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Master's Thesis of Public Administration

**An Institutional Analysis on the
Impact of the Power Industry
Restructuring Program in the
Philippines**

**필리핀 전력산업 구조조정
프로그램의 효과에 대한 제도분석**

August 2016

Graduate School of Public Administration

Seoul National University

Global Public Administration Major

Rey Evince Rabara Valencia

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**Submitting a Master's Thesis of Public
Administration**

April 2016

**Graduate School of Public Administration
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June 2016

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ABSTRACT

An Institutional Analysis on the Impact of the Power Industry Restructuring Program in the Philippines

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The Philippines practices the geographic area franchise concept which obliges franchise holders to connect all households and other potential customers in their franchise areas, unless by doing so it will undermine the financial viability of the distribution utilities. The geographic area concession, which divides the country into area franchises, creates a monopoly supplier in each franchise area. This type of market arrangement has been rationalized by the theory of natural monopoly. The theory implies that long run average cost declines continuously by increasing the supply of electricity. Thus, dividing the market between two or more firms will mean an inefficient allocation of resources because the average cost of supply is higher for each firm. The rationalization of natural monopoly could no longer be justified in the generation sector when increased cost of constructing power generating stations shows that the real cost of power production exhibits decreasing

returns to scale. This means that relatively small generators such as those operating combined cycle gas plants can effectively compete against large generators such as those operating large-scale coal and nuclear plants. In the face of the disappearance of the natural monopoly characteristics of the industry, and the high Philippine electricity rates compared to those in neighboring countries, the regulatory regime had to be restructured. Republic Act 9136 (Electric Power Industry Reform Act) was approved on June 8, 2001 by the Philippine Congress “to ensure transparent and reasonable prices of electricity in a regime of free and fair competition and full public accountability to achieve greater operational and economic efficiency and enhance the competitiveness of Philippine products in the global market”

Energy is considered the life-blood of the economy. It is indispensable in achieving economic growth and critical in sustaining a nation’s progress and prosperity. Energy is an instrument from poverty reduction and social equity as it serves as an enabling factor to channel grassroots development with the delivery of the much needed public services to marginalized and disadvantaged sectors of our society.

The Philippine energy crisis in the 1990s and the push from international financial institutions such as World Bank and the ADB has led the Philippines to restructure its energy sector through the enactment of the Electric Power Industry Reform Act of 2001 (EPIRA). One of the objectives of EPIRA is to achieve the affordability of the supply of electric power and reasonable prices of electricity in a regime of free and fair competition. Alongside this objective are the institutional reforms to effectively implement the delivery of public service in terms of electricity, policy formulation to promote competition and to design the competition environment, formulation and adoption of transparent and progressive pricing mechanism to achieve full

cost-reflective tariff structure and implementation of social welfare programs for the benefit of the low-income electricity consumers.

The Philippine electric power industry has embarked on a reform journey to a direction it has not travelled previously. This journey requires the restructuring and privatization of its existing agencies and institutions, and the establishment of a new legal and regulatory apparatus. The ultimate goal of this journey is to create a price-based competition, incentive-based regulation, open access to transmission and distribution facilities, and to attract sufficient private investments to meet demand in the long-run and provide reliable supply to consumers.

It is for this reason that this paper looks into the situation of the Philippine energy sector almost a decade and a half years after the enactment of the EPIRA. It focuses on four aspects of the energy restructuring program: regulatory framework, competition, price mechanism and consumer welfare and protection. Furthermore, attention is given on how these four aspects contribute to social welfare.

Keywords: energy industry reform, regulatory framework, competition, price mechanism, social welfare

Student ID: 2014-23740

Acronyms Used

BOT	Build Operate and Transfer
DU	Distribution Utilities
EC	Electric Cooperatives
EPIRA	Electric Power Industry Reform Act
ERC	Energy Regulatory Commission
GDP	Gross Domestic Product
GRAM	Generation Rate Adjustment Mechanism
IEC	International Energy Consultants
IPP	Independent Power Producers
IRR	Implementing Rules and Regulations
MERALCO	Manila Electric Company
NEA	National Electrification Administration
NPC	National Power Corporation
NPM	New Public Management
PEMC	Philippine Electricity Market Corporation
PPA	Purchased Power Adjustment
PSALM	Power Sector Assets and Liabilities Management
RCOA	Retail Competition and Open Access
TRANSCO	National Transmission Corporation
WESM	Wholesale Electricity Spot Market

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Chapter I: Introduction

The Philippine energy crisis in the 1990s and the push from international financial institutions such as World Bank and the ADB has led the Philippines to restructure its energy sector through the enactment of the Electric Power Industry Reform Act of 2001 (EPIRA). One of the objectives of EPIRA is to achieve the affordability of the supply of electric power and reasonable prices of electricity in a regime of free and fair competition. Alongside this objective are the institutional reforms to effectively implement the delivery of public service in terms of electricity, policy formulation to promote competition and to design the competition environment, formulation and adoption of transparent and progressive pricing mechanism to achieve full cost-reflective tariff structure and implementation of social welfare programs for the benefit of the low-income electricity consumers.

However, the Philippine energy sector reform is of no excuse when it comes to the challenges it faces in the implementation. Among these challenges are the slow pace of privatization efforts due to complexity of structuring the sale contracts coupled with legal impediments in transferring and administering these contracts.

It took the 10th and 11th Congresses, with the latter conducting a special session immediately after the May 14 national election in 2001, to enact the highly controversial law that aimed to restructure and privatize the

power sector industry. The Electric Power Industry Reform Act of 2001 (R.A. 9136) came into being after seven years of hibernation, protests, lobbies, debates, consultations, and deliberations which had started in 1994.

After 14 years of implementation of the Electric Power Industry Reform Act of 2001 (Republic Act 9136), there is so much to be desired from its promised and potential reforms and improvements in the power industry and the lives of consumers. The privatization effort of the National Power Corporation (NPC) and its massive debts continues. The electricity rate used and paid by millions of consumers keeps rising. The mismanagement of electric cooperatives and their inexplicable losses persists.

This is to revisit the law that sought, among others, to; 1) privatize the government agency tasked to generate, transmit, distribute, and supply energy to the country, 2) unbundle the power sectors to identify which is inefficient and incurring losses, 3) create a Wholesale Electricity Spot Market (WESM) to make the transaction transparent, open and competitive, 4) reduce the power rates.

In June 2011, the Philippine President, Benigno Aquino III, signed into law the extension of the implementation of lifeline electricity rate (subsidy) for poor consumers for another 10 years. The wisdom of the R.A. 9136 was that the lifeline rate would be unnecessary after 10 years of the Act because the electricity rate would have been affordable even by poor

consumers. On the contrary, after 10 years of R.A. 9136, the Philippines has the highest power rate in Asia. Thus, it is important to review the law in light of the current situation, context and its history.

Historical Background of Philippine Energy Reform

The Philippine electric power industry used to be dominated by the National Power Corporation (NPC) in the generation sector. All generating plants owned by NPC and Independent Power Producers (IPPs) were restricted from directly connecting to the electric distribution utility. The Electric Power Crisis Act of 1993 (R.A. 7648) and the Expanded Build-Operate-Transfer (BOT) Financing Law of 1994 (R.A. 7718) allowed IPPs to deal directly with distribution utilities and bypass the NPC grid. Thus, generation has now become a competitive segment of the industry.

After emerging from the crippling power crisis that occurred in the early 1990s, the Philippine government embarked on an industry privatization and restructuring program envisioned to ensure the adequate supply of electricity to energize its developing economy. This restructuring scheme is embodied in Republic Act No. 9136, the Electric Power Industry Reform Act (EPIRA).

Enacted on 08 June 2001, the EPIRA seeks to ensure quality, reliable, secure and affordable electric power supply; encourage free and fair competition; enhance the inflow of private capital; and broaden the ownership

base of power generation, transmission and distribution. The EPIRA restructured the power industry by organizing it into four sectors: generation, transmission, distribution and supply; and introducing the following major reforms: 1) restructuring of the entire power industry to introduce competition in the generation sector; 2) change from government to private ownership through privatization; and 3) introduction of a stable regulatory framework for the electricity sector.

In implementing the restructuring of the power sector, the EPIRA created the Power Sector Assets and Liabilities Management (PSALM) Corporation, a wholly-owned and –controlled government entity, to take over the ownership of all existing generation assets of the National Power Corporation (NPC), independent power producer (IPP) contracts, real estate, and all other disposable assets including the transmission business of the National Transmission Corporation (TransCo). By the same token, PSALM assumed all outstanding obligations of NPC arising from loans, issuances of bonds, securities, and other instruments of indebtedness. The principal purpose of PSALM, as mandated by the EPIRA, is to manage the orderly sale and privatization of these assets with the objective of liquidating all of NPC's financial obligations in an optimal manner.

Formally established on 26 June 2001, PSALM began operations in 01 July 2001 with the following functions; (1) structure the sale, privatization or disposition of NPC assets and IPP contracts and/or their energy output

based on such terms and conditions that will optimize the value and sale prices of these assets; (2) Liquidate NPC's stranded contract costs using proceeds from sales and other properties, including proceeds from the Universal Charge; (3) Restructure existing loans of NPC; and (4) Collect, administer and apply the NPC portion of the Universal Charge (EPIRA, 2001).

PSALM has 25 years from the effectivity of the EPIRA to fulfill its twin mandates unless otherwise extended by law. After the end of its corporate life, all assets it holds, all moneys and properties belonging to it, and all its outstanding liabilities will revert to and be assumed by the National Government.

Furthermore under the EPIRA, part of NPC would be retained as the National Transmission Corporation (TRANSCO) which is organized as a government-owned monopoly in the transmission sector. However, the government plans to bid a minority share of TRANSCO to strategic investors with experience in the electricity transmission business, provided that Congress approves TRANSCO's franchise. In the distribution sector, private investor-owned utilities dominate the electricity supply business in the major urban centers, while electric cooperatives supply electric service to rural areas connected to the grid. Figure 1 illustrates the pre-EPIRA industry structure.

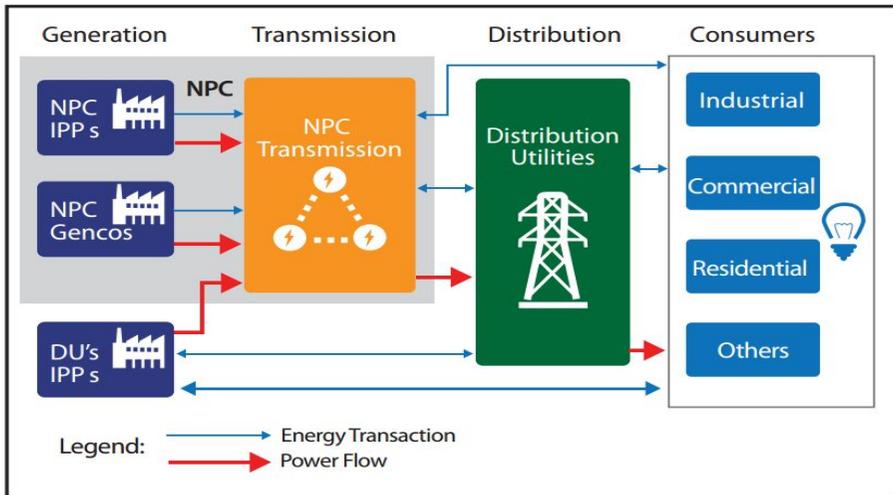


Figure 1 Pre-EPIRA Industry Structure¹

The Philippine power industry, which has just emerged from a virtually crippling energy crisis, continues to face major challenges that it will have to hurdle if it is to provide consumers a reliable and secure electricity supply at affordable prices. The privatization of the sector is seen as an appropriate response to these challenges. The strategy is also expected to attract substantial investments in the energy sector to fend off a looming power crisis.

The privatization of the assets of the National Power Corporation is anticipated to raise this needed capital. For one thing, the new owners of the privatized assets will have to undertake improvements in their assets to ensure that they remain competitive and viable. For another, the government will be

¹ Illustration sourced from KPMG Global Energy Institute (2013). *The Energy Report – Philippines. Growth and Opportunities in the Philippine Electric Power Sector*

able to use the proceeds from the sold assets to settle the debts of National Power, thereby helping reduce the country's consolidated public sector deficit.

Seen as the key to dismantling the dominance of a few industry players that have dictated electricity prices for so many years, the privatization of the generation assets is programmed to promote competition in the sector. EPIRA limits the ownership of generation assets by a single owner up to only 30% of the generating capacity within a single grid. This means that in any single grid, there can be at least four different owners of generation assets to allow competition. The privatization of the generation assets, majority of which are owned by NPC, will help bolster competition as specified in the EPIRA. This will also usher in a new regime where retail competition will prevail to enable electricity consumers to enjoy the benefits of a restructured electricity industry.

Ultimately, the privatization of the Philippine power industry will significantly contribute to ending the inherently inefficient monopoly system for generating and selling electricity by providing consumers the “choice of power” and the “power of choice.”

Electricity Consumption by Grid and Use

In order to gain a perspective on the impact of the power sector reforms on the national economy, the electricity kWh-consumption for the year 2014 has been broken down by the three main grids (Luzon, Visayas, and

Mindanao) and use (residential, commercial, industrial and others). Figure 2 shows the high electricity consumption within the Luzon grid relative to that in the Visayas and Mindanao grids.

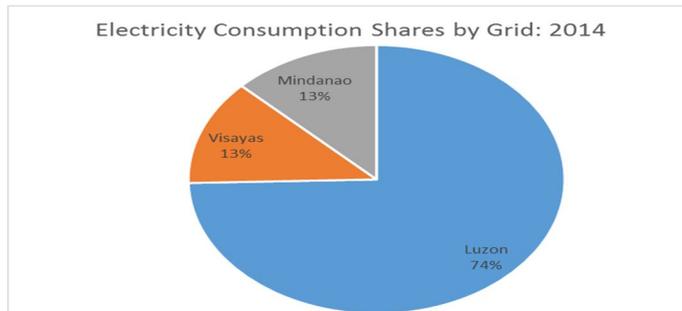


Figure 2 Electricity consumption shares by grid: 2014

In the 2014 data, Luzon accounts for over three-fourths of the national electricity consumption. Although the growth rate in electricity consumption over the past ten (10) years has been slightly higher in the Visayas (4.69% growth rate) and Mindanao (3.34% growth rate) than in Luzon (3.33% growth rate), the Luzon electricity sector impacts tend to dominate the national impacts for many years.

As illustrated in Figure 3, residential end-use accounts for about a third of total electricity sales. This may include the consumption by informal production units and some small manufacturers and service entities. In this paper, the analysis of the welfare impacts of the power sector reforms on residential consumers focuses on this electricity end-use.

