ACERA

Asociación Chilena de Energías Renovables y Almacenamiento AG.

POR UN CHILE
100% RENOVABLE

4th Global Climate Policy Conference

Some lessons learned from the Chilean experience introducing NCRE.

Sao Paulo
Agosto 2018

Chilean Association of Renewable Energies and Storage - ACERA
Asociación Chilena de Energías Renovables A.G. - ACERA

Founded on 2003

Mission: To promote the implementation of a national sustainable Energy strategy.

- Solar
- Eólica
- Mini-hidro
- Marina
- Geotérmica
- Biomasa

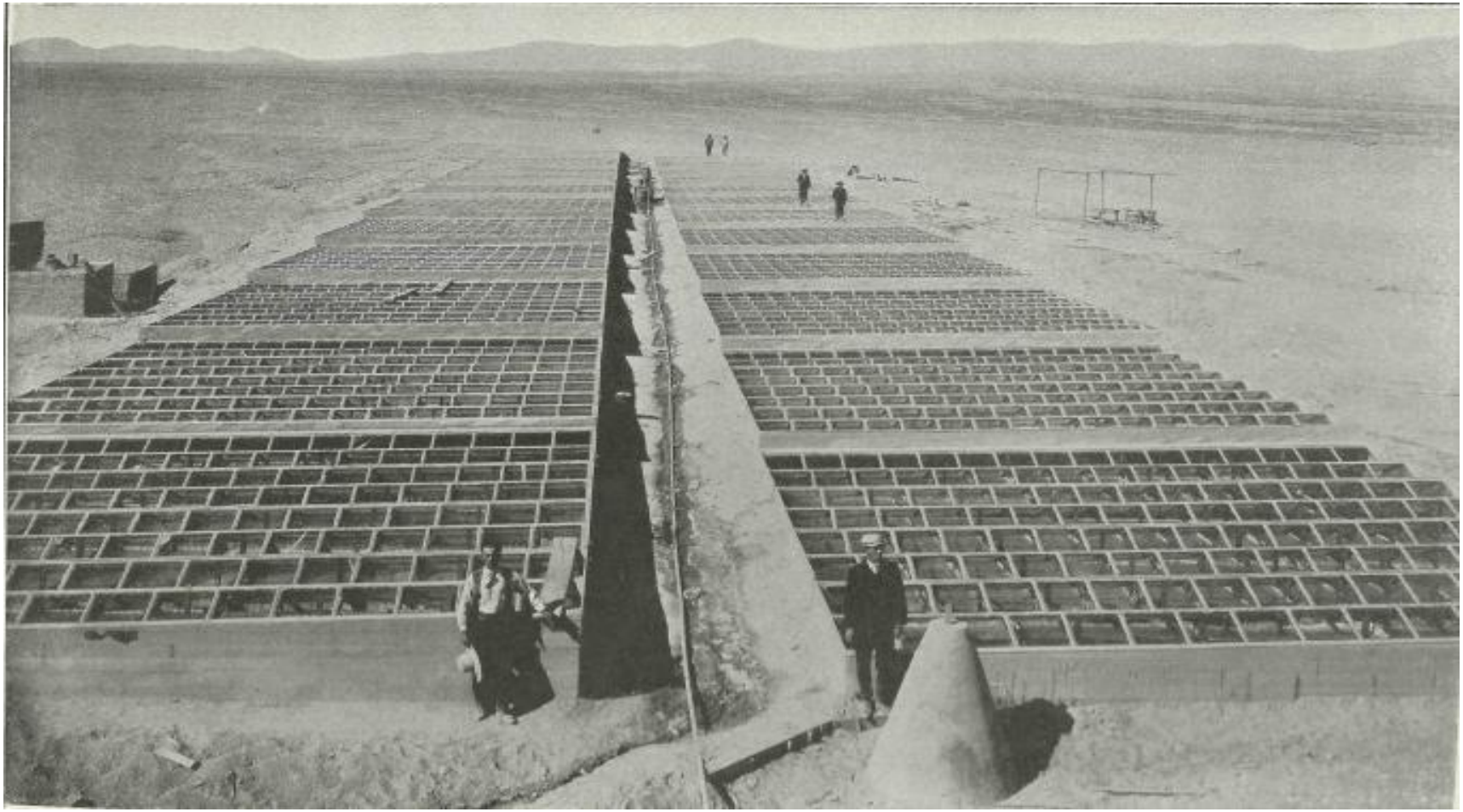
120 + members

- Projects Development
- Plant Operations
- Energy Sales
- Industry Services
- Equipment Supply
- Financing and Insurance
- Legal Services

