

The logo for CORFO, consisting of the word "CORFO" in a bold, blue, sans-serif font, centered within a white rectangular box. Below the box are three small, dark blue squares arranged horizontally.

**CORFO**

# **BUSINESS OPPORTUNITIES IN RENEWABLE ENERGIES FOR CHILE**

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# CORFO



- **The Chilean energy context**
- **The assistance for renewable energy projects**
- **The incentive on investments**

## CONTENTS

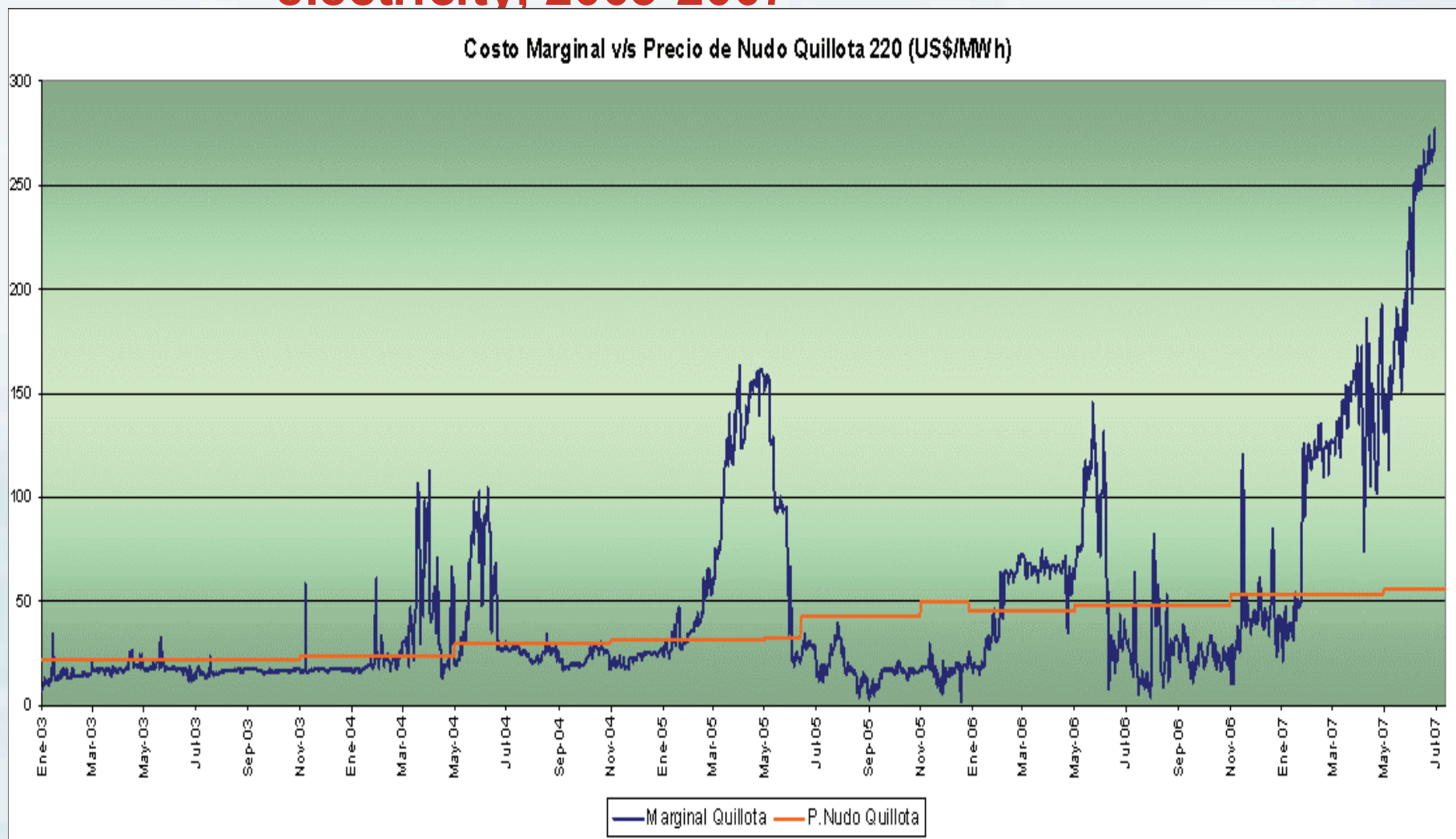
## General overview of the Chilean energy context

- **Dependence on foreign fuel supply**
- 95% of fuel is imported, while internal production is limited.
- Total dependence on natural gas imports from Argentina, for the north and the center of Chile, with more than 95% of the country's population
- More than 50% of coal is imported due to the bad quality of domestic coal.
- Only large hydro, still under some limitations, remains as an important resource for clean energy generation.

