THE PHILIPPINES: AN UPDATE ON THE COUNTRY'S NEW FEED-IN TARIFF

2013

CHAPTER 4: Policy and Regulatory Mechanisms in Support of Renewable Energy

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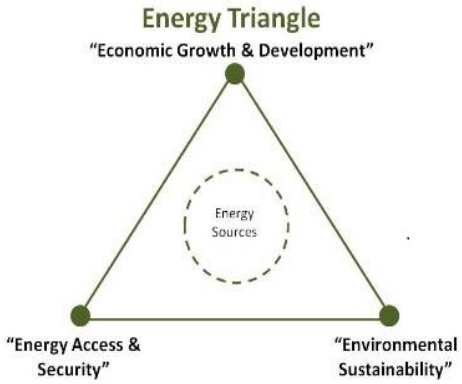
BACKGROUND

Based on the renewable energy law enacted in 2008, the Philippines Energy Regulatory Commission (ERC) adopted the country's first Feed-In Tariff Rules in 2010. Following up on the detailed analysis in the previous chapter, this update examines the implementation of the Feed-In Rules in the Philippines.

Since 2010, the population of the Philippines has grown at an annual rate of 1.7%, increasing the total population to more than 95.7 million.[1] The country's economy remains vibrant with a gross national product growing at a strong 6.8% per annum with inflation remaining below 3%. The health of the Philippine economy is reflected in a mid-2013 Moody's announcement that it was reviewing the country for a ratings upgrade based on, among other things, "robust economic growth and political stability."[2]

The Philippines is a country rich in the raw materials of renewable energy including sun and wind. Furthermore, its land offers not only sources of geothermal energy but a potential untapped wealth of tidal energy and an abundance of agricultural crops to be used in the production of biofuels. With the intent of accelerating the development and use of these natural renewable energy resources, in the summer of 2008 the country enacted landmark legislation: the Renewable Energy Act (RE Act). The intent of the RE Act was to provide a solid foundation for a sustainable and durable change in the energy infrastructure of the country. Of note, the law consists of what the World Economic Forum, an independent, not-for-profit foundation located in Switzerland, calls the energy triangle - a conceptual construct reflecting the interrelationship of three fundamental dynamics in renewable energy policy: 1) Environmental Sustainability, 2) Economic Costs, Growth and Development, and 3) Domestic Energy Security:



Source: "New Energy Architecture Enabling an Effective Transition" World Economic Forum & Accenture 2012

An example of how these fundamental dynamics are interrelated, if investments in renewable energy increase, the country's carbon footprint decreases. Jobs are created in areas sometimes bypassed in normal economic development and dependence on imported energy source decrease, thus reducing susceptibility to the severe price volatility often associated with fossil fuels. The World Economic Forum recommends that energy policy, to be effective, be designed with the energy triangle in mind.[3] The Philippines' RE Act includes all three fundamentals in its basic principles: [4]

- **Accelerate** exploration and development of renewable energy resources to support the achievement of energy self-reliance and the reduction of the country's dependency on fossil fuels. The reduction is intended to reduce the country's exposure to price changes associated with fossil fuels which can "…spiral down to almost all sectors of the economy."
- **Increase** utilization of renewable energy resources, including the commitment to institutionalize the development of both local and national capabilities in the use of renewable energy systems. The Act pursued these objectives through fiscal and non-fiscal incentives including an income tax holiday of up to seven years for renewable energy developers, an exemption from the Value Added Tax (VAT) and the duty-free importation of equipment and machinery.[5]
- **Encourage** development and utilization of renewable energy resources in order to prevent, or at least reduce, harmful emissions, thereby "balanc[ing] the goals of economic growth and development with the protection of health and the environment…."
- **Establish** necessary infrastructure and mechanisms to carry out the intent and mandates of the law.

The adoption of Feed-in Tariffs within the RE Act clearly provides for attainment of these four policy objectives by accelerating renewable exploration and development, encouraging development and utilization of renewable energy and promotes the establishment of necessary renewable energy infrastructure.

