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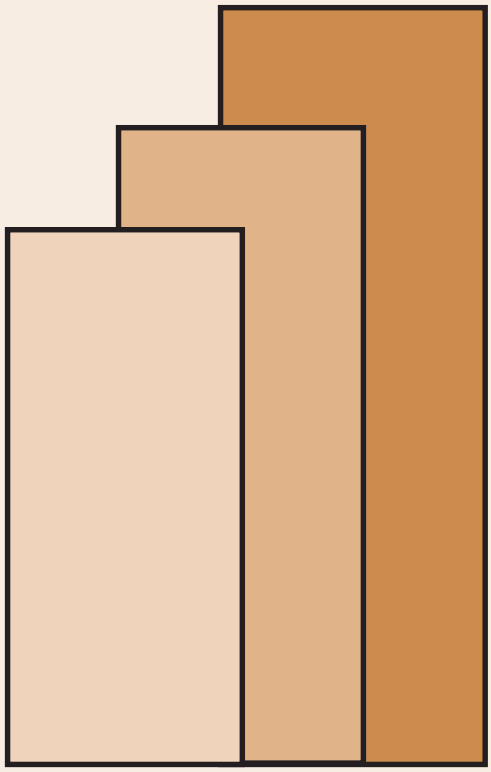

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Competition Policy and Regulation in Power and Telecommunications[1]

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Abstract

Following the global trend in using private sector participation in infrastructure financing and development, the Philippines has largely utilized privatization as a major approach to the development of infrastructure, particularly in power, water, transport, and telecommunications sectors. To provide a legal framework for private sector participation in infrastructure projects, Congress passed the build-operate-transfer (BOT) law, as amended, to expand the scope of private sector involvement in infrastructure provision. Regulatory reform has accompanied the effort to ensure operational efficiency and competitive provision.

This paper intends to review and evaluate the regulatory framework that has been established or suggested for the Philippines, focusing on the power and telecommunications sectors. This study will primarily evaluate the existing regulatory framework. It aims to identify issues and gaps, paying particular attention on the competition-related provisions as well as the institutional capacities of regulatory institutions.

Keywords: competition policy, regulatory framework, power sector, telecommunications sector, infrastructure development, private sector participation, BOT, EPIRA, VOIP

Competition Policy and Regulation in Power and Telecommunications

Epictetus E. Patalinghug and Gilberto M. Llanto*

Introduction

Recently, a global trend in using private sector participation in infrastructure financing and development has emerged. The Philippines uses privatization of infrastructure provision as a major approach to the development of infrastructure, particularly in power, water, transport, and telecommunications sectors. The Medium Term Philippine Development Plan 2004-2010 spells out the enabling role of government on the one hand, and private financing and provision of infrastructure services on the other. To provide a legal framework for private sector participation in infrastructure projects, Congress passed the build-operate-transfer (BOT) law, as amended, to expand the scope of private sector involvement in infrastructure provision. In the case of the power sector, the Electric Power Industry Reform Act (EPIRA) enacted into law in 2001 introduced far-ranging reforms in the sector. Executive Order 59 and the Public Telecommunications Act of 1995 (Republic Act 7925) liberalized and de-monopolized the sector. Regulatory reform which includes establishing an efficient and effective regulatory framework has accompanied the effort to ensure operational efficiency and competitive provision.

The main objective of the paper is to review and evaluate the regulatory framework that has been established or suggested for the Philippines. The paper focuses on the power and telecommunications sectors. The discussion starts with a description of the suggested analytical framework, followed by an explanation of the regulatory framework. The paper then analyzes the nature, extent, and sufficiency of the competition-related provisions of the regulatory rules. A discussion of the institutional capacity of regulatory institutions followed. Finally, the paper concludes with a set of recommendations to improve the regulatory framework.

Suggested Analytical Framework

The research framework described in this section is adopted from the framework elaborated by Levy and Spiller (1993). The utility's performance can be evaluated in terms of its capacity to adequately satisfy the demand for its services. The attainment of this required capacity necessitates that the utility has an adequate level of investment and has incentives to attain both allocative efficiency and technical efficiency. Market competition enhances both allocative efficiency and technical efficiency, while property rights encourage firms to invest and to exploit profit-taking opportunities. However, contracting problems exist in dealing with utilities which prevent the use of mechanisms such as competitive markets and property rights in ensuring the smooth functioning of a market economy. Utilities are characterized by: (1) economies of scale

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and scope, (2) a high ratio of sunk costs to avoidable costs, and (3) a broad range of users. The first characteristic encourages incumbent firms to develop a first-mover advantage, and acquiring some degree of market power which leads to pricing and investment decisions that are not socially optimal. The second characteristic makes utilities vulnerable to administrative expropriation (e.g. regulators setting prices below long-run replacement costs) and exposes utilities to risk which forces them to make disproportionately low (less optimal) investments in services where sunk costs are high. And the third characteristic creates a likelihood that politically influential groups constrain regulators from implementing allocatively efficient pricing schemes. These contracting problems create the rationale for regulation and provide the link between regulation and performance. The features of the regulatory design must be perceived as fair, reasonable, consistent, and predictable to achieve the twin goals of encouraging investment and promoting efficiency.

The following is a summary of Levy and Spiller's (1993) analysis of the features of an appropriate regulatory system:

A. To Encourage Investment
    - To restrain arbitrary administrative action through the following mechanisms:
        - substantive restraints on the discretion of the regulator embedded in the design of the regulatory system;
        - formal or informal procedural constraints on changing the regulatory system;
        - institutions that enforce these substantive and procedural constraints.
    - To have an institutional endowment that can put in place a regulatory system with the capacity to credibly restrain arbitrary administrative action.
    - To establish a regulatory framework that substantially limits regulatory flexibility.
    - To find substitute mechanisms that credibly restrain arbitrary administrative action if the country lacks the needed institutions for workable regulation.

B. To Promote Efficiency
    - To settle for less efficient regulatory rules if the regulatory system as a whole is to be workable.
    - To establish the required institutional foundations to be able to implement some relatively efficient regulatory rules (e.g. benchmark regulation or price-cap regulation).
    - To promote competition by guaranteeing interconnection among various services in segments of the industry that are contestable.

This suggested analytical framework is the basis for making generalizations and policy implications in the power and telecommunications sectors.

Regulatory Framework

a. Power

The electric power industry is subject to a number of laws, policies, administrative rules and regulations governing entry, ownership, pricing, access, and service standards.

In 1913, the Board of Utility Commissioners was established, and the Public Service Commission was created in 1923 with the power to authorize the operation of public services, to approve franchise, to fix rates, to set quality and safety standards, and to impose penalties for those who willfully violated the Commission's established orders, rules, and regulations.

