



Eastern Republic of Uruguay Transforming the Energy Sector in Uruguay

Activity	Setting and achieving a target of 50% share of renewable sources in the primary energy matrix by 2015.
Country	Eastern Republic of Uruguay
Sector(s) involved	Energy
Time frame	2005–2015

Case summary

Before the implementation of the new energy policy, and despite not having oil, natural gas or coal reserves, Uruguay had a significant presence of fossil fuels in its energy matrix, amounting to 56% in the period 2001–2006 (Méndez, 2014). In 2005, renewable energy sources had a share of 37% in the energy supply matrix. This was as the country was using almost its total hydro power potential. Energy imports were concentrated on few suppliers, increasing energy security risks (Energy and Nuclear Technology Directorate, 2008). In addition, average economic growth rates of 5.2% per year in 2006–2014 (World Bank, 2015) led to a sharp increase in energy demand.

To address this situation, an inter-ministerial coordination group was created in 2005 and, in 2008, the government approved a *new Energy Policy 2005–2030*, stipulating short-, medium- and long-term objectives for the sector.

The short-term objective for 2015 is to reach a 50% share of local renewable sources in the primary energy matrix, resulting in a 90% share of power generation. This target is supported by a set of policies promoting the development of biofuels, solar and wind as well as the elaboration of innovative promotion schemes that grant industries up to 80% tax reductions on investments in RE generation.

The implementation of the policies resulted in significant investments in renewable energy installations, initiating a transformation of the energy sector. To date, this policy has achieved annual GHG emission reductions of approximately 5 million tonnes CO₂eq.



Solar panel ©iStock.com/AbeSnap23

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Background

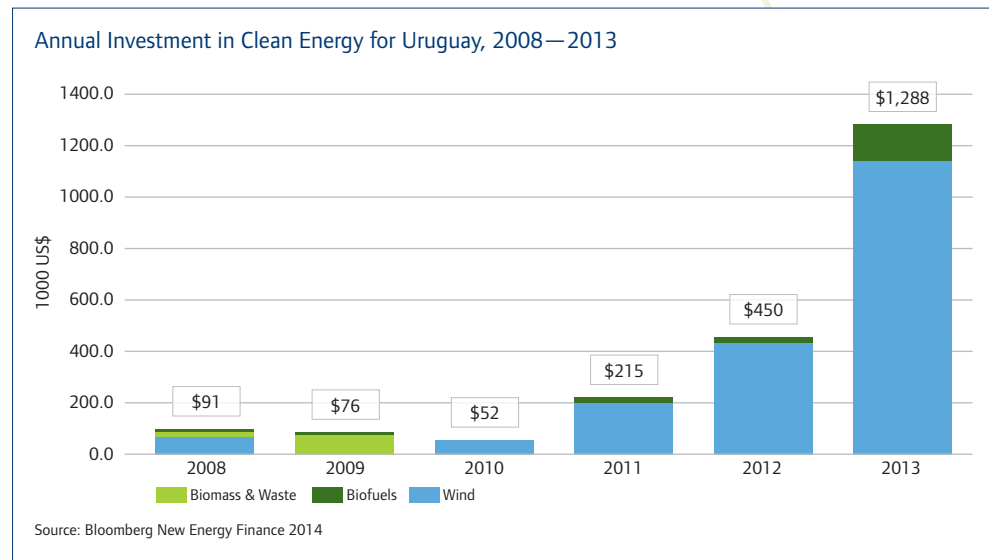
Before the implementation of the new energy policy, despite not having national oil, natural gas or coal reserves, Uruguay had a significant presence of fossil fuels in its energy matrix, amounting to 56% in the period 2001–2006 (Méndez, 2014). At the same time, almost the total hydropower potential of the country was being used. Energy imports were concentrated with few suppliers, increasing energy security risks (Energy and Nuclear Technology Directorate, 2008).

