QUALITY INFRASTRUCTURE FOR RENEWABLE ENERGY SOURCES & ENERGY EFFICIENCY
IN LATIN AMERICA AND THE CARIBBEAN

Documentation

”Experience Exchange on Promoting the Implementation of Energy Management Systems according to the ISO 50 000-Series in the Region”

Santiago de Chile, Hotel Atton Vitacura
March 10th – 11th, 2015

In cooperation with

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March 2015

QUALITY INFRASTRUCTURE FOR RENEWABLE ENERGY SOURCES & ENERGY EFFICIENCY IN LATIN AMERICA AND THE CARIBBEAN

In cooperation with

ENERGY AND CLIMATE PARTNERSHIP OF THE AMERICAS

The participants of the seminar

Content

Introduction

The Organization of American States' Department of Economic and Social Development, COPANT, SIM and IAAC and PTB have agreed to implement a regional project entitled "Quality Infrastructure for Energy Efficiency and Renewable Energy Sources in Latin America and the Caribbean". The project aims to strengthen the capabilities of the regional organizations COPANT, IAAC and SIM, improve technical competences in the region for the integration of renewable energy sources, and facilitate the implementation of energy efficiency programs. In this context, the ISO 50000-series represents an important instrument for improving energy performance in companies, as well as private and public institutions. On the suggestion of the project's counterparts, this seminar was prepared and carried out in conjunction with the OAS Project ECPA Energy & Climate Partnership of the Americas. The ECPA Energy Efficiency Working Group implemented by the OAS's Department of Sustainable Development with the leadership and guidance of the Government of Mexico, through its Secretariat of Energy (SENER) and National Commission for the Efficient Use of Energy (CONUEE), provides technical collaboration and support in the advancement of energy efficiency and conservation. The common objective of this cooperation initiative was to review the experiences undertaken in the region and identify gaps and challenges for the further implementation of the standard with emphasis on QI services. ICA / Pro Cobre supported the event.

1. Preparation

The COPANT member the Instituto Nacional de Normalización - INN (Chile) - was chosen to host the event and the Agencia Chilena de Eficiencia Energética (AChEE) agreed to support the seminar with its experiences as an implementation agency. The Concept (see annex 1) and Program (see annex 2) were coordinated jointly by the partners. Representatives from different countries and institutions were invited to present their concrete experiences. Certified enterprises, mainly from Chile, consultants and certification bodies were asked to explain their experiences and the challenges they faced. ICA/Procobre supported the event by providing experts.

A short questionnaire was developed to give an initial overview of the reality in Latin American and Caribbean countries (see annex 4). The summary of the results was included in the presentation on the general situation in the LAC region.[1]

The Program, presentations, and some photographic impressions can be found at

https://www.ptb.de/lac/index.php?id=6496.

2. Carrying out the Activity

Interest in the event was such that not all the institutions, enterprises and experts wishing to take part were able to do so. In the end, 63 participants (see annex 3) from 18 LAC countries (Argentina, Barbados, Bolivia, Belize, Brazil, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, El Salvador, Guatemala, Guyana, Honduras, Mexico, Peru, St. Kitts and Nevis, Uruguay), Germany, Spain, and the international organizations OAS, UNIDO, CARICOM, CROSQ, CAF, and ICA Pro Cobre attended the event. Representatives of the Energy Ministries or implementation organizations[2] from Barbados, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Peru, and Uruguay came to share their

[1] https://www.ptb.de/lac/index.php?id=6496. See also some of the main results in annex 5 to this documentation.
[2] Some countries have set up institutions for the implementation of the Energy Efficiency Policy. A good example is the Chilean Agency for Energy Efficiency AChEE.

experiences. All the main stakeholders were represented: ministries, implementing organizations and regulatory agencies, national institutes of metrology, national standardization bodies, national accreditation bodies, certification bodies, consultants, and enterprises. Some already possessed wide-ranging experience; others had just taken their first steps, while others still were preparing initial activities.

The event was inaugurated by Mr. Ignacio Santelices, Head of the Energy Efficiency Division of the Ministry of Energy of Chile, and Mr. Sergio Toro, Director of the INN. Mr. Otto Granados, Ambassador of the United States of Mexico in Chile, and Mr. Christian Gayoso, First Secretary of the German Embassy in Chile, gave a welcome to the participants.

The seminar was organized as a combination of presentations and group work and was subdivided into three main parts:

1. *Introduction to the topic and experiences from the region*

After an introduction to the background of the ISO 50000-series and some of the main issues involved, a presentation was made which included:

- a general overview on the implementation situation of the ISO 50000-series in the LAC countries, and
- the concrete experiences of Chile, Mexico, El Salvador, and Dominican Republic, involving companies, certification bodies, and consultants.

2. *Experiences of other regions*

A comparison between Europe and the LAC region detailed the different situations in the two regions with emphasis on the different market situation and the differences in the implementation phase, which have to do with:

- the existing legislation on operational control;
- the existing measurement systems and energy meters, which determine the quantity and quality of data (baseline!),
- the commitment on the part of the management and employees, and
- the level of technological penetration, which determines energy-efficiency and cost-saving measures.

UNIDO, which has supported the elaboration of ISO 50001 and its national adoption, presented the first results of the implementation worldwide, including experiences, advances, and problems. The main challenges for a further successful implementation were identified as:

- Developing robust EE policies and programs,
- Strengthening the Quality infrastructure, and
- Training workforces qualified in EE.

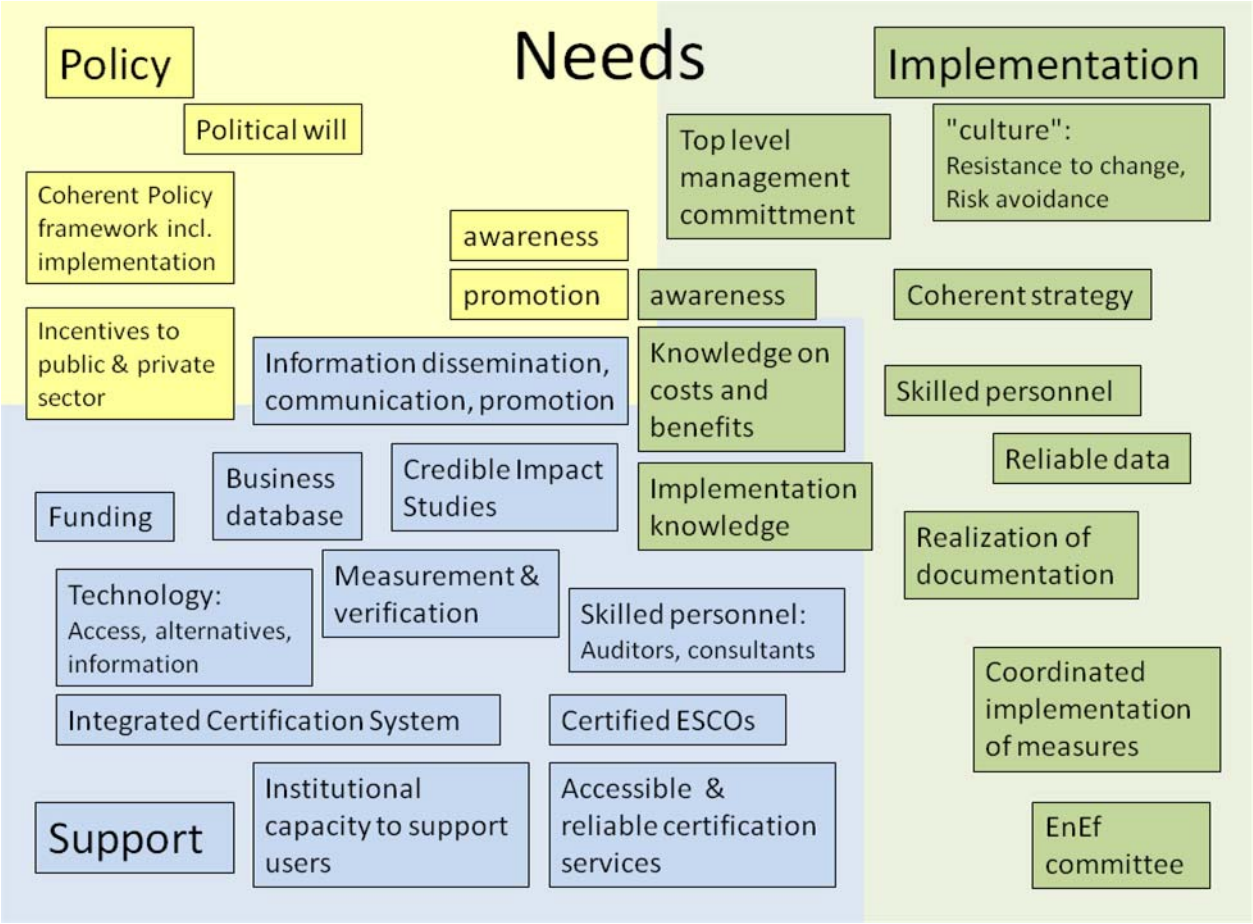
3. *Definition of problems and elaboration of recommendations in working groups*

