

**STATE OF CONNECTICUT
PUBLIC UTILITIES REGULATORY AUTHORITY
AND
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION**

DEEP AND PURA JOINT : DOCKET NO. 19-06-29
PROCEEDING ON THE VALUE OF :
DISTRIBUTED ENERGY :
RESOURCES : FEBRUARY 14, 2019

**COMMENTS (THIRD ROUND) OF THE INSTITUTE FOR
POLICY INTEGRITY AT NYU SCHOOL OF LAW**

The Institute for Policy Integrity at New York University School of Law (Policy Integrity) appreciates the opportunity to submit the following comments in response to the January 30, 2020 notice from Connecticut’s Department of Energy and Environmental Protection (DEEP) and Public Utilities Regulatory Authority (PURA) regarding the electric system dispatch simulation model inputs and Distributed Energy Resources (DER) technology use cases proposed for use in the Study of the Value of DERs (Study). Policy Integrity is a non-partisan think tank dedicated to improving the quality of government decisionmaking through advocacy and scholarship in the fields of administrative law, economics, and public policy.¹

Although DEEP/PURA did not expressly request comments on the model’s outputs, that is our focus here—specifically, the model outputs’ level of granularity with respect to time.

1. Section 6 of Public Act 19-35, An Act Concerning a Green Economy and Environmental Protection, directs DEEP and PURA to produce a Study of the value of DERs in Connecticut. That Study is meant to provide an authoritative basis for subsequent policy decisions that will steer DER deployments. The core of that Study, and the fundamental basis for whatever insights it yields, is the dispatch model described in the appendices to DEEP/PURA’s January 30th Notice. The level of detail contained in the model’s outputs is critical to its usefulness for the Study’s main purpose.

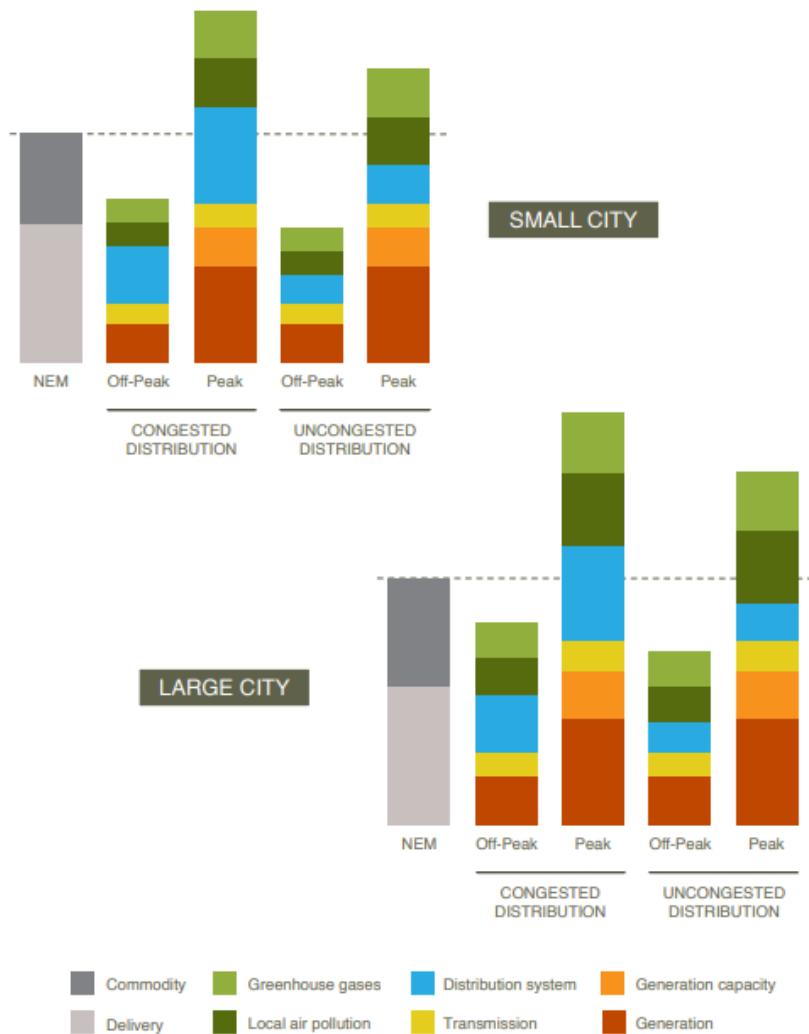
2. As we describe in our December 2019 report, *Getting the Value of Distributed Energy Resources Right*, the value that DERs can add depends primarily on how cost-effectively they can substitute for centralized electric grid functions.² Because the costs of operating the centralized grid vary across times (peak versus off-peak, both daily and seasonal) and locations (owing to degrees of electricity system congested, emissions intensity, and population exposed to

¹ This document does not purport to present New York University School of Law’s views.