In 1960, the Electrification Administration (EA) was created by Philippine Congress to implement the government's objective of total electrification of the country. The government granted franchises to private companies to encourage them to set up local distribution systems in rural areas. In 1969, the National Electrification Administration (NEA) was established by Congress to replace the EA as the implementing agency of the country's total electrification policy. Under NEA, the rural electric cooperatives (RECs) were designated as the country's primary electricity distribution system. NEA was given the authority to establish and oversee the RECs: (1) to make loans, (2) to acquire physical property and franchise rights of existing suppliers, (3) to borrow funds, (4) and to extend subsidies. NEA was converted into a public corporation in 1973. Under this structure, NEA was given the sole authority to regulate the RECs as well as to repeal, alter, and amend its franchises.

The Department of Energy was established in 1977 (although it was abolished in 1986 by the Aquino administration, Congress re-established it in 1992) to formulate energy policies, plan and implement energy projects and programs. The Energy Regulatory Board (ERB) was created in 1987 and took over the functions of the abolished Public Service Commission (PSC). After the abolition of the PSC in 1972, the National Power Corporation (NPC) assumed the regulatory functions of price setting and prescription of service quality standards among the industry players. ERB took over these functions in 1993. ERB was tasked to regulate petroleum products, gas pipe concessionaires, and tariff rates of distribution utilities. After the passage of the Downstream Oil Deregulation Act of 1998, ERB concentrated its regulatory efforts on the electric power industry.

In 2001, the Electric Power Industry Reform Act (EPIRA) was passed by Congress to ensure the quality, reliability, security, and affordability of the supply of electric power. EPIRA was intended to increase operational efficiency and reduce dependency on government funding by increasing competition and private sector participation.

EPIRA has mandated the organizational and financial restructuring of the industry. EPIRA stipulates that only transmission and distribution utilities need a franchise authority from Congress in order to operate. Generation utilities and electricity suppliers simply have to obtain a license from the Energy Regulatory Commission (ERC) to engage in their economic activities. Among EPIRA's significant provisions are: (1) the abolition of the Energy Regulatory Board (ERB) and the creation of the Energy Regulatory Commission (ERC) with the power to set tariffs in the transmission and distribution sectors and the broad powers to regulate behavior of participants in all sectors of the industry, (2) the creation of the Power Sector Assets and Liabilities Management Corporation (PSALM) to manage the orderly privatization of NPC's generation and transmission assets, (3) the creation of a wholesale electricity spot market (WESM) to allow competition in the wholesale electricity market, and (4) the prohibition on

NPC to build its own new generation plants or to negotiate new Independent Power Producer (IPP) contracts with private investors.

The main features of reform include the following:

- Vertical separation of generation, transmission, distribution and electricity supply;
- Privatization of NPC; constraint imposed on cross-ownership;
- Open and mandatory access to the transmission and distribution grids;
- Establishment of a wholesale spot electricity market and later, adoption of retail competition to ensure that consumers reap the maximum benefits from restructuring;
- Providing mechanisms to service commercially unviable areas and to promote the use of indigenous and clean fuel, even as cross-subsidies are eliminated.
- Unbundling of generation, transmission, distribution, and metering charges.

b. Telecommunications

A congressional franchise is required to operate a telecommunications service in all or some parts of the country. The industry is regulated by the National Telecommunications Commission (NTC).

Executive Order 546 abolished the Telecommunications Control Bureau and the Board of Communications and integrated their functions into the NTC in 1979.

NTC was mandated to regulate and supervise all telecommunications and broadcast facilities in the country. It exercises supervision, adjudication, and control of 73 fixed telephone operators, 6 cellular mobile phone operators, 11 international gateway facility operators, 10 public trunk repeater operators, 8 radio paging operators, 14 inter-exchange carriers, 307 value-added service providers (including 41 internet service providers), 583 FM stations, 225 television stations, 1,442 cable TV networks, 13,963 private fixed and land mobile radio stations, 5,009 maritime stations, 1,205 aeronautical stations, 124 radio dealers, 85 customer-premises equipment suppliers, 112,965 radio operators, 205 radio training schools.

NTC jurisdiction covers licensing, pricing, adoption of standards of reliability and interoperability, frequency allocation and assessment, dispute resolution, and consumer protection.

During the pre-reform period situation, service coverage represented only 16% of total land area. Barely half a million telephone lines serviced a population of 60 million people. Distribution of services between rural and urban areas was unbalanced.

Likewise, during the pre-reform period, the telecommunications industry was considered as a natural monopoly. Thus, a monopoly provision of telecommunications services was perceived as the most appropriate market structure to serve the public interest because it avoids the wasteful duplication of facilities, destructive competition, and cream-skimming behavior of new entrants. Under this policy, PLDT was officially sanctioned as the monopoly-dominant

firm. The government also believed that the goal of universal service could only be achieved under the monopoly market structure (Cabalu, et. al, 2001).

An industry is said to be a natural monopoly if a single firm's cost function is subadditive over the entire relevant range of outputs. Or to put it differently, if it is cheaper for one firm to produce a given level of output (or combination of outputs) than it is for two or more firms, then the industry is a natural monopoly. Serafica (1998) conducted an empirical test of whether PLDT was a natural monopoly. Her test revealed that natural monopoly properties did not exist in PLDT's provision of toll and local service. She concluded that the natural monopoly argument put forth by the government was misguided.

The telecommunications reform process started in 1987 when the Aquino administration allowed the granting of new franchises, through competitive bidding, to new players in the contestable segment of the market such as international gateway facility, cellular mobile telecommunications services, trunked mobile radio, and very small aperture terminals. The liberalization process had its dramatic impact in 1993 when the Ramos administration issued Executive Order 59 which mandated the compulsory interconnection of authorized public telecommunications carriers in order to create a universally accessible and fully integrated nationwide telecommunications network. The reform process was later reinforced by the issuance of Executive Order 109, a few months after the implementation of Executive Order 59. Executive Order 109 required all CMTS operators to install at least 400,000 telephone lines within three years, and IGF operators to put up 300,000 lines within five years.

The Public Telecommunications Policy Act of the Philippines (R.A. 7925) was passed in 1995 to promote and govern the development of the telecommunications industry and to improve the delivery of telecommunications services. R.A. 7925 addressed the need for an established policy framework in the telecommunications industry. It laid down the foundation for the administration, conduct, and direction of the telecommunications industry.

The Municipal Telephone Act (R.A. 6849) was passed in 1999 to provide public calling stations in every municipality in the Philippines and to provide public calling stations in 10,120 villages nationwide. The provision of these services was opened to private operators.

The introduction of major reforms in the telecommunications industry in 1993 led to significant expansion of telecommunications network, drastic improvement in service quality, and continuous introduction of new value-added services (see Tables 1 & 2).

In January 2004, the Commission on Information and Communications Technology (CICT) was created. CICT is tasked to formulate medium-term and long-term plans for the information and communications technology (ICT) sector. It also coordinates with other government agencies in formulating and implementing ICT plans and policies.

