Dr. Brad Borum
Indiana Utility Regulatory Commission
101 West Washington Street, Suite 1500 East
Indianapolis, Indiana 46204 -3419

September 28, 2023

Re: CenterPoint Energy Indiana South's 2023 Integrated Resource Plan

Dear Dr. Borum,

Solar United Neighbors (SUN), Vote Solar (VS), and Citizens Action Coalition of Indiana (CAC) respectfully submit the following comments regarding the 2023 Integrated Resource Plan (IRP or the Plan) from CenterPoint Energy Indiana South (the Company) on behalf of the thousands of Indiana solar owners and supporters whom we represent.

SUN is a national, grassroots 501(c)3 nonprofit organization dedicated to meeting the needs and interests of solar owners and supporters. Since launching our Indiana program in 2019, we've helped more than 260 families, businesses, and nonprofits around the state install more than 2 MW of small scale solar along with other behind the meter distributed energy resources (DERs) like battery storage and electric vehicle chargers. We envision a clean, affordable, and equitable energy system that directs benefits and control back to local communities, with rooftop solar as the cornerstone.

Vote Solar is an independent 501(c)3 nonprofit working to repower the U.S. with clean energy by making solar power more accessible and affordable

through effective policy advocacy. Vote Solar seeks to promote the development of solar at every scale, from distributed rooftop solar to large utility-scale plants. Vote Solar has over 90,000 members nationally, including over 500 members in Indiana. Vote Solar is not a trade organization nor does it have corporate members.

Citizens Action Coalition of Indiana is a membership organization with approximately 40,000 members in Indiana. Since 1974, CAC advocates on behalf of Indiana residents on issues including energy policy, utility reform, and pollution prevention.

We are encouraged by the Company's recognition that a transition to a more diverse resource mix will better meet its customers' needs. We also appreciate the increased stakeholder engagement throughout the 2023 IRP process. However, we believe that the final 2023 IRP is missing some critical inputs that could ensure more reliable, sustainable, and affordable electric service by the Company moving forward.

In response to the Plan, our comments will focus on ways that the utility should optimize the distribution grid and incentivize further customer adoption of DERs like solar and batteries.

Allow DG solar and other DERs to be included as resources eligible for selection in modeling

Customer demand for DERs continues to grow. Figures 4.3 and 4.4 in the Plan[1] show the Company's projections for customer adoption of rooftop solar through 2042. According to the Plan, the Company had a little over 1,100 residential and commercial solar customers as of December 2022, and

[1] CenterPoint Energy 2023 Integrated Resource Plan, p. 134 - https://www.in.gov/iurc/files/2022-2023-CNP-IRP-Volume-1-of-2-Redacted.pdf

expects that number to multiply in the coming years despite policy barriers like the end of net metering that is slowing adoption rates of distributed generation(DG) Solar. While the Plan includes a long list[2] of "operational issues" that the Company states would result from an unspecified "higher level" of DG penetration, we believe customers and the Company could benefit from alternative policies that more accurately capture the full value of DG solar to the broader electric system.

As the first utility covered under SEA 309 to reach the law's arbitrary net metering cap of 1.5% of peak load, CenterPoint became the first Indiana investor-owned utility to end net metering for new solar owners in their territory in 2021 (and the only utility to end net metering before the July 1, 2022 deadline in SEA 309) because of the demonstrated high demand for rooftop solar by its customers. The Company makes baseless and unsupported claims in the Plan about the "cost shift" caused by net metering customers not covering their fair share of the "fixed costs" the utility must bear to serve customers.[3] However, as the many studies and other sources cited in these comments demonstrate, there's ample and growing evidence demonstrating the value that rooftop solar and other customer-sited DERs bring to the entire electric system. We request that CenterPoint makes more effort to provide evidence to support these claims in the future, or engage in good faith with the evidence we present in these comments to the contrary.

The conventional utility planning approach for DERs (to the extent they account for DERs at all) is to treat them as an exogenous variable to their capacity expansion modeling. Like weather or the economy, DER growth is viewed as something that "happens to" the utility and needs to be planned around, rather than something that the utility can affect through its own actions. In fact, DERs can bring great value to the Company's customers and

[2] Ibid, Section 4.4.3, pp. 135 - 137.
[3] Ibid.

can be utilized as a tool for providing safe and reliable utility service. The conventional approach, which we believe the Company used for their analysis, typically forecasts energy efficiency (excluding Demand-Side Management {DSM} programs) and distributed solar adoption and then subtracts them from the utility's gross load forecast to establish a net load forecast. The net load forecast is then used, either as the base case or a sensitivity, to model system capacity expansion through supply-side resources (including DSM programs as a supply option) offered to the model, subject to user-defined constraints.

