recommend that the Commission  
10 deny NIPSCO's proposed "no netting" EDG Rider and proposal to end monthly netting.  
11 To the extent the Commission disagrees with my recommendation to maintain monthly  
12 netting under the EDG Rider, I recommend it consider alternative netting methodologies  
13 that are less punitive to customers.

14 If the Commission approves NIPSCO's filing as proposed or with limited  
15 modifications, I recommend that the Commission direct NIPSCO to provide additional  
16 consumer information and education regarding its "Purchases from Cogeneration Facilities  
17 and Small Power Production Facilities" tariff ("Rider 878") to ensure all eligible DG  
18 customers have access to and are fully informed of this rate option.

19 I also recommend that NIPSCO modify its calculation of the EDG Rider credit rate  
20 to accurately reflect the average marginal price at the daylight times solar DG systems are  
21 generating and exporting power to the grid.

1                   Finally, I recommend rejection of several harmful provisions of NIPSCO's EDG  
2                   Rider regarding the treatment of EDG credits at the end of a DG customer's service and  
3                   the requirement for an external disconnect switch.

**II. NIPSCO'S EDG RIDER "NO NETTING" PROPOSAL**

**A. Description of NIPSCO Proposal**

1 **Q. What is NIPSCO proposing in this case?**

2 A. In response to Senate Enrolled Act 309 ("SEA 309"), NIPSCO is proposing a new tariff,  
3 Rider 889 – EDG Rider, for procurement of excess distributed generation ("EDG") under  
4 Ind. Code ch. 8-1-40 ("Distributed Generation Statutes" or "DG Statutes"). NIPSCO  
5 initially proposed an EDG Rider that would have allowed DG customers to continue  
6 monthly netting, with EDG credited at the EDG Rider rate at the end of the billing period.<sup>1</sup>  
7 Thereafter, NIPSCO filed an Amended Petition and testimony that modified its netting  
8 proposal.

9 Specifically, NIPSCO is now proposing that customers taking service under the  
10 EDG Rider would not be able to net *any* electricity they export to NIPSCO with electricity  
11 they import from NIPSCO:

12 The utility meter for EDG customers will have two channels: (1) a channel  
13 labeled "inflow" that measures the electricity being used by the customer,  
14 net of the amount of electricity being produced by the customer during the  
15 period recorded by the meter;[FN] and (2) a channel labeled "outflow" that  
16 measures the electricity being produced by the customer above the  
17 electricity being used by the customer for the same period. The  
18 instantaneous calculation the meter performs of the difference between the  
19 electricity NIPSCO is supplying to the customer and the electricity the  
20 customer is supplying to NIPSCO is measuring EDG, as required under  
21 Section 5 of the Distributed Generation Statute.

22  
23 *FN: The "period" being measured by the meter is an interval of less than*  
24 *one second. There can be inflow or outflow for any particular period, or*  
25 *the meter can register "0" if the electricity NIPSCO is supplying to the*  
26 *customer and the electricity the customer is supplying to NIPSCO match*  
27 *during a particular period.*<sup>2</sup>

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<sup>1</sup> Direct Testimony of Kevin Kirkham (March 1, 2021), pp. 11-12.

<sup>2</sup> Direct Testimony of Kevin Kirkham (May 10, 2021), p. 10, footnote 4.



1  
2 NIPSCO further describes its EDG measurement methodology as follows:

3 [C]apture the inflow and outflow of energy as measured by the utility meter  
4 on an instantaneous basis. The resulting kilowatt-hour (“kWh”) that is  
5 captured during each cycle measured by a customer’s meter will be totaled.  
6 The total as recorded by the inflow channel will be utilized at the end of  
7 monthly billing cycle as the amount of energy in kWh to bill under the  
8 customer’s standard tariff rate. The resulting total kWh that is recorded by  
9 the outflow channel will be utilized at the end of monthly billing cycle as  
10 the amount of energy in kWh used in the calculation of the DG Billing  
11 Credit applied to the customer’s monthly utility bill.<sup>3</sup>  
12

13 NIPSCO calls this its “instantaneous netting proposal” where “each instantaneous  
14 measurement will have a charge or credit associated with it.”<sup>4</sup> This characterization is  
15 inaccurate. The DG customer is either importing electricity from the utility or exporting  
16 electricity to it, not doing both at a given instance. There is no actual “netting” occurring  
17 under NIPSCO’s proposal – NIPSCO is *not* subtracting, or taking the difference between,  
18 imports and exports, either at any instance or over any time period, before it then applies  
19 the EDG Rider rate to the resulting net amount or total. I therefore refer to this position in  
20 my testimony as NIPSCO’s “no netting” proposal, which I believe more accurately  
21 characterizes their amended petition.

22 Instead of applying monthly netting, all electricity that a DG customer does not  
23 immediately consume on-site behind-the-meter that is exported to NIPSCO under EDG  
24 Rider would be credited to the DG customer at a very low rate of \$0.02645/kWh, and that  
25 rate would change each year.<sup>5</sup> All electricity that a DG customer imports from NIPSCO  
26 would be charged at the applicable retail rate. NIPSCO anticipates closing its Net Metering

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<sup>3</sup> NIPSCO Amended Verified Petition, p. 7 [footnote omitted].

<sup>4</sup> Direct Testimony of Kevin Kirkham (May 10, 2021), p. 12.

<sup>5</sup> Direct Testimony of Kevin Kirkham (May 10, 2021), pp. 16-17.

1 Rider to new residential and biomass participants after June 30, 2022, and on January 1,  
2 2022 for its “non-reserved capacity” category that applies to other types of customers,  
3 although these customers would need to submit a completed application by October 1, 2021  
4 to ensure they can be approved by the December 31, 2021 deadline.<sup>6</sup>

5 **Q. How does NIPSCO calculate the EDG Rider credit rate for EDG?**

6 A. NIPSCO calculated the average Real-Time Locational Marginal Price (“LMP”) for its load  
7 zone within the Midcontinent Independent System Operator (“MISO”) for all hours of the  
8 entire 2020 year at a NIPSCO pricing node, and multiplied that by 1.25. The Average LMP  
9 in 2020 was \$0.02116/kWh, resulting in a calculated EDG rate of \$0.02645/kWh.

10 **Q. What are NIPSCO’s current metering capabilities?**

11 A. NIPSCO indicates its meters only have the capability to offer monthly netting or no netting:

12 NIPSCO currently has dual channel meters that have the capability to  
13 measure “inflow” and “outflow” either monthly or instantaneously. In the  
14 future, an AMI metering system and other billing technologies could allow  
15 NIPSCO to consider other periods to measure and compensate customers  
16 with Distributed Generation.<sup>7</sup>

17  
18 NIPSCO has requested installation of AMI metering in its pending Transmission,  
19 Distribution, and Storage System Improvement Charge case (IURC Cause No. 45557).

20 **Q. Are NIPSCO customers able to easily determine their instantaneous electricity  
21 consumption?**

22 A. No. Residential customers do not have access to any tool provided by NIPSCO, such as an  
23 online portal, that would provide them with information on what their usage is in real-time.

24 While some large commercial and industrial customers have such access, NIPSCO notes

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<sup>6</sup> NIPSCO Amended Verified Petition, pp. 7-8; Direct Testimony of Kevin Kirkham (May 10, 2021), pp. 4-6.

<sup>7</sup> Direct Testimony of Robert Sears, p. 11.

1 that it is “uncommon,” and that “NIPSCO’s automated meter reading technology is not  
2 capable of transmitting data on a real-time or near real-time basis, and therefore such data  
3 is not available for customers to access.”<sup>8</sup>

4 **Q. Does NIPSCO have granular data on its DG customers?**

5 A. No. NIPSCO does not have granular data on its net metering customers. NIPSCO  
6 confirmed in responses to a data request that it does not have in its possession or otherwise  
7 track DG customer generation, hourly inflows, hourly outflows, or monthly or annual load  
8 factors or billing demand of DG customers.

9 NIPSCO stated that it “only has granular 8760-hour data available for 125  
10 residential and 12 commercial customers.”<sup>9</sup> However, NIPSCO was unable to provide any  
11 representative 8,760 hourly load profile for its residential class despite repeated requests  
12 from IndianaDG.<sup>10</sup>

**B. EDG Credit Calculation**

13 **Q. What does the language in the DG Statutes provide with respect to how the EDG  
14 credit rate must be calculated?**

15 A. Please note, I offer no legal conclusions in my testimony. I only describe the plain language  
16 of the statutes and related documents I have read. Section 17 of the DG Statutes provides  
17 that the EDG credit rate must equal:

18 the product of: (1) the average marginal price of electricity paid by the  
19 electricity supplier during the most recent calendar year; multiplied by (2)  
20 one and twenty-five hundredths (1.25).

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<sup>8</sup> NIPSCO Response to IndianaDG Data Request 3-011.

<sup>9</sup> NIPSCO Response to IndianaDG Data Request 4-01; NIPSCO Response to Citizens Action Coalition Data Request CAC Request 1-003.

<sup>10</sup> NIPSCO Response to IndianaDG Data Request 4-01; NIPSCO Supplemental Response to IndianaDG Data Request 4-01.

1 Section 6 provides that marginal price of electricity:

2 means the hourly market price for electricity as determined by a regional  
3 transmission organization of which the electricity supplier serving a  
4 customer is a member.

5 NIPSCO's proposed hourly market prices are determined in each of the 24 hours in each  
6 day, including in daylight hours when customer solar is generating electricity and helping  
7 offset daylight demand, and nighttime hours when solar is not generating electricity and  
8 NIPSCO electric demand and wholesale market prices of energy are typically lower.

9 **Q. Is NIPSCO's calculation of the EDG credit rate reasonable?**

10 A. No. NIPSCO has averaged the wholesale electricity price for *all hours* of the year.  
11 However, nearly all DG systems are solar facilities that only produce electricity and export  
12 power during daylight hours. NIPSCO's calculation using *all hours* including nighttime  
13 hours does not align with the hours in which a DG system actually generates electricity,  
14 and therefore does not accurately reflect the marginal price of electricity during the hours  
15 in which a DG system is providing EDG to NIPSCO. NIPSCO's customers' highest  
16 demands for electricity generally occur during the early afternoon in summer (1-3 pm),<sup>11</sup>  
17 coinciding with when solar is typically generating electricity. NIPSCO forecasts that it will  
18 continue to be a summer-peaking utility through at least 2030.<sup>12</sup> Market prices for  
19 electricity are generally higher during these hours than the average of all hours over the  
20 year. Customer solar output shaves or eliminates their demand for electricity during these  
21 higher-priced hours, and their EDG exports help reduce the need for higher-cost market

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<sup>11</sup> NIPSCO Response to IndianaDG Data Request 3-006, Confidential Attachment A. Note that counsel for NIPSCO has agreed to make the information in my testimony public.

<sup>12</sup> NIPSCO Response to IndianaDG Data Request 3-006, Confidential Attachment A. Note that counsel for NIPSCO has agreed to make the information in my testimony public.

1 purchases during these hours. It would be an irrational exercise and result to calculate the  
2 value of customers' EDG based on hours of darkness when customers' solar facilities are  
3 not generating electricity and exporting power to the grid.

4 **Q. What would be a more reasonable way of calculating the marginal price of electricity?**

5 A. NIPSCO could calculate "the average marginal price of electricity paid by the electricity  
6 supplier during the most recent calendar year" by using the average marginal price for  
7 when DG generation is being exported, i.e. daylight hours which would be more reflective  
8 of what is "paid by the electricity supplier." I recommend calculating the average marginal  
9 price of electricity for each hour of the previous year and applying an appropriate factor  
10 that weights the average price in each hour according to the amount of generation a typical  
11 DG system is expected to actually produce during that hour.

12 I have conducted such an analysis based on the expected output of a typical  
13 residential solar DG system located in Merrillville, Indiana on Central Standard Time using  
14 the default assumptions and output produced using the National Renewable Energy  
15 Laboratory's ("NREL") PVWatts Calculator.<sup>13</sup> This analysis indicates that expected solar  
16 DG generation for systems located in Merrillville, Indiana, that are not paired with battery  
17 energy storage will primarily occur between the hours of 5 a.m. to 7 p.m. For instance, a  
18 solar DG system will produce the most electricity during the noon hours, equating to 13.7%  
19 of the system's total production on an annual basis. Therefore, the LMP for the noon hour  
20 should be weighted accordingly by multiplying the hourly LMP at noon for the previous  
21 year by 13.7%, conducting this same system hourly production calculation for each other

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<sup>13</sup> National Renewable Energy Laboratory, PVWatts Calculator, available at  
<https://pvwatts.nrel.gov/>.

1 hour of the day, and summing each calculated value to arrive at “the average marginal price  
2 of electricity paid by the electricity supplier during the most recent calendar year” as it  
3 applies to the generation profile of a typical DG customer. In contrast, the solar DG system  
4 produces no electricity during the midnight hour, equating to 0% of the system’s total  
5 production on an annual basis, and therefore the LMP for the midnight hour is weighted  
6 by a factor of 0%.

7 This approach results in a 2020 average LMP of \$23.88/MWh, or \$0.02388/kWh,  
8 which produces an EDG credit rate of \$0.02985/kWh, which is 12.9% higher than  
9 NIPSCO’s proposed EDG credit rate that incorrectly includes non-solar-generating hours  
10 in its calculation.

11 This would be a rational approach to applying the hourly wholesale market price to  
12 an EDG rate calculation that aligns with the time when solar DG facilities are generating  
13 electricity and would be consistent with the plain language of the DG Statutes. An  
14 alternative approach would be to take the hourly LMP price for each of the solar-generating  
15 hours and average them. But that approach would fail to give fair consideration to the  
16 hours that solar DG generation produces the most electricity. An even less accurate  
17 approach is the one taken by NIPSCO where the individual 24 hours of LMP are averaged  
18 with total disregard to when solar DG is actually producing electricity.

19 **Q. Does calculating the EDG rate based on daylight hour solar electricity production**  
20 **result in a rate that reflects the value of solar EDG exports and reach an overall just**  
21 **and reasonable EDG rate proposal?**

22 A. Calculating the solar EDG rate based on daylight hours (i.e., solar-producing hours) simply  
23 avoids the irrational calculation of solar EDG based in part on the non-solar producing

1 nighttime market price of wholesale electricity. But it does not result in a just and  
2 reasonable EDG rate as it still seriously undervalues EDG exports. More importantly, it  
3 will not yield a just and reasonable EDG framework or result. The slightly higher solar  
4 EDG credit from my calculation is an improvement on NIPSCO's EDG credit calculation,  
5 but it is not sufficient to offset to a meaningful degree the far more substantial negative  
6 impact of the "no netting" proposal. As I calculate below, the "no netting" proposal is the  
7 primary driver for significantly prolonging solar DG payback periods. In other words,  
8 while I believe correcting the EDG credit rate calculation as I describe above is logical, it  
9 is not a remedy for the harm to DG customers that will result from NIPSCO's "no netting"  
10 proposal.

**C. Measurement of EDG**

11 **Q. How does the language in the DG Statutes define EDG?**

12 A. Section 5 of the DG Statutes provides:

13 As used in this chapter, "excess distributed generation" means the  
14 difference between:

- 15 (1) the electricity that is supplied by an electricity supplier to a  
16 customer that produces distributed generation; and  
17 (2) the electricity that is supplied back to the electricity supplier by  
18 the customer.  
19

20 **Q. How does the language in the DG Statutes specify the compensation rate for EDG be**  
21 **calculated?**

22 A. Section 17 of the DG Statutes requires the Commission to approve a "rate" for  
23 compensating EDG that:

24 equals the product of (1) the average marginal price of electricity paid by  
25 the electricity supplier during the most recent calendar year; multiplied by  
26 (2) one and twenty-five hundredths (1.25).

1 **Q. Do you see any language in the enacted DG Statutes that specifies a change in netting**  
2 **methodology or prescribes a new method for measuring EDG; or otherwise directs**  
3 **the Commission to review and approve a new measurement or netting methodology?**

4 A. No, I do not see such language. There is no language in the statute that says monthly netting  
5 should stop. Notably, the language in the DG Statutes requires the Commission to approve  
6 a *rate* – not consider a new methodology or netting measurement for determining EDG. I  
7 do not see language that requires or asks the Commission to consider a new methodology  
8 or netting measurement for determining EDG.

9 **Q. Have you researched the legislative evolution of SEA 309 from publicly available**  
10 **documents?**

11 A. Yes, I have. The variations of the bill and video of legislative public hearings on the bill  
12 are publicly available on Indiana General Assembly’s website.

13 **Q. What has your research found with respect to provisions addressing the issue of**  
14 **netting in the legislative history of the SEA 309 DG Statutes?**

15 A. As introduced (“Version 1,” which is my Attachment BDI-2), Section 15 of SEA 309  
16 would have changed the netting methodology by expressly removing all netting.  
17 Specifically, it would have established a buy-all, sell-all tariff to replace net metering by  
18 providing that:

19 all distributed generation produced by the customer shall be purchased by  
20 the electricity supplier at the rate approved by the commission under section  
21 13 of this chapter; and (2) all electricity consumed by the customer at the  
22 premises shall be considered electricity supplied by the electricity supplier  
23 and is subject to the applicable retail rate schedule.<sup>14</sup>

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<sup>14</sup> Indiana General Assembly, 2017 Session, Senate Bill 309 (As Introduced), available at <http://iga.in.gov/legislative/2017/bills/senate/309#document-6bef29ba>



1 This definitional language makes clear that netting would not be permitted, since “*all*  
2 distributed generation produced by the customer” is being credited at the specified rate and  
3 “*all* electricity consumed by the customer” is subject to the applicable retail rate charges  
4 (emphasis added). A buy-all, sell-all tariff would have the DG customer pay retail rates for  
5 their full electricity usage, receive a set EDG rate for their electricity production, and their  
6 usage would not be offset by any of their own on-site DG generation output. A buy-all,  
7 sell-all policy would have been a change from the existing measurement methodology of  
8 monthly netting.

