Green Quality Dialogue

Quality Infrastructure Development for Renewable Energies, Electric Grids and Energy Efficiency”

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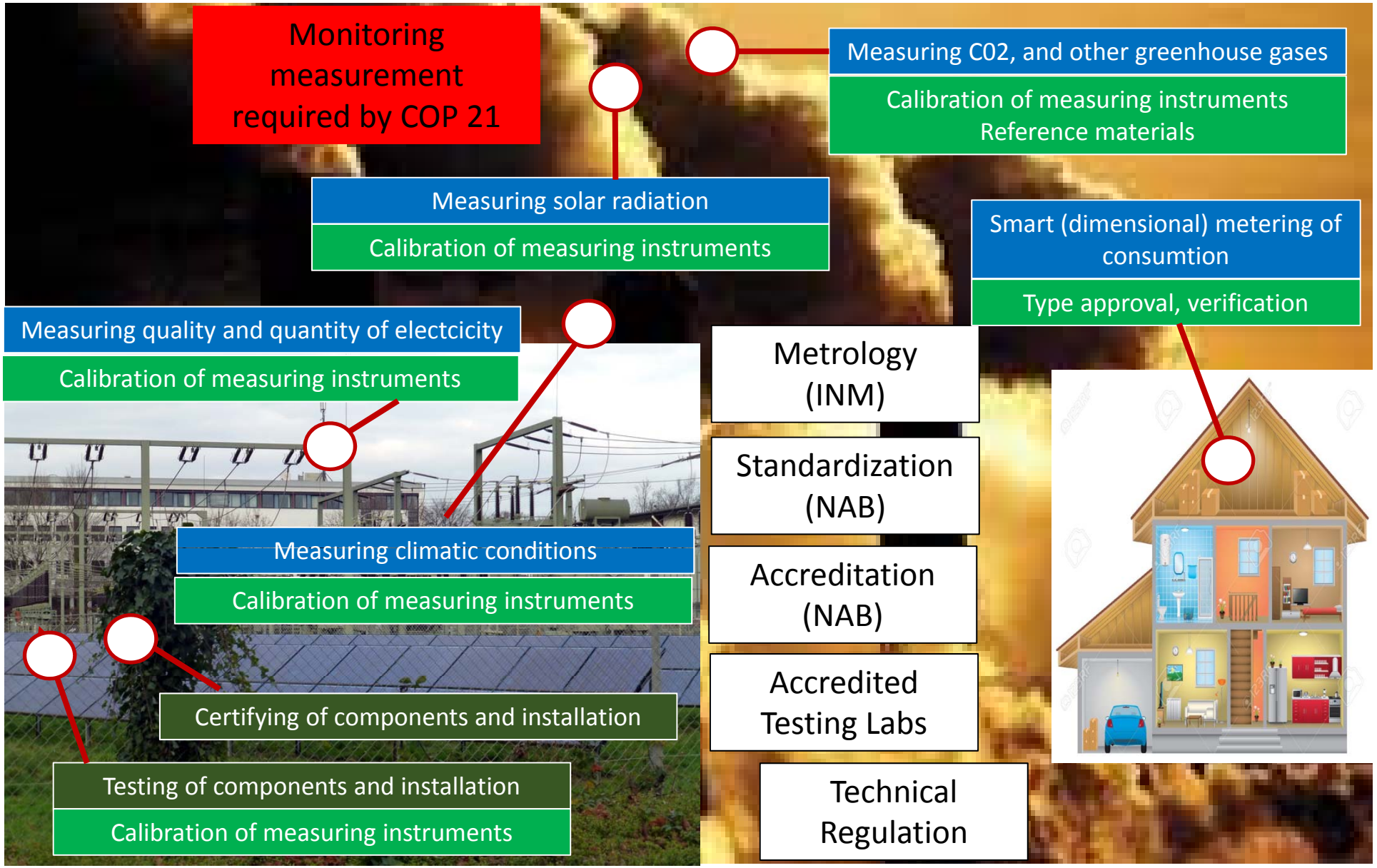
Systemic Approach: NQI Componentes and their Services

Metrology	Assures the traceability of the measurements to the International System of Units (SI), the confidence, the accuracy, and the comparability of measurements
Standardization	Formalized documention which contains the requirements of conformities of a product, a process, a service.
Accreditation	Confirms the technical competence of a conformity assessment body, i.e. testing and calibration labs, certification and inspection bodies.
Testing	Determines the characteristics of a product in comparison with the requirements of a standard.
Certification	Confirms the conformity of a product, a system, a process, a service, a person by a certificate.
Inspection	Verifies the conformity of a product, a process, etc. with general or specific requirements existing in the form of laws, technical regulations, norms and specifications.
Instruments of Control and Surveillane	Supervises and controls if the products which are on the markets are really in accordance with the requirements of the norms and technical regulations.
Institutional Legal Framework	Laws, decrees, and technical regulations defining the structure and the obligatory rules of NQI.

