Topic A Requirements

Topic A, Interconnection-Level Analysis and Planning

Topic A awardees must fulfill the following requirements:

1. The work to be performed must cover the entire Interconnection.

2. Analyses and planning must be developed and performed in a transparent and collaborative manner, and the study processes must be open to participation by state and federal officials, representatives from independent system operators (ISOs) and regional transmission organizations (RTOs), utilities, and relevant stakeholder bodies or non-government organizations (NGO's), including appropriate entities in Canada and Mexico. Discuss approach to ensure consensus among stakeholders on key issues.

3. The awardee must establish a multi-constituency steering group that will provide strategic guidance to the Applicant's analysts on the scenarios to be modeled, the modeling tools to be used, key assumptions for the scenarios, and other essential activities. At least one-third of the members of the steering group shall be state officials.

4. The modeling tools and databases used and developed under an award by the awardee will be public, and all events and meetings of study groups shall be open. The work to be performed will require the Applicant to have access to pertinent data from all electric utilities, generators, RTOs or ISOs, demand-side providers, and any other entities relevant to transmission planning in the interconnection.

5. A portion of the funds provided by DOE shall be available, in accordance with applicable regulations, for travel costs and other expenditures required to enable representatives of relevant non-profit, non-governmental organizations (NGOs) to participate in the development of interconnection-level analyses and plans. Funding for state officials' participation in these activities will be provided through the awards made under Topic B.

6. The work performed by the awardee shall give appropriate attention to the merits of alternative configurations of the interconnection's EHV (Extra High Voltage) AC and DC network. That is, the future network will be more than a collection of lines and facilities – it must operate as an integrated system, and the awardee must provide guidance to the affected governments and electric utilities and related organizations as to alternative configurations of major interest and their implications.

7. The work performed by the awardee shall give special attention to technological uncertainties that could have major effects on future transmission requirements, such as the prospects for offshore wind generation (as compared to on-land wind), other offshore generation technologies such as ocean energy, batteries for plug-in electric vehicles, other energy storage technologies, on-site photovoltaic or other significant

customer-based generation, better technological and geographic availability of baseload renewables, carbon capture and sequestration, advanced nuclear, and other relevant technologies. When appropriate, the awardee shall reach out to experts on specific technologies at universities, DOE's national laboratories, and other appropriate organizations to obtain expert information needed for its analyses.

8. The work performed may include supporting analyses on topics such as variable generation integration studies, training of utility system planners and operators on variable generation and also interconnection planning, reliability analyses of alternative large transmission configurations, and improvements to modeling tools used by the entity that may include, but may not necessarily be limited to, how to better model demand-side measures, and also allow longer modeled timeframes.

9. The long-term transmission plans to be developed by the awardee shall satisfy all reliability standards that have been approved by the Federal Energy Regulatory Commission. In addition, they shall achieve and balance the following objectives:

    a. They must consider all available technologies (to the extent that they may become economic) for electricity generation, energy storage, transmission, end-use energy efficiency, demand resources, and management of transmission- and distribution-level facilities.
    b. They must satisfy all current state and federal requirements (as of the date of the analysis underlying the plan(s)) for renewable energy goals, energy efficiency goals, and goals for reducing greenhouse gas emissions.
    c. They must minimize the long-term costs of producing and delivering electricity to consumers.
    d. They must minimize the overall long-term impacts of electricity supply activities on the environment.
    e. They must provide a path for efficient grid development (e.g., build fewer but larger long-distance transmission lines).

10. The first version of the interconnection-level plan(s) shall be delivered to DOE no later than June 30, 2011. An updated plan(s) shall be delivered to DOE no later than June 30, 2013.