While DG solar and other DERs have traditionally been treated as a decrement to load forecasts (or as an increase to load forecasts in the case of EV charging) and outside of the control of utilities when they develop resource plans, a growing number of experts are calling for DERs to be included on equal footing with other traditional resources in the planning process. For example, CenterPoint did model additional energy efficiency that could be achieved through DSM plans as a demand-side Resource option that could be selected to meet future resource needs in its IRP rather than only considering energy efficiency as an exogenous impact to its load forecast.

A similar approach should be considered for other types of DERs that can be modeled as supply-side resource options that could help meet future resource needs. Now that the consumer market for DERs like rooftop solar is more mature, tools are available that allow for predictably modeling customer adoption based on market conditions and policies that impact the return on investment.[4] While the IRP does include a rooftop solar adoption model, as noted above, we believe that more robust modeling as described below is appropriate and beneficial to both the Company and its customers.

[4] https://www.sciencedirect.com/science/article/abs/pii/S0960148119319731?via%3Dihub

RMI issued a report in 2023 called "Reimagining Resource Planning."[5] In the report, RMI makes several recommendations for how utilities can improve the resource planning process, including treating DERs as a resource in planning, touting their benefits for savings and reliability.

At the national level, a 2020 study by Vibrant Clean Energy (VCE) called "Why Local Solar for All Costs Less: A New Roadmap for the Lowest Cost Grid" showed that increasing penetration of distributed generation *reduces* total system costs, saving all customers money.[6] This finding directly contradicts CenterPoint's unsupported claims in its IRP attacking solar net metering.[7] VCE showed that co-optimization of distributed resources on the distribution grid has additional benefits for the larger utility grid beyond capacity and energy. For example, generation interconnected with load on the distribution grid produces higher load factors on the utility scale grid, reduced peak demand, and reduced distribution infrastructure costs.

In the Xcel Energy IRP in Minnesota, the Distributed Solar Parties (Vote Solar, Cooperative Energy Futures, the Institute for Local Self Reliance (ILSR), and the Environmental Law & Policy Center) developed a simple, effective model for reliably forecasting customer adoption of rooftop solar based on observed consumer patterns responding to the financial value of investing in solar.[8] The Minnesota Public Utilities Commission directed Xcel to develop methodologies to incorporate distributed generation as a supply side resource in its next IRP. ILSR subsequently released a toolkit to help others replicate that methodology.[9]

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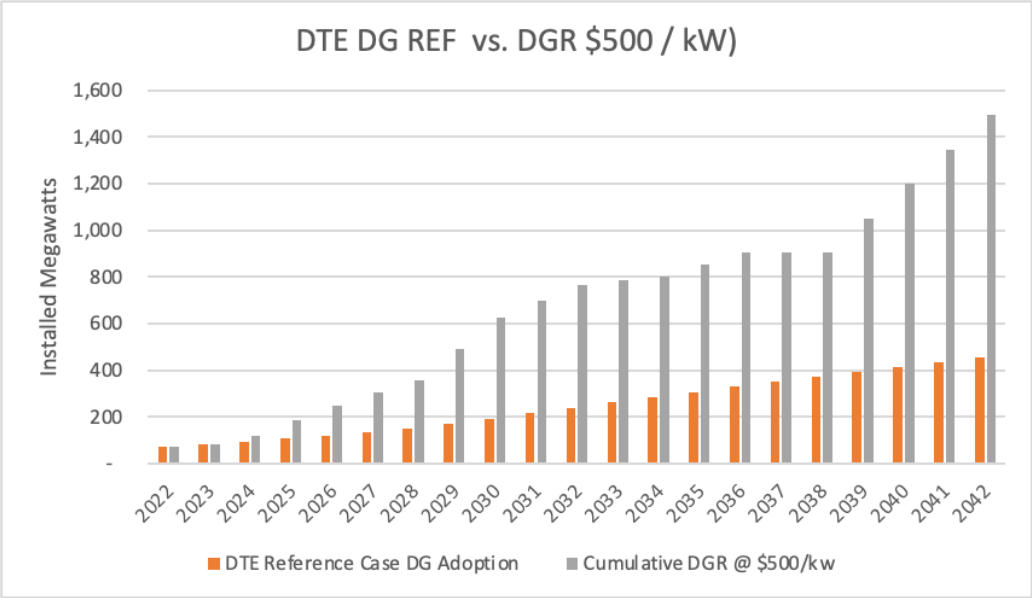
[5] https://rmi.org/insight/reimagining-resource-planning/
[6] https://www.localsolarforall.org/roadmap
[7] IRP, pp. 136-137.
[8] Joint Comments Of Vote Solar, Institute For Local Self Reliance, The Environmental Law & Policy Center, And Cooperative Energy Futures, *In the Matter of Xcel Energy's 2020-2034 Upper Midwest Resource Plan*, PUC Docket No. E002/RP-19-368. February 11, 2021.
[9] https://ilsr.org/wp-content/uploads/2022/08/Rooftop-Solar-Adoption-Model-2022.pdf

