Motivating both supply and demand for energy services: the Chilean case

Mónica Gazmuri Del Curto
CEO of Anesco Chile A.G.

Juan F. Richards
President of Anesco Chile A.G.
Energy Context

Chile

- Continental Chile is 4,270 km from north to south and only averages 177 km east to west.
- Natural borders from the Pacific ocean on the west to Andes Mountains on the east
- Great diversity of climate zones
Demand and Supply

Demand

Supply

10%

Coal 35%

NG 18%

27%

7%
National Energy Balance 2019 (Tcal)

Crude: 113,942
Biomass: 110,335
Coal: 66,603
Natural Gas: 8,674
Hydro: 2,054
FV: 82,558
Wind: 342,397
Geo: 301,629
Biogas: 113,942
Industry: 110,335
Transport: 66,603
Comercial/Residential: 8,674
Self Consumption: 2,054
No Energy: 82,558

Source: http://energiaabierta.cl/visualizaciones/balance-de-energia/
Crude Oil and derivates
- 98% imported
- Derivates: 60% refined in the country, 40% directly imported
- Represents the 57% of final consumption

Source: http://energiaabierta.cl/visualizaciones/balance-de-energia/
National Energy Balance 2019 (Tcal)

- **Biomass**
  - 12% of final consumption
  - The 50% of the biomass is used in electric generation, associated to pulp industry (black liquor)
  - 30% of the Comercial/Residential sector, mainly for heating

Source: [http://energiahable.cl/visualizaciones/balance-de-energia/](http://energiahable.cl/visualizaciones/balance-de-energia/)
National Energy Balance 2019 (Tcal)

Crude

Biomass

Coal

Natural Gas

Hydro

FV

Wind

Geo

Biogas

Source: http://energiaabierta.cl/visualizaciones/balance-de-energia/

Coal
- It’s still the third main source of energy of the country
- 95% of the coal is used for electricity
- Coal is the main source of the electric system and the base load

Industry: 110,335 Tcal
Transport: 66,603 Tcal
Commercial/Residential: 8,674 Tcal
Self Consumption: 2,054 Tcal
No Energy: 82,558 Tcal
Coal: 113,942 Tcal

66,603 Tcal
Comercial/Residential
8,674 Tcal
Self Consumption
2,054 Tcal
No Energy
National Energy Balance 2019 (Tcal)

Electricity
- 22% of final consumption
- 33% in Comercial/Residential sector
- 35% in Industry
- 1% in Transport
- Challenged to grow in % of renewables and in applications

Source: http://energiaabierta.cl/visualizaciones/balance-de-energia/
Energy Challenges

POLLUTION
• 7 out of 10 Chileans live below the contaminations standards
• Mainly associated to use of energy and low efficiency
Energy Challenges

Source: https://climateactiontracker.org/countries/chile/
Energy Efficiency- Our Experience

• Energy Efficiency has been and it is today the best first approach to our Energy problems

• Nevertheless, Efficiency has not been a main focus in public policy or industrial management
  • The Focus was produce more

• The first step was in 2007 Clean Energies Program, developed by the Interamerican Development Bank and Fundación Chile
  • This set out the need to develop a supply of EE solutions and of how to finance their implementation
  • ESCO Business model
  • 10 companies participated in this program
• 2012, ANESCO is formed as an association
• The development of new projects of EE that can be shown as an example

21/11/2012
Convenio de cooperación impulsa la asociatividad entre ANESCO y CER

A fines de octubre se firmó el documento de cooperación entre el Centro de Energías Renovables (CER) y la Asociación de Empresas de Eficiencia Energética (ANESCO Chile).

La reunión contó con la presencia de la Directora Ejecutiva del CER, María Paz De La Cruz, y el Presidente del Directorio de la asociación gremial, Fernando Araya Rigazzi, quienes firmaron la propuesta, en un ameno desayuno.

La relevancia de esta alianza radica, principalmente, en la cooperación entre estas entidades para el levantamiento de proyectos de energías renovables. Además, se orientan los esfuerzos a estudiar la factibilidad de proyectos e iniciativas en materia del aumento de la eficiencia energética en los procesos y aplicaciones de ERNC, a lo largo del país, que impliquen actividades enfocadas al fortalecimiento de ambas organizaciones.
Energy Efficiency - Our Experience

• 2013, Public-Private Round Table:
• Testing that EE and the ESCO model were administratively and legally possible to be developed in Chile without altering or influencing the national budget.
Synthesis of the Project: "ESCO in Universidad Nacional Andrés Bello".

The 80 kWp photovoltaic solar project implemented in Universidad Andrés Bello, was a milestone in the Chilean market. It was implemented in 2014 and was the largest project in the Metropolitan Region until 2016. It was conceived under the ESCO model with a specially designed contract to attend the client's needs and shorten payback time to a period of no more than 10 years.

Considered as one of the first ESCO photovoltaic solar system contracts, it allowed breaking down myths and preparing the path to develop technology in Chile, still positioning the University as a benchmark in terms of sustainability.

The project's total investment was 50% co-financed by Corfo and the other 50% was provided by a private contribution by the company, Punto Solar.

The solar system cost $80 million pesos, it generates emissions reduction of 57.5 tCO₂/year and provides 139.5 MWh/year of energy.
Energy Efficiency - Our Experience

- More than 30 projects in public buildings and hospitals between 2010 and 2017
- The Public-Private Agency for Sustainable Energy manage the program
- 80% of them developed by ANESCO's members
Energy Efficiency Law

- LEY N° 21.305 promulgated in 2021
Energy Efficiency - Private Sector

Sales of EE Anesco Chile A.G. US$

- 2014: sales of $0
- 2015: sales of $20
- 2016: sales of $40
- 2017: sales of $160

Bar graph showing sales over years.

Pie chart showing distribution:
- ESCO Model: 4%
- Equipments: 8%
- Consulting: 7%
- Lump Sum Projects: 81%
Energy Efficiency - Private Sector

Energy Efficiency Actions in the Private Industry

Source: Universidad de Chile
Energy Efficiency - Private Sector

Main Barriers for ESCO model

- Priority: 24%
- Financing: 17%
- Knowledge: 25%
- Other: 16%
Conclusions

• Public and Private sectors has barriers and myths against EE in the
• State facilities, a public-private round table was needed to show that the adoption of ESCO model was compatible.
• Companies that provide EE services, the disseminations of its benefits and visible achievements has been essential for the EE market in the private sector.
• All this effort has been accompanied with public policies, the inclusion of EE as a main issue in long term energy policy and the creation of the public-private Energy Efficiency Agency (now the Sustainable Energy Agency)
• Chile has an EE legal framework and EE is seen as essential for the fulfillment of the National Determined Contribution (Carbon Neutrality in 2050) and the sustainable recovery after Covid-19
• Development of Green financing and banking, will play an essential role in these goals.
Thank you!

Gerencia@anescochile.cl