NQI Services for Renewable Energies and Grids



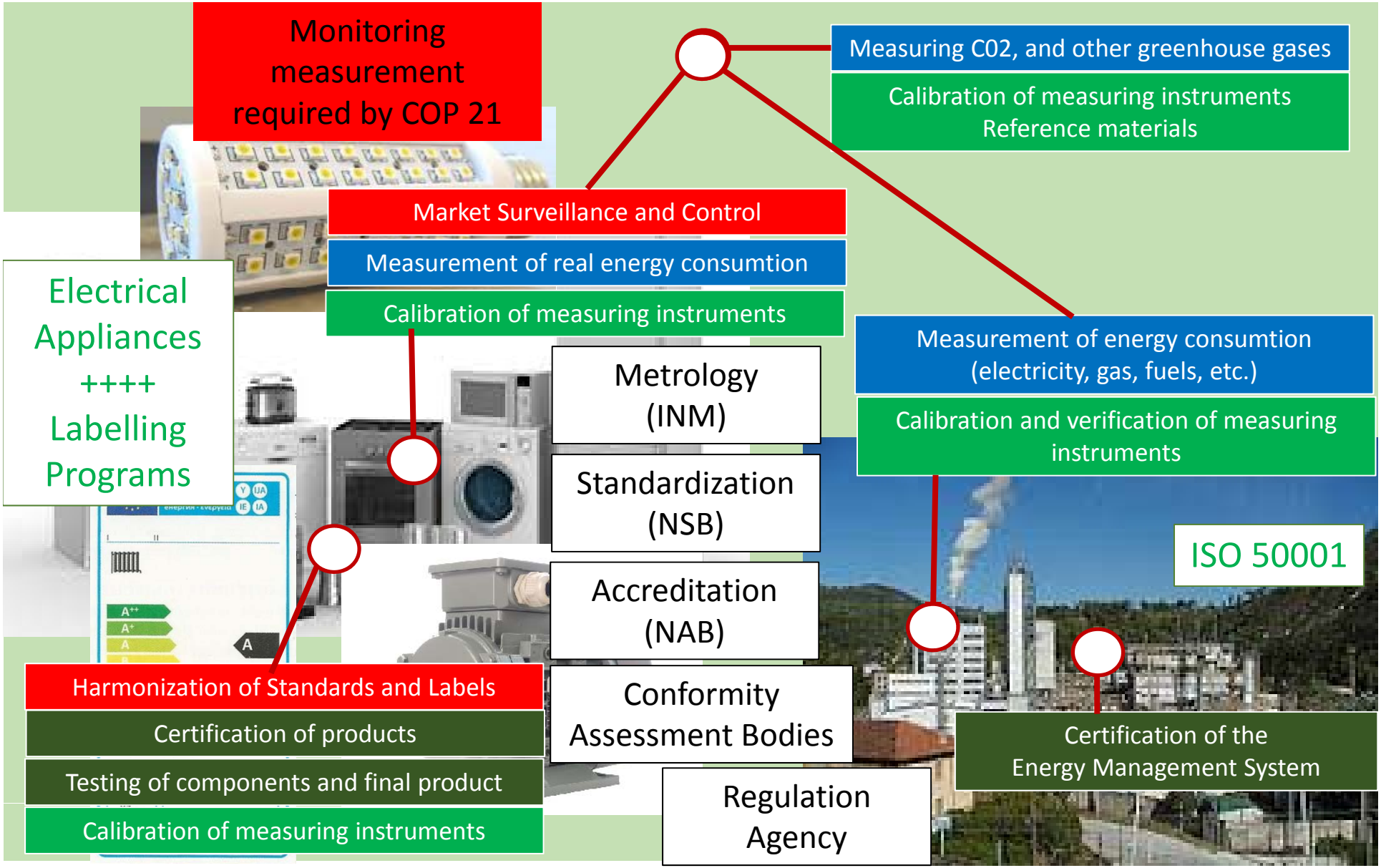
NQI Services for Renewable Energies and Grids

- Reliable and comparable measurement of quantity and quality of of energy.
- Standards and harmonisation of standards assuring the quality of energy and the interoperatibility of the grids.
- Reliable and comparable calibration and verification of measurement instruments.
- Reliable and comparable testing and certification of components
- Reliable certification of installations.
- Technical regulations based on standards and competent testing and measurements.

