THE POWER SECTOR IN: CHILE

Issue Area	CHILE
I. Current Status of Sector Reform: Key Points	
Power System Overview	Total installed capacity in Chile was 7,858 MW in 1998. Electricity generation and demand were respectively 33,417 GWh and 29,180 GWh, which represent a 12.7 % in losses. Growth in electricity demand has been steady at a 7% per year rate. Economic slowdown could cause a reduction in the country demand, but it is expected to recover to the previous levels. Since the entrance of the new gas pipelines from Argentina most capacity additions have been gas-fired combine cycle. More than 95% of the population has electricity service. The Chilean power network consists of two systems, the central interconnected system (SIC), which includes the capital Santiago, its surroundings and the Great Northern Interconnected System (SING) which supplies the mining region in the north. There are also various small independent systems in the south.
Structure	The sector is mostly vertically and horizontally unbundled though legally the functional separation of commercial activities is not required. However, major concerns persist regarding horizontal and vertical integration. The ownership and operating control of the Central Interconnected System (SIC) is under a corporate entity, Transelec, which has the same shareholders as Endesa, the largest generator in the region. In addition, Enersis, the holding company for the largest distribution company in Chile, owns around 25% of Endesa's shares. In the northern system (SING), Edelnor remains as a vertically integrated utility pending the establishment of a separate corporate entity to hold its transmission assets. The centers for economic load dispatch (CDECs) are autonomous groups that coordinate the operation of the two major interconnected systems. Any electricity system with more than 100 MW of installed capacity must have its own CDEC with governance controlled by the largest generators i.e. a generators' club. This arrangement has been highly controversial.
Competition	The market to large (>2 MW) consumers is deregulated and highly competitive, there is also aggressive competition among generators to meet new demand growth (most of the new plants are concentrated around the new natural gas pipeline projects coming from Argentina). The contracts with distribution companies are regulated and the power pool is cost based. There is no competition in the distribution and transmission sectors. Ownership structures, as well as dominant participants in the generation market deter competition in the wholesale market. The government has moved forward in improving competition by forcing distribution companies to ask for tenders for power contracts with generation companies.
Role of the State	Reforms implemented in the late 1970s and during the 1980s resulted in the separation of the state's commercial interests from its policy-making and regulatory functions. The government does not participate in the commercial activities and the Comisión Nacional de Energía (CNE) performs the regulatory and policymaking functions. A second agency, the superintendence of electricity and fuels (SEC), under the ministry of economy, holds additional regulatory and oversight functions for the sector.
Regulatory Institution	The authority of the two key agencies in charge of regulating and overseeing the sector has not changed since the initiation of the sector reform program in 1978. The inter-ministerial National Energy Commission (CNE) performs the basic policy formulation, regulatory and tariff-setting functions for the energy sector, while the Superintendence of Electricity and Fuels (SEC) oversees the technical, operating, and financial performance of sector enterprises according to legal and regulatory mandates and established standards. The Ministry of Economy continues to authorize concessions, approve and publish tariffs. The independence of CNE has been highly questioned. Change would be slow due to the structure of the legal framework in Chile; the law is very detailed, which leaves the regulator little discretionary power.

