

NS-276 - Promotion of wind power plants (WPP) in the Republic of Moldova

Republic of Moldova

NAMA Seeking Support for Implementation

A Overview		
A.1 Party	Republic of Moldova	
A.2 Title of Mitigation Action	Promotion of wind power plants (WPP) in the Republic of Moldova	
A.3 Description of mitigation action	The overall objective of this NAMA is large scale implementation, by 2030 , of Wind Power Plants with a total capacity of about 400 MW. The RM is dependent on imported electricity at about 82% rate. The country's strategic documents provide for overcc situation by adding renewable electricity sources (RES) into the energy balance, including wind energy. The total cap planned to be built by 2030 is about 800 MW. About 50% of these will be regulated, i.e. the price of the energy produ by the regulator, and 400 MW of WPP will operate on open market. In order to make the WPP financially feasible, the energy produced by these WPP should be lower or equal to the lowest price on the energy market. To be able to pro price, donors' contribution in the form of a grant and concessional loan is needed to allow for lowering of the energy p the energy produced by WPPs become competitive on the market. The NAMA concerned is therefore aimed at achie country's conditional NDC, which provides for the 78% reduction of GHG emissions by 2030 compared to 1990. This the list of the nationally appropriate mitigation actions in the country's LEDS. The RM has sufficient wind power potential. Maps of wind resources at the 50, 100 and above ground level of the Republic of Moldova are available on a free access platform. The wind installations to be built will be loca Parks at an altitude of 190-350 m, with towers of about 100-120 m, where the average annual wind speed is 6-7 m / sec. The Wind Capacity Factor falls within the range of 0.35-0.43. The cost of energy will be between 4.35 and 4.41 c € / kWh, corresponding to electricity price produced by the traditional energy sources in the region. By implementing this NAMA, a GHG reduction of approxin kt CO2 equivalent will be achieved. Up to 2016 2.33 MW of wind farms have been built in the RM.	
A.4 Sector	☒ Energy supply ☐ Residential and Commercial buildings ☐ Agriculture ☐ Waste management ☐ Other ☐ Transport and its Infrastructure ☐ Industry ☐ Forestry	
A.5 Technology	☐ Bioenergy ☐ Energy Efficiency ☐ Hydropower ☒ Wind energy ☐ Carbon Capture and Storage ☐ Land fill gas collection ☐ Other ☐ Cleaner Fuels ☐ Geothermal energy ☐ Solar energy ☐ Ocean energy ☐ Low till / No till	
A.6 Type of action	☒ National/ Sectoral goal ☐ Strategy ☐ National/Sectoral policy or program ☐ Other ☐ Project: Investment in machinery ☐ Project: Investment in infrastructure ☐ Project: Other	
A.7 Greenhouse gases covered by the action	☒ CO2 ☐ N2O ☐ PFCs ☐ Other ☐ CH4 ☐ HFCs ☐ SF6	
B National Implementing Entity		
B.1.0	Name	Ministry of Agricultur, Regional Development and Environment
B.1.1	Contact Person 1	Vasile Scorpan
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B.1.9	Contact Person 3	
B.1.10	Address	
B.1.11	Phone	
B.1.12	Email	
B.1.13	Comments	

[Add Additional Entity](#)

C Expected timeframe for the implementation of the mitigation action

C.1	Number of years for completion	5
C.2	Expected start year of implementation	2018

D Currency

D.1	Used Currency	EUR
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Conversion to USD: 1

E Cost

E.1.1	Estimated full cost of implementation	640,000,000
	Conversion to USD:	827,943,079
E.1.2	Comments on full cost of implementation	The full cost of implementation was determined on the basis of different sources at global level. It was assumed that a specific if for WPP equals to 1600 euro/kW. Thus, the total investment amounts to to 640 million euro.
E.2.1	Estimated incremental cost of implementation	
	Conversion to USD:	0
E.2.2	Comments on estimated incremental cost of implementation	

