

# expo biogaz

THE TRADE SHOW DEDICATED TO RENEWABLE GAS

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## 1. THE PRESENT AND FUTURE SHAPE OF THE RENEWABLE GAS SECTOR

The French government announced its 10-year energy programme (“PPE”) in late November for publication in January. It lays down the medium-term strategy that will be adopted in France with regard to the changing energy landscape and covers two distinct periods 2019–2023 and 2024–2028.

Objectives across all areas of biogas activity (CHP, biomethane, etc.) are less ambitious than those advanced by the sector in the debate organized by the National Public Debate Commission and lower than those set in the Energy Transition for Green Growth Act (“LTECV”) of 18th August, 2015.

The objective advanced by the sector’s stakeholders and the Public Debate Commission was 30% injected biomethane by 2030, whereas the LTECV anticipated raising the share of renewables in gas consumption to 10% by 2030.

**According to the new PPE, biogas (via the grid or used at source) would reach 7% of total gas consumption by 2030, with 14TWh/year of exploitable biogas production in 2028 (biomethane share 6TWh) and 24–32TWh/year of exploitable biogas (biomethane share 14–22TWh) in the reference trajectory.**

This trajectory should be compatible with the budget of 7.9bn euros in support of the injected biogas sector over the period, with a lowering of project costs from €95/MWh PCS to €67/MWh PCS in 2023 and €60/MWh PCS in 2028, for projects selected by tender (first of them in 2019 Q2).

The draft PPE anticipates maintaining the “on-tap” tariff for biomethane purchases from small-sized installations (below a threshold to be defined). A specific support mechanism will be implemented for biomethane not injected into the delivery grid.

### **Prime objective: to reduce the consumption of fossil fuels by 2028**

The PPE’s prime objective is to achieve a 35% reduction in fossil fuel consumption by 2028 (with respect to 2012) and for this to reach 40% by 2030.

But that’s not all. The Government’s other goals are—

- 40% of electricity from renewables in 2030
- renewable gas at 67 euros/MWh in 2023
- 15% of fuels from renewables in 2030
- 350 million euros for the “heating fund” in 2020
- 4.8 million electric vehicles in 2028
- 1 million oil-fired boilers replaced
- 14 nuclear reactors decommissioned by 2035

**To meet these objectives, the Government has promised €71bn toward renewable energy production, a development aid that amounts to roughly €8bn euros a year.** France wants to increase the share of renewables and reduce the share of nuclear in its electricity production.

All these issues open up new, national-level market prospects, with new goals, helping maintain and develop employment and thereby future-proofing the French sector. This will be fully mirrored at the EXPOBIOGAZ exhibition, whose coming edition will be expanding and enhancing its offering to play a full part in this impetus.

Sources: Club Biogaz ATEE press release “lower ambitions and more constraints for biogas and biomethane”

## BIOGAS: THE BASIC FACTS

### ONE SECTOR, SEVERAL TECHNOLOGIES

Biogas these days is recognized as an important resource in many sectors: energy, farming, industry, agri-food, etc.

Biogas comes from fermenting organic matter (livestock effluent, food processing waste, sewage sludge, refuse, etc.) in a sealed, oxygen-free atmosphere. It's an energy source with numerous value outlets (heat, electricity, renewable gas production, fuels) and a predictable, storable output.

This sector features several types of installation depending on the nature of the processed waste.

#### 1. Refuse disposal sites (“non-hazardous waste installations”)

According to France's national statistical service, at the end of June, 2018, records showed **153 installations nationwide** generating exploitable biogas from spontaneous refuse fermentation, giving a **total power output of 268 MW**. Although biogas-from-refuse installations are fewer in number than anaerobic digestion installations, they produce more unit power on average (1.7MW). They thus account for 61% of total installed power.

#### 2. Household waste

In 2017, the French energy agency ADEME's “Sinoe” maps showed **16 mechanical-biological treatment (MBT)** plants producing biogas. Automatic sorting separates fermentable and recyclable materials from landfill. MBT development has virtually come to a halt today because of bad experiences.

#### 3. Industrial sites

There are **202 installations** processing effluent from companies involved in agri-food, chemicals, etc. Their biogas output is used first and foremost to produce heat needed in the process.