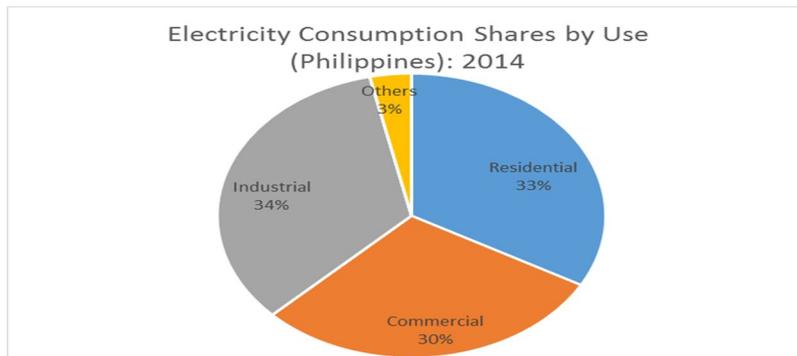


Figure 3 Electricity consumption shares by use (Philippines): 2014

Power Pricing in the Philippines

The Philippines' electricity tariffs are said to be among the highest in the world. In a study prepared by International Energy Consultants (IEC) in June 2012² and commissioned by the Manila Electric Company (Meralco), Meralco's³ average retail tariffs, pegged at US\$0.2026 per kilowatt-hour (kwh) or PhP8.82⁴, are ranked ninth highest in the world and the second highest in Asia (next only to Japan). The biggest component of this tariff is the generation component, at 65 percent of the overall retail tariff.

² International Energy Consultants, "Regional Comparison of Retail Electricity Tariffs Executive Summary," June 2012.

³ Meralco is the largest distribution utility in the Philippines and distributes power throughout Metro Manila and neighboring provinces.

⁴ US\$1=Php43.54 as at January 2012.

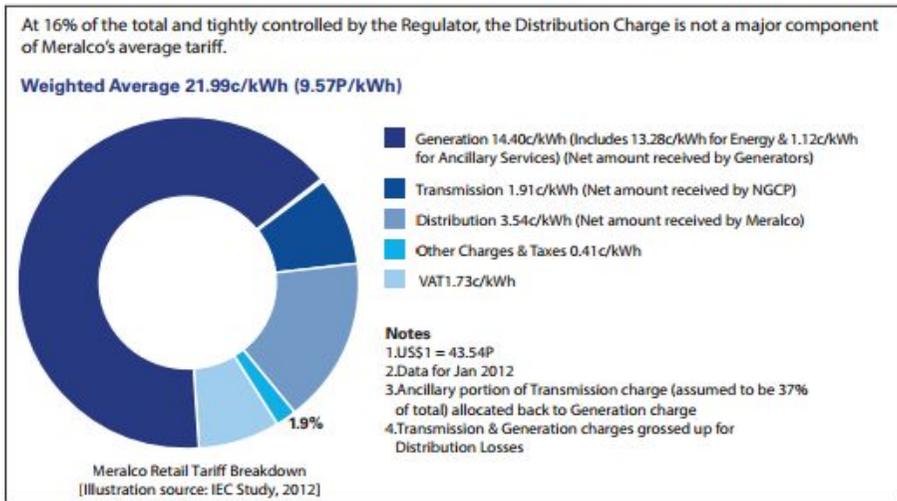


Figure 4 Meralco Retail Tariff Breakdown

Meralco's cost of generation supply was US\$0.1440/kwh or PhP6.2697/kwh in January 2012. This reflects the blended costs of supply from IPPs, its transition supply contracts (TSCs) with NPC, and the Wholesale Electricity Spot Market (WESM), and its costs for ancillary services.

The NPC component of Meralco's total cost of supply has averaged PhP5.6885/kwh. The WESM component of Meralco's total costs of supply has averaged US\$0.1082/kwh or PhP4.715/kwh in 2012. At peak, however, average WESM tariffs increased to as high as US\$0.2014 or PhP8.77/kwh (the average clearing price in the second quarter of 2012). Meralco's total costs (excluding ancillary services) are approximately US\$0.1328/kwh.

Many complain this ostensibly higher cost of supply compared to our Asian neighbors. The IEC points out, however, that this means that in the Philippines, our power supply tariffs reflect actual costs of supply. Our Asian neighbors, Thailand, Indonesia, Malaysia, Korea and Taiwan, on the other hand, enjoy government subsidies that reduce their average tariffs. These subsidies take the form of government-imposed tariff and fuel cost caps and direct government subsidies for utility losses, including forex losses, which the IEC considers “bad economic practice and ultimately unsustainable.”

Total Energy and Self-Sufficiency													
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2012	
Indigenous Energy (MTOE)	19.032	17.738	19.433	19.935	20.436	20.855	21.074	21.598	22.625	23.075	22.979	23.707	24.161
Oil	0.056	0.096	0.619	0.528	0.478	0.610	0.559	0.625	0.715	0.962	0.922	0.842	0.716
Natural Gas	0.009	0.115	1.449	2.208	2.039	2.701	2.529	3.033	3.192	3.215	3.028	3.269	3.210
Coal	0.644	0.586	0.803	0.980	1.311	1.521	1.216	1.795	1.905	2.474	3.510	3.632	3.879
Hydro	1.942	1.769	1.751	1.959	2.140	2.088	2.475	2.132	2.451	2.437	1.943	2.415	2.553
Geothermal	9.998	8.980	8.809	8.447	8.843	8.516	9.000	8.785	9.222	8.879	8.539	8.550	8.815
Biomass	6.383	6.192	6.002	5.813	5.625	5.417	5.289	5.183	5.081	4.977	4.925	4.887	4.847
Wind/Solar	-	-	-	-	-	0.002	0.005	0.005	0.005	0.006	0.005	0.008	0.007
Biofuels	-	-	-	-	-	-	0.001	0.040	0.054	0.125	0.107	0.104	0.134
Imported Energy (MTOE)	19.437	19.207	17.545	17.232	16.975	16.542	14.255	15.925	16.603	15.176	16.311	16.089	18.740
Oil	15.846	15.149	14.484	14.188	13.592	13.029	10.452	12.318	12.111	11.550	12.690	11.876	13.144
Coal	3.591	4.058	3.061	3.044	3.383	3.513	3.802	3.596	4.451	3.593	3.513	4.094	5.437
Biofuels	-	-	-	-	-	-	0.001	0.011	0.041	0.033	0.108	0.119	0.159
Total Energy (MTOE)	38.469	36.945	36.978	37.167	37.411	37.397	35.329	37.523	39.228	38.251	39.290	39.796	42.901
Self Sufficiency, %	49%	48%	53%	54%	55%	56%	60%	58%	58%	60%	58%	60%	56%

Figure 5 Total Energy and Self-Sufficiency (in Million Tonnes of Oil Equivalent, MTOE)

Another significant contributing factor to the high supply cost is the intrinsically high cost of producing and delivering electricity in Luzon, and the Philippines generally, because of the country’s dependence on imported fossil fuels. As of end-2012, the Philippines’ imports 18.74 MTOE⁵ of oil,

⁵ Million Tonnes of Oil Equivalent

coal and biofuels for power plants which puts its energy self-sufficiency status at 56 percent.

Furthermore, imported oil, biofuels and coal plants comprised 44 percent of the energy mix. Fuel for these plants is paid at full international market prices. In addition, domestic gas plants (which comprise approximately 19 percent of the energy mix as of end-2012) are supplied indigenous natural gas at prices which are pegged to international prices. The IEC states that this state of affairs is unlikely to change in the near future, absent the discovery of cheap domestic fossil fuel alternatives.

According to the IEC, however, the Philippines' tariffs which are driven by supply costs is "sound economic policy". Indeed, a fully cost-reflective tariff structure insulates consumers from price shocks and protects investors and developers from cost recovery risks.

Organizational Structure of Electric Power Industry

The restructured electric power industry is composed of four sectors: generation, transmission, distribution, and supply. Figure 6 illustrates the organization of these four sectors.

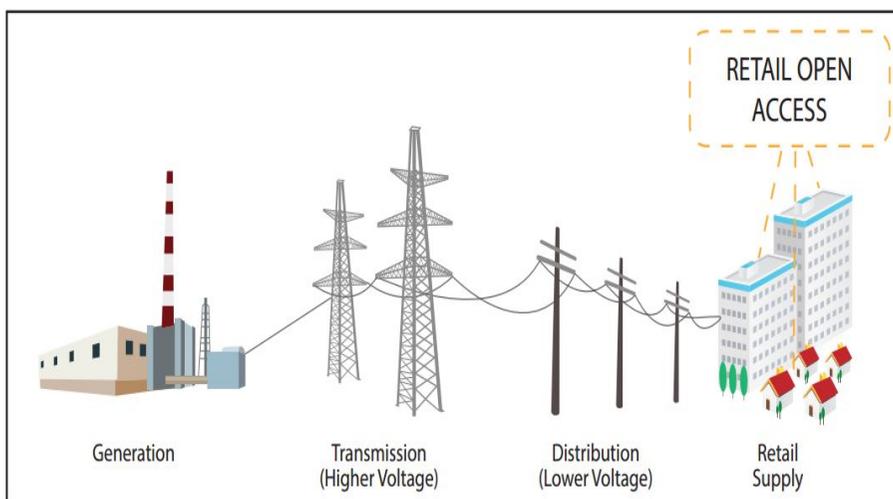


Figure 6 Organization and Operation of Electric Power Industry⁶

The first sector in the electric power industry is the generation sector. Generation of electricity refers to the production of the electricity by a generation company or co-generation facility. The generation sector is composed of generation companies, co-generation companies, and independent power producers. The generation of electric power shall be competitive and open. Upon implementation of retail competition and open access, the prices charged by a generation company for the supply of electricity shall not be subject to regulation by the ERC except as otherwise provided in EPIRA. Pursuant to the objective of lowering electricity rates to end-users, sales of generated power by generation companies shall be value added tax zero-rated.

⁶ Illustration sourced from KPMG Global Energy Institute (2013). *The Energy Report – Philippines. Growth and Opportunities in the Philippine Electric Power Sector*

A generation company is required to obtain an authorization from ERC to operate in this sector. Generation is relatively a capital-intensive and energy intensive activity. During the power crisis in the early 1990s, NPC augmented the country's energy generating capacity by entering into supply agreements with Independent Power Producers (IPPs). However, the IPP contracts contained "take-or-pay" provisions which form part of the fixed liabilities of NPC and the distribution utilities under a situation where electricity demand is weak (i.e. during economic downturn). The consumers pay for the "take-or-pay" provisions in the IPP contracts under the Purchased Power Adjustment (PPA) component of electricity bill. The recovery of this cost through the imposition of PPA to all end-users would negate the downward impact of industry restructuring on electricity prices.

A review of IPP contracts negotiated in the 1990s found five contracts to be defective and prejudicial to public interest. In February 24, 2003, ERC issued an order⁷ replacing PPA with Generation Rate Adjustment Mechanism (GRAM). GRAM differs from PPA because it excludes transmission component, system loss, and franchise tax. It requires quarterly review before the cost is passed on to the consumers. Any change of recovery of fixed costs of generation must pass through a petition and subject to approval by ERC. However, unlike PPA, GRAM provides a 3% carrying charge over and above the 91-day Treasury bill rate, provided that the combined effect should not

⁷ *ERC Case No. 2003-44, In the Matter of the Adoption of the Generation Rate Adjustment Mechanism (GRAM) and Incremental Currency Recovery Adjustment (ICERA) dated February 24, 2003*

exceed 12%. Since ERC has not invalidated previous IPP contracts (for lack of legal basis), GRAM is not radically different from PPA, and the detrimental impact of take-or-pay provision of IPP contracts on the electricity bills of consumers remains.

The second sector in the electric power industry is the transmission sector. Transmission of electricity refers to the conveyance of electricity through the high voltage backbone system which includes high voltage power lines that carry electricity from power stations via large transmission towers, to substations in towns and cities.

The transmission sector is a regulated common electricity carrier business and subject to the ratemaking powers of ERC. Under the EPIRA, the generation assets of NPC will be privatized. The transmission function of NPC will be retained under a new corporate structure to be called the National Transmission Corporation (TRANSCO). TRANSCO is wholly owned by the PSALM Corporation. TRANSCO will assume the following transmission function of NPC: planning, construction and centralized grid operation and maintenance of high-voltage transmission facilities, including grid interconnections, ancillary and other allied facilities. TRANSCO will need a franchise from Congress before it can sell a minority stake to a strategic private investor which is most likely to be a foreign investor with experience in the transmission business. This sector, through TRANSCO, shall provide

open and non-discriminatory access to its transmission system to all electricity users.

The third sector in the restructured electric power industry is the distribution sector. Distribution of electricity refers to the conveyance of electric power by a distribution utility through its distribution system. Distribution system refers to the system of wires and associated facilities belonging to a franchised distribution utility extending the delivery points on the transmission or sub-transmission system or generator connection and the point of connection to the premises of the end-user. A distribution utility have the obligation to supply electricity in the least cost manner to its captive market. To achieve economies of scale in utility operations, distribution utilities may pursue structural and operational reforms. Such actions shall result in improved efficiencies, reliability of service, reduction of costs and compliance to the performance standards. Distribution utilities shall provide universal service within their franchise, over a reasonable time from the requirement thereof, including unviable areas, as part of their social obligations, in a manner that shall sustain the economic viability of the utility.

Distribution of electricity to end-users is a regulated common carrier business. Distribution utilities must secure a national franchise and are subject to regulation by ERC. Distribution utilities are composed of private utilities, electric cooperatives, LGU-operated utilities, and other duly authorized entities. Distribution utilities can merge, consolidate, integrate, and enter into

management contract, bulk procurement and joint ventures, subject to ERC guidelines. Being a regulated sector of the Philippine electric power industry, distribution utilities cannot change the terms and conditions of its services to end-users without approval by the ERC. The distribution sector is composed of 17 private investor-owned electric utilities, 119 electric cooperatives, and 10 local government owned or operated electric utilities. MERALCO is the most dominant player in the distribution sector.

Lastly, the supply of electricity means the sale of electricity by a party other than a generator or a distributor in the franchise area of a distribution utility using the wires of the distribution utility concerned. Prices to be charged by suppliers for the supply of electricity to the contestable market shall not be subject to regulation by the ERC. Electricity suppliers shall be subject to the rules and regulations concerning abuse of market power, cartelization, and other anti-competitive or discriminatory behavior.