Update and Developments of Feed-in Tariffs (FIT)

By July 2010, the Philippine Energy Regulatory Commission (ERC) had promulgated its initial FIT rules adopting specific rules for each renewable energy technology, and establishes clear criteria for program eligibility. The ERC also addressed the "Feed-in Tariff Allowance" (FIT-All), the universal charge used to fund the FIT program.[6] The new rules, however, included only minimal discussion on installation targets. Considering installation targets as an integral part of the FIT program, Visayan Electric Company, Inc (VECO), the dominant utility serving the central Philippines, filed a petition to initiate a rule-making to amend the recently adopted FIT rules. The rules, according to VECO, had failed to address the development of installation targets for the development of the FIT. In fact, excluding the definition, the rules mention installation targets only three times. The company also voiced its concern regarding the appointment of a private entity to administer the funds collected to fund the FIT program. (See *Visayan Electric Company, Inc. (VECO)*, ERC Case No. 2012-001 RM and Order dated March 26, 2012.)

The new ERC FIT rules also provided guidance to the National Renewable Energy Board (NREB) for the computation of the initial FIT rates. Approximately a year after the ERC issued its rules, in May 2011, the NREB submitted its proposed FIT rates for the ERC's approval following the guidance in Section 5 of the rules.[7] According to the board's petition, the proposed FIT rates were derived using representative projects for each of the renewable energy technologies. To the extent possible, the NREB selected projects that were "…representative of the average conditions of the renewable energy power plant operating in compliance with or at par with applicable international technical standards and practices for such technologies…."[8] Along with comparable projects, the Board also considered capital costs, future currency exchange rates, local and foreign inflation rates and impact on taxes, among others.

It was not until July 2012 that the ERC issued a decision that approved modified FIT rates. The commission decision reduced all of the NREB proposed rates, with run-of-river hydroelectric projects experiencing the smallest reduction of 4.1% and with solar sustaining a surprising 46.1% decrease (see Table 1).

Table 1 – Proposed vs. Approved FIT Rates (2012)[9]

Renewable Energy Resource	*Proposed FIT*[10] *PhP/kWh*	*$/kWh**	*Approved FIT*[11] *PhP/kWh*	*$/kWh*	*Percent Change*
Biomass	7.00	$0.161	6.63	$0.152	-5.3%
Run-of-River Hydro	6.15	$0.141	5.90	$0.136	-4.1%
Solar	17.95	$0.413	9.68	$0.223	-46.1%
Wind	10.37	$0.238	8.53	$0.196	-17.7%

**\$1.00=43.5PhP*

In its decision, the ERC supported its dramatic reduction in the NERB's proposed solar FIT by citing a recent (May 2012) white paper on the changing costs in the photovoltaic industry. The paper, *Re-considering the Economics of Photovoltaic Power,* was published on the Bloomberg New Energy Finance website and addressed the current rapid changes in costs and market prices of solar photovoltaic systems (PV).[12] The commission argued that although the PV industry has seen "unprecedented declines in module prices since the second half of 2008, yet, awareness of the current economics [i.e. costs] of solar power lags among many commentators, policy makers, energy users, and even utilities."[13] The ERC cited as reasons for the lag in price information, among others, the very rapid pace of the decreases in costs of PV and, not so favorably, "…the persistent use of out-of-date data and information [that is] …disseminated occasionally by those with an interest in clouding the discussion."[14] In light of the current reductions in PV costs, the commission reconsidered the costs proposed by the NREB, resulting in a steep reduction in the final solar rate. The final key aspects are summarized below in Table 2.

