

ENERGY
EFFICIENCY
IN BUILDINGS



*Scenarios and Opportunities for Energy Efficiency
in Construction in Buildings*

Argentina



Ministerio de Economía
Argentina

Secretaría
de Energía



COPENHAGEN CENTRE
ON ENERGY EFFICIENCY
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■ *Argentinean Context*

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

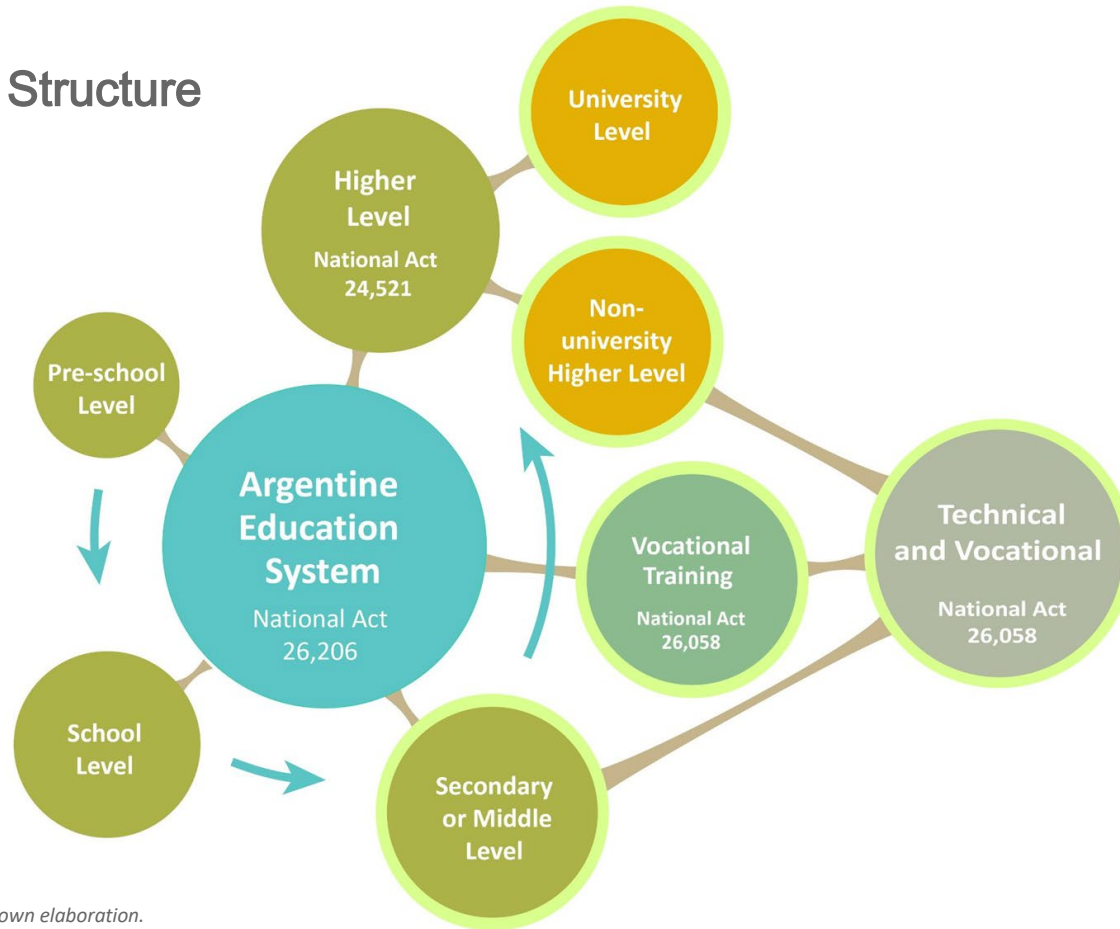


Figure: Argentine Education System. Source: Author's own elaboration.