Competition-Related Provisions

a. Power

With the passage of the EPIRA, the power industry was unbundled into four sectors: generation, transmission, distribution, and supply. Generation and supply shall be competitive and open. These subsectors shall not be considered public utility operations and shall not be required to secure a national franchise. Generators and suppliers shall secure a license from the ERC to operate, but they shall not be subject to regulation by the ERC. Transmission and distribution are natural monopolies. These subsectors are public utilities or common carrier business for public service and shall be required to secure a national franchise and are subject to regulation by the ERC. However, EPIRA contains provisions that mandate open access in both transmission and distribution. For instance, it stipulates that the state-owned National Transmission Corporation (TRANSCO) provide open and non-discriminatory access of its transmission system to all electricity users. ERC has authorized TRANSCO to impose transmission charges based on the revenue-cap ratemaking methodology. On the other hand, distribution utilities are currently subject to rate-of-return regulation. When WESM is fully operational in 2006 and open access is implemented, ERC has planned to authorize a price-cap ratemaking methodology for the distribution utilities.

Generation is currently subject to rate-of-return regulation whose rates are sometimes politically suppressed. A bulk of NPC's generation supply are sourced from the IPPs whose contracts contained "take-or-pay" provisions implying that IPPS are assured of payment for power contracted but not used. The ERC has designed a generation rate adjustment mechanism (GRAM) which allows generation utilities to recover deferred fuel and purchased power costs and their corresponding carrying charges through the deferred accounting adjustment (DAA). ERC likewise has designed an incremental currency exchange rate adjustment (ICERA) which allows utilities to recover the incremental currency exchange rate changes and their corresponding carrying cost through the deferred accounting adjustment (DAA). Thus, tariff rates for generation and supply are currently regulated by the ERC until the time when WESM is operational. Competitive pricing of generation through WESM may work in Luzon due to the presence of a number of power suppliers, but it may not work in Visayas and Mindanao whose grids are characterized by relatively few dominant power generators.

The Manila Electric Company (MERALCO) is the most dominant distribution utility in the Philippines. MERALCO has a franchise area that covers 9,337 square kilometers serving 23 cities and 89 municipalities. Around 19 million people reside within MERALCO's service territory which accounts for approximately 48% of the Philippines' gross domestic product (GDP). MERALCO served a total of 4,051,883 customers and sold 23,834 million kilowatt hours of electricity in 2003. MERALCO belongs to the Lopez Group which has controlling interest in several generation plants: Bauang Private Power (225 MW), First Gas-Sta. Rita (1000 MW), and First Gas-San Lorenzo (500 MW).

The cross-ownership provision in the EPIRA is weak. It allows a company or related group to own, operate, or control 30% of the installed generating capacity of a grid and/or 25% of the national installed generating capacity. This provision opens the possibility for a

distribution company to enter into supply contracts with its generation subsidiaries, and create hidden profits for the conglomerate. MERALCO's supply contracts with Lopez-owned Sta. Rita and San Lorenzo power plants are singled out as classic cases of the disadvantageous nature of the cross-ownership provision of EPIRA. MERALCO has been accused of buying power from its affiliated IPPs at higher prices compared to the price charged by NPC[2]. However, MERALCO asserts that it sources about 55% of its total power supply from NPC, and that its IPP rates would go down per kilowatt hour if the plants would be dispatched at minimum energy quantity (MEQ) or the maximum contracted outputs of about 83 to 86% of their installed capacities.

The restructuring of the Philippine electric power industry adopts the wholesale competition model in which distribution utilities retain their exclusive service territories and buy power from competing generators. One of the prerequisites for this model to succeed is the existence of a sufficient number of unaffiliated suppliers (Kessides, 2004). The cross-ownership provision in the EPIRA violates this competition rule. Furthermore, large players have the ability to strategically congest the existing limited-capacity Philippine transmission lines. Thus, in the long run, adequate investment in transmission capacity reduces congestion costs and the market power problem. However the executive and legislative branches of government cannot agree on whether TRANSCO's concession contract can be bidded to potential private investors even without a franchise.

The lessons from Chile's electricity-reform experience can be cited. Chile restructured its electricity industry in 1986. But by 2000, 93% of its installed generation capacity were controlled by three companies: ENDESA, GENEK, and COLBUN; in addition, ENDESA controlled 58% of generation in Chile's central region which accounted for most of Chile's electricity demand. ENDESA also owned Chile's largest distribution company which provided more than 40% of distribution. Learning from Chile's mistakes, Argentina restricted cross-ownership and limited ownership of generation assets to 10% of the market (Kessides, 2004). MERALCO's market position has some similarities with that of ENDESA. However, Chile was able to establish a credible, effective, and fast-acting regulatory mechanism. It had the capability to implement yardstick competition in distribution, and adopted a cost-based spot market that constrained the ability of generators to exploit their market power (Kessides, 2004). The argument elaborated here is consistent with the paper's suggested analytical framework: countries with strong institutional foundations are able to implement some relatively efficient regulatory rules.

EPIRA's competitive provision relies on implementing non-discriminatory access to existing systems. This provision is inferior to a situation where both divestment and open access are stipulated to de-monopolize the industry. Open-access provision relies on effective monitoring and enforcement of regulatory rules which is unlikely given the administrative capacity of regulatory agencies. Thus, structural remedies are more effective than imposition of behavioral rules in curtailing the exercise of market power (Abrenica and Ables, 2001).

[2] MERALCO was accused of buying power from Quezon Power at ₱6.54 per kwh, from First Gas-Sta. Rita at ₱5.54 per kwh, and from First Gas-San Lorenzo at ₱4.89 per kwh in December 2002 when NPC supplied MERALCO at only ₱3.62 per kwh. "Enrile Hits Rise in March Electricity Rates, Blames MERALCO PPA Charges," Manila Bulletin, March 12, 2003.

For example, Argentina barred a generator from controlling more than 10% of system capacity which sent a clear signal that competition must be introduced at the start of the reform process instead of relying in regulatory interventions to curb market power of large generation companies. In Chile, the disagreement between ENDESA and COLBUN on how transmission development costs should be allocated among generating companies prompted regulators to force ENDESA to divest its ownership of Chile's main transmission company in 2000. Before ENDESA's divestment, COLBUN decided to build its own transmission line between its generating plants and the main demand mode. This example illustrates the shortcomings of allowing cross-ownership that cannot be properly addressed by institutional arrangements (Abrenica and Ables, 2001; and Kessides, 2004). Fortunately, the existence of strong administrative capability immediately addressed the weakness of Chile's regulatory design. That may not be true for the Philippines. EPIRA has vested the ERC with design safeguards to protect its independence by specifying fixed and overlapping terms for its commissioners. However, the general opinion is that the independence of the ERC is oversold. The regulatory body is perceived to do what the Chief Executive wants done. In terms of this paper's framework, an independent agency that lacks administrative restraints is inferior to a regulatory commission that is not politically independent, but has a set of rules built into its system that credibly restrains arbitrary administrative action and helps to attract private investment.