9 SEA 309 was subsequently amended four times (“Version 2,” “Version 3,”  
10 “Version 4,” and “Version 5,” respectively; see Attachments BDI-3, BDI-4, BDI-5, and  
11 BDI-6), with Version 5 ultimately enacted as the DG Statutes. None of the subsequent  
12 versions retained the buy-all, sell-all framework or stated a new netting or no netting  
13 methodology, i.e., something different from the existing monthly netting, or otherwise  
14 instructed the Commission to evaluate any need for a different netting proposal.

15 **Q. What was the public reaction to Version 1 of SEA 309, which included revising the**  
16 **existing monthly netting methodology?**

17 A. There was strong opposition with letters to the editors sent to newspapers and opposition  
18 voiced to the bill’s author, Senator Brandt Hershman.<sup>15</sup>

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<sup>15</sup> E.g., John Russell, “Bill Alarms Solar-Power Advocates,” *Indianapolis Business Journal*, January 23, 2017; Dennis Shock, “Ending Net Metering Bad for Hoosiers” [Letter to the Editor], *The Indianapolis Star*, January 29, 2017; “A Bright Idea: Resist Urge to Tie Solar-Energy Producers’ Hands,” *The Journal Gazette*, January 27, 2017; Paul Steury, “Senate Bill 309 Could Kill Solar Buyback Program,” *The Goshen News*, February 4, 2017; Christopher Rohaly, “Strengthen Solar Industry, Legislature” [Letter to the Editor], *Kokomo Tribune*, February 7, 2017; and Ray Wilson, “Don’t Kill Indiana’s Solar Industry” [Letter to the Editor], *The Indianapolis Star*, February 7, 2017.

1 **Q. How did the author of SEA 309 and the General Assembly respond to the public**  
2 **reaction to Version 1?**

3 A. Senator Hershman amended Version 1 of SEA 309. Version 2 and all subsequent versions  
4 of SEA 309 removed what had proved to be the highly contentious and controversial buy-  
5 all, sell-all provisions that had been included in Version 1, which neither allowed for on-  
6 site consumption, nor any form of netting exported electricity against imported electricity.  
7 Version 2 and all subsequent versions of SEA 309 contained the same definition for  
8 “excess distributed generation” that the General Assembly enacted through Section 5 of  
9 the DG Statutes.

10 **Q. What statements did the author of SEA 309 make regarding the intent of the bill and**  
11 **its provisions with respect to EDG?**

12 A. After amending Version 1 to remove the buy-all, sell-all provisions, Senator Hershman  
13 submitted a letter to the editor (Attachment BDI-7) in response to the strong public  
14 opposition to Version 1 of SEA 309, explaining that the buy-all, sell-all provisions had  
15 been removed from the bill and describing his view of the other aspects of SEA 309.<sup>16</sup> He  
16 characterized the amended bill as still “encourag[ing] renewable energy generation” while  
17 stepping down the compensation *rate* for EDG. He responded to the vocal opposition by  
18 clarifying in his letter that SEA 309 “has already been amended to address many of these  
19 concerns.”<sup>17</sup>

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<sup>16</sup> Brandt Hershman, “Utility Fairness for Hoosier Customers,” *The Star Press*, available at <https://www.thestarpress.com/story/opinion/contributors/2017/02/23/utility-fairness-hoosier-customers/98318350/>.

<sup>17</sup> *Id.*

1           Notably, none of the bill versions introduced after Version 1 was amended,  
2 including the enacted DG Statutes, have language that mentions, suggests, or contains  
3 provisions implying a change to the monthly netting methodology. What is clear is that the  
4 DG Statutes' language changes the *rate* at which EDG is compensated, moving from the  
5 full retail-rate rollover crediting under Net Metering to a credit rate based on an average  
6 marginal price, plus 25%. It also included provisions allowing existing net metering  
7 customers to continue to take service under net metering for a specified period of time,  
8 depending on when the system was installed.

9           In hearings on SEA 309, Senator Hershman made the following statements about  
10 SEA 309 (emphasis added):

- 11           • “That is what this tries to do: by stepping us down over a fairly long period  
12 of time, **so that we don’t kill the solar industry, but we do start to**  
13 **transition them to a market-driven rate**, and as I said, I think the  
14 technology is going to allow that to happen and for them to continue to be  
15 a viable means of generation.”<sup>18</sup>
- 16           • “The language in the bill itself is not all that complicated. It has the IURC  
17 determine the wholesale rate for a particular utility and then adds 25% to it,  
18 which you and I can do on the back of an envelope right here [...] [A]nything that’s even close to a ratemaking procedure at the IURC is an  
19 exhaustive and expensive process that oftentimes takes years [...] **Simplicity and certainty was actually my goal in doing it this way.**”<sup>19</sup>
- 22           • “The only real issue here is how many people may sell their excess power  
23 back to the utility, and at **what rate they will be paid** [...] That’s it.”<sup>20</sup>
- 24           • “...that [**25% above average wholesale prices**] **premium recognizing**  
25 **that we do assign a public policy value to renewable power.**”<sup>21</sup>
- 26           • “We are providing a **very, very slow ramp-down of the rates** while we  
27 provide a substantial grandfathering for anyone who is currently  
28 participating in the program, and **we move ourselves, recognizing the**

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<sup>18</sup> Indiana Senate Utilities Committee, February 9, 2017, First Reading of SEA 309 [Timestamp 13:40].

<sup>19</sup> Indiana Senate Utilities Committee, February 9, 2017, First Reading of SEA 309 [Timestamp 25:30].

<sup>20</sup> Indiana Senate Utilities Committee, February 16, 2017 [Timestamp 14:45].

<sup>21</sup> Indiana Senate Utilities Committee, February 16, 2017 [Timestamp 17:10].

1                   **advances in technology, closer to a market rate over a very long period**  
2                   **of time.”<sup>22</sup>**

- 3                   • He described the 25% premium above wholesale rates as “**putting in law a**  
4                   **public policy preference for alternative energy.**”<sup>23</sup>

5                   Although Senator Hershman spoke frequently in these hearings of modifying the *rate* by  
6                   which EDG is compensated to slowly begin to align it with “market-based rates,” I did not  
7                   observe him or other members of the General Assembly in these hearings discuss any intent  
8                   in the bill to modify the methodology or measurement for determining EDG. Senator  
9                   Hershman’s words are clear that the changing compensation rate was meant to be a gradual  
10                  change, and not produce a devastating impact to the distributed solar industry in Indiana.  
11                  Senator Hershman made clear that he was not opposed to distributed solar – in fact, he  
12                  states this bill was enshrining in Indiana law a *preference* for technologies like distributed  
13                  solar – and that the bill was not designed to harm the distributed solar market, but rather  
14                  gradually align the State’s policy based on the maturation of this technology.

15   **Q.    What is the significance of the EDG definition with respect to determining the**  
16   **appropriate EDG measurement for compensation under the specified rate?**

17   **A.**    The DG Statutes expressly provide that the measurement of EDG requires a calculation  
18           between the “difference between” two values: (1) electricity supplied by the utility  
19           (“imports” of electricity from the DG customer’s perspective) and (2) the electricity  
20           supplied by the DG customer to the utility (“exports” of electricity from the DG customer’s  
21           perspective). Instead of calculating that difference, NIPSCO proposes that EDG be  
22           measured “instantaneously” so that *all* kWh supplied by a DG customer to NIPSCO is  
23           credited at the low EDG Rider credit rate of \$0.02645/kWh, and *all* kWh supplied by

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<sup>22</sup> Indiana Senate Utilities Committee, February 16, 2017 [Timestamp 17:10].

<sup>23</sup> Indiana House Utilities, Energy and Telecommunications, March 22, 2017 [Timestamp 25:30].

1 NIPSCO to the DG customer is charged to the customer at that customer’s applicable full  
2 retail rate – and not by first taking the *difference between* these kWh values and then  
3 applying the EDG rate to the total EDG. Although the EDG Rider is distinguishable from  
4 a buy-all, sell-all tariff in that it does allow a DG customer to self-consume electricity  
5 generated by its own private DG equipment behind the meter, by treating each of the two  
6 components of EDG in isolation, NIPSCO’s “no netting” proposal resembles the  
7 provisions of the initial Version 1 of SEA 309 that were subsequently removed.

8 Under this new NIPSCO “no netting” measurement methodology, NIPSCO is not  
9 actually taking the “difference between” electricity supplied by NIPSCO and by the  
10 customer to NIPSCO, respectively. Applying this NIPSCO methodology instead of the  
11 “difference between” prescribed by the Distributed Generation Statutes results in DG  
12 customers compensated for all exported electricity at an extremely low compensation credit  
13 relative to the per-kWh credit to which they should have their excess generation netted  
14 against, with no “difference between” offset to their imported energy consumption. In  
15 contrast, the adopted statutory language functionally defines EDG as occurring over a  
16 period of time, and necessarily requires a netting calculation. *Netting*, by definition, is  
17 taking the *difference between* two values – in the context of net metering or the DG  
18 Statutes, the difference between electricity imports and exports over the billing period.

19 Finally, since electricity flows in one direction, a DG customer does not both supply  
20 electricity to the utility and receive electricity from the utility at the same instance – they  
21 are either providing electricity to the utility, or they are being supplied electricity by the  
22 utility at any given time. Therefore, a utility cannot calculate EDG as defined by the DG

1 Statutes without measuring imported and exported electricity from a DG customer over a  
2 period of time. As further explained below, that period of time is the monthly billing period.

3 **Q. What other support do the DG Statutes' plain language provide for continuing to use**  
4 **a monthly netting period for DG customers?**

5 A. First, by defining “excess distributed generation” as the “difference between” exports and  
6 imports, the plain language of the DG Statutes suggests a netting calculation. Had the  
7 General Assembly intended for *all* exported generation from a DG facility to be  
8 compensated at the EDG Rider rate, it could have easily done so by defining “excess  
9 distributed generation” as “the electricity that is supplied back to the electricity supplier by  
10 the customer” – i.e., using only the second part of the definition that was adopted, and  
11 completely omitting any reference to the first part of the definition regarding “the  
12 electricity that is supplied by an electricity supplier to a customer that produces distributed  
13 generation.” NIPSCO’s interpretation of the DG Statutes renders meaningless the first  
14 component of the definition of EDG. Version 1 of SEA 309 contained provisions that  
15 would have required all generation by a DG facility to be credited at a prescribed rate, but  
16 in totally removing that provision without any similar replacement language in subsequent  
17 amendments, it is clear that these provisions were not endorsed by the General Assembly.

18 Second, Section 3 defines “distributed generation” to include DG facilities that are:  
19 sized at a nameplate capacity of the lesser of: (A) not more than one (1)  
20 megawatt; or (B) **the customer’s average annual consumption of**  
21 **electricity on the premises**

22 (emphasis added). In other words, a key limitation for becoming eligible for service under  
23 the EDG Rider is that the customer’s DG system is sized to meet their “average annual  
24 consumption.” There is no requirement – indeed, there is no indication in the statute’s

1 language – that the DG facility should be designed in a manner to limit EDG exports on an  
2 *instantaneous* basis; instead, it expressly requires that DG systems be designed to generate  
3 electricity to meet a customer’s *average annual* energy needs.

4 In addition, Section 18 of the DG Statutes provides, in relevant part, that:

5 An electricity supplier shall compensate a customer from whom the  
6 electricity supplier procures EDG (at the rate approved by the commission  
7 under section 17 of this chapter) through a **credit on the customer’s**  
8 **monthly bill**...

9  
10 (emphasis added). This provision identifies that EDG is being calculated and credited on  
11 a **monthly** bill basis, and not on an instantaneous basis.

12 **Q. Has the Commission established regulations implementing changes to netting since**  
13 **the enactment of the DG Statutes in 2017?**

14 A. No. In response to SEA 309, the Commission held collaborative meetings, issued  
15 Emergency Rulemaking 17-04, and General Administrative Orders 2017-2 and 2019-2.  
16 However, it did not issue formal regulations that would modify the measurement of EDG  
17 as currently prescribed under its net metering rules to a new netting policy or a “no netting”  
18 policy.

19 170 IAC 4-4.2-7 provides, in part, that under net metering,

20 The investor-owned electric utility shall measure the difference between the  
21 amount of electricity delivered by the investor-owned electric utility to the  
22 net metering customer and the amount of electricity generated by the net  
23 metering customer and delivered to the investor-owned electric utility  
24 during the billing period, in accordance with normal metering practices.

25 Normal metering practice is monthly netting, not a new “no netting” metering.

**D. Drawbacks of NIPSCO's "No Netting" Proposal**

1 **Q. Besides lacking support in the plain language of the DG Statutes, does NIPSCO's "no**  
2 **netting" proposal have any significant drawbacks?**

3 A. Yes, absolutely. In sum, NIPSCO's proposal is insufficiently supported by its case-in-  
4 chief, creates perverse incentives rather than desirable price signals, substantially reduces  
5 the economic value of DG to customers thereby making it accessible primarily to higher  
6 income Hoosiers, produces a tariff that appears to be substantively worse than NIPSCO's  
7 Rider 878, is a radical departure from the current Indiana DG policy and the best practices  
8 established in other states, and is not based on sound ratemaking or cost-of-service  
9 principles.

10 It is difficult to overstate the devastating effect NIPSCO's "no netting" proposal  
11 would have on Indiana's distributed solar market and solar industry, especially taken in  
12 context with the similar proposals filed by Indiana's other investor-owned utilities. It would  
13 significantly limit the ability of customers to benefit from more clean, local, on-site  
14 generation that supports the continued growth of Hoosier jobs. Similarly, it would reduce  
15 the ability of solar vendors and installers to do business in Indiana, leading to job losses  
16 and forgone economic development opportunities for the State. NIPSCO's "no netting"  
17 proposal produces unjust and unreasonable rates and should be rejected.

**1) NIPSCO's "No Netting" Proposal Lacks Support**

18 **Q. Why do you say that NIPSCO's proposal is insufficiently supported?**

19 A. NIPSCO's "no netting" proposal would result in a major policy change to how rooftop  
20 solar and other DG technologies will be compensated in the future compared to the monthly  
21 netting policy that has been in place for roughly the past 16 years in Indiana. Yet, its



1 application and testimony are bereft of any meaningful analysis or justification to support  
2 this drastic change, meaning the Commission and parties have an extremely limited basis  
3 on which to consider the proposal and its intended and unintended impacts. The utility is  
4 proposing a major policy change without offering any meaningful analysis demonstrating  
5 its impacts and, as I describe below, it is apparent NIPSCO lacks the basic data on DG  
6 customers to do the analysis necessary to present a meaningful defense of its radical  
7 departure from its current policy. Net metering as it existed is ended by SEA 309. Imposing  
8 a “no netting” policy in addition to SEA 309’s changes is unwarranted and very harmful.

9 NIPSCO’s proposal is also not supported with a class cost of service study or any  
10 other evidence demonstrating that moving to a “no netting” framework would produce just  
11 and reasonable rates. Furthermore, it did not provide a DG benefit-cost analysis or a value  
12 of distributed solar study that would demonstrate on a forward-looking basis (as opposed  
13 to a backwards-looking snapshot in time that is typical of an embedded cost of service  
14 study) that its “no netting” proposal produces net benefits rather than costs, or reflects an  
15 overall fair policy for compensating DG customers for the benefits that they provide to  
16 both DG and non-DG customers. Furthermore, NIPSCO did not include any information  
17 on how its proposal will impact future DG growth, solar installation businesses, their  
18 employment levels, or related economic impacts in its service territory. Those ignored  
19 impacts will all be harmful to Indiana.

20 An important question related to determining whether a rate is just and reasonable  
21 is whether it reflects cost causation principles. By that, I mean NIPSCO’s harmful “no  
22 netting” filing provides the Commission with no ability to conclude that the EDG Rider  
23 would produce rates that reflect or are designed to recover NIPSCO’s cost to serve DG

1 customers or are reflective of the value of the benefits DG customers provide. Importantly,  
2 NIPSCO has not made any showing demonstrating its proposed “no netting” policy would  
3 not recover *more than* NIPSCO’s cost to serve DG customers. And even if one argues  
4 monthly netting is overly generous to DG customers at the expense of non-DG customers  
5 – a position I do not endorse and which no evidence has been offered by NIPSCO to  
6 substantiate – NIPSCO has failed to provide any reasonable basis on which the  
7 Commission can conclude its specific “no netting” approach is the right one compared to  
8 many alternative policies.

9 On this basis alone, the Commission should reject NIPSCO’s application, at least  
10 with respect to its “no netting” proposal, as insufficient and failing to demonstrate its  
11 resulting rates are just and reasonable.

12 **Q. Does the “no netting” proposal in NIPSCO’s EDG Rider align with the longstanding**  
13 **principles of just and reasonable rates?**

14 A. In my opinion, it does not. The EDG Rider rate itself is calculated through an arbitrary,  
15 albeit legislative, 25% adjustment to the average wholesale market locational marginal  
16 price, and not an objective assessment on the actual value provided by EDG. Applying  
17 such an arbitrary calculation to determine the export credit rate for *all* kWh exported is not  
18 conducive of reaching a just and reasonable rate result. NIPSCO’s proposal substantially  
19 worsens the impact of the statutorily prescribed credit rate by ignoring the statutorily  
20 prescribed “difference between” exports and imports in its measurement of EDG, resulting  
21 in an arbitrary rate untethered to any ratemaking principles and in a manner that will  
22 materially harm DG customers taking service under such a rate, as further analyzed below.

1           The negative impact of this combination will be worsened by the EDG rate  
2           changing every year, depriving an EDG customer of any certainty or stability in their rate  
3           and making it extremely difficult to reliably estimate the most basic financial metrics of  
4           purchasing a potential DG system, such as the savings potential and simple payback period  
5           of such a significant investment.

