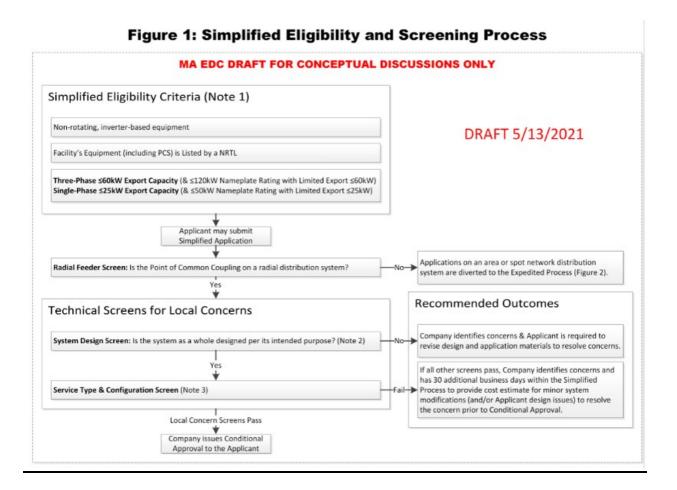
#### **Proposed Simplified Screens**

(Assumes acceptable time lines and ability for analysis and cost recovery through DER planning procedures)



## **Explanatory Notes to Accompany Figure 1 (Simplified Only)**

# <u>Figure 1 Note 1 – Eligibility Criteria:</u>

General Eligibility: For the purposes of determining eligibility to submit an application in the Simplified interconnection process, all Facility equipment that will operate in Parallel with the Company EPS must meet the following criteria: (a) all generating and storage equipment must be non-rotating and inverter-based, (b) all inverters and/or components intended to limit the Export Capacity in compliance with Section 4.3 of the Interconnection Tariff must be Listed by a NRTL, and (c) the aggregate Export Capacity of the equipment on the site must be less than or equal to 25kW on a single-phase service or 60kW on a three-phase service.

**Limited Export Capacity:** Where a mechanism is proposed to limit Export Capacity below the Nameplate Rating of the aggregate generating and storage equipment in order to comply with the

Export Capacity thresholds defined above, the aggregate Nameplate Rating of all generating and storage equipment that will operate in Parallel with the Company EPS may not exceed 50kW on a single-phase service or 120kW on a three-phase service. If the aggregate Nameplate Rating exceeds these thresholds (regardless of the Export Capacity), the application is not eligible to be submitted in the Simplified interconnection process. Additionally, while the mechanism to limit Export Capacity may monitor the real-time load on the site to ensure compliance with the Export Capacity eligibility criteria, under no circumstances may the mechanism to limit Export Capacity be contingent upon an assumed minimum load on the site (i.e. when the site load is zero, the Facility as a whole must remain in compliance with the eligibility criteria). While an Interconnecting Customer may propose any mechanism to limit Export Capacity that is permitted in Section 4.3 of the Interconnection Tariff, Facilities that rely on a Power Control System (PCS) may be subject to testing standards other than IEEE Standard 1547. Under such circumstances the PCS shall be tested by a NRTL to the specific standard publication relevant to such devices. Interconnecting Customers who can demonstrate Facility compliance with such a standard, with the testing done by a NRTL, will be eligible for the Expedited Process, and may be eligible for the Simplified Process upon review by the Company.

**Inverter Equipment:** Facilities with inverter-based equipment will be considered Listed upon demonstrating that such equipment has successfully passed all pertinent tests performed by a NRTL to conform with the latest version of IEEE Standard 1547. IEEE Standard 1547 includes design specifications, operational requirements, and a list of tests that are required for Facilities. IEEE Standard 1547.1 describes how to conduct tests to show compliance with provisions of IEEE Standard 1547. To meet the eligibility criteria to submit an application in the Simplified interconnection process, Interconnecting Customers must provide information or documentation that demonstrates how the Facility is in compliance with the IEEE Standard 1547.1. A Facility will be deemed to be in compliance with the IEEE Standard 1547.1 if the Company previously determined it was in compliance. Interconnecting Customers who can demonstrate Facility compliance with IEEE Standard 1547.1, with the testing done by a NRTL, will be eligible for the Expedited Process, and may be eligible for the Simplified Process upon review by the Company.

**Equipment not capable of operating in parallel:** Subject to the Facility passing the System Design Screen, generating and storage equipment that is not capable of operating in Parallel with the Company EPS (i.e. only operating when the Facility is isolated from the Company EPS) will not be considered as part of the Export Capacity and/or aggregate Nameplate Rating of the Facility for the purposes of determining eligibility for an Interconnecting Customer to submit an application in the Simplified interconnection process.

