

**Flexible Interconnection Evaluation  
Initial Report  
Public Law 2025, chapter 293**

Submitted to the Joint Standing Committee on  
Energy, Utilities and Technology

February 15, 2026

Maine Public Utilities Commission  
18 State House Station,  
Augusta, ME 04333

During the First Special Session of the 132<sup>nd</sup> Legislature, Public Law 2025, chapter 293 (Act) was enacted and went into effect on September 24, 2025. Section 7 of the Act directs the Public Utilities Commission (Commission) to “explore and evaluate the feasibility of adopting emerging flexible interconnection options in order to use distributed energy resources, increase grid capacity, decrease grid instability and reduce costs in achieving state goals related to clean energy, including energy storage and beneficial electrification.”<sup>1</sup> The Act requires the Commission to submit an initial report summarizing the Commission’s activities by February 15, 2026, and a final report including an evaluation of flexible interconnection options and any recommendations by February 15, 2027.

The Commission first compiled diverse resources into an Internal Education Review, included as Appendix A. The review gauged the current state of technology and the success of flexible interconnection implementations throughout industry. The Commission then met with members of the Interconnection Working Group, established pursuant to Public Law 2023, Chapter 307, on September 11, 2025. During the meeting, this group discussed flexible interconnection initiatives in other states, current programs being offered by utilities in Maine, distributed energy resource management systems (DERMS), and cybersecurity and technological concerns. This conversation provided the foundation necessary to initiate an inquiry regarding the feasibility of flexible interconnection in Maine.

On October 20, 2025, the Commission initiated an inquiry into flexible interconnection (Docket 2025-00312).<sup>2</sup> The Commission focused its notice on defining flexible interconnection, outlining potential to achieve the Act’s stated goals, addressing regulatory hurdles, and discussing technical maturity and grid readiness. Eleven stakeholders submitted comments, providing insights from diverse backgrounds and interests.<sup>3</sup> Stakeholder comments are attached as Appendix B.

As a part of the inquiry, the Commission invited comment on the Department of Energy’s (DOE) definition of flexible interconnection: “Control approaches to enable more DER interconnections based on dynamic operating envelope parameters,”<sup>4</sup> and whether the Commission’s inquiry should also include flexible service connections, which the DOE defines as “Control approaches to enable customer service connections for larger loads such as EV fleet charging and data centers based on dynamic operating envelope parameters.”<sup>5</sup> Parties broadly agree that investigating flexible service connections in addition to flexible interconnections would encourage greater technological diversity and provide additional value.

Stakeholders agree on several key issues raised in the Commission’s initial inquiry. For example, many note the need to improve data sharing practices between industry and utilities. Timely, two-

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<sup>1</sup> *An Act to Enhance the Coordination and Effectiveness of Integrated Distribution Grid Planning*, pg. 2-3. (June 2025)

<sup>2</sup> *Public Utilities Commission Initiated Inquiry into Flexible Interconnection*, Docket No. 2025-00312, Notice of Inquiry (Oct. 20, 2025) (Flexible Interconnection Docket).

<sup>3</sup> The following organizations submitted comments: Sierra Club, Dynamic Grid, Nexamp, Maine Community Power Cooperative, Maine Renewable Energy Association, Office of the Public Advocate, Efficiency Maine Trust, Department of Energy Resources, Versant, and Central Maine Power.

<sup>4</sup> *Flexible DER & EV Connections*, U.S. Department of Energy Office of Electricity Report, 3 (July 2024).

<sup>5</sup> *Id.*

way data visibility is important to site and operate flexible projects. Further, stakeholders agree that flexible interconnections will increase distributed energy resource (DER) penetration and grid utilization if wielded effectively and that utilities may need to invest in new technologies, such as a DERMS platform, in order to maximize the benefits of flexible interconnection.

The ‘Flexible Interconnection and Resilience for Maine’ (FIRM) grant was identified by stakeholders as a meaningful opportunity, particularly for its focus on Active Network Management and Dynamic Line Rating technologies.<sup>6</sup> Project FIRM is a U.S. DOE-awarded collaboration between the Department of Energy Resources and team member organizations Central Maine Power and Versant Power to deploy cutting-edge software and hardware to enhance grid stability, regulate voltage, and increase capacity on existing lines.<sup>7</sup> The \$65 million grant is conditionally awarded and is undergoing an extended definitization period with the DOE.<sup>8</sup> There is no additional information on if or when the grant funds will be available for use.

Multiple stakeholders noted potential hurdles to flexible interconnection in Chapter 324 of the Commission’s Rules. Chapter 324 details the process and requirements for DERs interconnecting to the distribution system. As of now, Chapter 324 neither contains a mechanism for utilities to define operating envelopes during interconnection studies nor grants authority to send dynamic dispatch instructions. Additionally, the current interconnection timelines and application costs included in Chapter 324 do not account for the level of analyses/studies that utilities would be required to perform to flexibly interconnect DERs. Finally, utilities emphasized the necessity for two-way communication protocol and cost-recovery adjustments. The Commission requested stakeholders expound upon these issues in the Commission’s current inquiry into Chapter 324.<sup>9</sup> Outside the purview of Chapter 324, stakeholders identified existing jurisdictional barriers limiting the scope of flexible interconnection in Maine. For example, ISO-NE does not permit the curtailment of non-Federal Energy Regulatory Commission (FERC) jurisdictional DERs to address Pool Transmission Facilities constraints.

Areas of disagreement amongst stakeholders primarily concern grid stability implications and the appropriate cost-allocation mechanisms for flexible interconnection-related upgrades. The Commission will continue to examine the areas of disagreement and areas of consensus in more detail as the flexible interconnection inquiry progresses.

The Commission appreciates the opportunity to provide an update on the initial stages of this evaluation. In the coming months, the Commission anticipates investigating flexible interconnection on three paths. First, the Commission plans to further engage stakeholders in the flexible interconnection inquiry, particularly to expand understanding of flexible load interconnections. Second, the Commission will work in the Chapter 324 inquiry to resolve

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<sup>6</sup> Both Versant and CMP recently filed Integrated Grid Plans in the Grid Plan Docket. The MPUC has required a section (Att. C, Section 6 of the Commission’s order) that will include a discussion of technology integration, system upgrades, and pilot projects. *See, e.g. Maine Public Utilities Commission Proceeding to Identify Priorities for Grid Plan Filings*, Docket No. 2022-00322, Central Maine Power Integrated Grid Plan at 26, 59 (Dec. 15, 2025).

<sup>7</sup> *Maine Public Utilities Commission Inquiry Regarding Utility Progress in Securing Federal Funding for the Benefit of Ratepayers*, Docket No. 2023-00157, Central Maine Power Company’s Quarterly Status Report (Dec. 26, 2025).

<sup>8</sup> Flexible Interconnection Docket, Department of Energy Resources Response to Procedural Order (Feb. 11, 2026).

<sup>9</sup> *Public Utilities Commission Inquiry into Issues Related to Chapter 324 of the Commission’s Rules*, Docket No. 2025-00303, Notice of Inquiry (Oct. 15, 2025).

regulatory hurdles. Finally, the Commission is reviewing the utilities' integrated grid plans to identify necessary data improvements and technical investments pertinent to flexible interconnection. The Commission will provide a final report with any actionable recommendations and detailed conclusions by February 15, 2027, and is willing to provide additional updates at the request of the Committee.

**Appendix A**  
Internal Education Review

# Appendix A: Internal Education Review

8/13/2025

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## 1. Flexible Interconnection

Public Law 2025, Chapter 293 (LD 1726) requires the Commission to evaluate the feasibility of flexible interconnection in Maine, submitting an initial report by February 15, 2026 and a final report by February 15, 2027.<sup>1</sup> This review discusses the maturity of flexible interconnection in selected case studies, including state programs piloting flexible load connections. For a detailed introduction, the Electric Power Research Institute (EPRI) has published a comprehensive resource on flexible interconnection capacity solutions (FICS).<sup>2</sup>

The case studies included in this review feature a range of technical complexities. The solutions may broadly be categorized with National Renewable Energy Laboratory (NREL) definitions, as shown in Figure 1.<sup>3</sup> Projects can be further distinguished as load-flexible (power-user interconnections) or export-flexible (generator interconnections).

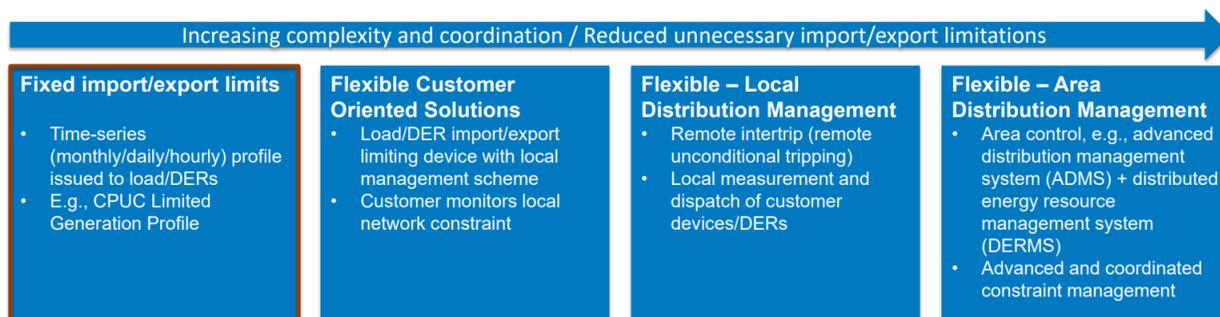


Figure 1. Demonstration of flexible interconnection complexity and efficacy. Solutions on the right are more complex with less unnecessary curtailment.<sup>4</sup>

## 2. Case Studies

### 3.1 New York State – NYSEG and RG&E (Utilities)

New York State initiated a set of FICS demonstration projects in October 2015. These projects are part of New York’s Reforming the Energy Vision (REV) regulatory sandbox. Nine candidate projects were selected for piloting, with four solar projects electing to proceed. All projects were identified as having high interconnection costs under traditional static connection rules.

The active network management (ANM) platform used Smarter Grid Solutions (SGS) “ANM Strata Grid System” and “ANM Element DER Gateway” solutions.<sup>5</sup> Neither NYSEG nor RG&E

<sup>1</sup> *An Act to Enhance the Coordination and Effectiveness of Integrated Distribution Grid Planning*, L.D. 1726, 2025 P.L. Chapter 293. [2025-Ch293](#)

<sup>2</sup> *Characterizing the Value of Flexible Interconnection Capacity Solutions (FICS)*. EPRI Technical Brief. June 2021. ([EPRI Download](#))

<sup>3</sup> *DER Flexible Interconnection Strategies and Approaches*, pg. 36. Interconnection Innovation e-Xchange (I2X), U.S. Department of Energy (DOE). Webinar. Mar. 15, 2024. (DER FICS Webinar) [I2X](#)

<sup>4</sup> *Id.*

<sup>5</sup> *Flexible Interconnect Capacity Solutions (FICS): Reforming the Energy Vision (REV) Demonstration Project*, Intermediate Summary Report, pg. 95. July 12, 2024. (FICS Intermediate Summary Report) [FICS NY](#)

had a scaled distributed energy resource management system (DERMS) at the time of pilot, although both are working to implement them.<sup>6</sup>

DER #1 (2MW) is in NYSEG's territory. The project sought to avoid upgrades of two single-phase voltage regulators. Due to construction delays and new system assessments by NYSEG, the project came online after NYSEG installed the previously deferred voltage regulators. This largely eliminated the need for a flexible interconnection, and the project went online in December of 2019. The ANM system was still temporarily installed to complete the piloting process.<sup>7</sup> In the interconnection agreement, the developer paid no premium for the flexible interconnection software but agreed to pay for the static interconnection upgrade if the FICS was ineffective in mitigating low voltage on the adjacent feeder line.

The other three projects, DERs #5, 6, & 7 (15 MW), were proposed by a single developer in RG&E's territory. The developer showed interest in the flexible interconnection program as a method to defer the cost of substation transformer bank upgrades (~\$3M). Without the bank upgrade, a significant portion of the proposed projects would have been unable to interconnect (12.4MW). The developer agreed to pay a platform-as-a-service annual fee of \$30,000 per project to offset ANM software costs. This number was calculated to be the break-even of the ANM licensing cost if 32 DERs were contracted. In addition, the developer installed a direct-transfer-trip (DTT) protection scheme to trip the DERs if the ANM system failed. The developer bore the costs of both the DTT and the ANM hardware. The initial assessment of ~3% curtailment was updated to 0.27% in March 2020 to reflect project withdrawals in the interconnection queue. As of July 2024, actual curtailment was 0.00049%. The total flexible interconnection cost was \$136,014/MW, and the three projects cumulatively avoided interconnection costs of \$2.76M.<sup>8</sup>

Both the NYSEG and RG&E projects were slower to completion than static interconnections of similar size. The NYSEG project was significantly delayed by cyber security concerns, a grassland bird study, and COVID. The RG&E projects were slightly slower than average, taking 1,064 days vs. 914 days. However, given the scale of the transformer upgrades, it is likely the flexible interconnection was faster than static interconnection. The final expenditures of the first stage of the pilots are documented in Figure 2. The NY FICS pilot project plans to move into "Phase 2" in 2026, expanding flexible interconnections to three additional substations and two EV charging sites.<sup>9</sup>

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<sup>6</sup> 2023 *Distributed System Implementation Plan*, pg. 21. NYSEG and RG&E, June 30, 2023. [NYSEG & RG&E Plan](#)

<sup>7</sup> *Q3 2019 quarterly report*, filed Oct. 30, 2019. NYSEG.

<sup>8</sup> FICS Intermediate Summary Report at 52-56.

<sup>9</sup> *Id.* at 72, 77.

	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
<b>Project Budget</b>	\$238,417	\$1,215,583	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,454,000
<b>Actual Spend</b>	\$208,026	\$752,851	\$369,037	\$120,802	\$214,258	\$126,641	\$21,501	\$101,183	\$731,917	\$2,646,216
<b>Variance</b>	\$30,391	\$462,732	(\$369,037)	(\$120,802)	(\$214,258)	(\$126,641)	(\$21,501)	(\$101,183)	(\$731,917)	(\$1,192,217)

*Table 2 FICS REV Demo Budgeted vs. Actual Spend*

	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
<b>NYSEG</b>	\$103,762	\$385,391	\$254,447	\$62,945	\$95,471	\$119,844	\$92,094	\$50,592	\$439,708	\$1,604,253
<b>RG&amp;E</b>	\$104,264	\$367,460	\$114,590	\$57,858	\$118,787	\$6,797	(\$70,593)	\$50,592	\$292,208	\$1,041,963
<b>Total</b>	<b>\$208,026</b>	<b>\$752,851</b>	<b>\$369,037</b>	<b>\$120,802</b>	<b>\$214,258</b>	<b>\$126,641</b>	<b>\$21,501</b>	<b>\$101,183</b>	<b>\$731,917</b>	<b>\$2,646,216</b>

*Table 3 FICS REV Demo Actual Spend Broken Down by Operating Company*

*Figure 2. NY expenditure on flexible interconnection pilots.<sup>10</sup>*

### 3.2 California – SCE and PG&E (Utilities)

California’s PUC approved a limited generation profile (LGP) option for interconnection in March of 2024.<sup>11</sup> Customers have the option to agree to LGPs, which are in effect until grid upgrades are completed. The profiles are based on historical conditions and are locally programmed. LGPs are a less capially and technologically intensive bridge between static interconnection and flexible interconnection.

Expanding upon their LGP offerings, both SCE and PG&E are working toward piloting real-time load management systems for DERs. SCE is planning to implement a DERMS platform that will allow their load control management system (LCMS) to use real-time grid conditions. SCE’s Bridging Strategies Plan identifies regulatory challenges related to the cost allocation of these upgrades. SCE asked the California PUC to create new incremental funding mechanisms. They state that deferred upgrade costs will not cover the cost of implementing the LCMS and battery-related balancing strategies.<sup>12</sup>

PG&E is running a similar pilot, allowing customers with controllable loads to connect to the grid prior to network upgrade completion. This stopgap approach curtails load with DERMS, using day-ahead forecasts to schedule curtailments. The pilot is targeted at energy consumers, such as EV charging systems and data centers.<sup>13</sup>

### 3.3 Illinois – ComEd (Utility)

ComEd is currently undergoing a flexible interconnection demonstration. As of December 2024, there are ~7MW of flexibly connected projects deployed and 10-20MW in pipeline, as shown in Figure 3. ComEd is using AspenTech’s OSI Grid DERMS, which required 6-9 months of lab

<sup>10</sup> *Id.* at 45.

<sup>11</sup> *California Pioneers New Ways to Ease Interconnection of Large DERs*, Utility Dive, Herman Trabish. Aug. 21, 2024. [Utility Dive](#)

<sup>12</sup> *Southern California Edison Company’s (U 338-E) Plan and Compliance Report on Bridging Strategies and Solutions*, pg. 16. Filed with the California PUC by William Yu. Dec. 16, 2024. [SCE Report](#)

<sup>13</sup> *PG&E Flex Connect Pilot*. 2024. [PG&E Flex Connect Pilot](#)

testing prior to implementation. There were 17 curtailment events (10-30 minutes each) in the first seven months of 2022. According to ComEd, developers are interested in expanding this technology.<sup>14</sup>

The Illinois Commerce Commission (ICC) produced a working group report in 2024 that outlines next steps for FICS in the regulatory and pilot spaces. In addition, the working group report discusses using smart inverters on smaller systems (less than 2 MW) as a substitute for direct utility control. These inverters can automatically reduce the power a DER sends to the grid.<sup>15</sup> <sup>16</sup> This provides an alternative to implementing a DERMS platform for flexible interconnection options.

DERMS Demonstration	Use cases and DER Enabled
<b>DERMS Substation 1 – 2020+</b>	Substation thermal limit use case
• <b>1<sup>st</sup> DER Customer Connected – Dec 2020</b>	2 MW Enabled
• <b>2<sup>nd</sup> DER Customer Connected – Dec 2021</b>	2 MW Enabled
• <b>3<sup>rd</sup> DER Customer Connected – Mar 2022</b>	2 MW Enabled
• <b>4<sup>th</sup> DER Customer Connected – Dec 2023</b>	Behind the meter DER – 720 kW Enabled
• <b>5<sup>th</sup> DER Customer Scheduled – Dec 2025</b>	2 MW Planned
<b>DERMS Substation BESS – 2024</b>	Enable DERMS monitoring and control of existing battery
<b>DERMS Voltage Management Demonstration (VMD) – 2025+</b>	Voltage violation use case
<b>DERMS Substation 2 – 2025+</b>	Feeder thermal limit use case, Wireless communications
• <b>5 Customers Scheduled – 2025-2026</b>	2-5 MW Enabled per customer

Figure 3. Illinois flexible interconnection & DERMS deployment schedule.<sup>17</sup>

### 3.4 United Kingdom: UK Power Networks (Utility)

Flexible interconnection became available in the UK in 2019. As of present, the UK has some of the most developed flexible interconnection technological practices and curtailment schemes, though much of the curtailment occurs due to transmission constraints. UK Power Networks’ DERMS curtails systems with real-time thermal network constraints, real-time overvoltage constraints, or using curtailment profile. UK Power Networks provides interconnection assessments and curtailment estimate reports for interconnecting DERs.<sup>18</sup>

<sup>14</sup> Interview with Shikhar Pandey. Dec. 2024. [Interview](#)

<sup>15</sup> ComEd DERMS and Flexible Interconnection Workshop Report. Commonwealth Edison Company (“ComEd”) & the Joint Non-Governmental Organizations (“JNGO”). Apr. 22, 2025. (ComEd Workshop Report) [Workshop Report](#)

<sup>16</sup> Illinois Commerce Commission On Its Own Motion vs. Commonwealth Edison Company, Order Requiring Commonwealth Edison Company to file an Initial Multi-Year Integrated Grid Plan and Initiating Proceeding to Determine Whether the Plan is Reasonable and Complies with the Public Utilities Act, Order, pg. 263. Dockets Nos. 22-0486, 23-0055, Dec. 14, 2023. [ICC Order](#)

<sup>17</sup> ComEd DERMS and Flexible Interconnection Workshop Report at 46.