## The Chilean energy context (2)

- Shortage in natural gas imports from Argentina since 2004.
- Oil prices have risen since 2005
- Electricity prices have increased: current prices are three times higher than 2000 - 2004 prices.
- Electricity demand increases 7% per year, against an economic growth of 5%.

# Effects of natural gas shortage and diesel prices over the spot price of electricity, 2003-2007

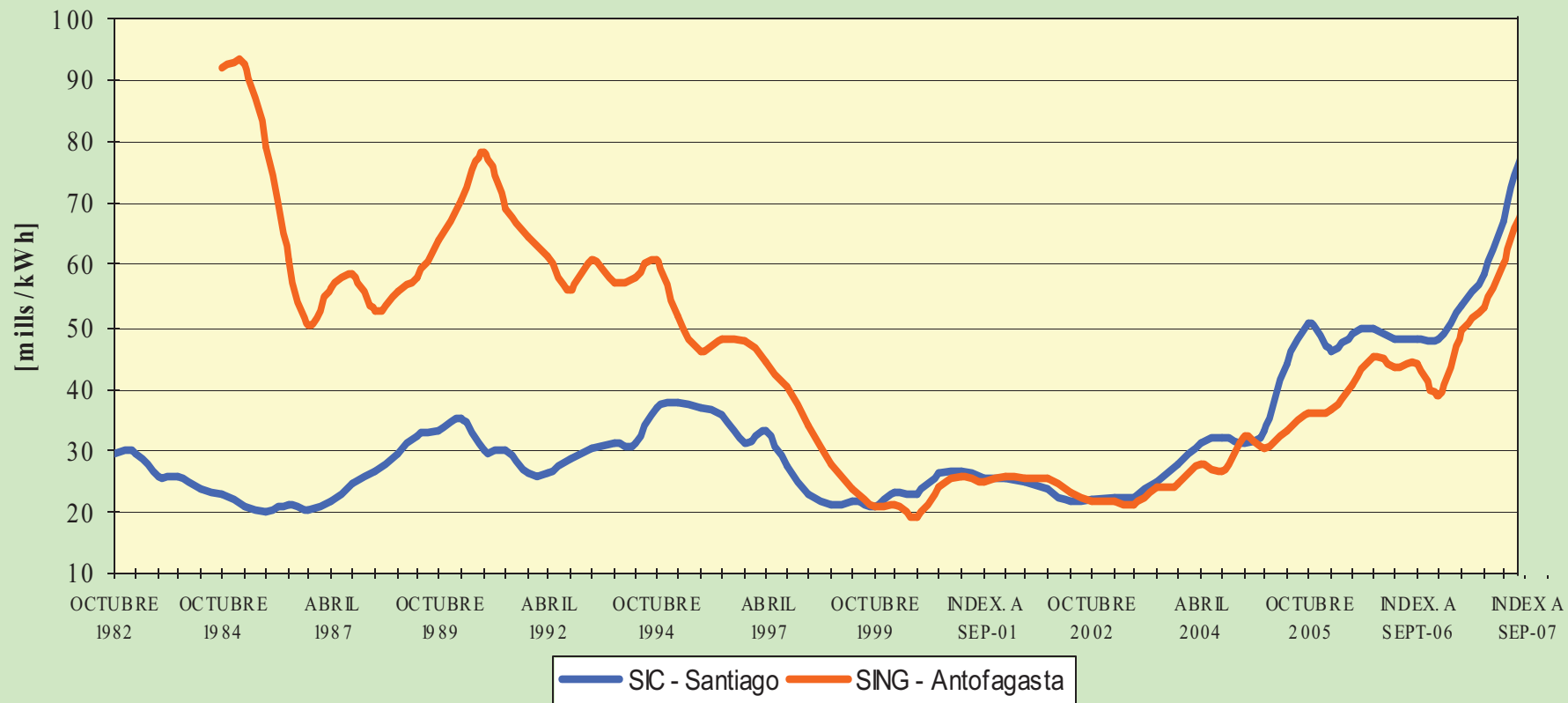


Source: CDEC-SIC



## Evolution of electricity node prices, SING and SIC, 1982 - 2007

**PRECIO DE NUDO ENERGIA**  
(Valores en dólares)



## The Chilean energy context (3)

- Commitment from the presidency that 15% of the new electric capacity added between 2006 and 2010 will be based on unconventional renewable energy
- Equivalent to an estimated additional capacity of 400 MW
- A new law enacted on April 2008 establishes targets for the participation of renewable energy in the electricity supply (5 % from 2010 and from 2015 an annual increase of 0.5%, in order to achieve 10% in 2024)
- Favorable conditions for the incorporation of renewable energies: good availability of natural resources (wind, hydro resources, biomass, geothermal activity, etc.).

## Changes in the law for electricity services

- Two first amendments : March 2004 and May 2005
- Incorporates the right for any electricity generator to sell at the spot market
- Guarantee for generators to access the electricity system.
- Exclusion of the transmission toll for small scale generators: free of charge for less than 9 MW of capacity and partial release for capacities between 9 and 20 MW.
- Market acknowledgment of installed power capacity for renewable energy and small scale projects (even for wind energy).
- Market acknowledgement of surplus energy from Self-generators with small power surplus ( surplus < 9 MW)



## The assistance for renewable energy projects:

In spite of the new law modifications, several barriers remain:

- Asymmetries of information
- Asymmetries on negotiation strength
- Access to financing
- Access to transmission lines
- Risk over forecasts of future electricity prices

**Opportunities for the assistance of projects**

## Subsidy for pre-investment studies

- CORFO co-finances design and assessment studies for the feasibility phase of renewable energy projects.
- The cap of the donation is USD 60,000 and up to 50% of the cost of the studies.
- Engineering studies, environmental impact assessment and even the PDD (for projects submitted to the Clean Development Mechanism) can be financed through this subsidy.
- Main applicability condition: access to the energy resource (water rights, ownership over biomass, land ownership or formal right of entry for wind mill projects).



