

**Evaluation of the Global Environment Facility Project  
on  
Developing the Legal and Regulatory Framework  
For Wind Power in Russia  
Final Report Volumes 1-9**

*Desk Review*

Prepared for

**International Finance Corporation**  
Washington, DC

Under Contract to  
**Princeton Energy Resources International**

Prepared by

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### ■ Executive Summary

The reviewer conducted an independent desk study evaluation of results from a project supported by the Global Environment Facility, Medium Size Project (GEF MSP) grant that was implemented and managed by the International Finance Corporation for "Developing the Legal and Regulatory Framework for Wind Power in Russia."

The project was structured to meet three goals: 1) to develop processes, procedures and model documents that are needed for implementing utility-scale wind power plants in Russia, 2) to facilitate implementation of the first 75 MW wind power plant to be built in Russia, and 3) to increase awareness of wind energy and its potential for utility-scale grid connected electric power production. One of the most important outcomes of this effort was the fact that the resulting regulatory framework that was assembled and written into model agreements is based on the actual commercial wind plant project estimated to bring an investment of approximately \$100 million to Leningrad Oblast. The potential for attracting this large international investment seemed to play a major role in the attention that was paid in Russia to the GEF project work. In broad terms, the lack of legal and regulatory framework for renewable energy in Russia, a potential major barrier to all commercial project development, appears to be significantly reduced.

The reviewer's assessment is that the Project Development Activities (PDA) and goals, as described in the Grant Agreement, have been fulfilled and the outcomes will be very helpful in facilitating the LenWind project, as well as future wind energy projects in Russia. The project is having a positive developmental impact on the host country by drawing on the experience and lessons learned in the large-scale development of wind power in Europe and the U.S. With its vast wind resources, this will provide Russia with a reliable and environmentally responsible source of power at a time when their economic advancement will depend on it. The GEF project stimulated demonstrated interest in the wind plant project from both Oblast (regional) and Federation governmental levels, in the Russian United Energy Systems (RAO UES) and in the Federal Wholesale Power Market (FOREM). It appears that the team's progress with the FOREM may prove to be of special significance with regard to future power off-taker agreements.

The 75 MW pilot wind power plant project is moving toward implementation and recent progress can be attributed largely to the GEF project and the commitment of the participants. Since completion of the project feasibility study in 2003 and launching of the GEF project, the project team has completed many significant and important steps toward fruition, including: completing negotiations and signing Letters of Intent and two comprehensive Protocols for Power Purchase Agreements, one Agreement is with FOREM and the second is with a large commercial energy operating in Leningrad Oblast; land use permitting was initiated; a grid interconnection protocol was been signed; tariff formulation discussions were initiated; terms of reference for an environmental assessment have been prepared; an application for Joint Implementation of carbon credits was submitted to the Nordic Environment Finance Corporation (NEFCO); and the project was presented to several potential investors for evaluation.

In addition to the direct benefits described above, much of the work done on this GEF project will benefit the pilot project and other renewable energy plants in years to come. As one example, new

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legislation was prepared with supporting rationale for "Support of Non-Conventional Power Sources in the Leningrad Oblast." Although this proposed Law has not yet been passed, apparently mainly due to budget constraints, it is a comprehensive model for what can be done to encourage renewable energy development at the regional level. Another long lasting benefit resulted from the team's access to, and opportunities to provide informational/educational briefing to, numerous top-level officials in the Oblast, including the Governor, the Head of the Russian Federation Administrative Apparatus, the most senior people at the Ministry of Industry and Energy and at RAO UES. The combination of a well-planned project, a strong project team and the inherent credibility of IFC/GEF support is critical to the successful outcome of an endeavor of this scale.

It is recommended that results from GEF project should be further publicized and disseminated. Publication in paper and E-copies is important and necessary, but other avenues should be explored. The GEF project team and IFC have apparently made some efforts in that direction. A panel meeting at the Global Wind Energy Conference held in Chicago in 2004 included discussion of the GEF project and renewable energy business issues in Russia. The Program Manager reported that an abstract for a paper summarizing the GEF work has been submitted to the European Wind Energy Conference in 2006, and that the model agreements presented in the nine volume final report are being included in the IFC Renewable Energy Tool Kit. Project results have been disseminated to the involved agencies in Russia and to a limited extent to the wind energy business community at international conferences in Europe and the U.S. and at a UES renewable energy planning conference held in Moscow. The reviewer would also recommend continuing these outreach efforts as appropriate and targeting business and financial audiences with this success story as well. More of this type of broad based outreach is warranted and necessary for projects like this, which can benefit all aspects of the renewable energy business community, and not just in Russia.

### **Status of the Pilot Wind Power Plant Project**

The 75 MW pilot wind power plant project is moving toward implementation and construction is projected to begin in 2006. The project feasibility study was completed in 2003 with participation and support from ABB (US), GE Wind Energy and U.S Trade and Development Agency. Subsequently, a project company, Leningrad Wind Power Company OOO (LenWind) was formed and registered in Vyborg, Russia.