<sup>18</sup> Export Curtailment Estimate for Site: Example Site. UK Power Networks. Oct. 21, 2024. [Sample Curtailment report](#)

UK Power Networks uses last in first out (LIFO) to manage curtailment, with DERs curtailed based on the interconnection application date. DERs are placed into “priority stacks” which determine order of curtailment in the case of a network constraint. There are separate stacks for import and export resources, with batteries/co-located storage in both. Sensitivity factors are calculated for each DER, defining the contribution of a DER to a given constraint. If the sensitivity factor is below 5% (i.e. production reduced by 1MW, constraint reduced by less than 50kW), the producer is not considered associated with the constraint.<sup>19</sup> The interconnection agreement sets a contractual cap on hours of curtailment to protect developers, called the Curtailment Limit. If the curtailment limit is exceeded, the Distribution Network Operator compensates the affected producer at a set price.

Scottish wind farms face significant curtailment under the current system. Low transmission capacity between Scotland and England resulted in ~37% curtailment of the wind farms in the first half of 2025 (~4TWh).<sup>20</sup> This has resulted in significant ratepayer costs, as wind farms are paid for curtailment past their curtailment limit, and additional energy must be provided by expensive peaking plants.<sup>21</sup> However, the scheme has also deferred large network upgrades while allowing for DER proliferation. One such case is in the Orkney Islands, where significant DER capacity was added without necessitating upgrades of subsea cables, as shown in Figure 4.<sup>22</sup>

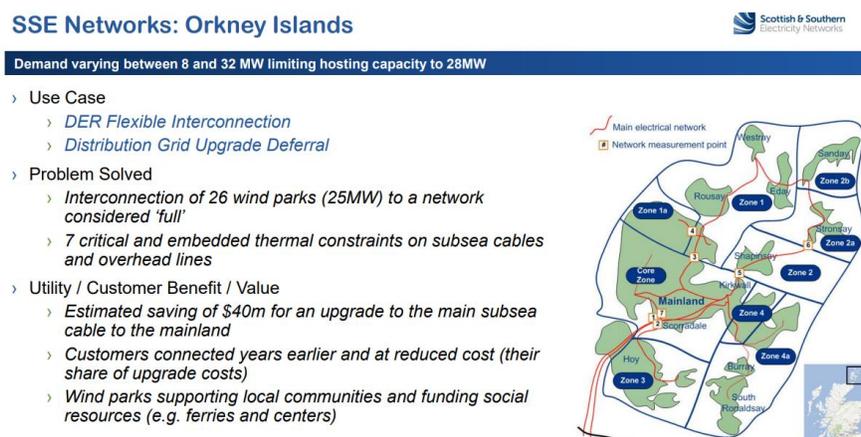


Figure 4. Orkney Island flexible interconnection case study.<sup>23</sup>

<sup>19</sup> *Curtailment Assessment Methodology and Assumptions*. UK Power Networks DSO, May 2024. [Methodology in Curtailment](#)

<sup>20</sup> *Scottish wind farms paid not to generate nearly 40% of potential electricity*. Financial Times Article. Millard & Kerr, Aug. 11, 2025. [Financial Times](#)

<sup>21</sup> *Field Analysis: £920 Million Annual Cost of 'Curtailment' Could be cut 80% by Using Existing Technologies Like Battery Storage More Effectively*. Field Energy, Field Team. Apr. 7, 2024. [Field-EconomicCosts](#)

<sup>22</sup> *DERMS Overview and Use Cases*, Smarter Grid Solutions, pg. 18. Jan. 12, 2023. [Orkney Island Case Study](#)

<sup>23</sup> *Id.*

### 3.5 Additional Pilots and Investigations

**Massachusetts:** In proposed Bill S.2282, the Massachusetts legislature would require the electric distribution companies to “develop a proposal for a flexible interconnection program” within six months of the effective date of the act. Within one year of the effective date of the act, the department will investigate the proposal and issue an order establishing a “uniform flexible interconnection program.” The bill is currently progressing through the legislative process.<sup>24</sup> In addition, Eversource (a utility) is implementing a DERMS platform and planning to create DER schedules based on granular thermal limitation data. This roll-out requires each new DER project greater than 500kW to install a power plant controller (PPC), and the utility to install a recloser and DER gateway at the point of interconnection. The DER Gateway uses a real-time automation controller to control the customer-side PPC and/or inverter.<sup>25</sup>

**Connecticut:** The Connecticut Interconnection Working Group is currently developing a flexible interconnection program to present to the Public Utilities Regulatory Authority (PURA) by March 2026. A December 2024 report showed strong developer support for flexible interconnection, and a March 2025 PURA interim decision requires electric distribution companies to develop a flexible interconnection in conjunction with the Interconnection Work Group.<sup>26 27</sup>

**Colorado:** Xcel in Colorado is in the process of piloting flexible interconnection, focusing on community solar projects in the queue with >1MW and high upgrade costs. In October of 2023, they anticipated 6 months of preparation for pilot followed by at least a year of operation. Due to the novelty, Xcel anticipates system impact studies to take additional time and possibly extend the time to interconnect participating projects.<sup>28 29</sup>

**Australia:** As of 2022 in Australia, eight distribution providers (DNSPs) are conducting field trials of “Dynamic Operating Envelopes” (DOEs). Multiple DNSPs have incorporated DOEs (for generators up to 10MW) into standard service offerings.<sup>30</sup>

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<sup>24</sup> *Massachusetts Bill S.2282*, Section 8. [MA Bill S.2282 Section 8](#)

<sup>25</sup> *TSRG Flex Connect Subgroup: Flexible Interconnection, DER Gateway and DERMS*. pg. 5-10. Eversource, Jan. 21, 2025. Eversource Flex Connect Subgroup Presentation. [Eversource Pres](#)

<sup>26</sup> *PURA Investigation Into Distribution System Planning of the Electric Distribution Companies – Interconnection Standards and Practices: 100-Day Sprint Working Group Report*. Docket No. 17-12-03RE06, Dec. 20, 2024. [Working Group Report](#)

<sup>27</sup> *Connecticut Charts a Path for Flexible Interconnection*. Energy Systems: Great Plains Institute, Cole, Stori, July 29, 2025. [PURA FI Article](#)

<sup>28</sup> *Meeting #2.2: Flexible Interconnection Demonstrations*. Gridworks, PSCo DSP Technical Working Group, Oct. 18, 2023. [GridWorks](#)

<sup>29</sup> DER FICS Webinar. [I2X](#)

<sup>30</sup> *Dynamic Operating Envelopes Working Group Outcomes Report*. Distributed Energy Integration Program. Mar. 2022. [AU Report](#)

### 3. Current FICS Technology Offerings

#### 3.1 Smarter Grid Solutions (SGS)

Smarter grid solutions have leading experience in implementing DERMS, including FICS and curtailment capabilities in their offerings. They have implemented their DERMS software, called Strata Grid, in several applications (microgrid, DER expansion, batteries, FICS). The UK and the NY pilot programs used the DER curtailment aspect of Strata Grid.<sup>31</sup>

Their control methods use autonomous control techniques to maximize DER import or export. It is not dependent on a fully integrated network model and can be implemented in a modular fashion.

#### 3.2 Camus Energy FlexConnect

Camus Energy’s flexible interconnection solution is called FlexConnect. It integrates best with data from Advanced Metering Infrastructure and GIS connectivity models. It states that it can also be “deployed separately from the existing utility IT/OT networks using line sensors and cellular-based communications.” No case studies are cited on the website, and it seems to be slightly more focused on load-flexibility interconnections such as EV charging.<sup>32</sup>

#### 3.3 Amp Energy DERCOM technology

Amp Energy pitched their DERCOM technology to Eversource, including a case study price estimate for their flexible interconnection solution. Eversource is currently implementing a different DERMS system in Massachusetts, General Electric’s GridOS DERMS.<sup>33</sup> However, this company provided interesting pricing data regarding a FICS case study, as shown in Figure 5 below.<sup>34</sup>

IC Method	Capacity (MW)	Project Size DC (MW)	IC Cost Assump.	DERCOM Cost	Loss of Gen Revenue from Curtailment (\$)	TOTAL I/C Cost	Cost/w
Fixed IC	3.75	4.6875	3,475,809	\$0	\$0	\$3,475,809	\$0.74
Fixed IC (Reduced Gen)	2.5	3.125	\$650,000	\$0	\$0	\$650,000	\$0.21
Flexible IC	3.75	4.6875	\$650,000	\$286,000	\$230,334	\$1,166,334	\$0.25

Figure 5. Cost of DERCOM technology, as presented in Massachusetts. Table includes costs of DERCOM and curtailment revenue loss over 25 years.<sup>35</sup>

#### 3.4 Other DERMS Companies

The three companies listed above offer established flexible interconnection services. However, many more technologies exist. AspenTech’s OSI is actively used to pilot flexible interconnections in Illinois. Massachusetts is implementing General Electric’s GridOS DERMS.

<sup>31</sup> Smarter Grid Solutions Website: Strata Grid Distributed Energy Resource Management System. Accessed Aug. 10, 2025. [Weblink](#).

<sup>32</sup> Camus Energy Website: Flexconnect. Accessed Aug. 11, 2025. [FlexConnect](#).

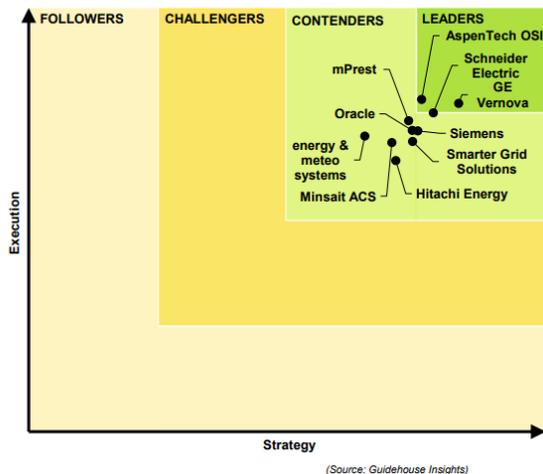
<sup>33</sup> Eversource Flex Connect Subgroup Presentation at 9-10. [Eversource Pres](#)

<sup>34</sup> Flexible Interconnection Solution (Dercom Technology) DERCOM MA Pitch. AMP Energy. [MA Pitch](#)

<sup>35</sup> *Id.*

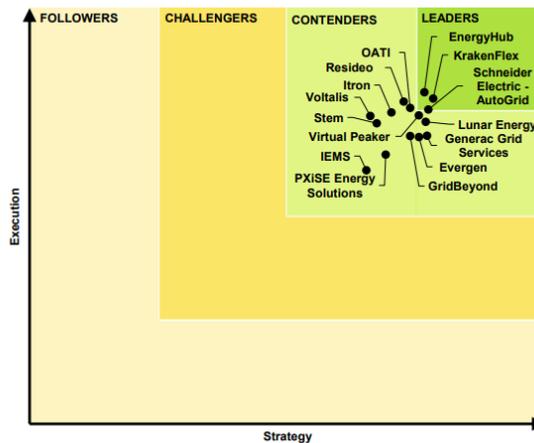
Figure 6 is a chart from Guidehouse Insights, pointing to leaders in Grid-Edge and Grid DERMS. While some of these companies don't currently support a flexible interconnection product, this is an actively developing space within utility technology.<sup>36</sup>

Chart 1-1. The Guidehouse Insights Leaderboard Grid: Grid DERMS



(Source: Guidehouse Insights)

Chart 1-2. The Guidehouse Insights Leaderboard Grid: Grid-Edge DERMS



(Source: Guidehouse Insights)

Figure 5. Guidehouse Insights' assessments of grid and grid-edge DERMS companies.<sup>37</sup>

#### 4. Curtailment & Cost Allocation

When multiple DER resources are flexibly connected and contributing to common network constraints, it is important to consider curtailment and cost-allocation schemes. Currently, LIFO is the most popular method for curtailment. LIFO curtails based on interconnection application date, with newer DERs curtailing first. An alternative approach, pro-rata, curtails all units in portion to their network constraint. While a more efficient solution, this creates uncertainty for developers. Two other curtailment schemes are (a) competitive bidding, where units bid to use network capacity; and (b) emission-based curtailment, where least emission units are prioritized. Figures 7 and 8 explore cost-allocation for network upgrades in LIFO and pro-rata solutions.<sup>38 39</sup>

According to a survey conducted during the NY REV pilots, it is easier to finance a flexibly connected DER under LIFO rules.<sup>40</sup> Illinois is considering using a hybrid approach, initially sharing curtailment with a pro-rata model until 5% curtailment is met. At or above 5%, newer connections are curtailed first.<sup>41</sup> Illinois stakeholders identified three risk management solutions

<sup>36</sup> GE Vernova: Guidehouse Insights Leaderboard: Grid DERMS, 2024. [Guidehouse Insights Report](#)

<sup>37</sup> *Id.*

<sup>38</sup> *Principles of Access for Flexible Interconnection: Cost Allocation Mechanisms and Financial Risk Management.* EPRI Technical White Paper, Aug. 2020. [EPRI -19635](#)

<sup>39</sup> *Principles of Access for Flexible Interconnection: Rules of Curtailment.* EPRI Technical White Paper, July 2020. [EPRI - 18506](#)

<sup>40</sup> FICS Intermediate Summary Report at 61. [FICS NY](#)

<sup>41</sup> ComEd Workshop Report. [Workshop Report](#)

to curtailment and cost allocation practices: gather additional study data, define maximum DERs allowed in interconnection agreement, and incorporate energy storage solutions.<sup>42</sup> Although curtailment guarantees and penalties minimize risk for developers, they are often not in the best interest of ratepayers.

	Cost Allocation Option	Pros	Cons
1	Allocate upgrade costs in proportion to the expected gains of each flexible interconnection customer. Consequently, the first LIFO customer would bear a smaller portion of the upgrade costs, while the last customer would shoulder a greater portion.	Facilitates equal financial gain from a grid upgrade across flexible interconnection customers	Lacks economic efficient outcomes. Because cost allocation is based primarily on vintage date of interconnection rather than size of contribution to a constraint, smaller projects that connect at a later date may not be able to bear the full cost of their portion of an upgrade—even if it is economic for the group as a whole.
2	Require upgrade costs be allocated in proportion to the contribution to the constraint.	Promotes economically efficient outcomes	Unequal financial gains for customers. The first flexible interconnection customer, if large, would have to pay a similarly large portion of an upgrade cost. But this customer would not significantly benefit from reduced curtailment. Alternatively, a small customer who interconnects later would incur a small upgrade cost, but would considerably benefit from reduced curtailment.

Figure 6. Cost allocation options under LIFO curtailment scheme.<sup>43</sup>

Curtailment Logic	Contribution to Future Upgrade Costs	
	Voluntary	Required
LIFO	<p><b>Example Implementation:</b> The last customer in seeks voluntary bids from all prior flexible interconnection customers to see if they can collectively agree, on a voluntary basis, to contribute to a pool of funds to pay for the upgrade.</p> <p><b>Insight:</b> May be challenging to get flexible interconnection customers at the beginning of the LIFO stack to substantially contribute to the upgrade.</p>	<p><b>Example Implementation:</b> At the time of connection, each flexible interconnection customer commits to pay a portion of the future upgrade costs (see Table 4) if and when the economic threshold is exceeded by all contributing customers across the group.</p> <p><b>Insight:</b> Ensures first comers contribute to future upgrade costs.</p>
Pro-Rata	<p><b>Example Implementation:</b> Each time a new flexible interconnection customer applies for interconnection (or based on a threshold, such as cumulative size), all flexible interconnection customers are contacted to provide revised curtailment estimates and obtain bids to determine if there is sufficient demand from the collective group to upgrade the grid.</p> <p><b>Insight:</b> Added project risk can increase financing costs and shutter projects given that there is no limit to future curtailment caused by growth in flexible interconnection customers.*</p>	<p><b>Example Implementation:</b> Once expected curtailments across the group reach a predefined threshold, all customers are required to pay based on their systems' contributions to the constraint.</p> <p><b>Insight:</b> Reduces project risks by limiting curtailment exposure before a grid upgrade is made.</p>

\*Note: It is possible for the DSO to mitigate this risk by placing a capacity limit beyond which no new projects will be added unless there is a voluntary agreement between flexible interconnection customers to make a grid upgrade. This, in effect, requires that some (but not all) customers contribute to a grid upgrade.

Figure 7. Cost allocation of grid upgrades under LIFO and pro-rata curtailment schemes.<sup>44</sup>

<sup>42</sup> *Id.* at 34.

<sup>43</sup> Principles of Access for Flexible Interconnection: Cost Allocation Mechanisms and Financial Risk Management at 10.

<sup>44</sup> *Id.* at 11.

## **Appendix B**

Stakeholder Comments – Docket 2025-00312

# Appendix B: Stakeholder Comments

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October 20, 2025

PUBLIC UTILITIES COMMISSION  
Inquiry into Flexible Interconnection

NOTICE OF INQUIRY

BARTLETT, Chair; SCULLY and GILBERT, Commissioners

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## I. SUMMARY

Through this Notice, the Commission initiates an inquiry pursuant to Section 13 of Chapter 110 of the Commission's rules. As an initial step, the Commission requests comments on the following issues as they relate to the flexible interconnection of distributed energy resources (DERs).

## II. DESCRIPTION OF INQUIRY AND REQUEST FOR COMMENT

During the most recent legislative session, the Legislature enacted L.D. 1726, Public Law 2025, ch. 293 (the Act). Section 7 of the Act directs the Commission to "explore and evaluate the feasibility of adopting emerging flexible interconnection options in order to use distributed energy resources, increase grid capacity, decrease grid instability and reduce costs in achieving state goals related to clean energy." The Act further directs the Commission to:

- 1) Review potential practices for providing flexible interconnection options;
- 2) Engage with stakeholders, including members of the interconnection working group established pursuant to Public Law 2023, chapter 307, section 8;
- 3) Identify any barriers to adopting flexible interconnection options;
- 4) Identify ways in which customers seeking connection might benefit from flexible interconnection processes; and
- 5) Determine whether the costs of flexible interconnection may affect noninterconnecting customers and how that may be mitigated.

The Act directs the Commission to submit an initial report summarizing its activities to the Joint Standing Committee on Energy, Utilities, and Technology by February 15, 2026.

For purposes of this inquiry, the Commission is using the definition of flexible interconnection that has been adopted by the Department of Energy (DOE). The DOE defines "flexible interconnections" as control approaches to enable more DER interconnections based on dynamic operating envelope parameters. *Flexible DER & EV Connections*, U.S. Department of Energy Office of Electricity Report, 3 (July 2024). The DOE defines the dynamic operating envelope as a more granular engineering method

to determine capacity availability due to time-sensitive variations in export energy, customer demand, and grid conditions. *Id.* This definition does not currently include what the DOE defines as “flexible service connections.” According to the DOE, flexible service connections are control approaches to enable customer service connections for larger loads such as EV fleet charging and data centers. *Id.*

In response to the Act’s directive, the Commission seeks comment on flexible interconnection and related issues.