Supply of electricity to end-users is a competitive and contestable market. An electricity supplier⁸ has to obtain a license from ERC to engage in the selling, brokering or marketing of electricity in the competitive or contestable market. The contestable market refers to electricity end-users with a monthly average peak demand of at least 750 kilowatts over the preceding 12 months. Subsequently, ERC will evaluate the performance of the market, and may reduce the threshold level until it reaches the household demand

⁸ sometimes called electric service provider, ESP; public electricity supplier, PES; or retail electric provider, REP

level. An electricity supplier shall not be required to secure a national franchise. The prices to be charged by electricity suppliers for the supply of electricity in a competitive environment is market-driven and shall not be subject to regulation by ERC.

In addition, the Wholesale Electricity Spot Market (WESM) as established by the Department of Energy (DOE) provides the mechanism for identifying and setting the price of actual variations from the quantities transacted under contracts between sellers and purchasers of electricity. WESM is managed by a DOE-constituted market operator, with equitable representation from electric power industry participants. Initially, WESM will be under the administrative supervision of TRANSCO. Eventually WESM will be managed by an independent entity. WESM participants will be composed of generating companies, distribution utilities, suppliers, bulk consumers/end-users, and other similar entities authorized by ERC.

In summary, generators convert primary energy source (such as oil, coal and hydro) as well as renewable source (such as solar, wind, and ocean) into electricity. Transmission utilities transport electricity produced by generators through high-voltage wires. Distribution utilities transform high-voltage electricity to lower voltage wires with the goal of supplying individual customers. Thus, the major product produced by the industry is electric power and its complementary services consist of transmission services, distribution

services, and suppliers' services that involve selling, brokering, marketing or aggregating electricity to the end-users.

The market's structures and performances after the start of the energy restructuring reform can be measured in different ways. However, the evolution of electricity prices, is presumably, the most important indicator. A desirable outcome of the electricity market is the achievement of a lower price and a price convergence through wholesale and retail competition. The major expectation of final customers, with respect to the industry restructuring of electricity markets, was that prices would drop substantially. However, there are many reasons for price increase and outside competition effects which require more in-depth investigation. Hence, this paper, after having examined the characteristics of the markets and market's structures, focus will be put on price changes.

With all these reforms in the energy sector, this paper aims to give light whether the government fails to achieve the objectives of EPIRA particularly on the affordability of the supply of electric power and reasonable prices of electricity in a regime of free and fair competition. Specifically, this paper turns its attention to the social welfare benefits of the reforms by looking into the four aspects: regulatory framework, competition, pricing mechanism and social welfare and protection.

Chapter II: Review of Related Literature

The Philippines practices the geographic area franchise concept which obliges franchise holders to connect all households and other potential customers in their franchise areas, unless by doing so it will undermine the financial viability of the distribution utilities. The geographic area concession, which divides the country into area franchises, creates a monopoly supplier in each franchise area. This type of market arrangement has been rationalized by the theory of natural monopoly. The theory implies that long run average cost declines continuously by increasing the supply of electricity. Thus, dividing the market between two or more firms will mean an inefficient allocation of resources because the average cost of supply is higher for each firm. The rationalization of natural monopoly could no longer be justified in the generation sector when increased cost of constructing power generating stations shows that the real cost of power production exhibits decreasing returns to scale. This means that relatively small generators such as those operating combined cycle gas plants can effectively compete against large generators such as those operating large-scale coal and nuclear plants. In the face of the disappearance of the natural monopoly characteristics of the industry, and the high Philippine electricity rates compared to those in neighboring countries, the regulatory regime had to be restructured. Republic

Act 9136 (Electric Power Industry Reform Act) was approved on June 8, 2001 by the Philippine Congress “to ensure transparent and reasonable prices of electricity in a regime of free and fair competition and full public accountability to achieve greater operational and economic efficiency and enhance the competitiveness of Philippine products in the global market”.

The principles of neo-liberalism have been spreading the whole globe with the aid of bureaucrats, institutions and scholars. The basic motto behind this idea is “private property ensures efficiency and lower costs” and this motto, in line with neo liberal creed, wandered around the world and permeate into every national economic agenda. This contagious movement have increasingly leaped from one sector to another and commons and public utility sectors have fall over into the range of neo-liberal principles one by one. These principles of neo-liberalism had extended its boundaries beyond the energy sectors. (Hagen and Halvorsen, 2009)

The scholars of neo-liberalism (Hayek 1935, Friedman 2002, and Rand 1966) argues that private ownership is more efficient in providing private goods in competitive markets. Viewing competition as the critical issue, the neo-classically trained are inclined to favor privatization insofar as it represents a move toward competition under conditions when markets should be expected to work efficiently.

State government administrators face multiple challenges in building the governing capacity to deal effectively with anticipated (and unanticipated) demands of the new century. Governing capacity demands effective strategic management. Strategic management builds upon competency in analytic and management skills. Some of the most innovative public administration thinking has provided rationales for a so-called New Public Management and alternative approaches to administration and governing (Kaboolian, 1998).

The New Public Management (NPM) reforms use market forces to hold the public sector accountable and the satisfaction of preferences as the measures of accountability. In order for this system to proceed, certain conditions, such as the existence of competition, must exist and information about choices must be available. Reforms that promise to reinvent government by way of focusing on results and customer satisfaction as opposed to administrative and political processes fail to account for legislative self-interest.

New Public Management is viewed as a more efficient means of attaining the same product or service; however, citizens are viewed as customers and public servers/administrators hold the title of Public Manager. Under NPM, Public Managers have incentive-based motivation and have greater discretion (as opposed to a regulated outcome per scenario, regardless of situation). NPM relies heavily on disaggregation, customer satisfaction, entrepreneurial spirit, and the "Rules of the Game." Public Managers under

the New Public Management reforms can provide a range of choices from which customers can choose, including the right to opt out of the service delivery system completely.

Due to its advancement, features such as outcome, budgeting, competitors, commercialization, and privatization receive additional attention than the exclusive components of particular civil service.

The momentum for privatization and restructuring in the Philippine power sector came in the wake of a 1994 World Bank study proposing radical reforms in the industry. The proponents⁹ of the EPIRA argue that the competitive electricity market will offer customers and industry participants a range of benefits. Most of the benefits accrue from the downward pressure on electricity prices as industry participants compete to secure purchase of their electricity and services. Other benefits ensuing from the introduction of a competitive electricity market include the following but not limited to:

- Cheaper electricity. Cheap electrical energy increases the attractiveness of a region as a site for new industry and business opportunities. Lowering production costs for energy intensive customers will allow them to re-invest more profits back into their businesses.

⁹ Authors of Philippine House Bill No. 8457 and Philippine Senate Bills No. 1712, 1621, 1943 and 2000

- Pricing is cost reflective, rather than a set tariff. Price signals drive the competitive market, encouraging industry participants to minimize the cost of supplying electricity to customers.
- Cost minimization. Results from the pressure on industry participants created by increased competition in selective sectors, third party access arrangements and independent economic regulation of the natural monopoly functions.

Ernst (1994) suggests that ‘the outcomes for consumers in general have been mixed’ and that ‘low income consumers have been affected more adversely than the generality of consumers’. This leads him to conclude that, while privatization of the utilities cannot be dismissed as ‘an unmitigated disaster’ (as critics have often claimed), nor is it the case that consumers have benefited (as the Government claimed they would) through ‘lower prices and better services’.

Florio (2013) found some evidence that the implementation of the reforms is correlated to an increasing probability that the respondents experience difficulties in paying their bills for utilities.

The regulatory framework that has been built to address the issue of social affordability has typically taken the weak form of some ‘universal service obligations’ for the incumbent, or of special provisions for tariffs in the case of the poor and vulnerable consumer.

A correlation between utility reforms and poverty may arise because of four trends. First, privatization may lead to higher average prices for households, either because of the need to cover the costs of previously subsidized public enterprises or because of the higher profit margins of the privatized provider and of the entrants. Second, regulation may impose higher quality standards, which in turn imply higher service costs passed to consumers. Third, cross-subsidies among types of users are decreased by tariff rebalancing. Eventually, connection rates may increase, as metering is more adequate, illegal connections are no longer ignored by providers, and so on. The burden for the poor resulting from these changes may be considerable. (Florio, 2013)

Without strong competitive pressures, the privatization and liberalization reforms are unlikely to deliver lower prices to the lower end of users and may possibly have the opposite effect if not counteracted by regulation. In fact, the removal, after privatization, of cross-subsidies that favored low users and unbundling – seen as the first step of market opening – may have benefited other users, when combined with liberalization at the upper end of the market. Competition is not necessarily beneficial to the poor if tariff structures are regressive and if switching between suppliers is affected by errors correlated to social vulnerability.

Privatization, Affordability and Reasonable Prices, and Free and Fair Competition

This section aims to provide in depth definition of privatization, affordability and reasonable prices, and the concept of free and fair competition. It also aims to provide information on how these three concepts are operationally used in this study and how these concepts relate to each other.

Privatization

The EPIRA defined privatization as the sale, disposition, change and transfer of ownership and control of assets and IPP contracts from the Government or a government corporation to a private person or entity¹⁰. This legal definition of privatization as embedded in the EPIRA shared the same though with that of other international organizations which focuses on the transfer from the public to the private sector of the equity interest in public properties, and is conventionally measured in terms of the reduction in the share of State-owned enterprises in gross domestic product (United Nations, 1999; OECD).

Starr (1989) attempts to clarify the meaning of privatization in three aspects – privatization as an idea, privatization as a theory and rhetoric and privatization as political science. Privatization as an idea came primarily to

¹⁰ Section 4 (pp) of the Electric Power Industry Reform Act

mean two things: (1) any shift of activities or functions from the state to the private sector; and (2) more specifically, any shift from public to private of the production of goods and services. Four types of government policies can bring about such a shift:

1. The cessation of public programs and disengagement of government from specific kinds of responsibilities (“implicit privatization”) or, at a less drastic level, the restriction of publicly produced services in volume, availability or quality, leading to a shift by consumers toward privately produced and purchased substitutes (also called “privatization by attribution”);
2. The transfer to private ownership of public assets, including sales of public land, infrastructure, and enterprises;
3. The financing of private services – for example, through contracting out or vouchers – instead of direct government service production; and
4. The deregulation of entry by private firms into activities that were previously treated as a public monopoly.

The normative theories justifying privatization as a direction for public policy draw their inspiration from several different visions of a good society. By far, the most influential is the vision grounded in laissez-faire individualism and free-market economics that promises greater efficiency, a smaller government, and more individual choice if only we expand the

domain of property rights and market forces. Another perspective sees privatization as a political strategy for diverting demands away from the state and thereby reducing government “overload”.

In the political context, privatization of state-owned enterprises often means denationalization – a transfer of control to foreign investors or managers. Since state ownership often originally came about in an act of national self-assertion, privatization appears to be a retreat in the face of international pressure. The more dependent a nation to foreign investments, the greater the likelihood that privatization will raise the prospect of diminished sovereignty and excite the passions of nationalism.

The privatization objective in promoting competition is supported by the International Labour Organization (2003) which discusses privatization in its narrowest sense a way being used to describe the sale of public assets to the private sector, but it has also been linked to a reduced regulatory role of government, linked to policies of liberalization and deregulation. In some cases, de-regulation was driven by privatization needs: the state wanted to sell its electric utility investment and changed the rules (de-regulation) to make the electric industry more palatable for potential investors, thus raising the price it could expect from the sale. (Philipson and Willis, 1999)

In this study, the privatization is operationally used as the transfer of ownership and control of assets through outright sale (in the case of

generating power plants) and the appointment of administrator (in the case of IPP contracts) from the Government to the private person or entity. This study focuses on the privatization of generating and transmission sector of the power industry. Although the Philippine Government is continuously moving forward in privatizing other sectors of the power industry which may have direct or indirect effect on affordability of the supply of electric power, it is beyond the scope of this study to provide analysis on such sectors.

Affordability and Reasonable Prices

Rouse (2014) defined affordability and reasonable price as the price point for a good or service that is fair to both parties involved in the transaction. This amount is based upon the agreed-upon conditions, promised quality and timeliness of contract performance. In government contracting, a fair and reasonable price is subject to both statutory and regulatory limitations.

Price is probably the domain of public utility practice of most immediate importance to consumers. The question of price is significant in any instance of producer-consumer interaction, but this is particularly so in areas of natural monopoly, where there is an ability to charge monopoly prices – either directly through raising tariffs or indirectly through attenuating service quality – independent of consumer demand and conventional market forces. (Ernst, 1994)

The outcomes for consumers in general, along the four key dimensions of prices, debt and disconnection, consumer protection and consumer representation, appear to have been mixed. For the average consumer, privatization has been the proverbial “curate’s egg”, with a gain in one area seemingly offset by a loss in another (Ernst, 1994). There are clear indications, however, that low income consumers have been affected more adversely than the generality of consumers. This has primarily been because of rises in electricity tariffs, in conjunction with a failure to recognize the particular needs of low-income households in the formulation of service standards.

In the public marketing of the utility privatization program, the Government regularly drew attention to the way that domestic consumers would benefit through lower prices for utility services. In this research, the pricing outcomes for domestic consumers in the electricity sector will be reviewed.

Affordability has become a sensitive issue in the recently liberalized electricity market. The EPIRA promised energy at a reasonable rate, but the definition of ‘reasonable’ is still unclear.”

Free and Fair Competition

There is a debate in the privatization literature on the relative importance of competition policy versus ownership change. Vickers and

Yarrow (1991) have argued that competition can shape managerial incentives better because it reduces the market share of inefficient firms and facilitates performance comparisons. On the other hand, Shleifer and Vishny (1994) have argued that so long as politicians are in control, state-owned firms will be characterized by political interference.

The utility privatization program is premised centrally on a form of ‘competitive Utopianism’ (Ernest, 1994). An intuitive belief in the emergence and efficacy of competition in the utilities industries. The advent of competitive forces into the erstwhile monopoly domains of utilities – gas, electricity, and water supply, will open up new horizons for industry efficiency and customer sovereignty, and ultimately eliminate the need for external regulation altogether.

In the power industry, competition is being created at two levels: wholesale (generation) and retail (distribution). In every case where a nation de-regulated its electric industry, its goal was to produce competition at the wholesale level, basically by allowing different companies to own generation and compete against one another in the sale of bulk power. In addition, governments often wished to promote competition at the retail level, meaning that individual consumers would have the ability to choose from among several local retail suppliers of power. (Philipson and Willis, 1999)

Competition is the process by which rival businesses strive to meet customer needs by developing and offering desirable goods and services on the most favorable terms. Competition spurs ongoing productivity growth. For the most part, more competitive markets lead to greater efficiencies in the use of scarce resources. The benefits of competitive markets include lower resource costs and overall prices, better services and more choice for consumers and businesses, stronger discipline on businesses to keep costs down, faster innovation and deployment of new technology, and better information allowing more informed consumer choices.

