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Belarus: Derisking Renewable Energy Investment

Key Points for Decision-Makers¹

The objective of this report is to analyse the most cost-effective public derisking measures to promote private sector investment in large-scale wind energy in the Republic of Belarus (“Belarus”). The report sets out the results from a quantitative, investment-risk informed modelling analysis. Modelling data has been obtained from structured interviews with private sector wind energy investors and developers active in Belarus. This report was prepared in close coordination with the Ministry of Environment and Natural Resources.

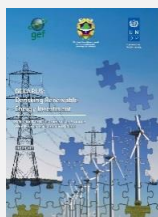
Context and Opportunity for Renewable Energy

The electricity sector in Belarus is currently heavily reliant on imported gas. In 2016, Belarus’ total installed generation capacity was close to 9.9 GW. Gas-fired plants, which are often inefficient and dated, predominate, amounting to 8.8 GW. Belarus imports all (99%) of its gas, which results in an accompanying exposure to price volatility. End-user tariffs are currently not fully cost-reflective, with industrial tariffs subsidizing residential tariffs. These tariffs have recently begun undergoing reform. Belarus has significant plans for additional capacity by 2020, including 961 MW in renewable energy (biomass, biogas, hydro, solar, wind), a 2.4 GW nuclear power plant and a large state programme for peat-based power. Overall electricity demand is projected to be flat in the near/mid-term. To date, Belarus has received 68 MW of investment in wind energy. This investment, made up of 66 individual developers/licenses, is remarkably fragmented, a result of the current small quotas in the regulatory regime.

The opportunity for investment in wind energy in Belarus is strong. This report uses a 2030 target of an additional 500 MW in private sector investment in wind energy, building on the 2020 target found in the Government Program "Power Saving" for 2016 – 2020. Belarus is well positioned for wind investment, with strong wind resources and a favourable ease-of-doing business environment. Increased investment in wind energy can contribute to improved energy security, a lowered dependence on energy imports, and can assist Belarus in meeting its climate change contributions under its NDC. Higher investment targets for wind energy could also open the door to potential export opportunities.

“Belarus is well positioned for wind investment, with strong wind resources and a favourable ease-of-doing business environment”

More on Belarus: Derisking Renewable Energy Investment



An executive summary version and the full version of this report in both Russian and English, as well as its financial models, are available to download at: www.undp.org/DREI

This ‘Key Points’ document was first published in June 2018.

¹ This ‘Key Points for Decision-Makers’ summarises the findings of the report in succinct manner. As such literature references have not been included here, but are found in the more detailed ‘Full Report’ version.

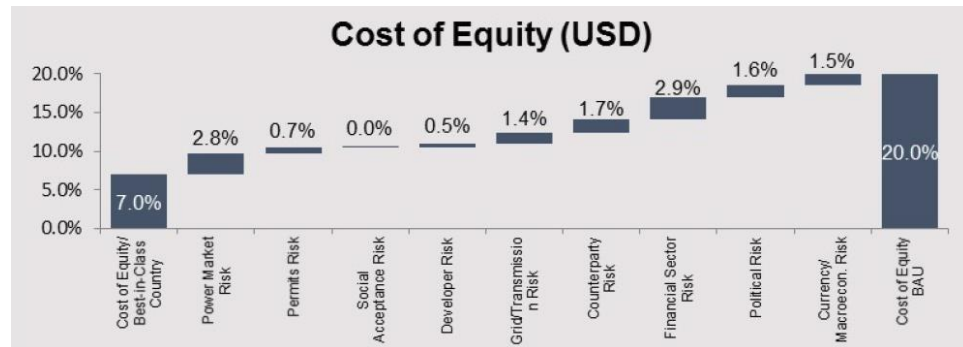
“Derisking attracts USD 808m of private sector investment in wind energy while saves USD 650 mof gas imports over the lifetime of the wind energy assets”

Financing Costs and Risk Environment

The modelling performs a detailed analysis of the financing costs and risk environment for wind energy in Belarus today.

- Financing costs (the cost of equity and the cost of debt) for wind energy projects are high in Belarus. This report finds that the cost of equity² for large-scale wind energy in Belarus today is 20.0%, compared with 7.0% in Germany.
- These higher financing costs reflect a range of investment risks for wind energy in Belarus (Figure 1 below). Based on structured interviews with investors, two risks that predominantly contribute to higher financing costs in Belarus, including: 1) “power market risk” that related to the uncertain outlook for the power market, the fragmented quota system and the variable tariff for wind energy, and 2) “financial sector risk”, which related mainly to the impact of sanctions on limited financing (debt and equity) for wind energy as well as a lack of experience with financing wind energy projects. A number of additional investment risks were also identified as being impactful.