6           Finally, the negative impact NIPSCO's proposal will have on DG adoption rates  
7           will also harm *non-DG* customers by both limiting their ability to later adopt DG and by  
8           reducing the benefits non-DG customers can realize from having more clean, local,  
9           distributed generation on the grid.<sup>24</sup>

2) NIPSCO's "No Netting" Proposal Creates Perverse Incentives

10 **Q.    What do you mean when you say that NIPSCO's proposal creates perverse**  
11 **incentives?**

12 A.    Utility ratemaking typically aims to provide price signals to customers that align, to at least  
13       some degree, with how the utility incurs costs and in a manner that discourages waste and  
14       promotes efficiency.<sup>25</sup> For example, NIPSCO's Rider 878 pays Qualifying Facilities a  
15       higher rate during the on-peak period of 8 a.m. to 11 p.m., with a higher payment rate in  
16       the summer months (May through September), and Medium General Service (Rider 824)

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<sup>24</sup> *E.g.*, see Lawrence Berkeley National Laboratory, Indiana 21st Century Energy Policy: Emerging Technologies on the Electricity Distribution System, pp. 55-56, available at <https://www.in.gov/iurc/files/2020-Report-to-the-21st-Century-Energy-Policy-Development-Task-Force.updated-min.pdf>; see generally National Standard Practice Manual for Benefit-Cost Analysis of Distributed Energy Resources, 2020, available at <https://www.nationalenergyscreeningproject.org/national-standard-practice-manual/>

<sup>25</sup> See James Bonbright's Principle 8 ("Efficiency of the rate classes and rate blocks in discouraging wasteful use of service..."). Bonbright principles are discussed further below.

1 customers have an on-peak period of 9 a.m. to 9 p.m.<sup>26</sup> These price signals discourage  
2 discretionary electricity use and encourage energy conservation and exports during on-  
3 peak periods relative to less expensive off-peak periods.

4 In contrast, NIPSCO's EDG Rider "no netting" proposal would create a perverse  
5 incentive by doing the *opposite* of what the price signals in these rates are designed to  
6 incentivize: ***The "no netting" component of the EDG Rider would encourage DG***  
7 ***customers to increase their consumption during NIPSCO's highest cost summer on-peak***  
8 ***periods.*** NIPSCO's summer on-peak hours align with the production of solar generation,  
9 which is the predominant form of DG technology on NIPSCO's grid now and anticipated  
10 into the future. A solar DG system designed to generate electricity in an amount equal to a  
11 customer's average annual electricity needs, as provided by the DG Statutes, will tend to  
12 produce more electricity during the daylight than the DG customer immediately consumes  
13 during daylight hours behind-the-meter. However, with "no netting" or "instantaneous"  
14 netting the DG customer no longer can net their exported electricity against their imported  
15 electricity. That gives the DG customer a strong financial incentive to export as little  
16 electricity as possible.

17 To avoid the "penalty" of receiving this low EDG compensation rate, the  
18 economically rational DG customer would strive to shift all possible discretionary  
19 electricity consumption to hours when their DG system is generating more electricity than  
20 the customer is immediately consuming behind the meter (e.g., by cranking up their air

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<sup>26</sup> NIPSCO, Electric Service Tariff, available at <https://www.nipsco.com/our-company/about-us/regulatory-information/electric-rates>. Note that the referenced tariffs have additional specifications on the timing of the on-peak and off-peak rates with respect to day of the week and Holidays.

1 conditioners on hot summer afternoons – during peak periods – to “pre-cool” their house  
2 for the nighttime hours; by charging electric vehicles during the day instead of overnight;  
3 etc.). Since this time period aligns with the utility’s on-peak period, it means DG customers  
4 will be strongly incentivized to increase their gross consumption during on-peak periods  
5 and decrease gross consumption during off-peak periods.

6 This perverse incentive baked into the “no netting” EDG Rider proposal would  
7 harm *non-DG customers* because these non-DG customers would no longer be able to  
8 benefit from the EDG exports the DG customer would otherwise have provided during  
9 higher-cost peak hours. A key objective of demand-side management programs and on-  
10 and off-peak pricing are to reduce utility peaks. NIPSCO’s “no netting” proposal would  
11 push in the opposite direction to the detriment of its customers.

3) *NIPSCO’s “No Netting” Proposal Compensates EDG Customers at a  
Rate below NIPSCO’s Avoided Cost Rate*

12 **Q. Why do you claim that NIPSCO’s “no netting” proposal is substantively worse than  
13 NIPSCO’s Cogeneration and Small Power Production tariff?**

14 A. NIPSCO’s “Purchases from Cogeneration Facilities and Small Power Production  
15 Facilities” tariff (“Rider 878”), available to eligible DG facilities, provides a substantially  
16 higher compensation rate to DG customers than NIPSCO’s EDG Rider.<sup>27</sup> Under Rider 878,  
17 DG customers with time-of-day (“TOD”) capable meters receive a payment of  
18 \$0.03549/kWh for summer on-peak periods and \$0.03251/kWh for winter-on peak periods,

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<sup>27</sup> NIPSCO, “Rider 878,” available at <https://www.nipsco.com/docs/librariesprovider11/rates-and-tariffs/electric-rates/2020-current-rates/table-of-contents/878.pdf?sfvrsn=8>.

1 or a weighted on-peak average of \$0.0338/kWh,<sup>28</sup> which is **27.6% higher than the**  
2 **proposed EDG Rider rate of \$0.02645/kWh**. The weighted average off-peak prices is  
3 \$0.02646/kWh (nearly identical to NIPSCO’s calculated EDG rate), but most solar DG  
4 generation would occur during the on-peak periods. Alternatively, Rider 878 DG customers  
5 without a TOD meter receive a payment of \$0.03066/kWh in summer and \$0.02956/kWh  
6 in winter, or a weighted average of \$0.0300/kWh, which is **13.5% above the proposed**  
7 **EDG Rider rate**. In addition, **Rider 878 customers are eligible for a capacity credit of**  
8 **\$8.80/kW**, which could further increase the financial benefit of Rider 878 relative to EDG  
9 Rider.

10 Rider 878 represents NIPSCO’s avoided cost rate under the Public Utility  
11 Regulatory Policies Act of 1978 (“PURPA”), and as such, reflects NIPSCO’s incremental  
12 cost. Additionally, PURPA allows Qualifying Facilities to negotiate the length of the  
13 contract, whereas the DG Statutes provide for an annual change in the EDG rate. It would  
14 be an absurd result and illogical to assume the General Assembly intended for DG  
15 customers to be compensated at a rate *far below* NIPSCO’s avoided cost rate while also  
16 experiencing less certainty in pricing from year-to-year. DG customers generally provide  
17 substantial value that goes beyond that of centralized power generation facilities, such as  
18 by directly serving on-site load, proportionately avoiding line losses, proportionately  
19 avoiding wear and tear on transmission and distribution facilities, mitigating congestion on  
20 the grid, and providing enhanced resilience opportunities, among other benefits. Providing  
21 a compensation rate for *all* exported electricity that is far below NIPSCO’s PURPA

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<sup>28</sup> Calculated by weighting the summer on-peak payment at 5/12 (since the summer period is five months) and the winter on-peak payment at 7/12, and summing the two products.

1 avoided cost rate is patently unjust and unreasonable on its face. It also conflicts with the  
2 statements made by the author of SEA 309 about the purpose of the legislation continuing  
3 to encourage DG and conferring a preference for DG technologies in statute, as described  
4 above in more detail.

5 If NIPSCO’s EDG Rider is adopted, it seems reasonable to assume it would be  
6 seldom used by customers with DG facilities that would be eligible under Rider 878, given  
7 Rider 878 would likely provide a far better economic value proposition for DG customers.  
8 While Rider 878 contains the same “no netting” policy as NIPSCO’s proposed EDG Rider,  
9 it offers a superior compensation rate for exported generation. It also does not take excess  
10 generation from DG customers without providing compensation, unlike the EDG Rider  
11 that confiscates customer EDG credits at the end of service, as I discuss later in my  
12 testimony. Rider 878 would also allow DG customers to enter into a longer contract length  
13 – at least three years for the initial period<sup>29</sup> – than under the EDG Rider, which has a  
14 compensation rate that changes every year. Therefore, NIPSCO’s interpretation of the DG  
15 Statutes and its proposed EDG Rider produces an absurd result pushing small EDG  
16 customers to NIPSCO’s Rider 878.

17 If the Commission declines my recommendations and adopts NIPSCO’s EDG  
18 Rider as proposed or with only modest revisions, I recommend the Commission also direct  
19 NIPSCO to make Rider 878 the “default” tariff for DG customers, or at least ensure  
20 prospective DG customers are clearly presented with this option on an equal basis to the  
21 EDG Rider. For example, the Commission should direct NIPSCO to provide clear  
22 summary information on its Rider 878 option on its website side-by-side with any

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<sup>29</sup> *Id.*

1 descriptions of its EDG Rider, in a location on its website that is easy to find, and that  
2 describes and compares the tariffs' terms and requirements in a manner that are easily  
3 understandable to a typical residential customer so that they are able to compare and  
4 contrast taking service under Rider 878 and the EDG Rider. In addition, when existing net  
5 metering customers are no longer eligible to continue service under their net metering  
6 tariff, they should be presented with the option of which tariff they would like to take  
7 service under instead of being automatically defaulted onto the inferior EDG Rider.

4) NIPSCO's "No Netting" Proposal Is a Dramatic Departure from DG  
Policies Adopted in Most Other States

8 **Q. While not necessarily controlling on any issue, do you think it appropriate and**  
9 **beneficial to sound public policy and intelligent regulatory discretion that utility**  
10 **regulatory Commissions stay apprised of regulatory trends in other states?**

11 A. Yes, I do. It has been my experience that utility regulatory commissions inquire about and  
12 watch with interest how evolving regulatory matters in other states raise new ideas, address  
13 emerging issues, and integrate new technologies. Such knowledge is beneficial to  
14 regulators when navigating evolving or new regulatory and technology matters and in  
15 applying their discretionary findings to reach an overall balanced outcome on issues  
16 consistent with the public interest. This is particularly so when a multifaceted issue like  
17 EDG can be broken down into its subcomponents and each subcomponent is subject to a  
18 regulatory finding, and potentially differing levels of regulatory discretion. Knowledge  
19 and understanding facilitate a balanced outcome in the formation of just and reasonable  
20 rates and sound regulatory public policy.



1 **Q. Have other state utility regulators decided to retain monthly netting after conducting**  
2 **a review or investigation into DG policies?**

3 A. Yes. In fact, maintaining monthly netting has frequently been the outcome of state  
4 proceedings that have addressed DG policies in recent years. In states with relatively  
5 modest customer net metering adoption rates, regulators have typically preserved monthly  
6 netting and only made modest changes that would not fundamentally alter the viability of  
7 solar DG, even when the utility regulator is acting to implement new legislation  
8 authorizing changes to net metering. I consider customer DG adoption in Indiana to be  
9 very modest.

10 **Q. Can you provide specific examples of state utility regulators retaining monthly**  
11 **netting after legislation was enacted authoring changes to net metering?**

12 A. Yes. The Arkansas Public Service Commission (“PSC”) issued an Order on June 1, 2020,  
13 addressing implementation of Act 464 (2019). Even though Act 464 authorized the  
14 Arkansas PSC to make changes to net metering, it elected to maintain monthly netting for  
15 the time being for residential and small commercial customers. It determined that:

16 [b]ased upon the evidence currently showing very low levels of penetration  
17 of renewable distributed generation by solar facilities in Arkansas in the  
18 residential class and in any non-residential customers without a demand  
19 component, the Commission finds that the current 1:1 full retail credit for  
20 net excess generation should be retained for now as the default Net-  
21 Metering rate structure,” (footnote omitted).<sup>30</sup>

22  
23 The decision permits utilities to propose more substantive changes through filings  
24 submitted after December 31, 2022 but requires the utilities to justify such a proposal by  
25 using a “timely and properly designed cost-of-service study” that demonstrates the

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<sup>30</sup> Arkansas Public Service Commission, Docket No. 16-027-R, Order, June 1, 2020, p. 525.

1 alternative DG policy is “in the public interest and will not result in an unreasonable  
2 allocation of or increase in costs to other utility customers.”<sup>31</sup>

3 As I describe below, the Kentucky PSC also recently rejected changes to KPC’s  
4 monthly netting policy, despite being granted discretion under Senate Bill 100 (2019) to  
5 make significant changes to DG policies.

6 Most states, including those with high DG adoption rates, have continued to offer  
7 monthly netting, while rejecting more significant changes or multiple changes that in  
8 combination could be detrimental to prospective net metering customers.

9 **Q. Does NIPSCO’s “no netting” proposal align with broader industry trends with  
10 respect to policy changes to net metering?**

11 A. No. In fact, as I will describe below, although they both have approved different netting  
12 policies, both the Kentucky PSC and Michigan PSC have established DG compensation  
13 rates for utilities in their respective states, that are roughly *four times* the EDG Rider credit  
14 rate proposed by NIPSCO in this case in conjunction with its “no netting” proposal.  
15 Furthermore, while many utilities have *proposed* significant changes to DG policies like  
16 net metering, few state regulatory commissions or state legislatures have adopted dramatic  
17 changes to existing policies in a manner that would significantly harm the future growth of  
18 DG, such as would be the case under NIPSCO’s “no netting” proposal.

19 **Q. How prevalent is monthly netting?**

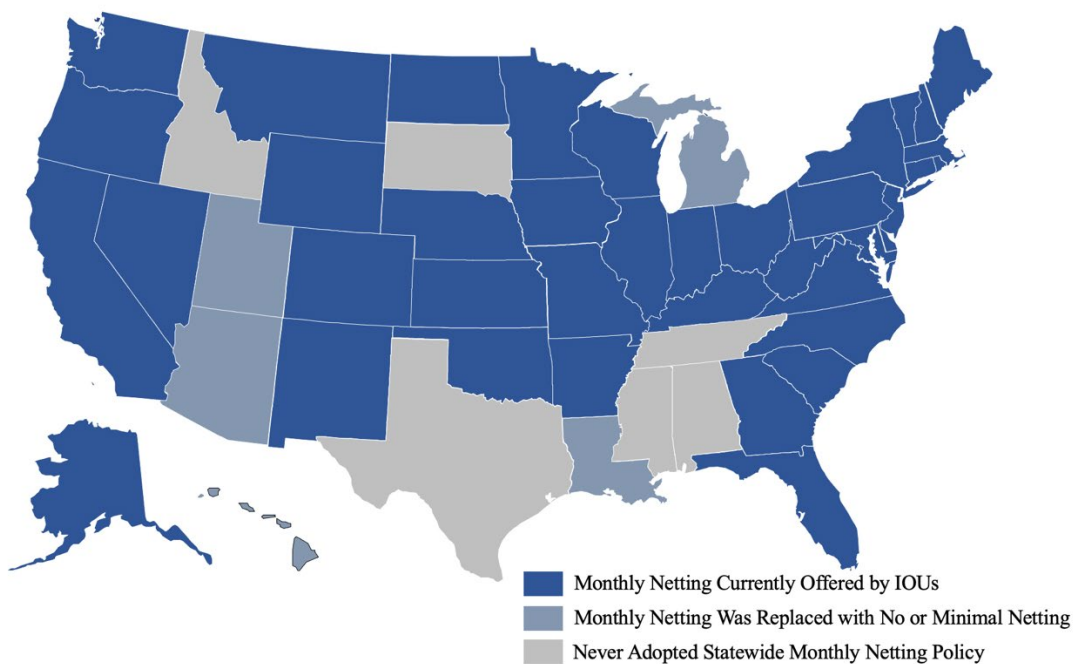
20 A. Monthly netting continues to be one of the most widespread and important components of  
21 DG compensation policies across U.S. states and utilities. At its peak, investor-owned  
22 utilities (“IOUs”) in at least 43 states and the District of Columbia offered monthly netting

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<sup>31</sup> *Ibid.*

1 to customers. Currently, most IOUs in 39 states and the District of Columbia offer monthly  
2 netting to new residential and small commercial customers, as identified in Figure 1. Only  
3 five states have transitioned from monthly netting to an “import/export” crediting scheme,  
4 characterized by no netting or a netting within only a short time interval (e.g., 15 minutes  
5 or one hour) and where exports are credited at a substantially lower rate than imports. In  
6 one state (Georgia), state regulators recently mandated a change *from* a “no netting” policy  
7 *to* monthly netting for Georgia Power, and two states (Nevada and Maine) that previously  
8 ended monthly netting subsequently restored it for residential customers through legislative  
9 changes.