Markets characterized by more competition, with more players, more dynamic entry and exit, and more intense rivalry for customers tend to deliver better market outcomes. These outcomes include lower prices and better access to services for consumers, including businesses that rely on these products as inputs for their own enterprises. It is also important to ensure that domestic production is internationally competitive, and, can, therefore, generate increased exports, foreign exchange, jobs and industrial growth. The introduction of competition – or indeed even the prospect of increased competition – can have a significant and immediate impact on prices.

However, competition is often constrained, for various reasons (Ellis and Singh, 2010). Problems such as market dominance and anti-competitive practices are very common and competition authorities have an important role to play in monitoring, publicizing and tackling such behavior.

It is also clear, however, that the role of the state is very important in determining competition and market outcomes – perhaps more important than the behavior of business itself. The influence of the state can take various forms: regulation; state ownership and privatization; price controls or subsidization; other policy mechanisms such as import protection or industrial policy; or corrupt business deals and ownership by individual politicians or their families ((Ellis and Singh, 2010).

Free market reforms involve changes in governmental policy aimed at bringing more freedom to the marketplace. This is generally accomplished by “reducing the role of the authorities, increasing reliance on the price mechanism rather than controls, establishing or strengthening market institutions, and integrating the country into the world economy” (Marer, 1991).

Greater competition will create downward pressures on cost and prices, and ensure that the customer, not the producer nor the distributor, comes first.

Benefits of Electrification

The energy crisis that occurred in the 1970s imposed a substantial cost to the Philippine economy – Gross Domestic Product (GDP) declined. The scrapping of the Bataan Nuclear Power Plant and the abolition of the

Department of Energy by the Aquino regime were significant causes of the power blackouts in the early 1990s. The electricity crisis of the early 1990s led to high power costs and was an important factor in the loss of international competitiveness of the country's export products. Sicat (2002) argued that the Bataan Nuclear Plant could have reduced government reliance on petroleum supply and could have replaced aging thermal-powered and coal-powered plants. The retention of DOE could have provided institutional continuity and retained a core of trained technicians who were responsible for implementing a highly respected energy development program that was then considered a good model of power sector adjustment during the energy shocks of the 1970s.

The growth of the economy drives the demand for electricity. The historical average energy-to-GDP elasticity¹¹ from 1991 to 2012 is 0.68¹². This means that an economy with an annual rate of GDP growth of 6% will drive energy demand at an average of 4.10%. Thus, a government that successfully implements a program to spur economic growth will drive up the demand for electricity.

¹¹ *The percentage change in energy supply to achieve one percent change in national GDP. Calculated as the ratio of growth primary energy demand over GDP growth. (DOE, 2012)*

¹² *The computation for historical average of energy-to-GDP excludes the values in years 1992 and 1998 due to effects of the Global Recession in early 1990s and Asian Financial Crisis in 1997*

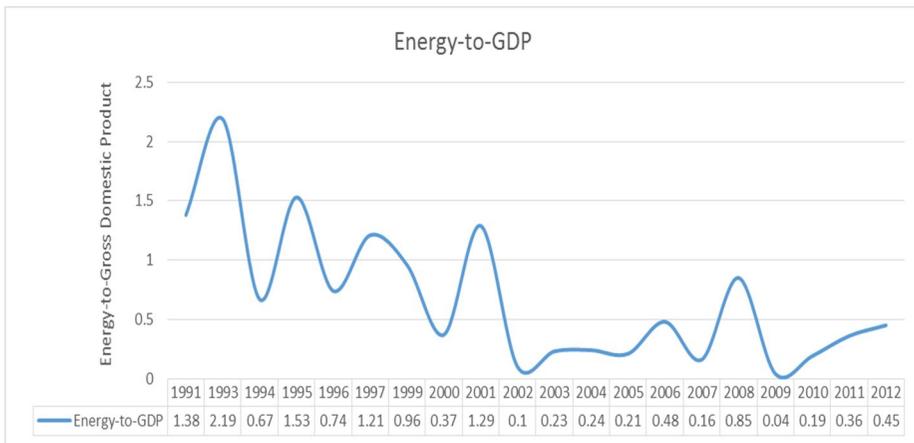


Figure 7 Energy-to-GDP (DOE, 2012)

Rural energy projects provide services that cater to the basic needs which confer indirect benefits on other citizens. The externality relates to the external benefits accruing to the society when there is an improvement in the circumstances of individuals or families belonging to the low-income groups (Evans and Kraft, 1997). Beneficial externalities include the avoidance of air (carbon) emissions associated with kerosene lighting, reduction of occasional burn injuries, bad odors, and the inconvenience of having to buy and store the fuel (Meier, 2002). Furthermore, Frederiksen (1985) confirmed the positive effect of rural electrification on income levels.

World Bank (2002) measures the monetary value of benefits derived from rural electricity services in the Philippines. Rural electricity is assumed to generate the following social and economic benefits: education, health, entertainment and communication, comfort and protection, convenience, and productivity. Electricity improves children's study conditions during the

evening, enhances the flow of information to rural households, decreases the amount of time rural households spend in their daily chores, and improves the productivity of small businesses. Electrified households attained about two years more formal education than their non-electrified counterparts. Use of electricity saved households about one hour per day. Electrification increased the chances that a household will engage in a home business by about 10.7%; with electricity, home businesses operated about two hours more per day. The total benefit of providing electricity to a typical non-electrified Philippine household ranges from \$81 to \$150 per month depending on the number of wage earners in the household and whether a household operates a homebased business.

Herrin (1979) argued that the availability of a relatively cheap source of power through rural electrification facilitated investments in agricultural infrastructure, business and industrial enterprises, health and environmental sanitation facilities and services, and educational facilities and services which brought about significant changes in productivity, employment, and income. And that the need to save and invest in electricity installation, in farm and business enterprises and in human capital created pressures to control the family size because the opportunity costs of additional children were raised.

Chapter III: Analytical Framework

The relationship between energy industry reforms and social welfare can be conceptualized at a fairly general level, depicted in Figure 8, as a two stage relationship where a set of causal factors impact on a series of intermediate indicators, which in turn determine the final outcome in terms of changes in the affordability, accessibility and reliability of the supply of electric power and reasonable prices of electricity in a regime of free and fair competition. It is recognized that an identical policy change can result in quite different outcomes because of modifying factors.

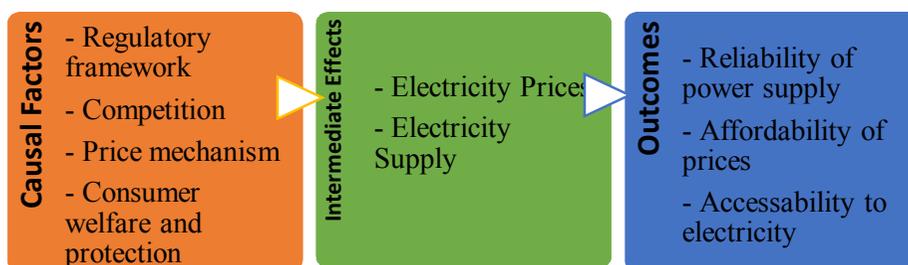


Figure 8 Analytical framework for linking energy sector reforms and social welfare

Any attempt to assess the impact of energy industry reforms on the levels of electricity price must therefore take into account the existing policy and institutional environment, the price mechanism, regulatory framework and the general consumer welfare which influence the extent to which reform will cause a change in the intermediate indicator. In addition, even if increases in aggregate energy supply production and net incomes do result from such reforms, it does not necessarily follow that the level of energy prices will fall.

In order to conceptualize the context specificity of the implications of industry reforms on electricity rates, a framework is proposed in which the impact on electricity price is described as a two stage process, the strength and extent of which is determined by a set of parameters.

The parameters can be categorized into two groups: (1) those that can be considered as impacting on the incentives faced by producers and on the magnitude of the consequent response in supply or demand, and (2) those that determine the way in which the energy supply and demand responses will feed through to impact upon the electricity price.

Developing a better appreciation of the importance of these parameters will enable a more informed understanding of the relationship between energy industry reforms and social welfare in terms of energy prices,

reliability of energy supply and access to energy. The components of the framework depicted in Figure 8 are discussed in detail at a conceptual level.

Framework components

Before going to the elements of the framework of this paper, it is necessary to understand the reform process in the Philippine setting and the rationale behind the actions of the government in restructuring the energy sector. Understanding the reform process and rationale gives a clear view on the roles of the institutions behind the reform process, the environment within the reform process, and the reason why there is a need for the restructuring of the energy sector.

Generally, the rationale for the EPIRA is that competition, properly harnessed, can boost economic performance and enhance consumer welfare. But the reasons for reform extend beyond economic efficiency considerations and encompass environmental sustainability and social equity.

It is important to start the reform process by having well-defined objectives of what the process is intended to achieve. Reform frequently presents an opportunity to restructure enterprises or the whole economy in ways that help to achieve long-term objectives such as sustained long-term economic growth and employment, changes in income distribution, improved access to basic needs, etc.

Causal factors

In Column 1 of the diagram, variables which are inherent to the industry reform are listed. While the focus is on the changes in social welfare brought by the reforms, it is recognized that the extent, speed and sequencing of associated reforms in the energy sector and in the wider national economy will influence both the incentives faced by producers, and the energy prices faced by energy household consumers.

Specifically, this paper focuses on four aspects of the reform – regulatory framework, competition, price mechanism and consumer welfare and protection, and provides analysis of the existing situation and challenges under each aspects.

Intermediate Effects

The second column reflects the reasonable electricity prices and reliable electricity supply that may be affected by the industry reforms. It describes a set of parameters that can modify both the transmission of prices from producers to consumers as well as its supply. Fully implemented reforms, which liberalize the energy industry or increase its openness, may be expected to improve both price transmission from producers to end-users. This response can, however, be muted by a series of factors related to both the type, sequencing and speed of the reforms and to the context in which they are implemented. In order to examine both the extent of price transmission and

any consequent response, it is therefore necessary to investigate the extent of the influence of both the institutional and policy environments.

In this respect, two broad issues appear relevant for further research: first, the functionality of wholesale electricity spot market used by different groups of energy producers in terms of their access and integration; and second, access to transmission and distribution assets.

Outcomes

Answers to questions on changes in energy prices and its effect on household incomes and conditions can assist in improving the understanding of the complexity of the link between energy reforms to social welfare. This research identifies the factors that will be affected as a result of the changes in energy sector performance driven by the reforms. Retail choice, reliability of supply, and price and accessibility, in particular are given attention in this paper.

Chapter IV: The Reform Process and Rationale

One of the revolutionary changes introduced by the EPIRA is the retail competition and open access (RCOA). “Retail Competition” means that eligible electricity customers (or retail customers) may themselves contract for the supply of electricity with authorized suppliers, rather than through the franchised distribution utility. “Open Access”, on the other hand, means that retail electricity customers and suppliers of electricity may also contract with the transmission company and the distribution company for the “wheeling” or delivery of energy/electricity through the transmission or distribution wires. Open Access is thus a means by which Retail Competition is achieved.

Consistent with the EPIRA’s objective “to ensure transparent and reasonable prices of electricity in a regime of free and fair competition”, RCOA is intended to make the unregulated components of electricity tariffs

more transparent and reflective of market forces. This, in turn, is meant to enhance the competitive industry landscape sought to be established by EPIRA.

Retail competition and open access on distribution wires shall be implemented subject to the following conditions: (a) establishment of the Wholesale Electricity Spot Market (WESM), which ensures that consumers (especially bulk users at the outset) have access to energy, the price of which is market-determined; (b) Approval of unbundled transmission and distribution wheeling charges, which ensures that consumers will be able to identify components of the retail rate as either non-bypassable or subject to competition. This will assist the consumer in deciding which among competitive suppliers to contract with; (c) Initial implementation of the cross-subsidy removal scheme, which ensures that no component of the retail rate which is subject to competition enjoys any subsidy, allowing for true competition to exist; (d) privatization of at least 70 percent of the total capacity of generating assets of the NPC in Luzon and Visayas, which is consistent with EPIRA's requirement that no generation company may own, operate or control more than 30 percent of the installed generating capacity of a grid and/or 25 percent of the national installed capacity. Privatization up to the stated threshold ensures that NPC or PSALM would not enjoy a dominant position in the market vis-à-vis private market players (or to ensure that true competition in the market would exist) upon implementation of retail competition; and (e) transfer of the management and control of at least 70

percent of the total energy output of power plants under contract with NPC to the IPPs, which, like the previous condition, ensures true competition among generation companies in the industry.

Upon the initial implementation of open access as shown in Figure 9, the ERC shall allow all electricity end-users with a monthly average peak demand of at least one megawatt (1MW) for the preceding twelve (12) months to be the contestable market. Contestable market refers to the electricity end-users who have a choice of a supplier of electricity.

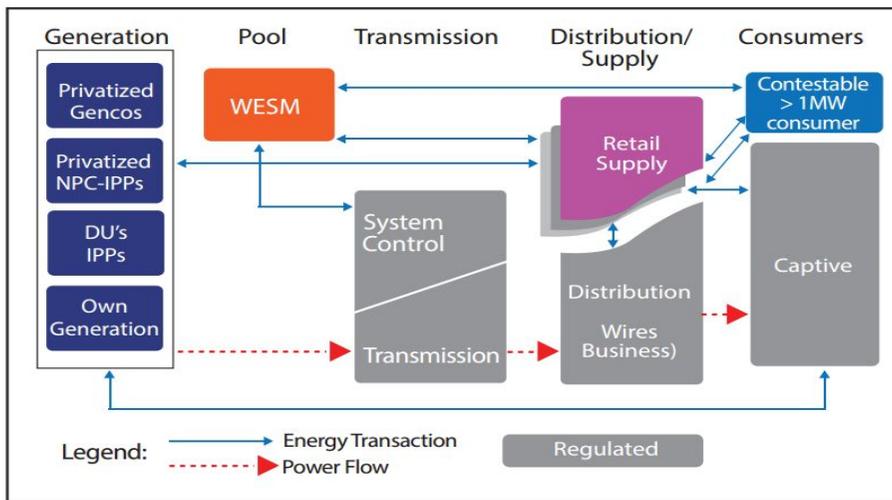


Figure 9 Post EPIRA Industry Structures (1MW Contestable Market)¹³

Two (2) years thereafter, the threshold level for the contestable market shall be reduced to seven hundred fifty kilowatts (750kW) as shown in

¹³ Illustration sourced from KPMG Global Energy Institute (2013). *The Energy Report – Philippines. Growth and Opportunities in the Philippine Electric Power Sector*

Figure 10. At this level, aggregators shall be allowed to supply electricity to end-users whose aggregate demand within a contiguous area is at least seven hundred fifty kilowatts (750kW). Subsequently and every year thereafter, the ERC shall evaluate the performance of the market. On the basis of such evaluation, it shall be gradually reduce threshold level until it reaches the household demand level.

