Review: CTF PRIVATE SECTOR PROPOSAL

Ukraine Renewable Energy Program (the "Program")

Reviewer's background and Scope of review

This review is based on my experience developing grid connected PV (not wind) power systems in the USA, as well as in India, Mexico and Philippines, starting in the early 1980s and continuing to the present. The fundamental contexts in which renewable energy power plants (wind power systems, solar photovoltaic systems, solar thermal power systems, or biomass power systems) are either viable or not are: (1) the magnitude of renewable energy resources (how many megawatt-hours can be produced annually from a given renewable energy power plant), (2) the electric power system operator's motivation to accommodate non-dispatchable power generation and to change routine operating procedures, (3) the value assigned to "clean energy" in the tariff, accounting and tax rules of the country in which the renewable energy plant is located, (4) established business models for the sale of renewable electric power to the grid operator or private parties, and (5) the familiarity of local bankers and investors with renewable energy technologies and the performance of these technologies in regions where they are to be deployed. Based on my experience, and from reviewing the IFC proposal "Ukraine Renewable Energy Program", it appears that these five contexts can be favorably aligned in Ukraine to support a nascent wind power sector and the subject "Program" to accelerate the adoption of wind power in Ukraine is well conceived. Further, I agree with the proposition that by supporting wind power as the lead RE technology, other RE technologies in the agri-business power sector can benefit from the advisory services component of this proposal. One caveat; I am not independently knowledgeable regarding the legal and political system in Ukraine, and as such am accepting as fact the proposal's statements regarding past EBRD investments, Ukrainian laws and other "facts" presented in the Program proposal.

Ukrainian Renewable Energy Development Situation

Not all of the five conditions needed to allow and sustain the adoption of wind power exist today within Ukraine. This can be overcome with the proposal's premise that large-scale projects can be accelerated in the near term with impetuous to incentivize "first movers" to assume the costs and risks of being the first to attempt development of large-scale wind power in Ukraine. It is important that this investment in the IFC-CTF Ukraine Renewable Energy Program provide examples of different turbine manufacturer's designs and project developer's business models (e.g., power purchase agreements and merchant power sales). The timing of Ukraine's CTF program seems appropriate to strengthen the foundation for continued and accelerated wind power deployment.

Specific Comments

Among the most compelling aspects of this proposal is that Ukraine is presently among the most carbon intensive economies in the world owing to its inefficient use of coal and gas for electric power generation and (according to additional information reviewed) an aging and inefficient power transmission system. Given the focus on wind power development in this proposal, it is important for the Program to include consideration of the transmission of electric power from regions with the best wind resource (apparently these are along the Black Sea and Sea of Azov coastlines) to major load and population centers in Ukraine.

Since the focus on this proposal is the reduction of carbon emissions by the electric power sector in Ukraine, knowledge of the dispatch order and carbon emission profiles for the existing fleet of coal- and gas-fired thermal power plants is important to understand the true reduction in carbon emissions. In addition there is a power system operations issue where the proposal could, but does not, anticipate and mitigate a future threat to sustainable wind power deployment in Ukraine: the dispatch of the conventional (existing) power plants given the unpredictable nature of wind energy resources in Ukraine. Unless there is some way to store power to meet demand or to forecast wind power resources accurately (there might be, but it will need to be proven), with increasing wind power deployment it will become increasingly expensive to serve demand during calm wind periods using dispatchable resources.

General Comments

Building the capacity to deploy wind power infrastructure within Ukraine will require more than a single wind power manufacturer and developer. Considering the limited scale of the proposed CTF projects, and the budgets to support only two wind power projects, it is important to allocate these to different project teams to gain the greatest amount of experience. The Program properly supports studies that should accompany these projects to capture knowledge gained and share it with others. If possible, such studies should be carried out by faculty and students within graduate schools in Ukraine, in collaboration with Ukrainian electric power system operators. The graduates from such schools would likely support the sustained growth of the wind power sector in the Ukrainian economy.

Overall Opinion

Ukraine has good wind power resources potential and the GoU provides support through its FIT. This CTF proposal is well conceived and is worthy of support. It includes project diversity (technology and business models), pays close attention to sustaining wind power deployment, and will support development of agri-business RE opportunities. Ukrainian utility and academic institutions should conduct the knowledge management and development studies suggested and, in doing so; develop human resources (graduating students) for career opportunities in sustaining Ukrainian wind power and agribusiness power deployment.

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