One of the objectives of the EPIRA is to privatize most of the NPC assets and use the proceeds to reduce NPC's substantial debt and losses. NPC owns and operates approximately 4,300 MW of grid-connected generation and a further 2,200 MW of generation is owned by NPC and operated under long-term contract. NPC-IPPs generated 53 percent of NPC's gross energy generation in 2001 (see Table 3). NPC is selling 35 power plants (see Table 4) with a combined capacity of 6,169 MW which comprised 47% of total dependable capacity of 13,262 MW in 2004. As of October 2004, NPC through PSALM has sold 6 power plants with a total combined capacity of 608.5 MW. PSALM has so far sold the following NPC power plants: 3.5 MW Talomo hydroelectric plant in Davao to the Aboitiz Group, 1.6 MW Agusan hydroelectric plant in Bukidnon to the Lopez Group, 1.8 MW Barit hydroelectric plant in Camarines Sur to Ramon Constancio, 0.4 MW Cawayan hydroelectric plant in Sorsogon to the Sorsogon II Electric Cooperative, 1.2 MW Loboc hydroelectric plant in Bohol to Sta. Clara International, and 600 MW Masinloc coal plant to YNN Pacific Consortium Inc. However, introducing and enforcing competition policies might matter more than ownership. Private ownership does not automatically bring about a competitive situation that creates more efficiency and higher consumer welfare. Caves and Christensen (1980) found no evidence of inferior performance by the government-owned railroad compared to that of the privately-owned railroad. Similarly, Estache and Rossi (2002) showed that the efficiency is not significantly different in private water companies than in public ones. Willig (1993) compares public enterprise with regulated private enterprise and shows that the efficiencies of privatization stem from the insulation it brings from arbitrary political and self-serving influences. And Kwoka (1996) found that competitive pressures are more important than ownership in explaining electric utilities' performance in the U.S. In states where state-owned and privately-owned electric companies competed, there was little difference in performance. In states where electricity supply was provided by the state-owned monopoly, performance was lower than in states where privately-owned monopoly supplied electricity. The provision in EPIRA on NPC privatization has not taken into

consideration that the success of reforms may hinge more on the degree of competition introduced in the market and less on the extent of privatization.

The wholesale electricity spot market (WESM) may work in Luzon due to its high capacity margins and the presence of a number of power generators. However, it may not work in the Visayas and Mindanao whose grids are characterized by relatively few dominant power generators. The delay in the construction of the Leyte-Mindanao transmission line is also an obstacle to the smooth functioning of the WESM. Furthermore, many of the distribution utilities are under financial stress and therefore cannot qualify to participate in the WESM which requires purchaser-class market participants to put up high levels of credit standing or financial security (ADB, 2003).

NPC is neither allowed to construct new generation plants nor sign new supply contracts with IPPs. Thus, Congress has made the private sector the sole source of construction and financing of new power generation projects. Unfortunately, the Philippine business climate, e.g., politically-suppressed tariff rates make it unattractive and risky for the private sector to invest in power plants.

The transmission planning process is not well-defined in EPIRA. The Grid Code does not state the higher level purpose or objectives of grid planning. There is a need to clarify the planning objectives and to set up a formalized process by which transmission development proposals are scrutinized and approved. The trade-off between generation and transmission in the transmission planning processes must be laid down. Under a privatized setting, the private concessionaire may not construct socially desirable grid augmentation projects if they are not privately profitable. There might be a need to set up an oversight Power Infrastructure Committee which has the power to require the grid operator to proceed with important augmentation projects (ADB, 2003).

b. Telecommunications

Reforms in the telecommunications industry led to the liberal granting of licenses in the formerly restricted cellular mobile telecommunications services (CMTS) and international gateway facilities (IGF) markets. Executive Order 59 mandated the interconnection between carriers which was actually directed at the dominant player, PLDT. This policy was intended to create a universally accessible and fully integrated nationwide telecommunications network. Executive Order 59 effectively reduced a major entry barrier.

To solve the severe shortage of telephone lines, Executive Order 109 established the service area policy. It also required CMTS operators to install at least 400,000 telephone lines within three years, and IGF operators to put up 300,000 lines within five years. The service area scheme divided the country into eleven service areas and required CMTS and IGF operators to establish local exchange carrier (LEC) services in underserved or unserved areas based on a formula that takes into account the projected population and target density rate (Serafica, 1996).

The Domestic Satellite Communications Policy was formulated in 1993 to promote the development of satellite-based telecommunications industry, and in 1994, the International

Satellite Communications Policy was established to broaden access to international fixed and mobile satellite system.

In 1995, Congress passed the Public Telecommunications Act of the Philippines (R.A. 7925) to complement Executive Orders 59 and 109, and to lay down the foundation for the administration, conduct, and direction of the telecommunications industry. The liberalization of the industry was received positively by both the firms who have targeted the profitable telecommunications market and by the consumers who felt its benefits in terms of access to phone services and introduction of a variety of value-added services.

R.A. 7925 mandated that all telecommunication entities with regulated type of services have to make a *bona fide* public offering to the stock exchange of at least 30% of its aggregate common stocks at the start of commercial operations. It also mandates the privatization of government-owned and operated telecommunications facilities, deregulated rate and tariff fixing, and removed the 12% cap on rate of return.

Value-added services (VAS)[3] were deregulated. A VAS provider that does not set up its own network and relies solely on the transmission, switching and local facilities of enfranchised telephone companies does not need to secure a franchise in order to operate. It only needs to register with the NTC (Kim, 2003).

NTC is in the process of issuing new rules to govern both business and public use of Voice Over Internet Protocol (VOIP). VOIP enables users to engage in voice conversations without having to pass through the international gateway facilities of telephone companies which charge much higher fees for the use of their networks. Public telecommunications entities (PTEs), according to NTC's interpretation of R.A. 7925, are allowed to offer VOIP to the public. However, NTC is not convinced whether R.A. 7925 allows non-PTEs such as cable companies and ISPs to offer VOIP to the public. The legal issue is whether non-PTEs have to obtain a legislative franchise and secure a Certificate of Public Convenience and Necessity (CPCN) from the NTC before they are allowed to provide telecommunication services such as VOIP.

Five out of nine telecommunications companies installed fixed lines in excess of their total lines committed under the service area scheme (SAS). However, the SAS was deficient and it penalized new entrants because a small-scale entry is unprofitable in providing telephone service which is characterized by significant economies of scale. A new entrant incurs a significantly higher average cost at output levels below minimum efficient scale of production (Serafica, 1996).

