Feed-in tariffs as an incentive to power investments in the Philippines

Martina Dampf
Asian Institute of Management
Makati City, Philippines
martina.dampf@gmail.com

Fernando Martin Y. Roxas
Asian Institute of Management
Makati City, Philippines
FYanRoxas@AIM.EDU

ABSTRACT

Globally, the most widely used approach for promoting the use of Renewable Energy is the Feed-in-Tariff, also called "FIT". The Philippines' Renewable Energy (RE) Law of 2008 aims to achieve the following objectives: (a) accelerate the exploration and development of RE resources to achieve energy self-reliance; (b) increase the utilization RE by providing fiscal and non-fiscal incentives; (c) encourage the development and utilization of RE to prevent or reduce harmful emissions and balance the goals of economic growth with the protection of health and the environment. This article analyzes the impact of FIT on the investment decision of industry players to expand the RE portfolio of the Philippines. The authors conclude that FIT, which is a "pricing" tool, cannot address all the issues that face potential investors. However, it may be a good place to start as any. The authors also identified areas for improving program design and implementation; viable alternatives such as auction systems, public bidding or Renewable Portfolio Standards (RPS); and possible improvements in scope such as the inclusion of brownfield projects and off-grid areas into the current set of regulations.

Keywords: feed-in tariffs, power, renewable energy

INTRODUCTION

Many countries have foreseen the need to move towards more environmentally benign technologies and have implemented regimes and measures to promote renewable energy. The most widely used approach is the Feed-in-Tariff, also called "FIT". The FIT mechanism is one of the primary instrument prescribed by the Philippines' Renewable Energy (RE) Law of 2008, to achieve the following objectives: (a) accelerate the exploration and development of RE resources to achieve energy self-reliance; (b) increase the utilization RE by providing fiscal and non-fiscal incentives; (c) encourage the development and utilization of RE to prevent or reduce harmful emissions and balance the goals of economic growth with the protection of health and the environment.

However, as many jurisdictions log more experience, the hidden costs and shortcomings of FIT become more and more apparent. Some countries, notably Spain and Germany, are back peddling trying to find solutions for a subsidy mechanism that is about to become, or has already become, largely unsustainable. Yet other countries, such as the Philippines, are newly implementing and promoting FIT.

OBJECTIVES

This article aims to analyze FIT from the viewpoint of investor friendliness, and from that vantage point, identify:

1. Areas for improving approach and implementation,
2. Viable alternatives such as an auction systems, public bidding or Renewable Portfolio Standards (RPS) and~~,~~
3. Possible improvements in scope such as the inclusion of brownfield projects and off-grid areas into the current set of regulations.

The authors recognize that the FIT tariffs may just be one of the things that potential proponents look at when they decide to invest or not in the Philippine power sector. There are many other equally important factors that would determine whether they sink their dollars on assets in the Philippines or in some other country needing power sector investments.

Issues on the Use of FIT in the Philippines

With the enactment of Republic Act 9513 on July 28, 2008, the Renewable Energy Act of 2008, and its Implementing Rules and Regulations on May 25, 2009, the Philippines paved the way for FIT in the country. The final FIT rules were adopted on July 12, 2010. On July 27, 2012 the Energy Regulatory Commission (ERC) approved the following rates:

Table 1. ERC Approved FIT Rates

Technology	Rates (PhP/kWh)	Degression rate
Wind	8.53	0.5 percent after year 2 from effectivity
Biomass	6.63	0.5 percent after year 2 from effectivity
Solar	9.68	6 percent after year 1 from effectivity
Hydro	5.90	0.5 percent after year 2 from effectivity

Source: ERC (2012)

Degression Rates

Degression, as used in this context, aims to account for reductions in the costs of the respective technology and to avoid overcompensation, as well as to provide incentives for technology improvements. The downside of a fixed degression mechanism for extended time periods, is the lack of flexibility to take outside factors such as steel prices or the prices of other installation materials into consideration. Admittedly, substantially greater price reductions in steel and other construction materials are improbable. At the same time, it is difficult to assess the rate of technology improvements and associated cost reductions. To expect that technology improvements will continue to bring down prices, particularly for wind and solar energy, cannot be taken for granted and historical developments are of limited use to develop forecasts for future improvements.

A solution that has been used in the UK is a contingent degression mechanism wherein the level of deployment of a certain technology determines the rate of degression. A default degression rate is set and if the technology deployment remains within a certain pre-defined corridor, the degression rate remains the default rate. If it is below or above the corridor, different degression rates apply (Feed-in Tariffs Ltd., 2014). It remains to be seen if the Philippine approach to FIT adjustments after 3 years, or when installation targets have been met, is sufficient to adjust for technology improvements in a timely fashion. The

provisions pertaining to FIT adjustment is silent on the degression rates. However, it is fair to assume that the overall FIT, including degression rates, is subject to review by the Energy Regulatory Commission rather than the rates on a stand-alone basis without degression.

FIT Installation Limits

In the Philippine FIT regime, installation limits were put in place to prevent oversubscription such as happened in Spain (Butler, 2011). There are disadvantages to the use of installation limits. Firstly, any non-performing or underperforming project which has been awarded still counts in full towards the installation limit, thus on paper the installation limit is reached when in fact the actual production is below the limit or even non-existent. This opens doors for speculative subscriptions which distort the overall supply picture.