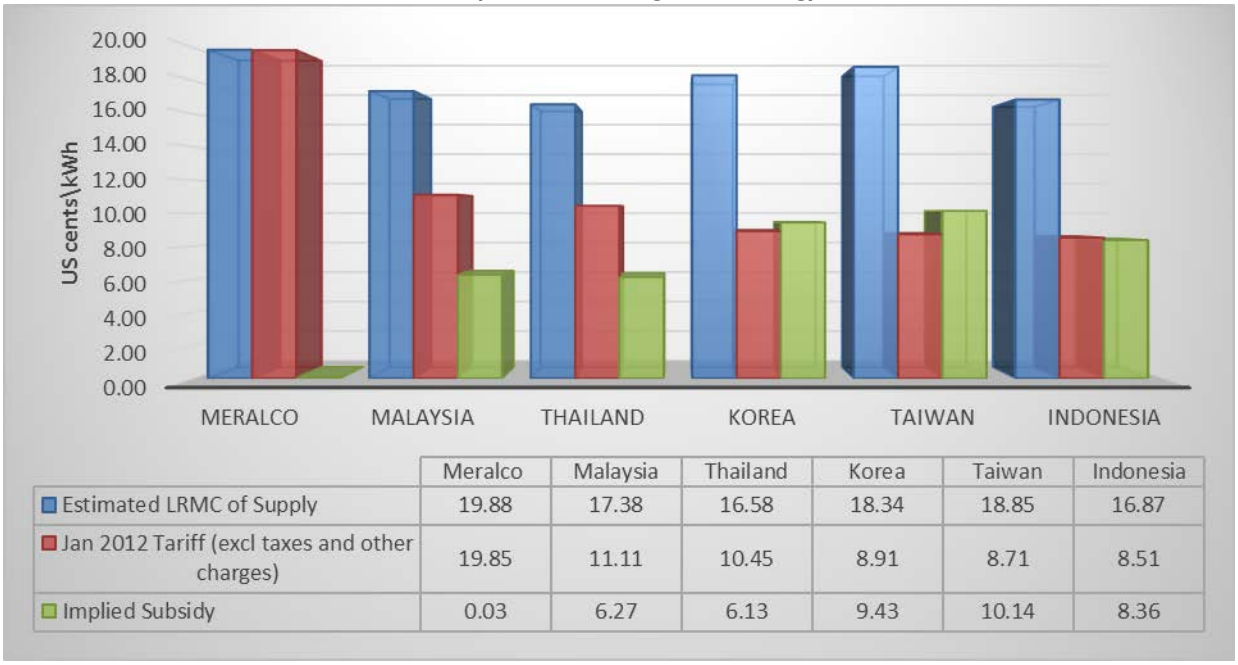
Table 2 – Key Aspects of the Philippine Feed-In Tariff Design

Eligible Technologies –	*Biomass, Run-of-River Hydro, Solar and Wind*
Tariff specified by Technology	Yes
Guaranteed payment	Yes
Interconnection	Yes
Payment Term	20 years (min 12 years)
Must Take	Yes
Degression[15]	Yes

Grid Parity

When compared to the recent energy purchase settlements recorded by the Philippine Wholesale Electricity Spot Market (WESM), the FIT rates approved by the ERC, are for some months at parity. For example, from February to July 2013, the average spot settlement price was 5.54 PhP/kWh - a settlement price less than all resources except run-of-river hydro.[16] However, using the same period in 2012, the average settlement price was 7.72 PhP/kWh, for that month, only solar and wind renewable technologies would have been greater than grid parity.[17] Does the existence of grid parity indicate that FIT rates are too low or are energy costs for the region simply high? A recent study performed by Meralco, the Philippines' largest electric power distribution company serving Manila and surrounding regions, showed its average retail tariff ranked the highest of all the Southeast Asian countries surveyed. Malaysia, the next closest comparable, had rates that were approximately 44% less than Meralco's rates, though the comparison is not so dramatic when the regions are compared using long-run marginal cost (LRMC) of supply.[18] The LRMC attempts to measure the true cost of energy by removing the effects of artificial cost supports such as subsidized fuel from the tariffed energy rates. The large disparity between countries within the Asia-Pacific region reflects the effects of the region's heavily subsidized electricity rates (see Chart 1).[19]

Chart 1 – Comparison of Regional Energy Subsidies[20]



	Meralco	Malaysia	Thailand	Korea	Taiwan	Indonesia
Estimated LRMC of Supply	19.88	17.38	16.58	18.34	18.85	16.87
Jan 2012 Tariff (excl taxes and other charges)	19.85	11.11	10.45	8.91	8.71	8.51
Implied Subsidy	0.03	6.27	6.13	9.43	10.14	8.36

The existence of direct subsidies in neighboring countries creates policy challenges in both measurement and the final development of FIT rates, ironically a creature of subsidies itself. Those subsidies designed to flow-through to consumers to lower electric prices actually produce market distortions leading to misallocation of resources (for example through higher energy use) and private industry electricity use effectively subsidized by the regional government tax payers. The Meralco study concluded that the governmental subsidies via lower tariffs were ultimately unsustainable. On the other hand, subsidies that flow through to programs such as the FIT program have positive consequences such as accelerated renewable exploration, along with development and utilization of renewable energy and established renewable infrastructure. However, electricity prices to the consumer normally increase as a result - an increase that further widens the rate difference between the Philippines and its regional energy markets, though not drastically.