Based on the experiences, problems, gaps, and challenges presented, a summary was made of the existing needs for a consistent EE policy and an efficient implementation of ISO 50001 and other standards in the ISO 50001-series. These needs were subdivided into:

- requirements for a coherent policy,
- the problems to be overcome for the implementation process, and
- the necessary support given to the implementation process with emphasis on the QI services (see figure 1).

The problems stated above were assigned to three working groups (Policy, Implementation, Support), who were given the objective of discussing these issues, correcting and/or counteracting them, and prioritizing the issues identified.

Figure 1: Needs summarized from the input presentations and subsequent discussions



Based on the results of this first group-work session, a second step was carried out, which involved the participants working in three groups on the three issues regarded as being fundamental:

1. Awareness creation
2. Development of QI Services and Capacity Building
3. Policy Development

Once again, the task was to counteract the problems, but the main objective consisted in defining solutions and activities to overcome the gaps identified. The results of the working groups (see annex 5 and 6) were presented in the forum, where they were discussed and summarized.

The event concluded with an evaluation process (both written and oral) and a short closing address by the representatives of the OAS and PTB.

3 Summarizing the main results

In recent years, many Latin American and Caribbean countries have developed an Energy Efficiency Policy. In most cases, this falls under the responsibility of the Ministry of Mining and Energy, and in some cases under the Ministry of Environment. Some countries have set up National Energy Councils, which formulate the National Energy Policy. The implementation of the policy is the responsibility of different institutions. Some of the countries (for instance Chile, Mexico) have set up special agencies dedicated exclusively to energy efficiency.

GENERAL

In comparison with Europe, for instance, the implementation of ISO 50001 in the LAC region is still in its initial stages. The differences in the methods used and the concrete results obtained are quite significant:

- Countries with a national certification program (existing or in preparation): Chile, Mexico, Ecuador, Colombia, Bolivia;
- Countries where entities, in the first line enterprises, were already certified: Chile, Mexico, Brazil, Uruguay, Colombia, Ecuador, Argentina;
- Countries where the implementation is (still) going ahead without certification: for instance El Salvador, Dominican Republic;
- Countries where an implementation agency has been established: Bolivia (IBMETRO), Chile (AChEE), Mexico (CONUEE and NORMEX), Uruguay (ISO-UNIT), Ecuador (MEER) and Colombia (UPME – Colciencias), Argentina (IRAM).

INTERPRETATION OF ISO 50001

When referring to the interpretation and application of ISO 50001 in policy as well as in its concrete implementation in enterprises and institutions (both public and private), it must be recognized that this standard is very complex and highly technical. It is not just a standard for establishing a management system, comparable with ISO 9001 (Quality Management System) or ISO 14000 (Environmental Management Systems). The standard requires that management not only considers energy efficiency in its activities, but above all fosters technological changes which enable a more efficient use of the different energy sources, and consequently an energy saving and reduction in CO_2 emissions.

> *The ISO 50001 standard requires a great deal of engineering knowledge and capabilities if the goal of the standard – the improvement of energy efficiency performance in institutions and in processes – is to be achieved.*

POLICY (see also Annexes 5.1 and 6.3)

After considering the question of how to draw up a long-term energy policy, including Energy Efficiency and in particular the implementation of the ISO 50000-series in a very global way, the following steps were identified:

- Awareness must be raised about the fact that coordinated actions are necessary for formulating and implementing an EE policy. The formation of a coordination committee made up of the different “interested” parties seems to be important.
- Long-term strategies, plans and objectives have to be formulated.
- Energy prices must be simplified in a way that encourages the efficient use of energy sources.
- Education and capacity building are indispensable aspects for efficient energy use.
- Incentives promoting EE are important aspects of an EE policy.
- The implementation of an EE policy requires a public-private partnership for establishing EnMS in the public and the private sector.
- The formulation and monitoring of indicators measuring the progress of an efficient use of energy are inherent elements of a coherent EE Policy.

In the second part of the work on policy issues, the discussion concentrated on incentives and their inclusion in the policy-making process. Within this process (some important steps of which are included in annex 6.3), following the gap analysis, it is very important to identify appropriate incentives, because they are designed to encourage the application of EE in the relevant institutions and assure the sustainability of these measures.

Brazil, Mexico, and Uruguay explained their concrete experiences with incentives (see also annex 6.3). Of special interest is the fact that in the case of Brazil and Uruguay, the incentives are

granted ex-post, which probably encourages the engagement of the entities in implementing real improvements in EE and prevents actors from merely obtaining financial support for the formulation of a management manual on EE.

The need for improved capacity building and the exchange of experiences and information within the LAC region was emphasized.

CAPACITY BUILDING AND QI SERVICES (see also Annex 6.2)

The participants unanimously identified the lack of sufficiently qualified personnel on all levels as one of the main obstacles for a further successful implementation of the ISO 50000-series:

- Within enterprises there is a shortage of energy managers and internal auditors;
- The need for well-established measurement systems is widely unknown. It is essential to use measurement instruments that are correctly calibrated (or verified) by accredited calibration laboratories (according to ISO/IEC 17025). These systems are indispensable for establishing the Baseline required by the standard and monitoring the development of energy efficiency;
- The consulting firms that are helping the enterprises to build-up the EnMS often do not have sufficient engineering knowledge, which means that the technical aspects of the standard are not covered;
- The certification bodies have lead auditors who are not sufficiently trained in the particularities of ISO 50001 for a qualified certification process. Technical experts are not included as necessary or are lacking altogether;
- The lead auditors of the National Accreditation Bodies have only very little knowledge of the technical particularities, resulting in the danger that certification bodies will be accredited without the necessary technical competence due to the lack of special accreditation schemes and technical experts;
- The technical aspects of the standard are also not sufficiently well-known in the relevant ministries and implementation agencies.

During the seminar it was not possible to elaborate detailed proposals for the capacity-building process, but the need for the following activities was stressed:

(a) Enterprises

- Basic training for obtaining (minimum) competences and knowledge in ISO 50001, audit techniques and specific problems of the industrial sector in question;
- Training in engineering;
- Training of energy managers (a good example is the EUREM program offered by the German Chambers of Commerce in different LAC countries).

(b) Consultancy Firms

- Technical competences, experiences in energy efficiency projects and in auditing are requested.