More recently in Michigan, the Clean Energy Organizations (consisting of the Environmental Law & Policy Center, the Ecology Center, the Union of Concerned Scientists, and Vote Solar) submitted testimony in DTE Energy's 2022 Integrated Resource Plan.[10] The Clean Energy Organizations proposed a Distributed Generation as a Resource (DGR) model in which distributed generation is offered to the resource planning model as a supply side resource. The DGR model applies the National Renewable Energy Laboratory's (NREL) Distributed Generation Market Demand ("dGen") model[11] to estimate the incremental increased demand that would be expected if an incentive of $500/kilowatt were offered for new distributed generation.

In late July 2023, the Michigan Public Service Commission approved a settlement agreement[12] led by the Clean Energy Organizations and other intervenors that incorporated DGR (with stakeholder feedback) in DTE's next IRP filing.

In the DTE case, the results of the dGen model show that the proposed incentive would result in a significant increase in DG adoption (all other things being equal) that would reduce total resource costs, even after factoring in the cost of the incentive.

[10] MPSC Docket U-21193.
[11] https://www.nrel.gov/analysis/dgen/about-dgen.html
[12] https://mi-psc.my.site.com/sfc/servlet.shepherd/version/download/0688y000008puPjAAI



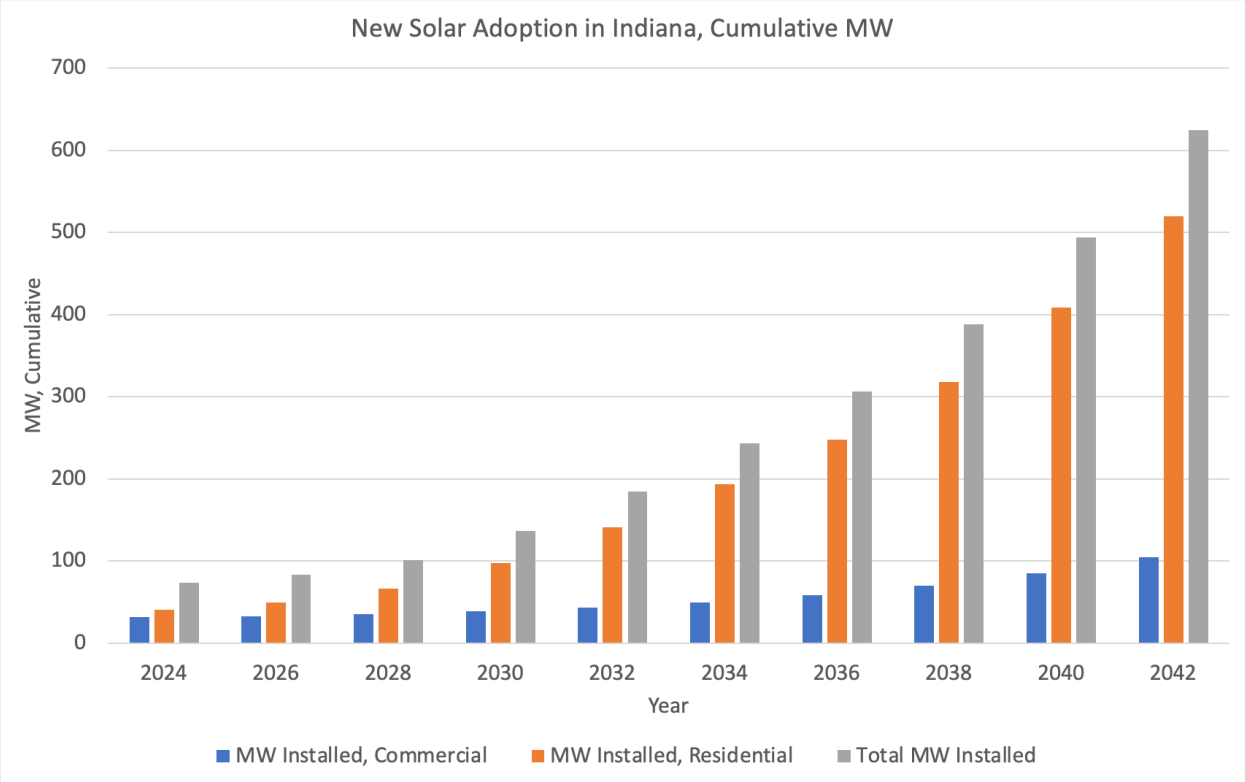
Source: Kenworthy Direct Testimony in U-21193, pg. 35.

