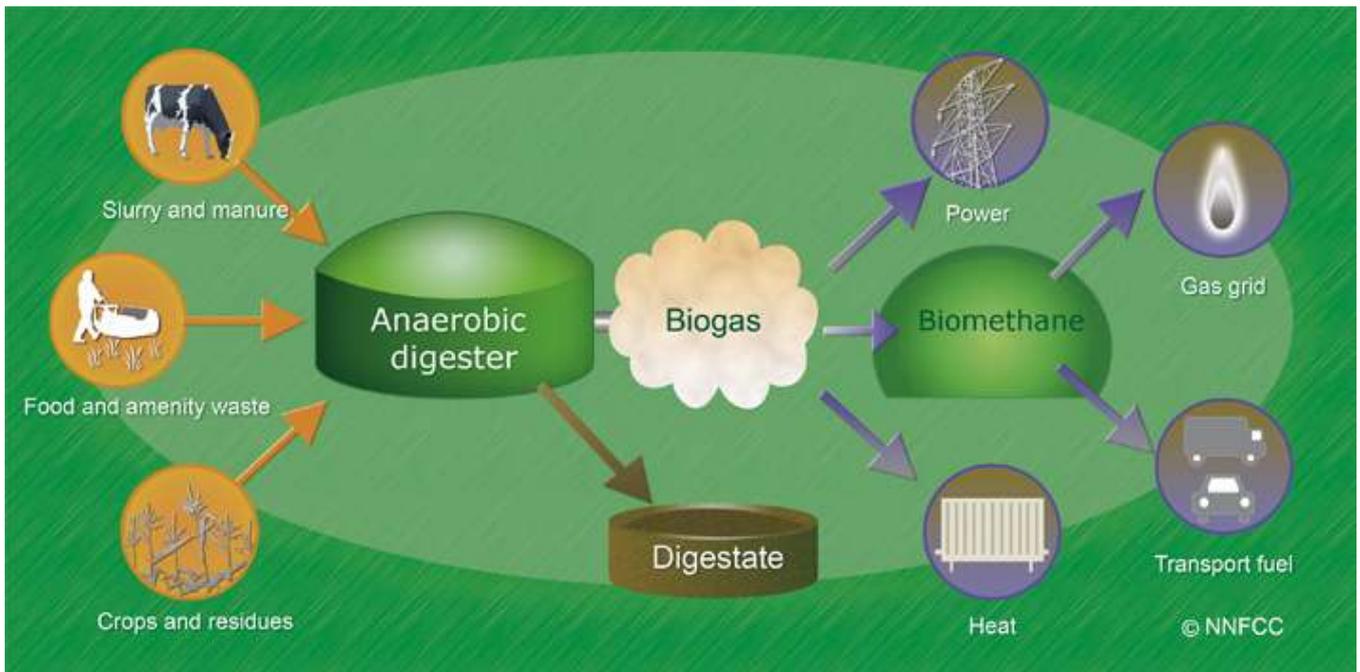


# BIOFUELS (biogas, biomass, biodiesel) SECTOR IN ROMANIA

An FRD CENTER Newsletter



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The current newsletter is based on research carried out by the FRD Center team, on the FRD Center database of companies active in the sector, on official public data, on company statements and publicized information, as well as on FRD Center analysis.

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### **Biomass industry has significant growing potential in Romania**

According to the Romanian Regulatory Authority for Energy (ANRE), with approximately 70 MW installed capacity in power plants using biomass or its derivatives (such as biogas) as fuels in May 2014, the sector has a significant potential for medium term growth in Romania.

Biomass and biogas have a share of 0.62% in Romania's total renewable energy. Based on the fact that biogas provides a non-polluting and renewable source of energy, leads to employment growth in the rural areas and generates environmental benefits, the biogas sector in Romania has solid premises for future development.

