



# The Commonwealth of Massachusetts

## DEPARTMENT OF PUBLIC UTILITIES

### MEMORANDUM

TO: Electronic Distribution List in D.P.U. 19-55

FROM: Kate Tohme, Hearing Officer

RE: DG Interconnection, D.P.U. 19-55  
Procedural Notice and Request for Public Comments

DATE: August 19, 2019

CC: Mark Marini, Secretary

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#### I. INTRODUCTION

On May 22, 2019, the Department of Public Utilities (“Department”) opened this inquiry to investigate the interconnection of distributed generation (“DG”) in Massachusetts, pursuant to the Standards for Interconnection of Distributed Generation tariff (“DG Interconnection Tariff”) and Distributed Generation Interconnection, D.P.U. 11-75-E (2013). In its Vote and Order, the Department provided notice of a technical conference on July 18, 2019. The Department commends the stakeholders who attended the technical conference on July 18, 2019 on a productive and collaborative day. The Department also thanks all stakeholders who have submitted written comments. Your comments have informed the next procedural steps in D.P.U. 19-55, set forth in this memorandum.

#### II. NEXT STEPS

##### A. TECHNICAL CONFERENCES

The Department expects to hold at least three additional technical conferences in D.P.U. 19-55. These technical conferences will be held on October 3, 2019, October 24, 2019, and November 21, 2019. At the technical conference held on July 18, 2019, we heard a request from stakeholders for as much specificity of topic as possible in advance of technical conferences. While the Department cannot yet provide specificity for the next technical conferences, we appreciate this feedback and will provide specificity as soon as possible. Once

the Department announces the specifics of each technical conference, we will also seek online registration.

**B. AFFECTED SYSTEM OPERATOR STUDIES**

**1. National Grid Affected System Operator (“ASO”) Cluster Study**

New England Power Company (“NEP”) is currently conducting a study of a group of proposed DG interconnections to Massachusetts Electric Company d/b/a National Grid’s (“National Grid”) electric distribution system in central and western Massachusetts, to determine the impacts of these interconnections on the transmission system in accordance with ISO New England Inc.’s (“ISO-NE”) rules and planning procedures (“Cluster Study”).<sup>1</sup> The Department accepted limited scope written comments through August 2, 2019 on actions that could be taken to improve the Cluster Study, and received helpful information from stakeholders. The Department, National Grid, NEP, and ISO-NE, have all reviewed these comments and are currently discussing which recommendations can be implemented. The Department has biweekly meetings with the above listed parties concerning the Cluster Study (in addition to daily staff communications and exchange of information) and is currently working on creative methods to remove certain DG facilities from the Cluster Study. The Department will provide updates to the D.P.U. 19-55 electronic distribution list whenever possible. Further, the Department understands through written comments that many stakeholders would like more regular updates from National Grid concerning the Cluster Study. The Department has directed National Grid to provide such updates and is working with the company to determine the scope and timing of the first update.

**2. Collaboration on DG Interconnection Tariff Revisions**

At the July 18, 2019 technical conference and in an email issued to the D.P.U. 19-55 electronic distribution list on July 23, 2019, the Department directed the electric distribution companies (“EDCs”) to collaborate with stakeholders and file agreed upon proposed revisions to the DG Interconnection Tariff related to affected system operator studies by **August 29, 2019**.

- a. To participate in this collaboration contact:  
[jhabib@keeganwerlin.com](mailto:jhabib@keeganwerlin.com), [awagner@keeganwerlin.com](mailto:awagner@keeganwerlin.com) or [jmcdiarmid@necec.org](mailto:jmcdiarmid@necec.org).
- b. The Department will open a limited scope comment period from **August 30, 2019 through September 9, 2019** for stakeholders to file comments on what issues exist but have not yet been agreed

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<sup>1</sup> Further information concerning the Cluster Study can be found in National Grid’s opening statement from the July 18, 2019 technical conference (<https://eeaonline.eea.state.ma.us/DPU/Fileroom/dockets/bynumber> (insert “19-55”)) and on National Grid’s website at: <https://ngus.force.com/s/article/Affected-Substations>.

upon related to affected system operator studies. **We encourage the submission of alternative proposed revisions to the DG Interconnection Tariff.**

3. Interim Guidance

At the July 18, 2019 technical conference the Department facilitated a conversation to obtain stakeholder recommendations on what should be included in a Department interim guidance document designed to direct process related to affected system operator studies. Stakeholders provided valuable recommendations both orally at the technical conference and memorialized by July 23, 2019. If the Department determines that sufficient information exists to establish interim guidelines, a guidance document will be issued in this docket.