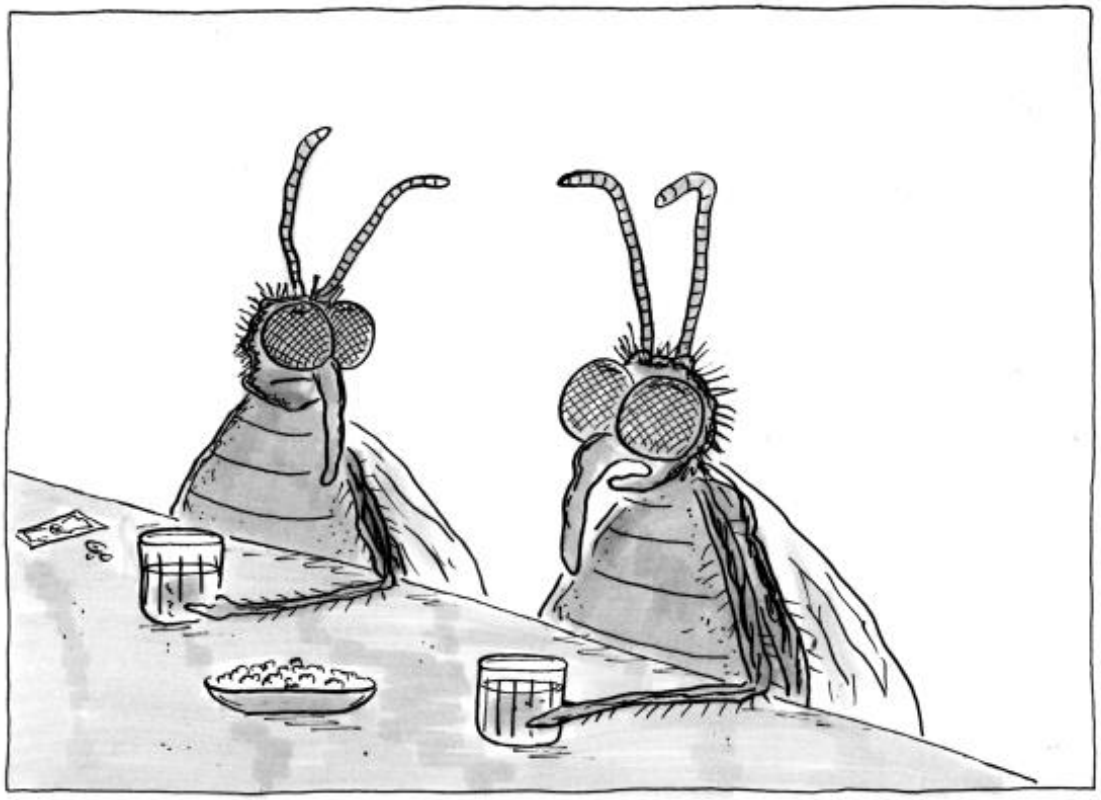
Member Companies

New Energies?

