

Development and Implementation of Cgcre Accreditation Program for Greenhouse Gas Verification Bodies

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Abstract: An organizational innovation is defined as the implementation of a new organizational method in the firm's business practices, organization of your workplace or in its external relations. This work illustrates a Cgcre innovation, by presentation of the development process of greenhouse gases verification body in Brazil according to the Brazilian accreditation body, the General Coordination for Accreditation (Cgcre).

Keywords: innovation; verification body accreditation; greenhouse gases; ISO 14066; ISO 14065.

1. INTRODUCTION

The official Brazilian accreditation body is the General Coordination for Accreditation (Cgcre), recognized by the Brazilian Government. Cgcre is signatory to the multilateral agreement (MLA) of the International Accreditation Forum (IAF), of the International Laboratory Accreditation Cooperation (ILAC) and of the InterAmerican Accreditation Cooperation (IAAC) and is part of the National Institute of Metrology, Quality and Technology (Inmetro) [1], according to the Act MDIC 82/2008, Federal legislation that approved Inmetro's bylaws [2].

The Development Division of Accreditation Programs of Cgcre (Didac/Cgcre) is responsible for establishing policy and systems for new accreditation programs, managing the activity of developing accreditation programs and disseminating knowledge generated in the accreditation activity, being responsible for organizational innovations in Cgcre, defined as the implementation of a new organizational

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method in the firm's business practices, organization of your workplace or in its external relations [3].

In the development process, based on internal procedure of CGCRE, NIE-CGCRE-015 [4], Didac/Cgcre has established two approaches based on the level of complexity that the new programme demands (levels 1 and 2). This work illustrates a Cgcre innovation, by presentation of the development and implementation process of the level 1 program: accreditation of greenhouse gas (GHG) validation and verification bodies, according to the international standard ISO 14065.

2. ACCREDITATION OF GREENHOUSE GAS VERIFICATION BODY UNDER ISO 14065

Greenhouse gases, as defined by ISO 14065 Clause 3.1.1, are gaseous constituent of the atmosphere, both natural and anthropogenic, that absorbs and emits radiation at specific

wavelengths within the spectrum of infrared radiation emitted by Earth's surface, the atmosphere, and clouds. Include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulfur hexafluoride (SF₆).

Verification is the process through which the verification body assesses a GHG assertion against defined verification criteria and the standard that is laid out by the GHG program [5]. The verification body is responsible for completing an objective assessment and providing a verification statement concerning the responsible party's GHG assertion based on evidence [5]. Greenhouse Gas Verification Body accredited under ISO 14065 must demonstrate that they are technically competent to undertake verification of greenhouse assertions in accordance with a greenhouse gas programme, such as Brazilian GHG Protocol Program, ISO 14064, Voluntary Carbon Standard (VCS) and others.

To perform this activity, a verification body must comply with ISO 14064 Part 3 [6], which specifies principles and requirements and provides guidance for those conducting or managing the verification of greenhouse gas assertions, established for the first time a process for conducting a verification of a GHG assertion, such as an inventory report of GHG of an organization.

ISO 14065 is a basis for assessing and recognizing the competence of verification bodies. This standard details a series of requirements that verification bodies must meet to become accredited. Another relevant international standard, ISO 14066:2011 [7], specifies competence requirements for verification teams of verification body.

According to ISO 14065, clause 6.1.a, the validation or verification body shall establish and maintain a procedure to determine required

competencies for each sector in which it operates. In addition, ISO 14066:2011 clause 6 establishes that "a validation team or verification team collectively shall have applicable sector knowledge and skills". For each sector, the collective technical competence of validation team or verification team shall include (as applicable) the capability to identify greenhouse gas sources, sinks and reservoirs (SSRs) concerning to the sector, and others. Different sectors have different SSRs and require a different set of competencies for the verification team. This implies that to define the scope can be a very difficult task, since for each economy sector there are several different SSRs that should be considered to define an inventory of GHG. To solve this challenge, Didac/Cgcre defined the scope regarding the sector of economy associated with the main activity of an organization, interested to have its inventory of GHG verified by an accredited verification body.

3. DEVELOPMENT OF GREENHOUSE GASES VERIFICATION BODY ACCREDITATION BY DIDAC/CGCRE.

According to Didac/Cgcre's requirements, the development process requires consideration of the existence of the accreditation programme in other countries; update or creation of documents; competency criteria for the accreditation team and selection, training, evaluation and qualification of assessors and technical experts. To implement an accreditation program, identified as level 1, a pilot project must be performed before becoming the new programme available in the portfolio of accreditation. Figure 1 shows the approved accreditation programme implemented in Cgcre, which a body requesting accreditation must indicate (a) a GHG verification programme and (b) an organizational level for GHG inventories verification.