(c) Certification Bodies

- Training Course for Lead Auditors for ISO 50001
- Training course for Latin America and the Caribbean: 40 h, with workshops, approval, carried out by Lead Auditors for EnMS according ISO 50001
- Audit team - Lead auditor and technical experts: Knowledge in ISO 50006

(d) Accreditation Bodies

- Evaluation team and technical experts: Training in ISO 50001 and 50003

CREATING AWARENESS (see also Annex 6.1)

One issue emphasized by all the participants was the need to create awareness among governments, enterprises and other entities about the opportunities offered by the ISO 50000-

series to improve competitiveness, save energy, and – in a global sense –reduce CO_2 emissions and contribute to climate protection. The following points were established:

- The strategy as well as the concrete activities must consider: the target group to be addressed, the message that will be transmitted, the most convenient instruments for conveying the message to the target group and the best transmitters.
- Depending on the target group, the actors should be entrepreneurial associations, academia, civil society in form of NGOs, and regional organizations like OAS, OLADE, ECLAC, etc. In the case of the users of EnMS, governmental bodies also play an important role.
- Emphasis was placed on the importance of real success stories and examples as a basis for awareness-raising work. Case studies showing real impacts and benefits should be elaborated and disseminated.

EXPERIENCE EXCHANGE AT THE REGIONAL AND INTERNATIONAL LEVEL

The exchange of experiences at the national, regional, and international level was seen as a very important aspect for promoting and improving the implementation of the ISO 50000-series. The main points highlighted were the following:

- It was considered extremely important to exchange experiences (lessons learnt) within the country, but also by using regional platforms like Red Lac EE (www.red-lac-ee.org) or at regional events held by different organizations and programs (for instance ECPA, OLADE, CEPAL, UNIDO).
- Networks for facilitating and carrying out capacity building at the different levels could help to achieve faster and better results.
- The network of mutual recognition of certificates in LAC should be strengthened to facilitate the certification process.

4. Evaluation

In general, the written evaluation by the participants shows a satisfying average of 1.5 (see table 1 and annex 7). Thus, 100% of the participants considered the workshop and its results to be good (50%) or excellent (50%). The facilitation also received a positive evaluation of 1.6 (see table 2 and annex 7) from 97.3% of the participants.

Table 1: General Evaluation of the Results of the Workshop

Excellent (1)		Good (2)		Regular (3)		Insufficient (4)		Eval.
No.	%	No.	%	No.	%	No.	%	
19	50.0	19	50.0	0	0.0	0	0.0	1.5

Table 2: Evaluation of the Facilitation

Excellent (1)		Good (2)		Regular (3)		Insufficient (4)		Eval.
No.	%	No.	%	No.	%	No.	%	
17	44,7	20	52,6	1	2,7	0	0,0	1,6

The written evaluation shows a highly diversified picture, depending on the participants' expectations, the different institutions they come from and their various professional experiences. It seems that it was not possible to fully satisfy some of the more experienced participants, whereas those who are planning to implement efficiency programs including ISO 50001 stated having received a lot of information and recommendations.

The main comments made are summarized below:

- In general, all the participants welcomed the possibility of exchanging experiences and are interested in continuing such activities. They would like to hear more concrete examples, in particular more real-life experiences of enterprises.
- The majority of the participants regret that the time available was too short and one of them recommended that such an event should be held over three days.
- In the opinion of many participants, the structure and the methodology of the group work was not satisfactory. They recommended (1) working in more and smaller groups to allow more time for the exchange of experiences, (2) limiting the subject and defining the objectives more clearly to enable more in-depth discussion and (3) working in sub-groups within the groups to address special themes and solutions, which should then be presented and discussed within the group before the results are presented in the forum. In general, more time should be allowed for group work.
- The main seminar room was too small for over 60 participants and hindered more fruitful work.
- With regard to the main gaps and main challenges for implementing ISO 50001, the participants agreed on most aspects, which is reflected very clearly in the wishes expressed for future events:
  - Capacity building on all levels (government, enterprises, consultants, certification bodies, accreditation bodies) is one of the most urgent questions that should be resolved. During the seminar, it was emphasized in particular that there is a lack of auditors and technical experts with real experience in energy-related matters (engineers) and the implementation process is often only seen as a management process. The participants propose more in-depth and more technical training, along with the inclusion of virtual or e-learning.
  - The exchange of experiences and learning based on concrete examples (best practices and failures) is absolutely essential. The participants propose using existing exchange platforms and setting up new ones for energy management systems.[3]
  - Another challenge is measurement and verification. This includes the development and the application of indicators and the use of correct measurement (calibration of measurement instruments) for establishing a baseline and monitoring the progress of energy efficiency.
  - The development of criteria on how the certification bodies can be accredited under ISO 17021 and how the certification of personnel can be organized.
  - Interest was expressed in defining more clearly what the role of Government is in the implementation process and what the most promising promotion instruments might be.
  - Finally, a very important challenge is to improve awareness for the implementation of the ISO 50000-series among governments and enterprises. The dissemination of concrete positive examples and concrete benefits is considered a highly valuable tool.
- The Caribbean participants underlined that more attention should be given to their situation; one of the most significant problems they face is the lack of access to training, certifications, laboratories, etc.

[3] As a reaction the Red Latinoamericana de Eficiencia Energética Red Lac EE set up a google Group for Exchange of experiences and information (www.red-lac-ee.org/).

5. Conclusions and Recommendations

5.1 The status of implementation of ISO 50001 varies greatly within the region. Only a few countries have started a systematic implementation process (Brazil, Chile, El Salvador, Mexico, Uruguay, Ecuador, Colombia, Argentina). Others have carried out activities that have had significant impact (Dominican Republic). The CARICOM Secretariat has undertaken a number of case studies to promote the process. The main barriers are a low level of awareness in governments and enterprises, a lack of auditors and technical experts in the accreditation and certification bodies, a shortage of internal auditors and energy managers in firms (in particular in SMEs), and a lack of awareness of the benefits and impacts.

5.2 Significant differences exist in comparison to ISO 90001 and the ISO 14000. The Energy Management System according to ISO 50001 includes many technical aspects requiring detailed technical engineering knowledge. At present, the lack of such knowledge on the part of consultants and conformity assessment bodies is one of the big shortcomings, and the need for capacity building at all levels (enterprises, consultants, certification bodies) is probably the greatest challenge. The most important result of the implementation of ISO 50001 is not the certification (or the management manual) but a real and continuous improvement in energy performance.

5.3 Energy Efficiency is one of the main factors contributing to the reduction of CO_2-emissions and effective climate protection. Understanding of this aspect must be fostered on all levels: government, enterprises, and conformity assessment bodies. More persuasive awareness activities are needed.

5.4 The positive impacts and benefits of implementing the ISO 50001 standard, which cannot be reduced to a pure cost saving, are not sufficiently known and there are only a few case studies that show the actual results of implementation. Implementation agencies, universities, entrepreneurial associations, and other entities involved should be encouraged to carry out such studies and disseminate their results.

5.5 When it comes to a consistent EE Policy to promote the implementation of the ISO 50000-series, the experiences presented show that a coordination committee including all the most important actors is very helpful. The policy should include long-term objectives, strategies, and plans. A gap analysis is necessary to define the steps that need to be taken. Simplifying price policy and capacity building were identified as important challenges. The discussion on incentives to encourage the implementation of ISO 50001 was not exhaustive but interesting examples (Brazil, Mexico, Uruguay) were provided, which are mainly granted ex-post. Chile is ending its subsidy program because it did not really promote a sustainable improvement in energy efficiency in many enterprises. The participants underlined the necessity of further exchange of experiences and networking between the countries in the region.

5.6 The importance of the Quality Infrastructure services for the implementation of the ISO 50001 standard is still underestimated.

- Correct metering by calibrated measurement instruments for establishing the baseline and monitoring the improvement of energy efficiency, and a correct interpretation of the metered variables
- The training of technical experts, internal and lead auditors for the accreditation and the certification process is a pre-condition for the successful development of an energy management system in enterprises but also in public institutions.
- The dissemination of more in-depth and precise knowledge on the requirements of the ISO 50000-series is a task for the Standardization and the Accreditation Bodies of the region.

Future technical cooperation efforts should focus on these aspects.

5.7 One very important issue stressed by all the participants was the promotion of experience exchange and networking with all relevant stakeholders (government, regulating and implementing agencies, QI services, enterprises, academia) within the countries and in the region. The dissemination of real case studies with their problems, costs, benefits, and impacts in the region could be very helpful for a further successful implementation of the standard.