Recently, the SAS was proven to be unsustainable because the rapid advance of telecommunications technology has made the regulatory rules redundant. NTC's goal of universal and integrated nationwide telecommunications network was anchored on achieving the target telephone density through the provision of fixed telephones. But emerging technologies made mobile phones more reliable, accessible, and affordable. This explains why only 48% of installed fixed lines were subscribed as of December 2002 (see Table 5). Access cost for fixed

[3] These refer to enhanced services beyond those ordinarily provided for by local exchange operators, inter-exchange operators, and overseas carriers, including internet services.

phones was significantly higher compared to mobile phones. Tariffs below cost were kept to make fixed phones affordable, but it forced new carriers to lock half of their investments in an area where the return was uncertain (Abrenica, 1999).

The Philippine telecommunications market is currently dominated by three nationally large market players, namely PLDT, Globe, and Bayantel (see Table 6).

PLDT provides landline facilities. Its mobile services are carried by its subsidiaries SMART and PILTEL, and its data communications services are provided by Infocom.

Globe, on the other hand, has a strong hold on the mobile phone market having pioneered the GSM mobile services. It is also engaged in the fixed line business through the Globelines, and internet services through G-Net and iAyala, now called Azalea Technology.

Bayantel has a nationwide line network, and provides internet service via Sky Internet, and extends mobile phone services through its subsidiary, Extelcom.

Although there are more than 280 firms providing various types of telecommunications services (Table 6), only three players dominate. Among the three, PLDT is the most dominant player because it owns the backbone network and has the largest number of fixed line and mobile phone subscribers. The structure of the market has changed due to mergers and acquisitions. PLDT and Smart have merged. Globe and Islacom did likewise. The convergence of voice, video, and data means that in the future, a small number of mega carriers could dominate the industry.

In theory, an incumbent is reluctant to give access to small entrants supplying the same product. If there is intense competition between incumbents and new entrants, interconnection agreements are less likely because of divergent interests. Under this circumstances, access regulation must be quite forceful (Valletti and Estache, 1999). Unfortunately, R.A. 7925 has no explicit or forceful rules on access regulation. Instead it specifies that access charges and sharing arrangements between all interconnecting carriers shall be negotiated between the parties. Clear and explicit rules would have made the regulatory body credible. This commitment would have been workable in an environment where administrative capability is lacking because of the difficulty of attracting and keeping qualified personnel with varied managerial, financial, and technical expertise due to low civil service compensation (Levy and Spiller, 1993; Galal and Nauriyal, 1995).

In the pre-reform period, PLDT exploited its monopoly position by refusing to interconnect with potential entrants on the argument that there was no legal mandate for interconnection or it could create difficulties to adapt to its system requirements. In the post-reform era, PLDT still holds incumbency advantages because of its control of the telecommunications backbone facility. Numerous complaints are received regarding the conduct of PLDT regarding delayed or insufficient interconnection, unequal access settlements or dispute on revenue-sharing arrangements. A classic case cited was the Globe experience. When PLDT affiliate Smart was negotiating with Globe for interconnection with Globe's short messaging services (SMS), Globe was initially reluctant to share its market dominance of the SMS market

(achieved by pioneering in the digital phone technology in the country). During the period of SMART-Globe negotiation, PLDT accused Globe of misrepresenting calls to avoid paying correct access charges. PLDT used this issue to restrict Globe's interconnection with PLDT's fixed phone lines. The dispute disappeared right after Globe agreed to interconnect with Smart (Cabalu, et. al., 2001; Serafica, 2000).

Policy reforms in the telecommunications sector were quite successful in breaking up monopolies and cartels. Telecommunications investments accelerated between the early 1990s and the late 1990s. Between 1996 and 1999, investments grew by 32.7 percent. However, as global telecommunications prices are going down rapidly, they tend to be sticky downward in the Philippines (Lamberte, et. al., 2003). In addition, internet service providers (ISPs) are complaining that major carriers which operate their own ISPs are practicing anti-competitive behavior by denying them access to more lines.

Nevertheless, R.A. 7925 has toned down the reform initiatives of Executive Orders 59 and 109. First, it reduced the roll-out period from 5 years to 3 years which made it difficult for new players to raise capital to meet their commitments. Second, it reduced the role of NTC by stipulating that interconnection and access tariffs must be determined through negotiation between concerned parties. This provision gives incentives to the dominant player to drag its feet or delay the process. For instance, Bayantel negotiated for months with PLDT for interconnection. In the meantime, PLDT installed phones in Quezon City, Bayantel's service area, where a huge unmet demand existed. As interconnection was stalled, PLDT won many of the potential subscribers from Bayantel (Kim, 2003).

Institutional Capacity of Regulatory Institutions

a. Power

The Department of Energy (DOE) sets down the goals for the energy sector, using the national government's macroeconomic targets as basis. It is tasked to prepare and update annually the Philippine Energy Plan (PEP) and the Power Development Plan (PDP). In addition, DOE is mandated to supervise the restructuring of the electricity industry.

The Power Development Plan[4] (PDP) of the Department of Energy (DOE) forecasts electricity demand to grow at an average annual growth rate of 7.6 percent during the 2003-2012 period on its base case or low-growth scenario, and to grow at an average annual growth rate of 8.2% for the same period in its high-growth scenario. DOE's electricity demand forecast is primarily dependent on NEDA's GDP forecast. Thus, DOE's low-growth and high-growth scenarios are based on NEDA's GDP growth projection of 5.4% and 6.0%, respectively for the period.

However, DOE's electricity demand forecasting methodology needs further refinement. Instead of using an aggregate income variable such as Gross Domestic Regional Product (GDRP), household income could have been used as a determinant of MERALCO residential demand. Surprisingly, price does not appear in any of the DOE electricity forecasting equations

[4] See Department of Energy, Philippine Energy Plan: 2003-2012 (Manila: DOE, 2003).

for Luzon, Visayas, and Mindanao. Ideally demand for electric power should be a function of income, price of electricity, price of substitutes for electricity, and population. The DOE electricity demand forecasting equations primarily use income and number of customers as determinants. While income and number of customers are appropriate variables to be included in the regression equation, the use of GDRP and gross value added (GVA) as proxies for the income variables may not be appropriate. Assuming that these variables are appropriate, they are inconsistently specified. For instance, residential demand in Luzon is a function of GDRP (a regional-level variable) while residential demand in Mindanao is a function of the GVA of the services sector (a sectoral-level variable). In contrast, industrial demand in Luzon is a function of GVA of the industry sector, while industrial demand in Mindanao is a function of GDRP.[5]

DOE's methodology of estimating the needed new generation capacity to be commissioned is not clear. It simply indicates that it used a chronological electric power production costing simulation software[6] to forecast needed additional capacity based on current projected electricity sales, peak demand, and gross generation requirements. The most heroic assumption made in the estimation of needed additional capacity is that rehabilitation instead of retirement will be undertaken to increase dependable capacity of existing power plants. DOE needs to review and strengthen its capacity to undertake energy planning and forecasting.

