



Market Overview

- ▶ According to the National Energy Commission (CNE), the 2002 sector GDP for electricity, gas and water was US\$1.5 billion. This figure was expected to have grown 6% in 2003, supported by a 6% increase in demand for electric power. For 2004, sector growth estimates are between 6.5% and 7%.
- ▶ The Chilean power grid has two primary, non-interconnected system networks and two independent systems: Central Interconnected System (SIC), 64.3% of the country's installed capacity; Northern Interconnected System (SING), 34.8%; southern Aysen independent system, 0.2% and Magallanes independent system, 0.7%.
- ▶ SING is 100% based on thermal generation. It supplies all mining companies and the Northern Regions' urban demand. SING is based upon a few generation units with a large individual production capacity. This

system has an excess production capacity; therefore, no new investment is foreseen in the near future.

- ▶ The SIC system relies largely upon hydroelectric power generation (60%). The remaining production is based upon thermal generation units, mostly gas-fired. SIC is based on a larger number of units of a wide diversity of sizes, thus making this grid more reliable than SING.
- ▶ The arrival of natural gas from Argentina transformed both systems (SIC and SING) by introducing the latest technology, which created important business opportunities for foreign companies.
- ▶ In Chile, there are 36 electrical distribution companies, 31 generator companies and five transportation companies, which supplied a national demand of 42,633 GWh in 2002.
- ▶ 75% of Chile's electrical power

generation is concentrated between the cities of Quillota (Region V) and Charrúa (VIII Region), which coincides with the largest industrial and urban concentration of the country.

- ▶ There are two kinds of end-users. The "regulated clients" consume less than 2000 KW (prices charged are set for a period of four years and based upon marginal generation cost). The second group are the "unregulated clients" who are the large consumers that negotiate directly with generation companies.
- ▶ According to the CNE, the energy sector's planned projects will require an investment of US\$2.0 billion from 2004 until 2006.
- ▶ In Chile, transmission lines are 23,000 volts; distribution lines are considered anything with lower voltage.

U.S. Position

- ▶ U.S. electric power equipment exports to Chile in 2002 totaled US\$8 million.
- ▶ The two leading U.S. companies participating in the Chilean power generation market are AES Corp (which owns part of AES Gener Chile) and PP&L (which owns 3% of Compañía General de Electricidad (CGE)). PSEG and Sempra jointly own Chilquinta, an electricity distribution company in Region V and PSEG alone owns SAESA, a distribution company serving the southern end of SIC.

U.S. Electricity, Gas and Water Investment 1974-2002 (Thousand US\$)

Investors	Reception Company	Authorized Investment	Materialized Investment
Sempra Energy International Holdings B.V. / PSEG Chilean Equity II Limited	Inversiones Sempra-PSEG Chile S.A.	1,160,000	514,010
Mercury Cayman Holdco, Ltd. (The AES Corporation)	Inversiones Zapallar Limitada	750,000	224,377
Mercury Cayman Co. II, Ltd. (The AES Corporation)	Inversiones C y C Limitada	600,000	492,721
PMDC Chile, LLC.	PPL Inversiones Pacifico Ltda./PMDC Chile Desarrollo de Recursos Ltda.	595,000	300,800
Mirant Caribbean, Inc./Mirant Corporation/SEI Newco 1, Inc.	Enerpac Inversiones S.A.	274,365	255,410
EPEC Gas Chile Corporation	Gasoducto Trasandino S.A.	209,836	10,428
Desarrollo Industriales Cayman, LLC	PPL Industrial Ltda.	195,000	137,556
Triunion Energy Pacifico Company	Triunion Energy Inversiones (Chile) Limitada	90,000	37,333
Duke Blue Water, Limited	Duke Energía de Chile Ltda.	22,000	22,000
Latin America Holding I, Ltd.	Entergy Power Chile S.A.	20,000	15,286
PSEG Americas Ltd.	Inversiones PSEG Americas Chile Holding Ltda./Servicios Técnicos PSEG Chile Ltda.	311,000	222,825
CMS Gas Transmission Del Sur Company	Inversiones Atacama Uno S.A. / Inversiones Endesa Norte S.A. / Gasoducto Cuenca Noroeste Ltda.	102,068	75,972
TOTAL		4,329,269	2,308,718

Source: Cinyer (Foreign Investment Committee)

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Competitors

▶ The power generation companies that dominate the Chilean market are: AES Gener: Chilean and U.S. capital (AES corp.); Edelnor and Electroandina: Chilean and Belgium capital (Tractebel); Endesa: majority owned by the Enersis Group, controlled by Endesa Spain; and Colbún: Chilean and Belgium capital (Tractebel).

