



Development of a Feed-in Tariff NAMA for Renewable Energy

NAMA Profile # 6

Seeking Support for Implementation (NAMA Registry ID : NS-121)

July 2015

Background

Given that approximately 27 million people in Sudan lack access to electricity, the country, which has a 36% electrification rate, has set a target to increase electrification to 75-80% by 2020. The Renewable Energy Master Plan (REMP), prepared under the UNDP-GEF 'Barrier Removal for PV Market Penetration in Semi-Urban Sudan' project, recognizes that Sudan is endowed with diverse energy resources, ranging from biomass to hydro, solar, wind and geothermal, and calls for the use of these renewable energy (RE) sources to ensure Sudan's energy security and to enhance access to electricity. In particular, the REMP recommends developing large-scale wind power over a near-term time horizon, highlighting the potential of the Red Sea coast in particular, based on the experience of wind farm installations on the coast in neighboring Egypt.

In the RE sector, feed-in tariffs have realized successful results in increasing the RE technology use worldwide. Feed-in tariffs encourage investment in RE generation by ensuring to buy and pay for all electricity produced. 64% of global wind installations and 87% of global photovoltaic installed capacity have been driven by feed-in tariffs (GEF, 2012). While most of these installations are in developed countries, particularly Europe, the African continent has significant untapped RE potential.

NAMA Objectives

The proposed NAMA aims to overcome the barriers that limit access to the finance required to fund large capital expenditure RE projects in Sudan. The provision of attractive, long-term RE feed-in-tariffs will provide the financial visibility and assurance to financiers to invest in RE technology, making it commercially attractive. In addition, ensuring feed-in-tariffs for a guaranteed length of time will provide private investors the predictability required to raise the necessary capital and to better manage their financial cash flows.

NAMA Interventions

The development of feed-in tariff will also include:

- Developing a set of guidelines to establish national NAMA eligibility and design criteria;
- Strengthening the Higher Council for Environment and Natural Resources (HCENR) as the national coordinating institution and quality assurer for NAMAs;
- Establishing a baseline for calculating emission reductions from grid-connected RE through the development of a tool for annually updating the emission factor of the national electricity system; and
- Developing and implementing a measurement, reporting and verification (MRV) framework for the NAMA.



photo courtesy: foreignpolicyblogs

Support Required for Implementation

The full estimated cost of NAMA implementation is US\$500,000, which includes financial, technological and capacity-building support to undertake the following activities:

- Supporting the Ministry of Water Resources and Electricity (MWRE) and the HCENR to build their internal capacities to design and implement the NAMA;
- Designing a guarantee mechanism to reduce counterparty payment risk in the context of the feed-in tariff;
- Designing a carbon/climate finance 'window' for the feed-in tariff, so that standard payments can be augmented by additional premium payments that do not directly burden the Government of Sudan; and
- Undertaking a technical review of the feed-in tariff after 2-3 years of operation to assess its impact in catalyzing RE investment and to propose design changes.

NAMA Relevance in the National Policy Context

The proposed NAMA is in line with the national policies and plans outlined below.

- **Renewable Energy Master Plan (REMP, 2005)**, which recognizes RE potential in Sudan and clarifies the case for increasing the RE share in Sudan's electricity mix.
- **National Strategic Vision 2001-2025**, which sets overall goals for economic development in Sudan for the period 2001-2025. The Vision is operationalized through rolling five-year strategic plans, and recognizes the supportive role of the RE sector in achieving economic development goals, through the capacity enhancement of existing technologies (hydroelectricity and thermal) and the addition of new renewables (e.g., wind, solar, geothermal and renewable biomass). Emphasis is placed on diversification of the electricity mix to ensure energy security and to enhance electricity access.
- **Second National Communication to the UNFCCC**, which specifically identifies wind energy as a high-potential climate change mitigation technology.
- **National Clean Development Mechanism (CDM) Strategy (2011)**, which is endorsed

by the HCENR, aims to promote low-carbon projects through the CDM. This strategy states that wind energy is the most promising RE option (as opposed to concentrated solar power and geothermal) in the short-term (i.e., within the next 5 years), a finding that is aligned with Sudan's current strategy to develop wind farms in Nyala (West Sudan), Dongola (North Sudan) and the Red Sea region.

- **Sudan's National Adaptation Programme of Action (NAPA, 2007)**, which observes that disruptions to hydroelectric power generation – in terms of both absolute quantity and reliability of electricity generation – will occur due to reduced precipitation arising from climate change, as well as to increased precipitation variability. Diversification of the electricity mix using utility-scale wind energy is seen as a viable means of enhancing Sudan's energy security. Furthermore, diversifying the renewable electricity base with wind energy will provide the added global environmental benefit of avoiding future adaptation costs in the power sector. For example, high sedimentation levels in Sudan's large dams due to upstream land degradation are a severe threat to hydroelectric power generation.

Potential for Transformational Change and Sustainable Development Co-benefits

The introduction of feed-in tariffs will spur more investment in RE; thus, this NAMA has significant transformational potential for RE and the energy sector in general.

Besides emission reductions, the NAMA is expected to generate the following sustainable development co-benefits:

- Increased access to energy, in particular clean energy;
- Increased energy security;
- Reduced dependency on less secure and more polluting energy sources through access to affordable, sustainable and clean energy;
- Development of national capacities regarding clean energy generation technology;
- Creation of more jobs; and
- Promotion of investment flows to Sudan.

Salient features of the Proposed NAMA

Sector : Energy Supply

Technology : Bioenergy, hydropower and wind energy

Type of action : National/Sectoral policy or programme

GHGs covered by the action : CO₂

Expected timeframe for the implementation : 5 years

Implementing entity : MWRE

Total estimated cost of the action : US\$ 500,000

Required support for the implementation of the action : US\$ 300,000 (financial support) and US\$ 200,000 (technical support)

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The NAMA is being developed as an activity within the broader UNDP-GEF project, 'Promoting Utility-Scale Power Generation from Wind Energy' (GEF Project Management Information System, number 4745).

References

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Government of Sudan (2005). Renewable Energy Master Plan (REMP).

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This series of NAMA profiles is produced by the NAMA and Registry Unit of the Non-Annex I Support Sub-Programme of the Mitigation, Data and Analysis Programme (MDA) of the United Nations Framework Convention on Climate Change (UNFCCC) Secretariat, based on the information recorded by Parties in the NAMA Registry. The objective of the NAMA profiles is to enhance visibility of NAMAs, which increases the probability of obtaining international support and encourages similar mitigation actions in other developing countries.

The NAMA Registry is a dynamic, web-based platform to record NAMAs in developing countries, as well as support available and/or provided by Parties and entities for such mitigation actions. Furthermore, the Registry aims to facilitate the matching of NAMAs with available support. Participation is voluntary and the Registry contains only information that has been submitted specifically for recording purposes. For any queries or assistance related to the NAMA Registry, please contact: NAMA-registry@unfccc.int or NAMA-support@unfccc.int

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