Saltpeter production in the north of Chile using solar energy - (s. IXX)



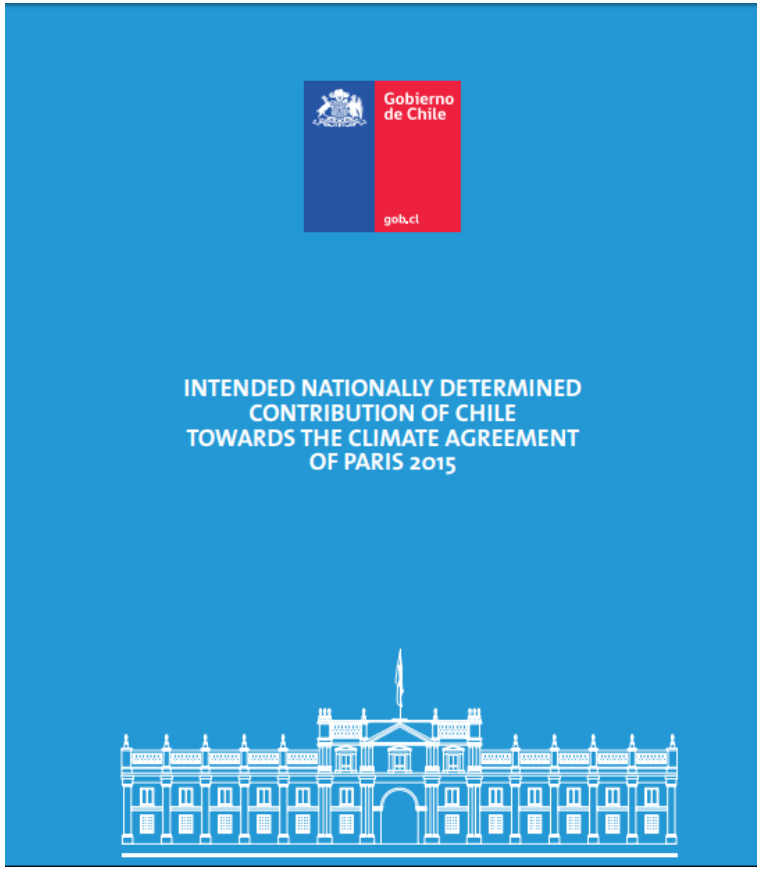
Caveat



"I never thought of a perfect world, but I guess it would involve a lot of dogs and candy."

Since each country has it´s own economic, environmental,technical, political and social reality, the contents of the following slides are not to be considered as a recommendation.

Chilean NDC



Energy sector is, by far, the largest GHG emitter in Chile.

The National Electric System (SEN)

- Installed capacity= **22.500** MW (*)
- Net maximum demand = **10.400** MW
- Yearly Energy demand = 75 TWh

Chilean power demand is equivalent to:

- 1/7 of Brazil´s power demand,or
- The demand of Colorado in the USA.

* A julio de 2018

In the last years, Chile has experienced the growth of Non Conventional Renewable Energies (NCRE) from just few megawatt of installed power to almost 5.000 MW

Tecnología	Operación (1) [MW]	En Pruebas [MW]	Construcción [MW]	RCA Aprobada (2) [MW]	En Calificación [MW]
Biomasa (3)	468	3	0	498	59
Eólica	1.305	114	600	9.355	3.083
Geotermia	24	0	0	120	100
Mini Hidro (4)	488	20	46	824	150
Solar - PV	2.091	169	190	15.928	7.790
Solar - CSP	0	0	110	2.348	300
Total	4.376	306	945	29.073	11.482

Fuente: CNE, Ministerio de Energía, Coordinador Eléctrico Nacional.

(1) Considera sólo proyectos entregados a explotación comercial.

(2) Considera todos los proyectos aprobados a la fecha.

(3) Considera los proyectos de biogás.

(4) Representa las centrales hidroeléctricas de pasada con capacidad instalada inferior a 20 MW.