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	Any changes in the structure of the market or of CNE would have to come directly from changes in the Chilean law. However, the supply crisis originated by the 1998 drought and the failure of the new thermal plants may unleash the momentum for change.
Private Sector Participation	The generation sector is mostly in private hands with the Government retaining a minority stake in Edelnor. The Tocopilla generating plant in SING formerly owned by the state mining enterprise Codelco was sold to a consortium led by Belgium's Powerfin (51%). Transmission and distribution are also in private hands with the exception of 3 municipal utilities and a few electric cooperatives.
Major Outstanding Issues	1. The political independence of CNE and its ability to coordinate with SEC in regulatory matters have been questionable. The presence of the ministers on CNE's council and the pressure exerted by the high profile sector enterprises have put both agencies in a position of weakness vis-à-vis many sector issues. Financially, they depend on budget allocations by ministry officials and lack an independent source of income such as that of fees collected from regulated enterprises. This lack of independence of the CNE resulted in the recent resignation of its executive secretary. The recent power shortages increased the political influence from different groups. The government is currently preparing a new electricity law seeking to fix some of the structural problems as evidenced in the recent crisis. 2. Although the system is currently very tight, the planned construction of large power projects to back up the entrance of various international transmission and natural gas lines will result in possible over-capacity in the system. For this reason, nodal price projections have a diminishing trend. This trend could results in pressures from the generators to changes the pricing rules, so their contract prices could be higher. 3. How to handle competition remains an issue in Chile. Vertical integration, cross ownership, dominant players and questionable pool operation are currently coexisting in Chile. 4. Although free entrance to the power market is desirable, a closer look should be given to the current competition between two gas pipelines and one transmission line entering the northern market in the short term. Both natural gas projects are already in construction (with the Gas Atacama project expected to enter on line this spring), and are backed up by various electricity plants. Nevertheless, demand projections have been downgraded; mining projects are the main customers of both gas and electricity, but lower copper prices have prompted the companies to postpone their expansion plans. This reduction in demand may result in the acceleration of the merging process between the two companies. However, due to the already advanced construction process, their agreements will consist mainly on sharing some of the facilities.
II. Legal & Regulatory Framework	
Legal Basis	*DFL No. 1, Mining (1982), the Electricity Law*, opens the sector to private ownership and sets rules for sector structure, operations, markets and pricing at the various levels of activity. It establishes quality and safety guidelines. It allows open sector entry without concessions and competition in the generating sub-sector, but requires concessions or permits for most transmission and retail distribution activities, which are regulated as natural monopolies. It provides for open access to transmission and distribution grids, establishes a coordinating unit for load dispatch and deregulates large consumers. The rights and obligations of sector participants and other standards are also defined. *DFL No. 6 (1982)*, Coordination of Operation Rules, defines the criteria under which the interconnected system is operated, including technical criteria for transmission as well as connection and participation criteria for generators. It charges the CDEC, the members of which are generators with more than 2% of the system's capacity, with setting coordinated operating rules according to minimal cost and other guidelines established by the CNE. *Decree No. (1978)*. Established the Comisión Nacional de Energía (CNE) as the oversight and regulatory entity for the sector with ministerial rank. It established a new tariff regime later codified in the 1982 Electricity Law. It also formulated and oversaw the implementation of the reform plan for the electricity sector.

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	The *Water Code* sets the basis for allocating water use rights. These are issued by the Directorate of Water and approved by the Ministry of Economy.
Role of the State	Reforms implemented in the late 1970s and during the 1980s resulted in the separation of the state's commercial interests from its policy-making and regulatory functions. The government has a minor participation in the commercial activities. The Comisión Nacional de Energía (CNE) performs regulatory and policy-making functions. The superintendence of electricity and fuels (SEC), under the ministry of economy, is mostly in charge of oversight functions but also has minor regulatory functions. The government does not participate in the centers for economic dispatch, as they are pools conformed by the different private companies in the generation sector.
Institutional and Regulatory Entities and Jurisdiction	The **National Energy Commission** (CNE), established by decree in 1978, formulated and implemented the sector reform program. It undertakes most of the normative and regulatory functions for the energy sector, including proposing policies and strategies for the sector, undertaking tariff studies, proposing tariff and self-regulating pricing formulas, establishing regulations, service standards, and operating criteria for sector enterprises; and overseeing the dispatch entities. It also undertakes indicative planning and may recommend state financing of generating (>200 MW) or major transmission projects that are not being pursued by other interests. The CNE consists of a Council of 7 Ministers (Economy, Finance, Defense, Mining, Planning, Secretary General, and a Chairman that is appointed by the president and has the status of a minister) and an Executive Secretariat headed by a presidential nominee. The member ministries issue decrees implementing CNE recommendations, and ensure policy coordination of the important ministries. The size of the staff and the budget is set annually in the budget prepared by the Ministry of Finance. The **Superintendence of Electricity and Fuels** (SEC) has evolved over decades as an oversight authority under the Ministry of Economy for technical and operating (including safety) compliance of sector entities with sector legal and regulatory requirements and of tariff applications. It collects data on sector enterprises and sets the New Replacement Value for distribution assets. It may impose penalties or recommend rescission of concession contracts. The President appoints the Superintendent. The SEC has a relatively large technical staff. The **Ministry of Economy** authorizes concessions, approves and publishes tariffs proposed by CNE, and generally oversees economic regulation of the sector. The **Ministry of Finance** implemented the restructuring and privatization of sector enterprises through the Corporación de Fomento y de la Producción (CORFO). It continues to handle privatization procedures as well as maintains an oversight role in the financial performance of enterprises in which the state has an ownership share. **CONAMA** is the environmental protection agency established in 1990 with jurisdiction over environmental issues for the sector. The **Anti-Monopoly Commission** is a judicial entity that oversees, investigates, and deliberates issues related to competition, reviewing anti-competitive charges and cases brought before it.
Sector Planning	CNE is responsible for indicative planning functions. The agency's 48-month generating projection is used to set node prices and allows CNE to guarantee that enough capacity will be available to meet expected demand.
III. Sector Structure and Participants	
Structure	Law does not prohibit sector enterprises from undertaking more than one area of commercial activity, though separate accounts for each activity are required. Sector commercial activities (generation, transmission/distribution networks, and retail distribution) were partly unbundled during the 1980s reform and privatization process as Endesa's distribution activities were spun-off in numerous, geographically-based business units and Chilectra's generation and distribution activities were similarly unbundled