Applying the same dGen model (but without any incentive structure) to Indiana produces an estimate that Indiana would see a statewide solar DG adoption of an additional 624.6 MW between 2024 and 2042. The Company's Figure 4.4 shows that they estimate their installed capacity to be 130.9 MW (see page 135 of Submitted IRP Volume 1 of 2).

These initial model results do not include any new state-based DG policies; rather, this modeling run only captured the market supply and demand of Indiana, as predicted by NREL, and as such are likely conservative. If given more time and information with the current state-based property tax incentive, dGen can be used to predict even higher DG adoption rates in Indiana.

Year	MW Installed, Commercial	MW Installed, Residential	Total MW Installed
2024	32.0	41.2	73.3
2026	33.2	50.1	83.3
2028	35.1	66.4	101.6

2030	38.6	97.9	136.6
2032	43.5	141.1	184.6
2034	50.0	193.7	243.7
2036	58.7	247.6	306.3
2038	70.3	318.3	388.7
2040	85.5	408.9	494.4
2042	104.7	519.8	624.6

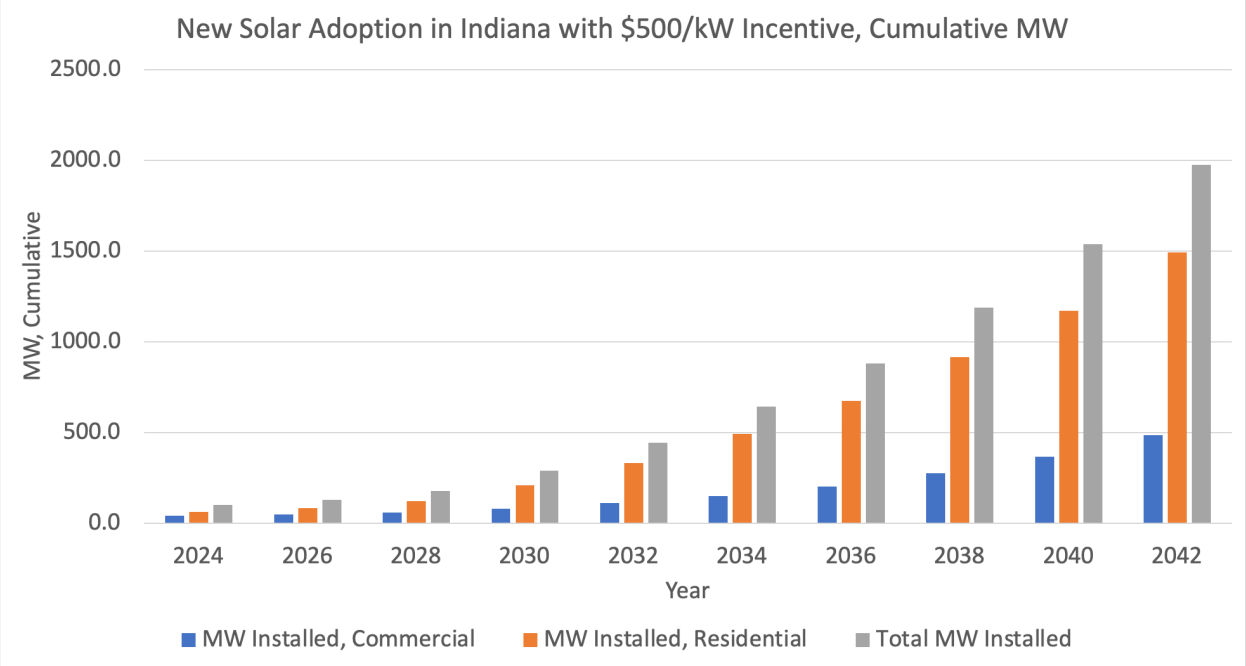


CenterPoint indicates an interest in monitoring emerging technologies for inclusion in future resource plans. But DERs like rooftop solar and batteries are already here. By more fully integrating DERs into the planning process as resources that can be modeled and selected in the preferred portfolio, such as through a program providing DER incentives to customers, the Company

will unlock previously untapped value for its customers and help provide more affordable, reliable, and sustainable electricity service.

Assuming a $500/kW incentive for DERs, here is what solar DG growth is estimated to be:

Year	MW Installed, Commercial	MW Installed, Residential	Total MW Installed
2024	39.3	62.6	101.9
2026	46.0	81.9	127.9
2028	58.2	120.2	178.4
2030	80.5	207.1	287.6
2032	110.3	331.3	441.6
2034	150.3	493.5	643.8
2036	203.3	675.3	878.6
2038	273.5	915.8	1189.3
2040	365.5	1172.3	1537.8
2042	484.7	1491.9	1976.7



By 2042, solar DG adoption from a $500/kW incentive would be close to 2000 MW, compared to the base estimate of 624.6 MW.

Incentivizing customers to adopt DERs can lower system costs while increasing resilience