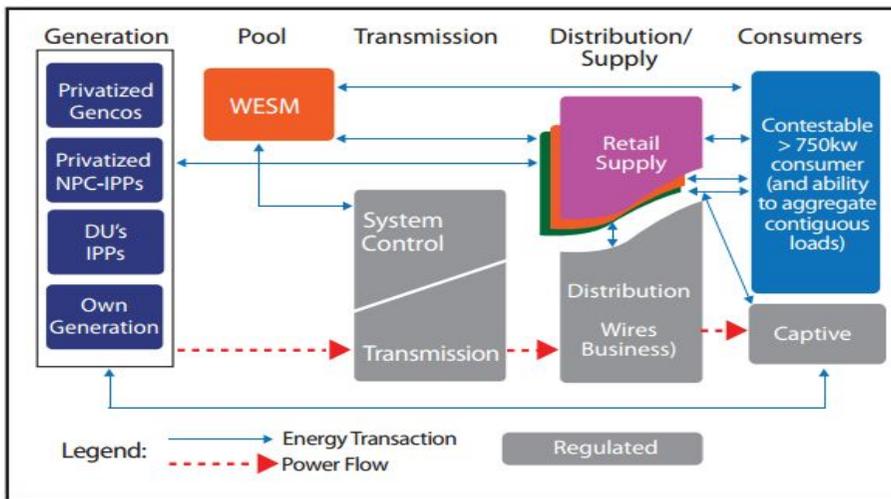


Figure 10 Post EPIRA Industry Structure (750kW Contestable Market)¹⁴

The structural reforms are critical to achieving the policies advanced by the EPIRA, including to ensure “transparent and reasonable prices of electricity in a regime of free and fair competition and full public accountability,” to “enhance the inflow of private capital, participation in the attendant risks, and broaden the ownership base of the power generation,” and

¹⁴ Illustration sourced from KPMG Global Energy Institute (2013). *The Energy Report – Philippines. Growth and Opportunities in the Philippine Electric Power Sector*

to “ensure fair and non-discriminatory treatment of public and private sector entities in the process of restructuring the electric power industry.

Section 45 of the EPIRA provides that “no participant in the electricity industry or any other person may engage in any anti-competitive behavior including, but not limited to, cross-subsidization, price or market manipulation, or other unfair trade practices detrimental to the encouragement and protection of contestable markets.”

For this purpose, the EPIRA and the Implementing Rules and Regulations issued pursuant thereto mandate the Energy Regulation Commission (ERC) to promulgate rules that prohibit anti-competitive behavior and abuse of market power, and specify appropriate remedies therefor and to promulgate rules “providing for a complaint procedure that, without limitation, provides the accused party with notice and opportunity to be heard.”

In sum, competition improves the performance of markets, generating better outcomes including lower prices, greater productivity and competitiveness leading to industrial growth and jobs, and better access to services. It can undermine the dominance of a few powerful players, allowing new enterprises to gain a foothold in the market, and underpinning private sector development and employment creation. Appropriate policies are crucial to create the conditions within which competition can thrive, and competition

authorities can help to build a culture of competition, and increase awareness of competition issues amongst policy-makers and the public.

Poorly designed regulatory impediments to competition — for example, restrictions on who can be in the market or how they can trade — can deliver less competitive outcomes and narrow consumer choice. Governments may need to intervene in a market in some cases to ensure the provision of social welfare services. In these cases, market and institutional design is very important in fostering competitive outcomes.

Policy and regulatory framework is defined as the existence of the necessary infrastructure which supports the control, direction or implementation of a proposed or adopted course of action, rule, principle or law.

The objective of regulatory policy is to ensure that regulations are in the public interest. It addresses the permanent need to ensure that regulations and regulatory frameworks are justified, of good quality and “fit for purpose”. An integral part of effective public governance, regulatory policy helps to shape the relationship between the state, citizens and businesses. An effective regulatory policy supports economic development and the rule of law, helping policy makers to reach informed decisions about what to regulate, whom to regulate, and how to regulate. Evaluation of regulatory outcomes informs policymakers of successes, failures and the need for change or adjustment to

regulation so that it continues to offer effective support for public policy goals (OECD, 2010).

Chapter V: The Structural Outcome of Reform

Energy is considered the life-blood of the economy. It is indispensable in achieving economic growth and critical in sustaining a nation's progress and prosperity.

Energy is an instrument from poverty reduction and social equity as it serves as an enabling factor to channel grassroots development with the delivery of the much needed public services to marginalized and disadvantaged sectors of our society.

Along these lines, the energy sector underscores its guiding vision of “Energy Access for More”¹⁵ (DOE, 2015) to mainstream access of the larger populace to reliable and affordable energy services to fuel, most importantly, local productivity and countryside development. With “Energy Access for More” vision, the DOE hopes to resonate a national commitment to more

¹⁵ *Energy Access for More is the guiding overall vision for the 2012-2030 Philippine Energy Plan (PEP)*

energy access up to higher levels of political and development agenda to become a key priority of the government.

The energy sector has outlined the following three (3) major pillars as its overall guidepost and direction, to wit: (a) Ensure energy security; (b) Achieve optimal energy pricing; and, (c) Develop sustainable energy plan.

An over-arching strategy to achieve these 3 major pillars is the principle of good governance. As the government liberalizes access to energy, transparency and accountability shall be the norms of conduct in all phases of energy policy, program and project development.

Cognizant of its role to promote better quality of life for the Filipino people, the Department of Energy will ensure the delivery of secure, sustainable, sufficient, quality and environment-friendly energy to all sectors of society through the mobilization of private sector participation and involvement of other stakeholders towards providing “Energy Access for More”.

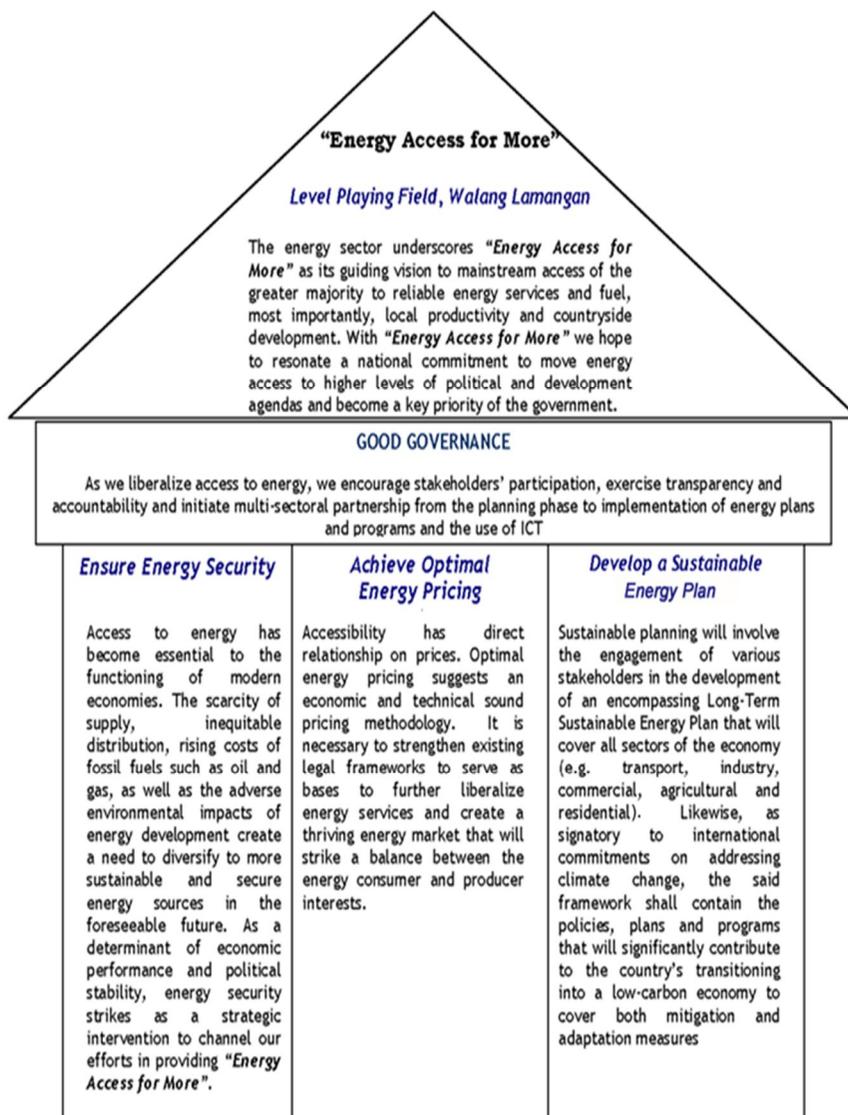


Figure 11 Department of Energy's Agency Reform Agenda¹⁶

Regulatory Framework

The Department of Energy formulates and enforces the country’s overall energy policy. It provides for an environment conducive to free and

¹⁶ Illustration sourced from www.doe.gov.ph/researchers-downloads/downloadable-files

active private sector participation in the energy sector. It also spearheads the growth of the Philippine WESM. It constituted the Autonomous Group Market Operator (AGMO) thru the creation of the Philippine Electricity Market Corporation (PEMC) - for governance, and the Market Operations Unit of PEMC - for the daily operations of WESM. To date, the DOE continues to facilitate the development of the market thru its involvement in the WESM - as part of the DOE Steering Committee and the PEM Board.

The establishment of the Wholesale Electricity Spot Market (WESM) is part of the package of electric power industry reforms mandated in Republic Act No. 9136, or the Electric Power Industry Reform Act of 2001 (EPIRA), signed into law on 08 June 2001.

The Philippine Department of Energy (DOE) was mandated by law to establish the Wholesale Electricity Spot Market (WESM) and, jointly with the electric power industry participants, to formulate the detailed rules that will govern the conduct of the WESM. The WESM Rules were promulgated on June 2002, a year after the enactment of the EPIRA.

In November 2003, the Philippine Electricity Market Corporation (PEMC) was incorporated as a non-stock, non-profit corporation, and was designated the following year, in August 2004, to serve as the autonomous group market operator (AGMO) that will undertake the preparations for and the initial operations of the WESM.

After several months of trial operations, the WESM commenced commercial operations in the Luzon grid on 26 June 2006. Four years into the commercial operations in Luzon, the Visayas grid was integrated into the WESM and commenced commercial operations on 26 December 2010.

The regulation of the WESM is provided for in Republic Act No. 9136 (EPIRA), its Implementing Rules and Regulations (IRR). Regulatory oversight functions over the WESM are performed by the DOE and the Energy Regulatory Commission (ERC). To provide a venue for coordination amongst the DOE, ERC and PEMC, the WESM Tripartite Committee was created by joint resolution of these three entities. The Committee serves for a limited term.

The Energy Regulatory Commission (ERC) is the quasi-judicial body created under the Act and tasked to regulate the electric power industry. Taking over the functions of the former Energy Regulatory Board (ERB), the ERC possesses authority extending from the enforcement of the rules and regulations of the EPIRA to investigative and quasi-judicial powers against any industry participant for violations of any law, rule or regulation. The ERC has jurisdiction to penalize abuse of market power, cartelization, and anti-competitive or discriminatory behavior by any electric power industry participant, enforce the rules and regulations of the electricity spot market, investigate and act against any participant or player in the energy sector for

violations of any law, rule or regulation governing the same including the rules on cross-ownership, anti-competitive practices, abuse of market positions and similar or related acts of any participant, and impose fines and penalties for any non-compliance with or breach of the EPIRA, IRR and the rules and regulations which it promulgates and administers.

The ERC also approves the Price Determination Methodology that will provide the principles for the pricing of electricity at the spot market, the market fees to recover the cost of administering and operating the WESM, and the administered price determination methodology for pricing of WESM transactions in times of market suspension and intervention. It also sets the criteria for eligibility for membership in the WESM and the performance standards based on the Grid Code¹⁷.

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

¹⁷ *The Philippine Grid Code establishes the basic rules, requirements, procedures, and standards that govern the operation, maintenance, and development of the high-voltage backbone transmission system in the Philippines. The Grid Code identifies and recognizes the responsibilities and obligations of three (3) key independent functional groups, namely (a) Grid Owner, (b) System Operator, and (c) Market Operator. These functional groups and all users of the grid must comply with all the provisions of the Grid Code. The Grid Code is intended to be used with the Market Rules of the Wholesale Electricity Spot Market to ensure the safe, reliable, and efficient operation of the Grid.*

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.

Tariff rates for generation and supply are 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. 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 or the maximum contracted outputs of about 83 to 86% of their installed capacities.

Both divestiture and open access policy are more effective to demonopolize the industry than simply relying on nondiscriminatory access to

existing systems because it is unlikely that regulatory monitoring and rules can be effectively enforced. On the other hand, placing caps on bilateral contracts between vertically integrated firms is inappropriate because it constrains the industry from responding to opportunities created by new technology or movement in fuel prices. Thus, it would be preferable to take a firmer position against cross ownership (Sicat, 2002; Abrenica and Ables, 2001).

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 bidden to potential private investors even without a franchise (Patalinhug, 2003).

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 crossownership 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). 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 demonomopolize 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).

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. 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. 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).

The electric power industry is subject to a number of laws, policies, administrative rules, and regulations governing entry and ownership, electricity pricing, technical and financial standards, customer service standards, access to inputs, and fiscal treatment of electric utilities.

The entry and operation conditions of electric utilities are generally governed by the Public Service Law which is administered by ERC. In addition, Foreign Investments Law (R.A. 7042), Power Cogeneration Law (E.O. 215), Electricity Power Crisis Act (R.A. 7648), BOT Law (R.A. 6957), and Expanded BOT Law (R.A. 7718) improve entry conditions by providing a fair rate of return to private investors. The old ERB, and now ERC, was and is given power to adopt and implement technical, customer service and financial standards for TRANSCO, generating companies, distribution utilities, and suppliers to ensure the quality, reliability, security, and affordability of the supply of electric power, and to safeguard against the risk of financial non-performance. EPIRA mandates that ERC shall regulate the retail rates charged by distribution utilities, the distribution wheeling charges of distribution utilities, and the transmission charge imposed by TRANSCO.

There are few administrative restrictions on access to inputs for electric power operators. NPC and electric cooperatives often enjoy tax exemptions and subsidies under existing laws. The importation of coal, electric generator sets, new and renewable technologies, and other electric power equipment has been liberalized. Electric generation and distribution are

given access to official development assistance (ODA) provided that they are given high priority by the National Economic and Development Authority (NEDA) and that they are economically viable but not financially feasible. Proposed projects requiring foreign-loan financing must be financially and economically viable and must be endorsed by the Regional Development Council. This rule also applies to projects funded by NPC and NEA (Nuqui, 1992).

