

Enabling Distributed Solar in the Philippines

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Country Context

- The Philippines is one of the fastest growing economies and remains to be a strong economic force in Asia
- The Philippines is among the world's most vulnerable countries to extreme weather events, natural disasters, and the impacts of climate change
- A comparatively insignificant GHG emitter, the priority for the Philippines is to build adaptive capacity and resilience to the effects of climate change
- Recognizing that low carbon development also promotes sustainable economic growth, the country has sought to pursue climate change mitigation strategies towards this goal



Mitigation Policies

- Renewable Energy Act of 2008
 - National Renewable Energy Program (2011-2030)
- Climate Change Act of 2009
- The Philippines INDC targets a 70% GHG emissions reduction by 2030 relative to its BAU scenario (2000-2030)
 - Reductions will come from energy, transport, waste, forestry and industry, conditionally on international support
- National Climate Change Action Plan 2011-2028
- National Framework Strategy on Climate Change 2010-2022

Energy Sector Context

- In 2012, the energy sector was the largest contributor to GHG emissions
- 67% all power generation is derived from fossil fuel, 50% from coal
 - Coal consumption in 2014: 20 million tonnes, of which 15.2 are imports
 - Annual coal consumption could rise by more than two-thirds over the next two decades
- High rates of population growth and economic development are projected to increase power-related emissions by 400% between 2007 and 2030, in a BAU scenario
- Emerging renewables currently only comprise 0.4% of total energy mix

Sources:

Annual coal consumption could rise by more than two-thirds to as much as 35 million tonnes over the next two decades

<http://www.reuters.com/article/philippines-energy-coal-idUSL3N1341BP20151110>

Energy Policy Framework

Renewable Energy Act of 2008 (RA 9513)

- National Renewable Energy Program (NREP)
- 2010: Adoption of the FIT Rules, which established the FIT as a fixed tariff
 - Priority connection to the grid
 - Priority purchase and transmission of and payment for by grid system operators
 - Fixed tariff for 20 years
 - To be applied for generation utilized in compliance with RPS
- 2013: Adoption of Net-metering Rules and Interconnection Standards
- 2013: Implementation of open access and retail competition for electricity end-users with an average monthly peak of at least 1MW



Rationale for the NAMA

Despite the existence of the following

- Net Metering Rules and Interconnection Standards exist since 2014
- Economic for solar rooftop are favorable (retail tariffs over 0.20 USD/kWh)
- Existing codes cover specific aspects to both grid/distribution integration of variable renewable energy (VRE)
 - Consumers are not taking advantage of these opportunities on a large scale



What is preventing the uptake of solar rooftop units in the Philippines?

Barriers to uptake of solar rooftop installations

- **Regulatory and Policy**
 - Need for revised NEM rates
 - Need for revised net-metering interconnection standard
 - To simplify the application for interconnection process
 - Grid interconnection procedures and rules on priority dispatch are not harmonized across all distribution utilities
 - Permitting requirements across multiple authorities (i.e. the local government units, the distribution network operators) create project delays and lengthy approval processes
 - To facilitate the identification and use of RE systems that respect strong standards
 - High administrative costs results in increased risk premiums for project developers

Barriers to uptake of solar rooftop installations

- **Economic**
 - High upfront costs for renewable energy technology
 - PV installations are up to 80% higher in the Philippines than in Europe for similar technologies, in part due to
 - Lack of competition
 - Vendors offer turnkey solutions, hence need to include fees to cover the lengthy and cumbersome application process with the utility
 - Small market size
 - High soft costs

Barriers to uptake of solar rooftop installations

- **Financial**

- Lack of available non-recourse financing options at competitive interest rates for consumers
 - Non-recourse loan might be 2 years, but the loan for the renewable technology needs to be 10 years
- Financial institutions lack long-term funding, and view RE projects as fairly risky
- Electric cooperatives need credit enhancement tools to increase investments in RE

- **Technical**

- Lack of certified technology
- No standardized accreditation processes for vendors
- Little public and consumer awareness of the availability of NEM projects

Goal of the NAMA proposal

The project's activities will address these barriers to add on-grid, and off-grid distributed energy from renewable sources.