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	vertically and horizontally into several independent business entities. The key exception to the general unbundling of the sector was the retention by Endesa, the largest generator, of the ownership and operation of the high voltage and sub-transmission assets of the Central Interconnected System (SIC).[1] Later, Endesa's transmission assets were spun off to a separate, but affiliated, corporate entity, Transelec, which had the same shareholders as Endesa. The main utility in the Great Northern Interconnected System (SING), Edelnor, has also remained vertically integrated, although provisions for its privatization included a plan to subsequently establish an affiliate to separate the utility's transmission from its generating and distribution activities.[2] The sector underwent some re-integration when Enersis, the holding company for Chilectra, the largest distribution company, bought a considerable portion of Endesa's shares, which it has increased to about 26%. Recent changes in the Chilean regulation, which promote a more competitive environment, have pushed Enersis' shareholders to sell their stake in Endesa. Many international companies have shown interest in the company, and Endesa Spain, which holds a majority stake on Enersis, is opposing the sale.
Participants and Degree of Private Sector Participation	*Generation:* Private generators, including self-generators, represent about 90% of the national installed generating capacity of nearly 8,000 MW. There are 11 main generating companies, under private (majority) ownership. Ten private generators supply the SIC. The largest generator, the privately-owned Empresa Nacional de Electricidad S.A. (Endesa) and its subsidiary Pehuenche, own about 2,600 MW or over 60% of the SIC's installed capacity and supplies 65% or so of the system's total generation. Gener (previous Chilgener) is the second largest generator, with around 1,600 MW of installed (mostly thermal) capacity, holding around 24% of the market. Gener's affiliate Guacolda S.A. is building another 300 MW of capacity with COCAR. The third generator is Colbún-Machicura; which owns two hydro stations with a combined installed capacity of 560 MW (15% of the market). Smaller private generators in the SIC include the Guardia Vieja, Pullinque, and Pilmaiquén plants. Empresa de Electricidad del Norte (Edelnor) is a privately owned vertically integrated utility with 277 MW of currently installed capacity. It also owns (with Codelco, a copper mining company) and operates the northern interconnected system (SING). Chilgener's SING affiliate, Norgener S.A., owns the 274-MW Nuevo Tocopilla plant. However, the 614 MW Tocopilla plant is the largest plant in the SING. It belongs to the state-owned copper mining company (Codelco) and to a holding company composed of Codelco and a private consortium consisting of Tractebel (Belgium), Iberdrola (Spain), and Enagas (Chile). In early 1996, this consortium bought the controlling 26% interest in the plant through the holding company. Endesa owns 73 MW of installed capacity in the SING. Like Codelco, many of the major mining industries located in the SING have considerable self-generating capacity they developed prior to reform. *Transmission*: The Compañía Nacional de Transmisión Eléctrica (Transelec) was created as an affiliate of Endesa to own and operate the SIC's transmission assets when they were spun off from Endesa in March 1993. The spin-off aimed to provide more transparency and allay concerns about the generator's potential for self-dealing transmission access on a priority basis. Transelec's shareholders were initially the same as Endesa's shareholders, but are evolving independently over time with changing investor interests. Edelnor, through its subsidiary Sitranor owns and operates the transmission system of the SING.

