SUMMARY OF OPERATION EVALUATION

A wind farm

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EBRD EVALUATION DEPARTMENT

European Bank
for Reconstruction and Development

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1. Executive summary

In 2009 the Board approved a loan to co-finance the development, construction, and operation of a greenfield 135 MW wind farm. The project's stated objectives were to help meet a project-specific funding gap in the midst of the global financial crisis, support private sector participation in the energy sector, and support renewable energy. This state-of-the-art wind farm was built and is operated by a local sponsor ("the Client" or "the Company"). Financing was jointly provided by the EBRD, the International Finance Corporation (IFC), and the European Investment Bank (EIB), in addition to equity provided by the sponsor. Project development was completed and construction and civil works were already at an advanced stage at the time the proposal was presented to the Board. The project was developed in the context of a strong prior government push for increased power generation from renewable sources, a major increase in applications for new wind power licenses, and a number of prior legal and tariff measures intended significantly to encourage production and utilisation of renewables.

1.1. Overall ratings

The overall project performance rating is 'successful'. The client met construction and commissioning schedules and turned in a strong financial performance. The project benefitted from a strong and previously committed local sponsor, the prior engagement of two other IFIs, and the provision of a significantly supportive policy and regulatory context by the Government. EBRD's provision of financing filled an unanticipated crisis-related gap; however as the final participant in an effort already underway for some time, its incremental contributions beyond the financing appear to be positive, but limited.

1.2. Findings

The key findings, as identified by the banking team, reflect the overall positive outcome of the project and focus on why the project was successful. These findings relate to the political-economic situation in the country of operations and the energy sector, legal and regulatory issues, and environmental performance.

1.2.1. Political risk

The project faced political and regulatory risk in a changing environment. The team addressed this by structuring a demand guarantee price structure which helped to greatly mitigate financial risks. While a set feed-in tariff existed for wind energy, the Company opted out and used a market-based tariff because of high local demand for energy in the region.

A demand guarantee proved to be an effective solution to mitigate project financial risks.

1.2.2. Value of a first-of-a-kind project

As in other countries, the Bank's initial entry was through a private sector operation. It positioned the Bank as a key supporter of renewable energy. The country has become one of the Bank's focus countries under the Climate Investment Funds. Subsequent to this operation, the Bank expanded its efforts in on policy dialogue in the power and energy sector in the country, with a focus on energy efficiency and renewable energy. The Bank has also participated in another wind farm project in the country and is participating in discussions about an extension of this project. Perhaps the Bank could have achieved more with this initial project but the Company needs to be looked at in the context of crisis response. The Bank acted quickly to provide needed financing which allowed the project to proceed.

An innovative project in a new country and relatively new sector for the Bank provided opportunities for policy dialogue and follow-on projects. In 2011 the Bank signed a memorandum of understanding with the country's authorities to work together on energy and energy efficiency.

1.2.3. Environmental additionality

The client took the initiative to exceed national requirements and prepare an ESIA consistent with EU standards prior to the EBRD's entry into the transaction. Partnering with a demonstrably committed client such as this is positive with respect to quality at entry and prospective results on the ground. The Bank's due diligence identified a number of shortfalls from EBRD requirements in the client's ESIA and prepared ToR for additional investigations required to bring the ESIA up to best international practice. The EBRD also worked closely with IFC to raise awareness of environmental issues. IFC and the EBRD jointly developed a generic ToR for wind power projects that has been widely used in subsequent operations.

Overall, the Bank's additionality appears limited to a few specific issues in the context of an operation that was relatively sound at the point of its entry.

2. Project ratings

Table 1. Summary of ratings

Relevance	
Additionality (Fully verified, largely verified, partly verified, not verified)	Largely Verified
Effectiveness	
Achievement of operation objectives (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Excellent
Project financial performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Excellent
Efficiency	
Bank handling (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Excellent
Bank investment performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good
Impact and sustainability	
Transition impact (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good
Environmental and social performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Excellent
Extent of environmental and social change (Outstanding, substantial, some, none/negative)	Some
Overall performance rating (Highly successful, successful, partly successful, unsuccessful)	Successful

3. Relevance

3.1. Rationale

The primary rationale for this project was to help expand the country's economy by addressing a key constraint, electricity production. The Bank also sought to promote renewable energy. The primary fuel source in the country is coal and half of the production of electricity is still government controlled. Nuclear, natural gas, and renewable energy are important alternatives.

