

Biofuels in Argentina: The Challenge

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Abstract

We must suppress it speaks of the fresh water of India, which has nothing to do with this work. Whole world is suffering from the same problem. The sources of pollution are sewage discharge, small industries discharge, agriculture run off. Sewage discharge is increasing due to increasing population. The causes of water pollution are discussed in the present paper.

Fundacion Solis

It's a Foundation Argentina created with the aim of assisting the development of the regional economies and the progress of the communities in a sustainable way through the research, development and promotion of renewable energies and alternatives.

Are a group of technicians and entrepreneurs from different disciplines specializing in renewable energies, committed to the change of the energy matrix? We believe that the dissemination and knowledge of this new paradigm will help accelerate change.

We use our knowledge, development and projects so that any community can have access to a clean and low-cost energy source.

One of the Great Measurers of the progress and welfare of a society is energy consumption. When the energy sources with which the society is supplied begin to deplete, the concept of "Energy crisis".

An Economic model as the current one, whose operation depends on a Continuous growth also demands a demand equally growing energy.

Since the Fossil and nuclear energy sources are finite, it is inevitable that in a certain moment the demand cannot be supplied and the whole system collapses, that is why so you it is very important to use and develop other new methods to obtain energy.

The use of conventional energy sources such as oil, coal combustion and natural gas, produce undesirable effects such as pollution, increased greenhouse gas and ozone-layer perforation.

Replacing conventional energies with renewable energies and alternatives represents a change that will necessarily have to be produced as soon as possible.

Argentina has an enviable endowment of energy resources (gas and oil, hydropower, nuclear technology, Wind, solar and biofuels) which, properly exploited, is sufficient to ensure energy consumption.

However, the country is on the verge of an energy crisis due to state regulations and interventions that unbalanced the energy market, depressing supply, reducing investment and exacerbating demand

It is necessary to invest in energy, diversify the energy matrix, the state must invest at least partially in sectors where private investment is very difficult (nuclear, hydroelectric) and encourage private investment in those and other sources of energy (wind, solar, biofuels).

These investments, both public and private, should be framed in an Energy plan Long-term design by the Ministry of Energy, with revitalized regulatory bodies, and a balanced and stable tax structure to ensure adequate income distribution between all actors (nation, provinces, and companies) and Predictability for investors.

In particular, the operation of the wholesale electric market must be immediately recomposed so that private and non-public investment is determined by the expansion of the electricity grid.

Solis Foundation It was born with the fundamental vocation of sensitizing society, on the need to carry out-and accelerate-a change of energy model based on renewable energies, alternatives and energy efficiency, as basic principles. This initiative is necessary to alleviate the tremendous lack of information that exists in our country on energy in general and on renewables, in particular ignorance that may be conducive to perpetuating unsustainable models in our field Energy.

From the foundation, according to our idea, we have Marking targets to drive the change of the energy model.

The time has come to start putting on the table an initiative that goes Imposing on Society, not only about the values of renewable energies but also about the need to implement and assume a new model of behavior in the face of energy. We have come to this conviction after working many years in this sector and seeing how it has evolved and what we have achieved.

It is necessary to keep in mind that

1. Energy is a basic, universal, limited and costly commodity, with a direct impact on the quality of life, the environment and the survival of the planet. Access to energy determines the future of countries and their relations of economic and technological competence as the main factor of competitiveness.
2. The interest of a rational society is to consume the minimum amount of energy possible to achieve the maximum satisfaction of the services.
3. Renewable sources must be understood in a long-term energy strategy framework in which intergenerational solidarity obliges not to derive the problems of supply security, environmental pollution, and radioactive waste and risks Nuclear power to future generations.
4. Renewable energies are the most effective technology to reduce energy dependence, reduce CO₂ emissions and improve energy intensity. All the improvements observed in the last few Years in These three ratios they have been due to the growth of the renewable share in the energy system.
5. Renewables are the only source of energy that, because of their autochthonous and inexhaustible nature and their availability in many sources at zero cost in nature, can guarantee the supply to all citizens of the world who today do not have access to energy and All those who in the future will not be able to withstand the incalculable costs of dependence on fossil fuels. In this scenario a new right of citizenship will have to be guaranteed: the right of access to renewable energy sources.

