

# APEC-ISGAN Smart Grid Test Bed Networks Workshop

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Washington, DC  
January 24-25, 2012

## Draft Meeting Summary

Over fifty experts and officials from laboratories and government agencies in nine different economies convened to discuss practical steps toward building a global network of smart grid test beds. They agreed in principle to establish a Smart Grid International Research Facility Network (SIRFN) as an Annex within the International Energy Agency (IEA) Implementing Agreement for a Co-operative Programme on Smart Grids (aka ISGAN) working in partnership with the Asia Pacific Economic Cooperation (APEC) Smart Grid Initiative (ASGI) and the associated Smart Grid Test Bed Network of the APEC Energy Smart Communities initiative (ESCI).

Representatives from a number of economies, several U.S. national laboratories, the Smart Grid Interoperability Panel, University of Pennsylvania and UL were present. The full list of participants is listed at the end of this summary.

Participants made a series of presentations on the technical focus and capabilities of their respective laboratories and research institutions. These presentations will be made available to participants through the Knowledge Sharing Platform of ESCI, for which a website will be launched in March 2012. Pursuant to discussion of common areas of interest across their programs, participants agreed to exchange more detailed information on specific planned and ongoing testing activities in six areas:

- Renewable Energy & Distributed Energy Resources Integration
  - ORNL, BNL, NREL, SNL, Korea, DERLab, UL, PNNL
  - Charlie Hanley, SNL, Coordinator
- Buildings Automation
  - DERLab, SNL, PNNL, NREL, ORNL
  - Tom King, ORNL, Coordinator
- PEV Integration
  - DERLab, PNNL, NREL, ORNL, ANL, UL, SNL
  - Korea, Japan Australia interested
  - Michael Kintner-Meyer, PNNL, Coordinator
- Microgrids
  - DERLab, NREL, UL, Fortoum Finland, BNL, ORNL, SNL, LBNL, PNNL
  - Phillip Strauss, DERLab, Coordinator
- Distribution Automation
  - DERLab, NREL, BNL, ORNL, PNNL, SNL
  - Stephanie Hamilton, BNL, Coordinator

- Cybersecurity
  - DERLab, UL, ANL, SNL, PNNL, ORNL; Sweden also interested
  - Coordinator TBD

Representatives from Germany, Korea and the United States confirmed that they were prepared to make their test bed facilities available to other economies on an equitable basis. Other economies were encouraged to confirm the availability of their smart grid test bed facilities to qualified researchers. Some preliminary discussion took place on the nature of access to facilities – including the types of researchers and research institutions that would have access, the sharing of costs between hosts (such as for routine facility maintenance) and visitors (such as for travel and accommodation), and the system for reserving access to facilities at specific times and places.

Significant discussion occurred regarding where the test bed network would fall on the broader technology development path (i.e., from research and development (R&D) to technology demonstration and validation to product commercialization and certification). Participants generally agreed that the network should not duplicate existing international R&D collaboration, nor should it attempt to replace existing testing for commercial certification. An opportunity was noted for the network to test and “prove out,” short of official certification, specific interoperability concepts. It was agreed that more detailed, systematic discussion would be required to set forth the operating modalities of the test bed network, with recognition that specific modalities might differ among the six areas of interest.

Participants agreed that the test bed network would have significant value to the smart grid community through development of standardized information on major smart grid test beds and test facilities, systematic comparison of the capabilities of these test beds and test facilities, identification of gaps and overlaps between their smart grid testing program, and subsequent realization of opportunities to leverage each other’s work through better planning and coordination of smart grid testing programs. Information will be gathered through the contact groups established in the six areas of interest and shared through the ESCI knowledge-sharing platform and ISGAN knowledge-sharing Annex. It was further agreed that contact groups within each area of interest should to begin identifying potential areas of collaboration and developing projects that will demonstrate the added value of the smart grid facility network. In addition, a formal SIRFN Annex proposal will be prepared to submit to the ISGAN Executive Committee (ExCo) for review and approval in March, with a “soft” launch of SIRFN envisioned for the 3<sup>rd</sup> Clean Energy Ministerial in April, 2012.

The group agreed that SIRFN would start on activities with broad support, like creating and sharing information on facility capabilities, and, based on these initial successes, grow more ambitious as key obstacles are overcome. Those obstacles include striking a balance between protecting intellectual property while still sharing appropriate research results and funding testing/research activities and visits to facilities given the multiple governments involved and the wide range of test facilities and users in the private, government and university sectors that could be involved.

Workshop Participants:

| Last Name    | First Name       | Affiliation  | Country/<br>Economy | Email Address                         |
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