Before EPIRA, NPC was tasked to fix its power generation and transmission rates, NEA was responsible of granting franchises to electric cooperatives, and ERB was to regulate petroleum products, gas pipe concessionaires, and fixing rates of distribution utilities. With the passage of the Downstream Oil Deregulation Act (R.A. 8479) in 1998, ERB was freed of the task of regulating petroleum prices and concentrated its regulatory efforts on electric power ratemaking.

National Electrification Administration (NEA) will act as a guarantor for purchases of electricity in the wholesale electricity spot market by any electric cooperative or small distribution utility to support their credit standing. NEA continues to monitor the outstanding uncollected billings of electric cooperatives to any local government units, and to report them to the Department of Budget and Management (DBM) for collection.

A smaller NPC shall remain as a government-owned and controlled corporation to perform the missionary electrification function through the Small Power Utilities Group (SPUG). NPC-SPUG is responsible for producing power generation and its associated power delivery systems in areas that are not connected to the transmission system. NPC-SPUG is a provider of basic electricity services in unviable, unserved, and marginalized areas. DOE is responsible for preparing the Missionary Electrification Development Plan (MEDP). MEDP is expected to provide a detailed master plan for the electrification of unviable areas and for the future development of existing missionary areas of the SPUG. MEDP is an important component of the Power Development Plan (PDP) which will be incorporated in the Philippine Energy Plan (PEP). PEP is submitted by the DOE to Congress annually.

The DOE is responsible for formulating policies for the planning and implementation of projects and programs. It is tasked for preparing and updating annually the Philippine Energy Plan (PEP) and the Power Development Plan (PDP). TRANSCO undertakes the preparation of the Transmission Development Plan (TDP) which shall be submitted to DOE for integration with the PDP and PEP. Any plan for expansion or improvement of TRANSCO's facilities must be approved by the ERC. In addition, DOE is mandated to supervise the restructuring of the electricity industry.

DOE is required to submit a semi-annual report to the Joint Congressional Power Commission (JCPC), an oversight body, on the implementation of the EPIRA.

Competition

The Philippines adopts a sectoral approach to competition policy and law enforcement with over 30 competition laws, industry-specific and consumer welfare laws addressing competition-related practices.

In the power industry, competition is being created at two levels: wholesale (generation) and retail (distribution). In every case where a nation de-regulated its electric industry, its goal was to produce competition at the wholesale level, basically by allowing different companies to own generation and compete against one another in the sale of bulk power. In addition, governments often wished to promote competition at the retail level, meaning that individual consumers would have the ability to choose from among several local retail suppliers of power. (Philipson and Willis, 1999)

To promote free and fair competition in the generation and supply of electricity to achieve greater operational and economic efficiency and to ensure consumer protection and enhance the competitive operation of the markets for generation and supply of electricity, the ERC monitors the market share limitation as provided in EPIRA stating that no company or related

group can own, operate and control more than thirty percent (30%) of the installed generating capacity of a grid and/or twenty-five percent (25%) of the national installed generating capacity.

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 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.

One of the revolutionary changes introduced by the EPIRA is the retail competition and open access (RCOA). “Retail Competition” means that eligible electricity customers (or retail customers) may themselves contract for the supply of electricity with authorized suppliers, rather than through the franchised distribution utility. “Open Access”, on the other hand, means that retail electricity customers and suppliers of electricity may also contract with the transmission company and the distribution company for the “wheeling” or delivery of energy/electricity through the transmission or distribution wires. Open Access is thus a means by which Retail Competition is achieved.

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).

Although the target dates for implementation of the restructuring of the power sector are proving ambitious, some progress has been achieved in the establishment of a wholesale market for electricity. Nevertheless, the introduction of a competitive electricity market in a developing country such as the Philippines is a formidable task, it requires careful design and implementation of trading systems, market rules, and operational systems. It also requires (a) strong, sustained political will, and commitment to the reforms; (b) financially viable market participants; (c) knowledgeable and well-prepared participants; (d) a competitive environment for suppliers of electricity; (e) developed financial markets to manage risk; (f) commercially focused participants; and (g) competent and credible market supervision (Cham, 2007).

In the event that effective competition cannot be established, wholesale prices could be determined on the basis of a merit order rule. Under the merit order rule, the market operator ranks plants on the basis of short-term marginal operating costs and dispatches those with the lowest cost first. Market participants are paid the short-run marginal operating cost of the last plant dispatched for all electricity sold to the wholesale market. This system of wholesale pricing closely resembles the bidding system, although incentives for improving productive efficiency may not be as strong as under the bidding system. Nevertheless, the merit order rule has been successfully tried in other countries and may be acceptable until such time when competition can be established through a bidding system (Choynowski, 2004).

Pricing Mechanism

Regulatory ratemaking regimes can be classified into two categories: (1) cost of service regulation (COS), and (2) performance-based ratemaking (PBR).

COS regulation is also called Return on Rate Base (RORB) regulation. Basically, COS is the ratemaking regime practiced in the Philippines. The process of determining the rates to be charged by an electric utility consists of two stages: (1) the total revenue that the utility firm is to be allowed in a period is calculated, and (2) the specific prices to be charged various users for particular services are set in order to produce the target revenue.

The weakness of COS regulation is that it is expensive, time-consuming and inflexible. To implement COS effectively, it requires expertise that ERC cannot afford to obtain. But the major drawback of COS regulation is that it does not provide adequate incentives for promoting efficiency improvements in regulated firms.

The performance-based ratemaking (PBR) provides a price-setting mechanism that automatically adjusts for changes in inflation less productivity, and provides incentives for maintaining service and performance standards in each year of the specified review period. The PBR mechanism also incorporates an automatic adjustment factor, and is considered to be an alternative to COS ratemaking currently practiced by energy regulatory bodies around the world.

The PBR mechanism is based on the two underlying principles: (1) the compensation principle, and (2) the incentive principle. The compensation principle states that the ratemaking mechanism should provide the utility with a fair opportunity to receive reasonable costs and earn reasonable and fair return on investments. The incentive principle states that the use of external benchmark creates strong incentives for the utility to minimize costs and maximize operating efficiencies.

In successfully implementing the PBR mechanism, three obstacles need to be overcome: (1) the regulator must set a baseline for PBR rates at a level that is not too high to achieve real cost savings, (2) to encourage the utility to cut costs by adopting a progressive sharing formula that gives consumers a bigger portion of the initial gains, but gradually increases the share of utility receives from additional cost reductions that it achieves, and (3) to institute technical performance standards to ensure the utility does not sacrifice its service and technical performance in achieving cost savings.

The PBR mechanism is appropriate in a restructured and competitive electric power industry because it provides adequate incentives for promoting efficiency; it has built-in pricing flexibility, and the PBR mechanism holds for a five-year period and avoids the frequent review characteristic of the COS ratemaking.

Although EPIRA has given ERC the mandate to adopt alternative forms of internationally accepted ratemaking methodology, it faces the regulatory challenge of harmonizing the inconsistency between a regulatory-driven pricing scheme (e.g. COS) and market-driven pricing scheme (e.g. PBR) under a supposedly competitive industry environment.

Just like its predecessor office, the then ERB, the ERC similarly follows the principle of “just and reasonable rates” in fixing and regulating the electricity rates (wheeling and retail rates) of distribution utilities (DUs). This

means setting the rates of DUs to ensure just and reasonable (not exorbitant and affordable) prices of electricity while, at the same time, allow the recovery of just and reasonable (appropriate and only those that are relevant in electric distribution) costs and a reasonable profit to enable utilities to operate viably (ERC 2002 Presentation on Briefing on Electricity Pricing). Currently, there are three forms of rate regulation or rate-setting methodologies being used by the ERC: the RORB (Return on Rate Base), the new PBR (Performance-Based Regulation), and the Cash Base methodology (Cook and Villamejor-Mendoza, 2006).

Under the RORB methodology, a utility is allowed to set electricity rates which will cover operating costs and provide an opportunity to earn a reasonable rate of return on the properties used and useful in the electric business operation. The rate of return must enable the utility to maintain its financial viability and soundness, and attract capital that may be required for improvements, expansion and technological innovation in the future. The power generators is allowed to earn a maximum rate of return of 12% on their investment.

For the Transmission and Distribution sectors, the ERC in 2003¹⁸ and 2006¹⁹ promulgated a new rate-setting methodology called the PBR. The shift from the traditional RORB regulation to the PBR was founded on Sec. 43 of the EPIRA which states that: The ERC may adopt alternative forms of

¹⁸ *Transmission Wheeling Rate Guidelines*

¹⁹ *ERC Resolution No. 16*

internationally-accepted rate-setting methodology as it may deem appropriate. The new rate-setting methodology is envisioned to promote economic efficiency which would lead to improved dependable quality service at reduced costs that will provide reasonable rates. There are two variations of the PBR being used: (1) Revenue cap for the transmission company, TRANSCO; and (2) Price cap for the private utilities (PUs). Under the revenue cap, there is a set of revenue targets over time that is indexed to inflation or some factor of inflation which the ERC will use as a gauge. This means that TRANSCO would be allowed to change prices so long as the percentage change in revenue does not exceed the revenue targets. In the same manner, the price cap allows the PUs to change prices as long as the percentage change in price does not exceed the price cap index. Under the price cap, next year's price is capped at this year's price plus an allowance for cost increases and reduced by an efficiency factor.

Meanwhile, the ECs are being regulated using the Cash Base approach which allows recovery of their cash expenses such as power costs, non-power costs, cash operating expenses, loan amortization, and a provision for reinvestment fund of 5% to cater to the ECs' system rehabilitation and improvements (Cook and Villamejor-Mendoza, 2006). A new rate-setting methodology for the ECs has just been adopted to replace the cash base technique. Similar to the PBR for the PUs, the new "Benchmarking Methodology" encourages efficiency in cost and in operations. Cost efficiency will bring about reasonable rates for the consumers whereas

operational efficiency will provide a reliable and sustainable electric service (ERC Resolution No. 20, Series of 2009).

The essence of PBR is to create incentives for firms to achieve social objectives by aligning their profits with those social objectives. Most PBR policies are based on two properties: (1) they give the firm some flexibility in how it meets performance goals; and (2) they use a system of rewards or penalties for meeting those goals. Flexibility is important because it allows the firm to use its superior knowledge to find better ways to achieve objectives. Flexibility gives firms the means to achieve goals; how vigorously the firm pursues those goals is determined by the strength of the incentives embedded in the policy. Specific policies contain many elements, often interrelated, that affect the overall incentives created for the firm. While PBR can be theoretically superior to ROR regulation, the details of implementation are key. It can be a delicate balance: the regulator must allow enough discretion for independently driven change and innovation to take place, but not so much that it leads to unintended negative consequences (Carlson, 2010).

The advantages of PBR are that it may help improve plant utilization, reduce operation and maintenance costs and improve system reliability. It also sets specific goals for utility management to focus on, can promote demand-side management and simulates competition where real competition may not be practical. In general, PBR is also regarded as giving greater flexibility to utilities to make their own choices on how to respond to regulation. The

disadvantages of PBR are that by placing emphasis on reducing costs, it may lead to inadequate O&M in an effort to save money. Incentives on certain items and not on others may divert attention to those areas where an incentive is offered to the detriment of other areas which may be equally important. It is also very important to set the rules correctly from the outset. If benchmarks and targets are wrong they could benefit the utility or the customer to the disadvantage of the other party. However, overall, PBR aims to promote sharing of benefit between the utility and the customers. The utility benefits through incentives and lower costs, leading to higher profits and better return on investments for its shareholders. The customers benefit from lower prices and improved service.

Consumer Welfare and Protection

The energy sector reforms cannot be expected to be put in place over a short period of time. Therefore, the government is expected to implement social protection programs that will immediately help low-income household consumers in paying their electricity bills while the reform is on its way. Among these social protection programs are the Mandatory Rate Reduction, Lifeline Subsidy Program and *Pantawid Kuryente: Katas ng VAT* (electricity bill subsistence: fruits of VAT) Program.

Mandatory Rate Reduction (MRR)

The true cost of electricity is not totally and fully paid by the end-consumers, the subsidy is borne by PSALM/NPC. Pursuant to Section 72 of the EPIRA, PSALM/NPC is continuously granting to residential customers the mandatory discount of 30-centavos/kWh for the term of the Transition Supply Contract (TSC). The TSC is the contract between PSALM/NPC (as the power generator) and distribution utilities. The TSC provides for the schedule of rates, including adjustments and indexation formulas which shall apply to the term of such contracts, among others. The term transition emphasizes that these contracts are only effective until Open Access and Retail Competition is in place, as the goal of EPIRA is to let market forces dictate the price of electricity.

These TSCs were assigned to PSALM/NPC successor companies. Before the transfer of the TSCs, the cost of the MRR is borne by PSALM/NPC. After the transfer of the TSCs to the PSALM/NPC successor companies, the cost of the MRR is still borne by PSALM/NPC. This is understandable as it is a national law that mandated the subsidy and to force PSALM/NPC successor companies to bear the subsidy would be unfair taking of their profits. It is for this reason that the true cost of generation is not reflected on the end-consumer's electricity bill.

The mandated reduction in residential rates during the transition period in the form of a 30-centavo per kWh reduction lowers the annual direct

welfare loss from the elimination of cross-subsidies from about P5.7 billion to P2.9 billion, or a 49 percent reduction of welfare losses due to the elimination of cross-subsidies. However, when indirect production benefits arising from the lowering of commercial and industrial rates are taken into account, the 30-centavo reduction in residential rates translates to a total welfare gain for households of P12.5 billion. Hence, the overall welfare effect of correcting electricity prices by eliminating the distortions due to cross-subsidies coupled with the 30-centavo residential rate reduction as a mitigating mechanism is general improvement in household welfare (DOE, n.d.).

Lifeline Subsidy Program

The EPIRA provided for a lifeline rate for low-income captive market end users who cannot afford to pay at full cost. The level of lifeline consumption and its corresponding discount rates are calculated for each specific service franchise area based on the cost in that area of two lighting facilities at 20 watts and 50-watt radio use for reasonable number of hours. Therefore, there are different levels of lifeline rates in each franchise area. The lifeline rate based on consumption is generally 50 kilowatts and below. However, the ERC has some discretion in setting the maximum level of lifeline consumption. It may adjust the minimum level of consumption and/or the level of lifeline discount to maximize the benefit to low-income end users while keeping costs associated with the subsidy between a certain ranges. This

program is extended for another ten (10) years with the enactment of Republic Act 10150 on June 2011.

The effects of the lifeline pricing scheme reinforce the positive effects of the 30-centavo per kWh reduction on household welfare and production output. Yet even the introduction of lifeline rates is not sufficient to improve equity since close to 49 percent of households consuming not more than 20 kWh per month have incomes that qualify them as non-poor. This result calls into question the effectiveness of lifeline pricing as a redistributive instrument.