#### 4. Urban sewage treatment plants

**79 biogas units were operating** in sewage plants in mid-2018 according to energy management organization ATEE. Sewage sludge is processed in anaerobic digesters. The thermal energy from the gas dries the sludge can also be fed into a town heating main. Most projects for extracting value from urban sewage biogas plants involve injecting the output into the natural gas delivery grid.

#### 5. Anaerobic digestion installations for farm waste

These anaerobic digestion plants are generally coupled to one or more farms, extracting value from manures and to a lesser extent from food processing waste.

We distinguish two categories of installation: On-farm anaerobic digestion plants, managed by a single, independent farmer (average output 200kWe), and the so-called territorial plants, often centralizing

the effluent from several livestock farms as well as industrial and municipal waste (average output 1.2MWe). In early 2018, ADEME counted 382 on-farm or territorial plants for a total power output of 103MWe.

Several value channels exist for biogas from anaerobic digestion:

- combined heat and power (CHP) production in a generating plant
- production of heat for use on or near the biogas production site
- injection into natural gas delivery grids, requiring a purification stage to turn the biogas into compliant biomethane
- conversion to engine fuel in the form of compressed natural gas (CNG)

## BIOGAS ISSUES AND PROSPECTS

Anaerobic digestion holds several advantages, notably:

- Reducing the amount of organic waste to be reprocessed in other channels
- Decreasing greenhouse gas emissions by supplanting fossil fuels and chemical fertilizers
- Enabling the processing of fatty or wet organic waste that cannot be naturally composted
- Limiting effluent odours thanks to the airtight digester and closed buildings with air cleaning systems

At the end of 2018 in France, there were **588 anaerobic digestion installations including 382 on farms**. With **60 additional installations in 2018**, anaerobic digestion is experiencing rapid growth while notably addressing a variety of issues: energy, waste management (organic matter incineration), climate (greenhouse gas reduced by methane capture), and agriculture (new income stream for farmers).

Because of its many positive spin-offs, anaerobic digestion has an important place in policies on greenhouse gas reduction, agroecology, circular economy, green transportation, etc. The sector also helps optimize waste management. Also, the cash flow from this energy can play a part in sustaining agricultural activities, notably livestock rearing, and in creating jobs.

### 447MW on 30th September, 2018

The quarterly review published by France's national statistical service (SDES) on **30th September, 2018** shows **588 biogas-fuelled power plants installed in France for a total electricity output capacity of 447MWe**.

Since the start of 2018, **60 new units have been built, adding 13MW to the national capacity**. This figure is down on 2017, which saw 21MW connected to the grid in the first 9 months. The **2017 electrical energy output was 1,950GWh or 0.5% of national consumption**.

**Just four regions, Île-de-France, Grand Est, Nouvelle-Aquitaine, and Hauts-de-France, account for almost half (48%) the total French power capacity as regards electricity from biogas**. Île-de-France comes top of the list with 76MW installed, almost all of it (70 MW) from refuse disposal sites.

Installations running on biogas from refuse disposal sites represent 65% of France's total biogas power capacity. Despite this, in Q1 of 2017, more than seven out of every ten units connected to the grid were anaerobic digestion plants.

## Agriculture: a core issue

As far back as 2013, ADEME observed that the **farming world accounts for 90% of France's anaerobically digestible resources**. Since then, it has been a logical focus for many of the country's initiatives and policies. Thus it was that in 2013 the Ministry of Ecology, Sustainable Development and Energy launched an "anaerobic digestion and nitrogen self-sufficiency" plan, which set out notably to assist the sector in developing 1000 on-farm anaerobic digesters by 2020. The French total at the time was 90. It was a tall order, and while time seems to be running out to meet that target, anaerobic digestion for farms has nonetheless shown remarkable progress: **the country so far boasts nearly 400 on-farm digesters**, a large majority of which have a CHP system attached.