F Support required for the implementation the mitigation action

F.1.1	Amount of Financial support	512,000,000
	Conversion to USD:	662,354,463
F.1.2	Type of required Financial support	☒ Grant ☐ Guarantee ☐ Loan (sovereign) ☒ Equity ☐ Loan (Private) ☐ Carbon finance ☒ Concessional loan ☐ Other
F.1.3	Comments on Financial support	Financial support is a € 219 360 000 grant or about 34 % of investment, and a concessional loan of € 293 000 000 or about 46% investment, and €128 000 000 or 20% of investment coming from the Wind Power Plant owners as equity. Concessional loan is years following the WPP start – up, with an annual interest rate of 0,0 %.
F.2.1	Amount of Technological support	410,000,000
F.2.2	Comments on Technological support	Technical support is needed to purchase wind farm installations and electricity grid elements to connect the WPPs to the national transmission network. All WPP installations and part of grid elements will be bought from abroad as the RM does not produce it.
F.3.1	Amount of capacity building support	80,000
	Conversion to USD:	103,493
F.3.2	Type of required capacity building support	☒ Individual level ☒ Institutional level ☐ Systemic level ☐ Other
F.3.3	Comments on Capacity Building support	The NAMA capacity building program will provide a series of training and workshops for a range of commercially-focused busines including those with little or no previous engineering or wind-industry background, such as wind power investors; wind power developers; project management firms; equipment & service suppliers; law firms and contract managers; Government energy polic and planners (Energy Efficiency Agency, Energy Efficiency Fund, Ministry of Economy and Infrastructure - General Energy Securi Efficiency Directorate); utilities & power generating companies; transmission system operators; research and design institutions & others with an interest in understanding the key factors in successful wind farm development and planning.

G Estimated emission reductions

G.1	Amount	0.609
G.2	Unit	MtCO2e
G.3	Additional information (e.g. if available, information on the methodological approach followed)	CO2 emissions reductions were calculated based on the annual total electricity produced by the NAMA WPP, equal to 1379.7 MWI Moldova Grid Emission Factor, equal to 0.4413 tCO2/MWh <http://www.clima.md/lib.php?l=ro&idc=243&>.

H Other indicators

H.1	Other indicators of implementation	The implementation evaluation and monitoring indicators of this NAMA are: - electricity produced by the WPPs; - number of jobs created by companies providing services for the WPPs installation, operation and maintenance; - number of WPPs implemented and their capacity; - investments made in WPPs, including as a grant, loan, budget support and beneficiary equity.										
I Other relevant information												
I.1	Other relevant information including co-benefits for local sustainable development	Co-benefit indicators for sustainable development are: This NAMA implementation will enhance international cooperation to facilitate access to clean energy research and technology, and promote investment in RES. economic benefits include better employment opportunities for local people in selling, installation, operation and maintenance of WPP, thus encouraging creativity, innovation and growth of micro-, small- and medium sized enterprises. Co-benefit indicators for sustainable development are: Energy security: the less imported electricity is contained in the energy balance, the higher the country's energy security is. Capacity building: Capacity building is considered to be one of the most effective measures to promote energy efficiency and RES in the Republic of Moldova. E knowledge gained by the local staff in successful implementation of this NAMA will be further used for planning and implementation of other NAMAs related deployment of renewables and energy efficiency projects. Income generation: this NAMA implementation will create new job opportunities for companies importing and selling WPP equipment and other related materials the staff involved in installation, operation and maintenance of the WPPs, thus increasing income generation through wages. Attraction of local investments in economic activity: Beneficiaries of WPP will invest their financial resources in technology that provides benefits during a long pe The positive experience gaind will foster local investors in new WPPs construction. Jobs creation: The number of jobs and the qualification of staff involved in the WPPs installation, maintenance and operation will gr										
J Relevant National Policies strategies, plans and programmes and/or other mitigation action												
J.1	Relevant National Policies	• The Energy Strategy untill 2030 – Government Decision no. 102 as of February 5, 2013. The Strategy establishes the capacity of RES to be built up to 2030. • Moldova 2020. National Development Strategy: 8 solutions for economic growth and poverty reduction, approved by the Parliament (Law nr. 121, 03 July 2014); • The Law on promoting the use of energy from renewable sources, no. 10 of 26.02.2016. • The National Action Plan on Renewable Energy Rources for 2013-2020. GD no. 1073 as of 27 December 2013; • The Low Emission Development Strategy (LEDS) of the Republic of Moldova until 2030 and the Action Plan for its implementation, GD no. 1470 30.12.2016. http://lex.justice.md/index.php?action=view&view=doc&lang=1&id=369528 . According to the conditional NDC, 82% of GHG emission reduct be reached in Energy sector by 2030 in comparison to 1990. Implementation of this NAMA is listed in the LEDS among other measures to reach this targ										
J.2	Link to other NAMAs	(none)										
K Attachments												
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