**Figure 1. Netting Policies for Residential and Small Commercial DG Customers of Investor-Owned Utilities**



1 **Q. Can you describe the types of DG policy changes that policymakers have approved?**

2 A. States that moved from monthly netting to an alternative policy have, in most cases,  
3 established a compensation rate for exported electricity that is significantly higher than the  
4 EDG rate proposed by NIPSCO. For example:

- 5 • In **Michigan**, new DG customers receive an export credit rate based on the power  
6 supply rate excluding transmission. The credit rate for Indiana Michigan Power  
7 customers is based on the specific rate schedule's combined Capacity and Non-  
8 Capacity Power Supply rates plus the Power Supply Cost Recovery factor. For  
9 residential customers, these values are \$0.0762/kWh, \$0.02689/kWh, and  
10 (\$0.00285)/kWh, which results in a total compensation rate for exports of  
11 \$0.10024/kWh, which is roughly *four times* as much as NIPSCO's proposed  
12 compensation rate across the border in Indiana.<sup>32</sup> Similarly, the credit rate for  
13 Consumers Energy's residential customers is \$0.119655/kWh for summer on-peak,  
14 \$0.080485/kWh for summer off-peak, and \$0.084785/kWh for all exports in non-  
15 summer months.<sup>33</sup>
- 16 • In **Arizona**, new residential DG customers of Arizona Public Service receive a  
17 specific export credit rate for a period of 10 years, with the amount depending on  
18 when the DG system is installed. A system installed October 1, 2021 through  
19 August 31, 2022 receives an export credit rate of \$0.09405/kWh.<sup>34</sup>
- 20 • In **Utah**, new DG customers of Rocky Mountain Power receive summer and winter  
21 export credit rates of \$0.05817/kWh and \$0.05487/kWh, respectively.<sup>35</sup>

22 However, many state policymakers have rejected attempts to fundamentally alter  
23 the monthly netting framework when implementing other changes to a net metering policy.  
24 One notable recent example is the Kentucky PSC's rejection of a net metering replacement

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<sup>32</sup> Indiana Michigan Power Tariffs, available at <https://www.indianamichiganpower.com/lib/docs/ratesandtariffs/Michigan/IMMITBBk172021-06-21.pdf>

<sup>33</sup> Consumers Energy, Rate Book for Electric Service, Original Sheet No. C-64.30, available at <https://www.consumersenergy.com/-/media/CE/Documents/rates/electric-rate-book.ashx?la=en&hash=3EC495A835F623EFFD51C5486014D83F>

<sup>34</sup> Arizona Public Service, Rate Rider RCP, available at [https://www.aps.com/-/media/APS/APSCOM-PDFs/Utility/Regulatory-and-Legal/Regulatory-Plan-Details-Tariffs/Residential/Renewable-Plans-and-Riders/rcp\\_RateSchedule.ashx?la=en](https://www.aps.com/-/media/APS/APSCOM-PDFs/Utility/Regulatory-and-Legal/Regulatory-Plan-Details-Tariffs/Residential/Renewable-Plans-and-Riders/rcp_RateSchedule.ashx?la=en)

<sup>35</sup> Utah Public Service Commission, Order on Agency Rehearing, Docket No. 17-035-61, April 28, 2021, available at <https://pscdocs.utah.gov/electric/17docs/1703561/3184591703561oar4-28-2021.pdf>

1 tariff proposed by Kentucky Power Company (“KPC”). In that case, KPC requested to  
2 move from monthly netting for all imports and exports to having two netting periods within  
3 the month that KPC alleged corresponded to on-peak and off-peak time periods. The  
4 Kentucky PSC’s May 2021 Order (“KPC Order”) rejected KPC’s net metering tariff  
5 proposal and retained standard *monthly netting* while reducing the EDG *rate* for monthly  
6 rollover from the retail rate to \$0.09746/kWh for residential customers and \$0.09657/kWh  
7 for commercial customers, based on a bottom-up calculation of various categories of  
8 benefits provided by EDG.<sup>36</sup>

9 Other examples of state utility regulators maintaining monthly netting policies  
10 include:

- 11 • In **South Carolina**, the PSC rejected a Dominion Energy proposal in May 2021 to  
12 replace monthly netting with netting on a 15-minute basis, where all exports would  
13 have been credited at time-based avoided cost rates, and charge DG customers  
14 additional surcharges. Instead, the PSC approved a tariff that has an annual netting  
15 period in which on-peak generation can offset on-peak usage on a 1:1 basis, and  
16 off-peak generation can offset off-peak generation on a 1:1 basis.<sup>37</sup> The PSC  
17 separately approved DG tariffs for Duke Energy customers that featured monthly  
18 netting within TOD periods.<sup>38</sup>
- 19 • In **New York**, the PSC has repeatedly decided to retain monthly netting for  
20 residential and small commercial customers, among others, even as it has moved  
21 other types of DG customers to its “Value of Distributed Energy Resources” tariff  
22 that differentially credits exported energy relative to imports.<sup>39</sup>
- 23 • In **Louisiana**, the PSC revised its net metering rules in December 2016 to maintain  
24 monthly netting while reducing the EDG credit rate to the applicable avoided cost  
25 rate after the utility reached its net metering cap.<sup>40</sup> Years later, in September 2019,

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<sup>36</sup> Kentucky Public Service Commission, Order, Case No. 2020-00174, May 14, 2021, pp. 39-40, [https://psc.ky.gov/pscscf/2020%20Cases/2020-00174//20210113\\_PSC\\_ORDER.pdf](https://psc.ky.gov/pscscf/2020%20Cases/2020-00174//20210113_PSC_ORDER.pdf)

<sup>37</sup> South Carolina Public Service Commission, Docket No. 2020-229-E, Order No. 2021-391, May 29, 2021.

<sup>38</sup> South Carolina Public Service Commission, Docket Nos. 2020-264-E and 2020-265-E, Order No. 2021-390, May 30, 2021.

<sup>39</sup> New York Public Service Commission, Docket No. 15-E-0751, Order, July 16, 2020.

<sup>40</sup> Louisiana Public Service Commission, Docket No. R-33929, Phase I Order, December 8, 2016.

1 it replaced the monthly netting policy with a no netting policy effective January 1,  
2 2020.<sup>41</sup>

- 3 • In **California**, the Public Utilities Commission maintained monthly netting under  
4 its revised net metering policy that applied after a utility reached its net metering  
5 cap (“NEM 2.0”). NEM 2.0 customers were required to take service under a TOD  
6 rate and pay certain non-bypassable charges (e.g., related to funding public purpose  
7 programs), but otherwise were allowed to use monthly netting within the TOD  
8 period.<sup>42</sup>

9 **Q. Have some utilities proposed additional charges on DG customers either in lieu of, or**  
10 **in addition to, changes to monthly netting?**

11 A. Yes, but relatively few are adopted. Utilities across the country have proposed a variety of  
12 other changes to DG policies, including new surcharges or fees, either in combination with  
13 proposals to modify or end monthly netting or in lieu of these changes. These include  
14 proposals for new capacity-based charges based on the size of the DG system, mandatory  
15 demand charges, minimum bill amounts that exceed the amount charged to non-DG  
16 customers, and additional monthly fixed charges. While numerous, these utility proposals,  
17 like changes to monthly netting, are seldom adopted. Specifically, since November 2012,  
18 there have been at least 27 distinct examples of investor-owned utilities in the U.S.  
19 proposing extra surcharges on DG customers. In nearly every instance, those proposals  
20 were withdrawn by the proponent, denied by regulators, or overturned in court on appeal.

21 I provide an overview of these examples in Attachment BDI-8.

22 While NIPSCO is not proposing a surcharge on DG customers in this case, its  
23 proposal to end monthly netting is analogous to utility proposals for DG surcharges insofar  
24 as both reduce the economic benefit to the customer of installing DG. These examples

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<sup>41</sup> Phase II Order, September 19, 2019.

<sup>42</sup> California Public Utilities Commission, Docket No. R.14-07-002, Decision No. 16-01-044, February 5, 2016.

1 provide further evidence demonstrating that utility proposals of all types aimed at  
2 significantly undermining the growth of DG have broadly lacked policymaker support and  
3 failed to gain traction despite the substantial and numerous efforts by utilities to have them  
4 approved.

5 **Q. How does NIPSCO’s proposed “no netting” policy compare to modifications adopted**  
6 **in other jurisdictions to their DG policies?**

7 A. Over the last decade, DG policies like net metering have been extensively studied and  
8 investigated in many jurisdictions across the country.<sup>43</sup> While I have not quantitatively  
9 analyzed the impact of every utility proposal, based on my professional experience, I can  
10 say that NIPSCO’s proposed “no netting” policy in combination with its implementation  
11 of EDG Rider to replace net metering would be more far-reaching and likely more  
12 detrimental than the vast majority of the changes adopted to DG policies in other  
13 jurisdictions, including those with far greater deployment rates of DG.

14 More fundamentally, NIPSCO’s proposal stands out when compared to most  
15 changes that have been adopted in other jurisdictions for its lack of underlying support and  
16 justification. Other jurisdictions, especially those that have higher penetration rates of DG,  
17 have undergone extensive investigation, study, and evaluation of DG policies over a period  
18 of several years *prior* to making significant modifications that were not expressly directed  
19 by legislation. Typically, state utility regulators have overseen investigations into net  
20 metering policies that include studies that quantify the costs and benefits of net metering  
21 or the value of distributed energy resources like solar prior to making significant changes

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<sup>43</sup> See, e.g., ICF International, “Review of Recent Cost-Benefit Studies Related to Net Metering and Distributed Solar” (May 2018).

1 to policies like monthly netting. The most common outcome of these proceedings is that  
2 the state utility commission adopts only limited and incremental changes to the overall  
3 design of the DG policy. Some states have gone through multiple iterations of this process,  
4 spanning multiple years, to collect evidence, gather input from a variety of parties,  
5 implement adjustments, monitor the results, and then restart the process in an iterative  
6 fashion to consider additional refinements.

7 I have developed Attachment BDI-9 to highlight a selection of jurisdictions that  
8 have examined net metering policies. The table identifies examples of studies that have  
9 been conducted, key regulatory proceedings that have investigated these issues, and a  
10 summary of the outcomes for each jurisdiction examined. The table is meant to be  
11 illustrative, and not entirely comprehensive of every jurisdiction, study, and docket.

12 **Q. What other observations do you have regarding state practices used when considering**  
13 **modifications to monthly netting based on your review of DG policies in other**  
14 **jurisdictions?**

15 A. There are several commonalities among many jurisdictions in how they have considered  
16 modifications of DG policies like net metering. At a high level, some of the commonalities  
17 evident from the numerous state public utility commission proceedings evaluating  
18 modifications to DG policies are:

- 19 • **Quantitative analysis is key:** Cost of service studies, cost-benefit analyses, and value  
20 of solar (or distributed energy resources more broadly) studies, or a combination  
21 thereof, have been used to quantify the impacts of DG policies. These studies have been  
22 paramount in informing discussions of DG policy changes, although they are not  
23 necessarily dispositive of the ultimate outcome, as larger policy considerations have  
24 also played an important role in shaping discussions. They can also be helpful in  
25 identifying policy solutions that align DG customer incentives with broader grid  
26 benefits in a manner that does not unfairly discourage the adoption of DG.



- 1 • **Gradualism is an important ratemaking principle:** After gathering robust evidence  
2 on net metering implementation, public utility commissions that have determined that  
3 changes should be made to existing net metering policies have adhered to the  
4 ratemaking principle of Gradualism by implementing modest changes. For example,  
5 regulators in New Hampshire maintained monthly netting, excluding certain non-  
6 bypassable charges, when they implemented a reduced EDG credit rate for the rollover  
7 credit at the end of the month, while directing a multi-year study into DG to collect  
8 additional data. Most states that ultimately ended monthly netting, such as Arizona,  
9 Utah and Louisiana, only did so after many years, multiple investigations, and a  
10 transition period where a modified policy was in place that limited the immediate  
11 financial impacts on prospective DG customers.
- 12 • **Iterative process:** DG policy discussions are rarely resolved through one proceeding.  
13 Rather, the proliferation of rooftop solar has led many policymakers to study and  
14 evaluate DG policies on an iterative basis, incorporating new information as additional  
15 experience is gained and data is collected.
- 16 • **Insufficiently supported utility proposals are rejected:** Numerous utility requests to  
17 modify DG policies or related rate design changes impacting DG customers have been  
18 rejected by regulators across the U.S. when they have not been adequately supported  
19 and justified by the utility. Regulators have been reluctant to make drastic changes to  
20 DG policies that are not clearly directed by statute that could undermine customer  
21 adoption of rooftop solar when the utility has not met its burden to demonstrate that its  
22 proposed changes result in just and reasonable rates and are in the public interest. In  
23 other words, regulatory determinations on DG policies have typically required utilities  
24 to meet the same burden of proof standard that applies more generally. Such a standard  
25 is critical for ensuring that adopted policies or rates are well vetted and not  
26 discriminatory.
- 27 • **Monthly netting remains commonplace:** Despite numerous proceedings and  
28 legislation addressing DG policies in states across the country, monthly netting remains  
29 one of the most widespread DG policies currently in place in the U.S.

30 **Q. Why have some states adopted changes to their DG policies in recent years?**

31 A. Based on my experience closely tracking this industry for more than seven years, I  
32 conclude that two factors are the primary drivers of this trend. First, rooftop solar  
33 deployment has increased in recent years, driven by equipment cost declines. Most state  
34 net metering policies specify an aggregate capacity limit for net metering programs (“net  
35 metering cap”). Often, state legislatures and utility regulators have responded to utilities  
36 nearing or exceeding the specified net metering cap as a result of the proliferation of DG  
37 solar by increasing the net metering cap and/or by adopting policies to modify net metering

1 or establish a pathway for adopting a net metering successor policy, which is often  
2 preceded by a study or formal investigation.

3 Second, utilities, their trade associations, and other aligned interests have waged a  
4 long-running campaign against policies encouraging the adoption of rooftop solar,  
5 particularly net metering.<sup>44</sup> Net metering allows a customer to purchase less electricity  
6 from a utility, which can result in a decrease in a utility's revenue. In addition, electric  
7 utilities earn profit by making capital investments, on which they are permitted the  
8 opportunity to earn a return on equity. Investment in generation facilities such as solar DG  
9 by utility customers can therefore compete with a utility's generation investments, with a  
10 reduced need in new utility generation assets corresponding to a reduced profit opportunity  
11 for the utility. In states without retail choice, rooftop solar is one of the few examples of a  
12 utility facing a form of, albeit limited, competition, as utility customers otherwise need to  
13 be fully served by the electricity generated or procured by their monopoly utility.

14 **Q. Have some state utility regulators expanded the availability of monthly netting after**  
15 **conducting a review or investigation into the policy?**

16 A. Yes. For instance, the Iowa Utilities Board issued an Order in July 2016 maintaining  
17 monthly netting after investigating its net metering policy.<sup>45</sup> The Order created a three-year

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<sup>44</sup> See, e.g., Joby Warrick, "Utilities Wage Campaign Against Rooftop Solar," *Washington Post* (March 7, 2015); Hye-Jin Kim, Rachel J. Cross, and Bret Fanshaw, "Blocking the Sun: Utilities and Fossil Fuel Interests That Are Undermining American Solar Power," Frontier Group and Environment America Research & Policy Center (November 2, 2017); Gabe Elsner, "Edison Electric Institute Campaign Against Distributed Solar," Energy and Policy Institute (March 7, 2015); See Generally, Energy and Policy Institute, "Category: Net Metering," <https://www.energyandpolicy.org/category/solar/net-metering/>.

<sup>45</sup> Iowa Utilities Board, Docket No. NOI-2014-0001, Order, July 19, 2016.

1 study process, while expanding the availability of net metering to all customer classes and  
2 increasing the maximum eligible system size from 500 kW to 1,000 kW.

3 More recently, the Georgia Public Service Commission modified the DG  
4 compensation policy in place for Georgia Power in December 2019 by moving from no  
5 netting to monthly netting.<sup>46</sup>

6 **Q. Why are other states' policy decisions on monthly netting or DG policy in general**  
7 **relevant to this proceeding?**

8 A. All states and their Commissions value their autonomy. Their policy decisions are  
9 governed by their unique legal frameworks, policy priorities, and objectives. Knowledge  
10 about how other states regulatory commissions have approached new technologies and  
11 related ratemaking issues may provide useful insights for regulators reviewing similar  
12 matters. Despite inherent differences, it is significant that after substantial focus on DG  
13 policies in recent years, most states have elected to expand or maintain existing net  
14 metering policies, make only modest changes that retain monthly netting within a DG  
15 policy, or establish a future process for considering changes to DG policies while allowing  
16 customers to continue to use monthly netting in the interim.

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<sup>46</sup> Georgia Public Service Commission, Docket No. 42516, Order, February 6, 2020.

5) NIPSCO's "No Netting" Proposal Is Inconsistent with Longstanding

Ratemaking Principles

1 **Q. What other factors do you think the Commission should consider when evaluating**  
2 **NIPSCO's "no netting" proposal?**

3 A. In addition to the DG Statutes, the Commission should consider other relevant Indiana  
4 statutes and the same generally accepted ratemaking principles (*i.e.*, the Bonbright  
5 principles) that govern utility ratemaking. With respect to other relevant Indiana statutes,  
6 IC § 8-1-2-4 specifies that:

7 Every public utility is required to furnish reasonably adequate service and  
8 facilities. The charge made by any public utility for any service rendered or  
9 to be rendered either directly or in connection therewith shall be reasonable  
10 and just, and every unjust or unreasonable charge for such service is  
11 prohibited and declared unlawful.

12 **Q. Is NIPSCO's "no netting" proposal consistent with long-standing ratemaking**  
13 **principles?**

14 A. No. In his seminal work that defined best practices in utility regulation, Professor James  
15 Bonbright enumerated a number of principles of utility ratemaking.<sup>47</sup> These principles have  
16 been foundational to determining rate structures that are just and reasonable. NIPSCO's  
17 "no netting" proposal fundamentally conflicts with several of these key principles.

18 First, asking the Commission to approve moving from the long-running monthly  
19 netting policy to a harmful "no netting" policy at the same time NIPSCO seeks to  
20 implement a statutorily prescribed reduction in the effective compensation rate does not

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<sup>47</sup> James C. Bonbright, *Principles of Public Utility Rates*, Columbia Univ. Press (1961), p. 291.

1 comport with the ratemaking principle that is often described today as Gradualism.<sup>48</sup> It is  
2 an abrupt, far reaching, two-fold negative impact on prospective DG customers and the  
3 Indiana businesses that install solar. The DG Statutes made substantive changes to the  
4 treatment of DG customers, perhaps most significantly by reducing the compensation rate  
5 from an effective retail rate rollover credit to a credit at the EDG Rider rate. The principle  
6 of Gradualism would strongly caution against making additional dramatic changes, such  
7 as the “no netting” proposal, at the same time as making these changes to avoid the negative  
8 impacts of “rate shock” and to maintain some level of rate stability. As discussed earlier, I  
9 see no language in the DG Statutes that requires or calls for consideration of the end of the  
10 normal monthly netting policy in favor of “no netting” or that seeks to impose the resulting  
11 harsh impact on EDG customers and Indiana’s solar industry.

