

# Philippines Regulatory and Policy Framework for Renewable Energy Development

## Concept Note

### 1. Background: *Ambitious Goals in a sector under transformation*

The 2005-2014 Philippine Energy Plan lays out a two prong agenda: (i) enhancing energy security/independence; and ii) implementing market sector reforms to enable a more efficient sector's operation and ensure proper supply of a growing energy demand.

Renewable energy sources will play a role in achieving this agenda. The Renewable Energy Law, passed in October 2008, lays out a framework to accelerate the development and utilization of renewable energy resources and, in parallel, establishes an institutional framework and mechanisms to carry out its mandates.

In addition, the Department of Energy (DOE) has specified demanding goals for the development of renewable (RE) resources.

“As an aggressive move to promote RE development and use, the DOE has identified long-term goals, namely, to (i) increase RE-based capacity by 100 percent by 2013; and (ii) increase non-power contribution of RE to the energy mix by 10 million barrels of fuel oil equivalent (MMBFOE) in the next ten years. In support of these general goals, the government aims to (i) be the number one geothermal energy producer in the world; (ii) be the number one wind energy producer in Southeast Asia; (iii) double hydro capacity by 2013; and (iv) expand contribution of biomass, solar and ocean by about 131 MW. These goals serve as concrete benchmarks for government to advance its vision of a sustainable energy system with RE taking a prominent role in the process.” (Source DOE, Renewable Energy)

Without efficient, coordinated policies these targets could prove to be too costly and or unattainable. One important step in the achievement of these targets is an identification of the renewable energy resources and energy efficiency opportunities and the construction of a ‘cost curve’ for these options. This can help inform the choice of the mix and level of renewable and energy efficiency resources to be pursued. The second step is the choice of instruments to achieve the targets. Typically it will involve a mix of policy and regulatory strategies, with the latter having an important complementary, but not dominant, role.

There are a number of possible policy/regulatory instruments that can be used to achieve these policy goals. These include tradeable renewable quotas and energy efficiency certificates, portfolio targets/obligations, feed-in tariffs, price structure and pricing incentives, subsidies and grants, concessional financing, R&D support, voluntary green energy programs. Furthermore there is considerable international experience with the implementation and operation of these policies that can inform policy choice and design in the Philippines. There are also various models for the implementation of these policies that rely to varying degrees on policy agencies, regulators, special purpose bodies and market-driven responses of industry participants (existing, such as utilities or new, such as ESCOs).

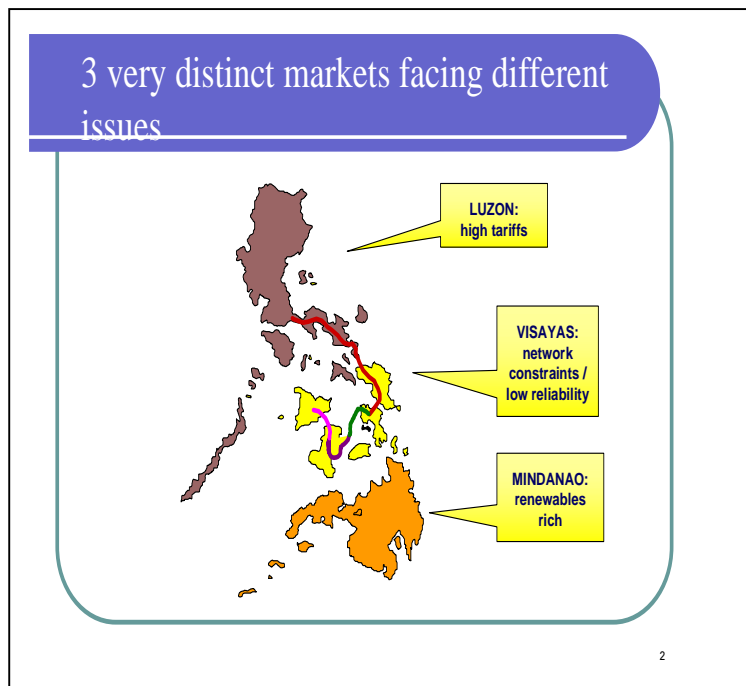
The above highlights the large range of options available that can be usefully categorized in terms of a number of dimensions, such as design, implementation, and operation. Further, due consideration should be taken of the existing power system infrastructure and regulatory framework in place.

Some of the existing regulatory barriers to renewable energy include: NPC's regulated rate (their average generation cost, including pre-existing PPAs and plants still not privatized) are being used as reference prices for DUs/ECs contracts. Any contract signed by a DU or EC at such price has automatic approval by ERC.

Second, regulations for DUs/ECs to pass-through power purchase, include supply contracts cost to their regulated tariffs, and ensure cost recovery. If the contract price is different to NPC's regulated rate as referred to before, the DU/EC needs to submit a request for ERC review and approval. ERC faces significant challenges in being perceived as neutral in this one contract at a time review and approval, in particular to demonstrate protection of end consumers interest in not authorizing recovery of contracts with unreasonable conditions and high prices. There is currently no "price reference" for Renewables for ERC to transparently review and approve RE contracts, and for investors to know in advance price / range of prices that are considered fair and DUs/ECs will be willing to sign being transferable to a regulated tariffs.

*Market Peculiarities and Options.* Philippines' energy, and more specifically power, sector has unique peculiarities that present both challenges and opportunities to be take into account.

First, power system operation is governed by the competitive wholesale electricity spot market (WESM). This in itself creates new challenges in ensuring adequate conditions for development and viability of renewable resources. WESM started commercial operation in Luzon in June 2006 and, once required pre-conditions are achieved, WESM is planned to be extended to Visayas. However, there have been reported instances where, in the bid based dispatch of WESM, renewable generation has been displaced by thermal, creating uncertainties for renewable investment. Thus, in order to design adequate measures and regulations, it is necessary to identify barriers and approaches to overcome those barriers for developing renewables in WESM.



