



NAMA Seeking Support for Preparation

| | |
|--------------------------------------|---|
| A.1 Party | Uruguay |
| A.2 Title of Mitigation Action | High Integration Program of Wind Energy |
| A.3 Description of mitigation action | <p>This NAMA consists on the creation of a Program focused on high integration of wind power, over 1,000MW of installed power, ensuring adequate levels of service and product quality.</p> <p>At present, due to the excellent wind resources in the country, Uruguay is in the process of installing 1,000MW of wind power in the next 3 years. This means that by 2015, 20% of the electricity demand will be supplied by wind energy. In the future, the increase of wind power installed capacity involves major technical challenges in a country like Uruguay with high variability of hydropower supply.</p> <p>The goal of this Program is to have a full analysis of the electric system expansion in Uruguay with high levels of wind power. It will be considered a participation of wind energy in the supply mix of electricity demand of 20%, 25% and 30%. It is noted that each additional MW of wind generation that can be installed, under the conditions described above, will contribute to the reduction of GHG emissions due to the replacement of fossil generation.</p> <p>The activities proposed for this Program are the following:</p> |

- a) Review of successful experiences in countries that already have a high integration of wind power, such as Denmark, Spain, Portugal and Germany.
- b) Analysis of existing regulations in Uruguay and identification of rules to be developed.
- c) Cooperation in the development of appropriate grid codes.
- d) Identification of critical scenarios that should be considered when making the system planning studies.
- e) Training in tools for network studies and wind farms modelling (static and dynamic).
- f) Development of studies and analysis of results.
- g) Critical analysis of the expansion plans of the Uruguayan electric system, according to the results obtained.
- h) Capacity analysis of the electric system to meet the demand peaks and fluctuations in wind generation (static and dynamic).



i) Analysis of existing tools in the world and in Uruguay regarding weather and wind generation forecasts.

j) Review of operational planning methodologies in countries with high wind power integration. Critical analysis of operational planning system in Uruguay and identification of changes to be made to integrate high levels of wind generation.

k) Visit to control and dispatch centers from systems with high wind integration around the world. Capacity building regarding operation and system dispatch with high levels of wind integration.

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| A.4 Sector | <input checked="" type="checkbox"/> Energy supply | <input type="checkbox"/> Transport and its Infrastructure |
| | <input type="checkbox"/> Residential and Commercial buildings | <input type="checkbox"/> Industry |
| | <input type="checkbox"/> Agriculture | <input type="checkbox"/> Forestry |
| | <input type="checkbox"/> Waste management | |
| A.5 Technology | <input type="checkbox"/> Bioenergy | <input type="checkbox"/> Cleaner Fuels |
| | <input type="checkbox"/> Energy Efficiency | <input type="checkbox"/> Geothermal energy |
| | <input type="checkbox"/> Hydropower | <input type="checkbox"/> Solar energy |
| | <input checked="" type="checkbox"/> Wind energy | <input type="checkbox"/> Ocean energy |
| | <input type="checkbox"/> Carbon Capture and Storage | <input type="checkbox"/> Other: <Pls enter Other text here> |
| A.6 Type of action | <input type="checkbox"/> National/Sectoral goal | |
| | <input type="checkbox"/> Strategy | |
| | <input checked="" type="checkbox"/> National/Sectoral policy or program | |
| | <input type="checkbox"/> Project: Investment in machinery | |
| | <input type="checkbox"/> Project: Investment in infrastructure | |
| | <input type="checkbox"/> Other: <Pls enter Other text here> | |

B National Implementing Entity

B.1 Name Secretary of Energy; Ministry of Industry, Energy and Mining.

B.2.1 Contact Person Dr. Ramón Mendez (National Director of Energy)

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C. Expected timeframe for preparation of the mitigation action

C.1 Number of months for completion 24

D.1 Used Currency USD

E Estimated full cost of preparation 1,250,000.00

F Support required to prepare the mitigation action

F.1.1 Amount of financial support 750,000.00

F.1.2 Type of required financial support

- | | |
|--|--|
| <input type="checkbox"/> Loan (sovereign) | <input type="checkbox"/> Loan (Private) |
| <input type="checkbox"/> Concessional loan | <input type="checkbox"/> Debt Swap |
| <input checked="" type="checkbox"/> Grant | <input type="checkbox"/> Equity |
| <input type="checkbox"/> Guarantee | <input type="checkbox"/> Other <Pls enter Other text here> |
| <input type="checkbox"/> FDI | |

F.1.3 Comments on Financial Support The financial support required constitutes the 60% of the costs estimated to develop the whole Program during the timeframe expected. This amount would be used to:

- Consulting services: USD 500,000.00
- Building capacity in Uruguay and technical visits abroad: USD 150,000.00
- Equipment: USD 50,000.00
- Publications and others: USD 50,000.00

(Salaries of technical staff participating in the Program: USD 500,000.00; constitutes the 40% of the full cost of preparation and will be provided by national government.)

F.2.1 Amount of Technical support 0.00

F.2.2 Comments on Technical support Technical support is considered in the financial support requested.

F.3.1 Amount of capacity building support 0.00 \$ (Dollars)
 man/hours

F.3.2 Type of required capacity building support Institutional development
 Human capital
 Systemic (policies, legislative, regularatory,etc)



F.3.3 Comments on Capacity Building Support

Capacity building support is considered in the financial support requested.

G Relevant National Policies strategies, plans and programmes and/or other NAMAs

Energy Policy: <http://www.miem.gub.uy/gxpsites/hgxpp001?5,6,584,O,S,0,,>

“Wind Energy Program in Uruguay” (PEEU): <http://www.energiaeolica.gub.uy/>