
2011 IEPR Workshop – Transmission Needed to Meet State Renewable Policy Mandates & Goals

Robert Woods
Director – Electric System Planning
SCE



Interconnection of Renewables to the Transmission System: Challenges

■ **Transmission/Distribution System Operability**

- Safety and Reliability
 - Impact of generation on ability to transfer load between distribution circuits/substations
 - Real power control to curtail excessive generation
 - Unintentional “Islanding”
 - Lack of “low voltage ride through” where temporary faults can shut down large amounts of generation
 - Line management and service
- Voltage
 - Steady state voltage regulation
 - Transient over-voltages caused by connecting generation to systems with little or no load
- Short circuit duty (impact on circuit breaker duty ratings)
- Power Quality, Intermittency, Stability
- Protection Requirements

■ **Transmission/Distribution Costs: Rate Impacts**

- Developer interconnection costs, utility network/distribution upgrade costs

■ **Interconnection Process: Project Volume & Timeline**

- As of mid-April 2011, SCE has approximately 865 renewable generation interconnection requests in process queue

■ **Project Development: Land Use**

- Land acquired for transmission projects should be held in rate base commensurate with the length of time for project development

Interconnection of Renewables to the Transmission System: Progress & Recommended Actions

■ **Interconnection Process Reforms:**

- Large Generator Interconnection Process (LGIP) reform converted inefficient serial study process to more efficient cluster study process (2007-2008)
- Small Generator Interconnection Process (SGIP) reform combined small/large generator processes into more efficient, comprehensive interconnection study process (2010)
 - Created Independent Study Process
 - Expanded Fast Track Availability

■ **Major SCE Transmission Projects: Ongoing Progress**

■ **Streamlining of Permitting Process:**

- The greatest time savings resulting from process reforms will be for projects where the permitting process has not begun
- SCE supports reforms that reduce overall permitting times and effort, such as:
 - Increasing collaborative efforts between the state/federal agencies and the applicant, before and after application filing, to avoid duplication of surveys/analyses, but which maintains agency independence
 - Conformance of legal agency-imposed mitigation measures to match the measures required by resource agencies
 - Information requirements and detail levels in CEQA and NEPA documents should meet, but not significantly exceed, legal requirements