[1] This and the case wherein the holding company of the largest distribution enterprise bought a significant ownership stake in Endesa, the largest generator, led to some legal challenges regarding competitive and anti-trust issues. Although these were eventually resolved, stricter limits on cross-ownership of distinct areas of commercial activity or an alternative means of ensuring better competition are expected to be defined.

[2] The Government could not undertake the separation prior to privatization because of a law remaining from the 1970s, which prohibited state companies from creating affiliates or subsidiaries. See *Analisis de la competitividad en la generación eléctrica. El caso de Chile*, 1995.

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	Retail Distribution: There are a total of 23 distribution utilities in Chile. Enersis is the holding company for the largest distribution utility, Chilectra, which serves the Santiago metropolitan area or roughly 40% of the total retail market. Chilectra and Chilquinta are the largest of the 17 investor-owned distribution utilities operating in the SIC. Edelnor and two smaller distribution utilities provide distribution service in the SING. Generally, small vertically integrated companies under private ownership provide distribution service in the smaller, isolated systems (Edelaysen, Edelmag). There are also 3 small municipal utilities and a few electric cooperatives supplying retail electricity service in remote areas. *Other*: A percentage of each privatized asset's shares were reserved for utility and public employees in a popular capitalism program that enabled employees to use their pension funds for stock purchases.
Targets for Privatization	Colbún is gradually being privatized through periodic sales of stock. Around 15% of the company has been sold to pension funds. A consortium led by Belgium's Tractebel bought an additional 37.5% of the company with the option to acquire a further 12.5% after three years. The US company Southern Electric acquired a share of almost 65% in Edelnor. The state has been privatizing it gradually; it still holds 16.5% of shares through its holding company Corfo.
New Investments	Investments in new capacity and upgrading existing facilities have been and will continue to be built primarily by the private sector based on market signals. In all, over 2,000 MW of hydroelectric capacity and over 1500 MW of thermal-fired (mainly coal or natural gas) projects are now under construction or planned. These projects, mostly under the private sector, include Alumysa (600 MW-hydro), Ralco (570 MW-hydro), Pangue (450 MW-hydro), Cachapoal (350 MW-hydro), Rucue (160 MW-hydro), Patache (150 MW-coal), Mejillones II (150 MW-petcoke/coal), Huasco II (141 MW-coal) and Talcahuano (67 MW-oil residues). Various thermal plants using natural gas have already entered the market including Renca (370 MW), Limache (400 MW) and San Isidro (355 MW). Both pipeline projects from Argentina to the Northern System in Chile consider the construction of large power projects. The Gas Atacama consortium has already started the construction of a 710 MW gas-fired plant in Mejillones and is planning to build a 360 MW gas fired plant in Taltal, which could be connected to the Central Electricity Grid. In order to provide feasibility to the Norandino pipeline, its affiliate Electroandina will build around 1,000 MW of capacity in the system. This large capacity addition and Gener' supply of electricity from Argentina could result in an over-investment in the system. If this is the case, no additional capacity will be needed in the following ten years.
IV. Electricity Markets: Areas of Competition and Monopoly	
Bulk Power	The generation sector is open to all types of participants. No concessions are required for generation unless the units are on public property. Water use rights are awarded through competitive bidding procedures or granted by the President. Provisions in their concessions, permits, sales contracts and relevant technical, operating, and environmental criteria govern generators' operation. Generators compete to sell firm capacity or energy under negotiated power purchase agreements (PPAs) with deregulated large consumers or with distribution enterprises (based on node prices). They may also sell power to other generators at regulated system marginal cost prices. Distribution companies are obliged to competitively bid their contracts with generation companies, which prevent from abuses in vertical integration and cross ownership structures. The SING has experienced rapid growth in demand since 1992, and now anticipates the need for about 400 MW of new capacity to come online by 1999. This has spurred competition among many generators building new plants that has resulted in lower bid prices for supply. The Tocopilla plant in SING provides all of Codelco's power requirements as well as excess power for sale to the grid and other industries via PPAs. Edelnor has more than doubled its capacity in the past 3 years. SIC still represents 80% or so of the national consumption. Chilgener, which supplies most of the requirements for Chilectra and Chilquinta, and Endesa dominate the bulk power market in the SIC.