Prior to Board approval, only one large wind farm project had been developed. The majority of projects are relatively small[1], based on fewer and smaller wind turbines. Government statistics provide an excellent baseline, making it easy to evaluate this project against stated objectives. In the midst of the global financial crisis, this project engaged the private sector, supported renewable energy, and helped to address a key constraint on economic growth. The project was consistent with the Bank's Energy Operations Policy. The Bank's first Country Strategy was not approved until July 21, 2009

3.2. Additionality

Table 1: Additionality ratings

	EvD
Additionality (Fully verified, largely verified, partly verified, not verified)	Largely verified

This project needs to be looked at in the context of the financial crisis and the EBRD's crisis response approach. The EBRD provided needed financing in the midst of the crisis thus allowing this project to proceed

The Board presentation, and the core of the additionality argument, was based on the proposition that without EBRD financing it is unlikely that this project would have proceeded. The EBRD stepped in when the Borrower and the other co-financiers were unable to obtain sufficient long-term financing. Its entry into the country and its ability to provide financial support with a longer tenor allowed the project to proceed. Both IFC and EIB saw the primary objective of the project as increasing renewable energy capacity in the country. The EBRD's public disclosure anticipated a shift in the regulatory framework towards support for renewable energy, although in fact significant regulatory and legal support for renewables (such as mandated off-takes and feed-in tariff) was already in place. In any event, this objective was dropped before Board approval. This was perhaps a missed opportunity, but also reflects that it was still early days for EBRD in the country. As noted elsewhere in this report, the EBRD subsequently engaged with the government on its energy strategy.

The Board paper makes specific reference to an EBRD requirement of a best practise Environmental and Social Impact Assessment as the sole element of Bank additionality beyond its financing. However, given the fact that the project was already at an advanced stage of construction at the time of the EBRD's entry, as well as the prior presence of IFC (as well as the self-initiated work of the Sponsor itself), any EBRD additionality on this issue would have been limited at best.

[1] Average size of 43,000 MW, and 33,000 MW if the three large plants are excluded.

4. Effectiveness

4.1. Achievement of objectives

Table 2. Rating of objectives

Achievement of objectives (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Excellent
Company financial performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Excellent
Project financial performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Excellent

The Board paper identifies two key objectives (i) to promote private sector ownership in the energy sector, and (ii) to demonstrate successful implementation of a renewable energy project. These objectives coincided with the transition impact objectives. The physical objective relates to the construction of the wind farm.

4.1.1. Design, build and operate a 135 MW wind farm - Achieved

The wind farm consists of 54 GE 2.5X1 wind turbine generators (rated capacity of 2.5 MW each). Technical completion was issued by the Ministry of Energy in 2011 and the plant is now fully operational. Actual energy production has exceeded design specifications.

4.1.2. More widespread private ownership in the energy sector - Achieved

From 2009 to 2010, the capacity commissioned by the private sector more than doubled and the sponsor became the second largest independent power provider in the country. They also hold licenses for two hydropower plants with capacities of 127.8 and 82.5 MW respectively. This wind farm project increased the client's commitment to the power sector in the country and expanded their capacity in renewable energy. Since approval and the commissioning of this plant in 2010, the Bank has supported two additional private wind and gas plants in the country.

4.1.3. Demonstration effects of new approach and expansion of renewable energy markets - Achieved

In this country of operations several other large wind farm projects have been financed since this project was approved. At the end of 2010 when the plant was commissioned, total installed wind capacity was 1.3 GW, thus this plant represented 10 per cent of the installed capacity. While it is difficult to prove "demonstration effect", a multi-national company became the preferred vendor of wind turbines and additional capacity has been built. The government's current target is 10 GW of installed wind capacity by 2020.