Unfortunately, speculative offers prevent credible market players from realizing projects. Credible market players have a reputation to protect and internal procedures to adhere to which may include complicated internal approval processes before they can tender an offer in contrast with speculative subscribers who likely do not need to follow approval processes and are therefore in a position to act quickly. In the case of foreign market entrants, subscription alone might require lengthy due diligence and a board approval, which typically requires some lead-time.

The DOE's "*First Come, First Serve*" Policy for FIT Eligibility

Rather than impose termination provisions for projects that are covered under the installation limits but are delayed or not commercially operational beyond a certain time frame, the solution that was proposed in the Philippines is a "first come first serve" basis (Department of Energy, 2013). This policy required that a project show substantial completion equivalent to 80 percent of its electro-mechanical requirements before it can even apply for FIT certification.

This principle is not particularly palatable to investors as it increases, among others, the costs of finance. Financing, especially project financing, requires relative certainty that debt can be serviced as scheduled and considering that a project might or might not be eligible for FIT after it has been 80 percent completed will lead lenders to ask for expensive warranties in case the project turns out to be ineligible.

Such safeguards will, if it is a small project, be guarantees, which are costly to maintain. For major projects, the safeguards will likely be parent company guarantees which shall be carried on the respective parent's balance sheet and thus impact its credit rating and overall borrowing terms and conditions. In the unlikely event that a lender would not ask for safeguards, the conditions of financing would simply be such that the risk premium, and correspondingly the borrowing rate, would be too high. In other instances, the "first come, first serve" situation might lead to situations wherein quality and safety is sacrificed for the sake of timely, if not early, completion of a project.

THREE MAJOR OBSTACLES TO RENEWABLE ENERGY INVESTMENTS IN THE PHILIPPINES

Foreign Ownership Restriction

It is and was expected that FIT would attract foreign investors and renewable energy projects would materialize (Department of Energy, 2014). What was not taken into

consideration is that FIT alone – even if price levels are appealing to investors, would not be sufficiently attractive if other investment criteria are not met. To the extent that FIT was driven by such deliberations, three major obstacles were not addressed, two of which could have been taken up in the bundling of regulations surrounding FIT.

The most fundamental barrier is the infamous "60/40 rule" enshrined in the Philippines' constitution. The rule restricts foreign ownership of "public utilities" to 40 percent. This provision is part of the 1987 constitution of the Republic of the Philippines but was also embedded in the constitutions of 1935 and 1973. The "Electric Power Industry Reform Act" in 2001, commonly known as EPIRA (Republic Act No. 9136), stipulates in Section 6: "*power generation shall not be considered a public utility operation*".

However, the Securities and Exchange Commission (SEC), which is the government agency tasked to enforce this constitutional ownership constraint, applied the ownership restrictions in an opinion regarding a wind farm, disregarding Section 6 of EPIRA (SEC, 2011). Section 6 of EPIRA further skirts the question of the power plant as a public utility because reference is only made to the operation. Investors are not satisfied. The former British Ambassador referred to it as "unhelpful" in the context of investments in the renewable energy sector (Lowe, 2013) and the president of the German-Philippine Chamber of Commerce and Industry "very much regret[s], […] that we are restricted" (GMA Network, 2013).

The SEC tended to use a liberal approach to the aforementioned ownership restrictions. Using layers of companies and Holding Companies to circumvent the 60/40 rule was an acceptable solution to circumvent ownership restrictions for many years. However, in 2010 the General Counsel of the SEC returned from the general "control test" to the application of the so-called Grandfather Rule (SEC, 2010). Under the "control test", a 60 percent Filipino owned corporation is treated as a fully Filipino owned corporation, wherein under the Grandfather Rule the ultimate and beneficial ownership has to be taken into consideration, taking different layers in a corporate setting into account. At the same time the SEC accepted inclusion of non-voting, preferred shares in its definition of "capital" which provided another solution to circumvent the 60/40 rule.

Two decisions of the Supreme Court, namely on June 28, 2011 (Gamboa vs. Teves, G.R. No. 176579) and on October 9, 2012 (Heirs of Gamboa vs. Teves, G.R. No. 176579) seemed to change the picture in a way that circumvention by either layering or using different classes of shares would no longer be an option. However, on October 9, 2012 the Supreme Court clarified as follows:

> "*Since a specific class of shares may have rights and privileges or restrictions different from the rest of the shares in a corporation, the 60-40 ownership requirement in favor of Filipino citizens in Section 11, Article XII of the Constitution must apply not only to shares with voting rights but also to shares without voting rights. Preferred shares, denied the right to vote in the election of directors, are anyway still entitled to vote on […] eight specific corporate matters mentioned […]. Thus, if a corporation, engaged in a partially nationalized industry, issues a mixture of common and preferred non-voting shares, at least 60 percent of the common shares and at least 60 percent of the preferred non-voting shares must be owned by Filipinos. Of course, if a corporation issues only a single class of shares, at*

> *least 60 percent of such shares must necessarily be owned by Filipinos. In short, the 60-40 ownership requirement in favor of Filipino citizens must apply separately to each class of shares, whether common, preferred non-voting, preferred voting or any other class of shares."* (Supreme Court, 2012)

Since the aforementioned decisions of the Supreme Court, other ways to circumvent the 60/40 rule have been found and tolerated by the SEC and the Supreme Court has so far not taken any action. The process as such is not investor friendly; the change of heart of the SEC is unsettling for investors at best, and the disregard of the Supreme Court decisions by the SEC increases doubts. Investors can, unless they want to await further development, control a company only via tight management control contracts. These are poor substitutes for exercising control in a company by way of majority ownership.