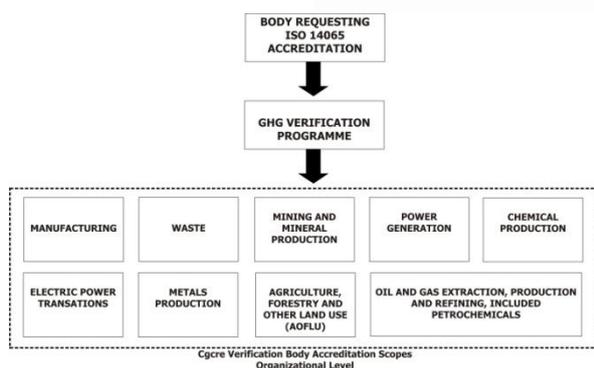


Figure 1: Approved ISO 14065 accreditation program by Cgcre.

4. IMPLEMENTATION OF GREENHOUSE GASES VERIFICATION BODY ACCREDITATION IN CGCRE.

In implementation step, Didac/Cgcre determines that technical experts for this accreditation program must have experience with greenhouse gas verification processes and technical knowledge in one or more GHG methodologies (programmes) and must have Bachelor degree in technical field (for example Chemical Engineer). Experience also should include, at the minimum, areas as emissions monitoring and calculations, design of GHG emissions reduction systems, testing and calibration of emissions monitoring equipment, working with GHG quantification methodologies (as mathematical modeling, measurement, and others).

In order to qualify internal Cgcre's accreditation assessors and other personnel involved, for example, accreditation manager, a training program was selected. Starting with the three training programs offered, around 30 professionals were prepared, among them permanent staff of the Cgcre and external technical experts (from Brazilian Universities).

5. PILOT PROJECT: MAIN RESULTS.

The main objective of pilot project is prepare infrastructure to become Cgcre competent to initiate a new accreditation program. At the end 8th Brazilian Congress on Metrology, Bento Gonçalves/RS, 2015

of accreditation in pilot project, a critical analysis is necessary to correct and improve the new program which will be included in the routine of accreditation's Cgcre Division responsible for it.

During the pilot Cgcre assessed the competence, impartiality and performance capability of applicant organizations using the internationally recognized standard ISO 14065:2012. As result of Pilot Project, 09 verification bodies (of 15 initial applicants) were accredited by Cgcre (The list of Brazilian accredited verification bodies under ISO 14065:2012 can be found at <http://www.inmetro.gov.br/organismos/index.asp> and include several technical sectors).

The methodology of critical analysis carried on Didac/Cgcre consisted in a survey with organizations and to assessors and technical experts that participated in the pilot project. All participants evaluated the pilot as good. Regarding the competence of assessors, 89% of verification body evaluated it as good, while 44% evaluated the competence of technical experts as excellent.

Were also analyzed all documents in main accreditation process steps, namely initial assessment, office assessment and witness assessment. Main problems areas for applicants refer to impartiality (clause 5.4), liability and financing (clause 5.5), deployment of personnel (clause 6.3), information provided to a client or responsible party (clause 7.1), approach (clause 8.3), appeals (clause 9) and complaints (clause 10), as show in Figure 3.

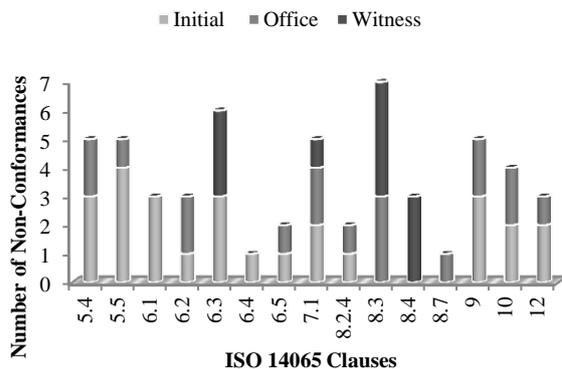


Figure 1: Non-conformances in ISO 14065 accreditation in Cgcre's pilot project.

6. CONCLUSIONS

According to ISO/IEC 17011:2005 clause 6.1.2, Accreditation Body shall have access to a sufficient number of assessors, including lead assessors, and experts to cover all of its activities. Especially for ISO 14065 accreditation, this is extremely important while remain a difficult task.

For internal assessors, training in ISO international standards and GHG Programme may not be sufficient to operate the accreditation program; in turn, technical experts in greenhouse gas emissions for all organizational sectors are not available yet. In this situation, improvements of training program with case studies, for internal assessors, remain a best option. For technical experts, may be necessary seeks qualified personnel in another countries for organizational sectors that isn't available in country of accreditation body, in a view of accreditation scoping extension.

Didac/Cgcre development step-by-step may be reproduce by others Accreditation Bodies (ABs), which seek launch this accreditation. This ABs will be founded this work very useful. Finally, suggests to international and/or regional

accreditation forums offer training courses and technical cooperation in this new accreditation program for accreditation bodies.

7. REFERENCES

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