**According to the French Farmer's Anaerobic Digestion Association ("AAMF"), roughly 200 further new projects could emerge** but are momentarily on hold. This association also makes the point that although the regulatory framework is now right, thanks to the selling price revision in 2016, this measure unfortunately took too long to implement: farming has suffered over the last few years and farmers are less likely to have the cash to put into anaerobic digestion projects. Each year, regions like Grand Est, Auvergne Rhône-Alpes, and Ile-de-France, are launching project submission initiatives for schemes of less than 500kWe in an attempt to develop the sector. The Brittany and Pays de la Loire regions go one step further with a regional agricultural biogas plan, introduced in 2007, that aims to stimulate new projects by raising awareness among stakeholders and offering assistance. The programme has been fruitful: as 2018 began, over 300 on-farm projects were up and running or on the way in these two regions, compared with 30 or so in 2008.

Finally, some good news came our way in October, 2018 that could add further impetus to the sector, in farming or otherwise: an increase in the government's "heating fund".

**In 2018, the fund's budget was boosted by 14%, taking it from €215m to €245m.** And this momentum looks set to continue, with the Minister of the Conscientious Ecological Transformation **committing €300m to the budget in 2019**. That's a big boost to the biogas sector. This and the "waste fund" provide backing of up to 30 million euros for a hundred or so projects yearly, and ADEME is expecting things to take off, with this new budget as the catalyst.

## Professionalizing and assisting

To increase stakeholders' competence in anaerobic digestion at all levels from design to plant operation, plans for two research centres took shape in 2018 for materialization in 2019. The first of these will be a biogas and anaerobic digestion technical centre, scheduled to open in the premises of energy management organization ATEE in 2019.

Among its various objectives, ATEE mentions "studies on unifying topics, such as a comparison of pre-processing systems (notably shredders & crushers), the addition of performance products (biomolecules, trace elements) to accelerate anaerobic digestion, accounts of experience in the implementing of intermediate cultures, causes of plant technical downtime, value of digestates, or lifecycle analyses on the various biogas/biomethane production channels."

The other, scheduled for operational start-up in late 2019, is the CertiMetha platform in the Biogaz Vallée® cluster in the Aube department, a union of French anaerobic digestion plant manufacturers. Comprising a laboratory and a demonstration facility, it will be a test site for innovations in the field of anaerobic digestion (equipment or processes), helping develop and market French products designed for local needs and thereby reducing imports of equipment not tailored to French specifics.

## A regulatory framework taking firmer shape

As with other electricity-producing renewables, since January, 2017 biogas has enjoyed the benefit of an aid programme whose application depends on power output. For installations under 500kW, an energy purchase price is guaranteed for twenty years, varying from €0.225/ kWh (for 80kW power, with maximum premium for livestock effluent and less than 15% food crops in the input stock) down to €0.15/kWh (for 500kW power with food crops and no livestock effluent in the input stock). For installations exceeding 500kW capacity, a production premium replaces the price guarantee. This premium is added to the sales price obtained on the electricity exchange, with new projects obliged to observe a tendering procedure. This procedure, implemented in 2016 by the Energy Regulation Commission (ERC), selects 10MW of anaerobic digestion + CHP projects every year, for unit powers of between 500kWe and 5MWe. But the complicated tendering procedure has discouraged project initiators and the measure has not met with great success: The first and second periods respectively saw three submissions filed for a combined total power of 5.3MWe then two for a combined total power of 1.3MWe, all of which were logically selected. The deadline for submissions in the third and last period has been put back to March, 2019.

Lastly, the European Commission's agreement to France's aid measures for electricity from refuse biogas should help unblock a delicate situation in the refuse stockpiling installations. These have been effectively excluded from the price guarantee or production premium measures for more than two years. Sites which at the time didn't have a purchase contract, or whose contract has subsequently expired, have often been reduced to burning their biogas for no value. On 20th July, the EC ended the suspense, but there is downside: the aid is available only to new or modernized production units with a capacity of 60MW or less, because "biodegradable waste dumping will decrease in years to come because of the progressive introduction of more stringent requirements for waste sorting at source."