Open Ended Approval Time Tables & Pre-Eligibility Completion Targets

The Department of Energy in its Department Circular Order DC 2013 – 05 – 0009 ("Guidelines for process of Renewable energy projects under the Feed-in Tariff system and the award of certificate for Feed-in Tariff eligibility") has stipulated three (3) main steps with various sub-conditions which eventually lead, on a first come, first serve basis, to FIT eligibility. (1) Initially, any project requires a declaration of commerciality which has to be confirmed by the Department of Energy within 30 days; (2) after electromechanical completion, which is deemed attained after 80 percent of the EPC (Engineering, Procurement and Construction) Contract has been completed, the Department of Energy will validate such completion within 15 days and within another 15 days confirm or deny the validation. If the validation is confirmed, the DOE has to nominate the eligibility to the Energy Regulatory Commission for processing of the certificate of compliance; no time frame is given for this step in the approval process. (3) After successful commissioning of the project, which has to be duly validated by the Department of Energy (no timeframe is given for such validation either) a certificate of endorsement has to be issued within 15 days on a first come, first serve basis.

This approval process is complicated and the lack of timeframe for two sub conditions in a country struggling to contain corruption is not comforting. Moreover, the fact that 80 percent of the EPC contract has to be completed in order to even apply for FIT eligibility is difficult to satisfy These conditions are quite challenging for on-balance sheet financing but would be nearly impossible for off-balance sheet financing, especially for capital intensive projects such as larger hydropower or commercial scale biomass projects.

Lenders and equity investors in project financed assets need to have a high degree of cash flow certainty whether or not their respective projects will be eligible for FIT. For those planning to qualify for FIT, only refinancing on a project finance basis is an option, once the eligibility has been established. This policy adjustment regarding FIT eligibility will benefit mostly established corporations with sufficiently large balance sheets to bear development costs until commercial operation commences.

Process Predictability

Obviously, the FIT pricing level has to be such that RE projects are bankable. It has to be assumed that proper due diligence was undertaken although tariffs were lower than

generally anticipated by the private sector renewable energy proponents. However, lenders might be amenable to lower cost of debt in exchange for other safeguards or additional incentives.

Leaving aside the 60/40 regulation and pricing issues, early clarity on eligibility and a less complicated qualification process would improve the entire situation from a financing perspective. Given the installation limits in place, the Philippine government needs some leeway for non-performing or underperforming projects, which count towards the limit. Rather than the current uncertainty surrounding the 80 percent completion requirement and "first come, first serve", termination provisions for time overruns, cost overruns or similar unfortunate circumstances would have been a better solution.

Performance bonds or completion guarantees, which are not foreseen under the current regime, can easily prevent speculative subscriptions. A credible investor with serious implementation plans will be willing and able to provide a reasonable performance bond refundable upon construction completion or upon commercial operation of the project. Subscription fees similar to commitment fees until construction completion or commercial operation are another way to limit speculative subscription although performance bonds are likely more acceptable to investors as they are returned to the project sponsors upon completion or commercial operation.

Oversubscribed Installation Limits – *Where is this coming from?*

By 31 December 2013, forty-one (41) renewable energy projects had been certified commercially viable with another 44 projects pending certification of commercial viability (Department of Energy, 2014). With the exception of Biomass, which is undersubscribed, all categories are significantly oversubscribed - most notably wind with an installation limit of 220 MW and a subscription level of 650.50 MW. This leaves the valid question whether or not the FIT tariff has been assessed correctly. Increasing the installation limits for wind and solar are being considered.

The FIT rate is subject to adjustment after three (3) years or if the installation targets have been met. The Technical Committee of the National Renewable Energy Board has proposed to the Energy Regulatory Commission (ERC) the amendment of the currently approved FIT as follows:

Table 2. Proposed New FIT rates

Technology	ERC approved	Indicative FIT new
Biomass	6.63	6.56
Hydro	5.89	6.17
Solar	9.69	8.70
Wind	8.53	8.37

Source: NREB Technical Committee (2014)

Except for hydropower projects, all prices are recommended for reduction by the NREB. The rates for solar energy will undergo a significant drop if the ERC follows the recommendation of NREB's Technical Committee. At the same time, it is noteworthy that the originally proposed FIT rates by developers of renewable energy were substantially higher. Inflation and improvement of technology between June 2010 when the original rates were proposed and July 2012 when the final rates were approved by the ERC may not fully account for such a significant difference.

Table 3. Original NREB Recommended FIT vs ERC Approved FIT

Technology	Initially proposed FIT April 2011	ERC approved FIT
Biomass	6.95	6.63
Hydro	6.15	5.89
Solar	17.95	9.69
Wind	10.37	8.53

Source: NREB revised targeted FIT (ERC Case No. 2011-006 RM., 2012)

In essence, the following three (3) reasons for the oversubscription are the most plausible: (1) the ERC approved prices were too high despite the expectations of private investors of even higher tariffs; (2) lack of termination procedures, penalties and warranties; and (3) investors subscribed on a speculative basis, counting on delays and future cost decreases in the respective technology.