5.8 The resulting proposals for further activities and events can be summarized as follows:

- To promote the exchange of experience as an important instrument for learning and improving the implementation process. The events should be planned with more precise objectives and give the possibility for more in-depth discussion between the participants;
- To create an electronic platform for exchange of experiences and information (such as Red Lac EE);
- To pay special attention to capacity building. In this context, enterprises should be supported through the training of energy managers and internal auditors for the EnMS. For accreditation and certification bodies, the qualification of leading auditors and technical experts in the application of the ISO 50000-series is very important.
- To give more attention to establishing the baseline required by the standard, the indicators for measuring the advances in EE, and the monitoring process. The use of appropriate measurement systems including correctly calibrated (or verified) meters represents a necessary basis for this purpose.
- A lack of awareness of the importance is a very significant obstacle: activities to promote awareness are necessary. These need real and convincing case studies and arguments, clear messages aimed at the different target groups (government, public and private sector) and an efficient use of transmitters and media.
- To promote the elaboration of concrete case studies demonstrating general results, costs, benefits, and impacts of the implementation of ISO 50001 in enterprises and public institutions

5.9 The seminar demonstrated that experience exchange is one of the most efficient ways to improve understanding of the ISO 50000-series, its requirements, and its implementation. Inviting actors from all levels proved very fruitful because it facilitates stronger ties between government policy, regulating and implementing agencies, QI services and enterprises and helps to develop a common understanding of the main questions. Such events provide support in orienting the individual activities carried out by the different actors to resolve the real problems of implementing the ISO 50000-series.

6. Annexes

6.1 Concept

6.2 Program

6.3 Participants

6.4 Questionnaire

6.5 Some results of the enquiry

6.6 Results of Group Work I

6.7 Results of Group Work II

6.8 Evaluation

Annex 1:

Concept

”Experience Exchange on promoting the implementation of energy management systems according to the ISO 50 000-series in the region“

Place and date: 2 days workshop in Santiago de Chile - March 10th and 11th, 2015

Background

The Organization of American States’s Department of Economic and Social Development, COPANT, SIM and IAAC and PTB have agreed to realize a regional project “Quality Infrastructure for Energy Efficiency and Renewable Energy Sources in Latin America and the Caribbean”. The objective of the project is to strengthen the capabilities of the regional organizations COPANT, IAAC and SIM and to improve technical competences in the region for the integration of renewable energy sources and to facilitate the implementation of energy efficiency programs.

The Energy and Climate Partnership of the Americas (ECPA) aims at the achievement of specific regional and national energy goals for the advancement of energy sustainability by fostering partnership and collaborative mechanisms across the region. The ECPA Energy Efficiency Working Group implemented by the OAS’s Department of Sustainable Development with the leadership and guidance of the Government of Mexico through its Secretariat of Energy (SENER) and National Commission for the Efficient Use of Energy (CONUEE), provides technical collaboration and support in the advancement of energy efficiency and conservation. These cooperation activities contemplate regional capacity-building through workshops, exchange missions and exchange of information and experiences with other regional initiatives on energy efficiency.

In the course of their work both initiatives have recognized an increasing demand regarding the promotion of energy management systems (EnMS) and decided to join forces to attend this demand.

The ISO 50 001 and related standards provide an internationally harmonized approach which enables EnMS also to be certified. The event will tackle the implementation of ISO 50 001 in general, but with emphasis on industry. The obstacles to a widespread implementation of EnMS according to ISO 50 001 occur on various levels:

- lack of independent and reliable information on benefits of EnMS on enterprise level;
- constraints in availability of technically competent and independently recognized consultants that can support EnMS implementation;
- access to financing for necessary investments;
- implementation of EnMS requirements on enterprise level due to factors like lack of proper knowledge of the standard´s scope; availability of persons with knowledge for its implementation within the individual enterprises; industry

	concerns about new certifications and associated implementation costs; - limited availability of services from internationally recognized certification bodies.
Objective(s)	To bring together practitioners - to exchange experiences on EnMS implementation and programs for their promotion - share information on benefits of EnMS implementation - to develop perspectives for systematic and curriculum-based capacity building programs for energy consultants - to identify needs for the development of certification services and for their internationally recognized accreditation - to identify needs for development and application of metrology and services for the implementation of energy management schemes
Target Group	Experienced practioners from - enterprises and their respective chambers of industry & commerce - capacity building institutions - energy services companies (consultants) - certification and accreditation bodies - standards development bodies - national metrology institutes/calibration laboratories - development & financing agencies - Energy ministries and regulatory agencies
Expected Impact	Sustainable concepts for the promotion of EnMS are sketched out that consider the needs of enterprises and include relevant institutions from public and private sector; knowledge sharing on gaps and good practices for the development of EnMS in the region increases the basis to raise awareness on national level of involved stakeholders and opens the way to a concerted and systemically oriented solution strategy; possible and real impacts of EnMS implementation are gathered, gaps and needs for further impact determination are identified;
Contribution to project goal (indicators)	This activity will enhance the knowledge of the energy relevant working groups of IAAC and COPANT with respect to their members´ needs and the implementation of the respective work plans (indicator 3). EnMS implementation and their certification is a topic of interest both to COPANT and IAAC and will hence contribute to the implementation of common interests of the regional organizations (indicator 4).
Relation to	Direct contribution to the OAS-led and -implemented ECPA Energy

strategy/work plan of regional organizational involved	Efficiency Working Group, which serves as a response to the commitment of the leaders of the Hemisphere to work together on energy and climate change issues noted during the April 2009 Summit of the Americas in Trinidad and Tobago. OLADE RED LAC EE AChEE
Methodology	Goal oriented moderated discussion in plenary and group work. Input lectures and plenary discussions.
Contents	1 Needs and interests of - Enterprises that want to implement EnMS - Consultants who accompany EnMS implementation - Capacity building agencies - Certification and accreditation bodies - Financing institutions - Development agencies 2 Examples of experiences of - Business models for consultancy activities in EnMS - Capacity building programs for EnMS consultants - Certification and accreditation programs 3 Identification of good practices in the different areas 4 Definition of elements necessary for a promotion of EnMS implementation 5 Development of a model promotion plan of action

Annex 2:

”Experience Exchange on promoting the implementation of energy management systems according to the ISO 50 000-series in the LAC region”

Programme

Santiago de Chile, Chile, March 10th – 11th, 2015

Time	Activity	
Day 1. March 10th, 2015		
09:00 – 09:30	Registration	Lorena Zenteno
09:30 – 10:15	***Part 1: Opening***	
	Welcome by INN	Sergio Toro
	Welcome by the Ministry of Energy of Chile	Ignacio Santelices (Jefe de la División de Eficiencia Energética)
	Welcome by the German Embassy	Christian Gayoso (First Secretary of the German Embassy)
	Welcome by the Mexican Embassy	Otto Granados (Ambassador of the United States of Mexico in Chile)
	Welcome by OAS and presentation of the project	Carolina Peña
	Welcome by PTB and presentation of the project	Ulf Hillner
	Presentation of the participants and presentation of the program and methodology	Christian Göthner
10:30 – 16:00	***Part 2: Introduction and experiences from the region***	
	ISO 50001 – Objectives, Content and the implementation situation in the LAC countries	Antonio Muñoz Trejo (Mexico)
	The Chilean Experience in the Implementation of ISO 50001	Diego Lizana (AChEE)
11:20 – 11:40	Coffee Break	

Hier sind manchmal die Luecken so gross...

