Scenarios and Opportunities for Energy Efficiency in Construction in Buildings

Argentina
Buildings in Argentina ("residential" + "commercial and public") accounted for 33% of the country's total energy consumption during 2018, which, in turn, accounted for 20.8% of the country's GHG emissions.

(-) Lack of knowledge and public awareness on impacts of energy waste

(-) Prevailing constructive logics with low efficiency materials, without considering energy saving & poor thermal performance

(+) Public policies such as the National Housing Labeling Program promote and drive base changes that allow the replication of other associated policies for the qualitative growth of the sector.

(+) Very Few Regulations in place compliant to Thermal Conditioning of Buildings and Windows Standards
Educational System Structure

Figure: Argentine Education System. Source: Author’s own elaboration.
Methodological approach

- Characterization of professional profile(s) in the sector of practicing professionals and market situation (goods, services and stakeholders of the value chain).

- Conducting surveys, interviews and stakeholder workshop.

- Survey and analysis of the supply of training and contents with a federal focus.

- Diagnosis of supply and demand, for the identification and dimensioning of the gap.

- Analysis and characterization of the gap.

- Recommendations to accompany the expansion of the EEB.
56 different programs considered

Results: very low correlation to the EEB, especially in Higher Technique.

Technical/Profesional Level data gathering

- Higher Technical Education: 21.1%
- Technical Secondary Education: 15.8%
- Vocational Training: 63.2%

Posgraduate Level data gathering

- Greater proximity to the EEB than at other levels (50% of the total surveyed, 182 courses)
- Topics and content of greater specificity in relation to other levels.

Figure: Distribution of degrees in Technical and Vocational Education according to content for EEB. Source: Author’s own elaboration.

Figure: Academic level in post-graduate and other courses with proximity to EEB. Source: Author’s own elaboration.
UnderGraduate Level data gathering

- 12 strategic careers surveyed in 153 institutions. (Architecture and Engineering)
- Medium and high correlation in 30 institutions.
- Architecture presents greater proximity
- Only 4% of the careers present content consistent with the EEB.

Figure: Proximity to EEB (%) in Undergraduate Programs. Percentage distribution of undergraduate programs. Source: Author's own elaboration.
General Results from Content Analysis

- *Very low* frequency of appearance of *EEB content at all educational levels*.
- *Lack of specific technical content*.
- *Not integrated as a cross-cutting topic in degree programs* or in ETP frameworks and resolutions.
- *Postgraduate and Other Courses present higher correlation of specific contents*.
- *Highly concentrated offer* in AMBA Region.
### Training and Awareness Raising Axis

- **Raise awareness** (especially among officials and/or decision makers) by presenting EEB linked to: energy savings, increased housing comfort, and climate change mitigation.

- **Train officials** to catalyze the application/implementation of new EEB specific regulations.

- Raise awareness of the student sector (advanced secondary school) about the training existing programs in EEB to promote career paths.

- **Train teachers** of ETP, undergraduate and postgraduate courses: Integrate the topic in the current teacher updating systems.
Educational Policies Axis

- Offer more elective undergraduate subjects related to EEB.
- Offer "packages" of elective subjects (even in other degrees or institutions, in order to favour inter-institutional transversality).
- Consolidate the EEB orientation as part of the curriculum in Architecture and Engineering curriculum.
- Forming open program degrees (also referred to as "à la carte").
Educational Policies Axis

- Propose **contents** offered by undergraduate institutions linked to the **climatic zone** in which they are located.

- Incorporate **EEB related contents** in Technical and Vocational Education in line with the measures planned for the reduction of GHG emissions in the country (NDCs).

- Design pedagogical strategies that favour the **development** of **interdisciplinary work skills** among professionals.

- Ensure **access** to centralized/ systematized and updated information on educational existing programs. This is specially relevant in ETP, which presented the greatest lack of data.
Concluding Remarks

- The **gap** is multidimensional

- The **potential of the combination** of restrictive / regulatory measures ("push") and incentive and promotion measures ("pull") in the demand and supply of goods and professional services linked to EEC.

- **Implementation of simple and known technology**, whose production could be proposed to migrate to the **national manufacture**

- **Have a stable and predictable political and regulatory framework** that allows **medium and long term planification**.
Thanks!