A junio de 2018

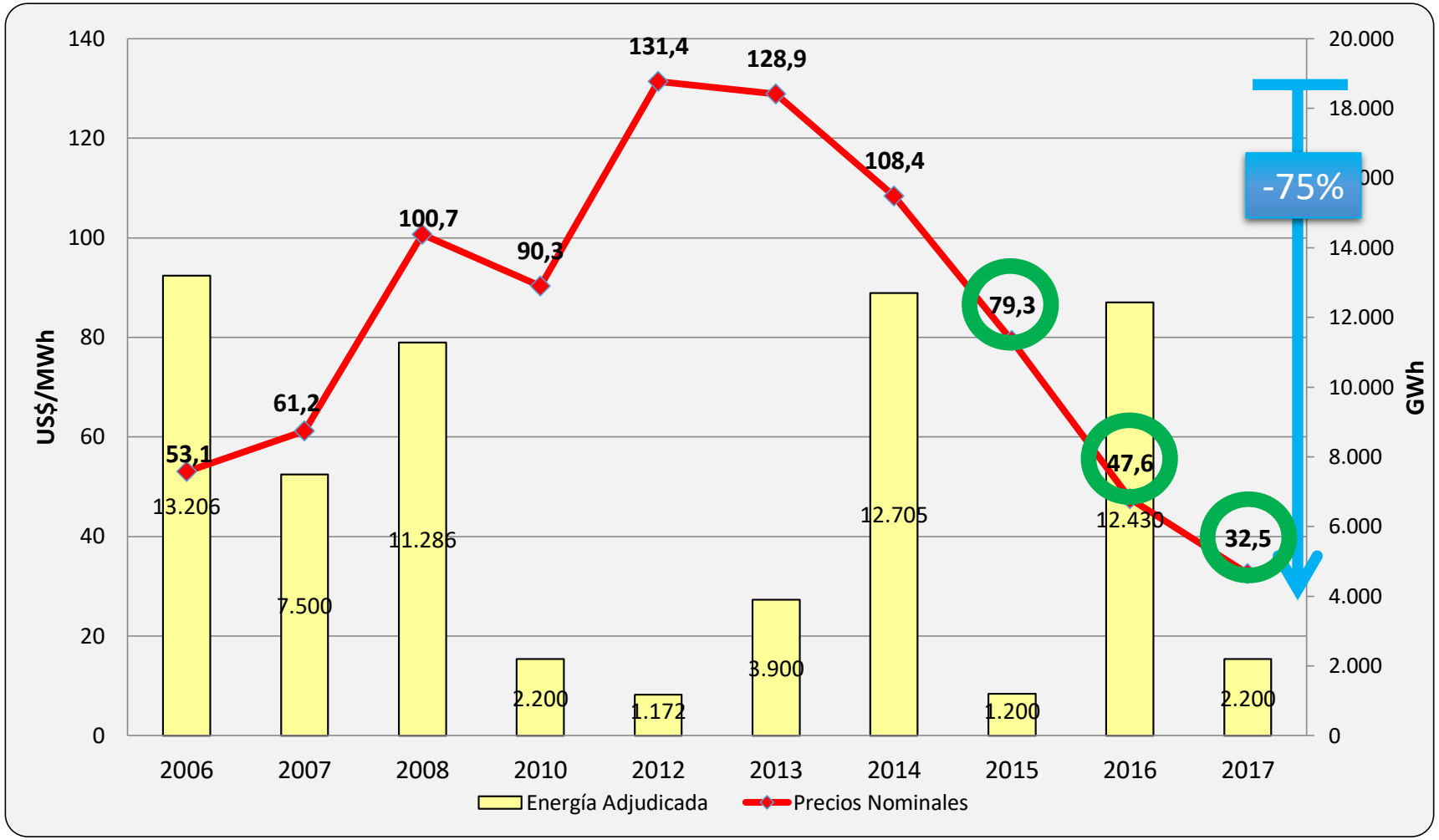
No subsidies exist for the implementation of NCRE in Chile.

YTD Non Conventional Renewables Energies represent almost 17% of power generation.

What´s the value of NCRE for Chile?

Main benefit: decrease of power prices!

Red line are Energy Price and yellow columns are the amount of Energy tendered



Prices of Energy are in US$/MWh. Circled prices are for tenders that were awarded 100% to NCRE

Other benefits.

- A cleaner generation matrix.
- Stability in energy prices.
- Energy independence with respect to foreign producers (LNG, coal, derived from oil)
- Less dead ended conflicts with communities.

But there is a lobby singing a too old melody about renewables:

- They are very expensive.
- They have hidden costs.
- The projects are finally not built.
- They destabilize the electrical network.
- They are not predictable.
- They involve a lot of investment in transmission lines.
- They are only viable through subsidies.
- They need support with base load technologies.