Pantawid Kuryente Program

Pursuant to the directive of Former President Gloria Macapagal-Arroyo, the Department of Social Welfare and Development (DSWD) started the implementation of *Pantawid Kuryente: Katas ng VAT Program*, a one-time subsidy to the poorest sector of the society to help them pay their electric bills.

The DSWD and National Electrification Administration (NEA) executed a Memorandum of Agreement (MOA) for the implementation of this Program in areas covered by the electric cooperatives (ECs) nationwide. Based on the MOA, the DSWD will transfer to NEA the amount that will cover the ₱500 subsidy for each of the customers consuming 100 kWh per month or less than with the initial release of ₱500 million.

The *Pantawid Kuryente: Katas ng VAT Program* is essentially a self-targeted program. Beneficiaries are identified based on the amount of electricity they consume. However, the lifeline power consumption level does not appear to be effective in distinguishing poor households from non-poor households.

Based on initial presentations, the target number of beneficiaries of the *Pantawid Kuryente: Katas ng VAT Program* is only 4 million households with a corresponding budgetary requirement of ₱2 billion (\$45 million). As the implementation of the program progressed, the target number of beneficiaries is raised to 6.8 million households (70% higher than the original estimate), with a corresponding budgetary requirement of ₱3.4 billion (\$76 million) which has already been released and used.

The regulatory framework that has been built to address the issue of social affordability has typically taken the weak form of some ‘universal service obligations’ for the incumbent, or of special provisions for tariffs in the case of the poor and vulnerable consumer.

Chapter VI: Social Welfare Effects

The social welfare effects in the energy sector can be analyzed in various aspects. This paper focuses on the social welfare effects of the energy industry reforms in terms of retail choice, reliability of energy supply, and price and accessibility.

Retail Choice

The full benefits of industry restructuring will only be realized if restructuring is undertaken correctly. For consumer benefits to be maximized, the objective of near term rate decreases must be coupled with genuine retail competitive choice. Unless the new electric industry is competitively structured, there is a danger that regulated monopoly will be replaced by unregulated monopoly, that competitive entry by alternative providers will be restricted, and that consumers -- particularly small consumers -- will not obtain access to competitive alternatives. Only if effective competition is the

cornerstone of deregulation will the new electricity industry achieve further rate reductions, maintain service quality and offer its customers a greater variety of service alternatives.

The reasons that retail competition has been pursued in the Philippines are several. Primary among them is the prospect that, through competition, costs of generation service to consumers will be lower than under continued regulation. Competition also is expected to bring a broader range of electricity products and services to consumers.

The retail choice system is a feature of the competitive retail electricity market that enables customers to choose their electricity provider based on the quality of their services and the price.

In retail competition, often called “retail choice”, customers have the ability to choose a plan that best meets their needs. This means the retailer may have a plan that uses clean energy sources such as solar or wind, includes energy efficiency upgrades to the home or business, or simply offers the best rates.

The drive to create these consumer-friendly plans typically would not exist if there was not competition in the market. Competition amongst retailers encourages the development of green jobs, clean energy, and technical innovation for products to be more energy efficient. Another key

aspect of “retail choice” is the fact that if a consumer is unhappy with their current electricity supplier, they can easily switch their retailer.

Clearly, not only is this competition beneficial to the consumers—offering various plans at affordable costs—it also promotes innovation within the energy industry. This transformation in retail electricity markets ultimately benefits the retailer and the consumer.

Evidently, there is continued growth and demand for competitive retail electricity markets in the Philippines. Through competing for a customer’s business, retailers are driving innovation, efficiency and success in the energy industry. Customers should have the power to choose a plan that best suits their needs.

With retail choice, competitive suppliers can participate in the production, trading and selling of electricity in a retail choice system. Customers are free to select the electricity products of competitive suppliers, while the local utility remains the exclusive provider of the transmission and distribution services. In addition, the local utility generally offers a default generation service for those customers who do not opt for a competitive generation service. These provider of last resort (POLR) services assure continuity of service to all retail choice customers, including those who have not selected or are no longer receiving generation service from competitive suppliers.

One potential, but intangible, benefit of retail choice is simply having the freedom to choose electric suppliers. Long term value in market efficiency, product choices, and customer satisfaction are expected to be derived from choice.

The primary, tangible benefit that would argue for implementation of retail choice is the prospect of cost savings. Cost savings benefits, if they can be realized, could be of the following types: (a) the customers can individually and collectively lower their cost of purchased electricity relative to the costs that would be incurred by the supplier to secure that supply on their behalf, those savings would be a benefit of retail choice and (b) the costs to operate can be reduced, those savings would be a benefit that should be considered in assessing the merits of retail choice. This would include savings that may be realized in managing purchased power costs, as well as in such areas as metering and billing, collections, or financing.

In assessing cost savings, consideration will need to be given to the possibility that retail choice may offer savings to some customers, but not all. In that case, the savings potential for some must be weighed against any added cost that may be carried by others to assure that net savings are realized and inequities are addressed in the design process.

Reliability of Energy Supply

The power sector has always played a key role in driving the country's economy. Its stability and reliability are always of interest for a country that has an increasing trend with respect to its power demand.

The country's power supplies are critically low and the lack of energy security could discourage new investors and dampen jobs creation. The weak power reserve margins suggest that all three grids -- Luzon, Visayas and Mindanao -- are easily vulnerable to increasing outages during extreme high demand.

The threat of potentially escalating outages has also made residential, commercial, and industrial consumers highly susceptible to electricity price hikes, as supply becomes severely short of demand. Current reserve margins²⁰ are precarious, and imply that our supplies of electricity across all three grids have become unreliable.

Power reserves refer to extra capacity immediately available to the system to meet demand in case a generator goes down, or there is another

²⁰ *A measure of available capacity over and above the capacity needed to meet normal peak demand levels. Reserve margin and reserve capacity are synonymous. For a producer of energy, it refers to the capacity of a producer to generate more energy than the system normally requires. For a transmission company, it refers to the capacity of the transmission infrastructure to handle additional energy transport if demand levels rise beyond expected peak levels. Regulatory bodies usually require producers and transmission facilities to maintain a constant reserve margin of 10-20% of normal capacity as insurance against breakdowns in part of the system or sudden increases in energy demand.*

disruption to supply. Most power systems around the world are designed so that, under normal conditions, the reserve is always at least equal to the capacity of the largest generator plus a fraction of peak demand.

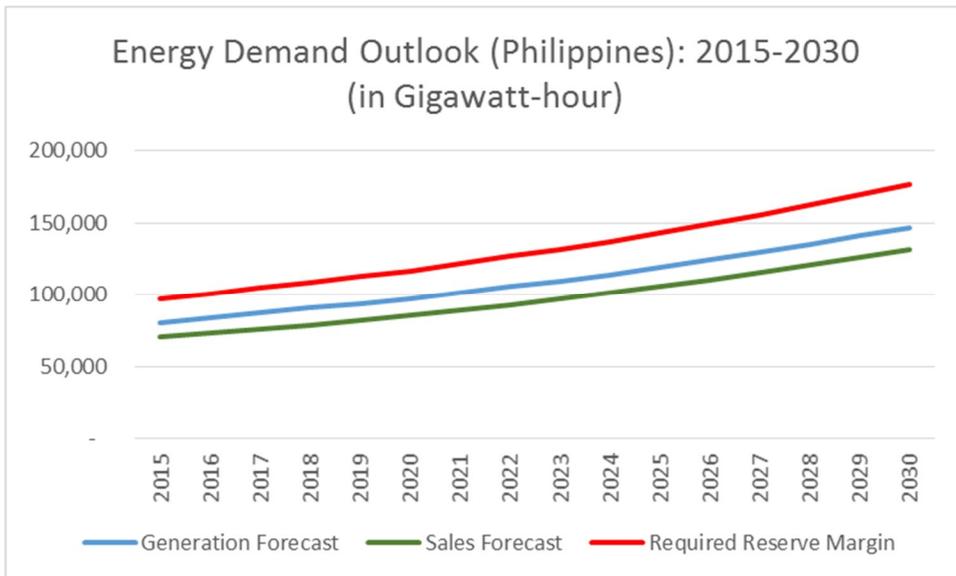


Figure 12 Energy demand outlook (Philippines): 2015-2030

To address the reliability of power supply in the Luzon and Visayas Grid, new power plants and power plant uprating are scheduled to be in commercial operation within the period.

However in Mindanao, ensuring enough power supply remained a major challenge with the island grid’s ever growing demand and with not much additional capacity coming in. To address this challenge, the government came up with immediate and short-term measures to address the capacity gap in Mindanao.

The immediate measures that the government considered to address the short-term supply gap were the Interruptible Load Program (ILP) and Interim Mindanao Electricity Market (IMEM)²¹.

The ILP is designed to entice greater participation from the different distribution utilities (DUs) with embedded generating capacities or those large users within their franchise areas having backup generating capacities to utilize such capacities. Under this program, the DUs with approved Energy Regulatory Commission (ERC) power rates will operate their embedded generating capacities, while the large users running their backup generator sets will be paid by the DU within its franchise area. The reduction of the power load requirements of the DUs with embedded generator will be transferred to other DUs requiring additional supply.

The establishment of an electricity market in Mindanao is seen as a mechanism to provide for a central dispatch and price for available capacities. Transaction in the IMEM will only be undertaken during supply shortfall. Power generating companies with uncontracted capacities as well as DUs and large users with available embedded generating capacities may nominate/bid to the IMEM their available capacities for dispatch at approved bid price. It is expected that by 2015 and 2016, new capacities from committed power

²¹ *Mindanao was not part of the WESM because its power infrastructure is not connected to the national grid and supply in this part of the country over the last decade has barely been sufficient.*

projects will be on commercial operation to provide the needed power supply requirement of the grid.

Economic growth has been impeded in the Philippines by the unreliability and high cost of energy. Reliable and secure electricity services at competitive rates are essential to improving the investment climate in a country that has limited fossil-fuel reserves and therefore is highly dependent on renewable and imported energy. The challenge in the energy sector is to ensure sustainable and reliable supply at reasonable cost.

Price and Accessibility

Energy is an essential commodity for most human activities, directly (as fuel) or indirectly (to provide power, light, mobility).

In traditional societies, populations rely on their own physical strength for labor, then on the power of domesticated animals, such as horses and oxen, then on water and wind, steam engines, hydrocarbons (fuel motors for land, sea and air vehicles) and finally - electricity. Energy combined with technology multiplies human force (e.g. motor fuel for cars, electricity for household appliances), thereby playing a crucial role in pre- and post-industrial and then IT societies. For other essential needs such as space heating and cooking, the transition has been from local biomass (e.g. firewood, agriculture waste) to industrialized fuels (e.g. LPG, natural gas) and also electricity (Stern, 2011).

Poor access to reliable and affordable modern energy services therefore acts as a barrier to economic and social development.

The Philippine government has some work to do to ensure there is the right balance between energy policies and electricity price to attract more foreign investment coming into the country to support the power generation growth in Philippines.

Although electricity prices are difficult to compare across countries due to the existence of various specialized rates, prices appear to be high in the Philippines. According to the Japan External Trade Organization (JETRO), prices in the Philippines are among the highest in the East Asia Region. Notwithstanding the fact that there are several special rate programs offered in some part of the country, the high electricity rates , together with concerns about the possible impact on the poor led to strong calls against major price hikes and contributed to limiting the pass-through of higher fuel prices.

Although data on unbundled costs are limited, the share of generation costs in the total retail costs appears to be on the high side.

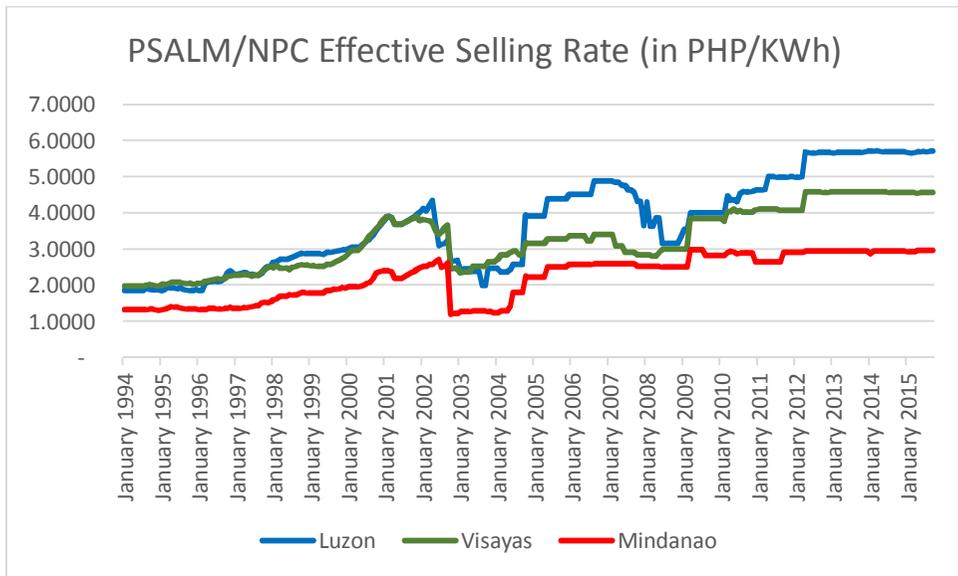


Figure 13 PSALM/NPC Effective Selling Rate

This partly reflects high operating costs of some IPPs, which provided urgent supply in the 1990s but at the cost of somewhat higher rates. Thus, the operation costs of some gas turbines that is required to use regardless of the fluctuations in oil prices and exchange rates are about twice as high as those of other oil-based plants. This state of affairs is unlikely to change in the near future, absent the discovery of cheap domestic fossil fuel alternatives.

In support of the Philippine government’s effort to alleviate poverty, the DOE launched a massive and focused action to increase and accelerate access to electricity services by the country’s un-energized communities.

To further strengthen and integrate efforts on rural electrification by both the Government and the private sector, and assist the DOE to develop

innovative and sustained policies and strategies consistent with the power sector reforms embodied in the EPIRA, the Expanded Rural Electrification Program (ER Program) was established building around the basic concepts and objectives of its predecessors. The ER Program aims to achieve one hundred percent (100%) barangays²² electrification by 2008 and ninety percent (90%) household electrification by 2017. As of 2014, the Program has already achieved 99.98% of the total potential barangay nationwide.