### III. OPPORTUNITY FOR COMMENT

#### A. Questions for all Stakeholders

- 1) When considering flexible interconnections pursuant to the Act, should the Commission expand its inquiry and consider both flexible interconnections and flexible service connections as defined by the DOE? If stakeholders do not approve of the DOE definition, please recommend an alternative definition of flexible interconnection.
- 2) How would adopting flexible interconnection regulations achieve the following goals of the Act:
  - a. Distribution system use of DERs;
  - b. Increased grid capacity;
  - c. Decreased grid instability; and
  - d. Reduced costs of achieving clean energy goals?
- 3) How would information flow between utilities and developers need to change to achieve the following goals of the Act:
  - a. Distribution system use of DERs;
  - b. Increased grid capacity;
  - c. Decreased grid instability; and
  - d. Reduced costs of achieving clean energy goals?
- 4) Please share any information about successful flexible interconnection programs that have been adopted in other states.

#### B. Questions for Utilities

- 1) Are there technological barriers preventing the adoption and implementation of flexible interconnection of DERs in Maine?
- 2) What are the estimated costs to overcome such barriers?
- 3) Are there regulatory barriers preventing the adoption and implementation of flexible interconnection of DERs in Maine?
- 4) Are there reliability or safety risks associated with the adoption and implementation of flexible interconnection of DERs? If so, what are these risks, and how may they be addressed?
- 5) Are there circumstances when DERs are approved to permanently interconnect at a capacity lower than the capacity in their original interconnection agreement? If so, what process is required to approve this

reduced capacity? Is the reduced capacity reflected in an updated interconnection agreement?

- 6) Are there circumstances when DERs are approved to temporarily interconnect at a lower capacity than the capacity in their original interconnection agreement? If so, what process is required to approve operation at this reduced capacity? Is the reduced capacity reflected in an updated interconnection agreement? What process is required to permit a DER to increase its capacity if the project is temporarily operating at a reduced capacity?
- 7) Are there types of flexible interconnection that would benefit from a Distributed Energy Resource Management System (DERMS)? Is DERMS required to implement any types of flexible interconnection?
- 8) Please explain how, if at all, the export control methods described in Section 8 of Chapter 324 of the Commission's Rules can be used to enable flexible interconnections.

#### C. Questions for Developers

- 1) Please express any interest in piloting a proposed flexible interconnection system.
- 2) Please comment on the efficacy of allowing a DER to interconnect at a lower capacity while network upgrades are completed.

### III. REQUEST FOR COMMENTS

The Commission requests comments by close of business on **November 20, 2025**.

### IV. SERVICE OF NOTICE

A copy of this Notice of Inquiry is being provided to those on the notification list in the Commission's most recent Chapter 324 rulemaking docket (2023-00103).

Dated at Hallowell, Maine this 20<sup>th</sup> day of October, 2025.

/s/ Rikka Strong

Presiding Officer

November 18, 2025

**PUBLIC UTILITIES COMMISSION  
INQUIRY INTO FLEXIBLE INTERCONNECTION**

Dynamic Grid, INC

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A. Questions for all Stakeholders

1) When considering flexible interconnections pursuant to the Act, should the Commission expand its inquiry and consider both flexible interconnections and flexible service connections as defined by the DOE? If stakeholders do not approve of the DOE definition, please recommend an alternative definition of flexible interconnection.

**ANSWER:** Yes, as the electrical grid evolves over the next 10 to 15 years there is a significant challenge and opportunity for flexible connections on both the supply and demand side. Exploring dynamic interconnections that respond to real-time grid conditions at both the transmission and especially at the distribution level can greatly expand the possible interconnection of DERs and loads like Fleet EV charging, DCFC, and data centers. When implemented, these methods will increase grid utilization and lower the infrastructure upgrades required.

2) How would adopting flexible interconnection regulations achieve the following goals of the Act:

- a. Distribution system use of DERs;
- b. Increased grid capacity;
- c. Decreased grid instability; and
- d. Reduced costs of achieving clean energy goals?

**ANSWER:** For information, there are four types of Flexible Interconnect to set the foundation for our answer

- Static flexible interconnection provides a single fixed export or import limit (higher than traditional conservative caps) but does not adjust to changing grid conditions; it is “flexible” only in that it relaxes some constraints while remaining time-invariant.
- Scheduled flexible interconnection allows different limits at predefined times—such as lower export during peak loading or higher export during midday—but these limits are set in advance and do not respond to real-time system conditions.
- Dynamic flexible interconnection updates export and import limits continuously based on real-time or near-real-time grid data, providing much higher hosting capacity and responsiveness than static or scheduled models.
- Dynamic localized flexible interconnection (using Localized Dynamic Operating Envelopes) goes further by tailoring these dynamic limits to the specific location of each DER on the feeder, reflecting local voltage, loading, and capacity constraints—achieving the highest level of safety, capacity utilization, and DER integration. (there are both autonomous and communications based- **(Dynamic Grid strongly suggests Autonomous versions for the greatest flexibility and utility operational simplicity.)**)

Flexible interconnection enabled through Localized Dynamic Operating Envelopes (LDOEs) allows DERs to operate within real-time, location-specific export and import limits rather than static worst-case constraints. By dynamically adjusting based on feeder loading, voltage conditions, and available headroom, LDOEs significantly increase DER hosting capacity without requiring immediate infrastructure upgrades. This approach transforms DERs into active grid assets that provide peak reduction, voltage support, and flexibility services, thereby improving grid stability and unlocking latent distribution capacity. As a result, more DERs can interconnect safely, operate more of the time, and contribute meaningfully to grid reliability and local resiliency.

Because LDOEs utilize software-defined flexibility instead of costly physical upgrades, they materially reduce the cost and timeline for achieving clean energy goals. They accelerate DER deployment, defer substation and feeder upgrades, and lower customer soft costs associated with long interconnection queues. Coordinated DER behavior under LDOEs also stabilizes feeders by preventing simultaneous export spikes or charging surges and enabling predictable, orchestrated operation rather than unmanaged variability. In total, flexible interconnection using LDOEs supports all major goals of the Act: greater use of DERs on the distribution system, increased effective grid capacity, reduced grid instability, and lower costs for accelerating clean, distributed energy deployment.

3) How would information flow between utilities and developers need to change to achieve the following goals of the Act:

- a. Distribution system use of DERs;
- b. Increased grid capacity;
- c. Decreased grid instability; and
- d. Reduced costs of achieving clean energy goals?

**ANSWER:** To enable greater distribution system use of DERs, increase grid capacity, and reduce instability, information flow between utilities and developers must shift from occasional, study-based communication to continuous, transparent, and easily accessible data exchange. Key changes include:

- Real-time or near-real-time visibility into feeder loading, voltage constraints, and hosting-capacity conditions so developers can design systems that operate safely and flexibly. (Dynamic Hosting Maps and 8760 -hourly load data available to approved parties)
- Standardized interconnection data portals that provide up-to-date maps, constraints, queue status, and Locational Dynamic Operating Envelope (LDOE) limits.

- Secure communication channels through edgeDERMS that allow DERs to adjust operation in alignment with system needs, using open standards like IEEE 2030.5 or OpenADR.
- Transparent reporting of planned upgrades, constraint relief timelines, and operational constraints to support better DER siting and reduce uncertainty in project development.

To lower the cost of meeting clean-energy goals, communication must also enable predictability, automation, and early visibility into grid conditions. This requires:

- Automated LDOE dissemination, allowing DERs to follow dynamic, location-specific operating limits without manual intervention or custom integrations.
- Consistent publication of interconnection cost drivers, enabling developers to design projects that conform to local flexibilities rather than triggering expensive upgrades.
- Shared operational data (curtailment histories, capacity availability, voltage performance) that helps developers optimize DER portfolios and reduce soft costs.
- Collaborative planning processes where utilities and developers jointly evaluate non-wires solutions, supporting DER-based capacity expansion and avoiding unnecessary capital spending.

4) Please share any information about successful flexible interconnection programs that have been adopted in other states.

#### **New York: Avangrid (National Grid)**

Avangrid's **Spencerport** solar project near Rochester is operating under a flexible interconnection arrangement: a DER gateway can curtail output in real time and even trip the system offline at the recloser if needed, allowing the project to interconnect sooner without immediate upgrade. After demonstrating that this setup can reliably protect the grid while adding solar, the utility is now seeking to **expand the flexible interconnection pilot more broadly** across its New York territory.

[https://pv-magazine-usa.com/2025/10/28/avangrid-aims-to-expand-its-flexible-interconnection-pilot-in-new-york-state/?utm\\_source=chatgpt.com](https://pv-magazine-usa.com/2025/10/28/avangrid-aims-to-expand-its-flexible-interconnection-pilot-in-new-york-state/?utm_source=chatgpt.com)

## **California: CPUC**

### Flexible EV charging load limits until grid capacity can be built

<https://www.canarymedia.com/articles/transmission/a-new-way-to-fix-grid-bottlenecks-for-ev-charging-flexible-connection>

### Limited generation profiles scheduled based system with static export limits

<https://www.utilitydive.com/news/california-pioneers-new-ways-to-ease-interconnection-large-ders/722513/>

<https://www.pv-tech.org/cpuc-approves-limited-generation-profiles-renewable-grid-connection/>

## B. Questions for Utilities

N/A

## C. Questions for Developers

1) Please express any interest in piloting a proposed flexible interconnection system.

**ANSWER:** We have microgrid projects that are suitable for flexible interconnection and our customers would be very interested in participating.

2) Please comment on the efficacy of allowing a DER to interconnect at a lower capacity while network upgrades are completed.

**ANSWER:** Allowing a DER to interconnect at a lower capacity—or under a flexible interconnection arrangement that curtails only during the few hours of the year when the grid is constrained—is often economically advantageous for both the developer and the utility. In many locations, constraints occur during a small number of peak loading hours. Allowing partial or flexible operation during these infrequent periods enables the project to move forward immediately rather than waiting months or years for upgrades. The economic value of being

operational for 98–99% of the year far outweighs the modest loss of revenue during constrained hours, especially when curtailment is limited, predictable, and communicated through scheduled or dynamic operating envelopes.

This is similar to the well-established economics of oversizing a solar array's DC/AC ratio. Developers routinely install more DC solar capacity than the inverter nameplate can accept, knowing that the small amount of clipping at peak conditions is more than offset by higher annual production and improved inverter efficiency during the rest of the day. Flexible interconnection works on the same principle: accepting occasional operating limits in exchange for higher annual output, faster deployment, and lower overall cost. In practice, allowing DERs to interconnect at reduced or flexible capacity while upgrades are underway accelerates project timelines, improves asset utilization, reduces financing risk, and avoids unnecessary curtailment or stranded generation potential. For the system as a whole, this approach delivers clean energy sooner and optimizes grid usage without compromising safety or reliability.

---

**Respectfully submitted,**

*Kay Aikin*

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Date: November 17, 2025



# SIERRA CLUB

## MAINE CHAPTER

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20 November 2025

Public Utilities Commission  
18 State House Station  
Augusta, ME 04333-0018

### **RE: Notice of Inquiry on Docket No. 2025-00312**

Dear Commissioners,

Founded in 1892, Sierra Club is one of our nation's oldest and largest environmental organizations. We work diligently to amplify the power of our 3.38 million members and supporters nation-wide as we work towards combating climate change and promoting a just and sustainable economy. To that end, we are submitting comments on behalf of Sierra Club Maine's over 20,000 members and supporters on **Docket No. 2025-00312**. We urge the Maine Public Utilities Commission (MPUC) to take all necessary steps to rapidly decarbonize the grid and increase resilience with a focus on lowering costs for Mainers.

Sierra Club Maine is interested in advanced electrical grid systems that manage highly granular distributed energy resources (DERs) both for the customer benefit and for the benefit of the grid in the form of demand-peak shaving, grid stabilization, and enhanced reliability. The grid benefits flow back to the customer through reduced rates and intangible savings from reduced outage time. Here we are using the descriptor "granular" in a spatial sense, referring to the distribution of resources, rather than in a temporal sense. Although the PUC Request for Information seems to be targeting interconnection of large, commercial DERs, we strongly feel that the PUC must consider a more granular DER arrangement in which eventually all residential ratepayers could participate as well as the larger resources. The residential ratepayers would participate with home batteries, EV batteries, and onsite renewable energy generation. A well-designed flexible interconnection scheme would allow for highly granular input/output as realized by the future multitude of households having DER capacity.

Maine's total electrical energy use per day is approximately 4.0 GWh according to [2023 EIA figures](#). The potential for residential DERs to contribute to this grid supply is enormous. For example, batteries in currently marketed EVs are now routinely in the 50-100 kWh range. In other words, 40,000 EVs at 100 kWh each can provide the same amount of electricity as used in a day. It is likely that only a fraction of that could actually be achieved in practice though. Alternatively, consider the impact of home battery storage, which may have more flexibility in its discharge. They are routinely marketed now at energy capacities of 10 kWh. With only 100,000 homes with such battery storage systems, they could meet Maine's electrical needs for six hours, more than enough to shave a peak load. Therefore, we advocate that Maine plan to optimally use these potential granular resources.

In some ways, a highly granular DER presents better performance than the DER model which has only large, commercial interconnections such as wind, solar, and battery farms. For instance, although highly granular DER systems have more points of failure, the system is unlikely to suffer from small failures random in time and location while DER systems with only a few sites may suffer when one or more of them fails. Even intermediate granular DER systems such as studied by [Mair et al.](#) may have a role. Based on analysis of real-world metering data, the authors state:

“These results have important implications for battery deployment strategies. In particular, they show that coordinated battery deployment at the street or building complex level is likely to have significant economic benefits.”

Highly granular DERs must be matched with sensing and software that accurately measures and competently predicts energy production and consumption across the grid. We emphasize that, while a highly granular DER system can provide many grid benefits, it also at the same time provides an important benefit to each household having these resources – protection against electrical outages which are prevalent state-wide in Maine. Central Maine Power has [described its extensive outage incidents](#) in PUC rate case 2025-00218 and outlined the investments needed to alleviate this. It is well documented that Maine has low reliability in electrical service; the [Citizens Utility Board](#) ranked Maine next to last among states with regard to reliability criteria.

Within this framework, we are pleased to comment on the four questions posed to stakeholders in the Notice of Inquiry for Docket No. 2025-00218.

*1) When considering flexible interconnections pursuant to the Act, should the Commission expand its inquiry and consider both flexible interconnections and flexible*

*service connections as defined by the DOE? If stakeholders do not approve of the DOE definition, please recommend an alternative definition of flexible interconnection.*

The “flexible service connection”, as described in the [DOE report](#), is not suitable for the residential customer. This is because this class of customers does not yet have the ability to decrease or eliminate their electrical load at arbitrary times set by the utility in the same manner as commercial DERs can. We therefore are neutral on this part of the question. We do note that the DOE report assumes that only large, commercial DERs are eligible for “flexible interconnections”. We are here advocating that all residential customers be considered eligible in any scheme for “flexible interconnections”.

*2) How would adopting flexible interconnection regulations achieve the following goals of the Act:*

*a. Distribution system use of DERs;*

It is accepted that clear and thorough regulation will usually accelerate the adoption of new technology or the application of certain technologies in new ways. While we advocate for highly granular flexible interconnections, it is not obvious that benefits to the distribution system will come faster with commercial-scale DERs. This is because commercial-scale DERs seem to face funding challenges, permitting hurdles, and construction delays that highly granular systems will not.

*b. Increased grid capacity;*

Given that the grid can increase its capacity with current infrastructure if load smoothing and peak shaving are achieved to some degree, the setting of flexible interconnection regulations will increase that capacity. We point out that, with a highly granular approach, that capacity could be increased modestly in small steps as opposed to accommodating commercial-scale DERs which are aimed to provide sizable inputs from isolated sites and thus entail major grid upgrades.

*c. Decreased grid instability; and*

[Grid instability](#) is heightened by the expanding reliance on renewable energy resources for the grid because these sources, unlike traditional power plants, have variable output. However, batteries as DERs, regardless of scale, can be controlled to provide just the needed amounts

to the grid and will decrease grid instability in the future when the majority of its input comes from renewable resources. In fact batteries may be the prime reason we can transition to an entirely clean electrical grid.

*d. Reduced costs of achieving clean energy goals*

Peak shaving and demand response are among the most widely adopted services in current Virtual Power Plant (VPP) projects, largely due to their minimal requirements for advanced user-side equipment and real-time communication infrastructure.

Time-of-use (TOU) pricing should not be neglected as a means to reduce the overall cost of achieving energy goals. While ratepayers will benefit from reducing their bills through conscientious timing of their electrical load, the grid will reap infrastructure cost savings from peak shaving.

[Energy arbitrage](#) is another popular service, relying on the VPP's forecast capability, communication efficiency, and propagation strategy. The accuracy of forecasts, the reliability of communication, and the fairness in propagation can make VPPs more attractive for users considering energy arbitrage. This service involves the technical capability to store energy when electricity prices are low and discharge it back to the grid when prices are high, requiring accurate forecasting and operational data collection to scale up VPPs effectively.

*3) How would information flow between utilities and developers need to change to achieve the following goals of the Act:*

*a. Distribution system use of DERs;*

It is clear that the distribution system needs to apply new software controls to the multiple DERs, however scaled from fine to coarse granularity. (We are here using "granularity" in a spatial, not temporal, sense.) This requires sensing the capacities of the multiple DERs in real time and adjusting their inputs to the grid to match the real-time loads. In sensing the capacities, we see a model whereby the DER owner can be setting the capacity of their resource and that this variable capacity is sensed by the distribution utility. For residential DERs, there may be various reasons to limit the usable capacity of their resource while this may not be necessary for commercial DERs. We are here advocating for a two-way sensing system under software control to measure, adjust, curtail, or maintain a

certain level of DER input to the grid. Such a control model is really no more complex than what is built into today's modern electric vehicles or many of today's appliances and electronic gadgets; it just needs to be scaled up. Our recommendations are indeed aligned well with the DOE's [Vision of the Future Grid](#).

*b. Increased grid capacity;*

We submit that a fully monitored interconnection system that allows for highly granular interconnections will, by its very nature, allow for increased grid capacity to supply electricity. This will be accomplished by grid smoothing and peak shaving.

*c. Decreased grid instability; and*

For the same reasons offered above in the case of increased grid capacity, a complete, granular information flow should increase grid stability.

*d. Reduced costs of achieving clean energy goals*

Without adding highly granular DERs to traditional DERs, we will give up a large potential pool of grid benefits that will reduce the ultimate quantity of renewable energy needed for a "clean" grid. (See the quote from the 1KOMMA5 executive in our Appendix.)

*4) Please share any information about successful flexible interconnection programs that have been adopted in other states.*

This [RMI document](#) lists 15 utilities in states across the US which have home Virtual Power Plant (VPP) programs of various sorts. Among those states are:

**California:** [AB 740](#) establishes a VPP deployment plan. It is currently moving through the legislature.

**Virginia:** [HB 2346](#) establishes a VPP pilot program.

**Massachusetts:** [H4144](#) is a massive energy bill from the Governor that includes some provisions on VPPs.

**Vermont:** Vermont was early (2016) in establishing a [home-battery program](#) with VPP capabilities. Recently Green Mountain Power has opened its program to all residential customers.

Additional programs not connected to legislation:

**Texas:** A company called Base Power has a [unique business model](#) in which it is the electricity supplier that also installs backup batteries in customers' homes as part of the deal.

**California:** A [VPP experiment](#) was conducted on a large scale with home batteries by the utility PG&E to show that these DERs could supply important grid services.

**Australia:** Australia appears to be a [leader in VPP deployment](#) based on home and vehicle batteries. The webpage offers a table of pros and cons around VPP home programs.

**Germany:** The energy company 1KOMMA5 expects to control [20 GW of VPP home capacity](#) by 2030. The webpage says:

“Studies show that household-related flexibilities, such as battery storage, heat pumps, air conditioning systems and electric vehicles, can save up to eight billion euros a year in system costs.”

Read more about what's being done in other regions in our appendix.