Increased rates are a commonly accepted economic impact of any FIT program, at least in the early years. In the case of the Philippines, its FIT program is funded by a universal charge on all customers referred to as the Feed-in Tariff Allowance or FIT-ALL.[21] The FIT-ALL charge is a per kWh charge effectively increasing the retail price of energy to the end consumer. Philippine policy makers are faced with the challenge of balancing the benefits and increased costs of policies that are designed to accelerate adoption of renewable energy with the social-economic impacts of higher rates on the nation's ratepayers. Some argue that the impact of the FIT-ALL on the electric bills for those who can least afford it is simply not acceptable. For example, 45% of Meralco's residential customers are lifeline customers, that is, customers that use 100 kWh or less monthly, rates that are subsidized by other users.[22] Along with the impact on low

income consumers, another serious consideration in the design of the FIT program is the loss of industrial customers. If rates increase too much, too fast, a company located in the country may at some point find it economically beneficial to move its operation to a lower priced country in the region.

FIT Inducements

A further challenge is encountered when the Philippines' relatively low FIT is compared to its grid market price. With a relativity low difference between market and the FIT, some policymakers maintain that developers will simply not apply for FIT eligibility, commenting that it is not worth the relatively small premium reflected in the approved FIT rate. Other policy makers however, argue that it is not just the rate premium of the FIT program that attracts RE development but actually the certainty of recovering the investment over the life of the project which includes a reasonable return. It is that within itself, they say, that will attract long-term investment in renewables under the current FIT scheme. Even with FIT rates nearing parity, investors will continue to weigh the abundance of other incentives that are packaged with the development of renewables in the Philippines.

The RE Act provided several inducements to developers of renewable energy facilities. For example, during the first seven years of commercial operations the earnings of the company are exempt from the national income taxes, which for corporations, can reach up to 30%. Along with the "income tax holiday," as it is referred to, within the first ten years, the importation of machinery and equipment, including any related parts and materials

Distributed Energy: Off-Grid Renewables

When energy analysts discuss mature distributed generation micro-grids, they discuss an energy system's ability to be "islanded" and have off-grid operations. In the Philippines, "islanding" is not a metaphor and off-grid operations are a daily reality.

Strewn about the country's seven thousand islands and its three major transmission grids, the Philippines has over 70 off-grid service areas.[23] These areas operate as standalone micro-grids serving remote parts of the country that mostly depend on imported fossil fuels purchased in small volumes and transported over long distances. This, along with the smaller scale of the off-grid generation, pushes the price of energy upward for populations whose average household income-per-capita is significantly lower than those living in neighboring on-grid areas.[24]

National Power Corporation (NPC) faces the difficult task of providing power and electrifying remote areas through the Small Power Utilities Group (SPUG). The SPUG is not only responsible for providing power generation but also for the delivery infrastructure to all the areas not served by an investor-owned utility or rural electric cooperative. These underserved areas, referred to as "missionary areas" in the Renewable Energy Act of 2008, are considered nonviable for commercial electrification either because the area cannot support the required infrastructure economically or because the terrain is simply too difficult to traverse by power lines.

In order to achieve the country's ambition of electric service for all of its citizens, NPC-SPUG provides subsidized electric service to missionary areas. However, the energy rates paid by customers in these areas are set at an amount that is a "Socially Acceptable Generation Rate" and subsidized by a universal charge collected from all on-grid users. The level of subsidy, determined by the Energy Regulatory Commission (ERC), is based on the economic development and affordability of existing rates in the serviced areas.[25] The universal charge, along with revenues from service within the program's service areas, also funds the overall NPC-SPUG missionary electrification program.

The NPC-SPUG, while routinely reassessing the prospects of service areas becoming commercially viable, actively pursues programs designed to encourage a community's conversion from government-provided energy to electricity provided by the private sector or the region's cooperatives.[26] Although still dependent on diesel-based generation, the NPC-SPUG electrification program recognizes the need to convert from fossil fuels to renewable energy. Recent projects include the Masbate and Ticao Islands powered 5,129 households in 108 communities using solar energy and in the community of

are exempt from tariff duties.[27] Sophisticated Investors recognize that the Philippine FIT rates do not exist in isolation but together with tax incentives and priority in connecting to the grid. Once production begins the investor enjoys priority dispatch even with variable output for renewables such as wind or solar for a twenty year period. The incentives provided in the RE Act provide an effective path for long term economic and social development of the RE industry in the Philippines.

