



MALAWI BUREAU OF STANDARDS

Promoting Standardization and Quality Assurance in Malawi

An overview – Standards on Renewable Energy Technologies

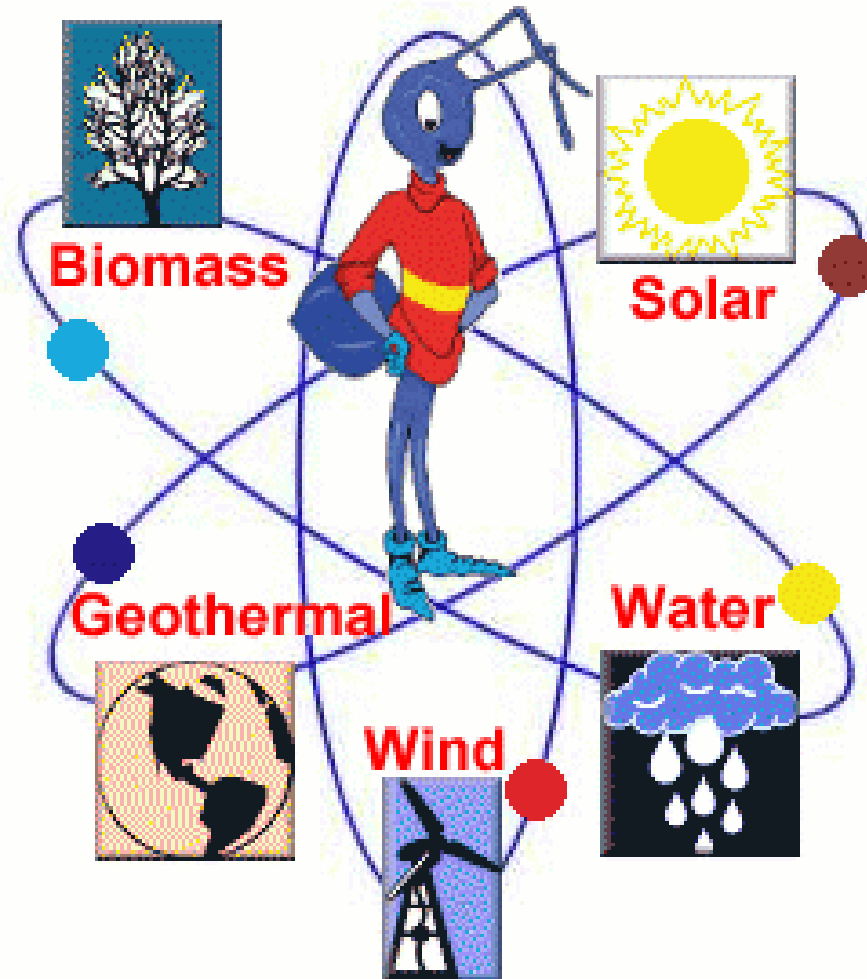
By

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Presentation outline

- What are RET
- What is quality in RET
- Objects of MBS
- Types and implementation of standards
- RET standards statistics
- Benefits of standards
- What standards cover presently
- Challenges and possible solutions in quality of RET
- Conclusion

Renewable Energy Sources





What are RET?



What are RET?



What is quality in RET

- Fitness for use/purpose
- Structural integrity
- Conformance to requirements
- Customer satisfaction/delight, exceeding expectations
- Degree to which inherent characteristics fulfils requirements (ISO 9000)
- Requirements – agreed between supplier and buyer or as stipulated in standards (specifications)

Objects of the MBS

- Promote standardization in commerce and industry
- Prepare and issue national standards
- Provide facilities for testing/analysing/examining articles/materials/substances
- Provide calibration services
- Assist any ministry, Govt dept., local authority, statutory corporation in preparation and framing of specifications or codes of practice
- Provide cooperation with representatives of any branch of industry, Government, or any person with the view of bringing standardization

Types of standards

- Specifications or product standards
- Methods of tests
- Codes of practice or guidelines
- Terminology or vocabulary

Statistics – RET standards

- Specifications – 14
- Vocabulary – 0
- Codes of practice – 2
- Guidelines – 8
- Recommendations – 14
- Sampling and test methods – 5
- Total of 43

Implementation of standards

- About 29 Mandatory – mostly Specifications
- About 14 Voluntary – Test methods, Codes of practice

Benefits of standards

- No country develops without standards
- Improve quality of life through health, safety and environmental sustainability
- Economic benefits – The huge cost of not maintaining standards
- Facilitate fair trade
- Facilitate communication

Challenges in ensuring quality in RET installations

CHALLENGE

- Poor workmanship – Correction and maintenance waste

SOLUTION

- Regulation of practice using Codes of practice



Challenges in ensuring quality in RET products

CHALLENGE

- Poor quality products on the market

SOLUTION

- Development of standards (product specifications) for products not currently covered
- **Regulation of imports through the MBS IQMS (Import Quality Monitoring Scheme) and Product Certification Scheme(for local)**
- **IECEE-CB IEC Conformity Assessment for Electrotechnical Equipment and Components and FSS – Factory Surveillance Scheme**
- **Market surveys**
- **Testing capacity development**

