



Argentina: A Strategic Investment Destination to Meet the Demand of Global Markets

Renewable Energies

Undersecretariat of Investment Development
Ministry of Foreign Affairs, International Trade and Worship
June 2011



Secretary of International Trade and
International Economic Relations



Undersecretariat for Investment Development

Renewable Energies

A global opportunity

Global facts

Growing population and increasing demand for energy

+

Climate change and environmental sustainability challenges

+

Policies to promote renewable energies around the world guarantee growing demand (over 85 countries have renewable energies use policy targets)



Renewable Energies

An outstanding mix of resources

Argentina's edge

Abundant resources to generate clean energies

+

World-class agricultural commodities

+

Extraordinary potential for biofuels, wind, solar, geothermal, biomass and hydroelectrical power

+

Highly skilled human resources & technological capabilities in energy sector

+

Longstanding industrial tradition



Biofuels

Booming domestic production

Strong foundations for success

Over 50 countries have established biofuel utilization targets (exceeding their domestic production capacity)

+

World biofuel consumption would increase by around 6.5% per year between 2010 and 2019 (OECD estimations)

+

Argentina has vast extensions of suitable land for agricultural production (36 million hectares of arable land) with extraordinary crop yields

+

Early national regulatory framework to promote local industry: Biofuels Law (2006) and Bioethanol Promotion Act (2008)



Main tax benefits for biofuel investors

- advance refunds of value added tax (VAT)
- accelerated depreciation of assets and infrastructure for income tax purposes

Biofuels

An integrated domestic industry

Biofuels value chain



- Feedstocks production includes soybean, sugar cane, corn and other crops (less concentrated segment).
- Bioethanol industry is concentrated in the Northwest of Argentina, where sugar cane is grown / Biodiesel industry is mostly based in Santa Fe province, the heart of the vegetable oils industry
- Four companies dominate the downstream oil and gas industry (in charge of the blending process).
- Blending terminals are located close to the largest population centers (City of Buenos Aires and Rosario)



Six blending terminals



Four blending terminals



Three blending terminals



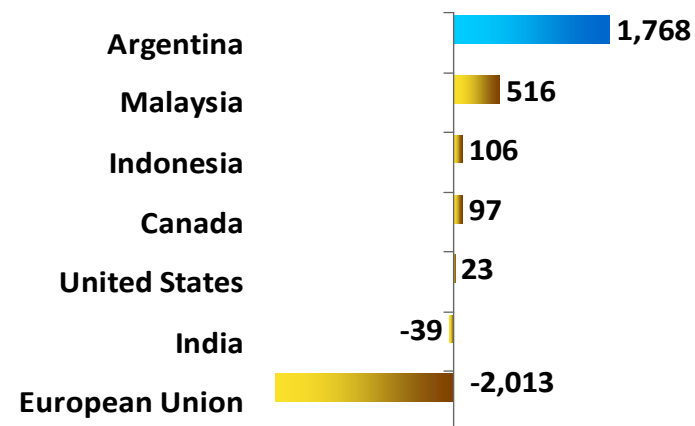
Three blending terminals

Biodiesel

A competitive and globally integrated industry

- In 2010, world consumption reached 21,000 million liters and it is expected 63% growth between 2010 and 2016
- Argentina is the leading biodiesel exporter in the world (US\$ 1,220 million in 2010)
- The country is among the top 5 world producers (10% of global production)
- Potential for the development of alternative resources (jatropha, camelina, among others)

Biodiesel Trade balance 2010 (In millions of liters)



Source: SUINV based on OCDE-FAO Agricultural Outlook

Biodiesel

Foreseeable profits

- Argentina's production capacity has increased 32% per year between 2008 and 2010, reaching 2.5 million tons in 2010
- There are 23 biodiesel refineries, led by large oilseed crushers (large multinationals with large plants close to ports and unlimited access to feedstock).
- Since 2010 mandatory domestic blends of B7 (7% of biodiesel) have boosted the domestic market and guarantee stable and predictable local demand
- In 2011 local market demand will be around US\$ 1,300 million
- Prices are set up by the Energy Secretariat and are in line with international prices (US\$ 1,202 per ton)