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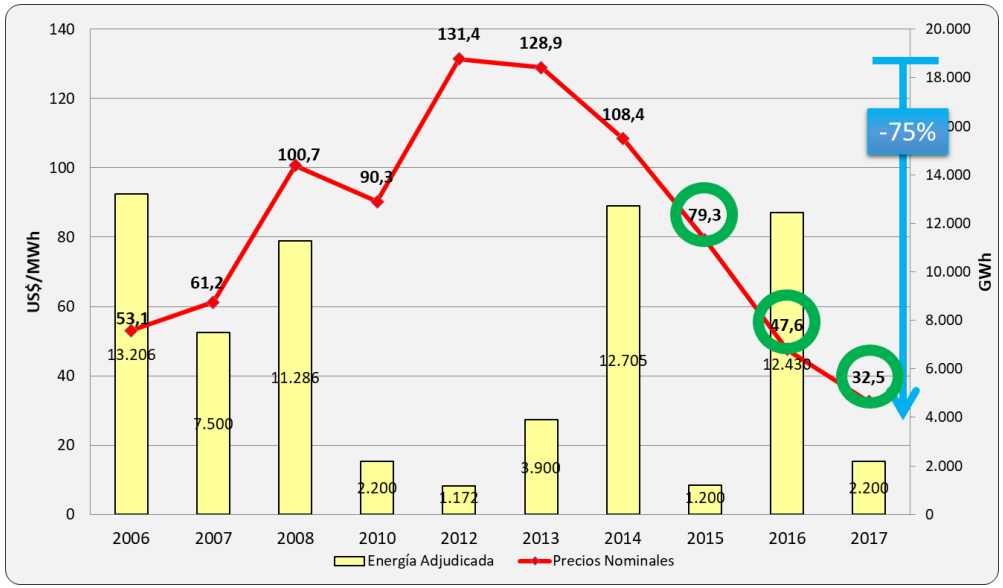
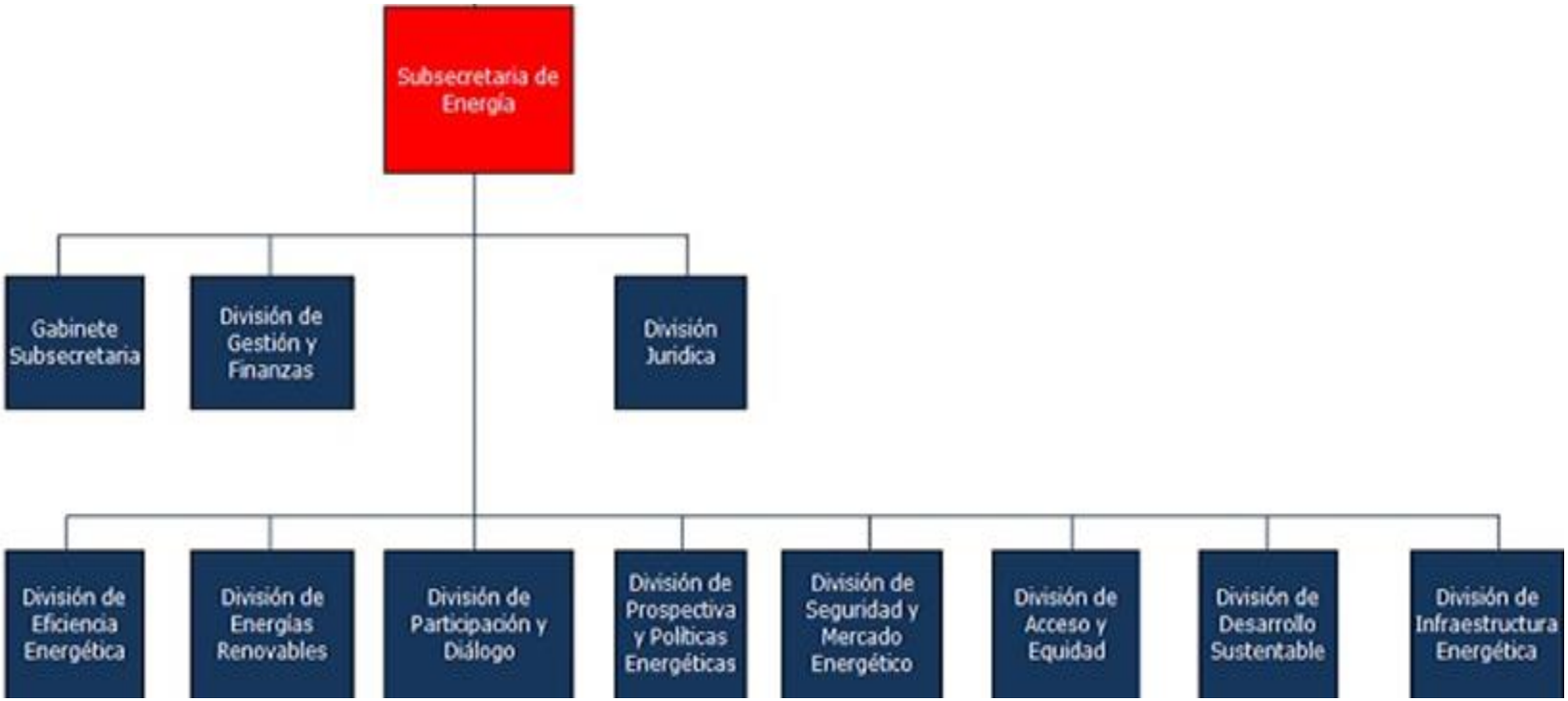
Some Lessons learned