Time	**Activity**	
	The Mexican experience	Noé Villegas (CONUEE, Mexico)
	The experience of El Salvador	Juan Ceavega (Asociación Salvadoreña de Industriales)
	The experience of a Chilean enterprise	Javier Salinas (Minera Hierro Atacama)
	Open Discussion	
13:00 – 14:30	*Lunch*	
	Summary of the gaps and challenges defined by the presentations and presentation of the proposals for the working group topics	Christian Göthner / Ulf Hillner
	Group work: Cause analysis of gaps, definition and prioritization of the existing problems	
	Presentation and discussion of the results of the Group Work	
16:00 – 16:30	Coffee Break	
16:30 – 17:30	***Part 3: Experiences of other Regions***	
	Comparing the European and the Latin American Experience	Dario Pérez (CREARA, Spain)
	Presentation Study UNIDO	Bettina Schreck (UNIDO)
	Round Table Discussion	Dario Pérez (CREARA) Bettina Schreck (UNIDO) Moderator: Christian Göthner
	Formation of the 4 Working Groups	Christian Göthner
	Closure	Christian Göthner

Time	**Activity**	
Day 2. March 11th, 2015		
09:00 – 16:00	***Part 4: Definition of Problems and Elaboration of recommendations in Working Groups***	
	Wrap up and introductionary presentation to the group work	Christian Göthner
	RedLACEE as a platform for the exchange of experiences in the region	George Soares (Eletrobrás, Brazil)
	The implementation of ISO 50001 in the Dominican Republic	Luis Alfredo Restituyo (MEM, Dominican Republic)
	Challenges for preparing qualified personal for the implementation of ISO 50001	Graciela Frey (IRAM, Argentina, requested)
	Challenges for enterprises implementing EnMS according ISO 50001. Experiences of a consultant	Sebastián Ignacio Barrios (Poch, Chile)
	Group 1: How to create awareness and promote the implementation of EnMS (including financial means)? Group 2: Which kind of QI Services are necessary for a successful implementation of EnMS according to ISO 50001? Group 3: Energy concepts: How to prepare consultants and auditors? Group 4: How to organize the cooperation and coordination between the different actors in the country? Exchange of information and experiences in the region The final themes for the group work will be defined at the end of the first day.	Christian Göthner Ulf Hillner Dario Pérez Susanne Wendt
11:00 – 11:30	*Coffee Break*	
	Continuation of Group Work	
13:00 – 14:30	*Lunch with* ***Presentation by Glycon Garcia (ICA): ICA and its engagement for Energy Efficiency Management***	International Copper Association Latin America Copper Alliance

Time	**Activity**	
	Continuation of Group Work	
	Presentation of the results of the Working Groups	
16:00 – 16:30	Coffee Break	
	Elaboration of Recommendations	
17:00 – 17:45	***Part 5: Planning and Evaluation***	
	Next Steps	Christian Göthner
	Evaluation (oral and written)	Christian Göthner
17:45	***Closure and Cocktail***	***OAS, INN, PTB, ICA***

Annex 3:

Nr.	Country	Institution	Name	Email
1	***Argentina***	IRAM	Graciela Frey	gfrey@iram.org.ar
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5	***Bolivia***	IBMETRO/Accr.	Jaime Mendoza	jmendoza@ibmetro.gob.bo
6	***Brasil***	Min.Energy	Jorge Paglioli Jobim	JOBIM@MME.GOV.BR
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9	***Chile***	Min.Energy	Ignacio Santelices	isantelices@minenergia.cl
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13		INN / Director	Sergio Toro	sergio.toro@inn.cl
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21		Minera Hierro Atacama	Javier Salinas	jisalinas@cmp.cl
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30		Universidad de Chile	Oscar González	ogonzalez@iap.uchile.cl
31	***Colombia***	Min.MinesEnergy, UPME	Andrés Tellez	andres.tellez@upme.gov.co
32		ICONTEC	Manuel Eduardo Cruz	mcruz@icontec.org
33		ONAC	Lia Carrillo	lia.carrillo@onac.org.co
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35		Min.de Ambiente y Energía	Alfonso Herrera	aherrera@dse.go.cr
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42	***Germany***	Embassy in Chile	Christian Gayoso	-

Nr.	Country	Institution	Name	Email
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Annex 4

Questionnaire "Situation of the Implementation of ISO 50001"

Country:	**Institution:**
Name of the person:	**Date**

1. Do you have a National Energy Efficiency Policy?

Yes		No	

2. Which institution is responsible for the formulation of the National Energy Efficiency Policy?

_____

3. Do you have a national policy / program for the implementation of the ISO 50001?

	Yes	No
National Policy for ISO 50001		
Implementation Program ISO 50001		

4. Do there exist a public contracting policy with criteria preferring firms certified by ISO 50001?

Yes		No	

In positive case, which one(s)?

_____

_____

5. Which institution is responsible for the implementation of the ISO 50001 in your country?

Institution	**Caracter**		
	Public	**private**	**Mixed**

6. Do there exist financing facilities for promoting the implementation of the ISO 50001?

Yes		No		In preparation	

In positive case which one(s)?

_____

_____

7. How many entities are already certified or in process of certification?

Sector	**Realized**		**In process**	
	No. certifications	**No. certified enterprises**	**No. certifications**	**No. enterprises**
Public administration				
Educative Sector				
Industrial Sector				
Mining Sector				
Agriculture/ Fishing				
Commercial Sector				
Transport				
Total				

8. How many certifiers exist in your country and by which kind of NABs are the accredited?

No. of certifiers active in the country	**Accredited by the NAB**	**Accredited by foreign accreditation bodies**

9. What are the three most important barriers that are impeding the implementation of EnMS according to ISO 50001?

1. _____
2. _____
3. _____

10. What are the three most important current challenges for implementing an Energy Management System according ISO 50001 in your country?

1, _____
2. _____
3. _____

Annex 5: Results of Group Working I

5.1 Policy

Problems		Actors		Solutions
Missing of EE in the State Energy Policy	1			To include EE into the State Energy Policy
The different entities do not adequately coordinate their activities	2	Government	5	Formation of a coordination committee with the target to create awareness for joint efforts
Long term Policy	3	Productive sectors	2	Long term strategies, plans and objectives
		Regulator	3	Establishing and monitoring of indicators
Missing motivation to apply voluntary instruments	4	Energy consumers	1	Simplification of energy prices
		Academia	1	Education and Capacity Building
Perverse incentives	5	Consultants	4	Incentives
		Energy enterprises	3	Public-privat alliances for adoption of EnMS

Note: The numbers reflect the priorization.

5.2 Needs on implementation level

	Awareness				**Culture** Resistance to change Risk avoidance?
QI relevant Issues	Skilled personnel	Top Management Commitment	Reliable data for the whole process (base line and monitoring)	Coherent Strategy	Document expected improvement of base line
	New personnel OR + Time dedicated		Establish the base line		Energy efficiency committee Mandate for responsible personnel
	Implementation knowledge		Reliable measurements		Realization of documentation
	… On standards				
	Knowledge on costs and benefits				

Reasons	Lack of Priority and Time	Use of non-calibrated measurement instruments	The lack of enforcement of rules for organizational behavior
	Lack of Flexibility in Application of EnMS	Calibration requirements not known	The need for new rules for organizational behavior
	Missing established curricula		

5.3 Support

		Funding	
		Stakeholder alliances	
Revision of standards (medium term)	Institutional capacity to support users	Link to academia	Credible impact studies
Skilled personnel • Auditors • Consultants		Link to government	Information, dissemination, communication, promotion
	Business Database	Measurement and verification	
Accesible and reliable certification services	Energy performance database	Measurement capacity	
Integrated certification system	Technology Access, alternatives, information	Certified ESCOs	

Annex 6: Results of Group Work II

6.1 Working Group 1: Awareness

Participants:

Name	***Institution***	***Country***
Susanne Wendt	PTB	Germany
Luis Hinojosa	Poch	Chile
Javier Salinas	CMP	Chile
Gabriel Velasquez	MEM	Guatemala
Claudio Carpio	OAS	Argentina

Results:

Target Group:	***Private Sector/ Users of EnMS***	***Government***
Message:	Economic benefits and image	Coherence with energy policy -> responsibility for promotion
Instruments:	Success cases	Regional exchange of experiences between the countries
	Quantifiable effects	
	Promotion and diffusion	
	Events and media	
Transmitters (Who?):	Government	Regional organizations and agencies (OLADE, OAS, ECLAC, PTB, GIZ)
	Private sector (associations)	
	Academia	
	Civil Society (NGO)	
Experiences (of transmission):	Lessons learnt	Regional events
	National programs	
Coordination / Exchange of experiences:	Red LAC EE and others	
	ECPA (events, homepage)	
Recommen-dations:	Political will and assign resources for awareness activities	Institutional Capacity Building
	Information and experience exchange	Associations: Improve communication and lobbying
	Lead by example	
	Make realistic promises - **real** success stories!	

