Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

TECHNICAL COOPERATION

Expert Report

Expert Report

Quality Infrastructure Services for Renewable Energy Sources and Energy Efficiency in Latin America and the Caribbean
Project Nro 95969 / BMZ No.: 2011.2026.0

Technical Cooperation with **IAAC**
Country | region: Latin America and Caribbean
Objective: Workshop for the experience exchange on ISO/IEC 17067
City | country: San José, Costa Rica
Duration: 21th- 23th September 2015

Reporter: Imilce Zuta
Function: Expert/No. contract 4500094549t
Date: 07th December 2015

Abbreviations | Explanation of terms used

AB	Accreditation Body
CASCO	Conformity Assessment Committee
CFL	Compact Fluorescent Lamp
CIPM	International Committee for Weights and Measurements
CMC	Calibration and Measurement Capabilities
CONAC	Consejo Nacional para la Calidad
ECA	Entidad Costarricense de Acreditación
EE	Energy Efficiency
IAAC	Interamerican Accreditation Cooperation
IEC	International Electrotechnical Commission
INMETRO	Instituto Nacional de Metrologia, Qualidade e Tecnologia
ISO	International Standardization Organization
LAC	Latin American and Caribbean Countries
LED	Light-Emitting Diode.
MINAE	Ministerio de Ambiente, Energía y Telecomunicaciones
NAB	National Accreditation Body
NIST	National Institute for Standards and Technology
NMI	National Metrology Institute
NSB	National Standardization Body
ORT	Órgano de Regulación Técnica
PTB	Physikalisch-Technische Bundesanstalt
PV	Photovoltaic
QA	Quality Assurance
QI	Quality Infrastructure
R3E	Energy Efficiency and Renewable Energies
RTCR	Reglamento Técnico de Costa Rica
SI	International System (of Units)
SIM	Sistema Interamericano de Metrología
SWH	Solar Water Heaters
TC	Technical Cooperation
WG	Working Group

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1. PRELIMINARY REMARKS

In the framework of the component 2 of the project, “Energy Efficiency”, we have developed the Workshop about the requirements and application of the ISO/IEC 17065, mainly focused to show energy efficiency programmes which are usually applied by the Certification Bodies for Products.

In this workshop we receive the explanation of some particular energy efficiency programmes as:

- Energy Efficiency in Lighting
- Energy Efficiency in Washing Machines
- Energy Efficiency in Refrigerators

From this workshop and from other one related to Inspection Activities related to Energy Efficiency and Renewable Energies held in Mexico it was agreed to develop a Workshop for the experience exchange on ISO/IEC 17067.

The majority of the countries in LAC region are interested in this activity, so the condition to attend to this meeting was to have a representative from the Accreditation Body and a Representative from the Governmental or Regulatory Body of the country

2. SUMMARY (IF NECESSARY, IN WORKING LANGUAGE)

Summary (if necessary, in working language)

3. OBJECTIVE

- To disseminate and exchange experiences for the implementation of Voluntary or Regulated Incentive Programmes or equivalent in Energy Efficiency and Renewable Energies in which the country members of IAAC could be interested in.
- To discuss the ISO/IEC 17067 standard which describes the fundamentals of product certification and provides guidelines for understanding, developing, operating or maintaining certification schemes for products, processes and services, as a reference tool for the Regulatory Agency or other corresponding entity, which are usually the certification scheme owner of the Energy Efficiency and/or Renewable Energies Programme1
- Identify the stage in which each participant country is in the Energy Efficiency Programme to be developed and propose inputs for its revision or improvement, having as reference the information given in the workshop.
- Facilitate the regional and international exchange of experiences e.g. through fostering existing communities of practice, networks, if there are and, possibly in future, working groups on specific issues concerning regional QA frameworks for the LAC region.

4. IMPORTANT RESULTS OF THE EXPERT MISSION

Regulatory Agencies of the participant countries are more aware of the relevance of accredited conformity assessment services to support the Energy Efficiency and Renewable Energies Programmes and about working together with the representatives of the Accreditation Bodies.

Regulatory Agencies have acquired basic capacities for developing technical regulations for Energy Efficiency and Renewable Energies Programmes regarding to the development of certification schemes and involving the corresponding interested parties.

Individual activity plans for Energy Efficiency and Renewable Energies Programme were reviewed or improved, to be developed by the participant countries considering accredited conformity assessment services in the implementation of these programmes.

