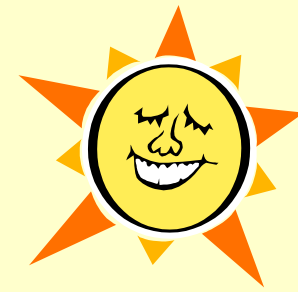
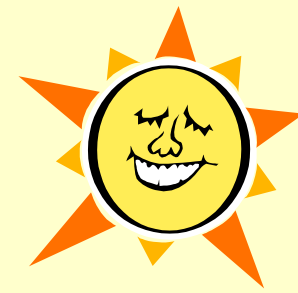


International renewable energy standards - non grid connected



**AFSEC WORKSHOP ON RURAL ELECTRIFICATION
AND
AFSEC TECHNICAL COMMITTEE MEETINGS
28 – 30 August 2012, Johannesburg South Africa**



IEC TC 82 (Solar photovoltaic energy systems)

JWG 1

IEC TS 62257 – technical document series : “Recommendations for small renewable energy and hybrid systems for rural electrification”

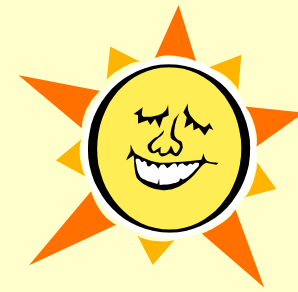


Presentation: Leon Drotsche JWG1 Co-Convener
South Africa

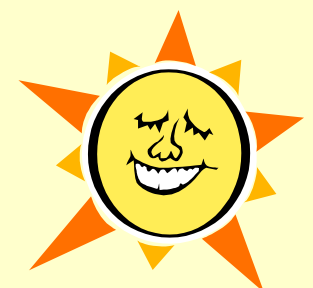
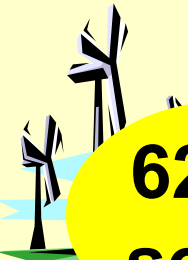
Preparation: Extract from presentation by A. Schmitt
originator of JWG1