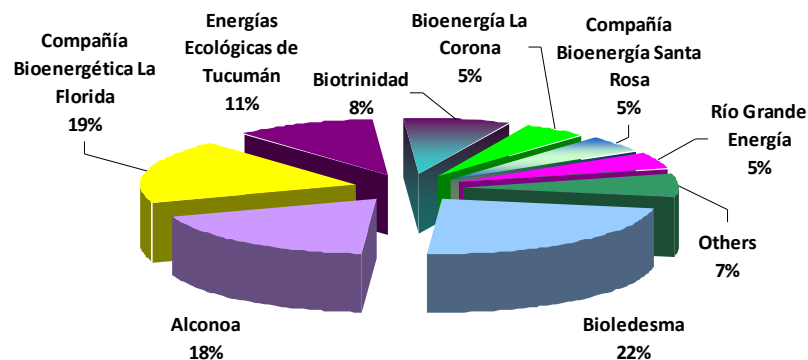


Bioethanol

National demand pushes the production

- Most widely used biofuel: annual global consumption is 93 billion liters
- World consumption will rise at least 47% between 2010 and 2016
- Since Argentina legislation enforced mandatory bioethanol blends E5 (5% anhydrous ethanol with 95% fossil fuel)
- 11 companies will provide 210,500 m3 of ethanol in 2011
- Prices are set up by the Energy Secretariat through a public formula. In 2011 ethanol price reached US\$ 0.76 per liter

Bioethanol national quota distribution by producer (In %)

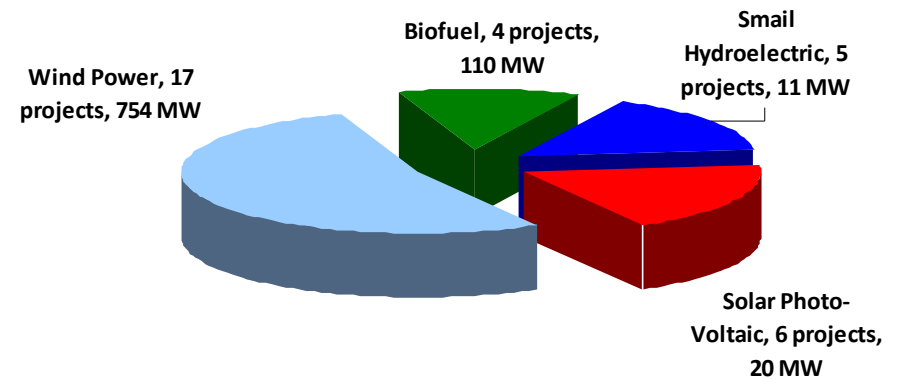


Clean electricity

Strong public commitment and support to promote clean energies

- Law 26,190 establishes that 8% of electricity demand by 2016 should be supplied through renewable resources
- GENREN (Generation of Renewables) Program: The Energy Secretariat and ENARSA tendered 15 years purchase contracts for 1,000 MW of electricity generated through renewable sources
 - ✓ 32 projects totaling 895 MW were selected (3% of the Argentine electricity demand)
 - ✓ US\$ 2,3 billion required to implement GENREN's Program
 - ✓ A new call, GENREN II, is planned. Geothermal, thermal solar generation, biogas and urban solid waste projects would be prioritized

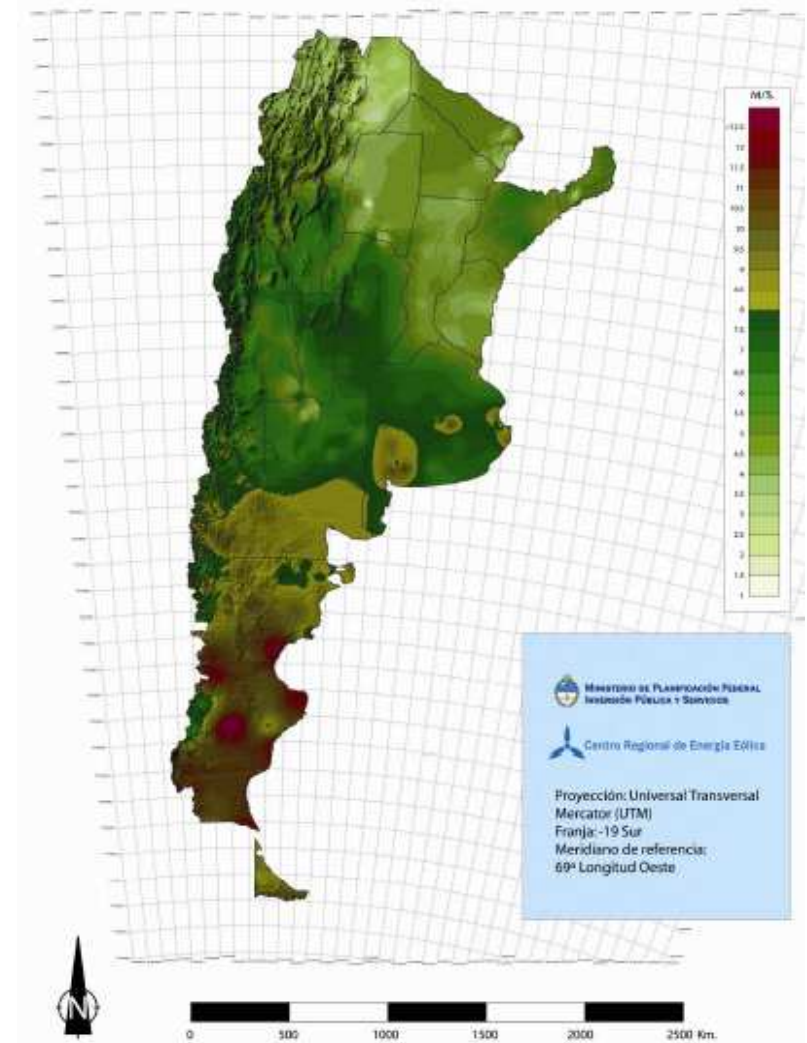
GENREN: Bid projects awarded by type (in %)



