Smart Grid Demonstration Program (SGDP) and
Renewable and Distributed Systems Integration (RDSI) Program

Outline for Metrics and Benefits Reporting Plans

1.0 Introduction

The Introduction should provide an overview of the Smart Grid Demonstration Program (SGDP) or Renewable and Distributed Systems Integration (RDSI) Program project. It should contain:

- A statement of the type of project that is being pursued (i.e., SGDP Regional Demonstration, SGDP Grid-Scale Energy Storage Demonstration [also include Storage Subarea as described in DE-FOA-0000036][1], or RDSI);
- An explanation of the main objectives of the project and how the assets planned to be installed will help meet those objectives; and
- A description of the benefits expected from the project.

2.0 Key Technology Development and Asset Deployment Schedule

Identify and characterize key technology development and deployment milestones for the Smart Grid assets that are part of the project. This should include:

- Key technology development milestones;
- Key asset deployment milestones;
- The periods during which 1) baseline data will be gathered and analyzed and 2) post-deployment data (full metrics data descriptions to be provided in Section 3.0) will be gathered and analyzed; and
- Milestones that relate to key decisions (e.g., technology performance thresholds and approval by the Public Utilities Commission or Board).

3.0 Storage System Performance

Identify and describe storage system performance information (i.e., storage system characteristics, data measurements, performance parameters). This should include:

- Data Acquisition System: actual data to be captured, instrument specifications (e.g., measurement range, accuracy, operating range, etc.), the rate of capture, location of data collection in the demonstration unit (i.e., around specific components or around the demonstration unit as a whole), on-site data archive capability, and duration of baseline data collection
- Performance information applicable to the project at all project stages

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[1] Storage Subareas from Funding Opportunity Announcement DE-FOA-0000036 are 1) Battery Storage for Utility Load Shifting or for Wind Farm Diurnal Operations and Ramping Control, 2) Frequency Regulation Ancillary Services, 3) Distributed Energy Storage for Grid Support, 4) CAES – Compressed Air Energy Storage, and 5) Demonstration of Promising Energy Storage Technologies.

- For the projects under sub-area 2.5 Demonstration of Promising Technologies, performance information that will be monitored in the project's early stages (i.e., lab and pilot scale vs. grid-connected)
- Reporting frequency for performance information at all project stages
- Any other performance information , not included in the Data Analysis Team's list

Build and impact metrics data will be collected by the Recipient and ultimately housed by NREL in an aggregated and non-sensitive manner. However, the Recipient is responsible for both collecting and housing all other storage system performance information agreed upon with the Data Analysis Team and then manipulating that data into review-friendly formats (e.g., graphs). After the system is operating, the Data Analysis Team will meet with the Recipient on an agreed upon frequency (e.g., monthly) to review and validate performance data.

4.0 Metrics and Benefits

Identify each of the Build and Impact[2] metrics that will be reported. The metrics will apply to the total project supported both by DOE and by cost-shared funds. This section should also contain explanations of the data collection, aggregation and analytical methods that will be used to determine these metrics and the associated benefits achieved by the project. Provide a sufficiently detailed description for how metrics information will be developed. Details should include:

- A clear indication of all Build and Impact metrics that will be reported at both the project- and system-level;
- A description of the types of data and their frequency, as well as a description of the calculations, used to derive Build and Impact metrics;
- Sufficient information so that Build metrics can be correlated to the numbers and types of customers (e.g., residential, commercial, industrial), the extent of service area covered, and how funding is allocated against equipment, as well as with other related Build metrics (e.g., type of dynamic pricing program correlated with metering features);
- An accounting of monetary investments in terms of installed cost of equipment being deployed[3];
- A description of the number and types of jobs created by the project; [4]

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[2] Impact metrics are to be reported through Technology Performance Reports submitted to the Technical Project Officer on a schedule to be determined during the Metrics and Benefits Reporting Plan development process.

[3] This information will be reported quarterly to the Technical Project Officer, and is separate from the invoices and cost information that will be provided as part of ARRA reporting. Monetary investments reported as part of the build metrics should be consistent with those submitted elsewhere.

[4] Jobs created and retained as a result of SGDP/RDSI funding (including Federal funds and non-federal cost-shared funds) should be reported quarterly as full time equivalents (FTEs) with build metrics to the Technical Project Officer. Job reporting categories include: Managers; Engineers; Computer-related Occupations; Environmental and Social Scientists; Construction, Electrical, and Other Trades; Analysts; Business Occupations; Recording, Scheduling,

- How metrics are related to the benefits that the project will demonstrate and report; and
- Recommended approaches for benefits quantification, and determine to what extent the Recipient will develop benefits estimates.

5.0 Baseline Data

Explain how baseline information for each of the metrics described in Section 4.0 will be developed, including sources of data and relevant calculations or analysis. This includes a discussion of how the value of each metric is to be estimated at project commencement, and how the pre-deployment baseline and forecasted baseline value, assuming no SGDP/RDSI award had been made, for each metric is to be calculated. The discussion should explain how the baseline data for each relevant Build and Impact metric will be determined, including the basis and methods that will be used to determine the values over time (e.g. application of normalization, averaging, or forecasting approaches).

6.0 Market Place Innovation Reporting

Explain how market place innovations (e.g., new jobs, products, services, and markets) that result from the project will be determined, documented and reported.

7.0 Collaboration and Interaction

Present approaches for collaboration between DOE and the Recipient (including representative organizations) to discuss key issues and share valuable information derived from the project.

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and Computer Operator Occupations. FTEs reported with the Build metrics should be consistent with the job data reported elsewhere.