Summary of the presentation

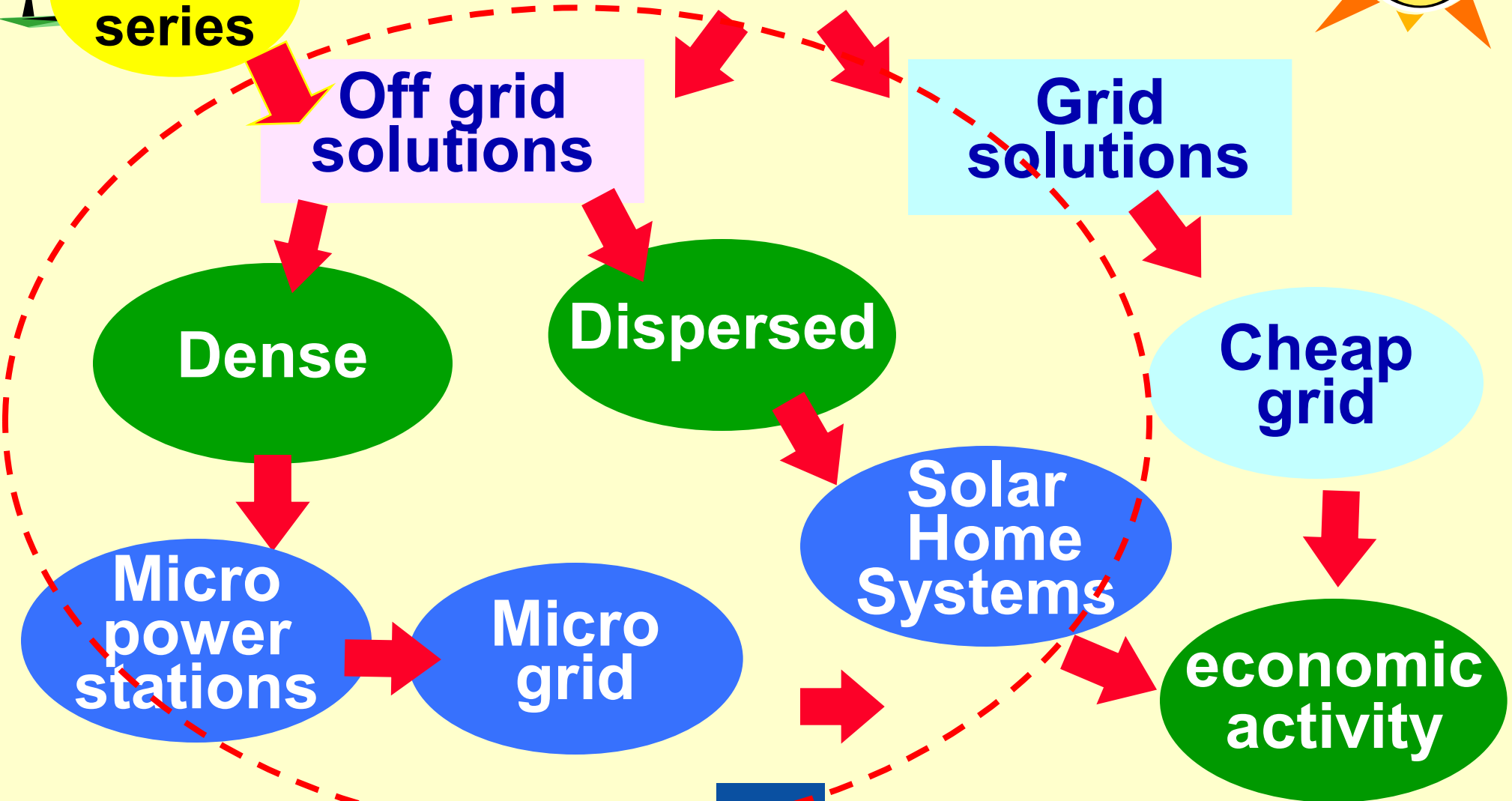


- ❖ Rural electrification; Key points
- ❖ Purpose of the IEC TS 62257
- ❖ Organisation within the IEC, JWG 1 and participants
- ❖ Structure and summary of the IEC TS 62257 documents
- ❖ Planning and Progress report
- ❖ Matters to be discussed : Interface with AFSEC ?



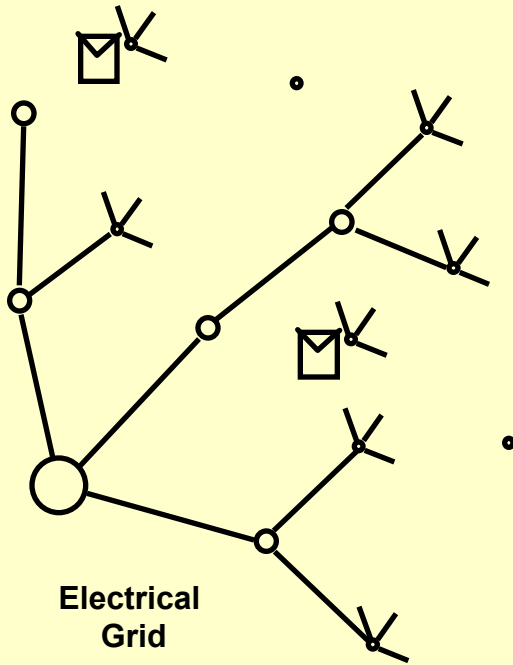
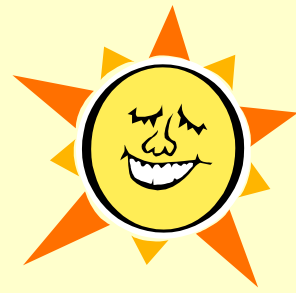
Electrification Target