Thanks to its geographical and climatic conditions, Argentina has a great potential for the development of renewable energies. The country needs to develop a strategic renewable energy policy that guarantees a definite course and rules of play that are clear and sustained over time.

Argentina must move forward on the path of sustainable development, and for this, among other things, it must have a clear policy of renewable energies. A long-term policy, supported by a legal and institutional framework, is essential for renewable energies to play a role in the planning of supply and in the adoption of structural solutions.

Biocombustibles in Argentina

The law refers to biofuels “to bioethanol, biodiesel and biogas, which are produced from raw materials of agricultural, agro-industrial origin or organic waste, which meet the quality requirements established by the Implementing authority” (Art. 5).

In Argentina, especially in recent years, biofuels have received strong impetus and support from the national State, which has provided a regulatory framework or with respect to the production and mixing of the fluid. Currently, both diesel and petrol are cut with biodiesel and bioethanol respectively. Exists a regime of promotion and benefits Prosecutors, who accompany the development of the sector.

A compulsory mix of the Biofuels with fossil fuels throughout the territory of the Argentine nation, which allowed generating the necessary conditions to assure the companies, enabled an internal market to supply and a horizon of sustained growth.

Biofuels

Bioethanol

Se produces by the fermentation of the sugars contained in the organic matter of the plants. In this process, hydrated alcohol is obtained, with an approximate content of 5% of water, which after being dehydrated can be used as fuel

BioEthanol Mixed with NAFTA Produces a high energy biofuel with characteristics very similar to the Oil But with a significant reduction in pollutant emissions in traditional combustion engines. There is also another alternative for its use, in the form of NAFTA additive as Ethyl-Tercbutil Ether (ETBE).

Biodiesel

Es a synthetic liquid biofuel that is obtained from natural lipids such as vegetable oils or animal fats.

The product manufactured industrially by esterification processes and Transesterification It is applied in the preparation of total or partial oil substitutes obtained from petroleum. As a total substitute, it is called B100, while other denominations such as B5 or B30 refer to the proportion or% of biodiesel used in the mixture.

Biogas

Nwe refer to this fluid as the gaseous product. It is a combustible gas that is generated in natural means or in specific devices, by the reactions of biodegradation of the organic matter, by the action of micro-organism and other factors, in absence of oxygen (that is, in an anaerobic environment).

This gas can be used to produce electric power by means of turbines or gas generating plants, in furnaces, stoves, dryers, boilers or other gas combustion systems, duly adapted for this purpose.

Biodiesel

Biodiesel It's him the only alternative fuel that can be used directly in the certain motoris heavy without requiring any kind of modification.

Owning fuel-like properties Diesel of oil both can be mixed in any proportion, without generating any problems. It should be clarified that the biodiesel has greater power of explosion than the diesel which bettera Engine performance.

The great strength that biodiesel represents as fuel lies in its possibility to generate from crops that in our country are abundant as ISoy Generating UN revenue for the agro-industrial sector and consequently an increase in employment and taxes by the added Value to soy bean among others. Rapeseed It has products derived from the residue of its process as GlicErina and organic fertilizers, whose value complements the business itself from the production of biodiesel It enables its own production in full cycle (oilseed harvesting pressing of oil Production of biodiesel) reducing costs and intermediaries.

The marketing of The Byproducts Originated in the pressing of soy bean (Expel Pellets, That in mixtures with other grains are used as a basis for balanced food Transformed vegetable protein into meat, egg and milk, in what has been called the protein chain) This constitutes a business in itself, where biodiesel is a business Accessory and Rentals Able. In addition it allows diversifying the risks.

Biogas

We must incorporate to the concept of utilization of the sources of biomass the development of co products of high added value that will allow the economic sustainability of this type of ventures.

The origin of all biomass both of animal as a vegetable it has the origin of the fixation of the solar energy by the photosynthetic process. The development of this capture requires the supply of the essential elements that make the photosynthetic process such as the provision of solar radiation, water, carbon dioxide, nutrients and temperature citing the main. These factors are fundamental requirements for the achievement of commercially exploitable significant volumes.