The reduction for solar FIT as suggested by the Technical Committee of the NREB from 9.69 to 8.70 PHP per kWh highlights the first reason mentioned above, albeit not necessarily excluding other reasons. At the same time, the aforementioned lack of termination provisions, completion guarantees or similar warranties that have been subscribed to provide ample room for speculation. In turn, reputable and serious developers as well as credible investors might stay away from projects in light of the oversubscription. In a worst-case scenario, little to no production output will follow a high volume of "paper" projects.

Problems of Conventional Energy Providers

Meanwhile, conventional energy providers will, in the long run, be hard pressed to remain competitive, particularly in light of the priority access to the grid given to providers of renewable energy. Wind and solar energy are created irrespective of demand and supply whilst conventional providers are subject to market prices and corresponding fluctuations.

As long as storage of electricity from intermittent production is not commercially viable and other non-intermittent producers are insufficient in number and capacity to replace fossil and nuclear energy producers, RE alone cannot satisfy energy demand. An incident in Germany, which occurred in May 2014, provides a showcase for the dilemma. During a day of extensive wind and sunshine, electricity spot prices dropped below zero for a short while (Gell, 2014). In this situation the seller pays the buyer to take the generated electricity. Prices below zero can occur in the wholesale spot market if conventional providers do not reduce their base load. In some instances this might be due to technical reasons, in other instances environmental compliance such as controlled water flow to maintain and protect fish population might even prevent a reduction of the base load although the latter mostly affects hydro power plants (US Energy Information Administration, 2012). Intermittent producers are given priority access to the grid and conventional providers are left to find solutions for the oversupply that they might not even be able to avoid.

Cost Pass-Through to Customers and its Impact on End-User Tariffs

In Germany – as is the case in the Philippines – costs for the high and distorted electricity prices caused by FIT will be passed on to end-users, a fact that is particularly relevant for industries which, by nature, consume high volumes of electricity. Their

competitiveness on the international market decreases with increases in power prices and relocation to a country with cheaper electricity. Philippines electricity tariffs are among the highest in Asia.

In 2012, Meralco's prices ranked 9th in the world (Anonuevo, 2012), which does not make the country particularly attractive to investors. It has to be noted that, as oppose to other countries in South-East Asia, electricity in the Philippines is not subsidized. The fact that electricity prices are high is not solely attributable to costs of generation and transmission. Prices are, however, heavily taxed which accounts in part for the high rates.

The cost pass through of an increase in electricity prices is felt immediately and on an individual basis. On the other hand, consumer benefits associated with such reforms are mostly non-monetary in nature and do not facilitate social marketing objectives. Arguments that renewable energy is comparable to a "hedging" of fuel price increases (Swanson, 2013) are equally dismissed merely by the fact that the proportion of renewable energy versus conventionally produced energy is small and will remain small in comparison for many years to come.

Ironically, electricity supply via renewable energy in off-grid areas – where such arguments might hold – is not considered by any of the regulations surrounding the Philippine FIT regime. Many off-grid areas in the Philippines only have diesel generators as their common source of power, a source known to be expensive and volatile. It seems worthwhile to consider subsidizing renewable energy in those areas, particularly if extension of the major national grid is difficult or too costly.

In reality, the increase caused by the FIT regime initially amounts to little more than 4 centavos/kWh per individual household if the Energy Regulatory Commission approves the rate case of TransCo, the authority tasked with administering FIT. This 4-centavos/kWh increase is by no means excessive when compared to general hikes of electricity rates over the previous years. However, this amount could escalate should the Department of Energy increase the installation limits and if projects do come on stream. In August 2014 alone, the Manila Electric Company increased electricity prices by 3.1 centavos (Cayabyab, 2014). In December 2013 the price spike reached PHP 4.15 (415 centavos) although this has been disputed and the case is currently resting with the Supreme Court of the Philippines.

In many countries, FIT is, and has been promoted as a "risk hedging" strategy against dependence on the internal politics of other countries, against long-term environmental pollution and against similar inherently valid reasons (Pembina, 2014). However, such long-term considerations are not tangible enough to convince end users of the necessity to increase, in principle, electricity prices. The same argument applies to businesses, which have to remain competitive. It is only in off-grid areas which are dependent on diesel generators might those arguments be more tangible and have more merit.

Auction Systems and Public Bidding as Alternatives to FIT

An alternative way to derive the right pricing structure can be provided by an auction system where the proponents conclude contracts at the lowest prices acceptable to them. Initially, the following decisions have to be made: (1) will there be segregation between off-grid and on-grid areas and (2) will the bid be for a specific technology, e.g. solar vs. solar, biomass vs. biomass and, (3) will the bid be based on energy output or the capacity to feed into a power grid.

Off-grid locations are areas, which are not connected to any one of the three (Luzon, Visayas, or Mindanao) main grids although they are sometimes connected within a community via mini-grids or local grids. Canada with its vast areas provides a good example for off-grid communities. Many of its off-grid areas are supplied by hydropower with back-up diesel generators in place (Aboriginal Affairs and Northern Development Canada, 2012). Theoretically, feeding into those local grids should suffice to qualify for FIT eligibility and there is no obvious reason not to include off-grid areas. However, in the UK where FIT is theoretically possible for off-grid areas, other FIT related issues, such as meter reading in remote areas, effectively prevent FIT participation in off-grid sites (Centre for Alternative Technology, 2014). For ease of implementation it seems therefore preferable to maintain the current segregation of on-grid and off-grid areas for the time being.

