



PosiGen Comments in Response to the Evaluation of Rhode Island's Distributed Generation Policies

PosiGen appreciates the opportunity to provide these comments in response to the fifth stakeholder workshop held on May 5, 2023. The following comments are meant to address the residential market segment only unless otherwise indicated.

Revenue Requirement - Residential Solar Costs

The modeled revenue requirements by project type show a substantial reduction of over 50% for residential PV between 2024 and 2030 based on projected cost declines from the 2022 NREL Annual Technology Baseline Report. This steep reduction in project costs would have to include substantial reductions to not only the equipment (which have seen increased costs recently), but also permitting, interconnection, customer acquisition, and labor costs. There are certainly pathways to reducing some of these costs in the near term while others will be more challenging. In particular, state leadership and innovation will be needed to reduce permitting and interconnection costs through initiatives such as SolarAPP and a streamlined interconnection process for small projects. Without these types of improvements over the coming years, it will not be possible for residential projects to see the projected cost declines.

Net Metered Projects REC Value

The benefit-cost ratio for both the Current NM and Alternative NM designs was .67, with the primary benefits coming from price effects and economic development. The analysis assumed fairly small T&D and reliability benefits, no capacity value, no RES compliance benefit, and a very small non-embedded emissions value.

The 4th stakeholder meeting presentation included a brief discussion on the treatment of REC value for net metered projects and ultimately concluded that avoided RES compliance costs would not be included as a benefit for BTM customers. SEA acknowledges that there is a RES compliance cost value by reducing the annual retail sales, but then also acknowledges the concern of also potentially double-counting BTM RECs. We believe that the REC value could be estimated in a way that avoids double-counting by estimating the total production/RECs for the system and then subtracting from that an estimated share of production that is produced and consumed behind the customer's meter (which is where the potential double counting would occur).

We believe that the lower RES compliance cost is a true benefit that should be accounted for in some manner for net metering customers, particularly given many (or most) of residential net metered customers may not be monetizing those RECs either in Rhode Island or elsewhere in the region. Those projects are providing RES compliance and environmental value that may not be captured in this analysis. Given one of the largest differences in the BCA for REG projects





vs. NM projects is the REC value, it should be considered if and how state policies could facilitate a similar value for net metered projects.

Transmission & Distribution System Benefits, Reliability Value, and Interconnection Costs

Quantifying the transmission and distribution system benefits from DERs is always challenging and we appreciate that a value was included to recognize that the value is not zero. We do not have any comments on the specific T&D value that was included in the BCA, but rather wanted to highlight that ratepayer benefits can increase if DERs are properly utilized. We have included as an attachment to these comments PPL's *2023 DER Management Report* filed at the Pennsylvania Public Utility Commission on April 20, 2023 and want to highlight some of the key findings from this unique pilot program as it relates to potential ratepayer value and reduced interconnection costs.

As background, the pilot started in January 2021 and involves PPL installing utility-owned ConnectDER smart meter collars and the ConnectDER Bridge connected to the solar smart inverter. Information is transferred from the inverter to the smart meter collar and then to PPL's DER Management System ("DERMS"). Additionally, smart inverter settings such as Volt-Var and ride-through are used. PPL also has different groups where one utilizes the autonomous smart inverter functionality and the other group's settings are actively managed by the DERMS, which will help provide data on whether, and to what extent, there is value in actively managing the settings. According to PPL:

*"This pilot is the first of its kind in North America, communicating with and managing DERs down to the individual residential installation level for the purposes of **improving power quality, safety, and hosting capacity, expanding operational awareness, and avoiding otherwise necessary capital or maintenance expenses**. The goal of this pilot program is to understand, demonstrate, and quantify these benefits of active management, their associated costs, and the overall impact on distribution system and customers' DER system performance. The Commission's authorization of this program **has already yielded significant benefits** and will continue to enable the growth of clean energy in Pennsylvania while maintaining system reliability, power quality, and affordability." (pg. 2, emphasis added)*

One of the key findings with significant ratepayer value is that in 4 case studies so far the autonomous volt-var curve has allowed PPL to avoid the cost of a three-phase voltage regulator, with a total savings in just those 4 cases of \$420,000 for ratepayers (pg. 16). This has also led to fewer line losses, and improved distribution system performance.

Another finding is that in 3 studies PPL has been able to avoid \$840,000 in interconnection costs for customers applying to interconnect (pg. 16-17). While smart inverter functionality cannot always fully avoid distribution system upgrades, it does show that there is meaningful value that can be provided. Given the focus in the stakeholder workshop on rising





interconnection costs, anything that can be done to mitigate those costs over the coming years will be helpful in meeting the 100% clean energy target.

PPL has also found that in most cases the use of monitored performance instead of the traditional nameplate capacity approach has led to increased hosting capacity (pg. 8). It also found that across just 6 case studies that the autonomous volt-var curve was able to mitigate voltage violations for 1,310 customers and another 309 through active management (pg. 14). While addressing these voltage violations may not have a direct monetary value, the grid support functionality of DERs is making the grid more reliable and therefore has value.

It is important to note that the majority of these benefits came from the use of smart inverter functionality, not necessarily because of the presence of utility-owned meter devices. Those devices are providing the visibility and data needed to confirm that the expected benefits are actually materializing. We are not necessarily suggesting that this same pilot is necessary in Rhode Island in order to maximize the ratepayer benefits from DERs.

Energy Storage

As expected, the inclusion of energy storage in the BCA analysis significantly increases the benefits and pushes the benefit-cost ratio above 1. This is consistent with similar studies conducted elsewhere including Connecticut where they found that the addition of storage increased the levelized value of solar from roughly \$.14/kWh to over \$.22/kWh.¹ The capacity and energy benefits of dispatchable solar+storage can provide significant benefits that are durable over time given the ability to adapt to system needs.

This analysis underscores the importance of encouraging greater solar+storage adoption through state policies. It also demonstrates that it is critical that when storage is installed that it is actively being used to maximize participant, grid, and ratepayer value. Solar+storage is a foundational DER that will help accelerate additional DER technologies such as electric vehicles, heat pumps, and whole-home electrification.

Please feel free to contact me with any questions regarding these comments.

Respectfully,

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¹ From the Value of DERs in Connecticut study, pg. 10, available at: [https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/56d151da9f6343af852585980063329d/\\$FILE/Value%20of%20DERs%20in%20Connecticut%20-%20Draft%20Study.pdf](https://www.dpuc.state.ct.us/dockcurr.nsf/8e6fc37a54110e3e852576190052b64d/56d151da9f6343af852585980063329d/$FILE/Value%20of%20DERs%20in%20Connecticut%20-%20Draft%20Study.pdf). The draft study was adopted without change.