Support from GEF enabled the continuation of progress on this project. Letters of Intent and detailed Protocols for Power Purchase Agreements (PPA) have been negotiated and signed between LenWind and two companies. One Protocol Agreement is with FOREM and the second is with a large commercial energy operating in Leningrad Oblast. The reviewer also understands that work is underway to obtain approval for a long-term tariff needed for the PPA with FOREM. In addition, the project site has been identified and land use permits and approvals are in process. Preliminary grid connection studies were completed and connection Protocol was signed between LenWind and Lenenergo. Since new transmission lines are needed the newly formed Northwest Grid Company is now also involved, and the team has also initiated technical discussions with them. Finally, project financing discussions have been held with potential investors including: GE Capital, the Nordic Environment Finance Corporation (NEFCO), several Nordic utility companies and private investors in the US and Europe. Involving potential financial partners at this time should help to further inform the project team and guide them in their agreement and framework related activities.

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### **Evaluation of Outcomes and Deliverables**

The nine volumes comprising the Deliverable submitted by the GEF project team have been reviewed and considered to be comprehensive and consistent with high quality standards of the IFC. The GEF project team has drawn from the experience and lessons learned from the commercial installation of nearly 50,000 MW of wind power plants installed and operating world wide in preparing a model framework for wind energy development in Russia. Model agreements were prepared based on Russian laws and rules and US and European examples. The resulting models and procedures presented in the nine-volume final report include:

- Executive Summary (Deliverable 1) – describes the project and the current business situation in Russia.
- Wind Power Plant Power Purchase Agreement (Deliverable 2) – includes a model long-term contract between a wind plant company and industrial, utility and wholesale market customers. Letters of Intent and Protocols for power purchase agreements were signed with two large and creditworthy off-take customers. Details of these Protocols are confidential and proprietary, but this is considered to be a significant achievement by the GEF project team.
- Grid Interconnection Agreement (Deliverable 3) – lays out procedures for determining safe, stable and optimal connection and operation of the wind plant connected to the existing power grid.
- Wind Power Tariffs (Deliverable 4) – describes the step-by-step process for obtaining tariff approval.
- Federal Wholesale Power Market (Deliverable 5) – describes the changing market and how this can play a key role in renewable energy development.
- Oblast Financial and Business Incentives for Renewable Energy (Deliverable 6) – A regional Law was prepared and introduced on support of non-traditional renewable energy resources use in The Leningrad Region.” This new Oblast legislation has important provisions designed to facilitate wind and other renewable energy development including: insuring grid access for wind power, providing loan guarantees and tax reductions for the wind project company and tax credits for industrial customers to offset the initially higher cost of purchasing wind energy. This proposed legislation is considered to be pioneering and well documented.
- Wind Energy Land Lease Agreement (Deliverable 7) – describes provisions for wind rights, compatible use of the land not occupied by the turbines and related facilities and for royalty payments to the landowners. In addition a Russian Federation Decree was prepared and enacted allowing the use of Federal Land for Wind Energy Development.
- Regulatory Procedures for Wind Plants (Deliverable 8) – discusses a step-by-step process for project design and construction approvals, licensing, turbine equipment certification, tariff setting and plant operation.
- Environmental Assessment and Carbon Credits (Deliverable 9) – lays out procedures for evaluating the environmental effects of the wind plant, as well as the carbon and other emission reductions that will result.

### **Project Monitoring and Evaluation Procedures**

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Management of the Grantee and subcontracts appear to be typical and appropriate, but the project evaluation process had unique aspects and in the opinion of this reviewer, should be considered for future GEF projects.

The Grantee was required to prepare a Work Plan providing a detailed approach to this project which proved very helpful during implementation. At the same time, IFC invited the Project Manager to describe the project and Russian market issues in a public panel discussion at the Global Windpower Conference. This afforded industry a unique opportunity to understand and to influence the project. This approach is useful and, if appropriate, should be expanded to include other audiences within the business and financial communities.

Another unique approach was employed for project review and evaluation. Three major European organizations interested in investing in the project were invited to review the 75 MW project and the GEF project activities. All aspects of the project including the financial proformas were presented to NEFO and two Scandinavian utility companies, Fortum and Vardar, for possible investment with debt/equity participation. The team has indicated that these discussions are continuing at this time. And, as stated in the project team's report, potential investor evaluations are certainly an unbiased and objective assessment of GEF projects. I would therefore suggest that the IFC and GEF consider including this valuable source for future project critiques.

#### **Deviations from the Work Plan**

Overall, the GEF project team showed flexibility and adaptability as business conditions changed in Russia in areas that impacted the project. Any deviations from the original project plan appeared to be concentrated in the team's attempt to establish a policy framework for this and future projects. The strategic focus was initially on the Oblast level of government. Shortly after the GEF project started, the Russian government underwent a significant reorganization and the power business sector was also restructured. Consequently, establishing new Federation level incentives for renewable energy would be difficult and time consuming, and would certainly not be available in time to help a prototype facility of this type. The GEF project team expected that the Oblast would be more likely to pass needed legislative initiatives providing incentives for commercially viable renewable energy projects, particularly in the Leningrad Oblast. An innovative approach was developed for the Oblast, in the form of an Industrial Wind Users Tax Credit (IWUTC). That legislation was in the process of passage, until it was determined that substantial cuts in tax revenue returns from Moscow to the Oblast were in the offing. Consequently, any legislation that reduced revenues was destined for defeat for the near term, even though it was shown that revenue short fall would be recovered in future through increased profit and property taxes. The GEF project team then shifted emphasis from commercial PPA's supported by tax credits to a PPA with FOREM where the higher initial cost of wind energy can be absorbed easily. This latter approach proved to be successful and a PPA Protocol has now been signed between LenWind and FOREM.

