

Terms of Reference

Consultancy work for assessment of skills and knowledge gap in building energy efficiency sector in Argentina

1. Background

There is a growing demand for energy in the developing and emerging economies fuelled by globalisation, market deregulation, and the worldwide influence of capitalism. To achieve the ambition of doubling the rate of energy efficiency and for governments to accelerate the development of public-private energy efficiency implementation projects will require the right mix of people and skills. To operationalize this program, basic questions need to be asked starting from understanding the existing skills programs: Which changes and modification need to be made to the current programs? What is being taught as part of secondary, tertiary, and university education? What needs to be done to address the energy efficiency skill and knowledge needs in the foreseeable future?

Rapid urbanisation and increased levels of income in developing and emerging economies have created demands for improved quality of life. The need for heating and cooling, increased penetration of electrical appliances and change in cooking fuel have increased the demand for energy, especially in the building sector. Most of these countries energy sector is facing multiple and complex challenges such as growth in energy demand, energy dependence, climate change, the electric system expansion and rise in consumption. Argentina occupies third place among Latin America countries with the highest energy consumption¹. The overall energy consumption in Argentina increased by 42% from 2000 to 2016, and the share of energy consumption by the residential sector in Argentina grew from 24% to 27% from 2000 to 2016². Thus there is a need to make the residential sector more energy efficient with compromising with the standards. The government has taken several initiatives in this regards and policies are in place but to implement these project will require skills and knowledge, for example, the mandatory labelling system for EE of some appliances was introduced in 1999, and in 2007 the National Program for the Rational and Efficient Use of Energy (PRONUREE) was launched³. Within the main policies set in the PRONUREE, several objectives were proposed for the sector regarding new and existing buildings.

There is a need to support these initiatives with skills and knowledge, both among the in-service professionals working in the energy efficiency sector and individuals proceeding out from the educational system, which sets in the need to review the taught programs in secondary and tertiary technical high schools, as well as in universities. There is also a need to review and benchmark the skills of in-service professionals.

1 (Lapillone, 2016)

2 (Ministerio de Energia y Minería, 2018)

3 (Secretaria de Energia del Ministerio de Planificacion Federal de la Republica Argentina, 2014)

In line with this requirement, this project addresses the competency gap required to implement the energy efficiency projects in the residential building sector by determining the skill and knowledge gap identifying means to fill this gap.

Additionally, the Argentine National Government has the purpose of favouring a rational and efficient use of energy, taking into account its positive influence on the protection of energy resources, the decrease in the costs and the mitigation of environmental problems.

It is also a strategic objective of the Argentine Government, the promotion of electric power generation from renewable sources since renewable energies will allow the achievement of two priority goals: improve energy security and mitigate climate change, in pursuit of sustainable development. Laws No. 27,191 and No. 27,424, with their respective regulations, establish the regulatory framework for this.

Within this framework, education for energy sustainability must constitute a central pillar of any educational proposal, since its action falls on the different types of energy, and its impact is much more direct and immediate than that of other forms of mitigation. It also focuses on habit-changes that are promoted from school and family education, which is why it should be encouraged in those responsible for the implementation of public policies for energy and environmental education and teacher training from the country.

2. Objectives

The objective of this study is to make a contextual assessment of skills and knowledge gaps among professionals working in the energy efficiency (buildings) sector and in the educational programs that train these professionals.

In doing so, the study will:

- Report on existing skillsets and gaps of individuals working in the sector of energy efficiency
- Report on assessing the content of the identified courses in each province and identification of gaps. The educational levels included in this assessment will be:
 - Secondary technical
 - Tertiary technical
 - University (engineering and architecture)
- Recommendations for policymaking on how to update educational profiles according to local needs and international state-of-the-art practices on this matter.

3. Scope of Work

To help in achieving the above objectives a study will be carried in steps mentioned below and the results will be disseminated through a workshop. As part of the study, the consultant will

- a) Do a general overview of the educational programs relevant for building-energy sector and identify the profiles of individuals who work in the sector.

- b) Review the energy efficiency projects that are being executed or are in the pipeline in Argentina and in consultation with C2E2 staff and Undersecretariat of Renewable Energy and Energy Efficiency (SSERyEE) staff prepare an overview of skills that would be required to design, execute and monitor these projects
- c) In consultation with C2E2 staff and SSERyEE staff identify the education institutes to be surveyed and in-service professionals to be surveyed/interviewed and conduct the survey of education institute and in-service professionals. The questionnaire will be first prepared in English language and subsequently translated into the Spanish language. All the surveys will be conducted in the Spanish language
- d) Do an assessment whether the educational profiles of each course (secondary technical, tertiary technical and university level –engineering and architecture-) is suitable to the needs -at province level- in terms of local energy resources and level of investment/activity in the building energy sector. This will include
 - i) Assessment of the skills needed at the province level
 - ii) Identification of course that teaches energy efficiency in the building sector
 - iii) Descriptive analysis of the existing abilities possessed by the in-service professionals
- e) The consultant will undertake four field trips to the four regions in Argentina that is South, Centre, North East and North West for consultations.
- f) Help in the organisation of a consultation workshop.

4. Deliverables

1. An inception report that will contain the methodology⁴, including a strategy to conduct the survey, questionnaires/survey forms/interview questions.
2. A report on the assessment of the educational program and skills gap among in-service professionals:
3. A report on interviews, survey/data collection and analysis (including survey data):
4. Dissemination workshop and workshop report

5. Budget

The budget for the consultancy contract is USD 17500. In addition to this budget, the consultant will separately budget and provide a lumpsum estimate for travel to the four provinces stated in the scope of work.

6. Qualifications and Skills

The appointed consultants should have:

- Postgraduate degree (desirable)
- Working knowledge and experience in the educational system of Argentina.
- Experience in conducting surveys.
- Experience of working with data

⁴ Inputs on methodology would be provided by C2E2

- Ability and experience to interview government agencies and private sector
- Proficient analytical and writing skills and excellent English and Spanish communication skills

7. Working Arrangement

The consultants or consultancy will be retained on a contract with the C2E2 and payments based on deliverable output. They would be required to be available for the timely delivery of milestones throughout the project.

The consultant will work under the supervision of the SSERyEE and will agree on face-to-face workdays at its offices (Av. Paseo Colón 189, 4th floor, Buenos Aires, Argentina) as per the progress of work.

8. Language

All outputs should be prepared and submitted in the English language to the Copenhagen Centre for Energy Efficiency along with a translated copy in the Spanish language.

9. Time for completion

Nine months

9. Confidentiality and ownership of results

The contracted consultant is obliged to maintain confidentiality regarding the activities they carry out and the information they receive from the evaluated homes. The reports generated, and all products related to the object of the present contract will be the exclusive property of C2E2. Any publication or dissemination that the consultant is required to do on joint works, may only be executed after authorization of such by C2E2 and the Under Secretariat of Renewable Energy and Energy Efficiency.