In terms of any particular renewable energy technology, it is more beneficial to auction according to electricity output without specifying the technology to be used. If a certain base load is required, hydropower and biomass can supply the base load while solar and wind can be utilized by way of a hybrid system. Peak demand can be satisfied by solar or wind energy. This simplifies implementation and regulation since it allows the market to choose between technologies given current advances, natural endowments and prices. There is also no need to specify degression rates for each technology.

Such a scheme would also allow existing fossil plants to participate by increasing production via the use of renewable energy technology. Where a hybrid plant using fossil fuel fired production and renewable energy production co-exist, all existing infrastructure of the fossil plant (switchyard, right of way, associated transmission lines etc.) can be used by the renewable energy component. This would make the respective bidder very competitive which in turn is advantageous to the government as well as end users because it decreases the required subsidy.

Likewise, if the bid is based on energy output rather than the capacity to feed into the grid, project sites which are less than ideal because of the system losses they incur due to their remote location are equally eligible for FIT as projects which do not face such issues. An auction system based on feed-in capacity would exclude such projects and thus reduce the undue burden to the public resulting from less than ideal project sites. However, this aspect could also be appropriately taken into consideration simply by specifying acceptable ranges for system loss when establishing FIT eligibility.

However, an auction system would bring back a public bidding process, which FIT intended to eliminate when it was initially introduced by forerunners in Europe. Public bidding, at the same time, brings back all procurement law issues as well as delays typically encountered. Traditionally, bidding processes are lengthy, often marred, often contested; sometimes quality suffers but in essence it is a means to derive the right pricing structure. It can be argued that the almost obligatory delays whenever public bidding and procurement is involved might make FIT the preferable option. However, if assessed objectively, the delays in implementing FIT in the Philippines have been such that a difference would hardly have been noticeable.

Competitive bidding does have some pitfalls. One of the greatest problems that occur whenever competitive bidding is involved is the singular focus on price. If price is the overriding criteria, quality will suffer. What is more unfortunate is that projects might not even be implemented because the cheapest bidder is often not capable of delivering the desired outcomes, be it financially or technically.

Obviously every bidder has to adhere to the same technical specifications but within those specifications, the respective bidder should be free to locate savings or find improvements. If too many opportunities for savings are discovered or, maybe worse, prices are unknown to a bidder and the bid is based only on rough estimates, chances are that something that looked good on paper may turns into the proverbial white elephant. In those cases, which are unfortunately not uncommon – everybody loses, including the public agency which is left to deal with the problem and the requirements of a new tender.

On the other hand, if too much emphasis is placed on technical criteria as oppose to price, the winning bid is easier to challenge. Price is undisputable but technical criteria and specifications are open to further scrutiny by a competitor. In recent years, a mixture of technical criteria and price has been used in tenders. Under current benchmarks, it is common to give technical criteria 40 percent and price 60 percent of the valuation.

Although time consuming, a relatively stringent pre-bid process can eliminate some shortcomings by requiring bidders to provide references of completed projects similar in scale and nature or requiring specific expertise of core personnel. The barriers to entry that are created this way can be mitigated by allowing a consortium of bidders to submit a joint bid wherein the consortium but not the individual member has to fulfill the criteria. It is reasonable to assume that an experienced and reputable party will not take the risk of partnering with a company that is not credible.

Bid bonds are often used to prevent bidders who are not serious from participating in a bid. If the amount of the bid bond is sufficiently high, segregation can take place on this basis. To the extent this constitutes a barrier to entry or an unfair advantage, allowing a consortium of bidders to participate mitigates the barrier for the same reasons outlined above.

Often low implementation rates are cited as a disadvantage of public bidding. In this context, to what extent is it the fault of the winning bidder that the project stalled or is not implemented at all. If permits are missing, construction is hindered or prevented by late expropriation of land or similar reasons, which are beyond the control of the winning bidder, then it is the implementing agency that is at fault.

Besides transparency issues, the biggest disadvantage of public bidding – and the biggest barrier to entry – is the costs associated with submitting a responsive bid. Particularly for large infrastructure projects, these costs easily reach millions of dollars. Even if a consortium shares costs on a pro rata basis, smaller participants might not be able to cover even a relatively small portion.

Some countries have, in recent years, successfully used a competitive tender process rather than FIT. Interestingly, most of those countries are developing countries and not countries, which have long standing, experience with successful public bidding (International Renewable energy Agency, 2014).

An alternative to public bidding that might be considered, though probably even more contentious as far as the Philippine experience goes, are unsolicited proposals. Unsolicited proposals originate from private sector proponents that have the necessary means, knowledge and experience to prepare, and in the long run implement, projects in areas where governments do not have funds, know-how or manpower to solicit such proposals or simply fail to request for proposals. However, unsolicited proposals have had undesirable outcomes in the Philippines. In the case of NAIA Terminal 3, an unsolicited proposal where construction started in 1997, the contract was declared null and void in 2004 and legal proceedings between the consortium PIATCO and the Philippine

Government are still ongoing whilst a semi-constructed much needed terminal has been left idle for years (Rappler, 2015).