## Appendix

The [website](#) of the German energy company 1KOMMA5 touts the economic benefit to ratepayers with this language:

### **Flexibilization and smart meter rollout make renewables fully usable**

Studies show that household-related flexibility such as battery storage, air conditioning systems, heat pumps and electric cars can save up to eight billion euros a year in system costs - through less grid expansion, fewer fossil reserve power plants and more efficient use of renewable electricity. Extrapolated to 2040, there is a savings potential of up to 70 billion euros through flexibility measures alone.

Jannik Schall, Co-Founder and CPO of 1KOMMA5°, says: “The problem is not that there is too much renewable energy, but a rigid grid without smart meters and without enough storage capacity. **Instead of subsidizing the old and analogue energy system with billions, politicians should continue to promote full flexibility and the smart meter rollout, and put large-scale and home storage systems on an equal footing regarding grid charges.** [bold emphasis added] The fact is that a lot is technically possible and has already been done elsewhere. We now need to release the handbrake and bring existing possibilities to bear.”

1KOMMA5 uses a sophisticated software tool called Heartbeat AI at small time intervals “4.8 million times a day” to monitor and control individual home energy resources.

Southern California Edison and other utilities [embarked on innovative VPP initiatives](#) to integrate residential solar and battery storage systems into a managed grid system. These programs allow homeowners in regions like Orange County, Ventura, and Santa Barbara to participate by providing stored solar energy to the grid during peak demand periods, earning incentives through programs like Swell Energy’s VPPs and Generac’s Power Flex program. These efforts are designed not only to stabilize the grid during energy shortages but also to enhance overall grid resilience and sustainability, promoting a more efficient and environmentally friendly energy management system.

In Texas, recent VPP initiatives aim to fully integrate consumer-owned energy devices like home backup batteries and electric vehicle batteries into the state’s electricity market. Texas VPPs aggregate these DERs to enhance the reliability and efficiency of the grid managed by the Electric Reliability Council of Texas (ERCOT). By doing so,

these VPPs contribute to better grid management and stability, showcasing a significant advancement in how energy is distributed and utilized across the state.

**STATE OF MAINE**  
**PUBLIC UTILITIES COMMISSION**

**PUBLIC UTILITIES  
COMMISSION**

**Inquiry into Flexible  
Interconnection**

**Docket No. 2025-00312**

**COMMENTS OF THE OFFICE OF  
THE PUBLIC ADVOCATE IN  
RESPONSE TO NOTICE OF  
INQUIRY**

**November 20, 2025**

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**I. Introduction**

On October 20, 2025, the Commission issued a Notice of Inquiry through which it initiated this inquiry to request comments related to the flexible interconnection of distributed energy resources (DERs). This inquiry is being conducted pursuant to the requirements of Section 7 of An Act to Enhance the Coordination and Effectiveness of Integrated Distribution Grid Planning (P.L. 2025, c. 293 (the Act)). Section 7 of the Act directs the Commission to “explore and evaluate the feasibility of adopting emerging flexible interconnection options in order to use distributed energy resources, increase grid capacity, decrease grid instability and reduce costs in achieving state goals related to clean energy.” The Act further directs the Commission to:

- 1) Review potential practices for providing flexible interconnection options;
- 2) Engage with stakeholders, including members of the interconnection working group established pursuant to Public Law 2023, chapter 307, section 8;
- 3) Identify any barriers to adopting flexible interconnection options;

- 4) Identify ways in which customers seeking connection might benefit from flexible interconnection processes; and
- 5) Determine whether the costs of flexible interconnection may affect non-interconnecting customers and how that may be mitigated.

The Act directs the Commission to submit an initial report summarizing its activities to the Joint Standing Committee on Energy, Utilities, and Technology by February 15, 2026. In response to the requirements of the Act, the Commission has requested comments on flexible interconnection and related issues. The Office of the Public Advocate (OPA) hereby provides its comments in response to the Notice of Inquiry.

## **II. OPA Comments in Response to Notice of Inquiry**

For purposes of this inquiry, the Commission is using the definition of flexible interconnection that has been adopted by the Department of Energy (DOE). The Commission notes that DOE defines “flexible interconnections” as “control approaches to enable more DER interconnections based on dynamic operating envelope parameters.” The DOE defines the dynamic operating envelope as “a more granular engineering method to determine capacity availability due to time-sensitive variations in export energy, customer demand, and grid conditions.” The OPA agrees that the DOE definition “flexible interconnections” is appropriate.

The Commission seeks input on whether to expand its inquiry and consider both flexible interconnections and flexible service connections, which are defined by the DOE as control approaches to enable customer service connections for larger loads such as EV fleet charging and data centers. Specifically, a flexible service connection is an arrangement between customers and utilities to modify the

magnitude and timing of customer loads in response to grid conditions.<sup>1</sup> For example, flexible EV fleet charging solutions are designed to address distribution capacity constraints by optimizing the timing and magnitude of EV charging loads so that EV fleet charging integrates seamlessly with the existing grid infrastructure without overloading it.

The OPA recommends the Commission use this investigation to identify the steps needed to implement both flexible interconnections and flexible service connections. With an understanding of the technology needed to implement both capabilities, the Commission can determine if it is more cost effective to implement both together or if investments for flexible interconnections can lay the groundwork for flexible service connections in the near future. The goal is to reach a technological level such that DERs and demand response are interchangeably flexible and therefore beneficial to the grid.

The benefits of flexible interconnections for DERs are clear. The hosting capacity of a particular site is inherently time-varying because the underlying load, generation, temperature, control settings, circuit configuration and other system parameters vary with time. <sup>2</sup> Traditional interconnection options are limited to reducing the size of the DER so its nameplate capacity remains below single site hosting capacity or requiring infrastructure upgrades to increase the single site hosting capacity so that the DERs maximum output will not exceed the hosting site capacity at any given time. This limits the extent to which distribution is utilized,

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<sup>1</sup> *Flexible Distributed Energy Resources Electric Vehicle Connections*, Department of Energy (July 2024).

<sup>2</sup>See *Understanding Flexible Interconnection*, Electric Power Research Institute (September 2018).

increasing costs. If DER operation can be reliably managed, grid utilization is increased, allowing DERs to reduce their interconnection costs and the state of Maine to more cost effectively meet its state policy goals.

By moving away from the current methodology of assuming worst case scenarios in determining interconnection requirements for DERs, utilities could enable new DER interconnections at a faster pace, without the need for expensive and time-consuming system upgrades. Through flexible interconnections, DERs will be able to dynamically adjust how and when they generate power to the grid based on real-time grid conditions. Instead of requiring that all DERs interconnected to a utility distribution system must protect against negative impacts under all possible operating conditions, flexible interconnections allow DERs and utilities to adjust DER output when necessary to protect the grid.

Flexible interconnection has the potential to improve overall economics of DER interconnection. Literature on the topic suggests that there are variety of approaches to flexible interconnection, from time-based operating limits to real-time active management of DER output. Key capabilities for flexible interconnections include advanced two-way communications systems (which may not be available through current SCADA and AMI system capabilities); Distributed Energy Resource Management Systems (DERMS) to compute and transmit time varying requests to DERs; cyber security upgrades; and updated planning and interconnection processes. Determining what would work best in Maine will depend on the capabilities of Maine's T&D utilities and the willingness of DER developers to work within those capabilities.

Both the T&D utility and the DER developer will need to agree upon the type of information that must be exchanged and the methodology for doing so. At the same time, the Commission must develop a means of allocating the costs of required system improvements to the DERs. These costs should not be shifted to ratepayers generally. As information system upgrades are required due to the collective impacts of DERs on the distribution system, the costs causers are responsible for paying for the technology upgrades. Therefore, it is critical that this inquiry obtain information from and hopefully some level of consensus between T&D utilities and DER developers as to the type of system upgrades required and the means of fairly distributing the costs of the upgrades among the DERs.

There is at least one example in Maine in which a developer and a T&D utility have worked cooperatively to flexibly interconnect a DER while waiting for full system upgrades to be installed by the utility. This is discussed in Docket No. 2025-00322, in which Central Maine Power Company (CMP) granted a DER project a conditional permission to operate at 0.457 MW until necessary upgrades were completed to allow the project to operate at its full allowed output of 0.996 MW under the project's net energy billing agreement.<sup>3</sup>

While increased flexibility in DER interconnection is a laudable goal, such flexibility must not be allowed to impact the safety or reliability of a T&D utility's system. For flexible interconnections to work, there would need to be agreement between DER developers and T&D utilities as to the acceptable technologies and

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<sup>3</sup> *MSD Galbraith LLC, Request for Good Cause Exemption Pursuant to 35-A M.R.S. § 3209-A (9)*, Docket No. 2024-00322,

systems that would allow DERs to interconnect in an expedited manner while still ensuring that generation can be limited when necessary during periods of system congestion. In addition to input from T&D utilities and DER developers, the Commission should seek input from industry experts and consider relevant experiences in other jurisdictions.

### **III. Conclusion**

The OPA appreciates the opportunity to provide these comments in response to the Commission's Notice of Inquiry. The OPA believes that developing options for flexible interconnection and flexible service connections provide benefits to DER developers and T&D utilities, with the potential for a lower cost grid for all ratepayers. Implementing these systems should be given strong consideration to enhance the DER interconnection process and improve distribution system management in Maine.

Respectfully submitted,

*s/ Heather Sanborn*

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November 20, 2025

## I. INTRODUCTION

On October 20, 2025, the Maine Public Utilities Commission (“MPUC” or the “Commission”) issued a Notice of Inquiry (the “Notice”) initiating an inquiry requesting comments on issues relating to the flexible interconnection of distributed energy resources (“DERs”). The Commission has initiated the notice following the most recent Legislature session enacting L.D. 1726, Public Law 2025, ch. 293 (the “Act”). Central Maine Power Company (“CMP” or the “Company”) responds to the questions posed by the Commission and provides comment on how flexible interconnection and flexible service connections may support the Act’s goals; the information exchanges needed between utilities and developers; examples from other jurisdictions; and the technological, cost, regulatory, safety, and operational considerations relevant to implementing flexible interconnection in Maine. CMP recognizes the importance of such inquiries for exploring new technologies and future grid planning needs and remains available to answer any further questions.

## II. CMP COMMENTS ON NOTICE ON INQUIRY

### A. Questions for all Stakeholders

- 1. When considering flexible interconnections pursuant to the Act, should the Commission expand its inquiry and consider both flexible interconnections and flexible service connections as defined by the DOE? If stakeholders do not approve of the DOE definition, please recommend an alternative definition of flexible interconnection.**

Yes, CMP supports the Commission expanding its inquiry to consider both flexible interconnections and flexible service connections as defined by the Department of Energy (“DOE”). Both concepts aim to improve utilization of the electric system by allowing DERs and flexible loads to operate in ways that better align with system conditions. Including flexible service connections broadens the review to capture opportunities for accommodating large or variable loads, such as elective vehicle fleet charging or data center demand, using existing system capacity more efficiently. This broader scope may also help reduce costs associated with achieving state policy and clean energy goals.

While CMP endorses the current DOE definitions, it is crucial to emphasize that the success of implementing flexible interconnections or service connections hinges on utility-owned and controlled operational strategies. Real-time grid visibility coordinated control of system conditions, and ensuring DERs and flexible loads operate within safe parameters are vital for maintaining reliability in an increasingly dynamic distribution system. Utility control complements the role of customers and developers in flexible arrangements, ensuring that flexibility is delivered safely, consistently, and in a manner that bolsters overall system reliability.

**2. How would adopting flexible interconnection regulations achieve the following goals of the Act:**

**a. Distribution system use of DERs;**

Adopting flexible interconnection regulations may, under certain conditions, enhance the use of DERs to support the distribution system by providing additional operational flexibility. In Maine, where most DERs are solar-based and intermittent, their ability to consistently address broader grid challenges like reliability, winter peak demands, or voltage support is limited. However, flexible interconnections enable these resources to contribute effectively when

conditions allow, by managing their output or temporarily reducing production to alleviate localized constraints.

The potential benefits increase as other types of DERs, particularly energy storage systems, become more widespread. Energy storage can absorb and inject power as needed, offering a controllable resource that balances variable generation and addresses grid concerns. When combined with solar or other intermittent resources, energy storage amplifies the value of flexible interconnections, enhancing the grid's responsiveness to real-time conditions.

These operational adjustments are managed through utility-owned control systems, such as a Distributed Energy Resource Management System (DERMS)<sup>1</sup>, which provide real-time visibility and coordination of DER behavior. This oversight ensures that DER actions align with system safety, reliability, and planning objectives. Utility control is essential to guarantee safety, reliability, are systems that meet NERC/ISO requirements. Relying solely on commitments from numerous developers and users to update their systems and adhere to operating envelope requirements is insufficient. Utilities must ensure these operating envelopes are enforced, which is why systems are built to meet peak demand. Utilities have a duty to ensure safety and require certainty to fulfill this duty.

At times, DERs may need to be curtailed to maintain grid stability or avoid exceeding feeder capacity limits. While such flexibility does not make DERs a primary reliability resource, it enhances overall grid utilization and may, under limited circumstances, defer certain system upgrades. As CMP continues to invest in sensing, data analytics, and grid automation, these

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<sup>1</sup> A Distributed Energy Resource Management System is a software platform able to monitor and control Distributed Energy Resources. There are typically two types of DERMS – Grid DERMS responsible for monitoring and controlling front-of-the-meter DERs and Edge DERMS responsible for monitoring and controlling front-of-the-meter DERs.

capabilities will better position DERs to play a more significant role in supporting grid operations within an integrated planning framework.

**b. Increased grid capacity;**

Flexible interconnection regulations may, under limited circumstances, increase the effective capacity of the distribution system by improving utilization of existing infrastructure. Rather than limiting DER interconnections based on conditions that may only occur during a small number of operating hours or days, flexible interconnection allows DER output to align with actual system conditions. When additional capacity is available, DERs can export energy without affecting system performance.

Participating DERs may be subject to temporary curtailment during periods when the distribution system is operating near thermal or voltage limits. While this may reduce DER output during heavy demand grid conditions, it enables a greater number of DERs to interconnect overall and makes more efficient use of existing grid assets, which may, under limited circumstances, defer the timing and scale of certain capital investments.

Implementation of flexible interconnection requires supporting operational capabilities. As mentioned above, DERMS provides the monitoring and control functions necessary to coordinate DER output, while distribution automation improves system visibility and responsiveness. Together, these capabilities would allow CMP to manage flexible interconnections in a way that increases grid utilization while maintaining safe and reliable service.

**c. Decreased grid instability; and**

Flexible interconnection does not, on its own, improve grid stability. CMP currently requires inverter-based DERs to meet ISO New England inverter performance requirements and

the Company's Blue Book standards, which include the ability to remain connected and support the system during routine voltage and frequency changes. While these standards establish a crucial baseline to maintaining reliability, additional stability challenges emerge as DER adoption grows.

As more of the electric system relies on inverter-based resources rather than traditional generators, grid behavior during normal operations and disturbances evolves. For instance, on sunny days, electricity may flow in unexpected directions along a feeder due to high solar output. Sudden weather changes can cause rapid shifts in this output, necessitating swift adjustments elsewhere in the system. Unlike traditional generators, inverter-based resources do not inherently contribute to system stability, making it harder to maintain steady voltage and reliable service under stress. Traditional generators provide inertia and voltage support through their rotating mass, helping the system resist sudden frequency or voltage changes. In contrast, inverter-based resources depend on fast electronic controls to mimic these functions and do not yet offer stability in the same inherent, system-wide manner. Consequently, increased penetration of inverter-based resources can actually increase grid instability necessitating more active system management and additional grid support technologies to uphold reliability.

#### **d. Reduced costs of achieving clean energy goals**

Flexible interconnections may reduce the costs of achieving clean energy goals in two key ways: by facilitating more cost-effective DER interconnections and by enabling flexible service connections that efficiently manage flexible loads.

Flexible interconnections allow for the timely and economical integration of DERs by leveraging existing distribution system capacity, helping to avoid immediate infrastructure upgrades. This strategy employs real-time visibility and operational tools to manage power flows

and adhere to system limits, minimizing upfront investment. For instance, within a flexible framework, DERs can connect and operate at reduced output during peak demand or system constraints, rather than necessitating full capacity upgrades. Although these projects might face occasional curtailment, this approach still advances Maine's clean energy and climate objectives, such as expanding distributed generation and energy storage, at a lower system cost.

Conversely, flexible service connections focus on accommodating variable or flexible loads, like electric vehicle fleet charging, by strategically managing their capacity usage. These arrangements may defer certain system upgrades and lower greenhouse gas emissions by promoting the electrification of transportation and other sectors. As control and monitoring technologies evolve, flexible service connections enable CMP to better align system load with available renewable generation, enhancing overall grid utilization.

- 3. How would information flow between utilities and developers need to change to achieve the following goals of the Act:**
  - a. Distribution system use of DERs;**
  - b. Increased grid capacity;**
  - c. Decreased grid instability; and**
  - d. Reduced costs of achieving clean energy goals?**

To achieve the Act's goals, the information flow between utilities and developers must transition from a one-time interconnection exchange to a continuous and data-driven process.

Central to this enhanced exchange is improved system data and visibility. Utilities require consistent, high-quality data on DER performance and grid conditions to manage dynamic operations safely. Enhanced data management, advanced forecasting tools, and improved situational awareness systems form the analytical backbone of this information exchange. These capabilities will enable CMP to provide more transparent, detailed information on hosting capacity, allowing developers to make informed siting and design decisions.

Developers, in turn, must supply detailed and timely operational data, including production forecasts, equipment settings, and flexibility characteristics (e.g., available storage or controllable output). This data will better allow CMP to integrate DER performance into forecasting and reliability models, enhancing operational coordination and system planning.

To support flexible interconnection and service connection arrangements, both utilities and developers will need to adopt more adaptive communication frameworks. Developers must be aware that operating conditions will change over time based on circuit loading, voltage levels, and local reliability needs. System constraints may sometimes necessitate curtailment or operational limits on DER output. Transparent data sharing sets these expectations and ensures all parties understand the parameters under which flexible connections operate.

It is also crucial to recognize the practical limits of flexible interconnections. Adding multiple flexible resources to a circuit near capacity can diminish the value of additional DERs and increase curtailment frequency unless traditional system upgrades are implemented. Continuous data sharing and performance monitoring are essential to manage these limits effectively and identify when foundational investments are needed to maintain reliability.

#### **4. Please share any information about successful flexible interconnection programs that have been adopted in other states.**

CMP's sister companies, New York State Electric & Gas Corporation ("NYSEG") and Rochester Gas and Electric Corporation ("RG&E"), have been piloting flexible interconnections through a New York Reforming the Energy Vision demonstration project called the Flexible Interconnection Capacity Solution. This project involved the flexible interconnection of three 5 MW solar PV facilities in the RG&E territory and a 2 MW solar PV facility in the NYSEG territory. DERMS is used to control solar facility exports, ensuring that reverse power flow through the substation transformer bank remains within limits. If these limits are exceeded, the

export from one facility is curtailed to maintain safe power flow. Curtailment follows the interconnection queue, with the last facility in the queue curtailed first. In NYSEG territory, DERMS managed the export of a voltage-limited 2 MW solar PV facility. Further details are available in filings on New York’s Department of Public Service website under Case No. 14-M-0101, with a comprehensive summary in the Intermediate Summary Report filed on July 12, 2024.

In Connecticut, through Cycle One of the Innovative Energy Solutions program, CMP’s sister company, The United Illuminating Company, is piloting flexible interconnection and service connections using two innovative technologies. One pilot implements a decentralized DER control scheme, orchestrating electric vehicle and school bus charge and discharge management based on substation and circuit parameters. The centralized control scheme pilot includes monitoring and controlling a solar PV facility and managing the charging of a transit bus fleet to defer or eliminate future infrastructure capacity upgrades. These pilots are ongoing and expected to conclude in the coming months. Results will be available shortly after completion under Docket No. 22-08-07 on Connecticut’s Public Utilities Regulatory Authority website.