Figure 1: Impact of risk categories on the cost of equity for wind energy investment in Belarus business-as-usual scenario



Source: interviews with wind energy investors and developers; modelling; best-in-class country is assumed to be Germany; see: Full Report and the Appendices therein for details

Public Derisking Measures

The modelling examines the selection and cost-effectiveness of public derisking measures to meet an investment target of an additional 500 MW wind energy by 2030. Public derisking measures can be understood as interventions by the government and its partners that address specific investment risks, in the form of policies, programmes or financial products.

The modelling identifies a targeted package of public derisking measures with an estimated cost of USD 193 million until 2030. The full instrument package is set out and itemised in Table 1.

If these derisking measures are implemented, this can result in the following benefits:

- Attracting USD 808 million of private sector investment in wind energy while saving an estimated USD 650 million of gas imports over the lifetime of the wind energy assets.
- Reducing wind energy generation costs due to derisking from USD cents 12.6 to USD cents 9.3 per kWh, almost at parity with current gas energy generation costs (USD cents 9.1 per kWh).

² USD-denominated cost of equity.

- Generating savings to the economy of USD 371 million when compared to commissioning 500 MW wind energy generation capacity under the current policy and investment environment.
- Lowering carbon emissions by 11.8 million tonnes of CO₂ over the next 20 years, thus contributing to climate change mitigation and environmental preservation.

Of note, investor feedback identified several priority derisking measures: transparent power sector planning; a national wind energy strategy; and reform of the bidding mechanism, targeting larger wind farms, using a fixed price tariff and introducing a standardized power purchase agreement (PPA). On a qualitative basis, investors communicated that these instruments will be key to unlocking investment at scale. These priority measures come at a relatively low cost of USD 1.1 million until 2030, and in turn have a relatively high impact on reducing associated risks.

Table 1: The selection of public measures to achieve the targets for wind energy

Risk Category	Policy Derisking Instrument	Financial Derisking Instrument
Power Market Risk	<ul style="list-style-type: none"> • Transparent energy sector planning • Long-term national wind energy strategy and targets • Well-designed and transparent procedures for quota and PPA tendering and fixed tariff • Standard PPA with well-designed, transparent key clauses across all regions 	NA
Permits Risk	<ul style="list-style-type: none"> • Permit harmonization • Development of a registry of available wind sites • Contract enforcement and recourse mechanism 	NA
Social Acceptance Risk	<ul style="list-style-type: none"> • NA 	NA
Developer Risk	<ul style="list-style-type: none"> • Capacity building for resource assessment • Feasibility studies; networking; training and qualifications; R&D; technology standards • Exchange of market information (e.g., via trade fairs and the establishment of a wind energy association) 	NA
Grid/Transmission Risk	<ul style="list-style-type: none"> • Strengthening Belenergo's operational performance, grid management etc. • Regular updates of the grid code 	<ul style="list-style-type: none"> • Take-or-pay clause in PPA
Counterparty Risk	<ul style="list-style-type: none"> • Strengthening Belenergo's and regional grid operators' management & operational performance for existing operations 	<ul style="list-style-type: none"> • Government (sovereign) guarantee
Financing Risk	<ul style="list-style-type: none"> • Promoting financial sector policy favorable to long-term green infrastructure investments, including project finance • Strengthening of investors' familiarity with financing renewable energy projects 	<ul style="list-style-type: none"> • Concessional public loans
Political Risk	NA	<ul style="list-style-type: none"> • Political risk insurance
Currency/Macro-economic Risk	NA	<ul style="list-style-type: none"> • Partial indexing of the PPA tariff

Source: Modelling. NA indicates "Not Applicable"

Conclusion

“Public derisking measures are an opportunity towards more reliable, affordable and clean power for people in Belarus”

Today's investment environment for wind energy in Belarus has a number of investment risks that result in high financing costs. The report's methodology systematically identifies public derisking measures to target these risks, thereby lowering financing costs and resulting in lower wind energy generation costs.

The modelling thus clearly demonstrates that investing in the identified package of public derisking measures creates significant economic savings in achieving a 2030 investment target of 500 MW in wind energy in Belarus. The modelling also confirms that, when analysed on an individual basis, each public derisking measure is cost-efficient for Belarus, compared to the alternative of higher generation costs.

As such, implementing these public derisking measures is indeed an opportunity for policymakers in Belarus. The end result can be affordable, locally produced and clean wind energy benefiting the people, economy, and environment in Belarus.