Agronomy professionals have as one of their main concerns to optimize the factors mentioned in order to achieve higher yields with a rational job of the resources involved.

In energetic terms the efficiency of catching and conversion by the vegetables is relatively low and the catchment and accumulation area is very scattered on the surface of the Earth. Biomass resources are characteristic of low energy density (reduced energy content per unit of mass or volume) and with a high geographical dispersion (distribution of This In a wide area of land). In order to achieve sustainable use from an economic, social and environmental point of view, the challenges that these two characteristics are demanding must be overcome. This requires the use of modern techniques of geographic information systems, Armando Real Atlas of the resource.

Bioethanol

The Ethanol it is a chemical compound obtained from the fermentation of the sugars which can be used as fuel, alone, or well mixed in varied quantities with naphtha, and its use has been extended primarily to replace the consumption of petroleum derivatives.

The resulting fuel DE The mixture of ethanol and naphtha it is known as Gasohol or Petrosun. For the production of ethanol in the world is used mostly as Biomass source (maize, sugarcane, sugarcane bagasse, others) this ethanol is called, by its origin, Bioethanol.

A key phase in the good outcome of the activities of the bioenergy Business group is the work of acquiring raw materials for the production of biofuels.

Ethanol is a fuel that can be produced from a large number of plants, with a variation, depending on the agricultural product, of the yield between the fuel consumed and that generated in that process. This ethanol, known as bioethanol, is subject to a strong controversy: for some it is shaping up as a potentially sustainable energy resource that can offer long-term environmental and economic advantages as opposed to fossil fuels, While for others it is responsible for large deforestations and the increase in the price of food, By supplanting forest and farmland for production, doubting in addition to its energy efficiency.

Bioethanol has the same characteristics and chemical composition as ethanol because it is the same compound. The difference lies in their production process. Bioethanol must be obtained from biomass, not being able to obtain oil. All alcoholic liquors that come from

the fermentation of the sugar of some plant can be Call Bioethanol.

Due to the increase in measures taken to control the total emissions of greenhouse gases, the use of this alcohol as a fuel for road transport is growing very fast. A complete life cycle analysis of this product as fuel shows how the emissions generated in the production process of the fuel and the operations are compensated by those fixed in the crop during their growth.

Ethanol is easily obtained from sugar or starch in maize and sugar cane crops, among others. However, the current methods of production of bio-ethanol use a significant amount of energy compared to the energy obtained from the fuel produced. For this reason, it is not possible to completely replace the current consumption of fossil fuels by bio-ethanol.

In our country we have as History to Station Experimental Agro industrial Bishop Colombes (year 70) in Tucumán. The plan Petrosun Argentino Naufrago in the decade of the 80, due to its high fiscal cost and to that not updated the prices fixed by the Secretary of Energy For alcohol the business lost profitability.

Today with the Law 26334 of the 2007, known as Regime of Production of bioethanol, Aposto again to the elaboration of alcohol to satisfy the quota of cut of the naphthas.

The moment you Regulated During the 2008, the Government reported that the measure sought "higher production of energy In our country and diversification of the energy matrix "and I point out a profitable and reasonable for the production of bioethanol whose tax benefits Benefit To regional economies, SMEs and producers.

The rules Entered into force in 2010, And in the case of bioethanol, sugar mills are the industrial sector responsible for their production and supply to service stations.

Legal framework in Argentina.LAW 26,093.DECREE 109/2007 As Said The law Define For the Biofuels "To bioethanol, biodiesel and The Biogas Has a Promotional regime Effective Fifteen (15) years from his approval. The National Executive branch (PEN) may extend its validity.

Law 26,093, promulgated on 12 May Of 2006, and His decree Regulation 109/2007, establishes the normative framework of regulation and promotion for the sustainable use and production of biofuels.

The quality standards to which biofuels must be adjusted are IRAM 6515-1; ASTM 6751-3; European standard DIN EN 14214. We are governed by these Latest.

Self-Consumption

The new standard defines as "self-consumption" the case in which a person Legal physics Produce biofuels for Sor own consumption.