62257 series

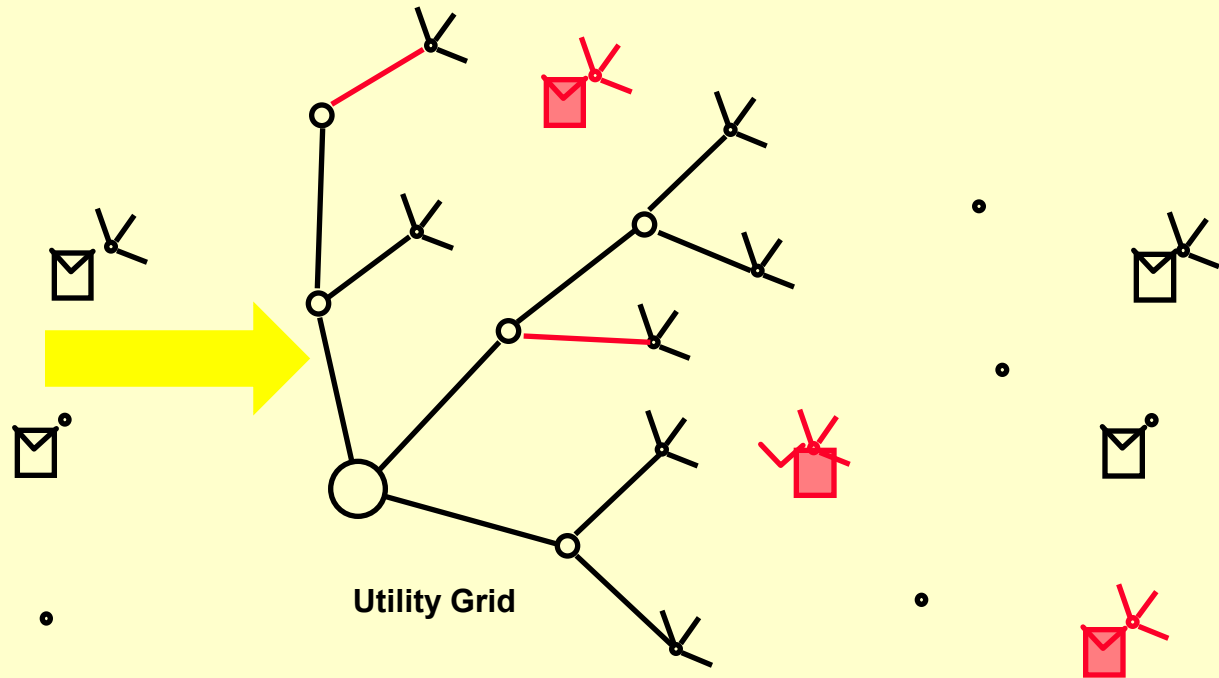




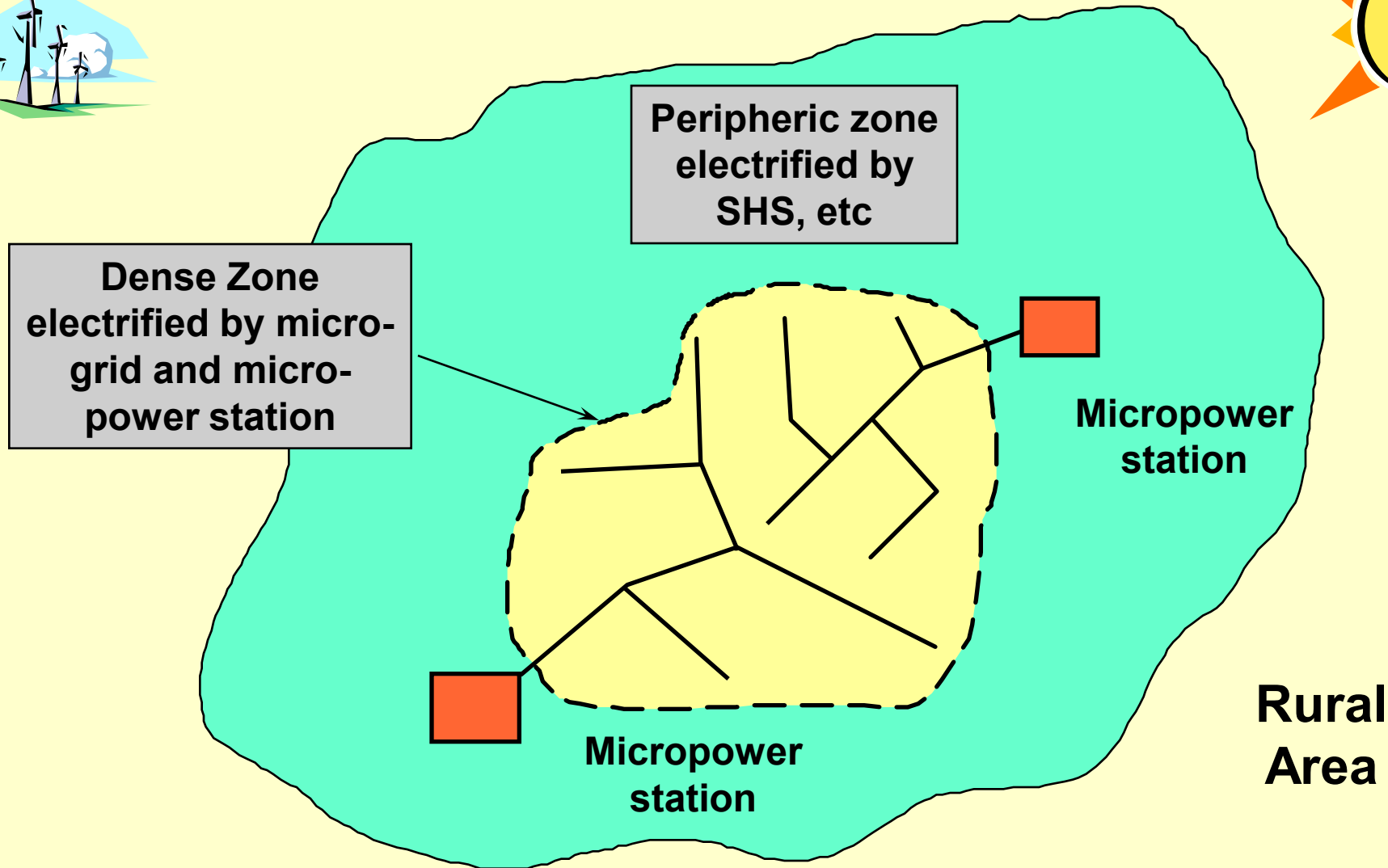
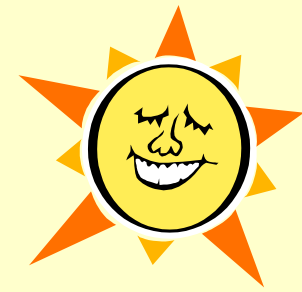
Electrification Implementation Strategy



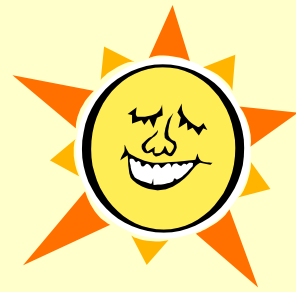
State of electrification at year n



State of electrification at year n+1



General (1)

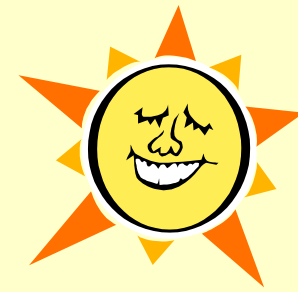


❖ IEC 62257 series - Why? Status in 1996:

- No existing technical references and dedicated documents
- Existing documents didn't match the needs
- Poor quality level of systems
- Bad design
- No « off the shelf » systems
- One system = one design
- Poor cost/benefits ratio



General (2)

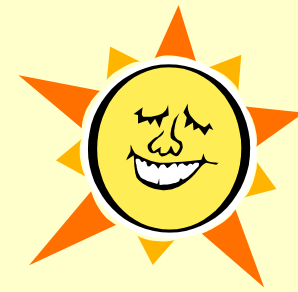


❖ **IEC 62257 series - What?**

- Technical specifications (and not International standard)
- Translation into TS of the REP methodology
- Consistent set of documents (from energy needs identification to equipment specification)
- Developed from PAS 62111 (1999)

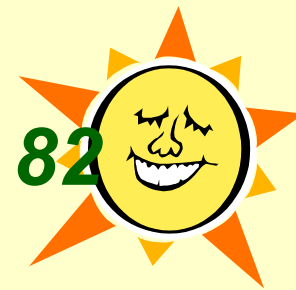


General (3)



❖ IEC 62257 series – for whom?

