

To minimize distributional concerns and to facilitate the transition to dynamic pricing it is important that customers facing dynamic pricing not subsidize customers facing traditional price schedules. In particular, price schedules for non-dynamic pricing should continue to reflect the average cost per kilowatt-hour of serving that group, which is likely to be higher than for customers on dynamic pricing.

General guidelines for data that will be needed for cost-benefit analysis of projects in this topic area include:

- The number of meters installed and criteria for installation (in general, there is a strong preference for saturation installation of meters for a type of customer within an area).
- The tariff on which each customer was billed on each day, including prices charged and how those prices were determined. (Tariff description would also include any price smoothing or hedging instruments made available to the customer and customer's participation in those programs.)
- The sources of information about the tariff that were available to the customer and the method by which these sources were made available (e.g., direct mail, website, fax, telephone hotline).
- The hourly electricity consumption of the customer.
- Demographic information about the customer.

Applications should include a plan that addresses the requirements of the ideal randomized control design to the best extent possible. After project selection and before project award DOE expects to meet with the applicant to finalize data collection and analysis requirements.

Applicants that do not yet have regulatory approval are eligible for receiving an award. Examples might include applications that require approvals for cost recovery or dynamic pricing tariffs. However, DOE may withhold some or all of the grant funds until regulatory approval is obtained.

## **5. Technical Approach to Interoperability and Cyber Security**

Submitted Project Plans are required to include a section on the technical approach to addressing interoperability with respect to the integration of smart grid devices covering the application of procedures and practices involving interface identification, specification, testing, and lifecycle management. The technical approach to addressing interoperability should include:

- A summary of the information exchange interfaces for communicating automation devices and systems (i.e., their points of connection with other elements of the system).
- A summary of how the project will provide openly available and proprietary aspects of the interface specifications, and how existing (legacy) communicating devices or systems will be integrated into the project.
- A summary of how the project will address response to failure and device upgrade scenarios, such that overall system impact is mitigated.
- A summary of how the project will support compatibility with NIST's emerging smart grid framework for standards and protocols.

Submitted Project Plans are also required to include a section on the technical approach to cyber security. Cyber security should be addressed in every phase of the engineering lifecycle of the project, including design and procurement, installation and commissioning, and the ability to

provide ongoing maintenance and support. Cyber security solutions should be comprehensive and capable of being extended or upgraded in response to changes to the threat or technological environment. The technical approach to cyber security should include:

- A summary of the cyber security risks and how they will be mitigated at each stage of the lifecycle (focusing on vulnerabilities and impact).
- A summary of the cyber security criteria utilized for vendor and device selection.
- A summary of the relevant cyber security standards and/or best practices that will be followed.
- A summary of how the project will support emerging smart grid cyber security standards.

DOE intends to work with those selected for award but may not make an award to an otherwise meritorious application if that applicant can not provide reasonable assurance that their cyber security will provide protection against broad based systemic failures in the electric grid in the event of a cyber security breach.

## **6. Project Costs and Benefits**

Submitted Project Plans are required to include a discussion of the plan for data collection and determination of project costs and benefits. With respect to project costs and benefits, DOE is interested in having project data collection efforts focus on the determination of overall and net benefits to consumers, companies, and society as a whole that result from project activities to enable smart grid functions and deploy smart grid technologies, tools, and techniques.

In addition, DOE plans to apply a framework to determine overall and net benefits of the SGIG projects. The framework provides the types of benefits that DOE would like to examine, as well as the data required to estimate those benefits. DOE intends to work with those selected for award but may not make an award to an otherwise meritorious application if the applicant does not reach an agreement with the DOE on the specific types and formats of data and information that will be needed for the DOE cost-benefit analysis. Applicants should provide a comprehensive discussion on what data will be collected and the types of benefits that will be expected from the project. In addition, applicants should discuss all of the relevant costs that should be included in the analysis of costs, including the un-depreciated costs of existing (to-be-replaced) equipment.

Applicants should also provide a brief discussion that includes quantitative estimates of the expected impact of their project on the areas of benefit (all that apply) listed in Table 6. These areas include:

- Lower electricity costs.
- Lower peak demand.
- Lower T&D losses.
- Lower O&M costs.
- Reduced transmission congestion costs.
- Reduced costs of power interruptions.
- Lower emissions of greenhouse gases.
- Lower consumption of oil.

It is an important DOE goal to analyze costs and benefits of SGIG projects in the most complete and comprehensive manner possible. In developing their Project Plans, applicants should be