4.1 GENERAL COMMENTS ON THE CURRENT SITUATION

The workshop was lead by the Brazilian Expert Mr. Gustavo Kuster, from the Conformity Assessment Department of INMETRO and by Mrs. Imilce Zuta, from PTB and it was held in Hotel “Parque del Lago” in San Jose Costa Rica, on 21th to 23th September 2015.

During the workshop the following blocks were addressed:

- Key concepts related to the certification scheme (Introduction and Definitions)
- Presentation and discussion of the interpretation of the requirements of the ISO/IEC 17067
- Brazilian Experience in the developing of the certification schemes
- Regional Experience related to the developing of the product certification or the developing of certification schemes mainly in Energy Efficiency considering the particular situation of each participant country. Inputs during the workshop.
- Next Steps

4.2 DESCRIPTION OF THE CENTRAL ACTIVITIES AND RESULTS

4.2.1 ISO/IEC 17067. Introduction and Definitions

It is issued by the ISO CASCO Committee.

This International Standard describes the fundamentals of product certification and provides guidelines for understanding, developing, operating or maintaining certification schemes for products, processes and services

It was highlighted that in the Conformity Assessment Activity it is involved the following actors:

- Regulatory Authority
- Accreditation Body
- Conformity Assessment Body
- Standards Institutes
- Private Sector (Manufacturing, Merchandising, Distribution)
- Metrology Institutes

So the basic documents for a certification scheme are:

- The standards involved in the process of certification and
- The assessment procedures

The certification scheme would have to have an equilibrium between the cost and the confidence to the consumers or other interested parties about the product or service that is being commercialized.

Certification System;
Rules, procedures and **management** for carrying out certification

Certification Scheme
Specific requirements, rules and procedures applies to a specified product.

4.2.2 Functions of the Product Certification

Selection:
- Identification of the product
- Confirmation to what extent sampling of the object of conformity is necessary and what basis should samples be collected
- Specified requirements that object must fulfil
- Choosing the most appropriate conformity assessment techniques

Determination
- Conformity Assessment Activities: Audit, Calibration, Testing, Inspection, Competence of a person
- Non Conformities: One possible outcome
- The evidence of conformity is contained in a report, technical field: Identification of objective and a statement of requirements to which conformity has been assessed
- Details of resources used: people, measuring instruments, other evaluation tools
- The results of activities
- Details of the determination activities in a way the activities could be repeated.

Review
- Review the evidence collected
- Suitable, adequacy and effectiveness of selection and determination activities
- Review the results

Decision
- Making a decision considering the stage of selection and determination

Attestation
- Issue a statement of conformity – Certificate of Conformity issue by an impartial and independent third part
- In some cases – Mark of conformity – Controlled by a scheme owner or a Certification Body

Surveillance
- Conformity Assessment end when attestation is performed but where there is a need to provide continuing assurance of conformity, surveillance must be used
- Carrying out determination activities at point of production or in the supply chain to the market place
- Determination activities in the market place

- Determination activities at place of use

A certification scheme depends on the context of the product or service whose conformity has to be assessed so the build of a product certification scheme has some guidelines but these of course are not determinant.

4.2.3 Types of product certification schemes

The scheme types presented in the standard are just proposals, what we have to take into account is the point of view of the actors involved in the certification process as th:

- Scheme Owner
- The Certification Body
- The Industry
- The Governmental Entities involved
- Other ones involved

Other key aspects that is important to take into account is the certification scheme would have to:

- Be applicable
- Be realistic
- Consider an economic balance

These certification schemes could be as simple as:

- Simple, just considering the type test, it means the test of one item of the product or the batch test.
- More complex that includes: type test, periodic assessment of production process, an audit of the management system, periodic tests of products and periodic tests in the market.

4.2.4 General elements of a scheme

- Scope
- Product requirements
- Conformity assessment activities
- Certification requirements
- Conformity assessment methods and procedures
- Information supplied by client
- Statement of conformity
- Mark of conformity
- Use of certificate and mark
- Resources for operating the scheme: impartiality, competence, outsourcing
- Reporting results of determination and surveillance activities
- Surveillance procedures

4.2.5 Legal Framework and EE programmes in the countries

For the beginning the Brazilian expert showed us its experience commenting us in detail an example of a Technical Regulation of Energy Efficiency in Household Appliance. This document defines:

