

ASIA CLEAN ENERGY FORUM 2019

PARTNERING FOR IMPACT

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Deep Dive Workshop

Grid Integration and System Flexibility: Status and Emerging Trends in Asia



USAID
FROM THE AMERICAN PEOPLE



Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH



NATIONAL RENEWABLE ENERGY LABORATORY

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Background

With costs for renewable energy (RE) continuing to fall, in many countries below the price of new thermal capacity, RE installations continue to increase rapidly. An increasing number of countries in Asia have shifted from planning for the integration of RE to implementing changes. In this Deep Dive Workshop (DDW), a continuation of a multi-year deep-dive series on grid integration, the United States Agency for International Development (USAID), the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), and U.S. Department of Energy's National Renewable Energy Laboratory (NREL) will bring experts and practitioners to share the latest best practices and regional examples of policies, regulations, and programs for cost-effective renewable energy integration.

Objective

This DDW will build upon several previous years that USAID and NREL have organized on grid integration. Since much progress has been made around the world on grid integration over the past few years, this session is a reboot - covering global and regional status and progress. It will discuss new approaches and state-of-the-art analysis, policies, processes, and technologies that are now being deployed in systems achieving high variable RE penetration.

Agenda

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| 10' | Welcome, Learning Objectives, and Agenda Overview |
| 30' | Grid Integration: Challenges and Solutions |
| | <ul style="list-style-type: none">• Introduction to key concepts and spectrum of challenges for large-scale renewable energy integration |

- Getting to 100%: What tools can help inform pathways for utilities, cities, and countries to achieve a reliable, 100% clean or renewable energy power system?

Speaker: Jaquelin Cochran, NREL

15'

Audience Poll: Emerging RE Integration Challenges in the 2020s

- What integration challenges are audience members facing today?
- What challenges do you anticipate for the next decade in clean energy deployment?
- What technology, policy, or political solutions will help RE become more competitive in the next decade?

Session Moderator: Jen Leisch, USAID

35'

Grid Integration: Status and Opportunities for System Flexibility Across Asia

- Overview: “Highlights of policies, regulations, operational practices and the role of flexible resources in unlocking the uptake of VRE”
- Case Study: ASEAN regional grid integration
- Q&A

Facilitator: Peerapat Vithayasrichareon, IEA

30'

Break

45'

TED Talks: Emerging Solutions for Large-scale Grid Integration

Experts will give short, intensive, though-provoking talks covering three emerging topics:

- Flexible generation resources
- Market design to access flexibility
- Energy storage technologies

[Speakers: TBD]

45'

Highlights, Lessons Learned, and Country Experiences

Panel Session and Q&A:

- Results of Audience Poll and Q&A for experts
- Panelist of speakers and highlighted country representatives will share recent experiences and lessons learned

Facilitators: TBD

Panelists: TBD

90'

Lunch

Speakers



Jennifer Leisch
USAID-NREL Partnership
Manager,
USAID

Jennifer Leisch manages the USAID-NREL Partnership, overseeing a portfolio of clean energy integration projects. Jennifer leads the USAID Greening the Grid initiative. She holds a Ph.D. focused on renewable energy science, and she has previously worked in the research and development of advanced solar energy and fuel cell technologies.



Jaquelin Cochran
Grid Systems Group Manager,
NREL

Jaquelin Cochran, Ph.D., is manager of the Grid Systems Group at the National Renewable Energy Laboratory. Dr. Cochran analyzes best practices to integrate renewable and distributed energy resources to the electric grid. She recently co-led a renewable energy grid integration study of India and is currently leading the City of Los Angeles 100% Renewable Energy Study. Before joining NREL, Dr. Cochran was an Assistant Professor of Natural Resource Management with KIMEP University in Almaty, Kazakhstan. She also served as a Peace Corps Volunteer for two years with the Polish Foundation for Energy Efficiency (FEWE) in Krakow. She holds a Ph.D. and M.A. from the Energy & Resources Group at the University of California at Berkeley.

Peerapat Vithayasrichareon,
IEA

Markus Wypior
GIZ