

Panel 1 – Uncertainties in Renewable Scenarios and Renewable Calculator

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12-IEP-1D

DATE MAY 14 2012

RECD. MAY 16 2012

- Scenarios should consider uncertainties in:
 - a. *Margin required to support load growth, RPS Goals, etc.*
 - b. *Resource assumptions:*
 - *Resources with clear information (such as executed & approved PPAs or verified participation in other approved procurement) should be preferred over those with no or very little information available.*
- Renewable Calculator should:
 - a. *Set Objectives:*
 - *Policies (e.g., GHG reduction, Reduced environmental impacts)*
 - *Planning philosophy (larger transmission upgrades with greater longevity/less need for near-term replacement vs. smaller transmission upgrades with greater likelihood of additional, future upgrades)*
 - b. *Set Design Requirements:*
 - *Reduce uncertainties*
 - *Consider planning horizon and Lead times*
 - *Recognize the limitation of the simplified approach*
 - *Moderate changes – frequent and drastic changes hurt planning efforts & investment decisions*
 - *Make realistic assumptions, updated information & consistent data*
 - *Consider future advances in technologies*
 - *Increase transparency – include stakeholder input*

Panel 1 – Policies or goals in Renewable Scenarios

- Policies or goals to be considered in developing the scenarios:
 - a. *RPS objectives (diversified fuels, cost-effective reliability, reduced emissions)*
 - b. *GHG reduction*
 - c. *Environmental impacts*
 - d. *Identify & address potential issues on technical feasibility (w/in planning horizon),*
 - e. *RPS & DG policies should consider the supporting technologies for implementation. Examples:*
 - *Reliability needs, including geographical and technology diversity as well as local reliability, A/S, etc.*
 - *Forecasting & Response- technology needed to provide visibility and control to the grid operator (which may require new technology, particularly for DG)*
 - *Lead time for needed new technologies, and assuring investment in new infrastructure is consistent with lead time (and/or “upgrade ready”)*

Panel 1 - Transmission, Project Siting and Information for Decision making

- Efficient process to identify and permit transmission:
 - a. *Increased coordination between the various Agencies*
 - *Long-range planning needs consistent with all policy objectives (avoiding current potential for insufficient transmission to meet policy objectives)*
 - *Short-term implementation needs to put timely “steel in the ground”*
 - b. *Provide information for developers to reasonably assess capacity for potential sites*
 - c. *Develop “quick fix” upgrade projects with lower costs and shorter lead times to meet immediate needs, in addition to large transmission projects that can serve multiple purposes, instead of medium-term fixes that take too long, cost too much and will need expensive replacement*
 - d. *Once approved, implement with milestone schedules and corrective action.*
- Incentives or penalties in the procurement process to encourage renewable generators to locate in desirable transmission areas
 - a. *Work with development community to identify realistic development areas*
 - b. *Identify “desirable” areas for bid evaluation, examples:*
 - *improved TRCR*
 - *“points” for desirable generator characteristics and locations*
 - c. *Include mechanisms to ensure timely availability of needed infrastructure*
 - d. *Enforcement of milestones through corrective action*
- Information needed by the stakeholders to assist in decision making:
 - a. *Portfolio fit and timing of need for new resources*
 - b. *Value (quantitative and qualitative) the resource can provide.*
 - c. *Potential environmental impacts*
 - d. *Timing and costs of transmission upgrades*