- The qualification level in terms of Energy Efficiency of the product
- The description and design of the Energy Efficiency Label
- The deadlines for implementing what it is established in the technical regulation
- Rules for the use of the Energy Efficiency Label
- Details about the Labelling Process.
- The Renovation and Control Process
- The Authorization Application for the Use of the Label
- Test Laboratory
- Suspension and Cancellation of the Authorization
- Sanctions
- Resources
- Applicable Standards
- Testing Methods

Next, in Table 1, it is shown the main exist and future activities in each participant country presented in the workshop

Country	Governmental, Legal and Regulatory Framework	Current EE Programmes operating	Potential EE Programmes (still not operating) or Next Activities
Costa Rica	Ley Reguladora del Uso Racional de Energia 7447 – 1994 and RTCR 374-98- (MINAE. Existence of CONAC -NMI, NSB, NAB and ORT)	Refrigerators Compact Fluorescent Lamps	Commercial Refrigerators, Electrical Water Heaters, Electrical Motors, Air Conditioning For Renewable Energies: SWH and PV
Colombia	Technical Regulation for Energy Efficiency Labeling. (Involves NSB, NAB, NMI, Entities who issue technical regulation, monitors and do market surveillance)	The EE Programmes of the following products are **recently** in process of implementation: Electrical Motors Commercial Air Conditioning, Domestic Lighting, Ballasts Domestic Refrigerators Washing Machines Electric tank-less and storage water heater Gas cookers	This country is currently beginning the process of implementation the technical regulation in Energy Efficiency for the products mentioned before.
Cuba	Resolution 136, 2009 applicable for products of final use of electric energy	Government directly ask for the laboratory services	Government is planning to ask for certification process (Energy Efficiency Label)

			who requires the laboratory services.
Honduras	Project of Law for the Rational Use of Energy (Department of the Rational Use of Energy – Secretary of Natural Resources, Environment and Mines)	Technical Standards for electrical motors, CFL domestic refrigerators and freezers, commercial refrigerators, air conditioning.	Elaboration of technical standards related to the energy efficiency of the electrical household appliances based on conformity assessment bodies accredited. Possibility of an Energy Efficiency Laboratory in Customs
El Salvador	Project of Law for the Rational Use of Energy. (NSB, NAB and ORT - Coordinator Entity, work jointly)	Technical Standards for electrical motors, CFL, domestic refrigerators and freezers, commercial refrigerators.	Potential revision of the technical standards related to the energy efficiency of the electrical household appliances based on conformity assessment bodies accredited. Revision of Technical Regulation for Domestic Refrigerators, Commercial Refrigerators, Air Conditioning and Electrical Motors Elaboration of Technical Regulation for Air Conditioning
Mexico	Laws and Technical Regulation of different entities involved in the Energy Efficiency Sector. Regulatory Commission of Energy,	LEDs, CFL and ballasts Washing machines Air Conditioning Refrigerators and freezers Commercial Refrigerators Renewable Energies Solar Water Heaters	
Paraguay	National Plan of Energy Efficiency (General guidelines) (Minister of Industry and Commerce and Minister of Energy and Mines)	It has been elaborated eight technical standards	Possibility to regulate Lighting
Peru[1]	General presentation	General presentation	General presentation

[1] The corresponding Peruvian governmental representative did not attend the workshop. Based on an Energy Efficieny Project in which I am involved currently, I could comment there are nine projects of technical regulation for: lighting, ballasts,

4.3 NEED FOR ACTION

To develop the future activities mentioned in 6.

These activities are relevant to support the initial development or the strengthening of energy efficiency (for determined household appliances) or renewable energies (photovoltaic modules or solar water heaters) programmes which were commented during the workshop by the participant countries.

On January 2016 it will be asked to the participant countries about the potential plan of activities based on what has been proposed lines above.

Proposal of the Plan of Activities of the Workshop

Activity	Specific Activities	Responsible
Implementation of the Plan of Activities defined by each country	Monitoring	AB Representative / I.Zuta
	Technical assistance by groups of interest	AB Representative / G.Kuster / I.Zuta
Developing of an Interlaboratory Comparison	Proposals: Refrigerators, Lighting, SWH	Expert / I-Zuta
Training	Promoting a Meeting among Regulators of the Region	IAAC or any other Regional Representative / I.Zuta
	II Workshop among ABs, Regulators and other key interested parties	

5. CONCLUSIONS

The discussion about the interpretation of the ISO/IEC 17067 was very useful for the representatives of the accreditation bodies and definitively an outstanding training for the representatives of the regulatory agencies of each participant country. Moreover, both groups receive a common message and established also a link in order to begin or continue working together for the implementation of the next potential Energy Efficiency Programme or next activities aimed to this objective.