Requires new measurement methods and instruments, for instance

- Phasor Meaurement Units (measurement of quality)
- Smart meters (bidimensional measurements)
- Digitalization and use of software
- Testing of PV-moduls, inverters, SWH panels, Wind turbine, etc.
- Development of standards, accreditation schemes, etc.

NQI Services for Energy Efficiency



NQI Services for Energy Efficiency

- Existence of accredited laboratories able to calibrate the measurement instruments.
- Application of testing methods according international standards and best practices.
- Accreditation of testing labs for determining the energy consumtion of electrical appliances.
- Development of technical regulations and labelling programs based on the international standards and commitments.
- Development and application of efficient methods of market surveillance and control.
- Assurance of the comparability and reliablity of the measurements.
- Assurance that all the participants in the chain from producer to the testing labs, certifyers, importers, costums officers and sellers are sufficiently trained to be able to assess if the certificate is correct or not.

Example Saint Lucia:
Implementation of Energy Labels for Compact Fluorescent Lamps

Normative Framework: Saint Lucia´s National Energy Policy
Standards SLNS 90 and 91 for Energy efficiency labelling of fluorescent lamps and incandescent lamps
Market: c. 54,000 households
import of c. 70,000 fluorescent lamps, c. 5,000 incandescent bulbs / year (2013-2014)

Test cycle in 2014 with 10 batches of bulbs (130 pcs) according to international standards (IES LM-65-10, IEC 60969)
Annual energy cost of testing CFLs at SLBS c. 18,000 USD
Results:
Durability: 7 out of 10 brands tested did not conform to their own label
Wattage: 5 out of 10 test items exceeded the declared wattage

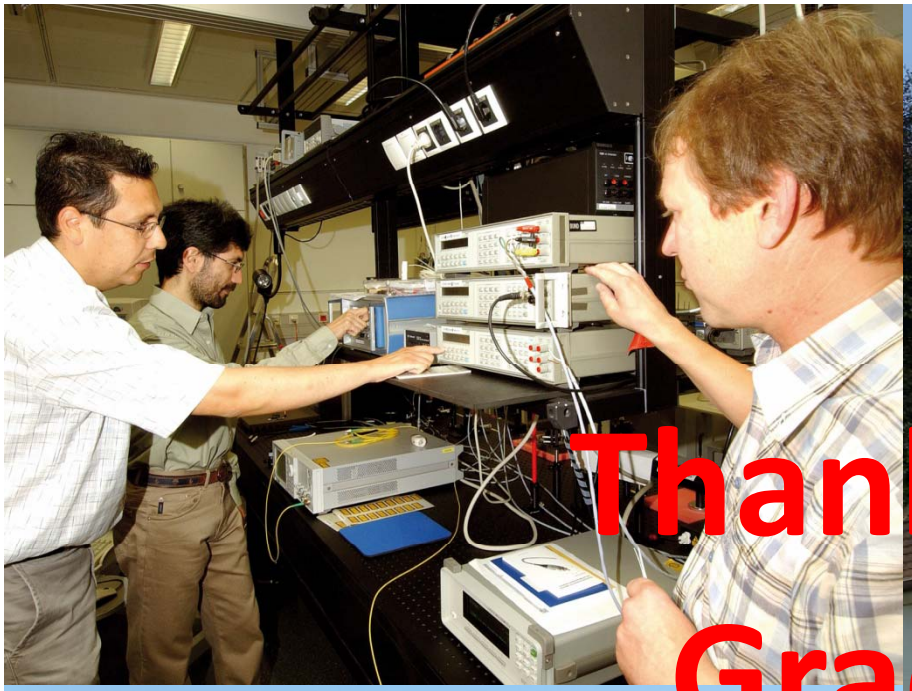
10-year-impact of bulbs with incorrect label (for 50,000 households; 2 bulbs at 4 hrs each day): c. 3.3 Mio USD

Example Mexico

Pilot Projects to introduce Energy Efficiency Management Systems to small and medium sized enterprises (ISO 50001-serie)

Typical parameters through implementation of first improvements

- 3-7 % of total energy consumption saved
- necessary investment of 0 – 1.2 Mio MXN
- RoI (Return of investment) after c. 4 months



Thank You
Gracias
Obrigado