However, as with any major venture, the path from concept to completion and operation is a long one; that remains true for RE developers in the Philippines. From the organizing and managing of exploration activities, to the preparation of feasibility studies, the developer has many governmental hurdles to clear, such as the submission of a *declaration of commerciality* based on the currently approved FIT rate. All must be completed before the Philippines Department of Energy (DOE) will issue a *Certificate of Confirmation of Commerciality*.[31]

Rio Tuba on the island of Palawan diesel-based generation was augmented with a 70 kW biomass gasifier, fueled by coconut and wood chips.[28]

To encourage private sector participation in the provision of electricity services on small islands and isolated grids, the Renewable Energy Act of 2008 (RA 9513) provides a cash incentive to renewable energy developers for installing generation within missionary areas. The Act provides that the cash payment, based on the kilowatt hours sold by the producer, be "…equivalent to fifty percent of the universal charge for power needed to service missionary areas where it operates."[29] Although the ERC is currently deliberating on the enabling rules that precisely define the amounts due to renewable developers, the hope is that the cash incentive will spur development of renewable energy in these areas, which are hardest hit by changes in fossil fuels prices and currency fluctuations.

In addition to the cash incentive, the Act also provides for the issuance of Renewable Energy Certificates for eligible renewable energy generation.[30] Although the first Renewable Portfolio Standards have not been issued, the sale of the certificates may provide an additional incentive to developers to install renewable generation in the many isolated areas of the country.

The Philippine initiative to install renewable resources on small islands and in missionary areas thus allows security from fluctuation in fossil fuel prices and provides an economic inflow to the region. However, regulators must keep in mind that while rural electrification promotes economic development there is a precarious balance between the attraction of investments in the remote areas and the cost that must be borne by on-grid customers.

First-Come, First-Serve

Finally, after the issuance of the *Certificate of Confirmation of Commerciality*, the developer proceeds with construction. Even at this stage of the project, there is no assurance that the RE project, once it begins operations, will be allotted any portion of the related installation target reserved for FIT eligible projects. Only when a project has been successfully commissioned, is physically connected to the grid and begins to deliver power to the system, can the project become eligible. The developer applies for a *Certificate of Eligibility* that allocates the appropriate portion of the installation target to the project and therefore the related FIT payments under the feed-in rules.[32] Referred to as "First-Come First-Serve," in the DOE's "*Guidelines For The Selection Process Of Renewable Energy Projects Under Feed-In Tariff System And The Award Of Certificate For Feed-In Tariff Eligibility*" it restricts awards of approved FIT rates to those operating before the installation target is fully subscribed. The wisdom of the DOE adopting the First-Come First-Serve principle for certifying eligibility for FIT payments is widely debated.[33]

Supporters of the guideline's principle argue that it correctly removes the ability of some developers that have no intention of completing a proposed RE project but instead expect to

gain financially by selling the RE installation target allowances allocated to them to genuine developers at an inflated price. They reason that the mere act of allocating limited eligibility certificates to developers should not provide the opportunity to some, once the installation target is fully subscribed, to arbitrage the allowances as financial derivatives - most likely driving costs up and, in turn, driving up energy prices to the end consumer. Proponents, however, strongly maintain that the guidelines discriminate against small start-up enterprises and support only those large companies that have the financial wherewithal to maintain the long-term financing to build an RE plant without the assurance of eligibility of FIT rates.

Conclusion

The Philippines has begun the process of developing the use of domestic renewable energy resources thereby supporting national energy security, economic development and environmental sustainability. The Philippine feed-in tariff attempts to balance economic and social policy demands while meeting the strong legislative mandate. Considering the challenges the Philippines is moving ahead gradually but consistently, providing an interesting case study combining renewable energy and distributed generation.

[1] The Asian Development Bank, 2012 paper, *Asian Development Bank & Philippines fact sheet*, p2.

[2] Moody's Investors Services, July 25, 2013, *Ratings Action Notice*.

[3] For a more detailed discussion of the energy triangle see "New Energy Architecture: Myanmar," World Economic Forum, Asian Development Bank, (June 2013), p. 10.

[4] Renewable Energy Act of 2008, Republic Act 9513, Fourteenth Congress, (2008), Sec. 2.

[5] Renewable Energy Act of 2008 at Sec. 15. Other incentives include, but not limited to: duty-free importation of equipment, tax credit on domestic capital equipment and services, special realty tax rates, income tax holidays, net operating loss carry-over, accelerated depreciation, zero taxed sale of carbon credits, zero rated VAT, exemption from a grid based universal charge and reduced wheeling charges.

[6] Energy Regulatory Commission (Philippines), *Resolution Adopting the Feed-In Tariff Rules*, Resolution No. 16, Series of 2010 at Sec.1.4 (July 12, 2010).

[7] National Renewable Energy Board, *Petition to Initiate Rule-Making for the Adoption of the Feed-In Tariff For Electricity,* ERC Case No. 2011-006 RM (May 16, 2011).