Second, as shown on the picture, the archipelago nature of Philippines has important implications for both renewable and power system development: (i) there are three very different power systems--two of which Luzon and Visayas are interconnected--serving three very different power markets in terms of demand, market composition and possible competitive options; (ii) this segregation of markets lends itself to a modular-small to medium-size development of renewable systems; and (iii) it also brings with it transmission constraints and bottlenecks that places restrictions on plant sizing and location. Transmission system, and therefore transmission expansion planning and/or coordination, takes an added importance when compared to land based systems.

Visayas is characterized by transmission bottlenecks and low reliability; Mindanao is rich in renewable resources and hydro currently accounts for 52.3 % of its capacity mix. Since RE investment is usually capital intensive and the constructed RE plants are expected to operate for 20-30 years, it is important to consider how future climate conditions would affect the current RE investment. One of global climate models, developed by Climatic Research Unit and referenced by IPCC, predicts that although annual precipitation increases over the Philippines in the future, there are seasonal differences. The drier seasons of December-February and March-May become drier still, while the wetter seasons of June-August and September-November become wetter. Under the high scenario (A2) by the 2050s these changes in rainfall reach about 20%<sup>1</sup>. The future climate variability will certainly affect certain RE such as hydro, and thus needs to be considered when making RE policies and regulations.

It is within this very dynamic sector that the regulatory agency, ERC, has requested Bank support in developing a sound regulatory framework to encourage the sustainable development of renewable energy sources. The proposed scope of work has been discussed with ERC in both October and December, 2008, missions.

While the renewable energy agenda is both broad and deep, this proposed task will provide an initial entry point to engage and lay out a more broader and multiyear programmatic approach, this proposed task is only a first step in that direction.

## **2. Objectives**

The general objective of this study is to provide support to ERC through timely advise on best practices to address regulatory and policy barriers for the sustainable development of renewable energy resources. This will be done by

- Estimating RE resources and the costs of RE technologies, considering mid-term future climate variability;
- Recommending a regulatory/policy framework to promote the efficient achievement of the Governments renewable energy policy targets that reflects international best practice and the Philippine context; and
- Recommending pricing and contracting mechanisms for RE.

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<sup>1</sup> Source: Hulme, M. and Sheard, N. (1999) *Climate Change Scenarios for the Philippines*, Climatic Research Unit, Norwich, UK, 6pp.

### **3. Scope of Work**

The scope of work will cover the following Components:

#### ***Component 1: Assessment of RE Costs***

The assessment of the costs of renewable energy technologies will include

- a. Estimating the construction, operations and maintenance and fuel costs for feasible renewable generation technologies other than hydro and geo-thermal generation. The analysis of resources and costs should be undertaken for the three broad regions (Luzon, Visayas and Mindanao). Recognizing that the costs for each option will vary depending on location and quality of fuel source, the study will provide a range of costs that focus on the most efficient options for each energy source in each region.
- b. Given the above, estimating the range for costs per unit of output for a range of load factors for each of the plant/region combinations.
- c. Undertaking sensitivity tests for key assumptions such as fuel costs, capital costs, exchange rates, and climate variability such as precipitation change.

#### ***Component 2: Regulatory Framework for scaling up Renewables***

This task will assess and recommend a regulatory framework to promote the efficient achievement of the Governments renewable energy policy targets by

- Reviewing the efficiency and effectiveness of the policy/regulatory instruments based on practical experience in the Philippines and other countries;
- Given the above, advising on the choice of policy/regulatory instruments and their assignment of the instruments between agencies in the Philippines; and
- Advising on the design and implementation by ERC of pricing and other regulatory arrangements to promote renewable energy consistent with the Renewable Energy Law.

#### ***Component 3: Pricing and Contracting Mechanisms for Renewables***

This sub-task will

- Review relevant international experience in determining prices for renewables and recovery through regulated tariffs of contracting / purchase costs with renewables.
- Assess and propose renewables pricing and generation pass-through to retail tariffs options (i) for Luzon, taking into consideration existing WESM; (ii) for Visayas taking into consideration possible future arrangements and network expansion; and (iii) for Mindanao, to develop industrial and economic growth and support rural electrification. It is expected that recommended approaches may differ for each region, in particular that the approach may be different for WESM than in a non-market environment.

#### 4. Deliverables

- A report on cost assessment of RE technologies.
- A report on regulatory and policy framework for RE development
- A report on pricing and contracting mechanisms for RE
- Proceedings from dissemination workshops

This activity is part of a multiyear programmatic support, needed follow-up will be agreed based on results of this 1<sup>st</sup> phase as proceedings from workshops require it.

#### 5. Resources

**Budget:** The technical assistance will be funded by a grant from ESMAP (\$250,000) fund, Bank budget (\$20,000), and GoP/ASTAE (\$300,000), this last one not yet confirmed.

**Staffing & Quality Control:** Quality control will be conducted by the core project team—Salvador Rivera (TTL), Beatriz Arizu (co-TTL), Yabei Zhang (economist), N. Berrah (consultant)—and a peer review team including Istvan Dobozi (ECSSD), Ashkor Sarkar (ETWEN). ERC and other key agencies such as TransCo will be part of the core team headed by Commissioner Rauf Tan (ERC).

#### 6. Timetable

Deliverables will be sequenced through CY 09, a firm workplan will be agreed in a 1<sup>st</sup> mission in February, 2009, but overall it is planned that this task will be completed by March, 2010.