The use of micro-level data may improve the forecasting accuracy of the DOE power demand forecasting model. But the most important point is to make the forecasting model more transparent so that it can be independently verified or audited. Since the difference between dependable capacity and demand measures the reserve margin, an underestimate of the demand forecast will provide a false sense of energy security. For instance, the supply-demand balance in Table 7 shows that the reserve margin rises from 33% in 2001 to 35% in 2004 for the Philippines, but falls below the critical level of 25% in Mindanao for the 2001-2004 period. These reserve margins will rise or fall depending upon the accuracy of the demand forecast. In addition, dependable capacity would tend to be overestimated if the planning horizon makes an assumption that rehabilitation instead of retirement will be undertaken for existing power plants.

The Energy Regulatory Commission (ERC) is an independent body which is given the authority to regulate entry, ownership, operation conditions, access to inputs, and electricity pricing. ERC is also empowered to adopt and implement technical, customer service, and financial standards for electric utilities to ensure the quality, reliability, security and affordability of the supply of electric power, and to safeguard against the risk of financial non-performance. It is likewise mandated to promote competition, encourage market development, ensure customer choice, and penalize abuse of market power.

The Energy Regulatory Commission (ERC) has total plantilla positions of 211, but has an actual total number of employees of 194. It has an annual budget of P114 million. The top management of ERC indicated that it needs to have 453 employees and an annual budget of at least P350 million to function effectively, given its mandated tasks under the EPIRA.

[5] DOE is trying to address this concern. The PDP for the 2004-2013 period specifies electricity demand as a function of population and GDP per capita.

[6] The generating expansion requirements were generated by making certain assumptions.

In 2003, ERC proposed a legislation authorizing it to collect a regulatory fee or fund to be charged either to the distribution utilities or to the consumers. The idea was to provide ERC a degree of fiscal independence. This will require an amendment to Section 42 of the EPIRA. Furthermore, independence will not be guaranteed if the regulatory fee is linked to output-based rewards such as the granting of rate requests. ERC should think of better measures that would insulate itself from funding volatility associated with fees based on prices charged for electricity or volume of electricity sold.

A study (USAID, 2003) on fiscal autonomy for ERC recommended that a hybrid mechanism consisting of diverse sources of funding from appropriations, fees, assessments, and taxes be utilized. However, the study failed to address the efficiency effect of the suggested hybrid mechanism on the behavior of the regulated firms. Likewise the study did not carefully examine how ERC can be independent by simply imposing output-based fees.

The 2003 USAID study was prepared for the creation and staffing of plantilla positions at ERC based on the mandates and responsibilities defined in the EPIRA. The staffing pattern was based on qualifications specified for each position. However, 80% of former ERB employees were re-hired in the actual manning. This was made possible because the qualifications for each position were significantly reduced to fit the ERB applicant. The Department of Budget and Management (DBM) correspondingly reduced the salary rates to match the lowered qualifications. Highly qualified manpower from the DOE, NPC, PNOC (Philippine National Power Corporation) and the private sector who could have filled the new positions at ERC were discouraged and abandoned plans to transfer to ERC.

ADB's technical assistance project assists ERC to develop regulatory guidelines for the setting of transmission and distribution rates. On May 29, 2003 ERC approved new guidelines for the setting of transmission system wheeling rates which is based on a performance-based rate-setting (PBR) methodology. The ERC is currently developing similar guidelines for the setting of distribution rates for investor-owned distribution utilities. However, ERC's skills-gap must be addressed before the PBR methodology can be effectively implemented by ERC staff. The ADB technical assistance has never explained thoroughly to ERC why the transmission sector uses a revenue-cap PBR, while it proposes a price-cap PBR for the distribution sector. A price-cap PBR will give incentives to a utility to increase profits by increasing load, but a revenue cap PBR will not. An earlier ADB technical assistance to ERB[7] recommended the use of price-cap PBR.

USAID is providing consultancy support to ERC, particularly in the development of regulatory process and in the processing of rate petitions. This has helped improve ERC in its issuance of orders and resolutions and in disposal of cases. The USAID consultants seldom interact with the ERC staff and instead deal directly with the ERC Commissioners. Unfortunately there has been very little institutional build up of knowledge and competencies in regulatory work. There is no mechanism to absorb, retain, process, adapt and use the knowledge acquired from the work of consultants. Thus, ERC's skills-gap has not been addressed and the temporary improvement in competence will disappear once the USAID support ends.

[7] ADB TA 3126-PHI, "Electricity Pricing and Regulatory Practice in a Competitive Environment", May 2000.

On the other hand, USAID's Basic Training Course on the Philippine Grid and Distribution Code is given to the same people that used to attend such courses in the past. Besides, the Grid Code is a poor learning material for ERC staff because it simply describes in detail the engineering processes and tools used by the grid planners, but it does not clarify the objectives of grid planning, and fail to explain the process by which transmission development proposals are evaluated and approved (ADB, 2003). In addition, USAID provided ERC technical training on rate unbundling, universal charges, and load forecasting. It is difficult to evaluate the effectiveness of this training program, but USAID is currently doing a training needs analysis for ERC which attempts to match existing qualifications/ skills with required technical skills/ competencies based on EPIRA's mandate.

It would be preferable to see ERC with a lean (60 to 80) qualified personnel with a varied technical expertise and a market-based compensation scale compared to the existing 200 staff and to stop wasting time and resources undertaking ineffective training assistance from international agencies. Chile, Mexico, and Argentina addressed the skill gap by hiring consultants to prepare or review proposals for tariff revisions (Galal and Nauriyal, 1995), but they kept leaner regulatory agencies.

b. Telecommunications

The National Telecommunications Commission (NTC) is an attached agency of the Department of Transportation and Communications (DOTC) and therefore its three Commissioners are not entitled to a fixed tenure. As a quasi-judicial body, NTC's orders and decisions are final and can only be appealed to the Supreme Court.

The market liberalization in the Philippines appears to have a lesser impact on fixed telephone services than it does for mobile telephone and internet services. Effective competition in Philippine telecommunications market has been difficult to realize for a number of reasons: First, PLDT (the incumbent) with an extensive network has effectively retained market power. Second, the private players that have come up are limited because of the high costs of building the network. Third, the availability of a spectrum is a constraint in the market especially for mobile cellular mobile services. Finally, interconnection between PLDT and other local exchange carriers is still problematic because NTC relies on voluntary interconnection agreements between PLDT and other carriers, instead of imposing a standard interconnection contract on the carriers if the carriers cannot come to an agreement after a fixed time period. NTC is predominantly a passive licensing and administrative agency rather than a pro-active policy formulating and implementing body. NTC needs to strengthen its capacity in the areas of policy and planning, setting telecom tariffs, and technical know-how to adopt standards of reliability and to address customer complaints, particularly in the mobile phone business.