C. MANAGEMENT OF HIGH VOLUME QUEUES

At the July 18, 2019 technical conference held in this docket, the Department asked stakeholders the priority in which the initial phase topics of this docket should be addressed after affected system operator studies. Overwhelmingly, stakeholders agreed that the next topic to be addressed should be methods to manage high volume queues for DG interconnection. As such, the Department commences process on this topic with a solicitation of written comments.

1. Solicitation of comments

The Department seeks written comments on the following, no later than **5:00 p.m. on September 18, 2019**. Joint submissions and proposed language for DG Interconnection Tariff revisions or guidance materials are encouraged.

- a. Identify **3-5** methods you believe if implemented would help to decrease high volume queues for DG applications to interconnect to the electric distribution system in Massachusetts. For each method, provide:
  - i. A 1-3 paragraph description of the method;
  - ii. The source of the method (i.e. implemented successfully in another state); and
  - iii. How to implement the method, including timeline, such as:
    - a) DG Interconnection Tariff revisions;
    - b) Department Order;
    - c) Guidance materials issued by the Department;

- d) Guidance materials issued by the Massachusetts Technical Standards Review Group; or
- e) Working group convened by the Department.

D. INTERCONNECTION OF ENERGY STORAGE SYSTEMS (“ESS”)

At the July 18, 2019 technical conference the Department facilitated breakout sessions on two discreet topics related to the interconnection of ESS: 1) establishing standards for reviewing applications for ESS, and 2) procedures for adding ESS to existing applications. These topics were identified through written comments submitted by stakeholders in this docket. The Department will continue process to find resolution for these two discreet topics discussed at the technical conference.

1. Solicitation of Comments

The Department seeks written comments on the following limited scope topics, no later than **5:00 p.m.** on **September 27, 2019**.

- a. The Massachusetts Technical Standards Review Group has created a proposed uniform questionnaire for all interconnection applications that include ESS. The proposed questionnaire has been revised to incorporate recommendations from the July 18, 2019 technical conference. The proposed questionnaire is attached as a Word document to this memorandum, Appendix A. Please provide in redline any revisions you propose to the questionnaire. In addition, please indicate if you believe additional revisions to the DG Interconnection Tariff are necessary to properly establish standards for reviewing interconnection applications that include ESS. If so, please provide proposed revisions/additions to the DG Interconnection Tariff (i.e. definitions or revisions to existing DG Interconnection Tariff exhibits). Joint submissions are **highly** encouraged.
- b. At the July 18, 2019 technical conference, a number of breakout tables recommended a decisions tree or tiered system for review of existing interconnection applications that seek to add ESS. One table’s suggested tiered system is represented below. Please provide your comments on the below tiered system and/or an alternative decision tree or tiered system in **no more than two pages**. In initial comments received in this proceeding, several commenters noted that standard operational controls could be a way to mitigate EDC concerns regarding system impacts associated with adding ESS to DG facilities that have already applied for interconnection. The Department encourages

commenters to discuss how operational controls might be employed in conjunction with a tiered system and/or a decision tree to address EDC concerns related to incremental system impacts of adding ESS to a facility with an existing interconnection application or interconnection service agreement (“ISA”).

	Study Implications	Profile of Proposed Modifications	Example
Tier 1	No re-study necessary. Queue position not impacted.	No change in Single Line Diagram (“SLD”) outside of the addition of ESS on the direct current (“DC”) side.	DC-coupled ESS behind same inverters as original System Impact Study (“SIS”)
Tier 2	<p>Tier 2A: No re-study necessary. Small turnaround time to ensure all significant variables are unchanged. Queue position not impacted.</p> <p>Tier 2B: Re-study may be necessary, original SIS/ISA queue position and system modifications are not jeopardized.</p>	<p>Tier 2A: SLD may change but all variables agreed upon in Exhibit A to this table remain the same. Operation profile to meet EDC prescribed limits.</p> <p>Tier 2B: Minor change in variables listed in Exhibit A to this table. Operation profile to meet EDC prescribed limits.</p>	<p>Tier 2A: DC-coupled with inverters changing but capacity, effective grounding, etc. remain the same.</p> <p>Tier 2B: DC-coupled with transformer grounding methodology changing.</p>
Tier 3	Submit a new interconnection application for the ESS. Additional study is necessary. Additional system modifications may be required. Queue position of the original application not impacted. New ESS application receives its own queue position.	Increase in maximum export of net generation. Significant change in generation profile.	Non-limited alternating current (“AC”)-coupled ESS.

Exhibit A to include the following variables: transformer kVA rating, transformer quantity, transformer winding configuration, transformer percent impedance, transformer grounding impedance (if applicable), aggregate inverter capacity, inverter UL listing and inverter anti-islanding and detection methodology.