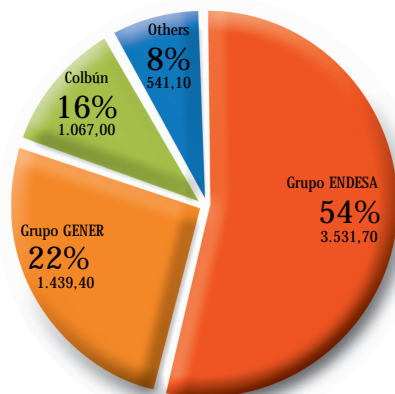
▶ The best distribution companies qualified by the SEC (Electricity and Combustibles Superintendence) are: Compañía General de Electricidad (CGE) —primarily Chilean owned, with 3% U.S. participation (PP&L); and the electric cooperative ("Cooperativa Eléctrica del Limari" (Elecoop)) —Chilean organization with over 5,000 members.

Principal Sub Sectors

- ▶ Generation
- ▶ Transmission
- ▶ Distribution

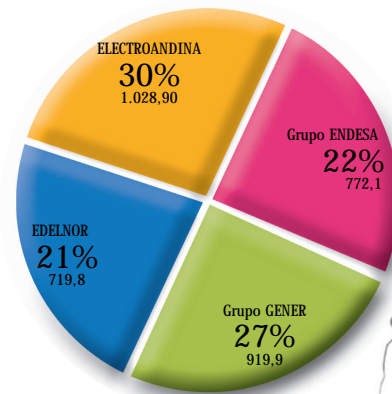
Ownership Participation in SIC Generation (US\$ Millions)

Source: Superintendence of Electricity and Combustibles



Ownership Participation in SING Generation (US\$ Millions)

Source: Superintendence of Electricity and Combustibles



Commercial Opportunities

▶ Colbún, (Tractebel, Belgium) and the Matte group (Chile), are planning to invest US\$600 million in two new electrical generation plants, Los Pinos and Candelaria, beginning in 2004.

▶ The Campanario plant, in Region VIII, is currently under construction. Led by Gas Industrial Innergy with a US\$214 million investment, the plant will have an annual generating capacity of 372 MW.

▶ The Chilean Government signed a US\$40 million loan with the Inter-American Development Bank (IDB) in November, 2003; this project relies upon a combination of wind, hydro and solar energy resources available on the Chiloe archipelago to generate power and is expected to start operations in 2005-2006. The Government's rural electricity plan aims to extend coverage to 90% of rural homes in Chile by 2006.

▶ Over US\$400 million of investment is required to meet the growing energy demand in the SIC, amounting to 400-500MW annually (US\$1 million per additional MW is required).

▶ Interconnection of SING (which currently has over capacity) with SIC. The estimated investment is US\$250-US\$400 million.

▶ Expansion and/or construction of new natural gas pipelines from Argentina (and eventually from Bolivia) that will supply newly combined-cycle gas-fired plants valued at US\$400 million each.

▶ Interconnection of SIC with the Argentine power grid. Though technically feasible, this project faces significant political and technical challenges. Investment could total US\$250-350 million.

Other Resources

- ▶ U.S. Department of Commerce Energy Team: Martha Budwin: martha.budwin@mail.doc.gov
- ▶ U.S. Department of Commerce Trade Development: Samuel Beatty: samuel_beatty@ita.doc.gov
- ▶ Electricity and Combustible Superintendence: www.sec.cl
- ▶ National Energy Commission: www.cne.cl
- ▶ SING Energy Distribution Center (CDEC): www.cdec-sing.cl
- ▶ SIC Energy Distribution Center (CDEC): www.cdec-sic.cl

CONTACT US

We hope that you find this information useful. If you would like further information, please contact Carlos.Capurro@mail.doc.gov, the CS Santiago Power Generation Specialist. Visit our website (www.buyusa.gov/chile) to discover other commercial opportunities in Chile. (January, 2004)

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