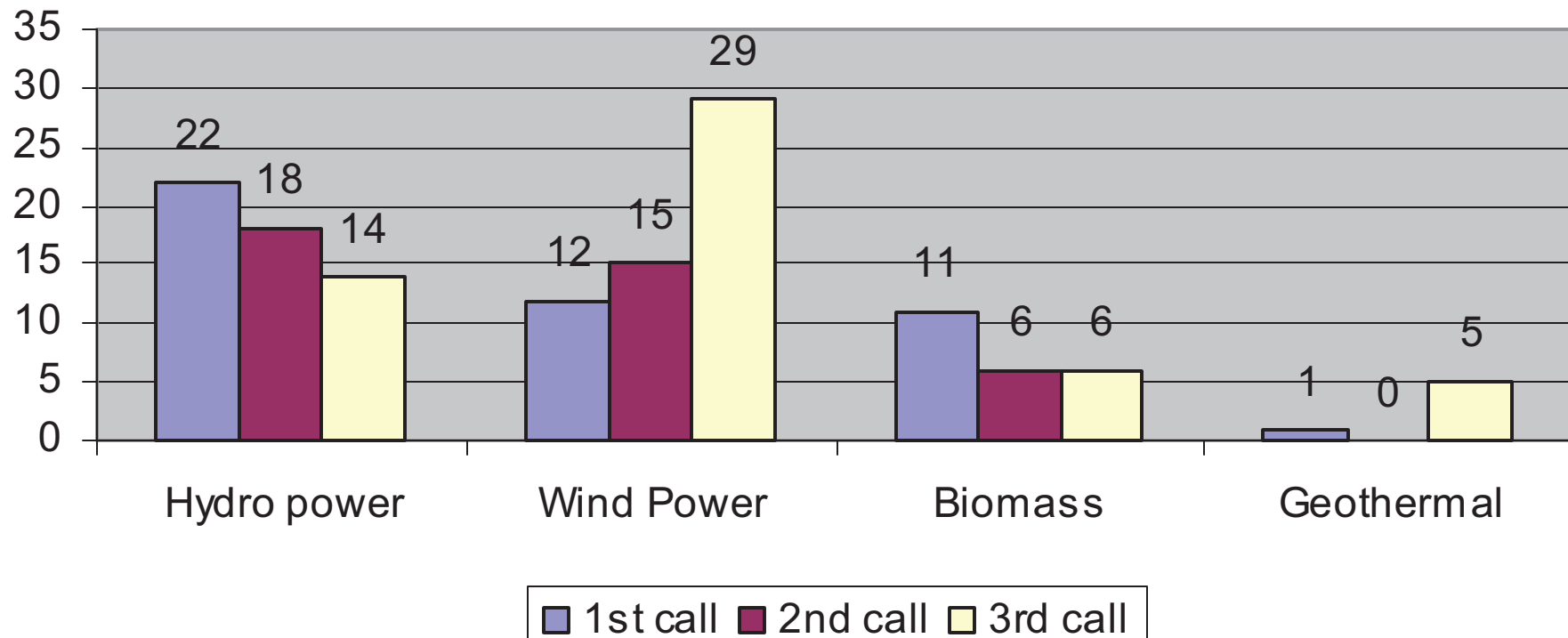
## Three calls for submissions

- July 2005, April 2006 and January 2007.
- 250 projects presented.
- 139 projects approved.
  - 54 hydropower projects
  - 56 wind mill projects
  - 23 biomass and biogas projects
  - 6 geothermal projects
- Projects that have been submitted and approved are included as part of CORFO's portfolio
- More than 120 projects in progress

# Statistics of approved projects



## Approved projects



## Projects that will be carried out

- 15 projects under financial closure
- 6 projects (5 hydro, 1 wind) under construction.
  - Lircay: 20 MW
  - El Manzano: 3.6 MW
  - Lican: 15 MW
  - Cuchildeo: 0.85 MW
  - Dongo: 6 MW
  - Lebu (wind): 2 MW
- 3 projects already built.
  - Canela: 20 MW (wind power)
  - Puclaro: 5.6 MW (hydro).
  - Negrete: 0.1 MW (biogas)



## Co-finance on studies and characteristics of projects

	CORFO Subsidy	Installed capacity*	Total investment*
	USD	MW	Thousand of USD
Biomass	651,087	72	150,992
Wind power	1,559,400	830	1,022,009
Hydro	2,012,474	316	500,995
Geothermal	349,900	59	116,866
<b>Total</b>	<b>4,572,861</b>	<b>1,277</b>	<b>1,790,862</b>

Source: Corfo

\* Based on project's information

## **CORFO's financial aids for renewable energy projects**

- Long term credit to finance projects with local environmental benefits and renewable energy activities.
- A maximum amount of USD 5 million for each project, with 30 months of grace period and 12 years for total return of credit
- A new line of credit, with support of the German government, will make possible loans of USD 10 million for each project (as from September 2008).

## The portfolio of projects

- Three calls: more than 139 approved projects.
- Diverse energy sources: hydro, wind, biomass and geothermic
- Diverse sizes: from a few hundred KW to 40 MW or more
