

# NS-174 - Expansion of electricity generation from sustainable forestry biomass byproducts.

## Uruguay

### NAMA for Recognition

#### A Overview

A.1 Party

Uruguay

A.2 Title of Mitigation Action

Expansion of electricity generation from sustainable forestry biomass byproducts.

A.3 Description of mitigation action

As a result, 429 MW of forestry biomass power will be installed between 2005 and 2018; 184 MW of that power will deliver electricity to the national grid. Moreover, the Government is working on a new tender to add up to 60 MW installed capacity from biomass to provide electricity to the national grid.

Uruguay's Energy Policy promotes energy generation from renewable sources, particularly from unconventional sources (hydro, wind, biomass and solar). It aims to achieve by 2015 a 50% renewable energy mix and 90% electricity generation from renewable sources. Forestry biomass byproducts (mainly from Eucaliptus sp. and Pinus sp.) are used for both cogeneration and generation of electricity, in addition to conventional steam generation. Governmental promotion of electricity generation from biomass led to the installation of several plants across the country; added to that, pulp industries deliver significant amounts of its generation to the national grid.

Since the enactment of the first forestry law in 1968 Uruguay has a Forestry Policy and Legislation, amended in 1987. In this framework, the General Forestry Directorate of the Ministry of Livestock Agriculture and Fisheries is the institution responsible for implementing the forestry policy. Due to the increase in both native and cultivated forest areas in recent years, Uruguay is no longer a country of low forest cover and now captures more carbon than it emits.

Regarding the commitments arising from the UN Framework Convention on Climate Change (UNFCCC, 1992), the Ministry of Housing Land Planning and Environment (MVOTMA), through the Division of Climate Change (DCC) of the National Directorate of Environment, is the competent national authority for its implementation and enforcement. The DCC is responsible for coordination with other institutions and supporting the development of NAMAs

In 2012 Uruguay registered a NAMA related to the incorporation of renewable energy to the national grid to reach 50% stake in the primary mix by 2015. It considered 250 MW of power based on biomass (forestry, rice and bagasse byproducts and black liquor).

The current NAMA, referring exclusively to forestry biomass, is an update and shows the progress on the hiring and promotion of this type of renewable power, demonstrating the continuity of actions related to national energy policy.

Industries generating energy from forestry biomass reduce GHG emissions in two ways: i) Reducing the need to meet demand with fossil fuels; ii) Reducing methane emissions from biomass byproducts (sawdust, chips, bark) accumulated in the open.

Biomass byproducts from forest plantations and industries (sawmills, board manufacturing and pulp mills) have been incorporated into the national electricity generation mix since 2007. Diverse measures were taken to lift existing barriers (mostly of information) for sustainable energetic use of biomass:

- Available biomass resources. The National Biomass Inventory was updated and national forestry mapping is available. These information was supplemented with a forest industry census, which involved estimates of biomass byproduct generation.

- Environmental aspects. There is a National Registry of Management and Forest Land Plans, a National Code of Good Forest Practices and a Sustainable Forest Management Standard. Suitable technologies for sustainable use of biomass for energy purposes in the forest chain were analyzed; forestry by-products liable for energy use are being characterized, as well as potential environmental impacts. The regional energetic crops situation was evaluated with international experts and, considering sustainability criteria, national energetic crops' characteristics are being discussed. There is an Environmental Impact Assessment Regulation, which environmental licenses reach cultivated forests (of >100 ha surface) and the industrial sector. Good industrial practices in terms of air emissions and air quality were evaluated.
- Promotion of biomass generation: The economic impact was analyzed, including initial investment, jobs created, wages and foreign exchange balance; as well as externalities and other social-economic-environmental issues. There is a fluid interaction with forestry, energy and environmental stakeholders in areas of collective participation.

The current NAMA presents 224 additional MW from forestry biomass regarding the 2012 NAMA; some of them are operating

and the rest will be installed by 2018. Of the total amount, 118 MW will provide electricity to the national grid.