6.2 Working Group 2: QI Services and Capacity Building

Participants:

Name	Institution	Country
Elías Valenzuela	Papelera Bío Bío	Chile
Eduardo Cruz	ICONTEC	Colombia
Albert Corbette	Dominican Bureau of Standards	Dominica
Christian Goethner	PTB	Germany
Wayne Barker	CROSQ	Barbados
Graciela Frey	IRAM	Argentina
I-Ronn Audain	SKNBS	St.Kitts&Nevis
Ian Cole	CARICOM	Guyana
Andrea Afranchi	ICA Pro Cobre	Argentina
Johnny Nahui	INDECOPI	Peru
Diego Cordero	INTECO	Costa Rica
Hortencia Villavicencio	INMC	Mexico
Antonio Muñoz Trejo	NORMEX	Mexico
Eduardo Ceballos	INN / Acreditación	Chile
Rodrigo Ramos	RNM / UdeC	Chile
Gerardo González	INN / RNM	Chile
Roberto Peñaloza	INN / Normas	Chile
Eugenio Salgado	INN / Acreditación	Chile
Jaime Mendoza	IBNORCA / DTA	Bolivia
Juan Ceavega	ASI	El Salvador
Alvaro Chamorro	UNIT-ISO	Uruguay
Noemi Monchez	OSA	El Salvador
Lia Castillo	ONAC	Colombia

Necessary basic competences and commitments

Actor	***Phase of Preparation***		***Certification***
Institution / Enterprise	Commitment "Upper Management" with the project: Improvement of the Energy Efficiency Performance	Personal dedication to the project (resources)	-----
Knowledge in measurement and how to measure			
Consultancy firm	Adaption of the consultant to the culture of the enterprise	Engineering capacity and engineering skills for the different processes	-----
Ability to make an energy audit	Knowledge management		
Calibration Laboratory	Measurement instruments calibrated by lab accredited according to ISO 17025		-----
Certification Body	-----	-----	Auditors with competence in Energy Management systems
			Knowledge of the standard and technical expert
Accreditation Body	Technical competence in management and specific technical scope	Assigned MRA/ MLA with an international (IAF, ILAC) or regional organism (IAAC)	XXX

Recommendations for Capacity Building

Actors	***Who***		***What***	
Enterprise	Chambers of Commerce	Universities	Basic training for getting (minimum) competences and knowledge in ISO 50001, audit techniques and industrial sectors	Training in engineering
	Standardization Bodies	Other qualified training institutions	Energy Manager (for inst. EUREM)	
Consultancy Firm	Same institutions like for enterprises		Experiences in EE projects	Experiences in auditing
Certification Body	Network of certification bodies for sharing experiences with advanced countries	Network of certification bodies of the industrialized countries for training in emerging and developing countries	Training course for LA: 40 h, with workshops, approval, realized by leading auditor ISO 50001	Training Course Leading Auditor for ISO 50001
	Certification bodies and NGOs of developing countries		Audit team - Leading auditor and technical experts: Knowledge in ISO 50006	
Accreditation Bodies / IAAC			Evaluation team and technical experts	Knowledge in ISO 50003
Coordination and Exchange of experiences	Exchange networks			
	To strengthen the network of mutual recognition of certificates in LAC			

6.3 Working Group 3: Political Framework

Participants:

Name	Institution	Country
Ulf Hillner	PTB	Germany
Luis Restituyo	MEM	Dominican Republic
Andrés Tellez	UPME	Colombia
Jorge Paglioli Jobim	MME	Brazil
Antonella Tambasco	DNE – MIEM	Uruguay
Noé Villegas	CONUEE	Mexico
Cecilia Moya	SEC	Chile
Ana Almonacid B.	GIZ	Chile
Oscar González	PRIEN – Universidad de Chile	Chile
Francisco Maureira	INN / Normas	Chile
Mario Roldán	CNE	Honduras
Ronny Rodríguez	Min. de Energía	Costa Rica
George Soares	Eletrobras	Brasil
Glycon Garcia	ICA Pro Cobre	Brasil

EE Policy promoting the implementation of ISO 50000

	Economic	Social	Technical	Environmental
How to promote the implement-ation of a public policy which includes Energy Efficiency in its Energetic Agenda	Incentive mechanisms for the implementation of ISO 50001	Training of experts in ISO 50001	Formulation and monitoring of indicators	Mitigation of Energy management
Implementation – by incentives or mandatory (not mutually excluding)	Creation of Incentive programs for promotion			
	Incentives for establishing national EE Programs	Promotion mechanisms for the implement-tation of EnMS		
	ISO 50001 and financing	Business Cases		
		Cooperation and coordination in the country and the LAC region		

Incentives and QI Services in EnMS Promotion Policies

Process of Policy Making
Directives vs. detailed instruments
Contact interested parties
Gaps identification analysis
Identify appropriate incentives
Require acknowledged services
Permit transition periods

Incentive Mechanisms	Use of QI
MEX: To take advantage of existing mechanisms to search the obligation for implementing measures	Certification of – Personnel (consultants) – Measurement system
URU: Award (bonus) ex-post successful implementation Preference to certified provider	Certification – UNIT-ISO – Extern (USA)
BRA: Insertion to National EE Plan Payment for initial diagnostics for EnMS implementation (ex-post)	XXX
Benefit for receiving credits when certified Plan: To develop a label (sello)	Approval by ANEEL

International cooperation for demonstrating that EE produces benefits (concrete examples)

Highly important Challenge:

Capacity Building

Annex 7: Evaluation of the Workshop

”EXPERIENCE EXCHANGE ON PROMOTING THE IMPLEMENTATION OF ENERGY MANAGEMENT SYSTEMS ACCORDING TO THE ISO 50 000-SERIES IN THE REGION”

Santiago de Chile, March 10th – 11th, 2015

Number of completed evaluation sheets received: 38

1. How do you evaluate the results of the workshop?[4]

Excellent (1)		Good (2)		Regular (3)		Insufficient (4)		Eval.
No.	%	No.	%	No.	%	No.	%	
19	50.0	19	50.0	0	0.0	0	0.0	1.5

What was missing in your opinion?

- Probably a bigger meeting room
- Creo que todos los temas fueron abordados y tenemos la posibilidad de presentarlos
- It was a great workshop. The experience exchange is very important for my country (Guatemala)
- To highlight a bit more how to keep in touch with the working group and learn from follow-ups
- Falta del aspecto técnico. Se concentró en la infraestructura de la calidad y no en los aspectos técnicos para implementar
- The only thing is time. Some expositors require more time to complete
- Experiences on failures (difficult to show…)
- I would have liked to discuss more about concrete implementation processes based on company experience. The only company that presented its experience could not share much as they had just receive the certification and still lack experience with the Energy Management System.
- Tiempo para escuchar experiencias de más empresas implementadoras. Por ejemplo el caso de República Dominicana fue muy interesante pero debido al poco tiempo disponible no fue posible más ampliar la información de su experiencia.
- It would have been good to give some working material before the seminar. This material could be a summary of the main topics, case studies, international experience, among others.
- Time was sometimes not enough to obtain right conclusions in some discussions.
- According to the workshop objectives I think the points were very well discussed.
- Algunos de los oradores fueron demasiado extensos y quitaron espacio para el seminario.
- En general todo muy bien organizado y logrado. Para mejorar: La sala no fue adecuada, los talleres se podrían mejorar entregando instrucciones por escrito.
- Haber hecho una presentación inicial que hubiera facilitado la interrelación entre los participantes de los diferentes países y organizaciones
- Establecer mediante las experiencias todos los inconvenientes y aspectos positivos que han ocurrido en la implementación y en la certificación de la norma ISO 50001 ayudando a prevenir o minimizar estos aspectos a futuras implementaciones o certificaciones que se puedan realizar en nuestros países
- It is somewhat hard to tell, we treated on several topics of interest

[4] In the evaluation column green means good and excellent, red means it is critical.