12 The Kentucky PSC’s KPC Order, which retained *monthly netting* while reducing  
13 the EDG *rate* for monthly rollover, is instructive in this respect. It noted that:

14 [c]ommitting to gradual compensation changes will provide customers and  
15 third parties with confidence to operate in Kentucky and, with improved  
16 integration, create significant benefits for all ratepayers.<sup>49</sup>

17 Second, moving to “no netting” violates the ratemaking principle of Simplicity,  
18 Understandability, Public Acceptability, and Feasibility of Application.<sup>50</sup> Monthly netting  
19 is understandable to, accepted by, and intuitive to customers. In contrast, NIPSCO’s “no  
20 netting” proposal creates an impossibly complicated compensation scheme for DG

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<sup>48</sup> Bonbright, Principle 5 (stating “Stability of the rates themselves, with a minimum of unexpected changes seriously adverse to existing customers. (Compare ‘The best tax is an old tax.’)”)

<sup>49</sup> KPC Order, Case No. 2020-00174, May 14, 2021, p. 41.

<sup>50</sup> Bonbright, Principle 1.

1 customers, most of whom lack the capacity and capability to manage their moment-by-  
2 moment consumption relative to their generation.

3 Again, the KPC Order is illuminating on this point. In rejecting a move from  
4 monthly netting to two netting intervals within a billing month, the Kentucky PSC found  
5 that, “The proposed netting periods also significantly increase the complexity of the [net  
6 metering service] rate design, without clear indication of their benefit.”<sup>51</sup> NIPSCO’s “no  
7 netting” proposal is far more complicated than that proposed by KPC, and NIPSCO has  
8 asserted no benefit(s) that justifies this unnecessary complexity.

9 Third, the “no netting” proposal violates the principle that Professor Bonbright  
10 described as, “Fairness of the specific rates in the apportionment of total costs of service  
11 among the different consumers.”<sup>52</sup> As I further describe below, NIPSCO has failed to offer  
12 any evidence demonstrating that its “no netting” proposal would recover the net costs to  
13 serve its DG customers and thereby is appropriately and fairly apportioning costs to DG  
14 customers relative to non-DG customers.

15 Again, the KPC Order is insightful on applying this principle in the context of DG  
16 policy. It found that KPC’s class cost of service study for DG customers, which was not  
17 based on load research on its actual DG customers, was “unreliable and not useful for  
18 ratemaking,” noting the “lack of appropriate and sufficient data” the utility had on its DG  
19 customers, concluding that “[w]ithout such data, claims regarding a subsidy or  
20 differentiated load profiles [between DG and non-DG customers] is moot.”<sup>53</sup>

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<sup>51</sup> KPC Order, p. 24

<sup>52</sup> Bonbright, Principle 6.

<sup>53</sup> KPC Order, pp. 20-21.

1 **Q. Have other utilities used, or have state utility regulators required, that utilities**  
2 **conduct load research on their actual net metering customers to produce an accurate**  
3 **cost of service study prior to significantly modifying DG policies?**

4 A. Yes. Table 1 identifies some examples where other state utility regulators rejected proposed  
5 changes to net metering based on cost of service studies that failed to use appropriate load  
6 profiles for net metering customers, or where the utility used or planned to use such data  
7 to support its proposal to make changes to net metering.

**Table 1: Examples of Net Metering (“NEM”) Customer Load Research Used or Required in Other Jurisdictions<sup>54</sup>**

| State | Utility             | Summary  | Key Excerpts  |
|-------|---------------------|--|---|
| MT    | NorthWestern Energy | In Northwestern Energy’s 2018 rate case, its embedded cost of service study used NEM customer load data that intervenors described as artificial and derived through a convoluted series of assumptions and adjustments, rather than load research sample data for NEM customers like it did for all other residential customers in the study. Accordingly, the Montana Public Service Commission denied the utility’s request to place NEM customers in a separate rate class and charge NEM customers a demand charge rate design. | “The Commission finds that NorthWestern should <b>develop load research sample data for NEM customers of comparable quality to that used for the broader residential class</b> for use in future cost of service studies.” <sup>55</sup>  |
| NV    | NV Energy           | The Public Utilities Commission of Nevada found that NEM ratepayers had unique service and cost characteristics based on the actual net metering class load shapes of NV Energy net metering customers.  | “NV Energy states that the <b>NEM ratepayer class load shapes were developed using all active NEM ratepayers</b> as of March 31, 2015, for the entire study period of June 2014 through May 2015. Actual generation data was used when available. Missing hourly generation data was estimated using the average of those ratepayers that have at least 95 percent of the necessary 15-minute generation data. The compiled |

<sup>54</sup> Key portions of quoted excerpts have been bolded for emphasis. Footnotes from the excerpts have been omitted.

<sup>55</sup> Montana Public Service Commission, Docket No. 2018.02.012, Order, December 20, 2019, p. 63, available at <http://psc.mt.gov/Portals/125/Documents/news/NWE%20Rate%20Case/2018212%20FO.pdf>

IndianaDG Exhibit 1  
IURC Cause 45505  
Direct Testimony of Benjamin Inskeep

| State | Utility   | Summary  | Key Excerpts   |
|-------|---|--|--|
|       |   |  | data was then compared to the National Renewable Energy Laboratory’s averages for reasonableness.” <sup>56</sup>   |
| NH    | Eversource Energy<br><br>Liberty Utilities<br><br>Unitil Energy Systems | In its Order adopting an alternative net metering tariff that will be in place “while further data is collected and analyzed, pilot programs are implemented, and a distributed energy resource (DER) valuation study is conducted,” the New Hampshire Public Utilities Commission found that “there is little evidence of significant cost-shifting from DG customers to customers without DG,” and that additional load research needed to be collected on DG customers. | “...[T]he <b>utilities should collect and make available load shape data</b> for individual distribution circuits, or at least for a selected sample of distribution circuits, <b>as well as customer load data on an hourly or shorter interval basis for at least a representative sample of customers</b> ...Following completion of the value of DER study, and with the availability of the additional customer load and system planning and operations data, the Commission will open a new proceeding to determine whether and when further changes should be made to the net metering tariff structure.” <sup>57</sup> |
| OK    | Oklahoma Gas & Electric   | The Oklahoma Corporation Commission rejected the proposed separate rate classes with three-part rates for DG customers. The utility’s cost of service study using smart meter data on its actual DG customers showed DG customers were not subsidized by non-DG customers.   | “In the event OG&E proposes, in the future, a demand charge or any other substantive change to a tariff applicable to customers with distributed generation that OG&E deems necessary to comply with 17 O.S. § 156, the Commission will require OG&E to include as part of its case cost effectiveness tests, such as those performed for the company’s demand programs, and make available to the parties detailed cost and benefit data.” <sup>58</sup>  |
| SC    | Duke Energy Carolinas (DEC)<br><br>Duke Energy Progress (DEP)           | DEC and DEP used actual metered solar production data on its NEM customers to define solar customer’s contributions to their cost of service, the same data that they used to calculate costs and benefits. The utilities reached a settlement agreement, approved by the PSC, on its Solar Choice Net Metering tariff that will replace their existing net metering tariffs in the future.  | “[T]he <b>Companies [Duke Energy Carolinas and Duke Energy Progress] utilized the same factors—including utilizing the same underlying data, such as production meter data—in performing a forward-looking evaluation</b> for the Companies’ proposed Permanent Tariffs (as defined below). In this way, the Commission will be able to compare ‘apples to apples’ when evaluating the Companies’ Permanent Tariffs against the Existing NEM Programs.” <sup>59</sup>  |

<sup>56</sup> Public Utilities Commission of Nevada, Docket Nos. 15-07041 and 15-07042, Order, December 23, 2015, Paragraph 17, available at: [http://pucweb1.state.nv.us/PDF/AxImages/DOCKETS\\_2015\\_THRU\\_PRESENT/2015-7/8412.pdf](http://pucweb1.state.nv.us/PDF/AxImages/DOCKETS_2015_THRU_PRESENT/2015-7/8412.pdf)

<sup>57</sup> New Hampshire Public Utilities Commission, Order, June 23, 2017, pp. 66 and 72-73, available at: [https://www.puc.nh.gov/Regulatory/Docketbk/2016/16-576/ORDERS/16-576\\_2017-06-23\\_ORDER\\_26029.PDF](https://www.puc.nh.gov/Regulatory/Docketbk/2016/16-576/ORDERS/16-576_2017-06-23_ORDER_26029.PDF)

<sup>58</sup> Oklahoma Corporation Commission, Docket No. PUD 201500273, Order No. 662059, p. 13, March 20, 2017, available at: <http://imaging.occeweb.com/AP/Orders/occ5360859.pdf>

<sup>59</sup> Public Service Commission of South Carolina, Docket No. 2020-265-E, Direct Testimony of Bradley Harris for Duke Energy Carolinas, LLC and Duke Energy Progress, LLC, November 2, 2020, p. 6, available at ; *See also* Public Service Commission of South Carolina, Docket No. 2019-182-E, Direct Testimony of Bradley Harris for Duke Energy Carolinas, LLC and Duke Energy Progress, LLC, October 8, 2020, p. 6, available at: <https://dms.psc.sc.gov/Attachments/Matter/3670a579-5fe0-41c8-82ab-7a4af9f5019b>



| State | Utility                    | Summary   | Key Excerpts  |
|-------|----------------------------|---|---|
| TX    | El Paso Electric (EPE)     | EPE began load research studies on DG customers in 2013. The load research was used by the utility in its rate case application to support its proposed DG tariff. The DG tariff was ultimately resolved through an approved settlement agreement with intervenors. | “EPE performed a sample study for the Texas residential customers who have installed rooftop solar. <b>The study provides data about the different load characteristics of these residential DG customers compared to residential customers (non-DG)</b> ....As of the end of the Test Year, EPE had 57 customers in its residential DG load study for Texas.” <sup>60</sup>  |
| UT    | Rocky Mountain Power (RMP) | RMP performed load research on net metering customers in 2015 prior to the Commission adopting a net metering transition program in 2017.   | “The magnitude of this subsidy, if it exists, will not be readily apparent if the analysis does not ‘drill down’ another level and separately allocate costs to net metering customers based on their usage characteristics. Analyzing costs at the customer class level ensures the cost to serve the net metering customers is also recognized. PacifiCorp represents <b>‘[u]sing data from the load research study that is currently underway, [PacifiCorp] will be able to create a class profile for residential NEM customers, in the same manner done for other types of customer classes’</b> and ‘[t]his will enable [PacifiCorp] to assign costs to the NEM customers based on how they use the utility system.’” <sup>61</sup> |

6) NIPSCO’s “No Netting” Proposal Is Not Based on the Company’s Cost to Serve DG Customers

- 1 **Q. Is the “no netting” proposal consistent with NIPSCO’s cost to serve a DG customer?**
- 2 A. NIPSCO has provided no evidence that it is, nor has it asserted as much. In fact, it admitted
- 3 it does not even know what the cost to serve its DG customers is, stating in response to a
- 4 request for such information that it has “not calculated a cost to serve distributed generation
- 5 customers, either generally or by customer class.”<sup>62</sup> It also confirmed that it has not
- 6 estimated or calculated the financial impact of net metering service on its non-net metered

<sup>60</sup> Public Utilities Commission of Texas, Docket No. 46831, Direct Testimony of George Novela, February 13, 2017, pp. 921-922, available at: [http://interchange.puc.texas.gov/Documents/46831\\_2\\_929022.PDF](http://interchange.puc.texas.gov/Documents/46831_2_929022.PDF) (Note: Testimony appears at PDF 4-87 of 100 of that file).

<sup>61</sup> Utah Public Service Commission, Docket No. 14-035-114, Order, November 10, 2015, p. 10, available at: <https://pscdocs.utah.gov/electric/14docs/14035114/27044914035114o.pdf>

<sup>62</sup> NIPSCO Response to IndianaDG Data Request 3-001.

1 customers, or estimated or calculated potential cross-subsidies.<sup>63</sup> Furthermore, NIPSCO  
2 admits it does not even possess the most basic data on its DG customers, confirming that  
3 it does not have load profile information for any net metering customer class<sup>64</sup> or hourly  
4 data on DG customer imports and exports.<sup>65</sup> NIPSCO was also unable to explain how much  
5 DG customers contribute to NIPSCO's coincident peak demand and how solar affects a  
6 customer's contributions to peaks.<sup>66</sup> Based on its testimony and responses to data requests,  
7 I conclude NIPSCO neither has assessed whether its no netting and EDG rate proposals are  
8 consistent with cost-of-service principles, nor has it collected the data necessary to conduct  
9 the analysis necessary to determine what the actual costs to serve DG customers are.

10 **Q. How is a utility's cost to serve a specific set of customers typically determined?**

11 A. To reliably identify the costs to serve a customer segment or class, a utility typically  
12 conducts load research and develops a class cost of service study based on that load  
13 research for the customer segment in question. In instances in which a utility operates in  
14 multiple jurisdictions, it will perform a jurisdictional cost of service study prior to its class  
15 cost of service study to determine its jurisdictional revenue requirement.

16 **Q. Is it important that conclusions about cost of service for a customer segment be  
17 supported by a full class cost of service study of that specific group of customers?**

18 A. Yes. There are several reasons why, but ultimately it amounts to a need for equity and  
19 fairness in ratemaking. It is unfair to use one standard of evidence, such as full cost of  
20 service study, for customers in general but permit a different standard to be applied to

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<sup>63</sup> NIPSCO Response to IndianaDG Data Request 3-002 and 3-003.

<sup>64</sup> NIPSCO Response to IndianaDG Data Request 3-004.

<sup>65</sup> NIPSCO Response to Citizens Action Coalition Data Request 1-003.

<sup>66</sup> NIPSCO Response to Citizens Action Coalition Data Request 1-004.

1 certain customer segments. Likewise, the results of a shoddy or incomplete evaluation  
2 could result in unfair rates that charge customers in excess of their cost of service. Nothing  
3 in the DG Statutes suggests that the Commission should depart from the typical standards  
4 it applies for the establishment of just and reasonable rates, or generally accepted  
5 ratemaking principles.

6 Without a targeted cost of service evaluation, the Commission has no way of  
7 knowing at what level DG customers pay for service relative to their cost of service, and  
8 how that might vary within the class. Not only does that lack of information raise the  
9 potential for customers to be overcharged, but it also prevents a more informed evaluation  
10 of the options necessary to remedy any issues that are present. For example, the simple fact  
11 that a DG customer purchases less electricity from a utility than they would have had they  
12 not installed a DG system is insufficient evidence that they are being “subsidized” by other  
13 customers.

14 **Q. Can you cite to any other examples illustrating this possibility?**

15 A. Yes. In a 2015 general rate case, Oklahoma Gas and Electric (“OG&E”) proposed to  
16 establish special demand rates for customers that install DG and eliminate *all* compensation  
17 for exported generation on the basis that the changes were necessary to eliminate an alleged  
18 “subsidy” to DG customers. As it turns out though, OG&E’s class cost of service study,  
19 which evaluated residential DG customers as a separate class, showed that the residential  
20 DG class actually produced a considerably *higher* rate of return than the residential class  
21 as a whole (7.23% compared to 5.33%).<sup>67</sup> In other words, residential DG customers were

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<sup>67</sup> Oklahoma Corporation Commission, Docket No. PUD 201500273. Direct Testimony of Mark Garrett. March 31, 2016, p. 14, available at:  
<http://imaging.occeweb.com/AP/CaseFiles/occ5272383.pdf>

1 subsidizing non-DG customers to a significant degree. Not surprisingly, the changes sought  
2 by OG&E were not adopted.<sup>68</sup>

3 **Q. In what ways could DG affect NIPSCO's cost allocation in its cost of service study?**

4 A. NIPSCO objected when asked a similar question through a Data Request from IndianaDG,  
5 and did not answer the question.<sup>69</sup>

6 When properly factored into a cost of service study, DG customers can provide a  
7 number of benefits to non-DG customers in their class including, but not limited to, the  
8 following examples, which are based on how NIPSCO described its cost allocation in its  
9 last rate case:

- 10 • NIPSCO used a coincident peak demand method to allocate generation and  
11 transmission costs.<sup>70</sup> The coincident peaks during June through September were  
12 used by NIPSCO to allocate the demand-related costs associated with the  
13 *production* functions.<sup>71</sup> The coincident peak demands during each of the twelve  
14 months of the test period were used to allocate demand-related costs associated with  
15 the *transmission* functions.<sup>72</sup> To the degree DG customers can aid in reducing their  
16 class's total coincident peak demands, either by generating electricity during those  
17 coincident peak hours with their DG systems or by themselves having a lower  
18 average demand during those hours than non-DG customers in their class, they will  
19 reduce costs allocated to their customer class.
- 20 • NIPSCO uses a non-coincident peak demand method to allocate demand-related  
21 distribution system costs.<sup>73</sup> To the degree DG customers can aid in reducing their  
22 class's total non-coincident peak demand, either by generating electricity during  
23 the non-coincident peak demand hours for their class or by themselves having a  
24 lower demand during those hours than non-DG customers in their class, they will  
25 reduce costs allocated to their customer class.
- 26 • NIPSCO allocates energy-related costs to rate classes based on the amount of  
27 energy used by each class.<sup>74</sup> All of the electricity generated by a DG facility reduces

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<sup>68</sup> Oklahoma Corporation Commission, Docket No. PUD 201500273. Order No. 662059. March 20, 2017, available at: <http://imaging.occweb.com/AP/Orders/occ5360859.pdf>

<sup>69</sup> NIPSCO Response to IndianaDG Data Request 3-005.

<sup>70</sup> Direct Testimony of J. Stephen Gaske, IURC Cause No. 45159, p. 28.

<sup>71</sup> *Id.*, p. 29.

<sup>72</sup> *Id.*, p. 29.

<sup>73</sup> *Id.*, p. 28.

<sup>74</sup> *Id.*, p. 37.

1 the amount of electricity that a utility needs to generate at its own facilities or  
2 through purchases. To the degree DG customers reduce kWh consumed as a result  
3 of self-consumption and reduced purchases from NIPSCO, they will reduce cost  
4 allocation to their customer class on a 1:1 basis. In other words, for costs allocated  
5 on the basis of energy, there can be no “subsidy” to DG customers.