## **B. Questions for Utilities**

### **1. Are there technological barriers preventing the adoption and implementation of flexible interconnection of DERs in Maine?**

Yes, there are technological barriers that must be addressed before flexible interconnection of DERs can be widely adopted in Maine. These barriers generally fall into four areas: monitoring and communication, data quality, software systems, and operational capabilities. CMP is actively advancing initiatives in each area to reduce these limitations and enable a more dynamic and resilient grid.

## **Monitoring, Communication, and Operational Capabilities**

A primary barrier is that existing distribution systems were not designed for the level of real-time visibility and coordination required to manage flexible DERs. Many local circuits may lack sufficient sensors, automation, and communication infrastructure to monitor operating conditions or to ensure DERs function within safe operating envelopes—the allowable range of voltage, current, and loading that maintains reliability.

To address this, CMP continues to expand its distribution automation and supervisory control and data acquisition (“SCADA”) systems to improve visibility into local grid conditions. CMP has also proposed implementation of an Advanced Distribution Management System (“ADMS”<sup>2</sup>) and DERMS which would enable dynamic monitoring, coordination, and control of DERs and flexible service customers within defined operating limits. Enabling flexible interconnections would also require a DER Gateway<sup>3</sup> to interface with and monitor these resources, ensuring safe operation within dynamic conditions.

## **Data Quality Improvements**

Another key barrier is the limited availability and integration of distribution system data. Existing information about circuit loading, voltage, and DER production is often not available in real time, making it difficult to determine where flexible interconnections can safely operate. CMP is addressing this through improvements to Advanced Metering Infrastructure (“AMI”) and enhanced data validation in the Geographic Information System (“GIS”). These efforts provide more detailed, near real-time information about local grid performance. CMP is also investing

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<sup>2</sup> An Advanced Distribution Management System is a software platform that supports a suite of distribution management functions. An ADMS includes functions that optimizes the performance of the distribution grid and automates outage restoration.

<sup>3</sup> The DER Gateway is a grid-edge device that interfaces with the DER facility and provides fail-safe operation in the event the ICGF is not following the dynamic operating envelope parameters or if grid and/or DER visibility is lost. The fail-safe action would entail site curtailment to a pre-set limit or tripping the site off-line.

in advanced forecasting tools that use historical and real-time data to better predict load growth, DER output, and potential system constraints.

### **Software Enhancements**

A third barrier involves limitations in existing planning and analysis software. Many current platforms were developed for static system conditions and are not well-suited for modeling variable DER behavior or dynamic system responses. To overcome this, CMP is modernizing its distribution planning and modeling platforms, including migration to a centralized CYME server environment that supports faster scenario analysis and improved integration of AMI and SCADA data. These enhancements are critical for evaluating DER impacts under variable conditions and for updating hosting capacity assessments as the grid evolves. Updating and modernizing software platforms ensures seamless data exchange with many critical systems (like CYME, SCADA and GIS). This will help CMP to properly manage the large volume of real-time data associated with flexible interconnections.

### **Summary**

The main technological barriers to flexible interconnection include insufficient system visibility, incomplete or inconsistent data, and software tools that are not yet equipped to handle real-time system dynamics. CMP's ongoing and proposed initiatives are designed to address these challenges by improving data quality, strengthening operational visibility and control, and enhancing system modeling capabilities. Together, these efforts will facilitate the safe and efficient integration of flexible DER interconnections while supporting Maine's clean energy and reliability goals.

## **2. What are the estimated costs to overcome such barriers?**

The investments needed to address these barriers are significant, generally on the order of tens of millions of dollars over multiple years. This estimate reflects the scale of system and

technology modernization required to fully enable flexible interconnections. These improvements include data integration, advanced software tools, and enhanced operational capabilities, all of which are essential to preparing Maine’s electric grid for a more dynamic and distributed future.

However, many of these investments will also provide broader benefits beyond flexible interconnections, supporting reliability, resilience, and service quality for all customers. Upgrades to data systems, communications infrastructure, and forecasting tools, for example, will strengthen outage management, grid optimization, and long-term planning functions. Over time, these shared improvements may replace or offset ratepayer costs that would otherwise be needed to maintain system reliability under growing DER adoption.

While the costs are not insignificant, these investments represent a measured and strategic evolution of the distribution system, one that safely integrates flexible interconnections while simultaneously advancing broader grid modernization and customer service objectives.

### **3. Are there regulatory barriers preventing the adoption and implementation of flexible interconnection of DERs in Maine?**

Yes, there are several regulatory and procedural challenges that can limit the adoption of flexible interconnection approaches in Maine. First, the required study timelines under Chapter 324 are relatively short and were developed for traditional, fixed interconnections. Flexible interconnections often require additional modeling and coordination to evaluate variable operating conditions, which cannot always be completed within current timeframes.

Second, the current rules do not provide a mechanism to use operating envelopes, the defined range of conditions under which a DER can adjust its output, as part of the interconnection study. Allowing the use of operating envelopes (safe, real-time limits for grid conditions) may make more projects viable by showing how they can safely operate within grid

limits rather than requiring costly upgrades. Another regulatory barrier preventing the adoption and implementation of flexible interconnection of DERs in Maine is the determination of the cost recovery mechanism of the DERMS and the grid edge equipment to enable flexible interconnection.

Finally, at the regional level, ISO New England's current market and reliability frameworks do not permit the curtailment of non-FERC-jurisdictional DERs to address constraints on Pool Transmission Facilities. This limits one of the key tools that could otherwise help manage local flexibility to relieve transmission constraints. CMP supports continued collaboration with the Commission, ISO-NE, and stakeholders to explore updates to Chapter 324 and related interconnection policies that would enable flexible approaches while maintaining system reliability and fairness across all customers.

**4. Are there reliability or safety risks associated with the adoption and implementation of flexible interconnection of DERs? If so, what are these risks, and how may they be addressed?**

Yes, as with any new technology or operating approach, there are reliability and safety considerations that must be carefully managed. For flexible interconnections, these include ensuring that DERs respond appropriately to system conditions, maintaining voltage and power quality, and protecting equipment and personnel during abnormal events such as power outages, loss of communication, or switching operations.

These risks can be managed through several initiatives. The deployment of ADMS and DERMS capabilities will improve real-time visibility and control of DERs. Enhanced forecasting tools and the use of AMI data will help operators anticipate system changes and adjust accordingly. Additionally, the implementation of a DER Gateway may minimize reliability and safety risks in the event the DER is not responding properly.

Specifically, in the event the ICGF is not following the dynamic operating envelope parameters, a DER Gateway could take corrective action and trip the point of common coupling recloser. These measures will improve the management of flexible interconnections in a way that protects customers and employees, maintains reliability, and supports the broader transition to a cleaner, smarter grid.

**5. Are there circumstances when DERs are approved to permanently interconnect at a capacity lower than the capacity in their original Interconnection Agreement? If so, what process is required to approve this reduced capacity? Is the reduced capacity reflected in an updated Interconnection Agreement?**

Yes, there may be circumstances when DERs are approved to permanently interconnect at a lower capacity than originally proposed, often due to system constraints or project design modifications. In such cases, CMP would require an updated distribution and/or transmission system impact study at this reduced capacity to confirm that the lower-capacity operation aligns with system reliability and safety requirements. Once approved, the reduced capacity would be formally documented in the Interconnection Agreement. This ensures that both CMP and the interconnecting customer maintain an accurate record of the project's final operating parameters and that system planning models are updated accordingly.

In some instances, DERs have reduced their project size in order to qualify for the Net Energy Billing ("NEB") program. In those cases, there is a mismatch in size between the Interconnection Agreement ("IA") and the NEB Agreement. The Commission issued an Advisory Ruling in Docket No 2022-00188 allowing projects to have nameplate capacity for the purposes of participating in the NEB program which is lower than the size identified in their IA.

**6. Are there circumstances when DERs are approved to temporarily interconnect at a lower capacity than the capacity in their original**

**Interconnection Agreement? If so, what is process is required to approve operation at this reduced capacity? Is the reduced capacity reflected in an updated Interconnection Agreement? What process is required to permit a DER to increase its capacity if the project is temporarily operating at a reduced capacity?**

Yes, temporary de-rates may occur when projects are awaiting system upgrades to be placed in-service that their project is dependent upon to operate at full output. These reduced values are determined during a System Impact Study. System upgrade dependencies and temporary de-rate values are reflected in a DERs Interconnection Agreement. Once the associated system upgrades are placed into service, the DER project is notified and permitted to operate at full capacity, and their Interconnection Agreement is updated. This process ensures transparency and continued compliance with reliability and safety standards while maintaining flexibility for project developers.

**7. Are there types of flexible interconnection that would benefit from a Distributed Energy Resource Management System (DERMS)? Is DERMS required to implement any types of flexible interconnection?**

Yes, DERMS plays a critical role in enabling advanced forms of flexible interconnection. Flexible interconnections that involve variable export limits, dynamic operating schedules, or coordinated control among multiple DERs would require DERMS capabilities. DERMS provides real-time monitoring, control, and optimization of distributed resources, allowing for dynamic adjustment of DER operating parameters in response to grid conditions. While DERMS may not be required for all forms of flexible interconnection, it is essential for safely implementing approaches that rely on active, automated coordination between DERs and grid operations. DERMs may also prevent costly upgrades needed for DERs that only need to reduce output during certain peak-constrained periods of the year. This may also allow DERs to connect and begin generating much quicker due to not having to wait until utility upgrades are complete.

Customer-controlled solutions such as advanced inverters may not require DERMS and may be implemented to address localized (ex. voltage on shared secondary) grid constraints.

**8. Please explain how, if at all, the export control methods described in Section 8 of Chapter 324 of the Commission's Rules can be used to enable flexible interconnections.**

The export control methods described in Section 8 of Chapter 324 provide a useful technical and procedural framework for managing DER export at the Point of Common Coupling. These methods, including Reverse Power Protection, Minimum Power Protection, Directional Power Protection, Configured Power Ratings, and Certified Power Control Systems, offer standardized mechanisms to limit exports and ensure the safe, reliable operation of distributed resources.

While these provisions are effective for traditional fixed-limit interconnections, applying them to more dynamic or flexible interconnection models presents challenges. The methods primarily support static export limits and do not currently accommodate time-varying or utility-managed adjustments to export capacity, which are essential for flexible interconnection models like operating envelopes.

That said, certain elements of Section 8, such as the "Agreed-Upon Means" and certified power control systems, could serve as a foundational component of future flexible interconnection frameworks. This capability could, in theory, allow DERs to respond to changing grid conditions or external control signals issued through ADMS or DERMS. However, implementing such a framework would require substantial additional development. This includes establishing reliable two-way communication protocols, updating Interconnection Agreements to address dynamic limits, and developing clear operational and regulatory procedures for defining, communicating, and enforcing variable export parameters.

Accordingly, while the export control provisions of Chapter 324 offer an important starting point, significant modifications and supporting infrastructure would be necessary before these methods could be used to fully enable flexible interconnections in Maine. CMP recommends a cautious, phased approach to exploring this transition, beginning with pilots and stakeholder engagement to assess the technical and administrative feasibility of applying dynamic export control within the existing regulatory framework.

### **III. CONCLUSION**

CMP appreciates the opportunity to provide comments in this docket and remains available to answer questions as part of this inquiry.

Respectfully Submitted,

*/s/Christopher Morin*  
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**STATE OF MAINE  
PUBLIC UTILITIES COMMISSION**

PUBLIC UTILITIES COMMISSION

Inquiry into Flexible Interconnection

Docket No. 2025-00312

**NATURAL RESOURCES  
COUNCIL OF MAINE  
COMMENTS ON NOTICE OF  
INQUIRY**

November 20, 2025

In a Notice of Inquiry (NOI) issued on October 20, 2025 in the abovementioned proceeding, the Public Utilities Commission (the Commission) requested comment on issues related to flexible interconnection pursuant to LD 1726, Public Law 2025, ch. 293 (the Act). Section 7 of the Act directs the Commission to “explore and evaluate the feasibility of adopting emerging flexible interconnection options in order to use distributed energy resources, increase grid capacity, decrease grid stability and reduce costs in achieving state goals related to clean energy.” In its order, the Commission requested parties interested in providing comment do so by close of business on November 20, 2025. The Natural Resources Council of Maine (NRCM) respectfully submits the following comments for consideration.

**I. General Comments:**

**A. The Extant Inquiry Provides an Important Vehicle to Achieve a Top Priority for Utility Grid Planning and to Implement Maine’s Minimum Service Standards.**

Interconnecting and utilizing distributed energy resources (DERs) is a basic function of utility operations and a core category of Commission oversight in the state of Maine. In its order to investor-owned transmission and distribution utilities (IOUs) in the Proceeding to Identify

Priorities for Grid Plan Filings in Docket No. 2022-00322, the Commission determined that one of three top priorities for utility planning in Maine in the next ten years is to:

- Promote flexible management of consumers’ resources and energy consumption:
  - Improve forecasting EV load, DER adoption, and climate parameters;
  - Support integration and utilization of DERs to enable load flexibility and resilience;
  - Technologies or programs to shift load from system peak to reduce Maine’s share of the RNS charge.<sup>1</sup>

Given the broad stakeholder effort that took place over more than two years of proceedings and involving 13 meetings and workshops to establish these priorities, there should be strong support for this shared objective from utilities, Commission staff and other stakeholders.

Additionally, Title 35-A §301 (1-A), which enumerates “minimum service standards” for Maine’s IOUs, specifies four essential categories of utility operations and activities for which the Commission must develop standards and metrics to ensure quality service for Maine customers.

These four categories for minimum service standards are as follows:

- (1) Service quality, including but not limited to reliability of service and timeliness of restoring service after outages;
- (2) Customer service, including but not limited to timeliness and accuracy of bills;
- (3) Field services, including but not limited to communication with and responsiveness to municipalities, businesses and individuals; and
- (4) Distributed energy resources interconnection.<sup>2</sup>

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<sup>1</sup> MAINE PUBLIC UTILITIES COMMISSION Proceeding to Identify Priorities for Grid Plan Filings, Docket No., 2022-00322, order issued July 12, 2024.

<sup>2</sup> <https://legislature.maine.gov/statutes/35-A/title35-Asec301.html>

According to statute, interconnecting DERs is a fundamental service to be provided by the state's T&D utilities, and utility performance in this area must be subject to minimum standards, quarterly reporting, performance evaluations, publicly-accessible report cards, and administrative penalties in the event of poor performance. To our knowledge, the Commission has not implemented this subsection of the law.

Establishing customers options for flexible interconnection through the extant inquiry will support achieving our priority goals for utility planning and support the work of gathering the data and information to fully implement the 2021 law on Maine's minimum service standards.

**B. Flexible Interconnection Supports Long-term Affordability.**

There is good reason for DER interconnection and utilization to be a top priority for Maine. Quickly, efficiently and cost-effectively connecting low-cost, clean energy resources to the T&D system is Maine's path to long-term affordable electricity. These resources can be sited, sized, configured and operated in ways to maximize the use of existing T&D resources while avoiding or delaying future investment and offsetting our dependence on expensive natural gas generation from the regional market.

**II. Responsive Comments**

**A. Questions for all Stakeholders**

**1) When considering flexible interconnections pursuant to the Act, should the Commission expand its inquiry and consider both flexible interconnections and flexible service connections as defined by the DOE? If stakeholder do not approve of the DOE definition, please recommend an alternative definition of flexible interconnection.**

For the purposes of this inquiry, flexible interconnection should be considered broad enough to include both of the DOE definitions, i.e., both load and generators which, as interconnecting customers, may have meaningful opportunities to reduce costs through flexible interconnection terms.

We further recommend the Commission take a pragmatic approach with respect to the scope of this inquiry, focusing on specific use-cases with immediate relevance in Maine.

- 1) One such use-case is battery energy storage; the Commission should use the opportunity of this docket to obtain information from utilities on current practices for studying system impacts of proposed battery storage projects.
- 2) Another and overlapping objective is the need to develop a regulatory framework to accompany the Flexible Interconnection and Resilience for Maine (FIRM) program to ensure that the \$65 million in federal investment, matched by ratepayer funds, achieves the intended results.

Firstly, with respect to the opportunity for battery energy storage in Maine, according to 2025 data from the Lawrence Berkeley National Lab, Maine's interconnection backlog is among the largest in the region, with 128 projects seeking to connect to the grid, of which 20 are battery or battery-solar/hydro combination projects.<sup>3</sup> Battery energy storage can be built and connected quickly, prices have declined rapidly, 40% per year since 2022,<sup>4</sup> and it can provide multiple operational functions to enhance reliability, stability, flexibility, and affordability for Maine ratepayers.

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<sup>3</sup> These 128 active and operational projects are mostly comprised of wind, solar, solar + storage, hydro and hydro + storage, representing in excess of 7.3 GW of new clean generation capacity. See LBNL, Queued Up 2025 Data File XLXS at <https://emp.lbl.gov/queues>.

<sup>4</sup> <https://www.reuters.com/markets/commodities/us-power-sector-battery-storage-momentum-keeps-charging-2025-06-24/>

NRCM enumerated reasons to prioritize battery energy storage in a November 17, 2025 filing in response to the Commission’s inquiry on forthcoming Chapter 324 amendments in Docket No. 2025-00303: “Battery storage remains eligible for the federal production tax credit and the investment tax credit until 2033. Bipartisan legislation has established goals for energy storage in Maine, requiring 300 MW by 2025 and 400 MW by 2030.<sup>5</sup> An inquiry into the energy storage procurement design proposed by the then Governor’s Energy Office (now Department of Energy Resources) pursuant to 2023 legislation<sup>6</sup> remains open in Docket No. 2025-00148.<sup>7</sup> Furthermore, the storage market will also be driven by recently adopted rate design for commercial and industrial customers, as well as storage applications in non-wires alternative (NWA) solutions to save ratepayers money through avoided transmission and distribution (T&D) investments and to reduce supply and transmission costs by storing excess solar and wind energy. Maine’s Office of the Public Advocate (OPA) attested to this latter point in its July 2025 newsletter after wholesale energy price spiked to bring on expensive fossil-fuel peaker units during a summer heatwave: ‘The key will be installing energy storage that can soak up that extra renewable energy that we were producing at midday...at very low cost, and shift it forward in time to when we needed it [in the] evening.’<sup>8</sup>”

Current utility practices for analyzing the impacts of battery projects seeking interconnection are opaque. To reduce barriers and improve transparency, the Commission should use the opportunity of this docket to obtain information from utilities on current study practices, with an eye to establishing streamlined interconnection options that can make use of

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<sup>5</sup> [An Act To Advance Energy Storage in Maine, Public Law 2021 Chapter 298,v](#) (L.D. 528).

<sup>6</sup> <https://www.maine.gov/energy/studies-reports-working-groups/current-studies-working-groups/storage-procurement-study-1850>

<sup>7</sup> <https://mpuc-cms.maine.gov/CQM.Public.WebUI/Common/CaseMaster.aspx?CaseNumber=2025-00148>

<sup>8</sup> Maine Office of the Public Advocate, July 2025 highlights at <https://mailchi.mp/e6a57bbe8965/office-of-the-public-advocate-july-highlights-17234953>

the dynamic import-export flexibility inherent to battery storage. While the New England Independent System Operator’s process for studying interconnection resources has its own discrete challenges, that should not dissuade Maine from demonstrating leadership on best practices within its own jurisdiction.