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	Lacking firm power contracts, the other generators in the system have had to sell considerable portions of their output to Endesa or to the system spot market, which subjects them to considerable variations in prices due to consideration of hydrological factors in the pricing method. The entrance of natural gas into both systems could improve competition, as new participants will enter the market in competitive terms.
Transmission and Distribution (Networks)	Transmission is not considered a monopoly area, and any party may undertake projects for expansion of the transmission system based on market signals. Generators can own transmission lines and are expected to build new transmission capacity in the future. A concession or permit is required for transmission activities unless the transmission only occurs over privately owned property. Though not required to expand their system in order to provide wheeling service, transmission lines operating under concessions or permits must provide open access as long as there is sufficient capacity to accommodate the requested wheeling service. Endesa directly owns the assets of the high voltage SIC and it operated the system until it created a subsidiary, Transelec, in 1993. Thereby providing greater transparency in the process for negotiating system services. Likewise, Edelnor's subsidiary Sitranor owns and operates the high voltage interconnected system in the north.
Retail Distribution	Retail distribution (commercialization) is considered a public service. A concession or permit is usually required for systems greater than 1,500 KW. The Ministry of Economy authorizes concessions for an indefinite period. The distribution concessionaire is required to provide service to captive consumers (but not deregulated consumers) requesting it within the defined service territory. Large consumers are deregulated; they can purchase power under negotiated contracts from the distribution utility or directly from generators. Distribution networks must provide open access in exchange for a negotiated service fee.
V. Load Dispatch and Pool Operation	
Dispatch Entity and Basis	Each interconnected system has an economic load dispatch center (CDEC), which is in charge of coordinating and programming load dispatch for generating units on the system. The CDEC itself does not hold shares in operating companies or own property. It serves to safeguard the reliability and security of the transmission system, guarantee equal access rights to generators, and coordinate system operation on a least-cost basis. The CDEC's oversight committee consists of generators supplying 2% or more of the system's requirements (the minimum threshold was 60 MW). This threshold will probably be lowered, perhaps to 10 MW. The committee sets the operating and technical rules for the CDEC/dispatch according to legal and regulatory provisions. The CNE has a very limited supervisory role over the CDEC and dispatch activities.
Pool Operation	The power market in Chile is mainly based in two types of contracts. A deregulated market between generators (or other agents) and large consumers and a regulated market, for inter-generators transfers and sales to distribution companies. The deregulated market represents around 27% of the demand. Regulated spot pricing applies to inter-generator transfers (via a generators' pool) and to system spot sales to distributors. Spot prices are set at each node of the interconnected system and are based on the weighted average of short run marginal costs (SRMC) of generation for the entire system optimized over a 12- or 48-month horizon (which accounts for reservoir levels, plant availability, thermal plant operating costs, new capacity and rationing). A 50-MW gas turbine increment is used to set the capacity component of the price, and transmission losses are incorporated. For sales to distribution companies, prices are calculated adding up node prices plus the cost of the transmission service. Node prices are adjusted every six months using indexation formulas with pre-defined variable ranges. Node prices must fall within a 10% range of deregulated prices. Dispatch is undertaken on an economic merit order, pre-programmed basis for the entire system in hourly units.