NTC has received numerous foreign assistance to build up its administrative capability, but there is little evidence of progress as a result of these efforts (Gavino, 1992; Serafica, 2002). Best practices regulatory bodies have adopted one of the three price regulations: rate-of-return, benchmark, and price-cap (or CPI-X). R.A. 7925 has abandoned the rate-of-return pricing methodology, but it is vague on how prices are being determined. NTC is given the task to determine its organization structure and personnel. This task belongs to NTC's Rates Regulation

Division which is given the responsibility to develop pricing criteria and standards. However, this particular vagueness of the regulatory rules has not deterred entry of private investment. Regulatory vagueness due to limited administrative capability has made the industry economically attractive to new entrants which faced no effective restriction either on prices of specific service or on their overall rate of return. While the Levy-Spiller framework provides a plausible explanation of the link between regulation and performance in the telecommunications sector during the pre-reform period, it loses some of its predictive value in the post-reform period. Studies on telecommunications reform in the early 1990s (Levy and Spiller, 1993; Esfahani, 1994; Smith, 1994; Staple and Smith, 1994; and Galal and Nauriyal, 1995) consistently concluded that credibility of institutions and clarity of guidance are needed to sustain provate sector participation. Philippine telecommunications was particularly cited as a failure case and that of Chile as a success case. Just recently, a World Bank 2004 infrastructure study arrived at the same conclusion for the Philippine power, road, and water sectors, but telecommunications sector was especially cited as a success case. The paradox is that the administrative capability of ERC is superior to that of NTC, although both are situated in a country with weak executive, legislative, and judicial institutions. The framework based on the modern theory of institutions must therefore be treated as necessary but not sufficient condition for linking regulation with performance. The regulatory environment in Philippine telecommunications remains the same: weak commitment mechanisms which are necessary to enforce contract, weak ability to handle administrative intensity, and weak capacity to process information (NTC relies on the information and testimony furnished by the regulated forms). Another explanation is that competition is superior to regulation. Opening up the industry to more firms is beneficial to the economy as the diversity of interests will act as a mechanism to restrain administrative action and foster confidence in the systems. The discipline of the market can compensate for the failure of the regulatory environment (Serafica, 1998).

Levy and Spiller (1993) suggest that countries with less administrative capability can settle for less sophisticated regulatory rules to be able to implement a workable regulatory system. Another suggestion (Gavino, 1992; Serafica, 1998) is to change the orientation (a paradigm shift) of regulation from one that is excessively concerned with the process of approvals; rules on pricing, subsidies, entry, and interconnection ("merit regulation") to one that ensures that incentives and market discipline protect both consumers and investors; that markets are fair, efficient, and transparent; and that regulatory risk is minimal ("market-based regulation").

Other Issues on Competition Policy

(a) Mergers and Vertical Integration

The Electric Power Industry Reform Act (R.A. 9136) has provisions dealing with monopoly such as policies on cross-ownership, open access, and wholesale electricity spot market. However, it has no explicit provisions on mergers.

The Public Telecommunications Policy Act (R.A. 7925) has no provisions addressing both monopoly and mergers. This explains why the PLDT-SMART and Globe-ISLACOM mergers went smoothly without being challenged for its underlying competitive risk.

Any informal competition policy towards monopoly and mergers in the Philippines will logically fall on the lap of the Securities and Exchange Commission (SEC) which has the ministerial function to approve all combinations, mergers, and consolidations under the Philippine Corporation Law. However, SEC has not challenged or blocked a single merger or acquisition application in the past. SEC is overloaded with several regulatory functions, and it has no capability to evaluate the impact of merger on market power.

(b) Restrictive and Anti-Competitive Practices

Restrictive practices are agreements between firms that have the effect of reducing competition, while anti-competitive practices are activities undertaken by an individual firm which restrict, distort, or prevent competition through the erection of entry barriers.

In the power sector, the cross-ownership provision of R.A. 9136 exposes the sector to more competitive risks. Outright disallowance of cross-ownership is deemed superior to a stipulation on open access. In addition, wheeling charges which are fees charged for the use of transmission and distribution lines have to be approved by the ERC to facilitate open access.

In the telecommunications sector the lack of clear policy on access charges and interconnection can unfairly expose new entrants to strategic behavior by incumbents. In the cellular phone service, the SMART-Globe market tandem could welcome the competitive challenge offered by Sun Cellular. The entry of credible players like Sun can promote genuine consumer choice, improve service, offer wider array of products, increase innovative activities, and reduce prices. Unfortunately, Sun is facing interconnection problems. PLDT-SMART and Digitel-Sun are locked in an interconnection dispute. Digitel collects an access charge of P2.50 per minute on calls that originate from SMART and terminate at Digitel. On the other hand, SMART collects P4.50 per minute on calls emanating from Digitel and terminating at SMART. Digitel proposes that the former charge be increased from P2.50 to P3.00 per minute and the latter decreased from P4.50 to P4.00 per minute. PLDT-SMART told NTC that it cannot agree to Digitel-Sun's proposal because it could only encourage more bypass operators. The determination of access charge is creating a competitive risk especially to potential entrants if the incumbent raises access price and lowers the final product price, and putting a price squeeze on new entrants. NTC has imposed a state-sanctioned fixed line commitments on new entrants which act as an entry barrier, most especially because it exempted the dominant player, PLDT. The service area scheme (SAS) is disadvantageous because it prevents new entrants from exploiting economies of scale and weakens each firm's bargaining vis-à-vis the incumbent in negotiating tariffs and interconnection arrangements (Serafica, 1996; 2000). Recently, NTC has approved the expansion of Bayantel's fixed-line operations in the Visayas and Mindanao. This will enable the company to cover more than 60% of the country. Bayantel was earlier authorized by NTC to operate local exchange service in the whole of Metro Manila. This is a positive move of NTC because the industry needs at least one national fixed-line operator to give PLDT a credible competition. Lastly, regulatory risk is aggravated if the NTC insists on a misguided policy of allowing telecommunications companies to offer both telecommunications services (e.g. voice, data, electronic message) and value added services (e.g. internet, VOIP) while restricting value added service providers from offering new technologically-driven products such

as VOIP on a pretext that a provider needs a legislative franchise for a product that does not have to pass through international gateway facilities.

Conclusion

This paper has reviewed and evaluated the regulatory framework and the competition-related provisions of the rules governing the power and telecommunications sectors in the Philippines.

Both the power and telecommunications sectors have regulatory commissions. While ERC has five commissioners with overlapping fixed terms, NTC has three commissioners who can be dismissed by the executive at will. Irrespective of this minor difference in regulatory structure both sectors are governed by vague regulatory rules with weak commitment mechanisms to enforce contracts, weak ability to handle administrative intensity, and weak capacity to process information.