The explanation of the different certification schemes presented by the expert from Brazil, but also from other representatives from countries as: Mexico, Costa Rica, Cuba and Colombia was

domestic refrigerators and freezers, industrial boilers, electrical motors, washing machines, dryers, air conditioning, electrical and gas wáter heaters. It is being evaluated the issue of these technical regulations

very useful too. The presentation of these participant countries was enriched by the inputs given by the expert.

In future it is expected that each country identifies clearly an action plan to promote the use of the energy efficiency programme of one product, depending on which stage they are at this moment. I mean considering there are some countries in a more advanced situation than other ones.

6. RECOMMENDATIONS (FUTURE ACTIVITIES, NETWORKING POTENTIAL ETC.)

What	Name	When
1 Accompany the implementation of an Energy Efficiency Programme proposed by the participant	AB representative in coordination with the regulatory body representative / I.Zuta (PTB)	October 2015 → Aug 2016 Note: The deadline depends on each plan of activities.[2].
2. Proposal of Plan of Activities for the region mentioned in 4.3	AB representatives / I.Zuta (PTB)	November 2015 Continue → 2016
3 Realization of tasks proposed	IAAC Certification Body WG / ABs Representatives / I.Zuta (PTB)	November 2015 → Aug 2016 Note: The deadline depends on each task.
4 Consider results of this workshop in the planning of the following R3E-project	I. Zuta/ U. Hillner	December 2015 → 2016 Note: It is foreseen to be considered for the 2nd Phase.

7. APPENDIX TO THE EXPERT REPORT

7.1 AGENDA

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[2] Some countries has their own plan as Colombia, Costa Rica, Cuba and Mexico, however the idea is to try to identify common necessities for the countries.

Workshop "Experience Exchange on Support of Programmes for Energy Efficiency and Renewable Energies through Accreditation Programmes for Certification Bodies and Inspection Bodies. Revision of the ISO/IEC 17067 as guidelines for the application of certification schemes"

DRAFT AGENDA

Monday 21th September 2015		
Hour	**Subject**	**Lecturer / Facilitator**
09:00	Welcome	ECA Representative
	Introduction	I.Zuta
09:40	Introduction and Objectives of product certification • Terms and definitions • Concept of product certification • Objectives of product certification	G.Kuster
10:45	Coffee Break	
11:15	Product certification schemes • Basics – Functional approach • Functions and activities in product certification schemes – table 1 ISO/IEC 17067	G.Kuster
13:00	Lunch	
14:30	Types of product certification schemes • When and Why to use • Product certification schemes proposed in ISO/IEC 17067	G.Kuster
15:35	Coffee Break	
16:00	Development and operation of a product certification scheme Content of a scheme – 1st parte	G.Kuster
17:00	End of first day	

Tuesday 22th September 2015		
Hour	Subject	**Lecturer / Facilitator**
09:00	Content of a scheme 2st part	G.Kuster
11:00	Coffee Break	
11:20	Sequence of a certification cycle and involved activities. Examples of some certification schemes applied in energy efficiency and electrical safety	G.Kuster
13:00	Lunch	
14:30	Sequence of a certification cycle and involved activities. Examples of some certification schemes applied in energy efficiency and electrical safety	G. Kuster
15:30	Coffee Break	
16:00	Sequence of a certification cycle and involved activities. Examples of some certification schemes applied in energy efficiency and electrical safety	G.Kuster
17:00	End of second day	

Wednesday 23h September 2015		
Hour	**Subject**	**Lecturer / Facilitator**
09:00	Development of a product certification scheme Development of certification scheme by the participants by country	G. Kuster I. Zuta
11:00	Coffee Break	
	Development of a product certification scheme Development of certification scheme by the participants by country	G. Kuster I. Zuta
13:00	Lunch	
14:30	Presentation of some schemes developed by the participants	G. Kuster I. Zuta
15:30	Coffee break	
16:00	Outcomes Next steps	I. Zuta
17:00	End	

7.2 CONTACTS

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7.3 UPDATE OF THE OPERATIONAL PLAN (OPTIONAL)

Update of the operational plan (optional)

7.4 UPDATE OF RESULTS-BASED MONITORING (OPTIONAL)

The plan of activities that has arisen, is being monitored.