According to Ministry of Agriculture, the country's biomass energy potential is of approximately 7.6 million tonnes of equivalent oil per year, out of which: biogas (7.7%), lumber and firewood waste (15.5%), wood waste (6.4%), agricultural waste from cereals, corn stalk, vineyards (63.2%) and urban household waste (7.2%)

According to REECO, approximately 36% of the biomass potential is currently used in Romania. So far, the biomass usage has been mainly focused on the household firewood, with direct burning, space heating, cooking and water heating accounting for approximately 95% of the current biomass exploitation, while the industrial biomass reached only 5%.

The biomass projects in Romania have high development potential and economic impact, being a solution for the internal power consumption in industrial sectors and an alternative to power and heat supply for residential areas.

According to ANRE, the average investment in a biomass cogeneration plant in Romania is

estimated at approx. 3.1 million EUR per MW installed, in terms of the electric power capacity.

Regarding the potential of biogas from manure, according to the Ministry of Agriculture, the animal livestock in Romania in March 2014 has recorded:

- 4,349,356 pigs
- 2,249,334 bovines
- 19,949,949 sheep & goats
- 588,099 horses
- 35,565,634 poultry

### **Eco Bihor launches biogas facility in Oradea**

Eco Biho, the operator of the landfill in Oradea (Bihor county), has launched in 2014 a biogas facility that uses organic waste deposited in the landfill as fuel for generating electricity and heat.

The biogas facility has the capacity of 1.6 MW/h. The project is based on a partnership with the company New Life Energy in Cluj Napoca.

### **Genesis Biopartner collaborates with Unilever to produce energy**

The developer Genesis Biopartner has signed in 2014 a partnership with Unilever to collect expired food waste (margarine, ice cream, mustard, mayonnaise and ketchup) from the Unilever warehouse in Prahova and to transform it into biogas and subsequently into renewable energy.

Genesis Biopartner has a biogas cogeneration plant located in Prahova, launched in 2013 with investments of approximately five million EUR. The plant has the installed capacity of 1 MW/h for electricity generation and of 1.2 MW/h for thermal energy. The plant processes 50 tons of organic material per day.

Genesis Biopartner has announced the intention to open new biogas cogeneration stations in the next years.



**TEB has developed biogas plant in Suceava**

TEB Energy Business is one of the major players in the biogas market in Romania. Established in 2004, it is an Energy Service Company (ESCO). The company provides tailor-made solutions in the cogeneration, biogas, landfill gas, coal mine gas, sewage gas, special gases or greenhouse applications.

TEB has developed a biogas plant located in Moara (Suceava county). The plant has the electrical output of 2.974 MW and the thermal output of 2.944 MW. It uses as fuel the biogas from corn silage and manure. The raw materials are provided by KWS Seminte that has 700 hectares cultivated with corn hybrids.

The plant in Suceava has been inaugurated in October 2014, following investments of 6.3 million EUR exclusively from private sources.

**Apa CTTA integrates cogeneration plant into wastewater treatment station**

Apa CTTA Alba is the supplier of water and wastewater services in the Alba county.

Apa CTTA Alba has signed in March 2012 a contract with the German companies Hochtief Solutions AG and Von Roll BHU Umwelttechnik GmbH for the construction of a wastewater treatment station. The project has an estimated value of ten million EUR and it is expected to be finalised in 2015.

Apa CTTA Alba secures the internal electricity consumption in the new wastewater treatment facility by integrating a cogeneration plant with the installed electric power capacity of 150 kW and the installed thermal power capacity of 204 kW.

By using biogas from wastewater treatment, the cogeneration plant will produce energy that will be used for heating purposes and in internal operations requiring electric power.

**Iridex targets installed power of 7MW**

The Romanian company Iridex Group Import Export, specialised in the civil and industrial constructions, renewable energy, irrigation systems and waste landfills, has a cogeneration power plant based on biogas from organic waste located in Chiajna. Launched in 2011, the plant has the installed power of 2.4 MW.