Before FIT was adopted by all countries in the European Union, it was a practice in some member states to provide subsidies to plants with the lowest generation costs as determined by a bidding process (Economic and Social Research Institute, 2005). Although this also involves public procurement, it might be worthwhile considering as a viable alternative to FIT in the Philippines. This can take the form of bidding for the lowest subsidy required to generate a certain capacity or bidding for a certain amount of capacity on cost basis with guaranteed Minimum Energy Off-Take for a pre-defined period of years. Particularly in off-grid areas, which are diesel powered, this might be a valuable approach to promote renewable energy and achieve the goal of significantly increasing renewables production in the country.

The Use of Renewable Portfolio Standards

Another approach to promote renewable energy are Renewable Portfolio Standards (RPS) wherein a certain amount of energy has to be sourced from renewable energy generation. This can happen via a supplier's own generation or purchases from third parties, the latter leading to highly competitive prices. In the United States, more than half of its member states have such guidelines in place although, in the absence of national legislation, the policies vary (Solar Energy Industries Association, 2014). It seems worthwhile considering a combination of RPS with other incentives or initiatives. However, in light of the many problems and uncertainties surrounding FIT in the Philippines, it might be overly ambitious to aim for a combination at this point in time. RPS follow a different set of rules and regulations which would add an additional layer of complexity and complication to a process that is currently already unnecessarily complicated and complex in its own right.

The Use of FIT in Other Countries

Interestingly, the European Commission in its new guidelines on State aid for environmental protection and energy 2014 to 2020 which became effective in July 2014, orders the member states to adopt a market based approach and pubic bidding instead of FIT, thus essentially abolishing FIT by 2017 (European Commission, 2014). The situation in the European Union is not comparable to the Philippines inasmuch as the European Union has to take heed of the so called "Single Market" wherein goods, people, services and capital are guaranteed free movement within the 28 member countries of the Union. A Single Market entails certain conditions; among others the obligation of the individual member states not to grant subsidies outside the rules and regulations provided for in the framework of the European Union as it distorts the market and its competitiveness.

Taking leads from the guidelines of the European Commission is of no relevance to the Philippines. The EU members have had long standing experience with FIT while the Philippines is just starting out its FIT regime. If ever a public bidding process is intended to replace FIT, the guidelines can help form a basis of how to move from FIT to a competitive bidding structure. At the same time, they can provide guidelines for useful exemptions as well as deviations for public bidding. The regulations of other developing countries might also be used as models, e.g. Brazil, Peru or South Africa.

How Brownfield Projects can Leverage FIT Implementation

What is entirely missing in the Philippine FIT approach is the promotion of renewable energy in brownfield projects. Brownfields are power plants already in service as opposed to 'greenfields' or those yet to be constructed. A possible reason for the neglect of brownfield projects might be administrative difficulties. Other than that, there is no apparent reason why brownfield projects are being left out. Without question, it is easier to apply FIT to greenfield projects but including brownfield projects might be more in line with the overall interest of promoting renewable energy in the country. The Department of Energy on its web page http://www.doe.gov.ph/renewable-energy-res states the following:

> *"…the government is formulating programs and projects to stimulate greater private-led investments in the sector, promote RE technologies as competitive energy options and maximize the use of RE potentials."*

If the potential of renewable energy is to be maximized, brownfield projects cannot be disregarded. Since the financial crisis in 2008, banks have become more careful and have shown a preference for brownfield projects over Greenfield projects, particularly for capital-intensive projects on a large scale. Obviously, an already performing power plant – be it renewable energy or fossil energy – with a steady revenue stream is significantly less risky than a Greenfield project where, as the term implies, does not exists yet.

Typically, investors are more amenable to provide finance if historical data is available because such information provides insights on revenue projections over the lifetime of the asset which makes brownfield projects particularly attractive. Further, if production can be continued, future revenues can be used as collateral or pre-payment of receivables, possibly obtaining preferential VAT treatment at the same time. If a fossil brownfield plant, which does not enjoy preferential VAT treatment, is converted into a hybrid plant, access to the preferred treatment could be introduced as an investment incentive.

DOE Resolution No. 16, Series of 2010, the Resolution Adopting Feed-in Tariff Rules, mentions brownfield projects in the following context:

> *Section 1.4 on eligibility of RE plants : "…existing facilities which have been substantially modified or expanded as described in Section 3."*

> *Section 3: "Additional or incremental capacities above an established generation baseline of existing facilities using the technologies listed above that undergo re-powering, modernization and/or expansion shall also be eligible for FIT."*

Technical criteria have so far not been provided to the public. It is unclear what criteria fulfill the term "substantially modified" or what constitutes merely an "upgrade" as oppose to an "expansion". Hybrid plants are one example where FIT eligibility is unclear: it can be argued that, e.g., adding a solar power system to a fossil plant which is already operational, and which can utilize all the infrastructure of the fossil plant and thus be highly efficient and cost effective, is an expansion.

A situation like the one above might help obtain bridge financing required to complete 80 percent of the plant, which is required for FIT eligibility. The future revenues of the existing plant might be sufficient collateral for lenders if FIT is sought for an expansion – be the original plant a renewable energy plant or a conventional one. After commercial operation of the expansion, the project can be refinanced on a project finance basis. Although someone might argue that the main plant is still a fossil plant and even the incremental capacity does not qualify it eligible for FIT.