A growing body of evidence shows that a local and clean grid is the most cost effective way to deliver power reliably while meeting environmental sustainability, resiliency, and stability goals, consistent with the five pillars of Indiana energy policy (HEA 1007, 2023). According to the 2020 Vibrant Clean Energy report mentioned previously, investing in local solar and storage nationally would save nearly $500 Billion nationally by 2050 compared to a business as usual model aiming to hit clean energy targets.[13]

13 https://static1.squarespace.com/static/5f4637895cfc8d77860d0dbc/t/5fd39999439c7c5ec221499b/1607702942515/Local+Solar+Roadmap+White+Paper+as+PPT+FINAL.pdf

However, we do not have to rely on national figures to make the case that the adoption of local solar and storage can save money for CenterPoint customers. In June 2020, the Energy Analysis and Environmental Impacts Division of Lawrence Berkeley National Laboratory (LBNL) completed a report for the 21st Century Energy Policy Development Task Force titled "Indiana 21st Century Energy Policy: Emerging Technologies on the Electricity Distribution System Impact on Rates, Reliability, and Resilience."[14] Researchers from LBNL modeled the economic and reliability impact of DER adoption under a variety of scenarios. The modeling used data from utilities around the state as the basis of their analysis. **LBNL found that the "High PV and Storage" scenario resulted in the greatest annual cost reduction relative to their modeled baseline, saving $265.5 million statewide in 2025.**[15] The "High PV" scenario performed slightly better in 2040, saving $549.2 million statewide compared to $544.1 million for High PV and Storage that year.[16] These significant savings came while maintaining or slightly improving system reliability.[17] The report also argues that: "larger system-wide benefits could be achieved if customer-sited batteries could discharge power back to the grid under direction from utility operations staff."[18]

Based on LBNL's analysis of Indiana, the Company should pursue a program to incentivize customer adoption of both customer-sited PV and storage above their current levels. While the Company currently has fewer than 1% of customers with PV and presumably a much smaller percentage of customers with battery storage resources, the High PV scenario used by LBNL assumed

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[14] https://www.in.gov/iurc/files/2020-Report-to-the-21st-Century-Energy-Policy-Development-Task-Force.updated-min.pdf starting on page 133.

[15] Ibid Table ES-1.

[16] Ibid.

[17] Ibid Table ES-4.

[18] Ibid p. 144.

