VOCTEC's vocational training programs for operators and technicians focus on installation, operations and maintenance of renewable energy (RE) systems in developing countries. Local operators are mainly concerned with properly operating and maintaining a correctly installed RE system, whereas technicians will additionally be trained in the installation of RE systems.

Our training programs provide a very hands-on, practical and applied technical learning experience. Students obtain a practical understanding of renewable energy technologies and their long-term sustainability and are able to safely and efficiently install, operate, maintain and troubleshoot RE systems in their respective communities.

Each vocational training program is customized in accordance with local in-country requirements. Coursework involves both classroom and hands-on training, to give students familiarity with actual systems and applications. Depending on local capacity, availability and requirements, the length of our vocational training programs vary from 2-5 days for short on-site training modules and up to several weeks for intensive vocational training programs in specialized training centers.

Students will learn:
- Fundamental electricity principles, including electrical current, voltage, power and resistance
- Common terminologies and components used in RE technologies
- How to understand natural resource assessments and their relationship to local natural resources
- Best practices for system design and installation
- Importance of scheduled maintenance
- How to troubleshoot and repair renewable energy systems
- Difference between grid-connected and off-grid RE systems
- Significance of energy efficiency measures
- Social benefits of RE systems for community members and its limitations

What is VOCTEC?

The "Vocational Training and Education for Clean Energy" (VOCTEC) program, under the leadership of Arizona State University (ASU), is a 5 year global program funded by the United States Agency for International Development (USAID). VOCTEC aims to improve the sustainability of renewable energy infrastructure and investments in developing countries by increasing awareness, knowledge and capacity of local stakeholders, primarily in decentralized clean energy technologies.
Example Training Course Topics

Solar PV Workshop Outline
- Introduction to Solar Photovoltaics and its applications in stand-alone and micro-grid systems
- Basics of Balance of System (BOS) components
- Step-by-step approach for pv system installation
- Operations and monitoring of system and major components
- Major maintenance areas and procedures
- PV system testing and troubleshooting
- Hands-on lab experiments enforcing the theory learned in classroom

Wind Workshop Outline
- Overview of wind energy technologies and their applications in stand-alone and micro-grid systems
- Basic principles of electricity and how to safely use and measure it
- Basic principles of wind turbine site selection & proper siting
- Introduction to tower types and construction tools & techniques
- Turbine types and installation procedures
- Balance of System Components and proper construction
- Maintenance issues, requirements, and procedures

Micro-Hydro Workshop Outline
- Introduction to micro-hydroelectricity and its applications
- Identification, monitoring, operation and maintenance of civil works, electromechanical systems, electricity distribution grid, and household installations
- Classroom training combined with hands-on instruction on actual hydroelectric equipment at site visits or an electromechanics laboratory
- Installation, operation, and maintenance of electrical distribution grids
- Troubleshooting handbooks and community organization