As part of their initial scope, the GEF project team had also planned to complete a project-level Environmental Assessment (EA). This process had to be delayed for several reasons. First, land use questions had to be resolved before the project site could be selected. Prior to this GEF project, areas designated as forestland could not be used for energy projects without an elaborate reclassification process. The GEF project team secured passage of a land usage decree allowing compatible energy and forestry uses. At that juncture, the EA process was further delayed due to the design impact that

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changes in power off-take customers (from the Oblast to FOREM) had on the location of required transmission lines. Appropriately, the project team completed the necessary legislative analysis and a proposed Terms of Reference for contracting for the EA in the near future. The team also prepared an application for Nordic carbon credits. The entire EA process has been documented in Volume 9 of the final project report.

The project was not completed in the scheduled nine months. In this reviewer's opinion the original schedule was overly ambitious. However, there were mitigating circumstances for the six-month delay in completing the effort. After the project started, President Putin instituted a substantial reorganization and downsizing of the Federal government. This clearly made the project negotiations more difficult due to role and responsibility shifts in relevant agencies and resultant key staff changes. The GEF project team also ran into summer holidays and the summer legislative recess which interrupted the consideration of Oblast legislation. Finally, the planned restructuring of RAO UES and FOREM was delayed, further complicating negotiations with FOREM. All things considered, the project team's ability to complete this project in thirteen months was a major accomplishment.

#### **Suggestions for Improving Project Execution and Information Dissemination**

By all appearances, the project was well managed and implemented. The team's two strongest assets in this case turned out to be their experience and their flexibility, critical attributes when working in a rapidly changing environment as was encountered here.

Additional presentation of the GEF project results seems warranted, especially to Russian governmental agencies, legislative offices in the Duma and at energy and business financing conferences in Russia and within the wind and renewable energy industries at large.

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Mr. Sandeep Kohli  
International Finance Corporation  
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Re: GFF Project for Development Facility – Developing the Legal and Regulatory Framework for Wind Power in Russia

Dear Mr. Kohli:

Under a task order from Princeton Energy Resources International, LLC (PERI), an independent evaluation was completed on results from the IFC project Grant for *Developing the Legal and Regulatory Framework for Wind Power in Russia*. Review of the previously funded project feasibility study supported by USTDA was not a part of the scope of this work.

Term of Reference for the evaluation involved three steps:

1. Reviewing the Grant Agreement, dated 22.10.03, between IFC and ZAO Lidesm, Grantee, focusing on project objectives and deliverables described in the Agreement.
2. Review of the nine volumes of deliverables produced by the Grantee and subcontractors. Follow-up questions and clarifications were addressed to the Project Manager at PERI.
3. Preparation of a report on the independent evaluation that is attached.

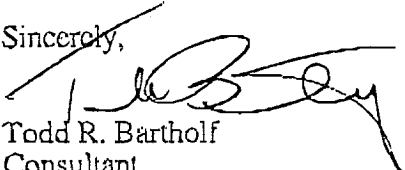
The work performed by the Grantee and subcontractors met the project objectives and are considered to be pioneering, innovative and consistent with the high quality expected in IFC and GEF projects. The compendium of deliverables is replete with useful information and the model agreements will be helpful for additional projects in Russia and in other countries. Basing the model agreements on an actual project is a unique approach that made their framework credible and valuable in moving the project closer to construction. Although the GEF project activities had a key facilitating role in supporting the development of the first large-scale wind power project in Russia, the project team still faces substantial hurdles to obtain the needed tariff, technical and administrative approvals. The strong project team can overcome these challenges, but not easily, in a country with traditionally low electricity prices.

The project team showed flexibility in adapting to the changing business climate in Russia. Deviations from the Grant Agreement and Work Plan were minimal, although the team had to shift emphasis from Oblast level incentives, to signing a Power Purchase Agreement with FOREM, the federal wholesale electricity market company. Shifting emphasis and the major restructuring and consolidation of government agencies and the United Energy Systems company, delayed project completion by about six months. Completion of the Environmental Assessment also had to be deferred until off-take customers and power line routes were more clearly identified. An innovative approach to project monitoring and evaluation was to have potential investors assess the project and results to date. This type of evaluation offers an objective assessment and should prove very beneficial to meeting the implementation objectives of the eventual pilot project.

The primary suggestion for improved execution is to expand and emphasize information dissemination. Results on this project will certainly play a key role in opening a new market for renewable energy in Russia.

Thank you for the opportunity to review and evaluate this important project.

Sincerely,

  
Todd R. Bartholf  
Consultant

Enclosure: Evaluation Report