■ Stakeholders

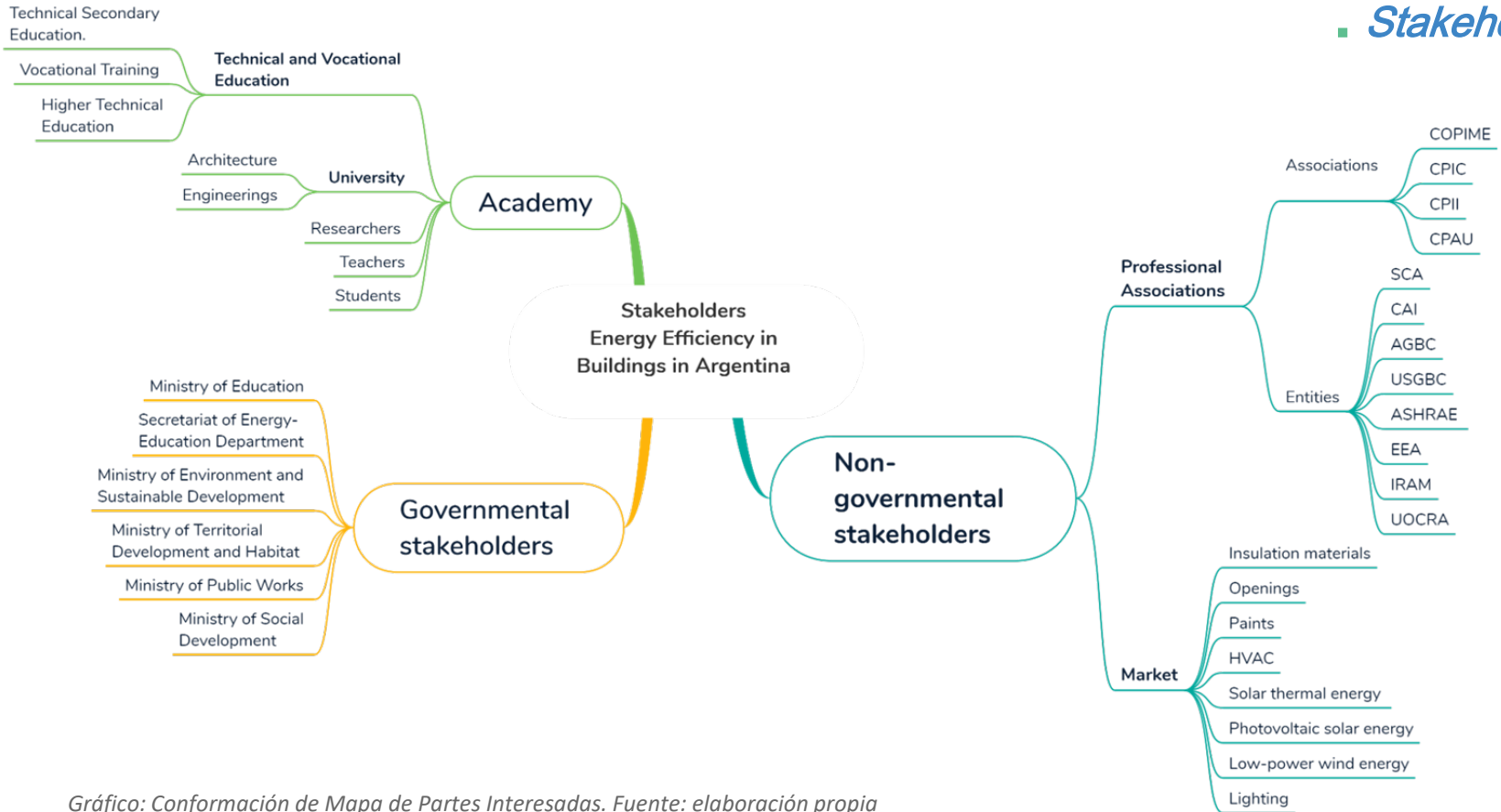


Gráfico: Conformación de Mapa de Partes Interesadas. Fuente: elaboración propia

■ *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.*





> Technical/Professional Level data gathering

- 56 different programs considered
- Results: very low correlation to the EEB, especially in Higher Technique.