Eolic energy

Innovative technology with growing production potential

- Argentina is a pioneer in wind power generation in Latin America region: the first wind farm was built in 1994 and nowadays there are 16 wind parks operating
- Highest concentration of wind mills in the world (Pampa Region)
- Huge potential for developing wind power in Argentina: Patagonia has some of the world strongest winds
- Comahue, Córdoba, La Rioja and Buenos Aires are also attractive locations
- Complementation and optimization opportunities with hydro resources



Eolic energy

Argentine companies sailing into the future

- Engineering and manufacturing capabilities
- Three Argentine companies engaged in wind turbine design:
 - ✓ **Industrias Metalúrgicas Pescarmona (IMPISA)**: manufactures 1.5 and 2.5 MW Direct Drive Permanent Magnet Generator using a proprietary design
 - ✓ **INVAP** produces the IVS-4,500, a turbine adapted to the strong Patagonic winds
 - ✓ **NRG Patagonia**, a local consortium that commercializes the NRG 1.5 wind turbine
- ✓ Six ongoing wind farm projects (Parque Arauco, Vientos del Secano, Malapasina, Diadema and Vientos de la Patagonia I and II)
- 17 new projects to be developed under GENREN Program

Domestic turbine developments



IMPISA Wind - Unipower®
1.5/2.1 MW Direct Drive PMG
Prototype Installed



INVAP - Eolis 15
1.5 MW Pitch / Asynchronous
Detail Engineering



NRG Patagonia - NRG 1500
1.5 MW Pitch / Asynchronous
Prototype under Construction

Renewable energies

Other renewable energies:

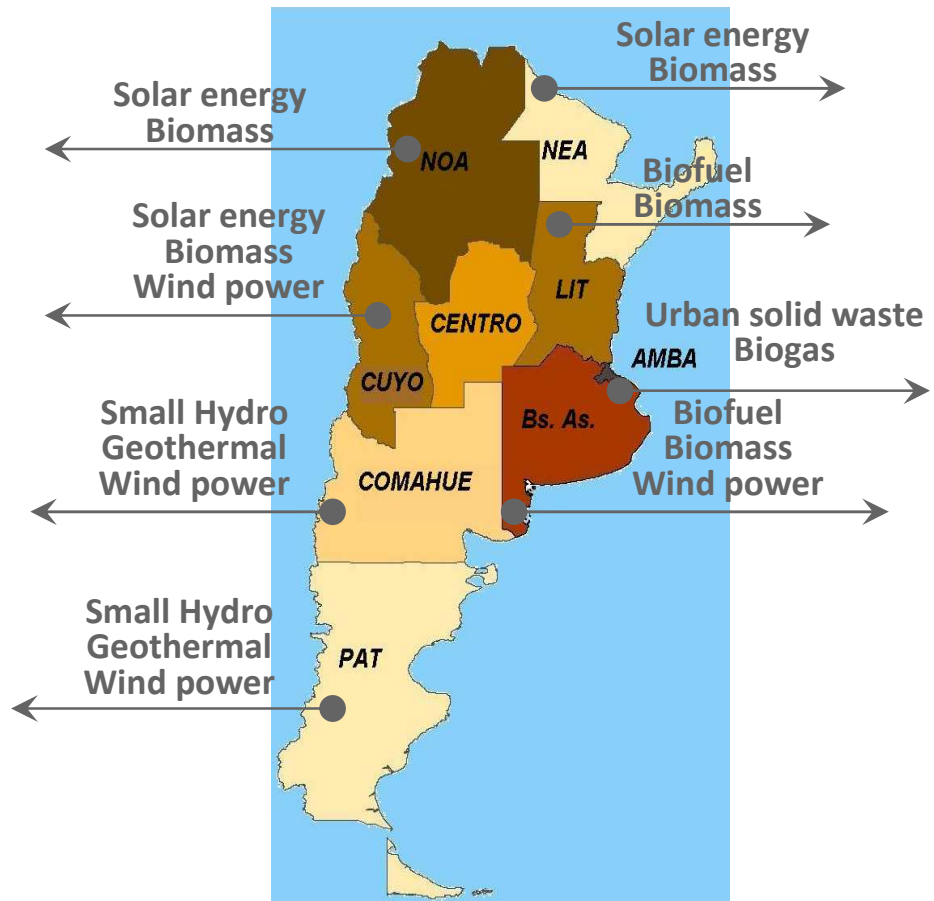
- **Hydroelectric energy:** particularly in the area of small hydropower plants of up to 30 MW
- **Geothermal energy:** Four areas with high potential already identified
- **Biomass and Biogas:** agricultural and forestry industry sources, animal waste and urban solid waste

Solar energy: Solar measurements show that 11 provinces in Argentina have a high potential for the installation of photo-voltaic panels.

A new solar power plant of 1.2 MWp with a cost of 10 million dollars has been integrated into the national power grid.

It's a successful example of collaboration between public and private sectors: a Spanish company, Comsa Emte, won the bid promoted by the provincial energy body

Potential renewable resources





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Provincial investment projects

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Province of Corrientes: Production of electric energy from forestry industry biomass.

- ✓ **Investment opportunity:** Construction of a plant which generates power by using waste from production processes involving the transformation of wood. There are many possible scales, as well as some variations in relation to the technology.
- ✓ **Total Investment:** US\$ 9-12.5 millions
- ✓ **Main advantages:** Significant availability of forestry industry waste, water and proximity to the national power grid.



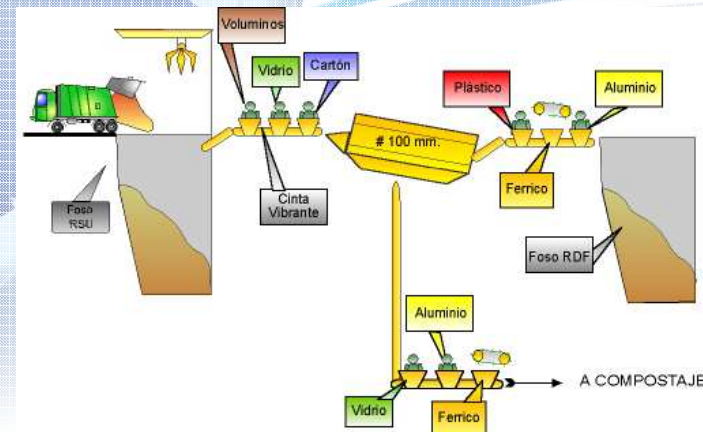
Province of Buenos Aires: Biodiesel plant (100.000 tons capacity).

- ✓ **Investment opportunity:** Building and operation of biodiesel plant with capacity to process 100,000 tons of soybean oil in San Nicolás, Ramallo or Campana.
- ✓ **Total Investment:** US\$ 7 millions
- ✓ **Main advantages:** Argentina's comparative advantage in soybean oil production (lower costs); mandatory blends in domestic fuel production; public incentives; proximity to ports; lots available in industrial poles



Province of Neuquén: Integral Management and Final Disposal of Urban Solid Waste in the area of Confluencia

- ✓ **Investment opportunity:** Construction and operation of a processing plant for physical, chemical and biological treatment of waste in order to obtain marketable inert materials, biogas for use at ecological thermal power station and useful organic fertilizers. The project is designed to cover a projected population of 600 thousand people, with a estimated production of 140/170 thousand tons of waste per year.
- ✓ **Total Investment:** US\$ 25 millions
- ✓ **Main advantages:** Public sector involvement; higher population's growth rates of the country.



Thank You!



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