In July 2014, Iridex has received the authorisation to construct the third energy unit of its biogas cogeneration plant, with the electrical power of 1.2 MW.

Iridex targets to reach installed power of 7MW in the next years.

**Egger has constructed biomass plant in Radauti**

The Austrian Group Egger finalised the construction works of a biomass plant in Radauti (Suceava county), following investments of 39 million EUR. The facility has the thermal power capacity of 83 MW.

Egger has constructed the biomass plant in order to transform its wood processing facility in Radauti into an integrated site and to reduce the consumption of the fossil fuel.

**Example of biomass generated energy**

According to the Romanian Transmission and System Operator Transelectrica, in March 2015 the biomass projects in Romania have generated a daily cumulated power of approximately 70 MW. This represents approximately 0.9% of the total generated power in the respective day.

Transelectrica plays a key role in the Romanian electricity market, being responsible for the electricity transmission, the system and market operation and the ensuring of the power system security.



### **Funds available in biomass sector in Romania**

The European Investment Bank (EIB) has signed a loan agreement in 2014 in order to provide funds of 300 million EUR for priority projects in Romania under the Rural Development Programme 2007 - 2013. The loan is expected to increase the use of renewable energy resources such as biogas and biomass, to finance environmental performance upgrading of over 44,000 farms and the management improvement of approximately 2,400 forestry holdings, to support erosion mitigation works on 60,000 hectares and anti-flood measures in over 1,000 communities.

The National Rural Development Plan 2014 - 2020 includes cumulated funds of approximately 760 million EUR allocated for investments in agricultural farms that can produce and use renewable energy for own consumption or for other economic operators.

According to the Single Area Payment Scheme - an income support scheme offered by the EU to Romania - starting with 2011, the energy crops benefit from subventions for diesel fuel and from state aid in an amount of 50 - 70% of the payment related to the premium of insurance.

### **Romania has submitted biogas pilot project**

After the European Commission has introduced its Investment Plan for the period 2015 – 2017, Romania has submitted a project related to the development of a pilot centre within the Research and Development Station for Cattle Breeding Dancu in Iasi.

The project targets the development of a biogas pilot station for anaerobic treatment of manure and vegetable waste in order to obtain renewable energy. The total investments are estimated at 1.5 million EUR. The construction works are expected to start in 2015 and to be finalised in 2018.

### **EnergoBit has invested approx. two million EUR in biogas plant in Tulcea**

EnergoBit Group, one of the biggest providers of equipment and services for the energy sector in Romania, has invested approximately two million EUR in 2014 for the construction of a biogas facility in Tulcea.

With the installed power of 0.5 MW, the plant in Tulcea generates electricity and thermal energy using the biogas resulted from the anaerobic fermentation of the organic animal and vegetal waste.

For this biogas project, EnergoBit has signed a partnership with the Romanian meat processor Carniprod Tulcea.

### **Colsen develops integral UASB installation for Covalact**

The Dutch company Colsen van den Hul has developed in 2013 an integral UASB installation at the plant of the dairy producer Covalact in Sfantu Gheorghe. The installation facilitates the treatment of the waste water streams and generates biogas for energy production.

The project has been supported by the Partners for Water Programme.

### **City Plaza Hotel inaugurates cogeneration power plant**

The five-star hotel City Plaza located in Cluj Napoca has inaugurated in December 2014 a cogeneration power plant, following investments of 200,000 EUR. The power station supplies both electric and thermal power energy.

The cogeneration station is expected to help City Plaza improve energy efficiency and reduce electricity and gas consumption. The cogeneration project has been implemented in cooperation with EnergoBit Group.

### **Imports of gas generators and parts**

The Romanian imports of gas or water gas generators and acetylene gas generators (and similar water process gas generators) have recorded approximately 6.7 million EUR in 2013.

The imports of the generator parts have reached approximately 3 million EUR in 2013 in Romania, up by over 280% compared to 2012.