One of the most critical permits in any power plant project – be it conventional or renewable energy, is the Environmental Compliance Certificate, conventionally called "ECC". The ECC has to be obtained from the Department of Environment and Natural Resources, following a complicated application procedure (DENR, 2015). Oftentimes significant delays are encountered in obtaining an ECC. The costs of such delays have to be borne by the project developer and will eventually increase overall project costs. With an ECC for an existing project in place, construction commencement can happen within a predictable time frame, development costs can be budgeted accordingly and cost overruns as well as completion on time can be achieved easily. Brownfield projects have ECCs in place and only some amendments or adjustments might be required.

Current Impact of FIT on the Philippine Generation Mix

The current impact of FIT in the Philippines is too low to be of any significance. Investors still prefer bilateral off-take agreements even if they are below FIT rates because they are deemed less risky in light of the many uncertainties surrounding FIT (Navarro, 2014). In addition to the issues outlined before, it is yet unclear how and when payment to RE providers will occur. FIT is a uniform charge which will show as an individual line item on consumers' electricity bills. TransCo has filed the amount of PHP 0.04057 for such line item in July 2014 and is seeking provisional authority pending final decision but is, at the same time, still consulting with the Bureau of Internal Revenue (BIR) on the tax treatment of FIT (Velasco, 2014). In light of the fact that the FIT rules were adopted in July 12, 2010, it is not comforting for investors to know that more than four years later, the disbursing agency is still seeking provisional authority and the tax treatment has not yet been clarified.

CONCLUSIONS

Despite all the shortcomings of FIT in the Philippines, it has to be noted that action still needs to be taken on the promotion and advancement of renewable energy. "Lessons learned" from other countries have been considered and lengthy consultations with industry sectors have already taken place. No rules or regulations will ever be satisfactory to all concerned parties. FIT might not be ideal but it has its merits and to change course and veer away from FIT would be premature at this point in time.

Rather than condemning FIT altogether because of its administrative difficulties in the Philippines and its many failures seen around the world, it seems worthwhile addressing the known concerns and existing issues such as eligibility, pricing and taxation in a timely fashion. If some of those issues are addressed and brownfield projects as well as off-grid areas are included into the FIT regulations, investors might already look at the Philippine FIT with a friendlier eye.

It is interesting and noteworthy that an industry specialist, Luis Miguel Aboitiz, Senior VP of Aboitiz Power Marketing & Trading, President & CEO of Aboitiz Energy Solutions and First VP of Aboitiz Equity Ventures, believes that the barriers to entry against foreign investors

are high due to the existing strong domestic players, most notably SMC, Lopez, Aboitiz, Alcantara, Ayala, Filinvest, Trans-Asia Energy, Meralco and DMCI despite a current production gap (Energy Boardroom, 2014).

If this is indeed the case, many of the issues surrounding FIT are not pressing and of rather secondary nature because most of the aforementioned industry players have strong enough balance sheets to finance projects themselves. This provides them with the option to refinance the project at a later stage on a project finance basis or leave it on their balance sheet; whichever is more practical from a strategic and financial viewpoint. Conversely, we can also say that the recent policy change by the Department of Energy is disadvantageous to upstarts and newcomers who may have good technologies but lack the financial muscle to provide on balance sheet finance.

In summary, FIT in the Philippines, which has been in the making since the Electric Power Industry Reform Act in 2001 has so far not had much effect other than indicating ceiling prices for bilateral offtake agreements. Hopefully this will change in the future when more eligible projects become operational and proponents as well as lenders gain confidence in the process. In the meantime, we hope that the Department of Energy will reconsider some of the difficulties new policy changes have created for investors and make renewable energy more attractive for the much-needed foreign direct investments.

POST SCRIPT - IMPACT OF CURRENT LOW CRUDE OIL PRICES

In light of the steep decline in international oil prices over the last few months, the question that comes to mind is the impact of such price levels on renewable energy. According to the concept of supply and demand, the thirst for oil should go up while demand for renewable energy, as a substitute for oil, should go down in this scenario. However, this concept is severely distorted if subsidies and policies are considered.

In many countries, petroleum products are heavily subsidized and renewable energy heavily policy driven; any change in subsidies and policies traditionally require time due to their legislative nature and political impact. It is therefore unlikely, if not to say premature, that any government will start changing its policies on renewable energy because oil prices have dropped over the last months (Shukman, 2015). Oil is, and has historically been, a volatile commodity. Predictions for future price developments are plentiful but in essence futile because the future cannot be predicted with surety.

The current drop in oil prices might even be used to argue in favor of renewable energy. Costs of renewable energy are stable and tend to decrease due to technical improvements and advancements, which make it more predictable than oil prices. Renewable energy thus provides independence from oil price volatility to the extent of its deployment. Phasing out oil subsidies during this period of low oil prices is worth considering (Economist, 2015). The effect on renewable energy can only be positive.

If indeed the drop in oil prices proves to be lasting and steps for policy amendments are considered, it can be argued that at the point in time such amendments become effective, prices for renewable energy will likely have decreased further due to technical improvements and thus, the overall situation is largely unchanged.

REFERENCES

Aboriginal Affairs and Northern Development Canada. (2012). *Off-Grid Communities, Government of Canada*. Accessed on March 3, 2015 at https://www.aadnc-aandc.gc.ca/eng/1314295992771/1314296121126#comm

Anonuevo, E. (2012). PH electricity rates among 10 highest in survey of 44 countries. *Interaksyon.* Accessed March 3, 2015 at http://www.interaksyon.com/business/40664/ph-electricity-rates-among-10-highest-in-survey-of-44-countries

Butler, E. R. (2011). *Promoting Renewable Energy Development: An Introductory Workshop for Energy Regulators - Lessons learned from the EU*.