Barangay Electrification Status				
Region	Potential Barangays	Electrified Barangays	Unelectrified Barangays	Electrification Level (%)
CAR	1,176	1,176	0	100.00%
I	3,265	3,265	0	100.00%
II	2,311	2,311	0	100.00%
III	3,102	3,102	0	100.00%
IV-A	4,010	4,010	0	100.00%
IV-B	1,458	1,458	0	100.00%
V	3,469	3,469	0	100.00%
NCR	1,695	1,695	0	100.00%
Sub-Total Luzon	20,486	20,486	0	100.00%
VI	4,050	4,050	0	100.00%
VII	3,003	3,003	0	100.00%
VIII	4,389	4,389	0	100.00%
Sub-Total Visayas	11,442	11,442	0	100.00%
IX	1,904	1,904	0	100.00%
X	2,020	2,020	0	100.00%
XI	1,160	1,160	0	100.00%
XII	1,194	1,194	0	100.00%
ARMM	2,458	2,452	6	99.76%
CARAGA	1,310	1,310	0	100.00%
Sub-Total Mindanao	10,046	10,040	6	99.94%
TOTAL PHILIPPINES	41,974	41,968	6	99.99%

Figure 14 Barangay Electrification Status

²² *Barangay is the smallest administrative division in the Philippines and is the native Filipino term for a village, district or ward.*

The overall barangay electrification level in 2014 stood at 99.98 percent with only six (6) remaining to be unenergized. These barangays, located in the Autonomous Region for Muslim Mindanao (ARMM), specifically in the province of Maguindanao, are considered problematic, either due to geographic constraints or due to law and order issues, or both.

It was gathered that the remaining barangays are so remote and generally located in mountainous areas that even setting up of topping poles pose some challenges; and even more in connecting end-users in such locations.

Thus the issue of access, equity, and total electrification policy must address the conflict between cost recovery and the need to provide poor households with minimum basic needs such as 6 hours of electricity per day. The issue of subsidy brings the question of whether a public provider or a private provider is more efficient in connecting more rural households per peso of subsidy. Ideally subsidies are awarded on a competitive bidding to proponents that offer the smallest subsidy to connect a given number of households in a targeted rural area.

Chapter VII: Summary, Conclusion and Recommendations

The Philippine energy crisis in the 1990s and the push from international financial institutions such as World Bank and the ADB has led the Philippines to restructure its energy sector through the enactment of the Electric Power Industry Reform Act of 2001 (EPIRA). One of the objectives of EPIRA is to achieve the affordability of the supply of electric power and reasonable prices of electricity in a regime of free and fair competition. Alongside this objective are the institutional reforms to effectively implement the delivery of public service in terms of electricity, policy formulation to promote competition and to design the competition environment, formulation and adoption of transparent and progressive pricing mechanism to achieve full cost-reflective tariff structure and implementation of social welfare programs for the benefit of the low-income electricity consumers.

However, the Philippine energy sector reform is of no excuse when it comes to the challenges it faces in the implementation. Among these challenges are the slow pace of privatization efforts due to complexity of structuring the sale contracts coupled with legal impediments in transferring and administering these contracts.

In spite of these challenges, it is worth noting the milestones that this energy reform has reached over the 14 years of its implementation. The Philippines has a long way to go to fully harvest the objectives from this reform and the challenges alongside of it in the coming years are still uncertain.

The Philippine electric power industry has embarked on a reform journey to a direction it has not travelled previously. This journey requires the restructuring and privatization of its existing agencies and institutions, and the establishment of a new legal and regulatory apparatus. The ultimate goal of this journey is to create a price-based competition, incentive-based regulation, open access to transmission and distribution facilities, and to attract sufficient private investments to meet demand in the long-run and provide reliable supply to consumers.

However, the reform process also requires a strong and independent regulatory body that does not succumb to pressures from the influential market players it regulates, as well as a government whose commitment to reform does not change with the change of the political environment.

Summary of Findings

Economic growth has been impeded in the Philippines by the unreliability and high cost of energy. Reliable and secure electricity services

at competitive rates are essential to improving the investment climate in a country that has limited fossil-fuel reserves and therefore is highly dependent on renewable and imported energy. The Philippines has some of the most expensive electricity in Southeast Asia, because (i) the archipelagic geography makes electricity costly in some areas; (ii) generation, transmission, and distribution systems are inefficient; and (iii) investment in the sector is low, coupled with the high cost of investments made during the country's power crisis in the 1990s. The challenge in the energy sector is to ensure sustainable and reliable supply at reasonable cost.

In terms of organizational units, the Philippines may have been successful in establishing the crucial institutions that play the major roles in the achieving the objectives of EPIRA. DOE works for the overall planning, monitoring and coordinating the energy policies; ERC as quasi-judicial agency that determines the pricing methodology in different energy sectors; PEMC that governs the WESM operation; PSALM focusing on the implementation of the privatization plans and energy sector debt management; NPC looking over the off-grid areas; and NEA which monitors the distribution players. However, there are still flaws in terms of each agencies' functions that hampers the attainment of the objectives of EPIRA.

The lack of competition in the power sector has contributed to the Philippines' poor record in total factor productivity, as power is a key input to all industries. The policy intent of unbundling the power sector was to ensure

adequate investment and efficient operation through increased competition. However, because open access was established late, power sector reforms have not yet translated into real declines in electricity prices. Although the power sector unbundling has achieved certain milestones—establishing an independent regulator, privatizing more than 3,000 megawatts (MW) of generation assets previously owned by the government, selecting independent power producer (IPP) administrators, and awarding transmission concessions to private management—reform remains incomplete and has not delivered sufficient benefits.

Enabling the electricity consumers to choose their suppliers through the establishment of the retail choice policy is not only beneficial to the consumers but it also promotes innovation within the energy industry. However, this will not be totally effective if power supply is not reliable enough due to the fact that electricity supply is not enough to cover the rising demand coupled with the risk of sudden power plant outage. This case hampers the customers to fully exercise their power of choice because there is not enough suppliers to choose from and thereby putting the power of price determination on the supply side.

Philippines has been successful in energizing 99.99% of barangays with only 6 barangays left un-energized in areas due geographic constraints or due to law and order issues, or both. However, the reliability of power supply remains one of the challenges in the energy industry in order to gain the

benefits of electrification specifically for the household sector. Increasing the power reserves by uprating the power plants and immediate evaluation and approval of new power plant applications, as well as proper scheduling to plant maintenance will greatly help in addressing the problem of the reliability of power supply. Moreover, notwithstanding the availability of special rate programs which only benefit small number of low-income households in the short-run, strong competitive pressures are seen as a more direct and active mean to address the rising electricity rates in the country that will greatly impact the social welfare across electricity end-users rather than just a mere imposition of ownership limitations and other anti-competitive behavior policies.

Policy Recommendations

This paper argues for correcting the existing flaws and insufficiencies in the regulatory environment. Specifically, it recommends the following: (1) competition matters more than ownership; (2) structural remedies are preferred over behavioral rules in curtailing the exercise of market power; (3) improving regulation; (4) establishment of transparent and competitive contracts market; and (5) demand-side participation.

It is first and foremost recommended to review the competition rules to make it responsive to the current market environment. Clear parameters

should be established in identifying undesirable market outcome, anticompetitive behavior, and other relevant circumstances.

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. The regulatory framework/environment to realize the potential gains from the power sector reform program is important. There is concern that weak regulations can hinder the development of real competitive markets. An adequate competitive market framework and anti-competitive market behavior provisions in the proposed legislation are necessary for the welfare benefits of the reform program to be realized.

The ERC has capacity shortfalls in a number of areas that has reduced the effectiveness and increased uncertainty of the regulatory process. ERC's independence must be enhanced to increase its credibility in the eyes of consumers and investors. The regulatory process needs strengthening in terms of streamlining current administrative and regulatory rules of procedure to improve consumer complaints, grievance, and dispute resolution mechanisms. A code of ethics and professional conduct and the full text of application and decisions on tariff adjustments, consumer complaints, market participant disputes, and the like should be made public to promote the transparency and

accountability of ERC. The legal and technical competence of ERC also needs strengthening in tariff setting. ERC staff needs to be firmly grounded in economics of electricity pricing and its relationship to financial, social, and other objectives.

Essential to creating a sustainable electricity spot market is the need to put in place appropriate risk management processes to mitigate the impact of volatile market outcomes. To ensure the attainment of EPIRA objectives of having efficient, transparent and reasonable prices of electricity in a free and fair competition, it is recommended to implement (a) Central Auction Scheme (CAS) that is designed to secure short to medium term power supply contract of DUs for its captive market in a transparent, open and competitive bidding process; to provide additional venue for the contestable consumers in the procurement of their supply requirement; to mitigate stranded contract cost of DUs by requiring them to sell their excess contracted capacity; and (b) the establishment of a forwards market will enable power industry stakeholders to procure forward contracts to mitigate risks of price volatilities in the market in the short term (e.g. 3 months) to medium term (e.g. 3 years). It must be noted that is more efficient and cost effective way of securing supply contracts as forward contracts are standardized, and trading of forward contracts is conducted through electronic means (over the counter bulletin board).

Lastly, demand side bidding should be encouraged to allow customers to respond to any changes in price or market condition. The demand side

response could be a more feasible alternative to having put up generating capacity. It is expected that the participation of contestable customers will provide the counterbalance in the demand and supply equation. There is a need to educate the participants, particularly the customers, on how to take advantage of these opportunities by using all the available information provided by the market.

Similar to any other organizations and industries, the course of realizing and sustaining WESM's goals cannot be achieved overnight given the dynamics and continuous evolution in the market. In line with the incessant market changes, market participants, regulators and policy makers must also strenuously act in the formulation and revisions of necessary rules counteracted with the enforcement of an effective, strong and strict compliance, monitoring and regulatory process for the greater good of all the energy industry players.

The real challenge of the future direction of the industry reform agenda is how the regulator enforces open access to transmission and distribution facilities, which is a prerequisite before introducing competition at the wholesale market, and subsequently at the retail level. How the industry manages the transition from the current state to a state where competition reaches the retail level will depend on the degree of the government's commitment to the reform program, and on its ability to overcome resistance from losers of the reform process.

The Philippine electric power industry has embarked on a reform journey to a direction it has not travelled previously. This journey requires the restructuring and privatization of its existing agencies and institutions, and the establishment of a new legal and regulatory apparatus. The ultimate goal of this journey is to create a price-based competition, incentive-based regulation, open access to transmission and distribution facilities, and to attract sufficient private investments to meet demand in the long-run and provide reliable supply to consumers.

However, the reform process also requires a strong and independent regulatory body that does not succumb to pressures from the influential market players it regulates, as well as a government whose commitment to reform does not change with the change of the political environment.

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필리핀 전력산업 구조조정 프로그램의 효과에 대한 제도분석

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필리핀은 사업권을 보유한 전력회사가 자신의 사업권 지역 내 모든 가구와 잠재적 고객에게 직접 연결을 강제한 지역별 독점 사업권을 도입하고 있다. 이는 전력 분배시설의 재정 건전성을 해치지 않는 범위 내에서 허용된다. 국가 내 지역별 독점 사업권으로 구성된 지역별 영업권은 각 영업권 내 독점 공급자를 생성하였다. 이와 같은 시장 형태는 자연적 독점이론으로 정당화 된다. 자연적 독점이론은 전력 공급의 증가를 통해 장기적 평균비용이 지속적으로 감소함을 의미한다. 따라서 시장을 두 개 또는 그 이상의 기업들로 분할하는 것은 각 기업의 평균공급비용을 상승시켜 자원의 비효율적 배분이 발생하게 됨을 의미한다. 자연적 독점에 따른 합리화는 전력생산 분야에서는 더 이상 정당화되지 못 한다. 발전소 건설 비용의 증가가 전력생산 실질 비용의 규모수익체감으로 이어지기 때문이다. 이는 열병합발전소와 같은 소규모 발전시설이 화력 및 원자력 발전소와 같은 대규모 발전시설에 대해 효과적으로 경쟁할 수 있음을 의미한다. 전력산업의 자연적 독점 특성 감소 및 인접 국가 대비 필리핀의 높은 전력사용료에

직면한 필리핀 정부는 규제체계를 개혁해야만 했다. 따라서 “자유 공정 경쟁 체제에 기반한 투명하고 합리적인 전기 가격을 보장하고 글로벌 시장 내 필리핀 제품의 경쟁력을 강화하며 경제활동의 효율성을 확대하기 위해” 전력산업구조개혁법 (EPIRA)가 2001년 6월 8일 필리핀 의회를 통과하였다.

에너지는 경제의 생명소로서 경제성장 달성을 위해 필수불가결하며 국가의 발전과 번영을 유지하기 위해 중요한 요소로 작용한다. 또한 에너지는 사회의 소외 받고 박탈된 영역에 대해 필요한 공공 서비스를 제공함으로써 근본적 발전을 가능하게 하는 요소로 작동하여 빈곤감소와 사회적 평등을 달성하기 위한 도구로 쓰일 수 있다.

1990 년대의 필리핀의 에너지 위기와 세계은행, 아시아 개발은행과 같은 국제 금융기구로부터의 압력은 전력사업구조개혁법 (EPIRA, 2001) 시행을 통한 필리핀 에너지 분야 구조조정으로 이어졌다. 전력사업구조개혁법은 자유 공정 경쟁에 기반하여 적절한 비용에 의한 전력 공급과 전기의 합리적 가격 달성을 목표로 하고 있다. 이와 함께 공공서비스로서의 전기의 전달 시스템에 대한 제도적 개혁과 경쟁을 촉진하고 경쟁적 환경을 설계하기 위한 정책 형성, 총비용 반영 효율구조를 달성하기 위한 투명하고 진보적인 가격 결정기제의 형성과 도입, 저소득 전기 소비자를 위한 사회복지프로그램의 집행 등을 목적으로 하고 있다.

필리핀 전력산업은 그 동안 경험해보지 못한 영역으로 구조조정의 여정을 시작하였다. 이 여정은 기존 에이전시 및 기관들의 구조조정 및 민영화, 새로운 법규 및 규제 도구의 수립을 필요로 한다. 또한 이

구조조정은 궁극적으로 가격기반 경쟁, 인센티브 기반 규제, 송배전 시설에 대한 자유로운 접근을 가능케 하고 장기적 수요를 만족시켜 고객에 대한 안정적 전력공급을 가능하게 할 충분한 민간 투자를 이끌어 내는 데 목적을 두고 있다.

이와 같은 이유로 본 연구는 EPIRA 시행 후 10년 이상의 기간 동안 일어난 필리핀의 에너지 분야의 현실을 분석하고 있다. 이는 에너지 구조조정 프로그램의 규제틀, 경쟁, 가격기제, 구매자 복지 및 보호 네 측면을 중심으로 이루어졌다. 또한 네 측면의 사회복지에 대한 기여에 대해서도 다루고 있다.

키워드: 에너지산업 개혁, 규제 프레임워크, 경쟁, 가격기제, 사회복지

학번: 2014-23740