Secondly, with respect to the FIRM grant, this set of technology investments in the systems of Versant and Central Maine Power (CMP) launched in 2024 are designed to “expand grid capacity and allow for more flexible management of clean energy resources.”<sup>9</sup> According to announcements, these investments include Distribution Energy Resource Management System (DERMS) to monitor and control DERs, Dynamic Line Rating (DRL) technology, as well as Active Network Management (ANM) platforms for both utilities.<sup>10</sup>

Active Network Management (ANM) is a technology platform that consists of a head-end system and grid-edge devices. The platform monitors real-time conditions in targeted areas of the system where a resource is seeking interconnection. A grid-edge device is installed at a resource’s point of interconnection and can control the resource’s power output to and/or import from the utility’s central operations. The grid-edge device performs a curtailment function, reducing output or import during targeted periods of the year under certain local load conditions or if specific contingencies occur on CMP’s system.

Without regulatory options available to interconnecting customers to ensure that they can access these technologies, these important investment may not live up to their promise of enabling new intermittent clean generation sources (like wind and solar), new loads resulting

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<sup>9</sup> <https://www.maine.gov/energy/press-releases-firm-grant-announcement-oct-2024>.

<sup>10</sup> Synapse, Costs and Benefits of Grid-Enhancing Technologies in Maine, Prepared for the Maine Public Utilities Commission, August 2025, p. 52 at [https://www.maine.gov/mpuc/sites/maine.gov/mpuc/files/inline-files/2025.08.26\\_MPUC\\_GETs\\_Assessment\\_final.pdf](https://www.maine.gov/mpuc/sites/maine.gov/mpuc/files/inline-files/2025.08.26_MPUC_GETs_Assessment_final.pdf).

from beneficial electrification (like EV charging), and new targeted load control resources (like energy storage), to interconnect to Maine’s T&D system more quickly and cost-effectively.

**4) Please share any information about successful flexible interconnection programs that have been adopted in other states.**

Numerous states and utilities across the country are exploring how to interconnect new loads and generators more quickly and cost-effectively through flexible interconnection, California, Texas, New York, Illinois, Oregon among them.

- Pacific Gas & Electric (PG&E) offers a Flex Connect program to allow customers with flexible loads, like EV chargers and batteries, to connect sooner and with reduced capacity upgrades in exchange for dynamic curtailment of load through a DERMS platform.<sup>11</sup>
- Avangrid has experience offering flexible hosting capacity on operating systems in its utilities in New York (NYSEG/RGE)<sup>12</sup> and Avangrid’s sister company in the UK (Scottish Power).
- Oregon General Electric is using flexible interconnections to accelerate connections for data center loads.<sup>13</sup>

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<sup>11</sup> [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/rule21/smart-inverter-working-group/pge\\_opflex\\_report\\_2025.pdf](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/rule21/smart-inverter-working-group/pge_opflex_report_2025.pdf); <https://www.pge.com/assets/pge/docs/clean-energy/electric-vehicles/flexible-service-connection-pilot-overview.pdf>

<sup>12</sup> <https://www.youtube.com/watch?v=XDTMQoknaNU>

<sup>13</sup> <https://www.publicpower.org/periodical/article/oregon-utility-gridcare-complete-project-accelerate-large-load-interconnections-using-flexibility>

- ComEd offers flexible interconnection to renewable generators to help them avoid infrastructure upgrades by using its DERMS platform to balance intermittent output against real-time system constraints.<sup>14</sup>

Thank you for this opportunity to provide comment. We look forward to working with the Commission and stakeholders on this issue.

Respectfully submitted,



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<sup>14</sup> <https://www.renewableenergyworld.com/power-grid/smart-grids/comeds-derms-is-working-really-really-well/>

November 20, 2025

MAINE PUBLIC UTILITIES COMMISSION  
Inquiry into Flexible Interconnection

VERSANT POWER  
RESPONSE TO  
NOTICE OF INQUIRY

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## **INTRODUCTION**

On October 20, 2025, the Maine Public Utilities Commission (“Commission”) issued a Notice of Inquiry (“NOI”) in response to L.D. 1726, Public Law 2025, ch. 293 (the “Act”), which directs the Commission to “explore and evaluate” the potential to adopt “emerging flexible interconnection options.”

Versant Power (“Versant” or the “Company”) believes that adopting flexible interconnection regulations—implemented pragmatically and driven by utility engineering expertise—can meaningfully advance state goals related to clean energy. A phased, utility-led approach, beginning with operational flexibility and progressing toward dynamic control, offers the best balance of near-term feasibility, reliability assurance, and long-term cost efficiency for Maine’s customers and clean-energy transition.

Versant appreciates the opportunity to comment and provides its responses to Sections A and B of the NOI below.

## **COMMENTS**

### **A. Questions for all Stakeholders**

- 1) When considering flexible interconnections pursuant to the Act, should the Commission expand its inquiry and consider both flexible interconnections and flexible service connections as defined by the DOE? If stakeholders do not approve of the DOE definition, please recommend an alternative definition of flexible interconnection.**

Versant supports expanding the Commission’s inquiry to include both flexible interconnections and flexible service connections while explicitly allowing Maine’s utilities to exercise their engineering judgment and operational discretion in determining which approaches can be safely and feasibly implemented on their systems. Utilities are in the best position to understand real-time system conditions, technical limitations, and customer impacts, and thus should retain authority to determine the most appropriate form and pace of flexibility deployment.

A phased, utility-led approach—grounded in proven methods “today” and evolving toward dynamic, Distributed Energy Resource Management System (“DERMS”)-enabled coordination “tomorrow”—will ensure that Maine achieves its clean-energy objectives responsibly, reliably, and at the lowest reasonable cost to customers.

### Recognizing the Range of “Flexibility”

“Flexible interconnection” is a broad concept that can describe many different practices, from simple operational adjustments to sophisticated real-time, data-driven coordination. At its core, flexibility allows a utility to manage the amount, timing, or characteristics of power flow at the point of interconnection to maintain safety and reliability without unnecessary upgrades.

This can include, for example:

- Static or scheduled export limits;
- Volt/VAR or power-factor settings;
- Temporary operational constraints during commissioning;
- Voltage and VAR optimization (“VVO”) or conservation-voltage-reduction (“CVR”) strategies; and
- Longer-term dynamic export management enabled through Advanced Distribution Management System (“ADMS”) or DERMS.

Each of these tools represents a different form of flexibility, appropriate to different stages of technological maturity and system capability.

### Current Practices Already in Place at Versant Power

Versant has already been applying several forms of flexibility to maximize hosting capacity while protecting reliability, including:

- **Volt/VAR optimization and fixed power-factor operation** on distribution feeders to support voltage stability;
- **Feeder-level VVO studies** to evaluate hosting potential and optimize capacitor and regulator settings; and
- **Allowing temporary reduced site output** during commissioning or while waiting for long-lead equipment such as reclosers or communication components.

These practices reflect Phase 1-type flexibility—incremental, operationally controlled measures that deliver real system benefits today using existing infrastructure.

## Evolution Toward Dynamic Flexibility

Versant recognizes that the longer-term, more “mainstream” view of flexible interconnection involves dynamic operating envelopes communicated in near real time through advanced platforms such as ADMS and DERMS. The Company is actively developing these capabilities as part of its grid-modernization initiatives. However, full functionality will take time to implement, integrate, and test to ensure cybersecurity, interoperability, and operational readiness.

Therefore, Versant supports a phased approach, progressing from the static and operational tools already in use toward dynamic flexibility as systems mature—mirroring the staged model used in Ameren Illinois’s Flexible Interconnection Report, which defined:

- **Phase 1:** near-term, low-complexity measures relying on existing utility processes; and
- **Phase 2:** future, data-driven dynamic export controls enabled by new platforms.<sup>1</sup>

This phased pathway aligns closely with Versant’s current trajectory and practical experience.

## Proposed Maine-Specific Definition

To reflect this pragmatic, utility-driven perspective, Versant proposes the following definition for consideration:

### Flexible Interconnection (Proposed Definition)

A controllable, utility-approved interconnection arrangement that allows for operational or technical adjustments—whether static, scheduled, or dynamic—to a distributed energy resource’s export capability or a customer’s import level, as determined through engineering analysis and/or judgment to maintain a safe, reliable, and cost-effective grid. The specific methods, communication standards, and control mechanisms shall be defined and implemented by the interconnecting utility consistent with engineering standards and best practices.

This definition intentionally provides flexibility in application, allowing each utility to adopt solutions suited to its system design, technology readiness, and resource mix.

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<sup>1</sup> Ameren Illinois Flexible Interconnection and DER Orchestration Report, Phase 1, Ameren Illinois, at 4-6 (Sept. 2025), <https://www.ameren.com/-/media/files/account/service-options/renewables/illinois/resources/flexible-interconnection-orchestration-report-phase-1.ashx>.

## 2) How would adopting flexible interconnection regulations achieve the following goals of the Act:

As an overall comment to these questions, Versant points out a fundamental challenge with the theory behind flexible interconnection processes in Maine: the higher the penetration of distributed energy resources (“DER”), the more likely that detailed evaluations of such projects are necessary. These in-depth interconnection evaluations, clearly required, lessen the possibility that the goals of flexible interconnections may be met in very high penetration areas such as Versant’s.

While IREC does not specify what percentage is defined as “high penetration”, Freeing the Grid (a joint initiative between IREC and Vote Solar) finds that best practices include “[a] penetration screen that allows expedited interconnection up to at least [90%] of minimum load.”<sup>2</sup> Versant’s overall DER penetration is much higher than 90% of minimum load—in fact, the average penetration is approximately 105% of the 2024 *peak load*, with some circuits in excess of 300% of peak. Using the industry standard estimate of minimum load being 30% of peak load would place the penetration at approximately 1000% of minimum load on those circuits—more than 11 times the 90% of minimum load Freeing the Grid uses when discussing “high penetration” levels. Using the 105% system penetration average works out to a penetration of 350% of minimum load, or nearly four times the 90% figure.

In its BTRIES toolkit, IREC states, “With *higher DER penetrations*, aggregate fault current, and its impact on protection systems coordination, is *likely to become a more common limiting factor*. This may not result in mitigation or system upgrade requirements but as penetration increases, more projects will likely fail the fault current screens and *require further evaluation* in Supplemental Review or Study.”<sup>3</sup> Additionally, “these unintentional injections of current onto the distribution system potentially pose power quality risks as a greater number of areas approach higher DER penetrations.”<sup>4</sup> Given Freeing the Grid, IREC, and Vote Solar’s establishment of “high penetration,” and that Versant clearly meets and greatly exceeds such standards, it is clear based on the IREC statements above that additional evaluation is required for a clear majority of Versant’s system. The IREC statements represent additional evidence that flexible interconnection regulations will provide less benefit to Maine.

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<sup>2</sup> *Interconnection Grade Criteria*, Freeing the Grid, <https://freeingthegrid.org/criteria/> (last visited Nov. 19, 2025).

<sup>3</sup> *Toolkit & Guidance for the Interconnection of Energy Storage & Solar-Plus-Storage, Chapter IV: Evaluation of Non-Export and Limited-Export Systems During the Screening or Study Process*, Building A Technically Reliable Interconnection Evolution for Storage, at 66 (Mar. 2022), <https://energystorageinterconnection.org/wp-content/uploads/2022/03/BTRIES-TOOLKIT-Chapter-IV.pdf> (emphasis added).

<sup>4</sup> *Toolkit & Guidance for the Interconnection of Energy Storage & Solar-Plus-Storage, Chapter V: Defining How To Address Inadvertent Export*, Building A Technically Reliable Interconnection Evolution for Storage, at 77 (Mar. 2022), <https://energystorageinterconnection.org/wp-content/uploads/2022/03/BTRIES-TOOLKIT-Chapter-V.pdf>.

Versant supports the exploration of flexible interconnection as a potential pathway to more efficient use of Maine’s distribution system, provided utilities retain engineering judgment and operational discretion to implement solutions suited to their systems. The practical impact of flexible interconnection depends greatly on how it is applied—ranging from basic operational measures already in use today, to future dynamic control-enabled means through grid-modernization investments such as ADMS and DERMS.

#### **a. Distribution system use of DERs**

Flexible interconnection allows utilities to use existing distribution infrastructure more effectively by enabling DERs to operate up to the limits of what the grid can safely accommodate at any given time.

Currently, Versant employs several strategies that already advance this goal, including:

- **Volt/VAR control** and **fixed power-factor operation** to regulate voltage and absorb reactive power;
- **VVO studies** to identify feeder headroom and optimize regulator and capacitor settings; and
- **Temporary operational limits** on new DER sites during commissioning or while waiting for long-lead components, allowing partial operation without full upgrades.

Formalizing these practices within a flexible interconnection framework would allow a broader, standardized use of operational flexibility while maintaining safety and transparency. Over time, as ADMS and DERMS platforms mature, utilities could further enable dynamic operating envelopes that adjust DER output to real-time conditions, increasing the distribution system’s effective use of DERs. However, we caution that Versant’s very high DER penetration means flexible interconnection rules will provide fewer benefits because in-depth evaluations, as stated by IREC, will be necessary.

#### **b. Increased grid capacity**

Flexible interconnection regulations may or may not materially increase grid capacity in Maine.

Flexible interconnection supports capacity growth by making better use of existing assets rather than relying solely on new construction. By allowing temporary or conditional interconnections—such as reduced export limits during peak loading—utilities can safely interconnect more DER projects while deferring or resizing upgrades.

This aligns closely with the Phase 1 approach used by Ameren Illinois in its flexible-interconnection framework: using conservative, utility-managed flexibility with existing tools to unlock capacity immediately, while building toward a Phase 2 dynamic model enabled by systemwide telemetry and analytics. Versant’s current practices and roadmap follow this

same philosophy—gradual, data-informed evolution based on field experience and technology readiness.

### **c. Decreased grid instability**

As a general rule, Inverter based resources DERs are *increasing* grid instability, not reducing it. New tools must be employed by utilities to overcome this challenge, to improve reliability in the face of these non-synchronous generation resources and increasing system complexity.

Flexible interconnection, when implemented through controlled and verifiable means, can enhance stability by preventing overloads, voltage excursions, and reverse-power conditions. Utilities can tailor flexibility mechanisms—such as power-factor control, ramp-rate limits, and curtailment windows—to specific feeders and system conditions.

Importantly, these measures are most effective when designed and operated by the utility engineering teams that maintain direct visibility into system behavior. This ensures that flexibility supports, rather than complicates, system reliability and safety. As ADMS and DERMS integration advances, near-real-time visibility will further improve the ability to maintain stability across higher DER penetrations.

### **d. Reduced costs of achieving clean energy goals**

Costs are a function of the complexity of the grid; with an ever-increasing grid complexity in Maine, already complex due to its very high penetration, it is uncertain flexible interconnection regulations will decrease costs.

Flexible interconnection can reduce total system costs by deferring infrastructure upgrades, reducing restudy cycles, and optimizing asset utilization. However, the degree of cost savings depends on penetration, implementation methods and technological maturity.

In the near term, the operational forms of flexibility already in use by Versant—such as voltage control and temporary output limits—provide cost-effective means to interconnect more DERs without major capital outlays. In the longer term, dynamic flexibility enabled by DERMS will allow the grid to absorb higher DER and electrification levels without proportional infrastructure expansion.

Critically, allowing utilities to apply engineering judgment ensures that these cost benefits do not come at the expense of reliability or safety, maintaining the overall affordability and integrity of Maine’s power system.

## **3) How would information flow between utilities and developers need to change to achieve the following goals of the Act:**

### **a. Distribution system use of DERs;**

- b. Increased grid capacity;**
- c. Decreased grid instability; and**
- d. Reduced costs of achieving clean energy goals?**

This answer<sup>5</sup> assumes applying the same solution (dynamic asset management) whether the question is focused on the utility utilizing DER to resolve grid issues (e.g., creating incremental load hosting capacity) or whether the utility is utilizing DER capability to resolve DER created grid issues, namely congestion (e.g., via DER curtailment). Technologically advanced solutions are required to extract additional capacity from an already highly congested grid beyond what Versant has been able to accomplish with Phase 1 solutions.

From a systemic operational perspective, realistic progress toward reaching all four of the above stated goals might be obtained by implementing dynamic management of DERs and utility resources via a robust communication network. The network would require communication infrastructure enabling real-time data transfer between the utility and: (1) directly with larger DER facilities; and (2) indirectly with smaller DER facilities via third party aggregators. Real time dynamic management relies on active monitoring and direct control of DERs in real-time or near real-time using centralized control systems such as DERMS, and compliance frameworks to ensure the DERs abide by the operating envelopes or control commands. This approach generally utilizes direct communication between the utility operational systems and the DER(s) within the scheme.

For smaller DERs (e.g., rooftop solar, home batteries, EV chargers), a more scalable approach is to interface through aggregator platforms or manufacturer cloud APIs by, for instance, sending controls via an inverter manufacturer's cloud using standard protocols such as IEEE 2030.5. This cloud-/aggregator-mediated control avoids the cost of field gateways at every small DER site while still enabling near real-time coordination. Interoperability and communication standards are critical in this scheme as well. Utilities and vendors are looking to standards like IEEE 2030.5 (the Common Smart Inverter Profile, originally adopted in California as well as Australia) or Open ADR to ensure different DER and load makes/models can receive controls securely and consistently. Using standardized data structures and protocols will allow signals through aggregators or directly to devices without middleware integrations, improving scalability.

Since the entire process is heavily dependent on communications, fallback options (such as predetermined maximum safe export levels) in case of a communication failure, will be required. As a result, communications uptime can significantly impact the operational capabilities of the resources, as communications failures will restrict import/export capabilities.

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<sup>5</sup> Versant's response encompasses subparts (a) through (d) above.

From an interconnection process perspective, ‘information flow’ takes on a different meaning. The preceding description of a dynamic distribution system makes an overarching assumption that control and curtailment of DER projects by the utility are economically viable for DER owners. And for sake of discussion as noted above, we also have to temporarily ignore the significant level of utility-scale DERs already interconnected and operating at their nameplate export values utilizing Volt/VAR to maximize, to the fullest extent, existing feeder capacity. For DER developers and installers, dynamic management fundamentally reshapes how projects are designed, evaluated, and financially modeled. If developers are responsible for evaluating curtailment to secure financing, it may present a significant barrier to utilization. Conversely, if the utility is providing assurance regarding the degree of curtailment, it may expose existing utility customers to additional costs or provide insufficient justification for applicants to secure financing. Navigating the roles and responsibilities for curtailment estimation is an essential element of the successful rollout of dynamically managed connections for DER. Obviously these are fundamental issues to be resolved and would impact the flow of information required early in the interconnection application phase of a prospective DER project.

Equitable dispatch of existing vs. new generation is another more complicated issue since, as alluded to previously, it is assumed existing interconnected generation will not be curtailment participants if they are already legally authorized to export at full nameplate rating for the full term of their interconnection agreement.

Given the complexity of the engineering analysis and economic evaluations that must be considered to determine if a prospective DER project is viable, these being steps occurring prior to application and during study phase, the current process may require more interactivity via information flow between the utility and developer in order to confidently determine whether a project, as presented, is actually viable. This may drive a change in study process that would be more analogous to a multi-phase feasibility study approach vs. the current system impact study rigid process. Conversely, if the impact study indicates some minimal level of export capacity is available at projected intervals, the developer would then have to determine viability or re-apply with a different project scope.

Dynamic management of the grid should lead to higher utilization of existing grid capacity in the form of higher DER export when—and where—possible thereby meeting 3.a above, however grid capacity, vs. utilization, can only be increased through capital investment in power transformer capacity, feeder reconductoring and other substantial equipment upgrades if goal 3.b is to be met. This should also directly help obtain goals as stated above for 3.c and 3.d.

**4) Please share any information about successful flexible interconnection programs that have been adopted in other states.**

The Company can identify no other comparable state programs at Versant’s penetration of DERs.

However, the DOE paper listed various pilot programs at National Grid, Avangrid, and Commonwealth Edison. Other utilities actively exploring or implementing programs include Pacific Gas & Electric, Southern California Edison, Xcel Energy, and the Southwest Power Pool.

