



AFRICA
MINIGRIDS
PROGRAM



Unlock your future in solar energy!

Register for the Capacity Building Certificate
Program on Community Minigrid
Development today.

Application deadline: 19 December 2025
Program commencement date: 19 January 2026

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Register for a fully sponsored Capacity Building Certificate Program on Community Minigrid Development with the University of Eswatini UNESWA Centre for Sustainable Energy Research CSER today.

About the Capacity Building Certificate Program on Community Minigrid Development

The Capacity Building Certificate Program on Community Minigrid Development is a vocational training program that is fully sponsored by the Africa Minigrids Program AMP Eswatini which is a technical assistance program that promotes digital knowledge management amongst its broad program components. The training will be conducted for two weeks a month over a three month period.

Delivery mode

The training will be available on online platforms as well as in-person classes at the UNESWA Kwaluseni campus. The modules will be delivered from 8.30 am to 12.30 pm. Candidates opting for the Competence Certificates will be assessed through assignments and project presentations. Participants have the option of attending the modules in person, online only, or in a hybrid learning format where they learn through a mix of in-person and online lessons.

Sponsorship

This program is sponsored by the Africa Minigrids Program (excluding travel and accommodation).

Target groups

Engineers, technologists, artisans, and technicians in the energy sector can apply for the program together with staff from regulatory authorities, entrepreneurs community developers, prospective mini grid developers, operators, and academic students. Priority will be given to young people and women who apply for the program.

Entry requirements

The minimum entry requirement is an SGCSE or related certificate with a credit in Mathematics and Physical Sciences. The selection process will be competitive and candidates will be selected based on qualifications and motivation.

Course instructors

The module instructors for the program are academically active UNESWA lecturers and technologists who also teach in other professional development programs including the CSER-Youth Leadership and Sustainable Energy Programme. The program instructors are from the UNESWA departments of Electrical and Electronic Engineering, Physics, and Economics.



Course sequence

The program is highly practical and interactive and will include case studies, field trips and basic experimentation.

WEEK	MODULE	CONTACT TIME
Week 1	Introduction to Minigrids	6(4)
Week 1	Minigrid Planning	10
Week 2	Load Forecasting	6(4)
Week 2	Demand Side Management	10
Week 3	Minigrids Business Model	10
Week 3	Minigrids Economics	10
Week 4	Renewable Energy Finance	10
Week 4	Tariff Design for minigrids	6(4)
Week 5	Feasibility studies for minigrids	10
Week 5	Enabling Regulatory Instrument	10
Week 6	Green Entrepreneurship	10

Course overview

Module 1: Introduction to Minigrids

Sustainable energy systems. Introduction to mini grids. Overview of a minigrid project Lifecycle: Planning, Procurement, Construction, Operation & Use. Renewable energy mini grid technologies. Green minigrid potential for Eswatini. Environmental, socio-economic, health and safety. Minigrid deployment statistics in Africa vs global. Challenges for mini grids: Environmental risks and public safety.

Module 3 - Load Forecasting

Overview of demand assessment and forecasting. Demand assessment process (data collection, preparation, analysis, calculating consumer's willingness to pay, evaluating economic benefits). Energy system modeling (load and demand growth, assessing mini-grid performance). Load forecasting results: system size, system cost, system performance. Energy Demand profiles (deterministic load, stochastic load). Minigrid performance monitoring and performance indicators. Quality Assurance Framework for Minigrids. Quality Assurance Framework Customer Service levels.

Module 5 - Minigrids Business Model

Types of mini-grid operators. Minigrid locations/markets. Business model concept and strategies. Business modeling tools. Business models for mini grids (customer focus, tariff types, revenue collection). Productive use case studies. End-user finance; Key maker model.

Module 2 - Demand Side Management

Community needs assessment. Energy needs assessment. Optimal planning, sizing, and technology selection for mini grids. Site selection: stages in the selection process; selection criteria; population density and minigrid sizing. Field survey: planning, structure, best practices, and challenges in data collection. Environmental, socio-economic impact assessment. Assessment of available/viable energy resources. Tools for site selection: site mapping tools and market assessment. System design and sizing with software training.

Module 4 - Demand Side Management

Introduction to DSM. DSM strategies. Supply demand and unbalanced load scenarios. Case Studies. Why productive use (PU) matters. PU best practices and case studies. Strategies for Pus: Appliance financing, Business incubation, Incentives for PU actors.

Module 6 - Minigrids Economics

Economic benefits (infrastructure savings, fuel savings, and ancillary services). Cost structure in mini grids operation. Minigrid economic performance indicators. Life cycle assessment and payback time. Willingness to pay versus ability to pay for electricity. Making rural mini grids work for investors.

Module 7 - Renewable Energy Finance

Types of Financing. Methods of Financing. Case studies (scalable minigrids, smart village minigrids, Portable minigrids). Cost and benefits of Minigrids. Financial challenges: risk for investors, technology challenges, developer challenges. Project Risk assessment and mitigation.

Module 9 - Feasibility studies for Minigrids

Socio-cultural and ethical issues. Gender impact and consideration. Risk analysis for minigrid implementation: Political, economic, social, technology, legal, environmental. Community identification, site assessment, engagement and design. Community engagement processes. Community engagement tools. Leveraging community engagement as a theft control measure within the facility to minimize financial losses, power generation disruption, and vandalism. Mapping stakeholder's interests and contributions.

Module 11 - Green Entrepreneurship

Green technology, green business, and environmentally friendly initiatives. Green business skills and innovation. Minigrids as a resource powering green enterprise. Business model canvas for green business. Access to funding. What investors look for in green businesses.

Module 8 - Tariff Design for Minigrids

Tariff design for local conditions. Tariff calculations. Energy-based tariff types, power-based tariffs. Prepaid or postpaid. Metering technology, smart metering for Minigrids (SteamCo, Spark meter and more). Revenue collection. Balancing sustainability against affordability.

Module 10 - Enabling Regulatory Instruments

National energy policy and regulations. Ownership and operating models. Project initiation and procurement. Licensing and concessions. Permits across the project life cycle. Power purchase agreements. Financial support schemes. Case studies.

Application deadline

19 December 2025

Commencement of the program

19 January 2026

Do not miss this grand opportunity. Enrol now.



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Scan QR code or go to <https://ln.run/TtODM> to apply.



Email the completed application form to Dr Mongi Dlamini at the following email: modlamini@uneswa.ac.sz