LThe producers of biofuels destined for self-consumption shall enjoy the benefits provided for in article 15, paragraph 3 of law No 26,093, but In addition to the non-commercial transaction, the tax burden of the national, PROVINCIAL or MUNICIPAL government is also saved.

It implies a strong impact on the lowering of the cost of Fluid What It allows to develop the fuel in the same place where You're going to consume, something similar to what electric energy is called Distributed generation.

Similarly, biofuel production facilities designed for self-consumption must be registered In the special record.

If we introduce ourselves to the issue of Proportion where you're going to have that use gas oil Or Diesel, we must say QEU the compulsory cut that began in the year 2010, for marketing in The Territory of the Republic Argentina, Was of 5%.

Foreign investors. All Foreign company to be installed must comply with the requirements, as laid down in article 8 of the Decree, Regulation 109/07 Being able to associate with 49% with national partners of the characteristics demanded in the law.

Atribuciones of Inspection and Taxization of the Application Authority

The implementing authority will supervise activities related to exploitation, exploration, industrialization, transport, marketing, and observance of laws, regulations and decrees.

The per missioners and concessionaires must facilitate the execution of the competent authorities and officials to the right of inspection and control, which may make use of the means they consider in order for a fair work.

It is up to the secretariat of Energy to control and approve the plant, a work that it performs through authorized consultants in principle, to precede to the authorization of these.

Promotional Regime

Requirements for those seeking to be beneficiaries of the so-called promotion the following in principle: They have to be installed in the country, and people must develop this activity exclusively in order to become beneficiaries of the promotional regime. In addition they must devote themselves mainly to the agricultural production. The application authority must select projects that are eligible for access to the fiscal quota. In this regard, the Decree indicates that certain criteria will be followed, pointing to:

1. Promotion of small and medium enterprises.
2. Promotion of agricultural producers.
3. If a cooperative is part of a project, its partners will be required to devote mainly to the production of the agricultural raw materials.
4. Promotion of regional economies.

Not only will it be necessary to frame in the selection parameters it is also necessary to meet the following requirements:

The majority social equity capital will be contributed by

1. The national state, the CABA, provincial states, municipalities or natural persons, companies of the state, entities of fomentation and promotion of investments, SA where the majority capital belongs to some of the state jurisdictions considered in article 13 of Law No. 26.093.
2. Natural or legal persons domiciled, settled and/or constituted regularly in Argentina whose social object and main activity

in the country is the agricultural production. In this case it is also required that they have properties in the country suitable for cultivation. For these purposes, the Decree indicates that the legal persons holding the shares and the controlling or controlling companies shall be taken into account.

With regard to self-consumption, although a private subject or a cooperative wants to produce for self-consumption, it necessarily has to ask for the approval of the secretariat of Energy for the plant.

The biodiesel industry in Argentina has 37With a combined annual production capacity Close to 4.4 Mt/year. It is an industrial complex of great Relevance for the country, since in the year 2016 produced near2.6 Mt of Biodiesel, exporting 1.6 MT and generating Currency for U \$ S 1.175 billion.

The biodiesel industry in the Argentine Republic Account at present (September 2017)

The survey it was carried out by the Rosario trade exchange together With the Argentine Association of Biofuels and Hydrogen based on reports from the Ministry of Energy and mining of the nation and consultations made to Companies in the sector.

In our country there are twelve large plants, with production capacities equal to or greater than100,000 t/year. Of those twelve factories, eleven are Located in the province of Santa Fe and more precisely, ten of them in the Great Rosary where Works the most important oleaginous complex at the level World by the degree of concentration of the industrial structure.

The biodiesel industry Argentina has registered a Important Growth from Of the year 2007. On the side of the Domestic market, mixing Compulsory diesel oil with Biodiesel was the one that drove the Development of this industry, Thanks to the national program of Biofuels that Implemented the government Argentine from the year 2010. At present, the Mandatory mixing percentage it is located at 10%, to this domestic market of compulsory cutting.

By the Side of the external market, the Government sustained a treatment Differential in terms of Export rights of the Soybean value chain, a Favor of derivative products of higher added value, Broke As a mirror to the Import tariffs growing, subsidy policies Agricultural and other incentives existing in the European Union and EE. UU. Contributing to fluency of international trade [1-5].

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