

Solar America Board for Codes and Standards

Updated Recommendations for Federal
Energy Regulatory Commission

SMALL GENERATOR INTERCONNECTION PROCEDURES SCREENS

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Study Report Overview

This Solar America Board for Codes and Standards (Solar ABCs) Report is a status assessment of the Federal Energy Regulatory Commission (FERC) Small Generator Interconnection Procedures (SGIP) fast track technical screens. The North Carolina Solar Center and the Interstate Renewable Energy Council led the review and development of suggested updates to the FERC SGIP screens and the 10kW Inverter Process after conducting an interactive development process based on a questionnaire of small generator interconnection subject matter experts (SMEs).

The FERC SGIP apply only to facilities subject to the jurisdiction of FERC, but may serve as a model for state-level interconnection procedures. FERC SGIP was developed and published in 2005 through the efforts of utilities, regulators, industry representatives, consumer and environmental advocates, and other interested parties. Regulators anticipated the need to update the small generator rules in FERC's Final Rule, which stated that "beginning two years from the issuance of this order, [we will] consider and recommend consensus proposals for changes in the Commission's rules for small generator interconnections" (FERC Docket RM02-12-000, 2005). There has not been a substantial review yet and this report is intended to assist with such a review.

Why the Report Is Important

Public demand for customer-owned distributed generation, especially grid-tied photovoltaic (PV) systems, has encouraged federal and state legislation calling for practical procedures for interconnection of non-utility-owned generators to the electric grid. Existing procedures have evolved over the last decade as states and the federal government sought to implement and improve upon early efforts. Early efforts were often unsatisfactory because high costs, lengthy timelines, bureaucracy, and uncertainty proved to be formidable barriers. Fortunately, much has been learned during the last decade and "best practices" have begun to emerge.

Issue

The FERC SGIP contains the technical procedures that a small generator and utility must follow when connecting the generator to utility lines subject to FERC jurisdiction. The standards are embodied in a single set of ten screens for the 10 kW Inverter Process and the Fast Track Process. Revising these screens to simplify interconnection and increase the number of systems that pass the fast track screens (and the 10 kW Inverter Process) can reduce barriers to solar energy installations.

Key Findings

To obtain input, we asked 154 SMEs, (composed primarily of the IEEE 1547.6 and 1547.7 Working Groups) to examine eight technical FERC SGIP screens. We then questioned them about the need to raise the threshold for the simplified interconnection process for inverter-based systems above the current 10 kW limit. This report outlines the responses of the 37 SMEs who replied to the questionnaire and also the review of recent National Renewable Energy Laboratory (NREL) technical reports. The



SMEs' responses to the various screens ranged from strong consensus for a need to update some screens to general agreement that other, existing screens do not need to be changed. Consensus was defined as support from two-thirds of the respondents.

Solar ABCs Recommendations

Solar ABCs presents these recommendations with the intent that they will serve as the first step toward the update of the FERC SGIP. FERC and National Association of Regulatory Utility Commissioners (NARUC) should collaborate to update the following FERC SGIP screens.

- Screen 2.2.1.7: The limit placed on the size of the aggregate generation on a single phase shared secondary should be updated to be in terms of a percentage of the transformer nameplate rating.
- Screen 2.2.1.9: The stability requirement should be rewritten for clarity.
- Screen 2.2.1.3: Area networks should be covered in addition to spot networks. In addition, limits on maximum load should also be revised upward in keeping with recent rules enacted in Connecticut and by Consolidated Edison in New York and with the guidelines defined in the IEEE 1547.6, which went to ballot in mid-June 2010.

For the following screens, the survey results did not reach consensus, but many respondents made strong arguments for updates:

- Screen 2.2.1.2: Further investigation and research is needed to determine whether to increase (and by how much) the current 15% limit on generating capacity related to circuit peak load (or possibly to change the limit to a percentage of the circuit minimum load). Separate treatment of inverter-based generation should be considered. DOE or NREL should aggressively study these issues.
- 10 kW inverter process: Further dialogue and investigation is needed to determine whether to increase the limit from 10 kW for the simplified inverter interconnection process (and if so, by how much).

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Download the Full report: www.solarabcs.org/FERCScreens

For more information, visit the Solar ABCs website: www.solarabcs.org

A Report from the Solar America Board for Codes and Standards

The Solar America Board for Codes and Standards (Solar ABCs) is a collaborative effort among experts to formally gather and prioritize input from the broad spectrum of solar photovoltaic stakeholders including policy makers, manufacturers, installers, and consumers resulting in coordinated recommendations to codes and standards making bodies for existing and new solar technologies. The U.S. Department of Energy funds Solar ABCs as part of its commitment to facilitate widespread adoption of safe, reliable, and cost-effective solar technologies.

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