In addition, a sustained economic growth (with an average annual growth rate of 5.2 % in 2006–2014 (World Bank, 2015)) led to a sharp increase in energy demand. The industrial sector, for instance, tripled its energy demand in 2004–2012 (Méndez, 2014). There was also a lack of both, energy efficiency awareness and good practices in energy consumption and production (Mendez, 2013a).

After years of very low investments in energy, with no new capacity installed from 1992–2005, the first ideas for a national energy plan started to take shape in 2005 after a change in government. These included the drafting of objectives for energy diversification, reduction of fossil fuel dependency, improvement of energy efficiency, and an increase in the participation of endogenous resources (IRENA 2015).

In 2008, the government approved the Energy Policy 2005–2030. The overall objective of this policy is to “satisfy energy requirements, at accurate and competitive costs, promoting good energy consumption practices towards energetic independence, in the framework of regional integration, using energy policy as an instrument to develop productive capacities and to promote social integration” (Energy and Nuclear Technology Directorate, 2008).

As a result, annual investment (asset finance, corporate finance, venture capital, private equity commitments) in clean energy technologies increased sharply as shown in Figure 1 (Bloomberg New Energy Finance 2014).



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Activities

Creation of an inter-ministerial coordination group: Against the backdrop of rising concerns around energy security, Uruguay created an inter-ministerial coordination group in 2005, formed by representatives from 11 national entities (several ministries, the Budgeting and Planning Office, the National Emergencies System and the National Mayors' Congress). The objective of this group was for all actors involved in energy policy to start a discussion on potential short-, medium- and long-term objectives for the energy sector.

Policy approval: By 2008, the Energy Policy 2005 – 2030 was approved by the government. The overall goals of the energy policy were:

- (i) the promotion of renewable energies (RE) and
- (ii) the development of an energy efficiency culture.

The policy also defines key short-term goals to 2015 and the strategies to achieve them. These goals include:

- » 50% share of local renewable sources in the primary energy matrix.
- » Energy access to increase to 100% electrification across the country.
- » Creation of an energy efficiency culture and awareness through replacement programmes for appliances and finalization of the energy efficiency regulation.

Public-private approach: Traditionally, Uruguay's investments in energy were carried out almost exclusively by the two national energy companies: UTE¹ in the electricity sector and ANCAP² for fuels. As part of the Investment Promotion Law, public and private participation in the sector shifted to an approach where the government provides strategic direction and conditions of investments for the private sector (see below in this section "Creation of financial mechanisms" for a description of financial mechanisms used).

Multi-party endorsement: In February 2010, following the governing party's initiative to create a Multi-party Energy Commission, the three political opposition parties endorsed the pillars of the energy policy.

Creation of financial mechanisms: Uruguay set up a combination of regulatory policies (renewable energy quota and biofuels obligations for utilities), fiscal incentives (reduction in sales, energy, CO₂, and other taxes) and public competitive bidding in order to promote renewable energies. The most important mechanisms to promote private investment in renewable energies and energy efficiency have been:

- » Solar Plan for Families.
- » Promotion of renewable energies by facilitating a contractual system between the UTE and power producers.
- » Long term contracts for solar PV electricity.
- » Auctions for wind energy (including long term contracts).
- » Promotion of private generation of wind energy from 2012 through direct contracts between industrial consumers and UTE.
- » Renewable micro-generation through the promotion of contracts between UTE and the final consumers of electricity.
- » Feed-in-tariff for biomass that stipulates that UTE must execute contracts with private companies to acquire biomass energy under certain conditions, without having to issue a public bid.
- » Tax exemptions and fiscal incentives for companies that invest in clean technologies.

The Energy Policy further promoted the development of biomass and wind projects and regulations for solar power.

¹ Administración Nacional de Usinas y Trasmisiones Eléctricas (UTE), is a state-owned company in charge of activities related to generation, transmission and commercialisation of electricity.

² Administración Nacional de Combustibles, Alcoholes y Portland (ANCAP), is a state-owned company involved in the production of petroleum products, cement and alcoholic beverages.

