UNIDO – Development of Regional Quality Infrastructure Frameworks

MicroEnergy International – Implementing partner

November 17th 2023

About MicroEnergy International (MEI)

MicroEnergy International is a consultancy company based in Germany with more than 20 years of experience in:

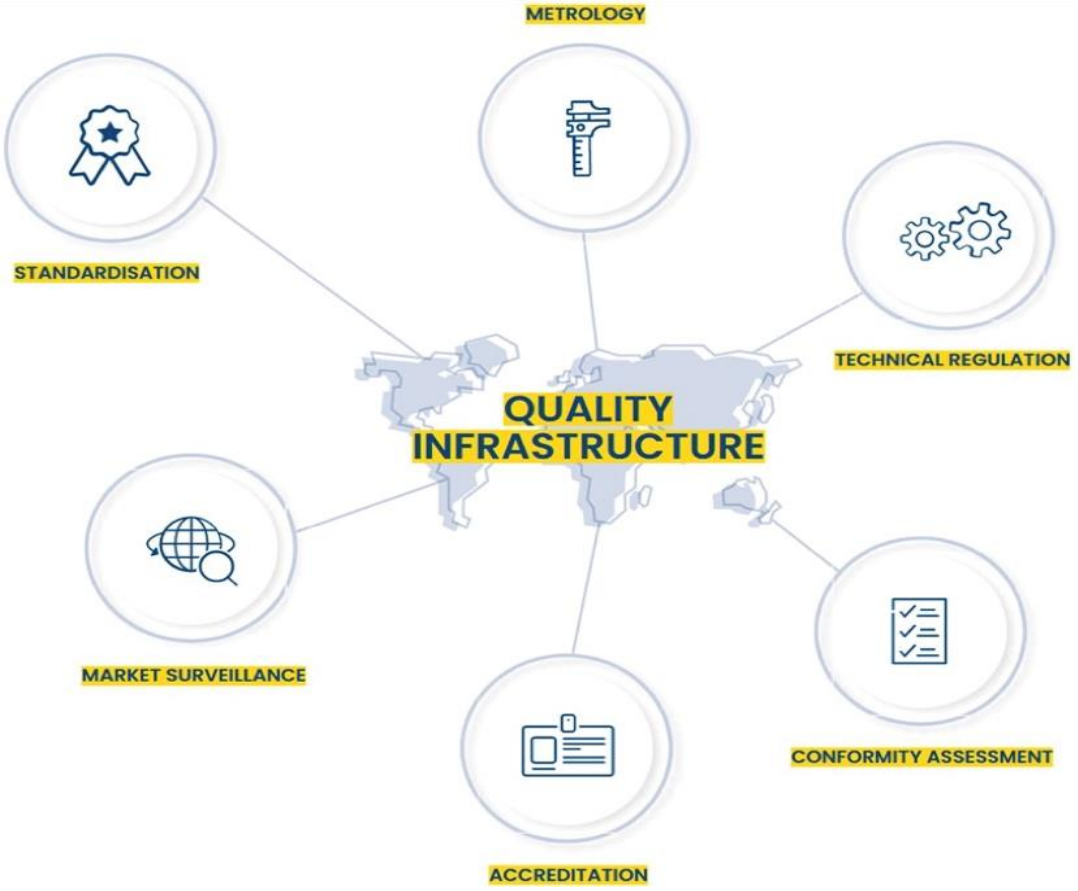
- **Technical assistance** for the promotion of clean energy technologies
- Technology solutions for off-grid electrification and productive uses of energy, including **solar irrigation, mini-grids and solar home systems**
- **Capacity building** and training of key stakeholders from the private and public sector
- Design and implementation of inclusive **finance instruments** for modern energy access
- Policy framework development for national **policies and technical standards**
- **Business model** development for the scale up of initiatives for the promotion of renewable energy solutions

Project objectives

- Develop customized Quality Infrastructure (QI) frameworks for solar PV in EAC and SPC.
- Enhance the effectiveness and relevance of solar qualification frameworks within these regions.
- Provide recommendations regarding priority international (IEC/ISO) PV standards to be included in the regional framework and develop new standards for solar PV products or services in these regions.
- Support the growth of solar market in both regions

Quality Infrastructure(QI)

QI for solar products is a comprehensive system that ensures the reliability, safety, and performance of solar energy-related components and solutions.