How the proposal will achieve its goal

- **Policy/Technical component:**
 - Facilitate the expansion of private-sector distributed solar by
 - Looking at appropriate policy changes
 - Net metering regulation
 - » Supporting the Philippines Energy Regulatory Commission's (ERC) efforts to improve net metering regulation (including revising the NEM rates to make NEM more sustainable)
 - » Streamlining interconnection standards
 - Slow response times for application
 - In August 2013, only 2 distribution network operators indicated that they had an interconnection policy in place
 - Strive toward eliminating distribution impact study (DIS) requirements (costly, time-consuming) for smaller size installations
 - Streamlining the permitting process
 - » Build capacity of local governments and utilities to evaluate and approve projects
 - » Pilot streamlined applications in selected jurisdictions
 - Accrediting vendors & creating a technology certification program
 - Will reduce technology risks to consumers, grid operators, and banks

How the proposal will achieve its goal

- **Financial Component**

- Establish a Credit Guarantee Fund, expand the financing options available for distributed solar projects
 - Would reduce risks of banks to lend to RE DG and allow for entering the RE DG market on bigger scale and extending better financing terms to RE DG customers
 - Will allow rural electric cooperatives to borrow funds for RE DG development
- Leverage private sector finance for RE DG
- Build capacity of local financial institutions to finance projects
 - Technical assistance to banks to develop standardized products, documents, and technology and project evaluation
- Market development: Initiate a pipeline of “finance ready” projects

Project stakeholders

- The Department of Energy, Renewable Energy Management Bureau
 - Implementing Partner for the Technical Component
- The Office of the President of the Philippines, Climate Change Commission
- The Local Government Unit Guarantee Corporation (LUGGC)
 - Implementing Partner for the Financial Component
- The World Bank
 - Delivery Organization for the Financial
- Center for Clean Air Policy
 - Delivery Organization for the Technical Component
- GIZ
 - Member of the National Steering Committee

Timeline: a final proposal will be ready in summer 2016

Project Financing

- International Support Requested: € 20 million
 - Financial component: €15 million to establish the Credit Guarantee Fund
 - Technical component: €5 million to develop
 - accreditation program for vendors
 - technology certification
 - project pipeline – fund will cover a portion of development costs
- Leveraged Private Sector Finance
 - The Credit Guarantee Fund will be leveraged at least 5 times by private banks in terms of the amount of loans provided to projects
 - With equity invested, the total leverage will be 9 times the initial seed funding of the Credit Guarantee Fund

Expected outcomes

- **Mitigation Outcomes**
 - 2.1 MT CO₂e over 25 years
 - A projected additional 50 MT CO₂e by 2040 through impacts beyond the projects directly supported by the financial mechanism
- **Sustainable Development Benefits**
 - Lower energy costs for electricity consumers
 - Improved health conditions by reducing respiratory illnesses and other diseases associated with fossil fuel combustion
 - Job creation due to increased installations and demand for solar PV technology
 - Increased wellbeing by providing the energy needed for schools and hospitals
 - Improved energy security through reduced fuel imports
 - Reduced transmissions and distribute losses; increased grid stability; reduced price fluctuation; avoided generation costs
 - Avoided costs created by weather-induced blackouts, including delayed production, lost output and wages, and impact on emergency and health support services
- **Adaptation benefits**
 - Increased climate resilience of the power sector

Conclusions

- **The project contributes to**
 - Achieving the objectives of its INDC by addressing emissions from the energy sector
 - Engaging Filipino stakeholders in energy policy and financial discussions to transform the electricity sector
 - Creating a market for solar rooftop installations
 - Increasing access to lower cost low carbon energy and reducing coal imports
- **Replicable:** Lessons learned developing the project pipeline, working with local financial institutions, and streamlining the application/interconnection process can be adapted to other regions to encourage the penetration of distributed resources from renewable energy throughout the country

Conclusions

- **Cost-effective:** Leverage €89 million in private sector funds and catalyze the distributed solar market estimated at €400-800 million annually
- **National commitment and political buy-in:** Continued support from the Department of Energy whose mission is to “improve the quality of life of the Filipino by formulating and implementing policies and programs to ensure sustainable, stable, secure, sufficient, and accessible energy” and the Climate Change Commission
- The proposal **needs support** to remove the main barrier to investment in the DG RE market, namely lack of access to non-recourse financing due to perceived risk by local financial institutions

Project point of contact

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