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Institutions involved	<p>The Ministry of Industry, Energy and Mines, specifically the Energy and Nuclear Technology Directorate leads the process.</p> <p>The Ministry of Housing, Land Planning and Environment (MVOTMA), through its Climate Change Unit, complements and coordinates the effort.</p> <p>Other relevant institutions involved are:</p> <ul style="list-style-type: none"> » Ministry of Foreign Affairs » Ministry of Economy and Finances » Ministry of National Defence » Ministry of Livestock, Agriculture and Fishery » Ministry of Health » Ministry of Sports and Tourism » Budgeting and Planning Office » National Emergencies System » National Mayors' Congress
Cooperation with	<p>In addition to all the ministries that participate in the inter-ministerial coordination group mentioned above, the two national energy companies, UTE in the electricity sector, and ANCAP for fuels, have also been key for the good implementation of the energy policy (Mendez, 2013a).</p>
Finance	<p>Investments in renewable energy: In the period 2010-2013, investments in renewable energies amounted to more than US\$7 billion, mainly placed by public-private associations (Mendez, 2013). In 2013 alone, tenders attracted US\$1.3 billion in clean energy investments, mostly coming from multilateral and export-import institutions (Bloomberg New Energy Finance, 2014).</p> <p>Each year, more than 3% of the national GDP is reinvested in infrastructure for the transformation of the energy matrix (one third from fiscal resources and two thirds from public private partnerships).</p>
Impact of activities	<ul style="list-style-type: none"> » GHG emission reduction: In 2005, renewable energy sources had a share of 37% in the energy supply matrix. With a projected 2015 primary energy supply matrix of 55% from renewable sources (wind (4%), hydro power (11%), biomass (28%), wood (12%) and solar (<1%)) the estimated GHG emission reductions achieved by this policy are expected to amount to 5.20 Mt CO₂e/year (Uruguay, 2015). » Improvement in energy security: A more diversified energy matrix, with strong participation of local renewable sources, increases the energy independence and sovereignty of the country. » Green jobs, new markets and non-traditional exports: The growth of renewable energy projects has led to the development of previously inexistent technology markets in Uruguay. It is estimated that 35% of the investments in wind projects benefits local market activities (i.e. technology, civil infrastructure, logistics) while, for biomass projects, this is estimated to be up to 60%. Know-how of local professionals and companies has also started to be exported to other countries of the region (Mendez, pers. comm.). » Price stability and competitiveness: To date, renewable sources account for 50% of the primary energy matrix, 95% of the electricity generation and 85% of the energy used in industry. A key element in guaranteeing the country's competitiveness is the fact that renewables are not vulnerable to fluctuating prices in international commodity markets. » Climate vulnerability: Complementary to the previous point, the diversification of renewable sources, beyond hydropower, and including biomass and wind, reduces the vulnerability to climate variability, especially related to water availability in a scenario where extreme weather conditions are expected to increase in frequency.

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Why is it good practice

- » **Private and public investments:** Private investors now undertake renewable energy projects, framed within contracts with UTE or ANCAP, while public investments are targeted mainly at distribution or grid connection infrastructure, and desulfurisation plants.
- » **Commitment and leadership:** Commitment and leadership at the highest political level - that has been maintained during three presidential periods - has been key in the policy's development and implementation. This has been reinforced by a consensus between the four main political parties who understand the relevance of the energy transformation for the development of the country.
- » **Long term vision, scope and goals:** A key success factor is the long-term vision, combined with a clear definition of short- and medium-term policy goals, targets, and underlying measures that integrate not only energy, but economic, social and environmental considerations across all energy consuming sectors.
- » **Coordination:** A strong institutional dialogue and coordination across different key ministries and stakeholders (i.e. Ministry of Energy, Ministry of Environment, public utilities, other), with clear mandates and dedicated resources available at the leading ministry, involved line ministries and other public authorities led to a transformation of the energy sector of Uruguay.