Workplan

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Phase 1. Project inception (Completed)

Activity	Timeline	Deliverable
1.1 Online inception meetings with project stakeholders, incl. GN-SEC centers	November 2023	D1 - Inception report Steering committee concept note
1.2 Sharing of documentation, lessons learned & project expectations		
1.3 Organization of steering committee and protocol for regular meetings		
1.4 Adjustment of workplan and project methodology		
1.5 Preliminary literature review and stakeholder mapping		
1.6 Contacting relevant stakeholders and scheduling interviews		
1.7 Preparation of draft inception report		
1.8 Incorporation of feedback		

Workplan

Phase 2. Baseline assessment on existing solar QI frameworks and management systems

Activity	Timeline	Deliverable
2.1 Desk research on international and regional QI frameworks and methodologies, including IEC/ISO Standards	December 2023 (D2.1) February 2024 (D2.2)	D2.1 – Outline survey with key solar QI questions D2.2 Analytical report publication
2.2 Desk research on QI frameworks and management systems in EAC and SPC, incl. Stakeholder identification and mapping		
2.3 Development of assessment indicators		
2.4 Design of survey/interview guides for consultations with key QI stakeholders in the GN-SEC regions		
2.5 Conduction of stakeholder interviews and online surveys with stakeholders in GN-SEC regions.		
2.6 Gap analysis of local and international QI frameworks		
2.7 Assessment of compliance of local practices with IEC/ISO standards		
2.8 Development of recommendations for including international standards into regional QI frameworks		
2.9 Preparation of draft analytical report on existing solar QI frameworks and management systems in EAC and SPC		
2.10 Incorporation of internal feedback on analytical report		

Workplan

Phase 3. Development of QI framework and management systems for EAC and SPC

Activity	Timeline	Deliverable
3.1 Development of draft regional solar QI framework documents and management systems for EAC and SPC, incl recommendations for improvement of capacities and processes	April 2024	D3 – Regional frameworks and management systems for SPC and EAC Procedures and guidelines for regional PV committees (RTCs)
3.2 Design of roadmaps for the implementation of regional QI processes and recommendations for testing and certification services		
3.3 Development of outline and procedures for regional technical committees (RTCs)		
3.4 Stakeholder consultation to gather feedback on the QI framework documents		
3.5 Incorporation of internal feedback on the draft framework documents		

Phase 4. Development of harmonized standards on solar PV and validation of draft documents

Activity	Timeline	Deliverable
4.1 In depth assessment of regional energy policies and technological needs	June 2024 (D4) July 2024 (Validation workshops) August 2024 (Formatting of documents for publication)	D4 – Harmonized solar PV standards Formatting of reviewed documents for publication
4.2 In depth review of international IEC and ISO standards on solar components and services, including testing standards and procedures		
4.3 Development of draft harmonized standards on solar PV		
4.4 Incorporation of internal feedback on PV standards		
4.5 Formatting for publication		
4.6 Conduction of validation workshops with key stakeholders		
4.7 Adjustment of solar QI framework, management systems and PV standards based on validation workshops and final consultations		
4.8 Formatting of reviewed documents for publication		

Workplan

Phase 5. Conduction of trainings on the regional frameworks and management systems

Activity	Timeline	Deliverable
5.1 Preparation of training concept note		
5.2 Review of relevant insights from Phases 1 to 4 of the project implementation		
5.3 Additional desk research on solar metrology, standardization, accreditation, conformity assessment and market surveillance	D5.1 - July 2024	D5.1 - Training concept note
5.4 Design of training materials and training evaluation questionnaire		
5.5 Preparation of logistics for the training sessions	D5.2 - September 2024	D5.2 - List of participants and certificates
5.6 Delivery of trainings and conduction of training evaluation		
5.7 Evaluation of training evaluation questionnaires	D5.3 - September 2024	D5.3 - Training report
5.8 Preparation of draft training report		
5.9 Finalisation of training report		