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VI. Pricing	
Bulk Power	Prices in the wholesale market are based in two types of contracts. Deregulated contracts, in which generators and large consumers are free to negotiate their prices; and the regulated contracts, in which generators sell their energy to distribution companies and other generators, through the generator's pool. Regulated prices are based on forecasts of the short run marginal cost at each node over a period of 12- or 48 months. These forecasts include optimization of the system, taking into account hydro conditions and expansions. Node prices must fall within 10% of deregulated prices. Negotiated prices apply to sales from generators (or other agents) to large consumers, but until recently, these have closely followed node prices. The deregulated market only represents 27% of the total demand. The latest projections for node prices show a reduction in future electricity prices due to the entrance of more efficient plants fired with natural gas and to the expectations of over-capacity in the system.
Transmission/ Distribution (Networks)	DFL No. 1 (Mining) provides for transmission enterprises to receive income that covers the long run annualized average costs for economically adapted system operations. For unregulated power sales, transmission service tariffs in the interconnected systems cover operating, maintenance, and investment costs and a return. Transmission service charges include regulated connection, entry and exit fees in a generator's defined zone of influence. Other fees apply for transactions in areas beyond this zone. Fees for wheeling services over lines not owned by the interconnection enterprise are negotiated between the owner and the party requesting the service. As needed, a commission comprising representatives of both transaction parties is formed to resolve disputes over the service or fees. Unlike deregulated prices, the regulated node prices do not include the costs of transmission. Node prices are calculated for each node of the interconnected system for sales to distribution entities, based on the cost of generation delivered to the node. Supplying generators are paid the node price for their power minus/plus a so-called "penalty" factor that accounts for the transmission losses (or reduced losses) occurring in the system related to the particular node where the power is taken. The revenue from the "penalty" factor is paid to the transmission enterprise.
Retail Tariffs	Retail tariffs for regulated end-consumers are based on the sum of the node price for energy and capacity in the system and the Added Value of Distribution (VAD). Periodic tariff adjustments according to established criteria are allowed for distribution companies to change the node price. The VAD is based on costs for a model distribution enterprise operating in a similar type of zone (i.e., of similar density and other features) established for 4-year periods through CNE-authorized consultant studies. The VAD incorporates: a) the fixed costs of administration, billing and customer service; b) investment, O&M costs, and peak power losses over the distribution system; and c) energy losses in the distribution system. The global rate of return is set to a level between 6% and 14%. The pricing mechanism does not include either quality-of-service issues or financial penalties.
Subsidies	There are virtually no subsidies implicit in the pricing system.
VII. Sector Problems and Priorities	
Framework and Other Issues	1. The regulatory independence of CNE seems to be impaired because of ministerial involvement, insufficient staffing and expertise, and because the regulatory role of CNE is not absolute, but depends on the ministries and shared responsibility with the SEC. In addition, SEC enforcement is not strict enough, probably due to the strong and vocal political influence wielded by sector enterprises. The regulatory agencies face difficulties in obtaining the necessary level of detailed information from sector enterprises, particularly regarding costs, that may impede them from performing effectively on issues dealing with pricing and competition. Recent studies are focusing on changing CNE's structure, trying to provide it with more independence and reducing the influence of