### **Biogest has constructed biogas plant in Satu Mare**

The Austrian biogas plant manufacturer Biogest has constructed in 2014 a biogas plant in Arduș (Satu Mare county) with investments of approximately six million EUR. The biogas plant has an installed power of 1.5MW.

The investment project has been financed by BCR Romania, part of Erste Group.

### **Tariff schemes in Romania**

In July 2014, the European Commission has informed the Romanian Regulatory Authority for Energy (ANRE) regarding the possibility to apply a scheme of feed-in-tariff for renewable energy projects with installed capacity of up to 0.5 MW. This is the first concrete step towards the implementation of a scheme with predictable prices.

The energy generated by biomass power facilities in Romania receives two green certificates per each MWh, for a period of 15 years.

Furthermore, if the biomass is generated from energy crops (rape, soybean, sunflower, corn) or the electricity is produced in high-efficiency biomass cogeneration plants, there is an extra green certificate provided.

### **Avicom has biogas station that uses poultry manure**

The poultry farm Avicom Vaslui has a biogas station that produces energy using poultry manure, sugar beet pulp and corn cobs. The biogas station has been launched in 2013 with EU and own funds.

The biogas station has the capacity to produce 500 kW / h. In 2013 and 2014, the station has produced approximately 340 kW / h.

### **Biogas station of Arad landfill produces energy of approx. 1,500 MW / year**

The Arad (W Romania) ecological landfill has a biogas station inaugurated in 2013. The station produces energy of approximately 1,500 MW per year. The Arad landfill has invested some 0.5 million EUR in the biogas installations.

Established in 2002, the landfill collects over 70% of the Arad county waste. It has a height of 30 meters and covers over three hectares.

### **Ursus has wastewater treatment plant producing biogas in Timisoara**

The beer producer Ursus Breweries, part of SABMiller, has a wastewater treatment plant that produces biogas in its Timisoara plant. The volume of biogas used by Ursus Breweries from its wastewater treatment plant as an auxiliary fuel for the beer production process has increased by 35.7% in 2013 compared to 2012.

Ursus Breweries is one of the largest beer producers in Romania, with a net turnover of 324 million EUR in 2013. It has beer production units in Timisoara, Brasov, Buzau and Cluj. Some of its brands are: Ursus, Timisoreana, Ciucas, Azuga, Stejar, Peroni Nastro Azzurro, Grolsch etc.



## **FOCUS: Large cattle farms in Romania and their biofuel status**

### **Interagro has cogeneration plant of 20 MW**

The Romanian Group Interagro is active in various fields such as: agriculture, energy, food, chemical, tourism etc. Interagro has animal farms with over 1,800 cows and exploits approximately 55,000 hectares of agricultural land.

Interagro has invested over 21 million EUR for the construction of a cogeneration plant with the power of 20 MW, located in Turnu Magurele. The plant has been launched in 2013.

### **CrisTim collaborates with Genesis Biopartner**

The Romanian producer of meat and dairy products CrisTim, which has registered a turnover of approximately 90 million EUR in 2014, collaborates with the biogas cogeneration plant developed by Genesis Biopartner in Prahova. As a result of this collaboration, CrisTim benefits from lower costs for the thermal energy production and efficient waste management.

CrisTim has an animal farm with approximately 900 cows, agricultural lands, vineyards and a plant with the production capacity of 150 tonnes of meat products per day.

### **Agroindustrială Pantelimon has 500-cattle farm**

Agroindustrială Pantelimon has a cattle farm with approximately 500 heads on a surface of 500 hectares. The firm produces over 5,000 litres of milk per day. It does not have biogas station yet. The company has registered a net turnover of one million EUR and some 60 employees in 2013.

### **Carmolimp has over 1,700 bovines**

Carmolimp is a Romanian family business set up in 1993. It has integrated activities: agriculture, animal farms, production of meat and dairy products and retail network. The company has a farm with over 1,700 bovines in Brasov county.