Workplan

Phase 6. Stakeholder consultations and participation in regional technical committee meetings

Activity	Timeline	Deliverable
6.1 Presentation of results	D6.1 – September 2024	D6.1 - Consultation and validation workshop report
6.2 Preparation of material for official validation workshop(s)		
6.3 Conduction of official validation and approval workshop(s)		
6.4 Adjustment of solar QI framework, management systems and PV standards based on validation workshops and final consultations		
6.5 Preparation of draft consultation and validation workshop report	D6.2 – October 2024	D6.2 - Mission report
6.6 Preparation of press release(s)		
6.7 Preparation of mission report		
6.8 Finalisation of mission and consultation and validation workshop reports		

Project key activities

Stakeholder cooperation	• Kick-off meeting with project stakeholders • Establishment of steering committee and conduction of monthly meetings • **Establishment of QI technical committees** • **Validation workshop and feedback on deliverables**
Baseline assessment	• **Stakeholder identification and mapping** • **Identification of relevant international QI frameworks (IEC/ISO Standards)** • In-depth assessment of demand for solar irrigation systems • Conduction of interviews/survey with key stakeholders
Elaboration of QI framework and standards	• Drafting QI framework documents and management systems • Roadmap for QI implementation • Procedures and guidelines for regional PV committees • Development of harmonized standards on solar PV
Training	• Preparation of training materials • Training delivery and evaluation

Project drivers and success factors

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Fostering local ownership	• Periodical coordination meetings through a Steering Committee • Coordination with UNIDO, ISA and GN-SEC centres • Establishment of regional technical committees
Knowledge transfer	• Evaluation and review of training conducted
Stakeholder cooperation	• Feedback rounds on the deliverables • Identification of available international standards and QI frameworks • Mapping of key stakeholders in SPC and EAC • Assessment of current status of QI frameworks and standards in SPC and EAC

Outline - Baseline Assessment on Existing Solar QI Frameworks and Management Systems in EAC and SPC

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1. Introduction
   - 1.1 International frameworks on solar QI frameworks
   - 1.2 Background and Methodology
2. Status quo - Solar QI Frameworks and management systems
   - 2.1 Mapping of international and transnational stakeholders
   - 2.2 Diagrams existing IEC/ISO solar PV standards
   - 2.3 East African Community (EAC)
     - 2.3.1 Regulations
     - 2.3.2 Standards (incl. IEC/ISO compliance)
     - 2.3.3 Stakeholder mapping and identification of capacities
     - 2.3.4 Conformity check and gap analysis
   - 2.4 Pacific Community (SPC)
     - 2.4.1 Regulations
     - 2.4.2 Standards (incl. IEC/ISO compliance)
     - 2.4.3 Stakeholder mapping and identification of capacities
     - 2.4.4 Conformity check and gap analysis
   - 2.5 Regional and trans-regional stakeholder network and cooperation analysis
3. Roadmap for the inclusion of international standards into regional frameworks
4. Critical stakeholders for roadmap implementation (e.g. metrological centres, universities, certification bodies)
5. Annex
   - 5.1 Interview guidelines
   - 5.2 Stakeholder contacts

Outline - Regional solar QI Frameworks and Management Systems for the Pacific Community (SPC)

1. Executive Summary
2. Recommendations for QI Framework and Management systems in SPC
   - 2.1 Content of QI Framework and Management Systems
     - 2.1.1 Standardisation (incl. List of suitable standards)
     - 2.1.2 Metrology
     - 2.1.3 Conformity Assessment (Testing and certification)
   - 2.2 Improvement of capacities and processes
   - 2.3 Roadmap for regional solar QI implementation
3. Annex - Outline and procedures for the regional technical committees (RTCs) for QI implementation support in SPC

Next steps – Baseline development

- Identification of international frameworks for solar PV QI and standards
- Knowledge exchange on the existing regional frameworks for solar PV QI and standards in EAC and SPC
- Support for stakeholder identification in EAC and SPC
- Support for contacting and scheduling stakeholder interviews and surveys