- Experiencias de organismos de certificación en sistemas de gestión energética
- Maybe some printed material about presentations
- La misión es de poder formar una red de involucrados hispanoparlantes en el tema de mejoras en la eficiencia energética así como demonstrar la realidad de los países participantes.
- Nada
- More real examples of certified industries or enterprises
- It was a lot of information however very little time. Need to be at least 3 days.
- More information on the Caribbean countries. More presentations could have been … for the Caribbean countries.
- The arrangement of chairs in round table was not adequate for the presentations; the time for each presentation was short.
- The time for comments by participants was interrupted by the moderator a lot of times, it was against the purpose of exchange of experience, the time for questions and answers was short
- En algunos momentos, en las dinámicas faltó la claridad de los objetivos.
- Comparar experiencias de América Latina y el Caribe sobre la implementación de sistemas de gestión energética

2. How do you evaluate the content of the workshop?[5]

	Excellent (1)		Good (2)		Regular (3)		Insufficient (4)		Eval.	No resp.
	No.	%	No.	%	No.	%	No.	%		
Part 1: Opening	20		18		0		0		1.5	0
Part 2: Introduction and experiences from the region	19		18		1		0		1.5	0
Part 3: Experiences from other regions	22		13		2		1		1.5	0
Part 4: Definition of problems and Elaboration of recommendations in Working Groups	11		24		3		0		1.8	0

What should be changed in another occasion?

- Presentation of case studies
- To change the methodology for the Working Groups
- To consider a bit more time for group work
- Mejorar organización y objetivos de los Working Groups
- Creo que se puede definir mejor los temas de las mesas de trabajo; esto ayudaría a enfocar la discusión de mejor forma aunque en general está bien
- For two days it is okay. No changes
- The opening was too long. I would have preferred a shorter opening and more time for speeches that were going more into detail.

[5] The percentages are calculated on the base of the real given evaluations.

- Tal vez podría trabajarse dentro de los grupos “subgrupos” de acuerdo a cada tipo de participante para consolidar las necesidades puntuales de cada sector.
- I would suggest to have a clear idea/objective of the work. For me it seems to be too general and too open, therefore, it takes time to understand the objective.
- Pre-formulated case studies and work on them
- Time scheduling like mentioned in 1.)
- More time is needed to elaborate recommendations (in detail). Recommendations are quite wide
- The group work should be done by groups with the same level of experience.
- Incluir más casos con indicadores reales
- Faltó mayor tiempo para la experiencia práctica a nivel industrial que presentó República Dominicana
- Organizar mayor número de grupos de trabajo para así disminuir el número de integrantes de los mismos para así hacer más eficaz el trabajo
- The time was short
- More time
- Que las presentaciones se enfoquen más al tema en desarrollo y no en tanto de presentar a la organización que representan
- Que más bien se adapte el formato de presentación a que no sea una cátedra profunda
- Mayor duración de los grupos de trabajo, separar por tipo de actividad (certificación, acreditación, consultoría, etc.) y luego juntar los grupo
- Maybe work in groups with 4 or 5. I think no everyone give their opinion
- More time for discussions and presentations
- More experiences to be shared from the Caribbean
- Allow more time for questions and discussion
- More time for presentations, questions, answers and comments by the participants
- En el trabajo grupal no había claridad sobre los objetivos y lo que se buscaba. Distintos participantes entendían las cosas de manera distinta.

3. How do you evaluate the facilitation?

Excellent (1)		Good (2)		Regular (3)		Insufficient (4)		Eval.
No.	%	No.	%	No.	%	No.	%	
17		20		1				1,6

What should be improved in another occasion?

- More time for each presentation
- Nice program
- More countries
- To emphasize the benefits of group work methodology (Meta plan)
- Metodología de los grupos de trabajo
- Time handling
- Slightly more flexible
- Excelente trabajo. Muy buena dinámica
- A little improvisation in some opportunities
- Se sabe que es muy difícil de coordinar grupos de trabajo pero habría que respetar más los tiempos.
- La sala en mesas redondas bien para los talleres, no tan bien para las ponencias
- Promover la participación de todos los participantes. La vocería estaba canalizada en un grupo de personas cuyo aporte fue muy importante pero si se hubiera tratado el mismo

tema en grupos más pequeños posiblemente hubiera sido más enriquecedor para llevar las conclusiones al grupo grande.
- Debería mayor número de expositores de experiencias tanto normativas tanto técnicas
- El tiempo es corto; impide a entrar en profundidad en algunos temas (entiendo que no era el objetivo) pero para futuros eventos el alcance puede ser más corto y profundizar más.
- More time
- Se podría implementar más material digital y evitar la información en papel
- Nada
- Depends on the sub-group. In my opinion the facilitator could guide or change the discussion when the participants were not talking about the real problem
- Higlighting the … of the Caribbean problem in EE
- The list of participants, the pdf of the PowerPoint presentations before the event
- Las dinámicas de las sesiones
- Creo que nos orientaron de cierta forma en los objetivos del trabajo grupal.

4. Was the local environment adequate to the requirements of the workshop/seminar/group training?

	Excellent (1)		Good (2)		Regular (3)		Insufficient (4)		Eval.	No resp.
	No.	%	No.	%	No.	%	No.	%		
Seminar room	3		16		15		4		2.4	0
Technical equipment	19		17		2		0		1,6	0
Provisions	21		15		2		0		1,4	0
Accomodations	19		14		1		0		1,5	4

Recommendations:

- Seminar room should be larger (7x)
- Nice
- Seminar room should have different arrangement in order to facilitate attention to the presentation
- La mesa de trabajo era demasiado pequeña para la cantidad de personas
- Una pizarra para poder pintar
- Creo mejor cambiar la disposición/el acomodo de las personas
- It is okay
- Salones un poco más grandes dado la cantidad de participantes
- La posibilidad de un local un poco más grande
- Space was not adequate for the number of participants. Sometimes the room temperature was too high
- Need for more ventilation in the room
- La sala de ponencias queda chica.
- La sala fue muy pequeña para el tamaño del grupo.
- El salón fue muy pequeño y se dificultaba ver las presentaciones ya que las mesas eran de forma redonda.
- More time
- Espacio e instalaciones de trabajo debería ser más amplios
- Recinto limitado en capacidad en respecto al número de participantes en el evento
- Ordenar las mesas para la presentación y mesas para grupos de trabajo
- Bigger room for the conference's time

- Not people back to the presentations
- La distribución de las mesas en forma de U
-

5. How will you inform your regional organisation about the results of the workshop and disseminate them in its member institutions?