15% of customers with PV by 2040 and the High Storage scenario assumed 1% of customers with storage by 2040.[19]

In order to achieve these levels of PV and storage adoption, the Company should consider an upfront incentive for customers who install new distributed solar capacity, as well as alternative compensation that more fairly values the electricity that solar customers share with their neighbors on the grid. Reasonable incentives and fair compensation for the value of energy exports are the most cost-effective way to reliably bring new clean, distributed resources to the grid and benefit all CenterPoint customers.

Further integrating distribution level planning into the IRP process to optimize the grid for increased DER adoption

The Company did not explain its approach to distribution system planning with any specificity.

Better coordinating planning efforts between the distribution system, transmission system, and generation resources is essential for meeting the utility's goals of affordability, reliability, and sustainability.

We request the Company to conduct distribution system planning as part of its IRP process as utilities like AES Indiana have committed to doing in the future. The Company should consider building tools and deploying platforms that enable the implementation of programs that deploy non-wires alternative concepts to increase system resilience and bring down customer costs.

One important aspect and value of distribution system planning is articulating and planning for the electric grid we want to have decades into

[19] Ibid Table 2.2.

the future. Utility distribution system plans describe strategic visions for safe, reliable, and affordable grids as customers deploy increasing amounts of distributed energy resources. In addition, many strategic plans for modernizing and decarbonizing the grid depend on increased electrification of vehicles and buildings in the coming decades. This increased electrification will result in significantly increased load and require additional capacity and capabilities from the distribution grid.

As the value of this opportunity grows, so does the importance of aligning distribution system, transmission and resource planning. The integration of high levels of distribution grid-connected resources, including distributed solar PV, while co-optimizing those resources with bulk system generation in order to minimize costs and maintain reliability, requires further enhancements to the Company's current approach to distribution system planning.

Anticipating a highly distributed and decentralized future, and in order to ensure that DER provide optimal value to the power system, the Company should work with stakeholders to take the following actions as a part of the alignment of its resource and distribution planning processes:

- Set DER deployment targets consistent with current IRP high adoption scenarios. The Company should explain how its distribution plan will put the Company on track to meet or exceed the level of DER deployment in its IRP.
- Conduct advanced forecasting to better project the levels of DER deployment at a feeder level, leveraging the capabilities of its advanced planning tools to identify opportunities and needs at a granular level.
- Proactively plan investments in hosting capacity and other necessary system capacity to allow distributed generation and electric vehicle additions consistent with DER deployment targets. The Company should

use DER and electrification analysis in load and potential studies to plan distribution system investments necessary to increase hosting capacity on circuits where it expects increasing distributed generation deployment, or where adding DER would provide grid value.

- Improve Non-wires Alternative (NWA) analysis, including market solicitations for deferral opportunities to make sure the Company can take advantage of DERs to address discrete distribution system costs and meet energy and capacity needs. As a part of its Integrated Distribution Planning effort, the Company should screen its planned distribution projects to determine whether those projects might be avoided or deferred by NWAs.
- Plan for aggregated DERs to provide system value including energy/capacity during net peak hours in all seasons. Several utilities and states are exploring the use of aggregated DERs as "virtual power plants" to provide an array of bulk and distribution system services. In California, the Staff of the Public Utilities Commission has proposed a pilot DER tariff that would allow the utilities to leverage aggregated customer and third-party owned resources that respond to dispatch signals communicated by the utility. The Company should explore similar customer DER programs in its future rate case and IRPs as a tool to avoid or defer traditional distribution upgrades in addition to providing energy and capacity benefits.

We also see an opportunity for the Company to explicitly integrate the federal government's Justice40 Initiative into its planning goals.[20] The Company should consider how historically disadvantaged communities will benefit from greater DER access and supportive infrastructure. Ensuring that at least 40% of these investments flow to disadvantaged communities will help fulfill the Company's responsibility to empower all customers to participate in and benefit from a clean, affordable, and equitable electric system.

[20] https://www.energy.gov/diversity/justice40-initiative

SUN, Vote Solar, and CAC look forward to working with the Company and other stakeholders in future IRP processes to ensure that CenterPoint customers are able to fully realize the benefits of a clean, affordable, and equitable electric grid through accelerated deployment of DERs on an optimized distribution system.

Respectfully Submitted,

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