- Help to
 - choose the right system for the right place;
 - design the system;
 - operate and maintain the system.
- For : project sponsors, project implementers, project contractors, project supervisors, engineering consultants, installers, operators, etc.



Organization of the JWG1 within the TC 82

❖ JWG 1: a transverse WG

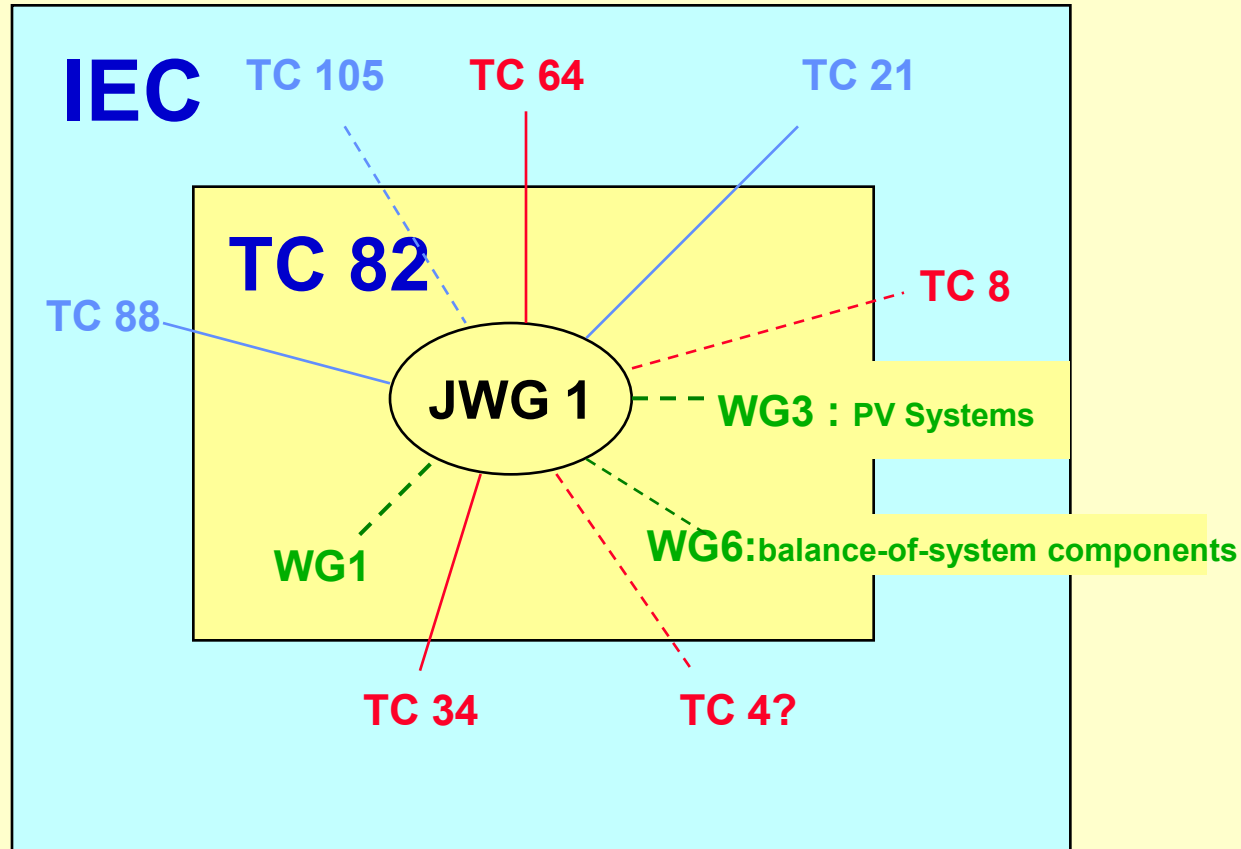
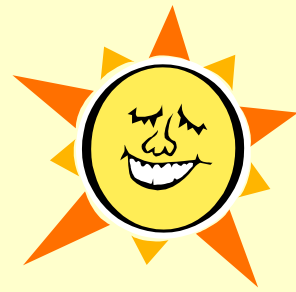
- Development of doc in cooperation with WG of several TCs (TC 21, 88, 64, 34, etc.)
- Development of doc as a working group for new topics/no existing WG
- Responsible for producing the final documents and keeping the original frame of mind of the PAS 62111

