

PROBIOMASA Program

replacing fossil fuels with biomass as an appropriate national mitigation action

Argentina

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PROBIOMASA Program

Implemented by the Government of Argentina through the Ministries of Agriculture and Energy, with technical assistance from FAO.

The main objective of this program is to promote the development of bioenergy at the regional and national level, in order to supply clean, reliable and competitive energy.



Key NAMA elements

- The "project strategy" is to be a platform that articulates the three main dimensions of the bioenergy related sectors: energy, agriculture and the environment at the provincial, regional and national levels.
- To support biomass use as an energy resource and through that replace fossil fuel consumption avoiding GHG emissions.
- To develop the necessary mechanisms at local, provincial and national level to ensure the implementation, supervision and monitoring of the production, management and sustainable use of biomass.

Background

- The domestic energy supply in Argentina is mostly based on hydrocarbons: 51% comes from natural gas and 35% from oil and its derivatives.
- But there is a great potential of biomass as an energy source:
 - The potential of biomass consumption could be increased from 2.5% to 10%, which represents a total of 12,000,000 ton/year of the final energy consumption.
 - Avoiding emissions by 8,727,788 tons of CO₂eq/year.
 - To reach that challenging goal, the inclusion of 2000 electric MW and 2000 thermal MW would be required.
 - That is 10 times more than the goal of PROBIOMASA until 2016.

PROBIOMASA Highlights

- **Generate a total of 200 electric MW and 200 thermal MW by 2016.**
- **Reductions of GHG emissions** through the use of biomass for energy generation.
- **Other benefits:**
 - Annual savings by replacing imported fossil fuels
 - Creation of a significant number of new jobs
 - Generation of new capabilities focused on the management of renewable energy
 - Energy security improvement in isolated areas (30 communities in total)
 - Reduction of local pollution of soil and water as well as fire reduction

CO₂ reduction from electricity energy production using biomass

Capacity to be installed	200	MW
Conversion factor	1 kWh	860 kCal
Annual electricity energy production	1,401,600	MWh/yr
Load factor	0.8	
Fuel Replaced	Diesel	
Grid emission factor	0.338	tCO ₂ eq/MWh
Quantity Replaced	400	M m ³
Annual Emissions reductions	473,741	tCO ₂ eq.
Aggregate emission reductions in 20 years	9,474,820	tCO ₂ eq.

CO₂ reduction from renewable thermal energy production

Capacity to be installed	200	MW
Load factor	0,9	
Annual thermal energy production	1,576,800	MWh/yr
Performance of the equipment	80%	
Input Energy required	1,69506E+12	Kcal/yr
Diesel oil Low Heating value	8,619	tCO ₂ eq/Kcal/l
Diesel oil savings	196,665,506	l/yr
Diesel oil CO ₂ emission factor	2.683	kgCO ₂ /l
Annual Emissions reductions	527,681	tCO ₂ /yr
Aggregate emission reductions in 20 years due to thermal energy displacement	10,553,624	tCO ₂

Current Policy Context

Several policies and regulations are being carried out by the government along with the Program.

- Resolution 1076/2001, Ministry of Environment and Sustainable Development, National Biofuels Program related to climate change issues.
- Resolution 1156/2004, National Biofuels Program, Secretariat of Agriculture, Livestock, Fisheries and Food.
- Law 26,190 / 2006, Secretariat of Energy: sets forth that, by 2016, 8% of national electricity consumption should be supplied by renewable sources, including biomass.
- GENREN: Electricity Generation from Renewable Sources Program, Secretariat of Energy.
- Law 26,093 / 2006, Regulation and Promotion for Sustainable Production and Use of Biofuels.
- PERMER: Renewable Energy in Rural Markets Program, Secretariat of Energy.

PROBIOMASA – Main Components

- PROBIOMASA pursues to secure the establishment of provincial-level **bioenergy strategies** aligned with national policy regarding the energy, agricultural and environmental dimensions.
- The program will develop the necessary mechanisms at local, provincial and national level to **ensure the implementation, supervision and monitoring** of the production, management and sustainable use of biomass.
- To raise **social awareness**: projects must be very well communicated and the social participation must be allowed from the very beginning with access to information and capacity building.

Policy and commercial finance barriers

- Banks do not have a tool for a technical evaluation of the biomass projects
 - there is no access to financing this kind of facilities
- The private industry sector lacks knowledge about this market and the energy production.
- Environmental requirements in the Argentinean electricity sector have been designed just for big thermal energy projects.
- Environmental Agencies do not have a methodological tool to evaluate this type of projects.

The PROBIOMASA strategy to overcome the barriers

- To strengthen the institutional framework.
- To prepare a methodology tool for the banks to technically evaluate different biomass projects.
- The banks will be able to finance projects that are technically sound.
- Multicriterial methodology to help to compare the impacts of different biomass projects.

PROBIOMASA platform is

- Transformational (bioenergy strategies, social awareness and inclusion of isolated communities)
- Comprehensive (different sectors, dimensions and levels)
- Integrated (provincial-level bioenergy strategies aligned with national policy)
- Replicable (institutional capacity building at the provincial level, pilots projects)

Additional finance

- Cost estimated for one electric MW generated using biomass: \$USD 2.5 million and \$USD 1 to 1.5 million for one thermal MW.
- PROBIOMASA investment required \$USD 750 million.
- Total funding support provided by the Argentinean Government: \$USD 5,488,975.
- Financial support is required for:
 - Capacity-building Support for the NAMA design
 - Design of financial mechanisms

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