

Solar PV Industry & TVET Training Landscape in AFRICA

Population

About 1.5 billion

Energy Access and Solar PV Sector

Electricity Access

43% of the population has NO access to electricity, mainly in Sub-Saharan Africa.

Solar Power production

40% of global solar power potential is in AFRICA

12,641 MW of electricity from solar energy = 1.2% global solar production

2022

11,516 MW from solar PV cells

Key Drivers of Green Vocational Education and Training (VET) in Solar Energy

Africa 2063 Agenda

energy transition through science + technology

Abundant Solar Potential

Africa holds 60% of the best solar resources globally

Job Creation & Economic Growth

8-14 M energy transition jobs could be created in Africa by 2030

Climate Change Mitigation

Solar energy is crucial for reducing greenhouse gases

International Support

Initiatives like: The African Development Bank's Sustainable Energy Fund for Africa 35M\$

Challenges Facing Solar Training

- Skills Shortage**: Africa lacks 4.3 M engineers and technicians
- Inconsistent Policy Frameworks**: Regulatory uncertainties hinder investment and training
- Limited Funding**: Infrastructure and student funding are major challenges
- Poor Public Awareness**: Misconceptions about solar energy limit program uptake
- Training Infrastructure Deficit**: Lack of modern facilities and equipment for solar training

Regional Differences in Solar Training

North Africa

Countries like Egypt and Morocco lead in solar projects and training (e.g., Benban Solar Park)

East Africa

Kenya and Ethiopia account for 30% of global solar home systems

West Africa

Countries like Nigeria and Ghana focus on scaling solar PV due to high energy demand

Central Africa

Major infrastructure gaps hinder progress

109M people lack access to electricity

Best Practices for Skills Scale-Up

Universities and Research Institutes	TVET Institutions	Non-Formal Training
North Africa + Cairo University, German University in Cairo, German institutions offer a dual-degree Master's in Renewable Energy and Energy Efficiency	North Africa Egypt's Don Bosco Technical Institute offers renewable energy training, with courses certified by both the Italian Embassy and the Egyptian Ministry of Foreign Affairs.	North Africa Infinity's Women in Renewable Energy (I-WIRE) Committee offers vocational training boosting female involvement in renewable energy (especially in rural areas)
West Africa + University of Nigeria Nsukka, + Usman Danfodiyo University offer advanced degrees in renewable energy, focusing on solar power generation	West Africa Accra Technical Training Centre, Koforidua Technical University Green People's Energy for Africa initiative establish decentralized renewable energy systems	West Africa Nigerian companies offer in-company short courses to upskill the labour-force
East Africa Uganda Christian University (UCU) is launching a postgraduate diploma in Sustainable Business and Renewable Energy	East Africa + Nairobi Technical Institute, Kenya Renewable Energy Association (KEREAA) top-level centre in for solar PV installation	East Africa Kenya is a regional leader (companies and associations) offering training, such as Sigalaga National Polytechnic (SNP)
Southern Africa University of Cape Town's Energy Research Centre (ERC) carries out research and solar short course trainings	Southern Africa South Africa's Nkangala TVET College offers solar-specific courses with six-month internships through partnerships with companies	Southern Africa South Africa is a leader in the sector (ex. Terraforma Academy, Green Solar Academy) offer practical, hands-on courses in solar PV technology