Carmolimp has reached a net turnover of approximately 22 million EUR in 2013. It has over 300 employees.

The company has a biogas station in Ucea de Jos (Brasov county).

### **Pajo Holding has recorded net turnover of approx. 37 million EUR in 2013**

Set up in 2006, Pajo Holding has a cattle farm in Prahova with the capacity of approximately 2,500 heads. Furthermore, it exploits some 2,000 hectares of agricultural land and produces animal feed.

Pajo Holding has recorded a net turnover of almost 37 million EUR in 2013, up by 22% compared to the previous year.

The company does not have a biogas station or specific plans in the biogas sector for the near future.

### **IAC has farm with over 1,000 bovines**

IAC, part of Combinatul Agroindustrial Curtici, is specialised in cattle breeding and reproduction and milk processing. Established in 1994, IAC has a farm with over 1,000 bovines, on the surface of 14 hectares in Arad county.

In 2013, IAC Curtici has recorded a net turnover of 1.5 million EUR and approximately 60 employees. Currently, IAC does not have biogas plant.

### **Teletext has 1,000-cow farm**

Teletext has a farm with approximately 1,000 cows in Slobozia. It produces milk and dairy products, under the Diami brand.

Teletext has recorded a net turnover of over 11 million EUR in 2013, up by 32% compared to 2012 and has good potential for biogas.



### **DN Agrar has two dairy farms in Romania**

The Dutch Group DN Agrar has started its activity in Romania in 2007. Its core business is represented by the development of dairy farms.

DN Agrar has two dairy farms in Romania, located in Garbova (Alba county) and Vaidei (Hunedoara county). The farms have a cumulated number of approximately 3,600 cows. Furthermore, DN Agrar exploits leased land on an area of 10,000 hectares in Romania.

It has very good potential for biogas station.

### **Agroindaf has recorded y/y net turnover increase of 28% in 2013**

Agroindaf Afumati has a farm on a surface of 1,000 hectares located near Bucharest. The farm has over 1,000 bovines. Agroindaf Afumati has registered in 2013 a net turnover of 1.4 million EUR, up by 28% compared to the previous year. The company has over 70 employees.

The company does not have a biogas station or specific plans in the biogas sector for the near future.

### **Koplax has invested over 10 million EUR in cow farm**

Established in 1999, Koplax has a farm with approximately 1,700 cows in Prahova. The company has invested over ten million EUR in the farm. One of the firm's main clients is the dairy processing company Danone Romania.

Koplax has registered a net turnover of almost 4 million EUR in 2013, up by 13% compared to 2012. The company does not have a biogas station or specific plans in the biogas sector for the near future.

### **AgroComplex Lunca has reported y/y net turnover increase of 42% in 2013**

Set up in 1991, AgroComplex Lunca Pascani is a Romanian family business. The company has a farm with over 1,000 cows in Pascani (Iasi county). In the last years, the farm has developed its activity by using EU funds.

The company exploits agricultural land, produces milk, dairy products, meat or bakery products.

In 2013, AgroComplex Lunca Pascani has recorded the net turnover of 6 million EUR, up by 42% compared to 2012. It has over 90 employees. For the time being, the company does not have biogas station.

### **Agrointer has recorded y/y net turnover increase of 60% in 2013**

Established in 1994, the Romanian company Agrointer exploits agricultural land and has a farm counting over 700 bovines in Teleorman. In 2013, Agrointer has registered a net turnover of over 18 million EUR, up by 60% compared to 2012. The firm has over 200 employees. For the time being, Agrointer does not have biogas station or plans in the biogas sector.

### **Dutch Trading exports approx. 60,000 bovines / year**

Set up in 2008, Dutch Trading International is specialised in the import, distribution and export of bovines. The company exports approximately 60,000 bovines per year.

Dutch Trading International has a bovine farm located in Prahova. The firm has posted a net turnover of almost 12 million EUR in 2013, up by 27% compared to 2012. Currently, it does not have a biogas plant.