Success factors

- » **Long term vision/policy with integrated approach:** The scope of the policy includes all energy sub-sectors, from liquid fuels to electricity generation and use of thermal solar power, across a 30-year time frame. Its transversal design takes into consideration not only energy but also economic, environmental, ethical and social criteria and how the energy sector contributes to a new consumption model in the country.
- » **Favourable conditions for energy transformation:** A strong regulatory framework, good institutional coordination, clear environmental standards, trained human resources and technology transfer, all provided the basis for the transformation.
- » **Public private partnerships:** With the government setting clear conditions, public-private partnerships achieved the transformation. UTE and ANCAP played a key role setting the ground to promote private investments through target setting, bidding processes, long-term contracts, and other innovative tools. Public investments are oriented towards complementary infrastructure in electricity distribution, desulfurisation plants for gasoline, infrastructure required for regional integration and other elements.

Overcoming barriers/ challenges

What were the main barriers/challenges to delivery?
How were these barriers/challenges overcome?

Capacities

One of the main challenges was to achieve a holistic implementation of the policy, counting on experts in many fields.
The Ministry created a capacity development plan for the energy sector, from research in the development of photovoltaic cells to research on energy-poverty linkages. Also, agreements were made with universities and technical institutes to train technical and postgraduate professionals.

Political

The rivalry between the different political parties threatened the long-term stability of the policies, as well as the confidence of investors
The government promoted an agreement between the main political parties in parliament, in order to secure the long-term continuity of the policy.

Logistics-infrastructure

The growth of wind power was so fast that the weekly arrival and transport of the materials and parts threatened the collapse of the seaport and some of the main roads.
Logistics experts were hired to plan the transport system of the materials.

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Lessons learned	<ul style="list-style-type: none"> » Previous experiences with CDM: Existing experiences with CDM projects provided a useful starting point and strengthened the communication among different ministries (e.g. Energy and Environment). It also allowed a natural transition towards sectoral mitigation instruments building on and incorporating what the country was already doing. » Relevance: Results obtained by individual projects have limited scope, whereas the design of programmes that are fully embedded in national policies and strategies increases the impacts of the initiatives and their sustainability. » Decisions need to be tailored to the local situation: Selection of the most suitable source of renewable energy and, importantly, the technology to be deployed needs to take local conditions (rather than international trends) into account, based on a comprehensive planning process. » Barriers: The policy should set the strategic objectives and targets while the tools to implement the policy should be flexible enough to overcome the barriers that will appear along the process.
How to replicate this practice	<ul style="list-style-type: none"> » Include a long-term plan with goals in the short, medium and long term. » Choose the most suitable renewable energy sources for the country, and the best technology in the national context. » Energy policies should be holistic and consider not only economic and technical issues, but also social, environmental and cultural aspects, as energy is an element of social integration, growth and development. The whole productive chain, from energy supply to final consumption needs to be assessed with energy as a common variable. » The establishment of stable long-term policies and the creation of an enabling environment for investors created trust and stability.
Contact for enquiries	<ul style="list-style-type: none"> » Belén Reyes breyes@mvotma.gub.uy +598 2917 07 10 ext. 4342/1420 International relations officer for climate change, MVOTMA
Website(s)	<ul style="list-style-type: none"> » www.dne.gub.uy/ » www.eficienciaenergetica.gub.uy/
Case study author(s)	<ul style="list-style-type: none"> » Aida Figari (Libélula) » Juan Sotés (Libélula)
Case study contributor(s)	<ul style="list-style-type: none"> » Ramón Mendez - National Environmental Direction, Ministry of Housing, Land Planning and Environment (MVOTMA) » Paola Visca – Climate Change Division, National Environmental Direction, Ministry of Housing, Land Planning and Environment (MVOTMA) » Magdalena Preve – Policy and Programmes Unit, UNDP Uruguay
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