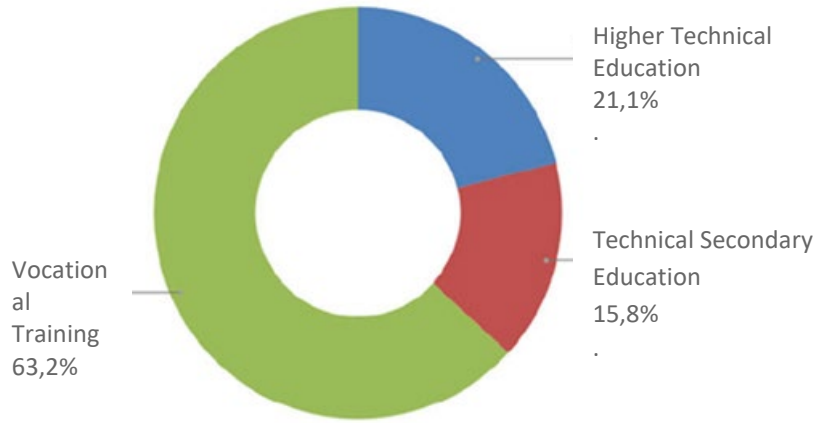


Figure: Distribution of degrees in Technical and Vocational Education according to content for EEB. Source: Author's own elaboration.

> 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.*

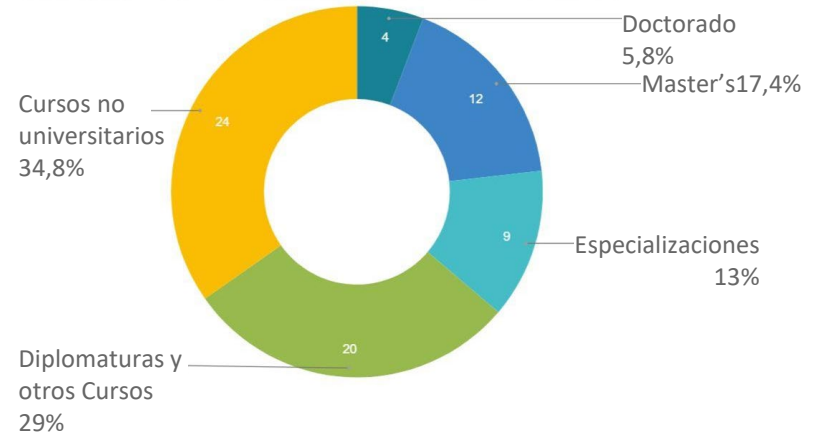


Figure: Academic level in post-graduate and other courses with proximity to EEB. Source: Author's own elaboration.



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.

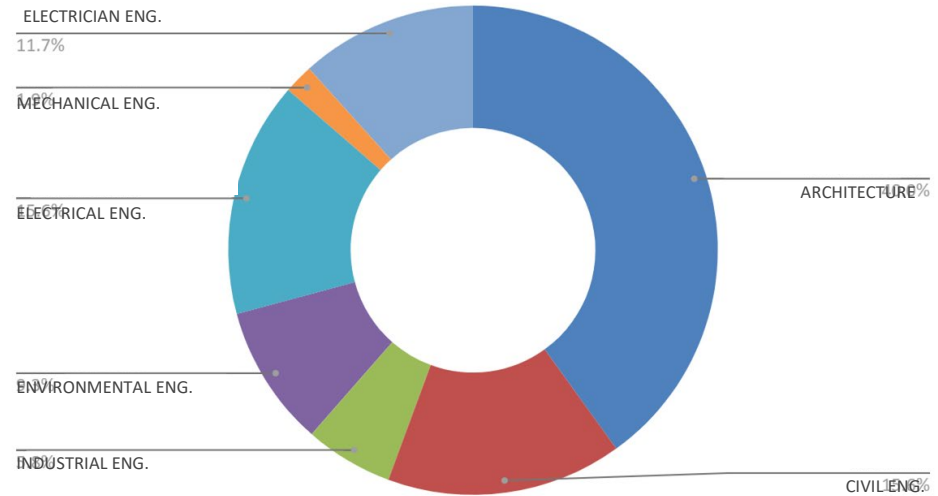


Figure: Proximity to EEB (%) in Undergraduate Programs. Percentage distribution of undergraduate programs. Source: Author's own elaboration.



. 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 presents higher correlation of specific contents ..*
- *Highly concentrated offer in AMBA Region*





Lines of action

■ *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").*



Lines of action

■ *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 .*



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Thanks!



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