4.2. Company/ project financial performance

The wind farm was commissioned in 2010 and all turbines are operational. The debt was fully disbursed and the borrower started repayment in 2010. In 2010, the Company generated revenues through the sale of electricity (about 7 per cent above the base case). The team's self-assessment states that the project incurred a financial loss in the first half of 2011. Typically, unlike conventional fossil fuel power plants, wind farms are front-loaded (high capital costs to cover the construction) but have relatively low

operations and maintenance costs (as there are no fuel costs). Thus, they are designed to lose money in the early years due to capital depreciation, but to earn cash.

The EBRD used guarantees to mitigate the project risks, but it is important to note that, due to the success of the project, the guarantees have not been triggered.

The project presented the possibility of selling carbon credits. The country is not a compliant market (there are no binding targets under Kyoto), thus potential sellers of carbon credits are limited to voluntary markets. Therefore, these potential credits are not suitable for the carbon funds that the EBRD administers. However, the sponsor was able to sell its carbon credits through the voluntary market and this is fully reflected in the revenues.

5. Efficiency

Table 3. Efficiency ratings

Bank handling (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Excellent
Bank investment performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good

5.1. Bank handling

Due diligence for this project took place in the midst of the financial crisis. The EBRD was able to join the IFC-EIB team and provided financing in a timely manner. Client relationships are strong and the EBRD is in discussions with the sponsor regarding a second wind farm adjacent to the existing one. Various mitigation measures were put in place to address the key ex-ante risks: implementation risks; operational risks; legal and regulatory risks; grid connection risks; interest and foreign exchange. The plant was completed on time and is fully operational, attesting to the good work of the team and the client in managing these risks and completing the project. Except for outstanding covenants related to completion, the project is fully complaint with the Bank's legal requirements.

The nature and structure of this project made it straightforward to evaluate. Key indicators were readily measurable. This project is a good example of a results-focused approach. Finally, the expanded monitoring report provides an excellent self-assessment of the project.

5.1.1. Environmental bank handling

A key member of the client's management team, previously in a senior position in the Ministry of the Environment, determined that the Company would work to establish best practice. At the time an ESIA was not required for a wind farm under local law but a contractor was hired to prepare an ESIA as per the IFC guidelines, resulting in the preparation of an Environmental and Social Management and Monitoring Plan (ESMMP) and a Stakeholder Engagement Plan (SEP), both of which set best practice. However, the EBRD and IFC screened the project Category B because wind farms were not listed in Annex I of their respective Environmental and Social policies. While this was technically correct, because an ESIA had been prepared it was an opportunity to work with the sponsor to establish best practice with positive demonstration effect and at no additional cost to the client. In 2011 the law was amended, now all wind

farms greater than 75 MWs require an ESIA. The EBRD missed an opportunity to contribute to environmental legal transition.

5.2. EBRD's investment performance

The project has a high margin, it was fully disbursed and is repaying on schedule, therefore EvD rates return on the Bank's investment as *'good'*.

6. Impact and sustainability

Table 4. Transition and environmental impact ratings

	EvD
Realised transition impact (Excellent, good, satisfactory, marginal, unsatisfactory, negative)	Good
Potential transition impact (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good
Risk to potential transition impact (Excessive, high, medium, negligible, low)	Low
Overall transition impact (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Good
Environmental and social performance (Excellent, good, satisfactory, marginal, unsatisfactory, highly unsatisfactory)	Excellent
Environmental and social change (Outstanding, substantial, some, none/negative)	Some

6.1. Expectations of transition at approval

Table 5. Transition impact benchmarks

Objective	Benchmark	Status (achieved, partly achieved, not achieved)
1. Demonstration of renewable energy	1.1. Successful commissioning and operation of the project	Achieved
2. Market Expansion	2.1. Closing of financing for project	Achieved
	2.2. Closing of 2 other large scale wind farm project financings in the country	Achieved
	2.3. Commercial success of the Project (defined by min. revenues €23 million per year.	Achieved
	2.3. Increase in wind capacity from 421 MW to at least 700MW.	Achieved

6.2. Environmental and social impacts

This project incorporated best practice in preparing and disclosing an ESIA -- even though the local law did not then require it to do so, nor did the EBRD – however EBRD's engagement cannot be said to have contributed appreciably beyond what was achieved before its entry. The most significant environmental benefit of this project is likely to be its contribution to the country's national commitments to reduce greenhouse gases. This project will displace approximately 241,000 tons of carbon emissions per year.