Implementation of dynamically managed connections has primarily been through pilot projects utilizing DERMS to monitor system constraints and modify DER output as needed to prevent the occurrence of reliability problems or negative utility customer impacts.

Ameren Illinois, as noted earlier, is entering Phase 1 of its program now and will be expanding or beginning to offer various non-utility-controlled options to help facilitate DER hosting capacity. Ameren Illinois's Phase 2 plan will include dynamically managed DER operating limits based on real-time grid conditions or forecasted operating limits.

We look forward to learning significantly more details about these and other pilot and permanent programs through DOE, other utilities and participating organizations (e.g., Electric Power Research Institute, National Renewable Energy Laboratory, etc.) as technology advances, industry standards are created, and implementation methods evolve toward best practices.

## **B. Questions for Utilities**

### **1) Are there technological barriers preventing the adoption and implementation of flexible interconnection of DERs in Maine?**

Yes, Maine's very high interconnection percentage: see Section A.2, above.

It is also very early in the evolution of the power industry's technological advancements that will foster dynamically managed DER grid integration. The more easily implemented passive and autonomous flexible interconnection methods are already being applied that leverage inverter advanced capabilities and that can be functionally demonstrated with some confidence via computer simulations and available system data.

### **2) What are the estimated costs to overcome such barriers?**

ADMS and DERMS systems are necessary to implement the curtailment processes inherent to flexible connections processes. Storage systems with integrated controls systems (supervisory control from the ADMS/DERMS) will allow additional hosting capacity. These are expensive, but necessary solutions to implement flexible interconnection regulations in high DER penetration environments.

**3) Are there regulatory barriers preventing the adoption and implementation of flexible interconnection of DERs in Maine?**

Yes, in addition to the technical barriers already discussed, regulations surrounding ownership of Battery Energy Storage Systems.

These issues may also need to be addressed:

- Potential changes to the interconnection application process;
- Potential changes to Interconnection Customer Generator Facility (“ICGF”) screening;
- Potential changes to the study process;
- Potential cost impacts of more robust ICGF project screening, Additional Reviews, system impact studies, and operational studies;
- Equitable treatment of grandfathered DER as it relates to their authorized export capacity; and
- Potential impact to other DER already operating with Volt/VAR controls.

**4) Are there reliability or safety risks associated with the adoption and implementation of flexible interconnection of DERs? If so, what are these risks, and how may they be addressed?**

Yes, implementation of flexible interconnections (specifically allowing additional DERs without the further evaluations IREC suggests are necessary at high penetrations) will decrease system reliability. Evaluations of the potential adverse impacts of the proposed DER to the Electric Power System (“EPS”) and adjacent customers must be conducted, and mitigating solutions must be developed if necessary.

In particular, DER performance will need to match its stated specifications and remain within utility-specified operating limits. Controls will need to be certified, tested, maintained, and updated. Changes to any DER equipment must be reported to the utility. DER facilities will need to be monitored for compliance. DER owners and operators will need to demonstrate a commitment to operational safety. Experience with DER operators to date has shown major shortcomings in these critical areas of safety and competence.

While extracting all remaining hosting capacity from the grid through higher asset utilization is an important goal, we will also continue to promote and implement proper engineering margins to ensure that an appropriate risk balance is achieved and maintained for operational performance, safety, resilience, stability, and reliability. Those vital goals should be equally held among all who participate in the various facets of grid planning.

**5) Are there circumstances when DERs are approved to permanently interconnect at a capacity lower than the capacity in their original**

**interconnection agreement? If so, what process is required to approve this reduced capacity? Is the reduced capacity reflected in an updated interconnection agreement?**

Versant has not yet permanently interconnected projects at lower capacity than listed in the Interconnection Agreement (“IA”). A scenario necessitating such a “write-down” of the IA capacity may be where system voltage is higher than planned as a result of permanent load reduction or for some other permanent reason. Versant’s view is that a reduced capacity would have to be agreed upon in the IA.

**6) Are there circumstances when DERs are approved to temporarily interconnect at a lower capacity than the capacity in their original interconnection agreement? If so, what is process is required to approve operation at this reduced capacity? Is the reduced capacity reflected in an updated interconnection agreement? What process is required to permit a DER to increase its capacity if the project is temporarily operating at a reduced capacity?**

Versant has allowed projects to interconnect at a lower capacity than the project was built for; however, this lower capacity was generally temporary in nature and reflected in the IA. Usually this was due to a delay in necessary equipment to allow operation at the full output. The IA was modified to the full capacity upon completion of the necessary upgrades and the project was then allowed to operate at the full output.

**7) Are there types of flexible interconnection that would benefit from a Distributed Energy Resource Management System (DERMS)? Is DERMS required to implement any types of flexible interconnection?**

DERMS systems are necessary to develop a dynamic dispatch system that can provide output setpoints for projects to operate at safe curtailment levels. However, there are no definitive standards DERMS suppliers use when developing such systems—such standards would be useful to utilities researching and executing DERMS.

**8) Please explain how, if at all, the export control methods described in Section 8 of Chapter 324 of the Commission’s Rules can be used to enable flexible interconnections.**

The export control methods provide limited assistance in flexible interconnection enablement: they do not allow for dynamic dispatch instructions to be calculated and sent (a utility function), then received and acted upon (a generator function). DERMS are necessary to make dynamic calculations along with communications system on the utility side; the generator must have equipment to accept those instructions and act (not equipment considered by most small generators).

## **CONCLUSION**

Versant thanks the Commission for this opportunity to provide comments on flexible interconnections. As described above, Versant is already using the advanced functions of smart inverters to implement strategies that achieve some of the flexible interconnection's goals (e.g., Volt-VAR, VVO, and temporary output levels). We look forward to working with the Commission to educate stakeholders on the EPS and flexible interconnection technology as well as the potential benefits and challenges associated with it.

Sincerely,

/s/ Arielle Silver Karsh

Arielle Silver Karsh

VP, Legal & Regulatory Affairs

Versant Power



Amy Dumeny  
Administrative Director  
18 State House Station  
Augusta, ME 04333-0018

November 20, 2025

**Re: Comments in Response to “Inquiry into Flexible Interconnection”, Docket No. 2025-00312**

Dear Ms. Dumeny:

On behalf of the Maine Renewable Energy Association (MREA) thank you for the opportunity to provide comments in response to the Maine Public Utilities Commission’s (Commission) October 20, 2025 Notice of Inquiry (NOI) into flexible interconnection of distributed energy resources (DERs), pursuant to Public Law 2025, ch. 293. MREA is an association of renewable energy developers and generators, suppliers of goods and services to those developers and generators, and other supporters of the industry. MREA’s membership includes developers, generators, owners, and operators of DERs, including distributed generation-scale solar, hydropower, and battery energy storage system (BESS) facilities.

Interconnection agreements that allow DERs to adjust import and export based on system constraints is essential to increasing DER penetration and the technologies’ attendant benefits, including reduced interconnection costs and necessary grid upgrades. Interconnection procedures that allow DERs to be based on contractually defined operating schedules rather than “worst case” scenarios are elemental to realizing those benefits. Indeed, MREA members view specified curtailment as a reasonable trade-off for reduced interconnection costs, so long as the operating schedule is clearly defined and any curtailment beyond the schedule is compensated for.

MREA members have received National Grid and Avangrid, Inc.’s recent efforts to advance flexible interconnection pilot expansions in New York and to work toward an “Upstate Flex IX Framework” favorably. Industry recommendations include (but are not limited to):

- Alignment with traditional interconnection processes for the sake of simplicity and standardization, including first-come-first-serve capacity allocation;
- Deploying flexible interconnection as a default option for certain classes of systems (e.g., 1 - 5 MW) with an option to instead pursue traditional upgrade-based interconnection at key milestones (i.e., down payment date);

[www.renewablemaine.org](http://www.renewablemaine.org)

- A financable, predictable and reliable framework with transparent curtailment studies, clearly defined curtailment rules, and guardrails to prevent excessive curtailment; and
- A program that is technology-agnostic and distributed, with robust standards for safety, reliability, and interoperability that enable multiple technologies to be deployed.

MREA recommends that the Commission look to work in New York as a jumping off point for work in Maine.

As an initial matter, consistent with comments submitted in response to the Commission's recent NOI regarding their Chapter 324 "Small Generator Interconnection Procedures" rules, MREA strongly recommends that the Commission incorporate amendments that would allow for the use of "Active Network Management" technologies (which enable flexible interconnection) as part of any forthcoming Chapter 324 rulemaking.<sup>1</sup> Though MREA sees great value in the Commission's forthcoming report to the Joint Standing Committee on Energy, Utilities and Technology and other Commission activity stemming from Public Law 2025, ch. 293, amending Chapter 324 *now* presents attractive efficiencies.

Specifically, the U.S. Department of Energy has awarded Central Maine Power Company (CMP) \$31.8 million in federal funding to "deploy innovative technologies to create a more modern and dynamic power grid to support the deployment of renewable energy in Maine."<sup>2</sup> The U.S. Department of Energy awarded the grant through their Grid Resilience and Innovation Partnerships (GRIP) program. It is driven at the state-level by the Flexible Interconnections and Resilience for Maine (FIRM) project led by the Maine Department of Energy Resources (DOER). Per Avangrid, Inc., the funding will be used to deploy "Active Network Management", which enables flexible interconnection, among other technologies.<sup>3</sup> Use of this technology would require a Chapter 324 waiver. Amending Chapter 324 *now* will enable CMP to utilize their grant funding upon receipt. Furthermore, amending Chapter 324 *now* will align with DOER's development of a distributed generation program, which they must design and submit to the Commission by September 30, 2026.<sup>4</sup>

Thank you for your consideration of our comments.

Sincerely,



Eliza Donoghue  
Executive Director

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<sup>1</sup> See "MREA Comments", submitted on November 17, 2025 in Docket No. 2025-000303.

<sup>2</sup> See [Avangrid Subsidiary Awarded \\$31.8M Federal Grant to Deploy Cutting Edge Grid Technology - Avangrid](#).

<sup>3</sup> *Id.*

<sup>4</sup> See P.L. 2025, Chapter 430, Section 14.



November 20, 2025

Amy Dumeny

Administrative Director

18 State House Station

Augusta, ME 04333-0018

**RE: Docket No. 2025-00312 Comments on Notice of Inquiry Regarding Flexible Interconnection**

Nexamp appreciates the opportunity to submit these comments in response to the Commission's *Notice of Inquiry into Flexible Interconnection*.

Nexamp is one of the nation's leading owners and operators of community solar and distributed energy resources. Nexamp develops, finances, owns, and operates community solar projects that deliver guaranteed savings to thousands of Maine households, small businesses, and municipalities.

Nexamp has experience with executing dynamic flexible interconnection pilot projects in other states. Our comments come from those experiences in other states and our thoughts on key considerations for adoption. Please see our answers to the questions outline in the NOI below:

**Defining Flexible Interconnection**

Nexamp supports the DOE definition of flexible interconnection (dynamic operations). The use of dynamic, real-time controls unlock large amounts of potential for utilities to operate a safe, reliable, and equitable grid in the long-term. The first key challenge for the state of Maine and utilities will be to execute a plan to fund and securely deploy a Distributed Energy Resource Management System (DERMS) platform.

In parallel to driving dynamic flexible interconnection adoption, other states have turned to additional solutions to support more near-term grid solutions. For instance, the state of Massachusetts is currently holding workshops (IIRG-policy & TSRG-technical) to align and "open up" the definition to the following:

**DRAFT MA Flexible Interconnection Definition (11/3/25):**

*Flexible interconnection is the ability to leverage several different DER control approaches to more quickly and/or cost-effectively connect some or all the desired DER capacity that would otherwise not be able to connect under a traditional firm interconnection provided these connections remain with the physical and operational limits of the distribution system. Flexible interconnection would be applicable to a broad set of DERs (i.e. solar, solar + storage and standalone storage) and includes DER control approaches that range from static controls to time-based dynamic controls to adjust generation output based on pre-determined schedules or real time conditions.*

### *Objectives:*

*Flexible interconnection can achieve several objectives depending on the specific approach and use case:*

- *Reducing timeframes to connect some or all of capacity*
- *Avoid significant distribution system upgrades*
- *Maximizing DER penetration*
- *Maximize utilization of existing infrastructure and/or future upgrades*

**Recommendation:** Nexamp recommends progression with the DOE definition of flexible interconnection (dynamic controls). If the state would like to “open up” the definition, similar to MA, and pursue more solutions in parallel, Nexamp recommends establishing working group(s) to discuss all near, mid, and long-term solutions (scheduled capacity, temporary derate, advanced inverter functions, etc.).

### **Achieving Flexible Interconnection Goals**

The adoption of flexible interconnection will enable greater deployment of distributed clean energy on the distribution grid in Maine. For instance, a common high upgrade cost scenario that has caused Nexamp to discontinue projects is triggering a substation transformer bank upgrade. This upgrade is typically triggered by reverse-power thermal overload limits being reached. When evaluating “how much” and “when” the thermal overloads are occurring, utilities will study the worst-case scenarios - which are the times of peak generation and minimum daytime load. Therefore, even a marginal thermal overload event for one specific hour of a calendar year (8760 hours) would trigger the need for a substation transformer upgrade. If the state and utilities can deploy dynamic flexible interconnections, the project would monitor, read, react and “curtail” (turn down output) during the one hour of the calendar year to prevent a thermal overload condition from happening.

In the state of Illinois, ComEd has forecasted that dynamic flexible interconnection has the potential to unlock a significant amount of additional capacity—up to ~250 MW AC over the next 4 years.

### **Information Flow**

Nexamp currently has (1) Illinois project and (2) New York projects utilizing dynamic flexible interconnection solutions. One project in New York is with NYSEG-RG&E, which shares the same parent company as CMP, Avangrid. Details around our pilot project partnerships with NYSEG-RG&E can be found under NY DPS Case #14-M-0101, where a quarterly demo report is filed. Additionally, NYSEG-RG&E has provided more information to the industry at multiple speaking venues – conferences, panels, workshops, and would likely be open to connecting with CMP parties, or the larger state of Maine stakeholders.

The state of New York plans to file flexible interconnection “phase 2 expansion” program plans by the end of year 2025, following multiple workshops over the last year. As part of plans, the draft plans detail information and process flow changes, including: curtailment estimation studies, communications network reliability, interconnection agreement language, curtailment cost allocations (LIFO, Pro-rata, hybrid), determination and release structure of “eligible” substations.

### **Other States & Utilities**

A few of the states and utilities with successful deployments are mentioned in the above responses. Please see the overview included as an attachment to these comments.

### **Interest in Flexible Interconnection Pilots**

Nexamp has expressed interest in a pilot to CMP on past projects, but CMP has advised that they are unable to do so under current Chapter 324 rules.

### **Lower Capacity Connection**

Nexamp views this as a viable option. It will require collaboration with utilities to provide the appropriate, permissible temporary derated (lesser) capacity value, along with commitment and transparency to keep the larger network upgrades on schedule.

### **Additional Information**

The Commission should be aware that, in Nexamp’s experience, CMP has attempted to add language to current interconnection agreements that contemplate an “active network management” system, which is yet to be developed. We understand this to be equivalent to DERMS. That language would require interconnecting customers to bear the costs of such a system, should CMP choose to develop it. In our view, the deployment of DERMS or similar control methodology and the associated cost recovery should be determined through a PUC proceeding, such as this NOI seems to initiate, rather than bilateral terms that impose on other parties an unbound cost liability for a yet to be developed series of investments.

Thank you for your consideration.

Respectfully,

Daniel Passarello  
Lead Consulting Engineer  
Nexamp

## What is Flexible Interconnection?

Flexible interconnection is an adaptable and scalable network management scheme that provides grid flexibility, reduces the need for new infrastructure, and enhances reliability by adjusting real-time, or scheduling ahead, Distributed Energy Resource (DER) outputs. With flexible interconnection, there is potential to “unlock” significant amounts of system capacity providing a clear solution for many states, businesses, and customers to meet high demand for near and long-term clean energy goals.

Many interconnections tend to only exceed ratings (substation, wire, protective devices) for a small number of hours a year, so costly upgrades are only for protection during these hours. With flexible interconnection solutions, generation facilities can be curtailed during these few hours of potential adverse grid impacts. Dynamic or scheduled flexible interconnections provide significantly greater ability for DERs to maximize output, however, there are also quicker, less complex, derating options (temporary or permanent) that should be made available to developers.

## Flexible Interconnection Types

Various states and utilities are defining flexible interconnection in different ways. The following table is meant to streamline terminology and align on flexible interconnection options:

Type	Short Definition	Equivalent Terms	Implementation Effort	Curtailment Duration
<b>Dynamic</b>	Having a platform that enables utility operators (or automation) to manage and coordinate DERs to optimize energy supply, ensure grid stability, and integrate clean energy sources efficiently. Dynamic flexible Interconnection systems collect <b>real-time data</b> from DERs to make decisions.	<ul style="list-style-type: none"> <li>Active Resource Integration (ARI)</li> <li>Dynamic Energy Resource Management System (DERMS)</li> <li>Active Network Management (ANM)</li> <li>Flexible Interconnect Capacity Solution (FICS)</li> </ul>	High	Seconds-Minutes
<b>Scheduled</b>	Having a schedule that specifies the maximum amount of power a DER resource can export to the electric grid at different times to avoid exceeding grid capacity limits.	<ul style="list-style-type: none"> <li>Limited Generation Profiles (LGPs)</li> <li>Scheduled Capacity</li> </ul>	Medium	Hours-Months
<b>Temporary Derating</b>	Allowing a DER facility to come online at reduced export capacity, while certain long-lead utility system upgrades are pending. Upon completion of the utility system upgrades, the DER facility will then be authorized to operate at its full nameplate capacity.	<ul style="list-style-type: none"> <li>Temporary Limited import/export</li> <li>Bridges to wires</li> </ul>	Low	Months-Years
<b>Permanent Derating</b>	Offering an alternative, utility-suggested reduction to DER facility export size (kW AC) to avoid significant utility system upgrades. This is a permanent facility downsize for the life of the DER facility.	<ul style="list-style-type: none"> <li>Permanent Limited import/export</li> <li>Permanent Downsize</li> </ul>	Low	Life of project

Note: “Flexible Interconnection” can be loosely used to describe other avenues for interconnection. Nexamp supports all technology options to support the grid and streamline interconnections for customers (ex. advanced inverter functions: volt/var, volt/watt, power factor adjustments, dynamic line ratings, NWA, behind the meter solutions, etc.). This categorization represents Nexamp’s exposure to the most common categories for “flexible interconnection” across states and utilities right now.

## Flexible Interconnection Adoption

The following table is a current reflection of Nexamp’s experience with allowance of the types of flexible interconnection being explored, tested, and implemented in different markets. The adoption status is consistently in flux as many state and utility workshops continue to shape and change the landscape:

Utility (State)	Dynamic	Scheduled	Temporary	Permanent
<b>NYSEG/RG&amp;E (NY)</b>	Y (Pilot Complete)	TBD (Work in progress)	TBD	N <sup>(2)</sup>
<b>National Grid (NY)</b>	Y (Pilot Complete)	TBD (Work in progress)	TBD	N <sup>(2)</sup>
<b>ComEd (IL)</b>	Y (Pilot Complete)	N	TBD	N
<b>Ameren (IL)</b>	TBD (Considering Y)	TBD (Considering Y)	TBD (Considering Y)	TBD (Considering Y)

<b>SDGE</b> (CA)	TBD	Y	TBD	TBD
<b>PG&amp;E</b> (CA)	TBD	Y	TBD	TBD
<b>SCE</b> (CA)	TBD	Y	TBD	TBD
<b>Xcel</b> (MN)	TBD (Considering Y)	TBD	TBD	TBD
<b>National Grid</b> (MA)	Y (Pilot In Progress)	TBD (Considering Y)	TBD (Considering Y)	N <sup>(3)</sup>
<b>Eversource</b> (MA)	TBD (Considering Y)	TBD (Considering Y)	TBD (Considering Y)	N <sup>(3)</sup>
<b>BG&amp;E</b> (MD)	TBD	TBD	TBD	Y <sup>(4)</sup>

Notes:

1. **Y** = Pilot in progress at minimum. **TBD** = Conversations or workshops in progress for “considering Y”, else unknown. **N** = Utility not presenting post-study downsizing options.
2. Utility did have this option in the past but have since not presented alternative size options. At additional time and cost, utility will re-study a downsize request without loss in queue position.
3. Do not present alternative post-study size options. However, utility will re-study a downsize request without loss in queue position at additional time and cost.
4. Post-study, utility suggests alternative size and adding storage.

