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

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# 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

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# 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