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	the different parties in its operation. 2. The recent events leading to the resignation of CNE's Executive Secretary are a clear sign of the pressure exerted over CNE. As the long-term projections showed a reduction in the node prices, both in the SIC and in the SING, generators began to be concerned regarding their investments. Several new plants were built because of the latest drought; thus providing the demand to back the construction of the gas pipelines. However, low prices in the future, and high current prices (at this time they have to buy from the pool), have put them in a difficult position. They have put pressure on the government to change the price structure for the fuel purchases, so variable costs are increased resulting in higher electricity prices 3. The major concerns raised by the sector's reform framework relate to the real curbs on competition and the perceived loss of benefits that could be achieved under greater competition. These limiting factors on competition ultimately have an impact on new investments, economic costs of service, quality of service, and end-consumer options and prices. For example, limiting factors include: – Endesa's market power, as a single generator has been too overwhelming, representing more than 60% of the capacity and 65% of the generation in SIC. - The exclusion of smaller generators as members of the CDEC committee (i.e., in SIC, only the 5 largest generators are represented) has raised other issues of fair competition, pricing, and rulemaking. - The coupling of the ownership and operation of the main transmission system with Endesa's dominant generating capacity has led to major concerns about the transparency and fairness of Endesa's marketing and wheeling terms. - Enersis' holding of significant ownership shares in Endesa while owning Chilectra raised anti-trust issues and brought about consideration of limiting cross-ownership of different sector activities. The obligation to distribution companies to compete their contracts with generators might reduce Enersis' market power. - The pricing in the deregulated market, representing about 27% of total demand, is seen as being constrained by the regulated bulk power prices, whereas the node prices cannot vary by more than 10% of the deregulated prices. Moreover, the difficulty of negotiating wheeling fees for power transfers over transmission and distribution grids has proved to be an impediment to greater purchases under negotiated contracts, particularly since there is no well-defined legal or regulatory basis for network tolls. 4. The purchase by Spain's Endesa of a 29% stake of Enersis represented significant conflicts within the company. Six former Enersis executives are being tried for their role in the 1997 deal in which Endesa Spain acquired the shares. The process is still underway and has represented significant frictions between the Spanish firm and the other shareholders in the company, which are mainly Chilean pension funds. The battle between Endesa Spain and the remaining shareholders increased by the decision of Enersis' board of directors to sell its 25.3% in its generating facility Endesa Chile but ended when Endesa Spain gained control of Enersis.
Operating Needs	Demand forecasts showed that significant increments of new generating capacity were needed, particularly in the SING, over the remainder of the decade. This increases in demand were being met through various hydroelectric, imported natural gas, and coal-fired projects. It appears the new demand is promoting greater competition among generators. However, those demand forecasts have been reduced due to lower prices in the mining industries, which have prompted mining companies to delay their projects. A close watch should be taken on the construction of three energy projects in the northern grid, as they could result in over-capacity in the region. Up to now, the two gas pipelines have shown their firm intention to enter the market. They have already started the construction of large power projects and

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	secured some power purchase agreements with the companies in the region. Attempts to merge the companies have failed, and the final result will be the over-installation of power plants connected to the power grid. This is added to the transmission line that Gener is planning to build to connect a generation plant in the Argentine region of Salta with the same northern grid. If the three competing projects are built, electricity prices will be reduced significantly and many power projects will become unfeasible in economic terms. Among the choices to solve that problem will be to consider connections to the central grid and to export electricity to Argentina and Brazil. The projects based their calculations on the forecasts of high demand growth, but the latest reductions might force them to look for alternative strategies, such as merging or exporting to other countries. The CDEC has not been seen as optimal, and proposals have been made to increase its membership (by lowering the threshold to generators with as little as 10 MW) and give it a legal status and technical staff to increase its efficiency, objectivity, and transparency. Initially, new projects were proposed only by existing sector participants. These, however, have an incentive to delay investments, as their profits will rise in tandem with the tightness of the supply market. The large amount of new capacity under construction has allayed concerns about sufficient investment incentives to meet demand, especially for the seemingly under-supplied 1997-2000 period. This resulted in the latest rationing, which affected the country's Central Grid in November 1998. On the issue of whether or not end-consumers have benefited from competition in terms of price decreases, surveys show mixed results regarding the quality of service, though rates are now stable.
Electrification and Energy Efficiency	Distribution companies carry out electrification efforts, though more than 95% of the population has electricity service. CNE is responsible for electrification policy issues. The Ministry of Economy provides funds for electrification programs in rural areas as needed.

VIII. Sources and Relevant Web Pages

Sources

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Relevant Web Pages:

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Enersis: http://www.enersis.com/

Gener: http://www.chilgener.com/

Chilectra: http://www.chilectra.cl/

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