❖ 14 registered countries

- Australia, Canada, China, Denmark, France, Germany, Italy, Japan, Korea, South Africa, Spain, Sweden, United Kingdom, USA

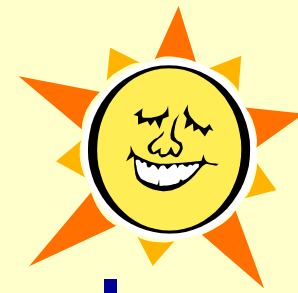


JWG 82/88/21/105/64 cooperation within the IEC and within the TC82





Structure and summary of the IEC 62257 (1)

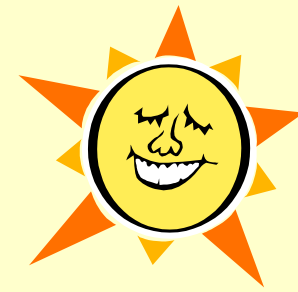


❖ 62257 series = 31 (initially!) technical specifications structured into 4 main sections:

- Introduction to rural electrification
- Project management / implementation guidelines
- Technical specifications for components and systems
- Demand side /appliances



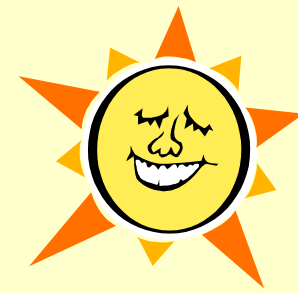
IEC 62257 (1)



- **General introduction**
- **62257-1** Part 1: General introduction to rural electrification -
- **Project management / implementation guidelines**
- **62257-2** Part 2: From requirements to a range of electrification
- **62257-3** Part 3: Project development and management
- **62257-4** Part 4: System selection and design
- **62257-5** Part 5: Protection against electrical hazards
- **62257-6** Part 6: Acceptance, operation, maintenance and replacement



IEC 62257 (2)

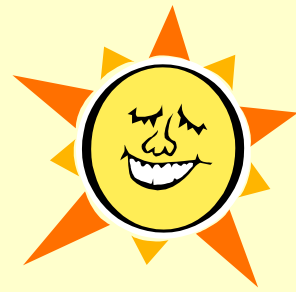


- Technical specifications
- 62257-7 Part 7: Generators
- 62257-7-1 Part 7-1: Generators - Photovoltaic arrays
- 62257-7-2 Part 7-2: Selection of small wind turbines for rural electrification projects (project)
- 62257-7-3 Part 7-3: Generator set - Selection of generator sets for rural electrification systems
- 62257-7-4 Part 7-4: Micro hydraulic turbine (project)
- 62257-8 Part 8 - Batteries and energy managers
- 62257-8-1 Part 8-1: Selection of batteries and battery management systems for stand-alone electrification systems - Specific case of automotive flooded lead-acid batteries available in developing countries



IEC 62257 (3)

Technical specifications

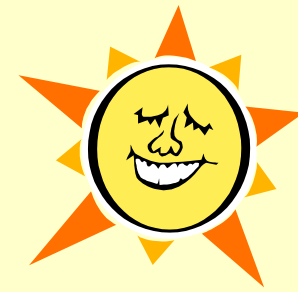


- **Technical Specifications**
- **62257-9** Part 9: Integrated systems
- **62257-9-1** Part 9-1: Micro power systems
- **62257-9-2** Part 9-2: Micro grids
- **62257-9-3** Part 9-3: Integrated system - User interface
- **62257-9-4** Part 9-4: Integrated system – User installation
- **62257-9-5** Part 9-5: Integrated system - Selection of portable PV lanterns for rural electrification - *being reviewed*
- **62257-9-6** Part 9-6 : Selection of Photovoltaic Individual Electrification Systems (PV-IES)
- **62257-10** Part 10 : Converters