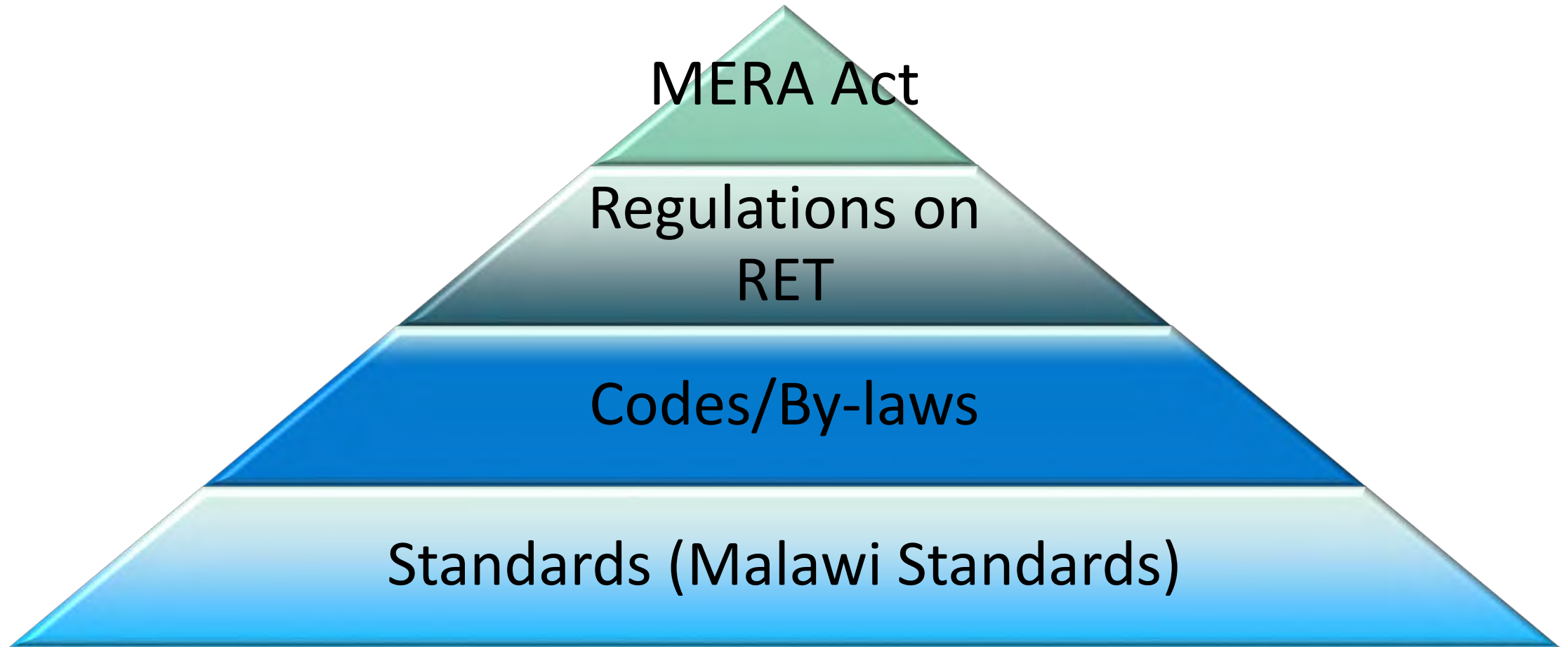


Challenges in ensuring quality in RET products - Testing Equipment for electrical products at MBS

Personnel: Instrumentation unit has 1 Electrical Engineer and 2 Technicians



Challenges in ensuring quality in RET – Gaps in the Regulatory framework



What are the standards covering?

Solar Water Heaters	Domestic and industrial	MS 62, 527, 758, 759, 760, 761-1 &2
Solar PV	Home systems Spec & Code of practice Modules (crystalline) CFL Batteries and Cells Water pumping system	MS 695 & 696 MS 711 MS 709 MS 710 MS 780
Hybrid systems	Solar and wind system	MS 779
Small RE systems & hybrid systems for rural electrification (based on IEC TS)	Decentralised systems Design, management, protection against electrical hazards, generators, microgrids, integrated systems interface, installation Solar lantern	MS 889 Parts 1-7, 889-7-1 &3, 889-8-1, 9-1 to 9-6, 12-1, among others
Fuels	Biodiesel, JSVO, Petrol/Ethanol blending	MS 805, 888, 170
Cookstoves	Solid fuel Type I and II	MS 158, 155

The MBS Electrical and Electronic certification scheme

- Started in 2009
- Mostly focused on inspection
- To be enhanced - SQAM project to enhance testing

Any Gaps in standards

- Different types of modules on the market (amorphous type etc.)
- Charge controllers and other devices partly covered
- Standards for Cells and batteries need careful assessment
- There is need for a GAP analysis on both standards development and implementation – ***Standards are demand driven***

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Thank you for your attention