² JUSTIN GUNDLACH & BURCIN UNEL, GETTING THE VALUE OF DISTRIBUTED ENERGY RESOURCES RIGHT 9 (2019), https://policyintegrity.org/files/publications/Value_of_DER_Report.pdf.

emissions), the benefits available from avoiding those costs also vary across times and locations.³ Consider the figure below, which appears on page 30 of our report. It illustrates how timing and location are relevant to the value a given DER contributes to the electricity system and society as a whole.

Figure 8. Conceptual comparison of retail rate (and NEM) to value stack compensation across times (peak and off-peak) and locations (congested and uncongested distribution grid sections in a large and small city)



There is an important difference between what the NEM bars indicate and what the others do. The NEM bars' heights indicate what a DER would be compensated by a NEM program in each city over a full billing period. By contrast, the other bars' heights indicate how much a DER would be compensated by a value stack in select places and select times within a billing period.

³ *Id.* at 16-23.

As the figure shows, electricity system costs like generation, and societal costs from emissions, vary significantly between off-peak and peak times, which are separated by mere hours.⁴

3. In addition to DERs’ potential value reflecting the variability of centralized grid costs across time and location, different DERs have distinct operational profiles that also vary according to other patterns such as when the sun is shining or when batteries charged with low-cost power can maximize the value of discharging.⁵ Here again, for a comparison of how DERs’ operational profiles interact with that of the centralized grid to be accurate, modeling outputs must be granular.

4. Appendix B to the January 30th Notice indicates that whereas energy demand reduced induced price effects (DRIPE) will be reported “at the hourly level,” more significant factors—avoided energy generation, avoided generation capacity, and avoided emissions—will be reported “at the monthly and annual levels.”⁶ Because of the variability described above, if the Study relies on monthly and annual levels for these factors, it will fail to discern information that is critically important for understanding DERs’ value. Most obviously, it will lose sight of how DER deployments might affect peaks in load, generation, capacity needs, and emissions.

5. Reporting more granular modeling outputs for avoided generation and emissions costs would help DEEP/PURA to adhere to the “State DER Program and Policy Principles” it identified in the Draft Study Outline issued on September 18, 2019:⁷

State DER Program and Policy Principles
• Define Perspective (State/System-Wide)
• DER Program and Policy Principles
- Ensure DER programs effectively contribute to GWSA targets
- Ensure equity and affordability, particularly for low-to-moderate income customers
- Ensure least cost deployment of DERs
- Maximize societal and electric system benefits of DERs
- Minimize soft costs and system integration costs (i.e. distribution + transmission costs, as appropriate)
- Simple, transparent program design focused on consumer protections
- Align temporal benefits of DERs when not in conflict with “simple” program design

⁴ See JEFFREY SHRADER, BURCIN UNEL & AVI ZEVIN, VALUING POLLUTION REDUCTIONS (2018), https://policyintegrity.org/files/publications/Valuing_Pollution_Reductions.pdf (noting the significance of hourly variations in emissions levels and describing options for monetizing the value of avoiding emissions); see also Jeffrey Shrader et al., (Not So) Clean Peak Standards 2 (Working Paper Dec. 10, 2019), https://policyintegrity.org/files/publications/Clean_Peak.pdf (explaining that reliance on average rather than marginal emissions rate data can cause the design of policies intended to reduce emissions by supporting energy storage deployments to actually *increase* emissions instead).

⁵ GUNDLACH & UNEL, *supra* note 2, at 7.

⁶ Notice of Request for Written Comments, DEEP/PURA Docket No. 19-06-29, Appendix B: DER Technology “Use Cases” and Quantitative Values (Jan. 30, 2020).

⁷ Draft Study Outline and Notice of Request for Written Comments, DEEP/PURA Docket No. 19-06-29, at 2 (Aug. 29, 2019).

For instance, understanding how different DER use cases would interact from hour to hour with system-wide peaks in energy costs and emissions would help to ensure that:

- DER programs contribute to Global Warming Solutions Act targets;
- DER deployments proceed at least cost; and
- deployed DERs maximize societal and electric system benefits.

In addition, granular outputs will be indispensable for DEEP/PURA to both assess how well DERs' temporal benefits "align," and to determine whether capturing them would conflict with keeping DER program design simple. Relying on coarse outputs will obscure DERs' temporal benefits and make it extremely difficult to weigh the relative merits of a more or less simple program design.

6. We do not expect more granular modeling outputs to indicate higher or lower values for one or more DER use cases. Our goal with these comments is simply for DEEP/PURA's dispatch modeling to facilitate good decisionmaking. Current modeling parameters, by gleaning only monthly and annual outputs, will make it harder, first, for DEEP/PURA to adhere to the principles established for the Study, and, second, for all stakeholders—the legislature, state agencies, and private actors included—to inform their future decisions using what the Study reveals about DERs' value.

Respectfully submitted,

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CERTIFICATION OF SERVICE

I, the undersigned, hereby certify that on February 14, 2019 an electronic copy of the above COMMENTS was sent by email to all participants of record listed in the joint DEEP/PURA web filing system for docket number 19-06-29.

Respectfully submitted,

/s/ Justin Gundlach
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