However, the link between regulation and performance has accurately described the predicament of both sectors in the pre-reform era, but the link somehow collapsed in the post-reform era. Power which is relatively superior in administrative capacity vis-à-vis telecommunications has lagged the latter in attracting foreign investments. The underlying interpretation is that the discipline of the market compensates for the failure of the regulatory environment. Opening up an industry to more firms will serve as a mechanism to restrain arbitrary administrative action in economies with poor institutional endowments.

The enabling law governing the power sector contains some provisions to address vertical integration, monopoly and anti-competitive practices but none on mergers. On the other hand, the enabling law governing the telecommunications sector is void on explicit provisions to address monopoly, vertical integration, anti-competitive practices, and mergers.

This paper argues for correcting the existing flaws in the regulatory environment. Specifically, it recommends the following: (1) structural remedies are preferred over behavioral rules in curtailing the exercise of market power; (2) competition matters more than ownership; (3) there is a need to clarify the transmission planning objectives and to set up a formalized planning process; (4) the elimination of service area scheme in the telecommunications industry will make the industry more contestable; (5) network access and interconnection contracts must be decided by regulators if contracting parties fail to reach an agreement within a given time period (e.g.90 days).

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Table 1

Number of Telephones: 2002

Company	Installed	Percentage	Subscribed	Percentage
Bayantel	488,684	7.07	185,506	5.60
Digitel	618,271	8.94	389,967	11.78
ETPI	89,386	1.29	21,242	0.64
Globe	790,291	11.43	134,803	4.07
Islacom	693,978	10.04	73,491	2.22
Philcom	219,343	3.17	49,596	1.50
Piltel	473,341	6.85	76,716	2.32
PLDT	2,933,145	42.42	2,092,539	63.20
PT&T	189,169	2.74	38,573	1.17
Others	418,627	6.05	248,500	7.51
Total	6,914,235	100.00	3,310,933	100.00

*Note: PLDT figures include SMART data.

Source: National Telecommunications Commission.

Table 2

Cellular Mobile Telephone Subscribers: 2001-2003

Company	2001	2002	2003
Digitel			732,467
Extelcom	194,452	29,896	29,896
Globe	5,405,415	6,572,185	8,800,000
Islacom	181,614	181,614	*
Piltel	1,483,838	1,773,620	2,867,085
Smart	4,893,844	6,825,686	10,080,112
Total	12,159,163	15,383,001	22,509,560

*Islacom was merged with Globe. Islacom subscribers are included in Globe figure.

Source: National Telecommunications Commission

Table 3

NPC: Gross Energy Generation, 2001
(in Gigawatt hours)

Source	NPC-Owned	NPC-IPPs	Total
Oil-Based	2,360	6,724	9,084
Hydro	6,164	822	6,986
Geothermal	5,152	5,420	10,572
Coal	6,851	9,977	16,828
Total	*20,527*	*22,943*	*43,470*

Source: 2001 NPC Annual Report

Table 4

List of NPC Plants to be Privatized

Plant	MW	Type
Ambuklao	75	Hydro
Binga	100	Hydro
Pantabangan	100	Hydro
Masiway	12	Hydro
Tiwi	275	Geothermal
Makban	410	Geothermal
Pinamucan	110	Bunker
Panay	37	Diesel/Bunker
PB101	32	Diesel/Bunker
PB102	32	Diesel/Bunker
PB103	32	Diesel/Bunker
PB104	32	Diesel/Bunker
Bohol	22	Diesel
Loboc	1.2	Hydro
Limay	620	Diesel
Bataan Thermal	225	Bunker
Barit	1.8	Hydro
Cawayan	0.4	Hydro
Calaca	600	Coal
Masinloc	600	Coal
Angat	246	Hydro
Magat	360	Hydro
Bacman	150	Geothermal
Palipinon	193	Geothermal
Tongonan	113	Geothermal
Sucat	850	Bunker
Amlan	1.8	Hydro
Talomo	3.5	Hydro
Agusan	1.6	Hydro
Navotas	210	Diesel
Iligan I & II	114	Diesel
Manila Thermal	200	Bunker
Bataan Thermal	225	Bunker
Cebu II	54	Diesel
Aplaya	108	Diesel
Gen. Santos	22	Diesel

Source: Joint Congressional Power Commission

Table 5

TELEPHONE DISTRIBUTION BY REGION AS OF DEC. 2002

REGION	POPULATION	INSTALLED CAPACITY	SUBSCRIBED LINES	TELEDENSITY	
				INSTALLED	SUBSCRIBED
CAR	1,461,529	94,144	35,503	6.44	2.43
NCR	10,758,840	2,847,516	1,698,365	26.47	15.79
I	4,276,974	182,076	108,760	4.26	2.54
II	2,922,220	39,602	30,667	1.36	1.05
III	7,982,572	406,583	236,490	5.09	2.96
IV	11,904,461	1,118,707	513,907	9.40	4.32
V	4,919,499	135,422	66,701	2.75	1.36
VI	6,548,108	443,763	112,023	6.78	1.71
VII	5,750,685	457,709	173,355	7.96	3.01
VIII	3,899,553	165,035	43,352	4.23	1.11
IX	3,300,211	166,000	29,470	5.03	0.90
X	2,984,121	199,566	51,529	6.69	1.73
XI	5,523,366	431,541	133,497	7.81	2.42
XII	2,784,797	84,744	32,876	3.04	1.18
XIII	2,171,985	100,648	36,153	4.63	1.66
ARMM	2,287,349	41,179	8,015	1.80	0.35
TOTAL	**79,476,271**	**6,914,235**	**3,310,933**	**8.70**	**4.17**

Source: National Telecommunications Commission

Table 6

Philippine Telecommunications Service Market Structure

Type of Service	Market Players	Major Players
Local Telephone Service	76	PLDT
National Long Distance Service	11	PLDT
International Telephone Service	11	PLDT, Bayantel, Globe
Mobile Telephone Service	5	Smart, Globe
Paging Service	15	
Trunk Radio System Service	10	
Value-Added Service	156	

Source: National Telecommunications Commission

Table 7

Power Supply and Demand: 2001-2004
(In MW)

	2001	2002	2003	2004
Luzon				
• Demand	5,646	5,823	6,365	6,728
• Supply	8,523	10,223	10,521	11,086
Visayas				
• Demand	898	903	1,006	1,063
• Supply	1,377	1,377	1,424	1,520
Mindanao				
• Demand	953	995	1,166	1,278
• Supply	1,309	1,309	1,460	1,429
Philippines				
• Demand	7,497	7,721	8,537	9,069
• Supply	11,209	12,909	13,404	14,035

Source: National Economic and Development Authority, Medium-Term Development Plan, 2004-2010 (Manila: NEDA, 2004).