- 6 • NIPSCO adjusts its cost allocation data for line losses in the transmission and  
7 distribution system.<sup>75</sup> System losses are greatest for customers that take service at  
8 the secondary voltage levels, so these customers are allocated a higher portion of  
9 the costs.<sup>76</sup> DG helps reduce line losses, and associated costs allocated to  
10 customers, by both directly serving on-site loads and by providing EDG that is used  
11 by nearby customers in lieu of electricity that would have otherwise had to have  
12 been transmitted through the transmission and distribution systems.

13 Furthermore, NIPSCO states that EDG “may reduce the expected load NIPSCO  
14 needs to procure in the market to serve all customers,” but admits that it “does not currently  
15 take that into account when forecasting.”<sup>77</sup> NIPSCO’s failure to forecast EDG to reduce  
16 market purchases is a failure to accurately forecast and prudently plan, and should not be  
17 considered a downside of EDG’s ability to provide value from which other customers could  
18 benefit.

19 **Q. But you previously cited SEA 309’s sponsor as saying he did not want complicated**  
20 **lengthy ratemaking proceeding. Is a cost of service study, or another type of analysis**  
21 **such as a cost-benefit analysis, actually needed in an EDG case?**

22 A. In general, such studies are not required in an EDG case when the utility is merely  
23 implementing a calculation of the EDG rate in accordance with the statute; however, if the  
24 utility is *also* proposing additional, major policy changes not expressly directed in the  
25 statute that are a significant departure from important existing policies, such as NIPSCO’s

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<sup>75</sup> *Id.*, p. 37.

<sup>76</sup> *Id.*, p. 37.

<sup>77</sup> NIPSCO Response to IndianaDG Data Request No. 3-10.

1 “no netting” proposal, then it is the utility’s responsibility and burden to demonstrate these  
2 additional changes are just and reasonable. That has not occurred here.

7) NIPSCO’s “No Netting” Proposal Would Undermine Solar Jobs and  
Economic Development in Indiana

3 **Q. How would NIPSCO’s “no netting” proposal impact the Indiana solar industry?**

4 A. Based on my analysis of NIPSCO’s proposal and my professional experience, I believe  
5 NIPSCO’s proposal would significantly harm Indiana’s residential and commercial sector  
6 solar industry, leading to job losses and reduced economic development benefits for local  
7 communities. My belief is consistent with the Direct Testimony of IndianaDG witness Jim  
8 Straeter’s testimony in this Cause. Overall, the solar industry has created more than 3,300  
9 solar jobs in Indiana, with solar jobs increasing by 114% since 2015.<sup>78</sup> NIPSCO’s “no  
10 netting” proposal, and the similar proposals filed by other utilities in Indiana, would imperil  
11 many of these jobs through the abrupt and substantial decrease in the economic value of  
12 customer-sited solar. They would also create a substantial negative outlook and chilling  
13 effect for the State in terms of its ability to attract new residential and commercial sector-  
14 focused solar companies, and significantly diminish any additional job creation potential  
15 at existing companies operating in Indiana. NIPSCO’s “no netting” policy will materially  
16 harm Indiana solar installation businesses by reducing demand for solar installations. The  
17 sum of the negative impacts will include loss of Indiana jobs, loss of economic  
18 development, and loss of state and local tax revenues from those companies and their  
19 employees, and the indirect ripple effects that will emanate from these direct impacts.

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<sup>78</sup> The Solar Foundation, National Jobs Census 2020, available at  
<https://www.thesolarfoundation.org/national/>

8) Monthly netting does not cause harm to NIPSCO and non-DG customers.

1 **Q. Would retaining monthly netting harm NIPSCO or non-DG customers?**

2 A. No. Whereas retaining monthly netting is of utmost importance for the nascent but growing  
3 Indiana distributed solar industry, and for Indiana residents that want financially viable on-  
4 site solar options, there is little to no imperative to change this policy from NIPSCO's or  
5 its non-DG customers' perspective.

6 In fact, DG customers are likely providing substantial net benefits, as discussed  
7 further below, meaning the Commission should exercise its discretion in a manner that  
8 encourages the continued growth of DG in Indiana. For instance, the Lawrence Berkeley  
9 National Laboratory was commissioned by the Commission in response to a legislative  
10 request to provide a detailed analysis of emerging technologies and their impact on  
11 generation capacity, reliability, resilience, and rates ("LBNL DER Study"). It concluded  
12 that "[i]n general, scenarios with high adoption of rooftop solar PV result in system-wide  
13 savings," and "[r]ates tend to go down in the short term for the High PV scenarios."<sup>79</sup> These  
14 findings generally echo the results from studies commissioned on net metering or the value  
15 of solar in other states, some of which are discussed in more detail in the following section.  
16 The harmful impact of NIPSCO's "no netting" policy in conjunction with a very low EDG  
17 credit rate would hinder the State from realizing these substantial benefits.

18 Regardless of how the benefits of DG are quantified and considered, it is important  
19 to emphasize that the costs of DG are very modest on NIPSCO and non-DG customers.

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<sup>79</sup> Indiana 21st Century Energy Policy: Emerging Technologies on the Electricity Distribution System, pp. 55-56, available at <https://www.in.gov/iurc/files/2020-Report-to-the-21st-Century-Energy-Policy-Development-Task-Force.updated-min.pdf>

1 Through the end of 2020, NIPSCO had only 30.4 MW of installed net metering capacity.<sup>80</sup>  
2 NIPSCO indicates that the total monthly exported generation, summed for the 2020 year,  
3 was 5,468,498 kWh.<sup>81</sup> At the EDG credit rate, this annually equates to a mere \$142,801 in  
4 credits, a relatively inconsequential amount in NIPSCO's total revenue requirements.  
5 NIPSCO's own analysis estimates the difference between "no netting" and monthly netting  
6 will be less than \$0.5 million in revenue in 2022 and about \$1.4 million in 2023 under its  
7 "expected case,"<sup>82</sup> which NISPCO admits did not actually account for the impacts of its  
8 EDG tariff proposal on reducing customer DG adoption rates,<sup>83</sup> and is therefore likely to  
9 overstate what is likely to occur.

10 When looking at residential net metering specifically, net metering customers had  
11 617,996 kWh in monthly exports in 2020,<sup>84</sup> which is only about 0.02% of NIPSCO's 2020  
12 residential sales (3,475,876,000 kWh).<sup>85</sup> If all net monthly exported residential EDG was  
13 compensated at NIPSCO's current residential retail rate (inclusive of riders) of  
14 \$0.1407/kWh, then NIPSCO would have provided a mere \$86,963 in credit compensation  
15 for this monthly EDG. NIPSCO had 417,327 residential customers in 2020,<sup>86</sup> meaning that  
16 at full retail rate offset the cost burden to residential non-DG customers would have totaled  
17 \$0.02 per month at the most in exchange for the diverse benefits customer-owned EDG

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<sup>80</sup> Indiana Utility Regulatory Commission, "2020 Year-End (2020YE) Net Metering Reporting Summary," March 2021, available at <https://www.in.gov/iurc/files/2020-Year-End-Net-Metering-Required-Reporting-Summary.pdf>

<sup>81</sup> NIPSCO Response to IndianaDG Data Request 2-08.

<sup>82</sup> NIPSCO Response to IndianaDG Data Request 2-10.

<sup>83</sup> NIPSCO Response to Indiana DG Data Request 3-13.

<sup>84</sup> NIPSCO Response to IndianaDG Data Request 2-08.

<sup>85</sup> NIPSCO Response to IndianaDG Data Request 3-07 Attachment A.

<sup>86</sup> NIPSCO Response to IndianaDG Data Request 3-07 Attachment A.



1 provides. At the EDG credit rate, the 617,996 kWh in exports equates to a mere \$16,346  
2 in compensation, or an impact of only \$0.003 per residential customer per month.

3 Moreover, these values reflect a gross cost of monthly EDG, and not the net cost  
4 after considering the benefits of the EDG, such as the lower generation and purchased  
5 power costs resulting from the EDG. Needless to say, even under these conservative  
6 assumptions and assuming no value is provided by EDG, it would only amount to a *de*  
7 *minimis* “subsidy” or cost shift to non-DG customers that would not justify the major policy  
8 change being proposed by NIPSCO. But when the benefits are considered even that *de*  
9 *minimis* “subsidy” would not exist, or would be substantially reduced.

10 NIPSCO’s annual revenue requirement is approximately \$1.47 billion.<sup>87</sup> The high-  
11 end estimate of the residential compensation under monthly netting and offset at the full  
12 retail rate is \$86,963, or about 0.006% of NIPSCO’s annual revenue requirement. Under  
13 the EDG Rider, the rollover credit rate will be reduced by about 81% from the retail rate  
14 to the EDG credit rate, further reducing the NIPSCO revenue impact.

15 **Q. What if DG adoption continues to grow, causing the credit amount to also grow?**

16 A. The revenue requirement for the EDG credit is so small that there would have to be  
17 unprecedented and abrupt growth in DG adoption rates for it to be a legitimate concern.  
18 Indiana’s solar DG adoption rates are relatively modest to date, and there is no indication  
19 that such dramatic growth is likely. In a data response, NIPSCO provided its estimate of  
20 “low,” “medium” (the “expected case”) and “high” customer DG adoption. However,  
21 NIPSCO confirmed that its scenario analysis of various DG adoption rates does not adjust

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<sup>87</sup> IURC Cause No. 45159.

1 for any reduced DG adoption rates that will occur if its “no netting” proposal is approved.<sup>88</sup>  
2 NIPSCO’s projected “expected case” margin reduction between its “no netting” proposal  
3 and monthly netting at NIPSCO’s proposed EDG credit rate would be \$1.4 million in 2023  
4 and grow to about \$4.3 million in 2026.<sup>89</sup> Under the more plausible “Low Case” projection  
5 the margin reduction would be \$0.9 million in 2023, rising to \$2.7 million in 2026. These  
6 are not major costs in the context of NIPSCO’s \$1.47 billion revenue requirement.  
7 Furthermore, focusing only on growth in the annual EDG credit fails to account for  
8 offsetting associated benefits customer-sited DG provides, and these benefits would need  
9 to be holistically and comprehensively analyzed on a forward-looking basis to fairly  
10 evaluate whether the existing policy is causing a net benefit or a net cost to Hoosier  
11 residents. Utilities are permitted to recover the costs of EDG credits under the plain  
12 language of Section 15 of the DG Statutes.

**E. The Benefits of Retaining Monthly Netting**

13 **Q. What factors help explain why monthly netting policies have been popular and**  
14 **widely adopted in the U.S.?**

15 **A.** Monthly netting offers a number of key advantages that have contributed to it becoming  
16 widely adopted, popular among customers, and effective at growing DG:

- 17 • **Understandable to customers.** Monthly netting makes sense to consumers. The  
18 simplicity of netting of kWh exports against kWh imports over the duration of a  
19 billing period is intuitive and understandable to customers, who are accustomed to  
20 the monthly character of typical billing.
- 21 • **Ability to estimate financial benefit of DG investment.** Monthly netting allows  
22 solar installers to provide reasonably accurate estimates of the financial viability of  
23 a distributed solar facility, whereas no netting policies add substantial complexity  
24 and uncertainty to these estimates. Monthly netting allows customers to make

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<sup>88</sup> NIPSCO Response to IndianaDG Data Request 3-013(c).

<sup>89</sup> NIPSCO Response to IndianaDG Data Request 2-010.

1 informed decisions about a potential solar investment that is sized to generate  
2 electricity sufficient to meet their expected annual electricity usage. Smaller  
3 systems (e.g., those designed to only offset a customer’s minimum usage and never  
4 export electricity) typically have higher per-kW costs that can substantially erode  
5 the solar value proposition.

- 6 • **Technologically simple.** It does not take new or expensive metering equipment,  
7 such as advanced metering infrastructure, to implement monthly netting. Monthly  
8 netting can be implemented using existing metering equipment.
- 9 • **Fair compensation.** The full crediting of DG exports against imports from the grid  
10 over the duration of a billing period is generally perceived and accepted as a fair  
11 compensation rate by customers. In addition, numerous studies from across the  
12 country have shown this crediting rate is a reasonable approximation of the value  
13 provided by rooftop solar during a month, particularly at low levels of rooftop solar  
14 deployment like in place in Indiana.
- 15 • **Benefits non-DG customers.** By facilitating DG growth, monthly netting produces  
16 greater systemwide DG benefits that flow to all grid users. The LBNL DER Study  
17 found that the estimated incremental economic impact on power system investment  
18 and operation in its High PV scenario relative to its Base case was \$265.2 million  
19 in savings by 2025 and \$549.2 million in savings by 2040.<sup>90</sup>
- 20 • **Bill certainty and stability.** Since compensation for excess generation takes the  
21 form of kWh credits, future changes to the utility’s underlying kWh rates do not  
22 impact the economics of the system, as the customer continues to fully offset their  
23 electricity exports and imports during the month, giving a customer additional  
24 “peace of mind” about their financial investment.
- 25 • **Local and State economic development.** Monthly netting policies have proven  
26 effective at transforming nascent rooftop solar markets into significant job creators.  
27 Rooftop solar installer jobs are inherently local jobs and cannot be outsourced.

28 **Q. Have states studied the costs and benefits of policies with monthly netting, or the value**  
29 **provided by DG solar net metering systems?**

30 **A.** Yes, there have been numerous studies in recent years that have examined the costs and  
31 benefits of such policies or the value of solar DG or other distributed energy resources  
32 more broadly.

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<sup>90</sup> Indiana 21st Century Energy Policy: Emerging Technologies on the Electricity Distribution System, pp. 55-56, available at <https://www.in.gov/iurc/files/2020-Report-to-the-21st-Century-Energy-Policy-Development-Task-Force.updated-min.pdf>

1 **Q. What have these studies found regarding the costs and benefits or the value of solar**  
2 **DG?**

3 A. As shown in Figure 2 below, these studies have generally found that policies that employ  
4 monthly netting frameworks result in net benefits to all customers or only small net costs,  
5 prior to taking into consideration larger policy objectives and less directly quantifiable  
6 benefits (*e.g.*, societal benefits, local economic development benefits, etc.). Similarly,  
7 studies calculating the value of solar DG have often found the total value *exceeds* the  
8 current retail rate. One recent review found that 14 out of 24 value of solar analyses  
9 conducted in 2012-2018 calculated that the value of solar was at or above the retail rate,  
10 and only one analysis calculated a value that was below 50% of the residential retail rate  
11 (Figure 3). For comparison, NIPSCO's EDG Rate is only 18.8% of NIPSCO's current total  
12 residential energy charges. Stated differently, **NIPSCO is proposing to reduce the**  
13 **effective compensation rate for all exported generation by a residential DG customer**  
14 **by 81.2% in this case.**<sup>91</sup>

15 There is considerable variation across these studies in the methodology used, the  
16 categories of costs and benefits or values included, and the entity performing the study,  
17 which can all significantly impact the conclusions reached. Therefore, it is important that  
18 the specific context of a utility or state be fully evaluated in a rigorous and transparent way  
19 by an independent or neutral entity to determine what the impacts of net metering are in a  
20 specific jurisdiction.

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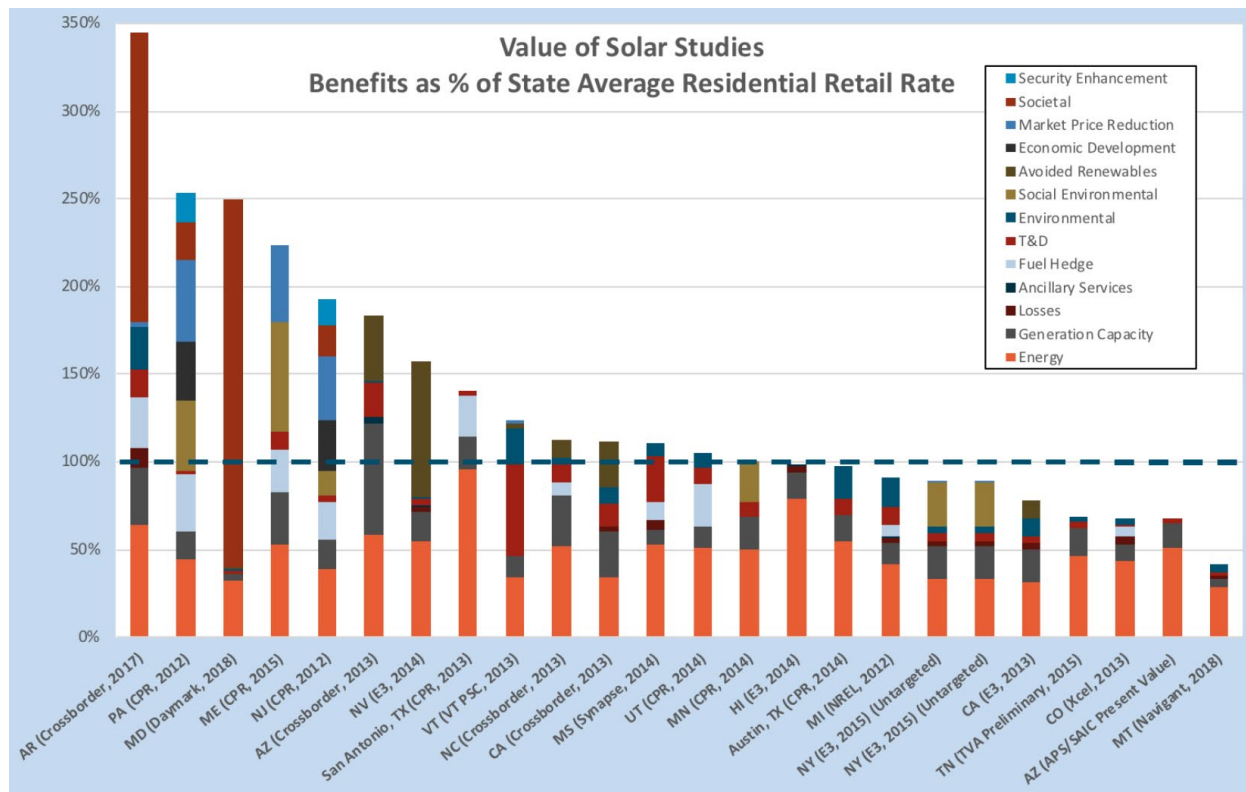
<sup>91</sup> Calculated by adding the Rider 811 Residential Service base energy charge and six applicable rider adjustment charges (Rider 870, Rider 871, Rider 874, Rider 883, Rider 887, and Rider 888) and then dividing the EDG Rate of \$0.02645/kWh by the calculated total energy charge rate of \$0.14017/kWh.