## Figure 1 Note 2 – System Design Screen:

This screen identifies the need for the Company to review the Interconnection Application, and all of the associated material submitted by the Interconnecting Customer, to determine if the proposed design of the Facility as a whole is likely to operate as intended. In particular, the Company will consider the manufacturer's specifications for all the constituent components of the Facility within the context of the site plan, line diagram, operating schedule, project narrative and any other supplemental materials provided by the Interconnecting Customer that may impact

the operation of the proposed Facility in Parallel with the Company's EPS. The Company will also consider whether the proposed Facility design as a whole will comply with the Company's technical standards and may also consider (as directed by the Department) whether the proposed Facility design complies with the proposed incentive program(s) identified in the Interconnection Application.

Any application (single-phase or three-phase) that exceeds an aggregate Nameplate Rating of 25kW (regardless of Export Capacity) must have an electrical one-line diagram with a P.E. stamp from an electrical engineer certified in Massachusetts.

# <u>Figure 1 Note 3 – Service Type & Configuration Screen:</u>

**Mismatching Configurations:** This screen includes a review of the type of electrical service provided to the Interconnecting Customer, including the service transformer configuration and service type to limit the potential for creating unacceptable voltage imbalance, over-voltage or under-voltage conditions, or service equipment overloads on the Company EPS due to a mismatch between the size and phasing of the energy source, the service loads fed from the service transformer(s), and the service equipment ratings.

<b>Primary Distribution</b>	Type of Interconnection to	Screen
Line Type	Primary Distribution Line	Result
Three-phase, three-wire	Three-phase, phase-to-phase	Pass
	Single-phase, phase-to-phase	Pass
	Other configurations	Fail
Three-phase, four-wire	Effectively-grounded three-phase	Pass
	single-phase, line-to-neutral	Pass
	Other configurations	Fail

**Secondary Voltage-Rise:** The purpose of this screen is to maintain the +/-5% voltage boundaries for the nominal service voltage at the Point of Common Coupling for all customers (including other customers in the general vicinity of the proposed Facility).

**Shared Overhead:** If the Facility is to be interconnected on a single-phase overhead transformer that includes at least some portion of shared secondary conductor, the aggregate Export Capacity on the shared secondary, including the Facility's Export Capacity, will not exceed: (a) 25 kilovolt-ampere ("kVA"); (b) the kVA nameplate rating of the service transformer; or (c) a KVA threshold that in combination with the secondary conductor will be likely to cause the voltage on the secondary conductor to be greater than 5 % nominal service voltage.

**Shared Underground:** If the Facility is to be interconnected on a single-phase underground transformer that includes at least some portion of shared secondary conductor, the Facility shall fail this screen and require additional review unless the Company has sufficient information readily available at the time of the screening review to make a determination that voltage-rise concerns are unlikely once the Facility is operational.

**Dedicated Overhead or Underground:** If the Facility is to be interconnected via a dedicated single-phase transformer (and/or on a dedicated service drop or underground service conductor) that does not include any shared-secondary conductor, the aggregate Export Capacity on the dedicated secondary, including the Facility's Export Capacity, will not exceed (a) 25 kilovolt-ampere ("kVA") or (b) the kVA nameplate rating of the service transformer.

Other Considerations: For overhead service transformers (regardless of whether the Facility is to be connected via a shared or dedicated configuration), if the Facility is to be interconnected on an existing single-phase service drop consisting (at least in part) of #4 size conductor, the Company may determine that the Facility fails this screen and requires additional review. For any other conductor sizes or service configurations that are not explicitly listed in this screen but are likely to cause voltage-rise concerns once the Facility is operational (based on the information that is readily available to the Company at the time of the screening review), the Company may determine the Facility fails this screen and requires additional review. If the Company identifies additional common scenarios that lead to voltage-rise concerns for Facilities that would otherwise have passed this screen based on the aggregate Export Capacity threshold, it will post examples or descriptions of those scenarios on its website and/or in its technical standards.

Center Tap Neutral: If the Facility is single-phase and is to be interconnected on a center tap neutral of a 240 volt service, it will be evaluated under the Expedited screening process (see Figure 2). Additionally, regardless of Nameplate Rating or Export Capacity of the Facility, the applicant must provide an electrical one-line diagram with a P.E. stamp from an electrical engineer certified in Massachusetts, and the label "Center Tap Neutral Configuration" must be prominently displayed on the diagram.