NCRE can compete against conventional sources

- Just level the playfield in terms of risk. For instance, let solar and wind be allowed to supply energy in hourly blocks.
- Enable clear rules and costs to connect to the grid.



Social License is First



Define (and use) policies and guides to approach and involve communities

Implement effective and honest economic signals to deal with negative environmental externalities from old technologies.

- Carbon taxes are an efficient and effective way to displace carbon emitting technologies from the power system.
- But, some politicians (in Chile) are smart enough to demonstrate that a carbon emitting power plant should be reimbursed the whole or a part of the payment they make for carbon tax and that a portion of this reimbursement should be supported by… renewables!!!

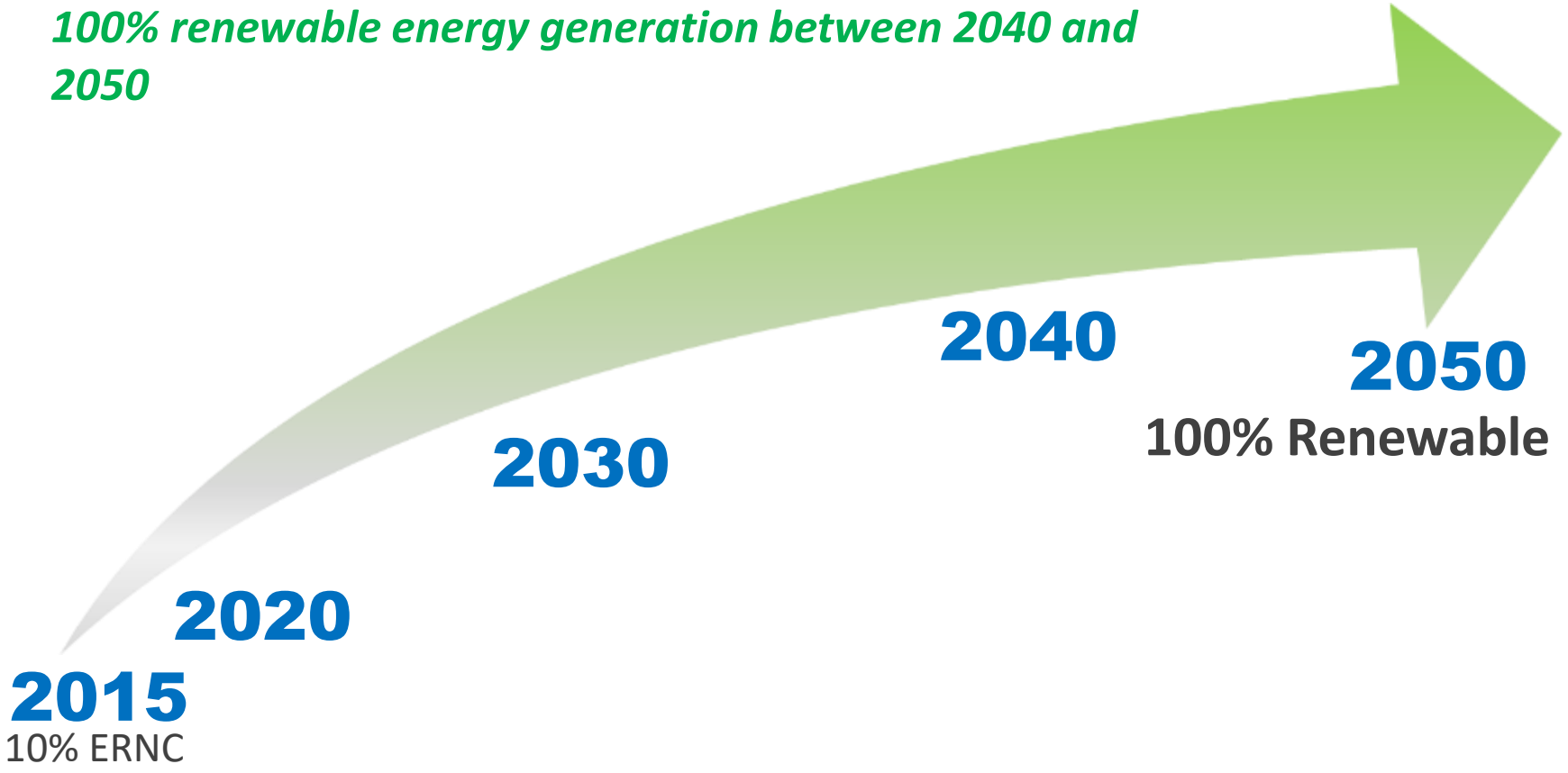
Don´t believe that the future of the electric energy is limited by the past.

- Flexibility is the new base load.
- Storage is becoming a key resource for the efficient implementation of renewables.