**Figure 2. Summary of State Cost-Benefit Study Results<sup>92</sup>**

| State                            | Year | Prepared by      | Principal Findings  |
|----------------------------------|------|------------------|---|
| <b>NEM Cost-Benefit Analysis</b> |      |                  |   |
| Arkansas                         | 2017 | Crossborder      | Benefits of residential distributed generation (DG) exceed the costs; do not impose a burden on other ratepayers. |
| Nevada                           | 2016 | E3               | Cost-shift amounts to a levelized cost of \$0.08/kWh for existing installations.                                  |
| Louisiana                        | 2015 | Acadian          | Costs associated with solar NEM installations outweigh their benefits.  |
| South Carolina                   | 2015 | E3               | NEM-related cost-shifting was <i>de minimus</i> due to the low number of participants.                            |
| Mississippi                      | 2014 | Synapse          | NEM provides net benefits under almost all of the scenarios and sensitivities analyzed.                           |
| Vermont                          | 2014 | PSD              | NEM results in “close to zero” costs to non-participating ratepayers, and may be a net benefit.                   |
| <b>VOS/NEM Successor</b>         |      |                  |   |
| District of Columbia             | 2017 | Synapse          | Utility system VOS is \$132.66/MWh (2015\$); cost-shifting remains relatively modest.                             |
| Georgia                          | 2017 | Southern Company | Provides a methodology for assessing costs and benefits; no specific estimate is produced.                        |
| Hawaii                           | 2015 | CPR              | Provides a methodology for assessing costs and benefits. Preliminary results suggest a net benefit.               |
| Maine                            | 2015 | CPR              | Value of distributed PV is \$0.337/kWh (levelized).   |
| Oregon                           | 2015 | CPR              | Provides a methodology for assessing costs and benefits; no specific estimate is produced.                        |
| Minnesota                        | 2014 | CPR              | Provides a methodology for assessing VOS; no specific estimate is produced.                                       |
| Utah                             | 2014 | CPR              | VOS is \$0.116/kWh levelized.   |
| <b>DER Value Frameworks</b>      |      |                  |   |
| California                       | 2016 | CPUC             | Provides a methodology for assessing costs and benefits; no specific estimate is produced.                        |
| New York                         | 2016 | NY DPS           | Provides a methodology for assessing costs and benefits; no specific estimate is produced.                        |

<sup>92</sup> ICF International, “Review of Recent Cost-Benefit Studies Related to Net Metering and Distributed Solar” (May 2018).

**Figure 3. State Value of Solar Study Results<sup>93</sup>**



1 **Q. What do you conclude based on your review of these studies?**

2 A. I conclude that monthly netting has been one of the key factors enabling the growth of DG  
3 in the U.S., and that DG has been shown in numerous studies across the country to provide  
4 substantial value that all customers benefit from. Approving NIPSCO’s “no netting” policy  
5 would harm the growth of DG, and the corresponding benefits it can provide to both DG  
6 and non-DG customers alike.

<sup>93</sup> Kush Patel, “Act 236: Version 2.0,” Energy+Environmental Economics, August 7, 2018, [http://energy.sc.gov/files/Act%20236%20Follow%20Up%20-%20Stakeholder%20Meeting%2008.07.18\\_Final.pdf](http://energy.sc.gov/files/Act%20236%20Follow%20Up%20-%20Stakeholder%20Meeting%2008.07.18_Final.pdf)

**F. Other Netting Periods**

1 **Q. Has the Commission previously stated it has discretion in EDG proceedings to**  
2 **determine the appropriate netting period?**

3 A. Yes, the Commission previously stated that it may “exercise its expertise and discretion in  
4 determining the reasonableness of a utility’s proposed netting period for EDG.”<sup>94</sup> As I will  
5 discuss further later, longer netting periods, including monthly netting, weekly or daily  
6 netting, rather than no netting or netting on a short time interval (e.g., 15-minute or hourly  
7 netting), are fairer to EDG customers. But again, I see no language in the DG Statute that  
8 requires or invites a change from monthly netting.

9 **Q. What netting period is most consistent with producing just and reasonable rates in**  
10 **this case?**

11 A. As explained previously, monthly netting is most consistent with the plain language in the  
12 relevant provisions of the applicable statutes and long-standing ratemaking principles.

13 In addition, retaining monthly netting also represents a “no regrets” policy option  
14 for the Commission in this case. Adopting monthly netting for the time being would allow  
15 the Commission to monitor the impacts of the transition to the EDG Rider and avoid a  
16 hasty move to a “no netting” policy that would further compound the negative impacts of  
17 the EDG Rider rate on future DG growth. If the Commission believes it has discretion to  
18 adjust the netting period, then there is little or no risk from preserving monthly netting for  
19 the time being, while reserving the right to move away from monthly netting in the future,  
20 should a compelling case based on actual facts, data and analysis be made for that  
21 significant policy change.

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<sup>94</sup> IURC Cause No. 45378, Final Order, April 7, 2021, p. 38.

1 A comparative analysis of the impacts of various netting methodologies is  
2 described in the following section.

**G. Analysis of Impacts**

3 **Q. Did NIPSCO estimate the bill increase for a residential DG customer and a**  
4 **commercial DG customer under its proposal in this case?**

5 A. Yes. NIPSCO conducted an analysis of a single residential customer with 7.6 kW DG  
6 facility. It found that the customer's total monthly bill summed over an annual period  
7 would increase from \$410 under the current net metering policy to \$779 under its "no  
8 netting" proposal, a **90% residential DG bill increase**. NIPSCO also conducted an  
9 analysis of a commercial DG customer with a 120 kW system. Its results for the  
10 commercial customer was even more alarming, showing a bill increase from \$509 to  
11 \$1,242, a **144% commercial DG bill increase**.<sup>95</sup>

12 **Q. How would NIPSCO's "no netting" policy affect residential DG customer bill**  
13 **savings?**

14 A. I estimate that NIPSCO's "no netting" policy would reduce residential customer bill  
15 savings by roughly 52% for a solar DG facility sized to produce an approximate 100% load  
16 offset on an annual basis (i.e., 6.3 kW-dc) compared to monthly netting where EDG is  
17 credited at the EDG credit rate.

18 I arrived at this estimate through a multi-step process that was necessary due to the  
19 lack of granular data provided by NIPSCO. First, I developed a typical residential solar  
20 production profile for a DG system located in Merrillville, Indiana, using the default

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<sup>95</sup> Direct Testimony of Kevin Kirkham (May 10, 2021), Attachment 2-B.



1 assumptions in, and the output from, the National Renewable Energy Laboratory's  
2 ("NREL") PVWatts Calculator, which is a public, freely available modeling tool.<sup>96</sup>

3 Second, I developed a representative hourly production profile for a typical  
4 residential customer in NIPSCO's service territory. NIPSCO was unable to provide a  
5 representative hourly load profile for its residential customers despite repeated requests by  
6 IndianaDG for the information.<sup>97</sup> Therefore, I used the OpenEI Database to find a  
7 representative residential load profile for a residential customer located in South Bend,  
8 Indiana, which is the load profile for the geographic location that I believe most closely  
9 aligns with NIPSCO's service territory that is available in the database.<sup>98</sup> Since this  
10 representative load profile resulted in 9,133 kWh of annual generation, whereas NIPSCO  
11 reported an average residential customer annual energy consumption of 8,394 kWh in its  
12 last rate case,<sup>99</sup> I scaled the hourly load profile so that it aligned with NIPSCO's actual  
13 residential customer average load.<sup>100</sup>

14 Third, the default solar system size used in PVWatts is 4 kW-dc, so I scaled up the  
15 size of the DG facility to 6.3 kW so its production offset approximately 100% of the  
16 residential customer's annual electricity consumption. Based on the resulting load profile

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<sup>96</sup> <https://pvwatts.nrel.gov/>

<sup>97</sup> NIPSCO Response to IndianaDG Data Request 4-001; NIPSCO Supplemental Response to IndianaDG Data Request 4-001.

<sup>98</sup> OpenEI Datasets, available at

[https://openei.org/datasets/files/961/pub/RESIDENTIAL\\_LOAD\\_DATA\\_E\\_PLUS\\_OUTPUT/BASE/](https://openei.org/datasets/files/961/pub/RESIDENTIAL_LOAD_DATA_E_PLUS_OUTPUT/BASE/). (I used the file named, "USA\_IN\_South.Bend-Michiana.Rgnl.AP.725350\_TMY3\_BASE.csv" for my analysis.)

<sup>99</sup> Direct Testimony of Gaske, Attachment 18-C, Cause No. 45159; *see also* NIPSCO Response to IndianaDG Data Request 3-007 Attachment A, identifying 8,329 kWh/year for residential customers, which is a similar value.

<sup>100</sup> In other words, I divided the hourly residential load for each hour of the year by the scalar, which is calculated by dividing 9,133 kWh by 8,394 kWh. This produced a residential load profile with 8,394 kWh of consumption per year.

1 and solar generation profile, I calculated the value diminishment and payback period of  
2 NIPSCO's proposal and several alternative policies.

3 Using *hourly* production and load figures as opposed to more granular data means  
4 that this analytical method will understate the actual amount of exported electricity (*i.e.*,  
5 my methodology is akin to using an *hourly* netting interval instead of the *no netting*  
6 measurement proposed). Therefore, the reduction in customer bill savings produced by this  
7 method is a conservative estimate, and the actual reduction to bill savings will be more  
8 drastic under NIPSCO's "no netting." To develop a rough estimate of the additional  
9 reduction in value from moving from an hourly netting to a "no netting" policy, I used the  
10 same reasonable deduction calculated in direct testimony by Joint Intervenors' witness  
11 William Kenworthy in Vectren's EDG case (IURC Cause No. 45378). Mr. Kenworthy  
12 reasonably estimated that the annual bill for an average customer under the Dual-channel  
13 Billing methodology ("no netting") would be approximately 12% more than the average  
14 customer would pay under his Hourly Net Billing methodology.<sup>101</sup>

15 Finally, I also analyzed an alternative netting policy that would allow netting of  
16 imports against exports on a *daily* basis, which offers another alternative to NIPSCO's "no  
17 netting" proposal. The results of my analysis indicate daily netting is substantially less  
18 harmful to DG participants than either no netting or hourly netting. Specifically, no netting  
19 and hourly netting results in a 59.2% and 52.9%, respectively, value diminishment in the  
20 value of solar produced by a DG system relative to the current net metering policy, and a  
21 52.3% and 44.9% value diminishment relative to monthly netting with EDG credited at the  
22 EDG Rider rate. Daily netting, on the other hand, results in only a 19.8% value

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<sup>101</sup> IURC Cause No. 45378, Direct Testimony of William Kenworthy, p. 19.

1       diminishment of DG generation compared to the current net metering policy, and a 6.1%  
2       value diminishment relative to monthly netting with EDG credited at the EDG Rider rate.  
3       As shown in Table 2, the total value of DG generation (i.e., on-site consumption plus  
4       exported generation) in the first year after installing a solar DG facility is estimated to range  
5       from a high of \$1,186 under net metering to a low of about \$484 under NIPSCO’s no  
6       netting proposal, with the other policy options analyzed reflecting a less significant  
7       reduction in total value. The results of this analysis are presented in Table 2.

**Table 2. Annual Value Diminishment to Residential Solar Customer under Alternatives to Net Metering**

| <b>Compensation Category</b>                                | <b>No Netting</b> | <b>Hourly Netting</b> | <b>Daily Netting</b> | <b>Monthly Netting (EDG Credit)</b> | <b>Net Metering (Retail Rate)</b> |
|---|-------------------|-----------------------|----------------------|-------------------------------------|-----------------------------------|
| On-Site Value   | <i>Unknown</i>    | \$413.02              | \$413.02             | \$413.02                            | \$413.02                          |
| Export Credits Value  | <i>Unknown</i>    | \$145.20              | \$537.98             | \$599.96                            | \$772.50                          |
| Total Value   | \$483.54          | \$558.22              | \$951.00             | \$1,012.98                          | \$1,185.52                        |
| Value Diminishment Compared to Net Metering (Retail Rate)   | <b>59.2%</b>      | <b>52.9%</b>          | <b>19.8%</b>         | <b>14.6%</b>                        | --                                |
| Value Diminishment Compared to Monthly Netting (EDG Credit) | <b>52.3%</b>      | <b>44.9%</b>          | <b>6.1%</b>          | --                                  | --                                |

8               While there will be a fair amount of variation between individual customers with  
9       respect to their hourly load profiles, my estimates are reasonable comparisons. Customers  
10       with lower daytime loads would produce a greater quantity of exports than those with  
11       higher daytime loads and, consequently, forfeit more value due to excess daytime  
12       generation being compensated at the low EDG Rider rate, instead of the volumetric retail  
13       rate compensation that the customer would receive under monthly netting. Second, system  
14       orientation and other site characteristics would influence the solar production shape and,

1 correspondingly, the amount of hourly exports. However, I believe my estimate provides a  
2 useful and reliable illustration of the financial impacts of NIPSCO's proposal on a typical  
3 residential customer installing a solar DG system.

4 The daily netting results further demonstrate just how financially disastrous  
5 NIPSCO's no netting proposal would be on prospective solar DG customers compared to  
6 more reasonable alternatives. Even allowing solar customers to retain their export credits  
7 for a day yields a 14.6% diminishment in customer value compared to nearly a 60% value  
8 diminishment from no netting relative to net metering.

9 My analysis of potential impacts of NIPSCO's proposals in this case was  
10 significantly hampered by the lack of data NIPSCO was able to provide with respect to its  
11 DG customers. NIPSCO's inability to provide meaningful, granular data on the usage and  
12 generation characteristics of its DG customers in this case illustrates how impossible it will  
13 be for many prospective DG customers to have sufficient information about their own past  
14 usage and the degree their usage would align with solar DG generation, hampering their  
15 ability to make reasonable estimates about the financial viability of DG, as well as  
16 managing their generation and usage effectively once a DG system is installed to maximize  
17 their financial benefits.

18 **Q. How would NIPSCO's "no netting" proposal affect residential DG customer payback**  
19 **periods?**

20 A. I calculate that the payback period for a 6.3 kW system costing a residential customer  
21 \$3.05/watt,<sup>102</sup> or a total upfront cost of \$19,215, would be 27.4 years under NIPSCO's "no

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<sup>102</sup> Energy Sage, <https://www.energysage.com/local-data/solar-panel-cost/in/> (Showing that "[a]s of July 2021, the average solar panel cost in Indiana is \$3.05/W.")

1 netting” proposal, compared to 11.4 years under the current net metering policy, or 13.3  
2 years under monthly netting with EDG credited at the EDG Rider rate (Table 3).<sup>103</sup>  
3 NIPSCO’s proposals in the case would more than double the payback period for a typical  
4 residential customer DG investment, to the point where it no longer would save a customer  
5 money over a 25-year life of the system.

**Table 3. Payback Period of a 6.3 kW Residential Solar Facility in NIPSCO’s Service Territory With ITC**

| <b>DG Compensation Policy</b>                                  | <b>Payback Period (Years)</b> |
|--|-------------------------------|
| Net Metering (Current)   | 11.4                          |
| Monthly Netting (EDG Credit for Excess Distributed Generation) | 13.3                          |
| Daily Netting  | 14.2                          |
| Hourly Netting   | 23.7                          |
| No Netting   | 27.4                          |

6 The payback periods above include the current 26% federal investment tax credit (“ITC”),  
7 discussed in more detail below. The payback period of a DG system will get worse in future  
8 years as the ITC phases out. For a residential DG system installed on or after the end of the  
9 ITC on January 1, 2024, the payback period would increase to 17.3 years under monthly  
10 netting and to more than 34 years under NIPSCO’s “no netting” proposal (Table 4).

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<sup>103</sup> If the average price of Indiana solar installation were to decline, for example, to \$2.50/watt, the payback period under NIPSCO’s EDG proposals would still be more than 22 years.

**Table 4. Payback Period of a 6.3 kW Residential Solar Facility in NIPSCO’s Service Territory With No ITC**

| <b>DG Compensation Policy</b>                                  | <b>Payback Period (Years)</b> |
|--|-------------------------------|
| Net Metering (Current)   | 14.9                          |
| Monthly Netting (EDG Credit for Excess Distributed Generation) | 17.3                          |
| Daily Netting  | 18.4                          |
| Hourly Netting   | 30.1                          |
| No Netting   | 34.3                          |

1 **Q. What is the impact of NIPSCO’s “no netting” proposal relative to the application of**  
2 **the EDG credit rate?**

3 A. As demonstrated in Tables 2-4, NIPSCO’s “no netting” proposal is the primary driver of  
4 the reduced value of installing solar DG, and would result in a significantly longer payback  
5 period. In contrast, maintaining monthly netting and applying the EDG credit rate to all  
6 monthly net EDG produces a less drastic decrease in the value of installing solar DG and  
7 a smaller increase in the payback period relative to the current net metering policy.

8 **Q. Would non-residential customers be similarly impacted?**

9 A. Yes. Schools, churches, governments, and businesses would likely see a similar, negative  
10 impact on their potential bill savings from installing a DG system designed to meet their  
11 annual electricity usage under NIPSCO’s proposed “no netting” policy. The specific  
12 magnitude of the impacts would depend on the customer’s rate schedule, usage  
13 characteristics, and generation profile, among other factors.