- Yes
- Presentation of discussed subjects and experiences of other countries to colleagues
- Write a report for the vicedespacho
- Will conduct a workshop and prepare a presentation
- Revisión interna una vez enviadas las conclusiones
- En nuestro caso se estaría introduciendo algunos conceptos discutidos dentro de la política pública
- By reports and sharing information
- This task will be done by Carolina Peña
- I will inform about the workshop in our staff meeting.
- Presentación de informe a gerentes
- A través de un informe general de la actividad y con diversas actividades de difusión sobre las experiencias en la región que fueron tratados en este intercambio.
- I would communicate relevant experiences from the región and keep in contact with other participants
- I will inform the top management and the energy team members about the activity
- I will inform by report or mail
- Recommendations will be presented in ppt. + list of participants and sectors
- An internal report will be prepared with the conclusions and results of the workshop
- Se dedica internamente una reunión para tratar este tema. Sería de mucha ayuda de contar con el material lo antes posible.
- Serán considerados en actividades de capacitación y en la actualización de directrices de acreditación.
- Mediante reunión con las direcciones técnicas, de gestión y ejecutiva con el fin que se definan los pasos a seguir para darle continuidad al proceso. Adicionalmente, gracias al trabajo realizado ejecutar reuniones técnicas con los sectores relacionados del subsistema nacional de calidad.
- A través de un informe ejecutivo y de reunión con los compañeros normalizadores y de certificación trasladándoles el contenido y la experiencia del taller
- En nuestro caso fue interesante escuchar y participar en los temas que presentamos ya que estamos implementando este tema y esta norma en nuestro país.
- Si además de informarnos da pautas para desarrollar y trabajar temas en conjunto con algunas personas que tuve la oportunidad de conocer en el taller.
- I am to issue a Back-To-Office Report of the Workshop.
- I will do a report document to directors. Dissemination will be done through the local technical committee (energy management) and future meetings with other local stakeholders for progress.
- Se facilitará la información a las personas con poder de decisión dentro de la organización, con la finalidad de adecuar las experiencias compartidas a la realidad de nuestra institución y a su vez generar un efecto multiplicador al sector energética del país
- La realidad nacional existente en comparación con la realidad existente en otros países
- A través de una presentación de los conocimientos adquiridos
- Usually, when we participate in this experience we have to make a presentation for all the integrants of the National Energy Direction. Before this event I talked with certified industries, organizations and education. I will share with them the information.

- El Estado de desarrollo, implementación y certificación en América Latina y el Caribe
- Written and verbal report
- A report is mandated to be sent.
- Report
- I will present a report and share the documents
- (1) an official report on the mission, (2) A meeting with the partners of the Energy Efficiency Committee of SIGET, (3) I will give a CD with the received information to the administration and will upload it to the Intranet of SIGET
- We should enter the website of the project to better understand the results of the project
- Probablemente en la sección pero me interesa contar con las presentaciones que son mucho más precisas.

6. Which themes/subjects should be treated in the future with priority?

- Implementation
- Training of auditors
- Experiences of countries which have successfully improved the ISO 50000 process
- Renewable energy
- Measurement and verification
- Capacity Building
- Experience exchange
- The nexus between government and enterprises
- Acciones concretas
- Publicidad y prensa
- Herramientas de trabajo concretas
- Leyes de gestión de calidad
- Laboratorios acreditados
- Subsidies and incentives
- The industrial experience from the very beginning to the end (certification)
- Education
- Mecanismos de cooperación en red
- Formación virtual
- Criterios que deben aplicar los organismos de acreditación para la evaluación de organismos de certificación de SGEn.
- También considerar criterios para organismos de certificación de personas para competencias técnicas relacionadas a los SGEn.
- It would be very interesting to follow up the experiences/goals of the different countries. It seems that nations from the region are just starting with new projects. I would like to know how those initiatives evolve in the future.
- Best practices and successful cases
- How to train personnel - not only titles, but in detail
- The results of ISO 50001 in the region will be very welcome
- Difusión y capacitación
- Calcular las líneas base
- Aspectos técnicos y de experiencia en resultados de gestión energética
- Dificultades de empresas ya …
- Superación de temas que ayudan a certificar con mayor facilidad
- Temas con detalle técnico (dificultades encontradas)
- Técnicas de implementación desarrolladas por los países con experiencia
- Creo que los temas que nos interesan saber son la implementación de etiquetados y laboratorios para tener mejor regulación y calidad de servicios

- Enfocar mis esfuerzos y los del instituto en la difusión y capacitación
- Awareness of the EnMS
- Regulatory Policy Issues
- Small scale successfully implemented cases focused on the role in energy management according to different entities
- Compartir redes de conocimiento y experiencias entre organismos de certificación
- Eficiencia energética en el sector de la construcción, edificios e instalaciones similares
- La acreditación bajo la norma ISO/IEC 17021 para los organismos de certificación de sistemas de gestión de energía
- Who does implement ISO 50001? Focus on industry and services
- Personnel certification and accreditation of the certifiers
- Certification according to ISO 50001 and how to get involve it with other ISO 50000 standards
- A través de IAAC intercambio y definición de criterios entre acreditadores
- How to créate awareness?
- Capacity Building
- EE challenges in the Caribbean
- Lack of M&E infrastructure / equipment (in Caribbean)
- Lack of Data collection an analysis (in Caribbean)
- Lack of Capacity Building and opportunities availables for access to training, certifications, etc. (in Caribbean)
- Create a Working Group on EnMS for LatAm
- Schemes to promote awareness and public policy
- Concrete examples of successful entities
- Successful business cases
- The example of the Chilean enterprise was not clear enough: How much did it cost? What was the benefit? Which was the Base Line?
- El rol del Estado y cómo puede promover este tipo de proyectos. Creo que hay mucha experiencia en el área.

7. Observations and personal comments

- Thank you (2)
- Many thanks to Christian, Ulf and Carolina for the invitation and the kind support during the workshop
- Is a great experience
- Excellent opportunity to learn about other experiences and to network with colleagues
- Thank you for your support!
- It was excellent. Congratulations!
- Excelente
- Good organization at all. Congratulations
- None
- It was a good networking experience and the content and discussion were very fruitful and interesting
- Excelente disposición y dedicación!! Felicitaciones!!!
- Agradezco la oportunidad dada al OSA para ser partícipe de este excelente intercambio de experiencias. Nos permitirá abonar a la difusión y sensibilización del tema en nuestro país.
- Outstanding opportunity of knowing key people working on related ISO 50001 issues
- Thank you very much! It was an excellent opportunity for me and IRAM. You all have been very nice to all participants. Thank you again!
- Congratulations for OAS and PTB for this initiative

- Sería bueno contar con un documento resumen de todo el seminario/taller (resumen de lo discutido en los grupos)
- De todas maneras quisiera felicitarles por el buen trabajo., agradecer la invitación a participar y quedo a disposición para cooperar.
- Muy provechoso. Muy buena la organización de intercambio de experiencias
- El trabajo fue muy enriquecedor. Se tuvo un foco apropiado que abre grandes oportunidades para seguir avanzando en el tema
- Existieron muchas discusiones respecto a temas ya … , en las mismas de las 50000
- Debe proveerse mayor tiempo a los ponentes de experiencia de los países
- La información obtenida en los dos días del taller me ha permitido conocer los retos y dificultades que presenta la aplicación de la norma ISO 50001 y me ayudará a intentar prevenir estos inconvenientes.
- El evento fue muy bueno ya que escuchar como otros países tienen las mismas barreras y como han salido triunfantes ya que estamos en esta lucha ahora mismo en Honduras. Me lleva buenas amistades y contactos que espero nos ayudan a solucionar estos problemas que tenemos en común. En mi opinión particular este evento fue de gran ayuda.
- Taller muy enriquecedor, muy valioso porque se conoce perspectivas que no siempre uno visualiza. Me gustó y aprendí y me dio la oportunidad de conocer expertos en el tema.
- I think lots of planning was involved and to my need the workshop went well.
- I am grateful for taking us into account for this important kind of workshop.
- Debería darse un seguimiento de los resultados
- Seguir desarrollando el tema de eficiencia energética. Que exista la participación del gobierno en el workshop
- Excelente forma de trabajo, ampliar la duración de este tipo de grupos de trabajo (en lo posible)
- Some conclusions were not totally clear because the sub-group did not have only one conclusión. Maybe more specific topics in small groups could help.
- Como requisito para una mejor comprensión sería deseable que los participantes conocieron de las normas de la serie, es decir ISO 50003, ISO 50006, a parte de las ISO 50001
- Workshop conducted very well
- This workshop was informative but more time is needed to allow more dissemination and information
- I would like to see more discussion on the reduction of energy consumption and how this is best captured in the implementation process
- Excelente ambiente para intercambiar experiencias.
- Me parece muy interesante el intercambio de experiencias. Es un espacio muy necesario que debe repetirse.