A.4 Sector	<input checked="" type="checkbox"/> Energy supply <input type="checkbox"/> Residential and Commercial buildings <input type="checkbox"/> Agriculture <input type="checkbox"/> Waste management <input type="checkbox"/> Transport and its Infrastructure <input type="checkbox"/> Industry <input checked="" type="checkbox"/> Forestry <input type="checkbox"/> Other <input type="text"/>
A.5 Technology	<input checked="" type="checkbox"/> Bioenergy <input type="checkbox"/> Energy Efficiency <input type="checkbox"/> Hydropower <input type="checkbox"/> Wind Energy <input type="checkbox"/> Carbon Capture and Storage <input type="checkbox"/> Land fill gas collection <input type="checkbox"/> Cleaner fuels <input type="checkbox"/> Geothermal <input type="checkbox"/> Solar Energy <input type="checkbox"/> Ocean Energy <input type="checkbox"/> Low till / No till <input type="checkbox"/> Other <input type="text"/>
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"/> Project : other <input type="checkbox"/> Other <input type="text"/>
A.7 Greenhouse gases covered by the action	<input checked="" type="checkbox"/> CO2 <input type="checkbox"/> N2O <input type="checkbox"/> PFCs <input checked="" type="checkbox"/> CH4 <input type="checkbox"/> HFCs <input type="checkbox"/> SF6 <input type="checkbox"/> Other <input type="text"/>

### B National Implementing Entity

B.1.0 Name	
B.1.1 Contact Person 1	Ramón Méndez, National Director of Energy.
B.1.2 Address	Mercedes 1041, Montevideo.
B.1.3 Phone	+598 2900 6919
B.1.4 Email	director@dne.miem.gub.uy
B.1.5 Contact Person 2	Pedro Soust, National Director of Forestry.
B.1.6 Address	Cerrito 318. Montevideo.
B.1.7 Phone	+598 2915 1900
B.1.8 Email	psoust@mgap.gub.uy
B.1.9 Contact Person 3	Jorge Rucks, National Director of Environment.
B.1.10 Address	Galicia 1133, Montevideo.
B.1.11 Phone	+598 2917 0710
B.1.12 Email	Jorge.rucks@mvtma.gub.uy
B.1.13 Comments	

### C Expected timeframe for the implementation of the mitigation action

C.1	Number of years for completion	13
C.2	Expected start year of implementation	2005

## D Currency

D.1	Used Currency	<div style="border: 1px solid black; padding: 2px; display: inline-block;">AED</div> Conversion to USD: 1
-----	---------------	--

## E Cost

E.1.1	Estimated full cost of preparation	0
E.1.2	Comments on estimated full cost of preparation	
E.2.1	Estimated full cost of implementation	0
E.2.2	Comments on estimated full cost of implementation	It has been estimated that 1 MW of power from forestry biomass installed in Uruguay costs in average 3 million dollars. The total amount of MW considered in this NAMA is 224 MW installed, from wich 118 MW are integrated to the national electric grid .
E.3.1	Estimated incremental cost of implementation	0
E.3.2	Comments on estimated incremental cost of implementation	

## F Estimated emission reductions

F.1	Amount	622
F.2	Unit	<div style="border: 1px solid black; padding: 2px; display: inline-block;">MtCO2e/yr</div>
F.3	Additional information (e.g. if available, information on the methodological approach followed)	<p>Avoided emissions were calculated as follows: The annual energy coming to the grid from forestry biomass was calculated, with an estimation of a dispatch of 85%. In absence of this source, the electricity would have been generated with fuel oil. Therefore, emissions from the most efficient fuel oil plant in the country for energy generation were also calculated.</p>

## G Other indicators

G.1	Other indicators of implementation	<p>MW generated a year from forestry biomass; number of plants installed; tons of forestry biomass used to generate energy.</p>
-----	------------------------------------	---

## H Other relevant information

H.1	Other relevant information including co-benefits for local sustainable development	<p>Jobs created (The forestry sector generates 5 and 3 times more jobs per ha compared to livestock production and agriculture); technology transfer and innovation; capacity building; increased in the energy independence; impact on balance of payment; broaden distributed power generation. Finally, waste valorization enhances the sustainability of all the forestry industrial value chain.</p>
-----	--	---

## I Relevant National Policies strategies, plans and programmes and/or other mitigation action

I.1	Relevant National Policies	<p>National Plan to Respond to Climate Change  <a href="http://www.cambioclimatico.gub.uy">http://www.cambioclimatico.gub.uy</a></p> <p>National Energy Policy  <a href="http://www.dne.gub.uy">http://www.dne.gub.uy</a></p> <p>Decrees related to renewable energy generation  <a href="http://www.probio.gub.uy">http://www.probio.gub.uy</a></p> <p><a href="http://www.mvotma.gub.uy/namas/index.php">http://www.mvotma.gub.uy/namas/index.php</a></p>
I.2	Link to other NAMAs	.

## J Attachments

J	Attachments	<div style="border: 1px solid black; padding: 2px; display: inline-block;">Title Description</div>
J.1	Attachment description	

Browse...