

Complementary Training Agenda for Accelerating Clean Energy Transitions and Resilience in Pacific Island Countries Workshop



Dr. James Nelson

The Polytechnic School, Ira A. Fulton Schools of Engineering

Director of Technology and Innovation, Laboratory for Energy And Power Solutions (LEAPS)

Marlon Acevedo

Workforce Development Lead, Laboratory for Energy And Power Solutions (LEAPS)

Instructors



Dr. James Nelson
Director of Technology
and Innovation - LEAPS



Marlon Acevedo Rios
Workforce Development
Lead - LEAPS

ASU LEAPS

*ASU is a comprehensive public research university, measured not by whom it excludes, but by **whom it includes and how they succeed**; advancing research and discovery of **public value**; and assuming fundamental responsibility for the economic, social, cultural and overall health of the communities it serves. **Focus on use-inspired research.***

- Largest US university: **170,000 students; 25,000+ researchers** and practitioners
- \$6B in utilities infrastructure
- 50 MW solar generation, 20 MW combustion turbine, 25 MW combined heat and power (CHP); largest thermal loop in AZ
- Building **public-private partnerships** and networks with utilities, developers, federal and defense entities, and non-profits
- Commitment to sustainability with world's 1st School of Sustainability
- Over **\$800M/yr in research** to deployment
- International centers in power systems

- **Breadth:** 3,000+ people in energy Research, Development, Technology Evaluation, Technical Transfer, Pilot Deployment, Policy
- **Depth** (below): USAID Pakistan Centers for Advanced Studies in Energy (PCAS-E), Vocational Training and Education for Clean Energy Program (VOCTEC), Higher Engineering Education Alliance Program (HEEAP)
- **Reach:** 100+ countries; YouthMappers, DreamBuilder



ASU Laboratory for Energy And Power Solutions (LEAPS)



Creating technical and business solutions that facilitate the global transition to a resilient low-carbon economy.

Providing energy innovations from concept to construction with a focus on energy access, microgrids, grid modernization, critical infrastructure, and workforce development.

- Basic and applied research in simulation and control
- Prototype technologies for field development
- Partnerships for commercialization and scale
- Grid modernization and microgrid test bed
- New market opportunities for on-grid and off-grid solutions
- Training and workforce development programs



Laboratory for Energy And Power Solutions (LEAPS)



Grid Modernization

Scalable controls from
circuits to system



Global Energy Access

Solutions that support
sustainable development



Workforce Development

Education for a changing
global energy economy



Testing Evaluation and Demonstration

Proof of concept, testing,
and demonstrations to
scale solution



Defense Energy Security

Energy transition
planning defense
applications

LEAPS also provides consulting services for master planning support, technical and financial modeling, and third-party evaluation of electrical infrastructure projects. In addition, prototyping services are available to create new components, assemblies of components, or business modeling from existing prototypes to scale solutions and markets.

Training Overview

Course Materials and Agenda

Goals

- Overview of key microgrid concepts and considerations
- In-depth exploration of project critical data including electrical load and rate structures
- Access to XENDEE and guided group activities for a Fijian use case
- <https://www.dropbox.com/scl/fo/1xgp4ithf8brosrhefs2m/h?rlkey=996el6kjllb5k7kipnxbx8jom&dl=0> to download a zip file with all of the course materials

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THURSDAY, November 16

Location: Japan-Pacific ICT Centre, Video Conference Room 1 (3rd floor), **Laucaja** Campus, University of South Pacific (USP), Suva, Fiji


Instructors: Dr. James Nelson, Mr. Marlon Acevedo Rios


Time	Topic	Format
9:00am	Arrive, Coffee, and Introductions	
9:15am	Welcome and Overview	Lecture
9:30am	Microgrid Concepts and Definitions & Motivations for Microgrids	Lecture
10:00am	Stakeholders in the Microgrid and Electric Power Industry	Lecture, Discussion
10:30am	Break	
10:40am	Introduction to Optimization and the XENDEE Platform	Lecture
11:10am	Understanding Electrical Load Estimation	Lecture, Activity
12:00pm	Lunch	
12:45am	Understanding Electric Rate Structures and Energy Markets	Lecture, Activity
1:30pm	Fijian Hospital Microgrid Design Using XENDEE	Group Activity
3:00pm	Break	
3:10pm	Microgrid Decision Metrics and Cash Flow	Lecture, Example
4:00pm	Modifying and Understanding XENDEE Models	Group Activity
4:20pm	Training Conclusion	Discussion
4:30pm	End of activities	

Thank you!


For more information, please contact:


Dr. James Nelson

 jrnels12@asu.edu

 +420724395406

Marlon Acevedo Rios

 jaceve25@asu.edu

 +14808036308