- Diverse level of development: from evaluation of the resource (wind and geothermic) until construction.
- 20 projects estimated to be ready for financing.

## Incentives on renewable energy projects

- **1<sup>st</sup> International Congress for Investors on Renewable Energy projects: 5 and 6 Oct, 2006 (Santiago, Chile)**
- More than 500 participants
- More than 140 investment companies (Capital Risk Funds, Private banks)
- More than 50 project developers
- More than 400 business meetings, from which more than 150 have continued
- Publication of a catalogue with detailed information of 40 projects.

## Incentives on renewable energy projects (2)

- **2<sup>nd</sup> International Congress for Investors on Renewable Energy projects: 14, 15 and 16 November, 2007 (Santiago, Chile)**
- More than 700 participants
- More than 250 companies from 40 different countries
- A portfolio of more than 60 projects
- More than 1000 business meetings
- Publication of a second catalogue with detailed information of projects.
- A special day for the space for the promotion of renewable energy projects within the framework of the CDM of the Kyoto Protocol.



## Incentives on renewable energy projects (3)

- This year the “**International Week on Climate Change and Renewable Energy**” will take place in Santiago (Chile) between the 28<sup>th</sup> and the 31<sup>st</sup> of October
- 7 Institutions in the organization: The World Bank, UNFCCC, IETA, OLADE, PROCHILE, CORFO and CONAMA.
- Expecting 800 attendants.
- Unique opportunity to get knowledge of the Latin America’s CDM market and Chile’s renewable energy projects.
- A portfolio of more than 60 projects.
- Third Project’s Directory under development.

**Come to Santiago and take part of this process that will incorporate you in the encouragement of renewables and CDM for Chile and Latin America!**

Thank you for your attention