## E. METERING

At the July 18, 2019 technical conference, the Department heard that metering is a topic stakeholders would like the Department to address as soon as possible. The Department understands that issues related to metering fall into three categories: 1) technical configurations, 2) ownership of meters, and 3) cost recovery. The Department will attempt to address discreet issues related to technical configurations in this docket. The Department understands that technical metering issues fall within three categories of DG facilities paired with ESS: 1) DC-coupled behind-the-meter facilities with back up capability, 2) DC-coupled standalone facilities, and 3) AC-coupled facilities. We announce process for each category below.

### 1. *DC-coupled behind-the-meter facilities with back up capability*

The Department finds at this time that issues related to this category are best addressed in forums outside of D.P.U. 19-55. However, the Department is aware of existing issues and is actively working to find resolutions. If process related to this category is announced in a separate docket, we will provide an update to the D.P.U. 19-55 electronic distribution list.

### 2. *DC-coupled standalone facilities*

The Department understands that the Department of Energy Resources, the EDCs, and certain stakeholders have been engaged in discussions related to this category and that proposed resolutions are under consideration. Two summaries of proposed resolutions are attached hereto as Appendix B. The Department encourages continuation of these discussions and seeks to assist in finding a resolution. As such, the Department will hold a meeting at its offices, in Hearing Room A, at One South Station, Boston, Massachusetts on September 11, 2019 from 9:30am-12:30pm. The Department seeks to keep this meeting at a reasonable size to allow for productive conversation and as such invites only those stakeholders with specialized knowledge of this discreet issue. If you wish to attend this meeting, please register online [here](#) by August 30, 2019. If resolution is found on this issue in advance of September 11, 2019, the Department asks that any parties involved please file a joint summary of the resolution in this docket.

### 3. *AC-coupled facilities*

At the Department's request, National Grid has provided a summary of three key issues in this category and proposed resolutions, attached hereto as Appendix C. The Department will hold a meeting at its offices, in Hearing Room A, at One South Station, Boston, Massachusetts on September 11, 2019 from 1:30-4:30pm to discuss these issues and the proposed resolutions. The Department seeks to keep this meeting at a reasonable size to allow for productive conversation and as such invites only those stakeholders with specialized knowledge of these discreet issues. If you wish to attend this meeting, please register online [here](#) by August 30, 2019.

F. SUMMARY OF ANNOUNCED DATES

<b>Topic</b>	<b>Date</b>
Deadline for EDCs to submit DG Interconnection Tariff revisions related to ASO studies	Thursday, August 29, 2019
Deadline for stakeholders to submit comments on outstanding issues related to ASO studies not addressed by DG Interconnection Tariff revisions filed on August 29, 2019	Monday, September 9, 2019
Meeting to discuss DC-coupled standalone metering issues	Wednesday, September 11, 2019; 9:30am-12:30pm; Hearing Room A, at One South Station, Boston, Massachusetts; Please register online <a href="#">here</a> by August 30, 2019
Meeting to discuss AC-coupled metering issues	Wednesday, September 11, 2019; 1:30-4:30pm; Hearing Room A, at One South Station, Boston, Massachusetts; Please register online <a href="#">here</a> by August 30, 2019
Deadline for stakeholders to submit comments on management of high volume DG interconnection queues	Wednesday, September 18, 2019
Technical Conference	Thursday, October 3, 2019; 10:00am-4:30pm
Deadline for stakeholders to submit comments on limited scope topics related to ESS interconnection	Friday, September 27, 2019
Technical Conference	Thursday, October 24, 2019; 10:00am-4:30pm
Technical Conference	Thursday, November 21, 2019; 10:00am-4:30pm

G. LOGISTICS

When submitting written comments, please file an original and one (1) copy of such written comments with Mark D. Marini, Secretary, Department of Public Utilities, One South Station, Boston, Massachusetts, 02110. All documents should also be submitted to the Department in electronic format using one of the following methods: (1) by e-mail attachment to [dpu.efiling@mass.gov](mailto:dpu.efiling@mass.gov) and the hearing officer [Kate.Tohme@mass.gov](mailto:Kate.Tohme@mass.gov); or (2) on a CD ROM. The text of the e-mail or CD ROM must specify: (1) the docket number of the proceeding (D.P.U. 19-55); (2) the name of the person or company submitting the filing; and (3) a brief descriptive title of the document. The electronic filing should also include the name, title, and telephone number of a person to contact in the event of questions about the

filing. Documents filed with the Department will be available for public inspection at its offices during business hours and through our website by looking up the docket by its number in the docket database at <https://eeaonline.eea.state.ma.us/DPU/Fileroom/dockets/bynumber> (insert 19-55).

For further information regarding this memorandum or to request addition to or removal from the electronic distribution list, please contact Kate S. Tohme, Hearing Officer, at (617) 305-3500.