### Nexamp “Dynamic” Flexible Interconnection Experience

Nexamp has experience with all the different flexible interconnection types above, but the following information focuses on dynamic flexible interconnection. Each of the following projects avoided multi-million-dollar, multi-year construction grid network upgrades. These projects would not exist today had they not been able to adopt a dynamic flexible interconnection solution.

Nexamp ID	State	Utility	Status	Curtailment			Deferred Upgrade Cost
				Access Principle	Utility Estimated (kWh/yr)	Actual (kWh/year)	
Union Street	NY	RG&E	PTO w/Flex 3/22/21	LIFO	< 0.27% <sup>(1)</sup>	~0.005%	\$3.3M
Paw Paw	IL	ComEd	PTO w/Flex 12/13/21	LIFO	< 5%	~0.092%	\$25M
Allis Hill	NY	National Grid NY	PTO w/Flex 1/10/25	Pro-Rata	< 5%	0.00%	\$5.7M

Nexamp continues to monitor these operational facilities closely in parallel to advancing development and deployment in opportune markets.

Additional References:

00. Industry – [Article](#), [presentation](#), and [developed paper](#) (with Nexamp input) with PNNL / i2x Technical Assistance. The report runs several cost-benefit analyses and highlights the importance of sharing data.
01. New York – NYSEG/RG&E [Article](#). Also see NYDPS Case #14-M-0101.
02. Illinois – ComEd flexible interconnection [webpage](#).
03. Massachusetts – National Grid [Article](#).

Note: Nexamp has additional studies, reports, standard drawings, interconnection agreements, technical communication interface guides, more detailed test procedures, etc. associated with the executed projects but cannot release of these materials publicly for utility and/or developer confidentiality reasons.

## Key Elements of a “Dynamic” Flexible Interconnection Framework

1. **Utility Infrastructure:** Critical for scale.
  - a. A dynamic monitoring platform needs to be developed and deployed widespread within utilities to scale. Most utilities see the benefit of DERMS platforms, but funding and implementation timelines are major challenges. Flexible interconnection deployments to date have been “one-off” targeted locations.
2. **Curtailement Estimation, Certainty, and Principle of Access:** Critical for project financing.
  - a. Curtailement Estimation
    - i. Utility estimates
      - o Utilities have access to the most relevant planning/historical grid data but currently **do not offer detailed curtailement studies** to estimate annual expected curtailement. In lieu, utilities commonly state they will seek to manage < 5% annual kWh curtailement. Neither estimating nor ensuring a curtailement cap makes it **extremely difficult** for developers to justify curtailement expectations to customers and project financing partners.
    - ii. Developer self-estimation
      - o Distribution utilities have, but **do not readily provide enough publicly available data** for developers to self-forecast potential curtailement. With more data made available (and confidentiality rights/measures set up accordingly), developers can self-evaluate (or contract) 3<sup>rd</sup> parties for curtailement assessments. With Nexamp’s Union Street projects, a mutual 3<sup>rd</sup> party was contracted to perform a detailed curtailement study.
  - b. Curtailement Certainty
    - i. Interconnection Agreements
      - o Curtailement arrangements to date have been non-binding. Clear agreements on yearly curtailement kWh limits shall be agreed upon. Alternative avenues of utility responsibility in curtailement metrics could be explored (ex. If developer can provide proof of curtailement exceeding agreed-upon limits, developer to be refunded losses, or a general right to contest).
    - ii. Network Reliability
      - o When the system operates as intended, the DER facility turns down its output, providing grid protection and support. However, when the communications systems lose connectivity, the DER facility is taken completely offline (0 MW). However, it may be possible to operate safely at a non-zero capacity in these situations. Standards around loss of communications (output adjustment, equipment standards, and signal strength) are critical on both utility and developer ends to ensure as much system up-time as possible.
  - c. Principles of Access
    - i. LIFO (Last-In, First Out), Pro-Rata, or other
      - o LIFO provides the most curtailement certainty. Projects on pro-rata approaches are risk-exposed to projects (being in queue) coming online and then equally sharing curtailement. Nexamp has projects under both approaches. Other concepts of sensitivity-based analyses, vintaging, etc. have been discussed in select markets. The industry, individual states, and utilities have not settled on a single approach but is very important to understand for a given project’s curtailement risk-exposure.
3. **Interconnection Process Management:** Critical for Scale
  - a. Process management
    - i. Flexible interconnection has been a widely adopted option in the UK for 10+ years. The US has adopted pilots, but it is critical to scale into programs. Flexible interconnection currently outpaces state procedures. State specific procedures (redlines) with clear expectations, costs, and timelines need to be written and adopted to scale. Flexible interconnection can be an option elected by the customer at application (if enough data is available to make educated decision), or an alternative option presented by the utility in a distribution study.

**STATE OF MAINE  
PUBLIC UTILITIES COMMISSION**

**MAINE PUBLIC UTILITIES COMMISSION**

**COMMISSION INITIATED INQUIRY INTO  
FLEXIBLE INTERCONNECTION**

**DOCKET NO. 2025-00312**

**COMMENTS**

**EFFICIENCY MAINE TRUST**

**NOVEMBER 20, 2025**

Efficiency Maine Trust (hereinafter “the Trust”) offers these brief comments in response to the Notice of Inquiry issued on October 20, 2025:

**1) When considering flexible interconnections pursuant to the Act, should the Commission expand its inquiry and consider both flexible interconnections and flexible service connections as defined by the DOE? If stakeholders do not approve of the DOE definition, please recommend an alternative definition of flexible interconnection.**

The Trust supports the expansion of the definition to include both flexible interconnectors and flexible service connections as defined by the Department of Energy. The systems needed for flexible interconnections are likely the same as flexible service connections so investments in these systems could provide more benefit to customers.

**2) How would adopting flexible interconnection regulations achieve the following goals of the Act:**

**3) How would information flow between utilities and developers need to change to achieve the following goals of the Act:**

The Trust encourages the Commission to build on the successful collaboration between the Department of Energy Resources (DOER) and the investor-owned utilities to secure a grant from the Department of Energy’s Grid Resilience and Innovation Partnerships (GRIP) Program. The resulting project, “Flexible Interconnections and Resilience for Maine (FIRM)” could be a starting point for this inquiry. The Trust believes it could be a useful exercise to start with the consensus built between DOER and the utilities and explore what regulatory changes both at a state and regional level would be needed to implement the vision articulated in the FIRM grant.

Respectfully submitted,

/s/IGB

Ian Burnes  
Director of Strategic Initiatives  
Efficiency Maine Trust

November 17, 2025

PUBLIC UTILITIES COMMISSION  
Inquiry into Issues Related to Chapter 324 of the  
Commission's Rules

Comments of the Maine  
Department of Energy Resources

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The Maine Department of Energy Resources (DOER or the Department) is the designated state energy office with responsibilities for energy resources, planning, programs, and development. The Department works to ensure all households, communities and businesses in the State have access to an affordable, reliable and resilient energy supply to meet energy demand, address energy burdens and support economic development. The Maine Energy Plan, developed in accordance with statute and released in January 2025, advances objectives, strategies, and key actions needed to ensure affordable, reliable, and clean energy for all Maine people and businesses. The issues raised in this proceeding relate directly to the achievement of these goals. DOER hereby submits its comments in response to October 15, 2025, Notice of Inquiry into Issues Related to Chapter 324 of the Commission's Rules.

### **Background**

On October 15, 2025, the Commission issued a Notice of Inquiry into issues related to the Commission's Chapter 324 rules (the NOI) posing 20 questions, with five of those questions directed specifically to the T&D utilities, regarding the current procedures and protocols for small generators to interconnect to the transmission and distribution (T&D) system.

DOER appreciates the Commission's issuance of the NOI to further explore certain rules governed by Chapter 324, to obtain further input regarding the L.D. 327 Working Group Proposal's recommendations, changes to utility planning and study criteria, proposed technical changes, calculation of overhead, charging of O&M costs, waiver, and assessed fees. The Department recognizes the substantial number of topics and specificity of questions posed by the Commission with respect to Chapter 324. The Department provides certain general comments regarding Chapter 324 for the Commission's consideration, as well as limited comments in response to certain questions below, numbered consistent with the NOI.

### **DOER Recommends a Flexible Interconnection Framework**

DOER encourages the Commission to consider the comments which will soon be received in response to the Flexible Interconnection NOI issued in Docket No. 2025-00312

when considering proposed changes to Chapter 324.<sup>1</sup> In particular, DOER encourages the Commission and any future interconnection working group to consider the potential impact of Project FIRM (Flexible Interconnection and Resilience for Maine), a collaboration between the Department, Central Maine Power, and Versant Power to deploy cutting-edge software and hardware to enhance grid stability, regulate voltage, and increase capacity on existing lines.<sup>2</sup>

### Interconnection Minimum Service Standards and Performance Metrics

DOER takes this opportunity to recommend that the Commission propose minimum service standards and specific, quantitative metrics pertaining to distributed energy resources interconnection in its next rulemaking regarding Chapter 324. 35-A M.R.S. §301 (1-A), enacted by of P.L. 2022 ch. 702 (LD 1959), requires that “the commission shall adopt rules for utilities with over 50,000 customers in accordance with this subsection governing the evaluation of transmission and distribution utility service, which must take into account the specific characteristics of each utility and its service territory... The rules must include specific, quantitative metrics pertaining to utility operations and activities relating to... distributed energy resources interconnection.” In its July 29, 2022 Order adopting modifications to Chapter 320, when declining to adopt interconnection-related performance metrics at that time, the Commission indicated “The Commission may consider additional provisions and metrics in a future Chapter 324 rulemaking.”<sup>3</sup>

This inquiry provides an opportunity to gain detailed inputs and feedback for inclusion in Chapter 324. There are numerous criteria that could be captured in the reporting; DOER encourages the Commission to consider the following categories of metrics:

- 1) number of days to connect ICGFs to the grid by interconnection level;
- 2) number and percentage of disputes;
- 3) actual costs (\$ and %) compared with estimates provided; and/or
- 4) customer satisfaction with interconnection (determined through periodic surveys).

The Commission could also utilize metrics calculated using data already reported by T&D utilities relating to interconnection performance. Other jurisdictions, such as New York,

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<sup>1</sup> Maine Public Utilities Commission, *Inquiry into Flexible Interconnection*. Docket No. 2025-00312, Notice of Inquiry (October 20, 2025).

<sup>2</sup> [Maine Governor's Energy Office Announces \\$65 Million Federal Grant to Prepare the Electrical Grid for More Renewable Energy | Maine Department of Energy Resources](#)

<sup>3</sup> *Maine Public Utilities Commission, Amendments to Electric Transmission and Distribution Utility Service Standards (Chapter 320)*, Docket No. 2022-00052, Order Adopting Rule and Statement of Factual and Policy Basis (July 29, 2022) at 5.

have launched proceedings to develop and implement similar performance metrics.<sup>4</sup> Furthermore, the potential costs and impacts of interconnection facilities and distribution upgrades for various Levels of ICGFs would benefit from additional information that would be available for future proceedings if the proposed reporting requirements were adopted in this rule. For these reasons, DOER recommends the adoption of required reporting metrics related to the interconnection of distributed energy resources consistent with the requirements of 35-A M.R.S. §301 during the next Chapter 324 rulemaking.

## **Opportunity for Comment**

### L.D. 327 Working Group Proposals

- 5) *Any other comments on the working group proposals and recommendations detailed above.*

DOER appreciates the recommendations made by the L.D. 327 Working Group, as well as the efforts made by the members of the Working Group and Commission Staff to address complex technical challenges in a consensus-oriented manner. DOER has not participated in the Working Group and is not in a position to speak to the details of the recommendations but looks forward to seeing the Working Group process advance toward meaningful, effective modifications to Chapter 324 that address the identified needs. In general, DOER favors steps that increase transparency and create efficiencies. For instance, DOER supports the concept of publicly identifying circuits or other relevant portions of the distribution system where Chapter 324 screen results are easily known (i.e. so-called congested circuits), so long as this information is provided in a manner that is understandable and actionable for customers and updated on a regular and predictable basis. Such an approach would presumably conserve resources for both proposed interconnecting projects and T&D utilities.

### Changes to Utility Planning and Study Criteria

- 1) *Whether it would be useful to have a group assigned to tracking utility interconnection standards and making those standards available to the wider public. If so, please include suggestions for the composition of and detailed role of such a group.*

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<sup>4</sup> See e.g. *State of New York Public Service Commission Case 24-E-0415 – In the Matter of Timely Interconnection of Distributed Energy Resources*, Notice Soliciting Comments (July 16, 2024). Available at <https://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7BC029BC90-0000-C810-8147-96D8BCCACBC7%7D>

DOER recommends establishing an ongoing interconnection working group tasked with reviewing and standardizing utility interconnection best practices, rules, and technical requirements. The working group should identify opportunities to streamline procedures, reduce queue backlogs, and enhance transparency. Like Massachusetts Technical Standards Review Group, the working group could produce a document to be used as a reference guide for interconnecting customers which clearly sets out Chapter 324 requirements, guidelines, and processes.

In addition, the Department recommends the working group studies the advancements of flexible interconnection to develop a Flexible Interconnection Framework to enable more cost-effective and timely integration of distributed energy resources (DER). DOER would be pleased to work collaboratively with the Commission and other stakeholders through such a working group.

An established interconnection working group open to a variety of stakeholders will create a more efficient, consistent, and forward-looking interconnection procedure—one that benefits utilities, interconnection customers, and ratepayers while strengthening the reliability, affordability, and resiliency of Maine’s electric grid.

#### Proposed Technical Changes

- 2) *The Commission requests parties to review the May 9 Complaint Regarding Adopting MSAs in Docket 2025-00150 and to comment on the development of standards related to meter socket adapters. If commenters agree that standards related to meter socket adapters should be developed, the Commission requests additional comments on whether those standards should be incorporated into Chapter 324 or should be addressed through Utility technical standards. The Commission specifically seeks any engineering or technical information available to support a party’s comments as to the effect of adopting requirements related to approving and installing meter socket adapters.*
- 3) *The Commission requests stakeholders to comment on potential risks, if any, plug-in solar systems pose to the safety, reliability, and power quality of the distribution system.*

In general, the Department supports the adoption of innovative technologies that have the potential to modernize Maine’s electric grid and support affordability and reliability. The Department understands from the May 9 Complaint that use of meter socket adapters for

interconnection of distributed generation is explicitly enabled in jurisdictions including Connecticut, Vermont, and Maryland, and New York and Massachusetts are in the process of doing so.<sup>5</sup> The Complaint also proposes a process for enabling meter socket adapter use in Maine, including proposed language “adapted from recently enacted regulations in Connecticut and Maryland.”<sup>6</sup> This language could serve as a starting point for a new section of Chapter 324 or a Commission Order to T&D utilities, once the Commission is in receipt of feedback from other commenters in this proceeding.

DOER looks forward to further addressing these topics in the context of a Notice of Rulemaking and appreciates the Commission’s attention to these matters.

Respectfully submitted,



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Kiera Reardon  
Senior Regulatory Analyst  
Department of Energy Resources



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Kelly Strait  
Energy Project Manager  
Department of Energy Resources

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<sup>5</sup> Complaint at 2.

<sup>6</sup> Complaint at 3.

November 20, 2025

MAINE PUBLIC UTILITIES COMMISSION  
Inquiry into Flexible Interconnection

COMMENTS OF MAINE COMMUNITY  
POWER COOPERATIVE, INC.

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## 1) Introduction

Maine Community Power Cooperative, Inc. (MCPC) appreciates the opportunity to provide comments on the Commission's inquiry into flexible interconnection. MCPC develops, owns and operates small-scale community solar projects on behalf of our member-owners, who are primarily low-income households. We operate at cost and utilize the Net Energy Billing program to pass benefits through to members in the form of reduced utility bills. Our exclusive focus on 167kW projects that connect on single phase power lines at the grid edge allows us to offer a unique perspective in this discussion, compared with others developing larger projects on three-phase infrastructure.

Whereas larger projects utilize the Chapter 324 level 4 interconnection process and typically include significant and expensive grid upgrades, MCPC's use of the level 2 interconnection process results in additional DER capacity coming online within the constraints of existing grid conditions. This is the most efficient way to make use of the grid we already have and an effective way to reduce costs for all.

This NOI is not about Chapter 324 specifically, but we are particularly interested in the opportunity this NOI provides to identify the potential to utilize existing grid infrastructure to safely and reliably interconnect more small-scale DERs than is possible utilizing the overly conservative, outdated and mostly static screens currently utilized as part of the interconnection approval process.

- 2) When considering flexible interconnections pursuant to the Act, should the Commission expand its inquiry and consider both flexible interconnections and flexible service connections as defined by the DOE? If stakeholders do not approve of the DOE definition, please recommend an alternative definition of flexible interconnection.

MCPC proposes the Commission expand its inquiry and consider both flexible interconnections and flexible service connections as defined by the DOE. This will provide the widest lens to identify opportunities for ratepayer benefits.

3) How would adopting flexible interconnection regulations achieve the following goals of the Act:

- a) Distribution system use of DERs;
- b) Increased grid capacity;
- c) Decreased grid instability;
- d) Reduced costs of achieving clean energy goals?

Adopting flexible interconnection regulations will allow developers to explore a wider range of site selection criteria, technology choice and system design to strategically deploy systems that provide the most benefit at least cost. This is in contrast to the current approach of site-driven project origination that considers grid conditions as a secondary factor because of the split incentives and asymmetry of data between developers and utilities. Flexible interconnection regulations have the potential to reshape the dialogue between developers and utilities and focus on the conditions under which additional DERs can be connected to provide better use of existing infrastructure, as well as the ancillary benefits of higher penetration of DERs, including lower generation costs, improved grid stability, and deferred or reduced transmission and distribution upgrades as a result of generating energy closer to where it is consumed. This will become increasingly important as beneficial electrification grows and drives additional demand on our already struggling electrical infrastructure.

4) How would information flow between utilities and developers need to change to achieve the following goals of the Act:

- a) Distribution system use of DERs;
- b) Increased grid capacity;
- c) Decreased grid instability; and
- d) Reduced costs of achieving clean energy goals?
- e) Please share any information about successful flexible interconnection programs that have been adopted in other states.

The most important information required to achieve the goals of the Act are real-time (or near-real-time) circuit-level data providing insight into loading, voltage, and other conditions that inform true hosting capacity so developers can intelligently site and design systems that provide the most benefit given local conditions. Utilities have historically refused to share this or other detailed circuit-level data, but it is necessary in order to enact flexible interconnection regulations in any meaningful way.

5) Please express any interest in piloting a proposed flexible interconnection system.

MCPC is eager to participate in a pilot of a proposed flexible interconnection system. Our diverse portfolio of small-scale projects could be utilized to test a variety of grid conditions and constraints.

Thank you for the opportunity to comment on this inquiry.

/s/ Tyler Adkins

Tyler Adkins

CEO

Maine Community Power Cooperative, Inc.