14 **Q. Will federal subsidies for DG technologies like solar make up for NIPSCO’s dramatic**  
15 **reduction in compensation under its “no netting” proposal?**

1 A. No. The federal ITC has been a factor in customer payback periods since it started, and it  
2 is factored into my payback period analysis described above. To say the existing ITC credit  
3 – even if it is extended by Congress – is a cure for or reduction to the financial harm that  
4 would be caused by NIPSCO’s “no netting” proposal would be false. The ITC for solar is  
5 currently being phased out. The ITC currently provides a 26% tax credit for solar systems  
6 on residential (under Section 25D) and commercial (under Section 48) properties. In 2023,  
7 or only six months after NIPSCO’s EDG Rider is scheduled to become effective for all  
8 new DG customers, the ITC will step down to a 22% tax credit. Beginning in 2024, the  
9 commercial ITC drops down to 10% in perpetuity, whereas the residential ITC will be  
10 *eliminated* for new systems.<sup>104</sup>

11 It is also important to note that entities without federal income tax liability like  
12 churches and municipal governments cannot directly benefit from current federal ITC. This  
13 means that solar sited at government buildings, public schools, and nonprofit organizations  
14 in Indiana are generally unable to benefit from the ITC.

15 Third-party power purchase agreements (“PPAs”) are a financing mechanism that  
16 has been widely used in many other states, allowing entities without federal income tax  
17 liability to indirectly benefit from the federal ITC through the pass-through of the benefits  
18 realized by the third-party owner(s) to the customer purchasing the solar facility’s output.  
19 However, this financing mechanism has not been explicitly authorized in Indiana, so its  
20 legal status is unclear here. As a result, Indiana taxpayers are paying for the ITC (to the  
21 extent all U.S. taxpayers bear the costs of federal tax credits) associated with solar PPAs

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<sup>104</sup> Solar Energy Industries Association, “Solar Investment Tax Credit (ITC),” available at <https://www.seia.org/initiatives/solar-investment-tax-credit-itc>.

1 that other state regulators or policymakers have expressly allowed as part of their DG  
2 policies, meaning Hoosiers bear the costs but are not getting their fair share of the benefits  
3 of the ITC associated with solar PPA financing models.

4 **Q. What would be the impact of the “no netting” proposal on the adoption rate of**  
5 **technologies like distributed solar and the type of customer that would be able to**  
6 **make such an investment in NIPSCO’s service territory?**

7 A. Simply put, as a result of the large reduction in potential savings for installing DG,  
8 NIPSCO’s “no netting” proposal would have a devastating impact on the adoption rate of  
9 DG technologies like solar by preventing most customers from being able to install such a  
10 DG system based on the economics. For example, a rooftop solar system can have an  
11 upfront cost (prior to applying the federal ITC) of roughly \$15,000 to \$25,000, depending  
12 on system size and other factors.<sup>105</sup> If NIPSCO’s “no netting” proposal is approved, solar  
13 companies will likely struggle to attract new customers and will be less likely to be able to  
14 offer financing arrangements like leasing, which can make rooftop solar economically  
15 viable for families that cannot afford the upfront costs of a solar system, because such  
16 leasing services are usually made available on the basis of demonstrating a net cost  
17 reduction to customers. Without a reasonable opportunity to save money from a solar  
18 investment, most customers are unlikely to install a system.

19 Only customers who are not sensitive to the economics of such a large investment  
20 would be able to make such an investment. Unfortunately, this leads me to conclude that

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<sup>105</sup> The median price for residential solar in the U.S. in 2019 was \$3.76/watt, according to Lawrence Berkeley National Laboratory’s “Tracking the Sun” data, available at <https://emp.lbl.gov/tracking-the-sun>. More recent and regionally specific data suggest the price in Indiana is currently around \$3.05/watt: <https://www.energysage.com/solar-panels/in/>.



1 NIPSCO’s “no netting” proposal would likely mean that primarily high-income Hoosiers  
2 and perhaps some larger businesses only would be able to afford investment in on-site DG  
3 technologies like rooftop solar, making solar out of reach for the average Hoosier  
4 household, small business, or school. In contrast, trends in rooftop solar adoption across  
5 the country show that the median household income for solar adopters is falling over  
6 time.<sup>106</sup>

7 NIPSCO’s proposal is a step backwards in improving equity and access to the  
8 diverse benefits of DG solar.

9 **Q. Could customers mitigate the adverse impacts of the “no netting” proposal by adding  
10 battery energy storage system to their DG facilities?**

11 A. While battery energy storage is an extremely promising resource that can provide  
12 customers and the grid with many benefits, they are typically too expensive for individual  
13 customers to install, especially lower and moderate-income residential customers, and  
14 should not be *de facto* mandatory for participation in a DG program. For instance, one 5.8  
15 kW / 13.5 kWh Tesla Powerwall costs \$7,000, and that is before consideration of  
16 supporting hardware that can cost about \$1,000, sales tax, plus installation costs that are  
17 site dependent and can run into thousands of dollars.<sup>107</sup> Most residential solar installations  
18 would need to be paired with multiple batteries for the customer to fully serve their entire  
19 load on an annual basis without importing or exporting any electricity.

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<sup>106</sup> Lawrence Berkeley National Laboratory, “Residential Solar-Adopter Income and Demographic Trends: 2021 Update,” available at [https://eta-publications.lbl.gov/sites/default/files/solar-adopter\\_income\\_trends\\_final.pdf](https://eta-publications.lbl.gov/sites/default/files/solar-adopter_income_trends_final.pdf).

<sup>107</sup> Energy Sage, “The Tesla Powerwall home battery complete review,” April 29, 2021, available at <https://news.energysage.com/tesla-powerwall-battery-complete-review/>

1           Notably, NIPSCO offers no proposal to mitigate the upfront cost of customer  
2 investments in battery energy storage systems, or innovative proposals, akin to those I  
3 discuss later, that would help customers and the grid benefit from batteries' capacity  
4 located on the customer's premises. Instead, NIPSCO seeks to impose the most restrictive  
5 EDG paradigm possible, which will result in many customers not being able to install solar  
6 and the potential demise of solar installation business in Indiana. The DG Statutes' plain  
7 language does not require DG customers to install battery storage, and it would be unfair,  
8 unjustified, and unreasonable to impose a policy that would require such a financial burden  
9 on NIPSCO EDG customers.

10 **Q.    Couldn't DG customers limit their exported electricity through other means besides**  
11 **installing a battery energy storage system?**

12 A.    Only to a limited extent. DG customers do not generally have the ability or the capacity to  
13 monitor their instantaneous minute by minute electricity usage and generation and align  
14 the two, meaning customers are limited in their capability to respond to the "price signals"  
15 under "no netting." Similarly, residential customers of Indiana investor-owned utilities are  
16 not exposed to real-time wholesale market price fluctuations that would require closely  
17 monitoring and responding to sub-hourly price fluctuations, and are instead served under  
18 rate schedules that use flat energy rates, block rates, or TOD rates with a limited number  
19 of time periods.

20           Furthermore, only a portion of electricity usage is discretionary and can be shifted  
21 across time. Many customers will have limited ability to do so and maintain those  
22 behaviors, which further limits the customer's ability to avoid exporting generation by  
23 using the DG output behind the meter for on-site consumption. Some types of customers

1 will be particularly constrained in their ability to shift usage during the day or across  
2 seasons (e.g., schools; residential customers with schedule constraints that prevent shifting  
3 when they cook dinner or do the laundry; etc.).

4 Finally, as discussed above, there is no reason customers should be discouraged  
5 from exporting EDG in the first place, particularly given that it will tend to overlap with  
6 NIPSCO's on-peak period in the summer and shave peak demand during these times.

7 **Q. If a customer were to install battery storage, would a “no netting” policy provide a**  
8 **good price signal for maximizing the value that the battery can provide to the grid?**

9 A. No. No netting or limited duration netting policies (e.g., hourly netting) prompt customers  
10 to use the battery to avoid exports, since those exports have a diminished value relative to  
11 electricity consumed on-site. This results in the battery charging during daylight hours, and  
12 discharging when solar production is not available at night. Discharge is limited to the  
13 customer's load at any given point in time.

14 By contrast, maximizing the value of a battery to the larger grid is achieved by  
15 maximizing discharge during the peak periods irrespective of on-site load. This  
16 characteristic is reflected in the “Bring Your Own Device” (“BYOD”) battery storage grid  
17 services framework that is becoming increasingly common. For instance, in a recent  
18 proposal for a home battery program, Consumers Energy in Michigan proposed such a  
19 design for dispatch of enrolled batteries based on findings from a preliminary test  
20 deployment where it “learned that the usable battery energy was reduced when only  
21 offsetting customer home load – and it would be more efficient to maximize battery

1 discharge beyond the customer home load during system peak conditions.”<sup>108</sup> Likewise, in  
2 Hawaii, Hawaiian Electric is now offering substantial financial incentives to incentivize  
3 residential and commercial customers to add a battery energy storage facility to an existing  
4 or new solar facility and use and/or export electricity stored in the battery between 6 p.m.  
5 to 8:30 p.m. daily in order to help contribute to resource adequacy during those times after  
6 an AES coal plant retires in September 2022.<sup>109</sup>

7 In other words, the greatest benefits to the grid accrue when exports, either from  
8 on-site solar alone or battery storage, are maximized during peak conditions. Devaluing  
9 exports during peak periods as NIPSCO proposes does exactly the opposite. It sends  
10 exactly the wrong signal to customers from the standpoint of maximizing the benefits of a  
11 DG system.

12 **Q. Does monthly netting require the utility to serve as the EDG customer’s battery?**

13 A. No. The utility is neither acting as nor providing services comparable to a battery.  
14 Electricity exported by a DG customer flows onto the grid and is used by other customers.  
15 The utility charges those other customers the retail rate for that electricity and credits the  
16 DG customer for the electricity provided. The utility does not store the solar electricity  
17 generated by the DG customer and provide that electricity back to the customer when the  
18 DG customer needs it. Monthly netting is merely a compensation framework that provides

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<sup>108</sup> Michigan Public Service Commission, Docket No. U-20963, Direct Testimony of Priya D. Machi at 6:9-12, March 1, 2021.

<sup>109</sup> Hawaiian Electric, “New ‘Battery Bonus’ program to offer Oahu customers cash incentive to add energy storage to rooftop solar system,” July 19, 2021, available at <https://www.hawaiianelectric.com/new-battery-bonus-program-to-offer-oahu-customers-cash-incentive-to-add-energy-storage-to-rooftop-solar-system>.

1 fair compensation measurement to a DG customer for excess generation they provide to  
2 the utility and to the benefit of other customers.

3 Battery storage provides distinguishable and separate services compared to the  
4 utility's grid, including as a back-up power source for when the utility experiences a grid  
5 outage, a method for a customer to manage their demand (e.g., to manage their demand  
6 charges or take advantage of time-of-use pricing), and a means for the customer of storing  
7 electricity generated on-site for future use. DG customers, like non-DG customers, can use  
8 electricity provided by the utility when they need it under the terms of their rate schedule  
9 and in line with the utility's obligation to serve all customers in its service territory.  
10 NIPSCO is neither an EDG customer's battery nor is acting as a battery under monthly or  
11 any other netting method.

**III. OTHER ISSUES WITH NIPSCO'S EDG RIDER**

**A. EDG Credits at End of Service**

1 **Q. Does NIPSCO's EDG Rider allow the full amount of EDG credits to be carried**  
2 **forward?**

3 A. No. NIPSCO would confiscate any credits remaining when the customer discontinues  
4 service:

5 If the customer discontinues service at the interconnection address, any  
6 unused and remaining DG Billing Credit Balance will be forfeited by the  
7 customer and passed back to other customers through NIPSCO's Fuel Cost  
8 Adjustment ("FAC") under Rider 870.<sup>110</sup>

9 This practice would deprive departing customers of earned EDG credits without any clear  
10 justification.

11 **Q. Is this provision fair and consistent with the language of the DG Statutes?**

12 A. Section 18 of the DG Statutes provides that:

13 An electricity supplier shall compensate a customer from whom the  
14 electricity supplier procures excess distributed generation (at the rate  
15 approved by the commission under section 17 of this chapter) through a  
16 credit on the customer's monthly bill. Any excess credit shall be carried  
17 forward and applied against future charges to the customer for as long as  
18 the customer receives retail electric service from the electricity supplier at  
19 the premises.

20 The language in the DG Statutes does not expressly specify how unused credits should be  
21 treated when a customer no longer receives retail electric service from the utility.

22 **Q. Do other jurisdictions allow DG customers to cash out unused credits?**

23 A. Yes. In my experience, it is common for states to allow net metering customers to cash out  
24 unused net metering credits, such as on an annual basis for any credits that accrued over

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<sup>110</sup> Direct Testimony of Kirkham, pp. 13-14.

1 the year, or at the end of service. For instance, in 2016, Iowa regulators directed utilities to  
2 allow unused credits to be banked monthly and cashed out at the end of the year at the  
3 utility's avoided cost rate under net metering tariffs.<sup>111</sup>

4 I am not aware of any negative impacts that these customers have experienced as a  
5 result of such policies.

6 **Q. What do you recommend?**

7 A. I recommend that earned EDG credits be refundable to customers upon service termination.  
8 Those credits represent the approved value of electricity the customer generated and sent  
9 to NIPSCO. To not compensate them for that valuable electricity is to in my view take the  
10 DG customer's property without compensation. If the customer moves but remains an  
11 NIPSCO customer, they should receive their EDG credits on their subsequent NIPSCO  
12 bill. They earned it, it has value, and it should be theirs to keep.

13 An unused credit represents electricity a DG customer has generated through their  
14 investment in a DG system and provided to the utility to the benefit of its customers. The  
15 utility effectively sells EDG provided by a DG customer to other customers at the retail  
16 rate. Confiscating unused EDG credits takes the economic value of exported electricity  
17 provided by DG customers, but provides no compensation to the DG customer for that  
18 benefit.

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<sup>111</sup> Iowa Utilities Board, Docket No. NOI-2014-0001, Order, July 19, 2016.

**B. External Disconnect Switch**

1 **Q. Are there any other provisions of the EDG Rider that raise concerns?**

2 A. Yes. NIPSCO's EDG Rider includes a term that requires all EDG customers to install a  
3 disconnection device, at their expense. NIPSCO's EDG Rider provides that:

4 The Company may isolate the distributed generation facility if the Company  
5 believes continued interconnection creates or contributes to a system  
6 emergency. At the Customer's expense, Customer shall install a lockable  
7 manual or power operable disconnect switch, or lockable circuit breaker  
8 shall be installed between the generation source and Company's electric  
9 system, and be accessible to Company personnel at all times.

10 **Q. Why is this term problematic?**

11 A. My understanding is that external disconnect switches are not necessary for isolating a  
12 small, inverter-based DG facility. For instance, Vectren's approved EDG tariff does not  
13 require Level 1 interconnections to install an external disconnect switch.<sup>112</sup> Other states  
14 have also moved away from requiring external disconnect switches for small, inverter-  
15 based DG systems. For example, New York's Standardized Interconnection Requirements  
16 do not require a disconnect switch for inverter-based DG system sizes 25 kW or less.<sup>113</sup>  
17 Since modern inverters that are installed as part of distributed solar facilities and other DG  
18 technologies can safely isolate the DG system from the grid in the event of an outage, and  
19 because installing an external disconnect switch can be expensive and burdensome to DG  
20 customers, this provision in NIPSCO's EDG rider is unnecessary, unfair, and unjustified.

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<sup>112</sup> IURC Cause No. 45378, Final Order, April 7, 2021, p. 41.

<sup>113</sup> New York Department of Public Service, available at  
<https://www3.dps.ny.gov/w/pscweb.nsf/all/DCF68efca391ad6085257687006f396b>



1 **Q. What do you recommend?**

2 A. I recommend the Commission direct NIPSCO to clarify in its EDG Rider that disconnect  
3 switches are not required for Level 1 interconnections.

#### **IV. CONCLUSION**

4 **Q. Please summarize your recommendations to the Commission.**

5 A. I recommend that the Commission reject NIPSCO's EDG Rider to the extent it would  
6 implement a "no netting" or "instantaneous" methodology for measuring EDG. NIPSCO's  
7 case in chief in my view has failed to prove its case and has not demonstrated that this  
8 major policy change would produce rates that are just and reasonable. As my testimony  
9 demonstrates, there are many good reasons for the Commission to reject this radical  
10 departure from past methodologies and maintain the longstanding, widely adopted, and  
11 commonsense monthly netting framework for measuring EDG as it transitions away from  
12 net metering through implementation of the EDG Rider.

13 To the extent the Commission disagrees with my recommendation to maintain  
14 monthly netting under the EDG Rider, I recommend it consider less punitive alternative  
15 netting methodologies to the "no netting" policy NIPSCO has proposed.

16 If the Commission approves NIPSCO's filing as proposed or with limited  
17 modifications, I recommend that the Commission direct NIPSCO to provide additional  
18 consumer information and education regarding its "Purchases from Cogeneration Facilities  
19 and Small Power Production Facilities" tariff Rider 878 to ensure all eligible DG customers  
20 have access to and are fully informed of this rate option, which would provide a  
21 significantly higher compensation rate than the EDG Rider as proposed.

1 I also recommend that the Commission direct NIPSCO to modify its calculation  
2 methodology for the EDG Rider credit rate as described in my testimony to recognize the  
3 fact that solar is producing and exporting generation only during daylight hours and should  
4 be compensated accordingly.

5 I also recommend the Commission to ensure that all DG customers are provided  
6 fair terms and conditions under the EDG Rider. I recommend the Commission reject certain  
7 provisions of the EDG Rider with respect to the external disconnect requirement and taking  
8 without just compensation for any EDG credits remaining at the end of a customer's  
9 service, as described above. These terms are unjustified and would further harm EDG  
10 customers by imposing additional, unnecessary costs or take away benefits to which DG  
11 customers are entitled without providing fair compensation.

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

13 **A.** Yes, at this time. I may need to supplement this testimony in the future.

**VERIFICATION**

I, Benjamin Inskeep, affirm under penalties of perjury that the foregoing representations are true and correct to the best of my knowledge, information and belief.

  
Benjamin Inskeep

July 27, 2021