Cayabyab, M. (2014). P0.31/kWh power rate hike August-Meralco. *Business Inquirer*. Accessed March 3, 2015 at http://business.inquirer.net/176160/p0-31kwh-power-rate-hike-august-meralco

Centre for Alternative Technology. (2014). *Can off-grid renwable energy systems get feed-in tariff payments?* Accessed on March 3, 2015 at http://info.cat.org.uk/questions/fits/can-off-grid-renewable-energy-systems-get-feed-in-tariff-payments

DENR. (2015). *ECC Application Procedure*.

DOE. (2014a).*DOE Sec. Petilla: Renewables pave the way to energy security in the Philippines.* February 16, 2015 at http://www.doe.gov.ph/news-events/events/announcements/2473-doe-sec-petilla-renewables-pave-the-way-to-energy-security-in-the-philippines.

DOE. (2014b). Philippine National Renewable Energy Program,

DOE-DC. (2013). *Guidelines for the Selection Process of Renewable Energy Projects under Feed-in Tariff System and the Award of Certificate for Feed-in Tariff Eligibility.* Department Circular No. 2013-05-0009. Section 6 e., May 28, Department of Energy, Republic of the Philippines.

Economic and Social Research Institute. (2005). *Aspects of Irish Energy Policy*, page 102.

Economist. (2015). *The fall in the price of oil and gas provides a one-in-a-generation opportunity to fix bad enerby policies.* Accessed on March 4, 2015 at http://www.economist.com/news/leaders/21639501-fall-price-oil-and-gas-provides-once-generation-opportunity-fix-bad

Energy Boardroom. (2014). *Interview: Luis Miguel Aboitiz*. Accessed on March 3, 2015 at http://www.energyboardroom.com/interviews/interview-president-ceo-aboitiz-philippines

European Commission (2014). *Guidelines on State aid for environmental protection and energy 2014-2020*.

Energy Regulatory Commission, Resolution Nr. 10, Series of 2012.

Energy Regulatory Commission, ERC Case No. 2011-006 RM. July 27, 2012.

Feed-in Tariffs Ltd. (2014). *Feed-in Tariffs - The information site for the new guaranteed payments for renewable electricity in the UK.* Accessed February 16, 2014 at http://www.fitariffs.co.uk/eligible/levels/degression/

Gell, A. (2014). *For a brief moment last week, electricity prices in Germany dropped to zero. Business Insider Australia.* Accessed March 2, 2015 at http://www.businessinsider.com.au/electricity-prices-in-germany-down-to-zero-2014-5

GMA Network. (2013). *PHL renewable energy efforts still face huge hurdles*. Accessed February 16, 2015 at http://www.gmanetwork.com/news/story/307392/economy

/companies/phl-renewable-energy-efforts-still-face-huge-hurdles-analyst
International Renewable Energy Agency (IRENA). (2014). *Renewable Energy Auctions in Developing Countries*. Accessed on March 3, 2015 at http://www.irena.org/DocumentDownloads/Publications/IRENA_Renewable_energy_auctions_in_developing_countries.pdf
Lowe, A. (2013). Limit on foreign stake in renewable energy "unhelpful". *Rappler*. Accessed February 16, 2015 at http://www.rappler.com/business/22123-renewable-energy-investors-lament-foreign-ownership-cap
Navarro, L.B. (2014). President of CleanEnergy Solutions International. personal interview.
Pembina Institute. (2014). http://www.pembina.org/re/benefits
Rappler. (2015). *CA to government: Pay Piatco in full before claiming NAIA 3*. Accessed on March 3, 2015 at http://www.rappler.com/business/industries/208-infrastructure/83994-court-appeals-piatco-naia3-ownership.
Republic Act No. 9136 or EPIRA, Republic of the Philippines, June 2001.
SEC Opinion No. 11-44 Re: Nationality Restrictions; Control Test and Grandfather Rule; Composition of the Board. Security and Exchange Commission, Republic of the Philippines.
SEC. (2010). Foreign ownership in a local mining corporation, Securities and Exchange Commission, Office of the General Counsel, Republic of the Philippines.
Shukman, D. (2015). *Will the falling oil price undermine green energy*. Accessed on March 4, 2015 at http://www.bbc.com/news/science-environment-31057078
Solar Energy Industries Association. (2014). *Renewable Energy Standards*. Accessed on March 3, 2015 at http://www.seia.org/policy/renewable-energy-deployment/renewable-energy-standards
Supreme Court in Gamboa vs. Teves, G.R. No. 176579, 28 June 2011, Republic of the Philippines.
Supreme Court in Heirs of Gamboa vs. Teves, G.R. No. 176579, 9 October 2012, Republic of the Philippines.
Swanson, R. (2013). Solar energy: Statements. *The Economist*. Accessed March 3, 2015 at http://www.economist.com/debate/days/view/1032/print
U.S. Energy Information Administration. (2012). *Negative prices in wholesale electricity markets indicate supply inflexibilities.* Accessed March 3, 2015 at http://www.eia.gov/todayinenergy/detail.cfm?id=5110
Velasco, M. (2014). TransCo to consult BIR on FIT-All tax concerns. *Manila Bulletin*. Accessed on March 3, 2015 at http://www.mb.com.ph/transco-to-consult-bir-on-fit-all-tax-concerns/