[8] Energy Regulatory Commission (Philippines), *In the matter of the petition to initiate rule-making for the adoption of the feed-in Tariff for electricity generated from biomass, ocean, run-of-river hydropower, solar and wind energy resources*, Decision ERC Case No. 2011-006 at pp 5-6. (Aug 23, 2012).

[9] Although the NREB proposed an ocean-energy based FIT, the ERC deferred recognition of a FIT until sufficient data becomes available. (*See Decision ERC Case No. 2011-006 at p 117)*

[10] Decision ERC Case No. 2011-006 RM at p 3.

[11] Decision ERC Case No. 2011-006 RM at p 117.

[12] *Re-considering the Economics of Photovoltaic Power (May 2012)*, Barzilian, Onyeji, et al. Bloomberg New Energy website, accessed August 28, 2013, http://about.bnef.com/white-papers/re-considering-the-economics-of-photovoltaic-power-a-co-authored-white-paper-on-pv-economics/.

[13] Decision ERC Case No. 2011-006 RM at p 101.

[14] Decision ERC Case No. 2011-006 RM at pp 100-101.

[15] A degression rate recognizes that the costs related to renewable technologies will decrease with time, and avoids the problem of windfall revenues to developers able to secure a high FIT at a lower cost. Degression also encourages renewable developers to invest at the initial stage of the FIT program, and thus accelerating investment and deployment. The NREB proposed degression rates, in contrast to its FIT rates, were not controversial and were accepted by the commission with one modification. The ERC rejected a provision that would allow an exemption from the application of a degression rate if the commercial operation of an eligible power plant was delayed by factors beyond the control of the developer. (See Decision ERC Case No. 2011-006 RM at pp 116-117.)

[16] Wholesale Electricity Spot Market, Monthly Summary Report (July 2013).

[17] Wholesale Electricity Spot Market, Monthly Summary Report (July 2012).

CHAPTER 4: Policy and Regulatory Mechanisms in Support of Renewable Energy

[18] Long Range Marginal Cost (LRMC) of supply equals replacement or incremental cost of generation, transmission and distribution, plus energy. *See Meralco, PowerPoint of Regional Comparisons prepared by International Energy Consultants (June, 2012).*

[19] Meralco, PowerPoint of Regional Comparisons prepared by International Energy Consultants (June, 2012).

[20] Meralco, PowerPoint of Regional Comparisons prepared by International Energy Consultants (June, 2012).

[21] Energy Regulatory Commission (Philippines), *Resolution Adopting the Feed-In Tariff Rules*, Resolution No. 16, Series of 2010, Annex A at 2.5 (July 12, 2010).

[22] EPIRA Power Tracker, Lifeline Rate for Residential End-Users, http://powertracker.doe.gov.ph/archive/category_socialconsumer/lifeline, (last access September 2, 2013).

[23] Energy Regulatory Commission Decision, ERC Case No. 2006-020 RC, *In The Matter Of The Application For The Approval Of A Socially Acceptable Generation Rate (SAGR) For Sixty (60) Remaining NPC-SPUG Areas,* Page 1 (May 4, 2011).

[24] Ibid, Page 13.

[25] Ibid, Page 2.

[26] Rules and Regulations to Implement Republic Act No. 9136, Section 3 Obligations of SPUG.

[27] Renewable Energy Act of 2008 at Chapter VII.

[28] 2012-2016 Missionary Electrification Development Plan (March 14, 2012), Philippine Department of Energy, Section 0.1.3.

[29] Renewable Energy Act of 2008, Republic Act 9513, fourteenth Congress, (2008), Sec. 15(h).

[30] Renewable Energy Act of 2008, Republic Act 9513, fourteenth Congress, (2008), Sec. 12.

[31] Department of Energy, Guidelines for the selection process of renewable energy projects under feed-in tariff system and the awards of certificate for feed-in tariff eligibility, Circular No. DC 2013-05-0009 Sec. 4-5 (May, 2013).

[32] Department of Energy, Guidelines for the selection process of renewable energy projects under feed-in tariff system and the awards of certificate for feed-in tariff eligibility, Circular No. DC 2013-05-0009 (May, 2013).

[33] Department of Energy, Guidelines for the selection process of renewable energy projects under feed-in tariff system and the awards of certificate for feed-in tariff eligibility, Circular No. DC 2013-05-0009 Sec. 6(e) (May, 2013).