- Technologies are rapidly evolving. Future means lower costs, better efficiencies, more functionality, etc.
- New concepts such as Smart Networks, Demand Side Management are changing the way power systems used to be managed.

How far can Chile go?

An “educated guess” for the transition to a generating matirx based 100% on renewables.

ACERA estimates that it is technically feasible and economically efficient for Chile to achieve a matrix of 100% renewable energy generation between 2040 and 2050

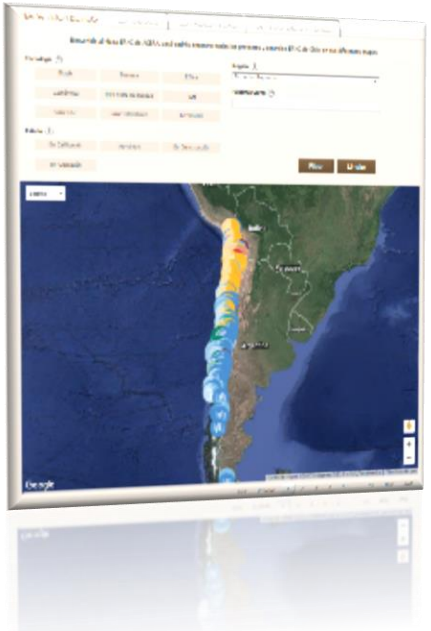


We invite you to follow ACERA´s activities in our social networks

Web

Newsletter

Mapa de Proyectos



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¡Gracias!

Carlos Finat D.

Director Ejecutivo ACERA

- Ingeniero Civil Electricista
- Director de Operación y Peajes del CDEC-SING – 1999 – 2008
- Gerente de Energía – Minera Collahuasi – 2008 – 2012
- Representante de clientes libres en el Directorio del CDEC-SING – 2010 – 2012
- Presidente del CDEC-SING – 2011-2012
- Director Ejecutivo de ACERA desde Octubre de 2012