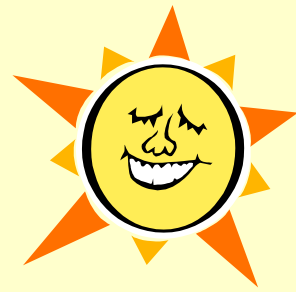
IEC 62257 (4)

Technical specifications - NWP



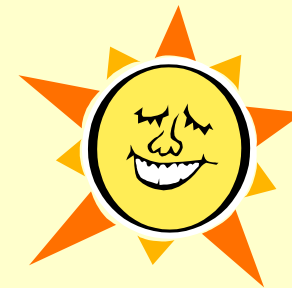
- **62257-11** Part 9: Integrated systems
- **62257-11-1** **Part 11-1: Considerations for rural electrification systems extension**
- **62257-11-2** Part 11-2: Considerations for rural electrification systems extension-
Interconnection of micro grids
- **62257-11-3** **Part 11-3: Considerations for rural electrification systems extension-
Connection of a micro grid or of a cluster of micro grids to a regional grid**

IEC 62257 (5) Technical specifications



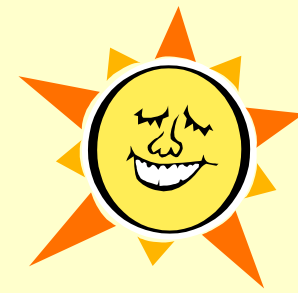
- **62257-12** Part 12 : Demand side / Appliances
- **62257-12-1** Part 12-1: Selection of self-ballasted lamps (CFL) for rural electrification systems and recommendations for household lighting equipment
- **62257-13** Part 13 : *Miscellaneous*
- *Water pumping, specific electric characteristics of loads connected to a micro grid, etc.(projects)*

Document progress status



❖ 62257 doc range - Tableau Rev 2012 R1 LAD .doc

62257 -Related activities



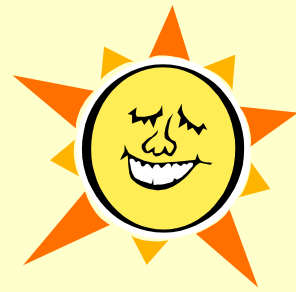
- ❖ Ongoing liaison with other IEC TC/WG's for grid connected standards to align standards / specifications.
- ❖ Locally in SA we have the NRS 052 documents : Photovoltaic systems for use in individual homes, schools and clinics
- ❖ NRS 097 - Set of industry standards being developed that define the utility interface for the interconnection of small scale embedded generators (SSEG) to a utility network
- ❖ Affiliate program - survey was initiated in end 2011 to ascertain how applicable the documents are so that the working group can focus on what will add the most value.- *22 countries responded to the survey*



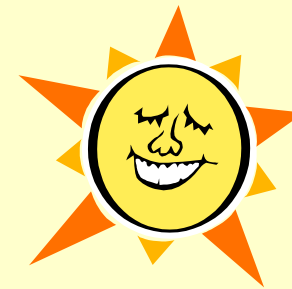
62257 –*Work programme*

- ❖ Keep the 62257 series consistency even after transforming TS into standards (selection / comparison VS certification)
- ❖ Produce the planned documents on micro wind turbines , micro hydro and low energy /cost LED lighting.
- ❖ Produce the new document on PV array (new 62257-7-1)
- ❖ Coordination with WG3 and 6 : to produce TS quickly and standards later (Converters, charge controller, water pumping)
- ❖ Start the maintenance process for parts 1 to 6
- ❖ Recruit more participants for the WG activities.
- ❖ Collect the comments of the affiliates members and take them into account into the maintenance process or prioritise new projects.

62257 - Matters to be discussed



- ❖ Will/Does this range of documents address the users needs.
- ❖ What additional requirement should be pursued.
- ❖ How do we close the loop between users and producers of the specifications/standards.
- ❖ More and more interest from national committees...
...But less and less participants to working groups – is AFSEC members interested to participate & how can this be done.
- ❖ Etc



THANK YOU