## Ideas for doing even better

The electricity-from-biogas sector has set itself a number of objectives. First, those of the 10-year energy plan (PPE), which targets 137MW of installed anaerobic digestion capacity by the end of 2018, and 237 to 300MW by 2023. These targets are unlikely to prove difficult: the first was already exceeded a year ago and the second looks to be on the right path. A more ambitious target has however been set in the national action plan submitted to the EU: 625MW for the whole sector (anaerobic digestion, sewage plants, refuse disposal sites). To meet both this target and the PPE's biomethane grid injection objectives (1.7TWh by the end of 2018 then 8TWh by 2023), an anaerobic digestion workgroup was set up by the government, comprising stakeholders from the sector. In March, 2018 it put forward some 15 proposals, which have all been duly approved. Among these, the power threshold has been raised to 1MW for ERC tender submissions, bringing 500kW–1MW installations under guaranteed purchase umbrella, while a BPI guarantee fund of €100m has been constituted in favour of anaerobic digestion projects for farms to help resolve the bank funding problems these can encounter.

## Biomethane injection, a driving force in the sector

Although some of the workgroup's proposals will certainly help the CHP cause, most of them (proliferation of anaerobic sludge digestion in large sewage treatment plants, expansion of anaerobic digestion sources by allowing additional mixtures of input stock, etc.) are aimed squarely at setting the

ball rolling with biomethane injection into natural gas delivery grids. The sector's stakeholders have got together and notably created the "France Gaz Renouvelable" association in the summer of 2018. It assembles the AAMF (biogas farmers), France chambers of agriculture, Club Biogaz ATEE, FNCCR (public services), FNSEA (farming syndicates), France biomethane, GRDF, and GRTgaz in the aim of promoting green gases in the French energy mix. **In its white paper, it sets out its vision for the production of 270TWh/year of green gases (100% of needs) by 2050, relying on pyrogasification, power2gas, and microalgae on one hand and anaerobic digestion on the other (120–130TWh/year with 80% to grid injection or tanker transport and 20% to CHP on farms).**

The stakeholders also insist on an upward revision of the 10% objective for green gas in grids by 2030— they want this to rise to 30% in the next PPE.

### An impetus that translates to jobs

With such potential, the economy of the sector should be expanding to match. The ATEE estimates that in 2030, it could represent a yearly expenditure of €6bn, with **10,000 direct jobs and 60,000 indirect**. ADEME, meanwhile, has **published its September, 2018 strategy letter, which reports on a study that reveals a potential 31,000 jobs in new energy resources in 2050 in the Hauts-de-France region alone**. The number of jobs linked to new energy developments would therefore be quadruple the 2015 figure, with "sectors exploiting biomass (wood energy and anaerobic digestion) creating the most employment (57% of jobs)" according to ADEME. The main development sectors would be injection, for the type of installation, and activities relating to the production and transport of resources (agriculture, waste management, etc.). »

### Professionalizing the anaerobic digestion sector by promoting good working practice in the sector

**Training courses will be implemented for all types of stakeholder**, with the Ministry of Agriculture overseeing training for the farming world.

This training plan will help project initiators put forward projects that limit nuisances and favour local dialogue.

**The sector's stakeholders are asked to reach agreement on a charter** that would involve all project sponsors and underscore the observation of these good practices.

## ELECTRICITY FROM BIOGAS: THE NUMBERS

**At 31st December, 2018, the number of electricity-from-biogas installations connected to the national grid was 635.** That corresponds to a **total installed capacity of 456MW**.

During 2018, **a further 26MW were connected**. Installations with power outputs of more than 1MW represent 68% of the installed power. Anaerobic digestion plants account for over two-thirds of the installed base and a third of the total power. The total power capacity of pending projects was 69MW at the end of 2018.

**Electricity production amounted to 2.1TWh over the year, representing 0.4% of French consumption, 11% up on the 2017 production figure.**

## Close-up on biomethane injection into delivery grids in 2018

**On 31st December, 2018, 76 installations had injected biomethane** obtained from purified biogas into natural gas delivery grids. The capacity of these amounts to 1.2TWh/year, **75% up compared with the 2017 year end**. This capacity is nonetheless 28% below the objective set for the end of 2018 in the first 10-year energy plan. Additional capacity of 522GWh/year was installed during 2018, a clear increase over 2017 (285GWh/year). Almost two-thirds of the installed base comprises small installations whose output is less than 15GWh/year, but these represent only 40% of total installed power. Anaerobic digestion units account for nearly 80% of the installed base's total capacity. At the end of 2018, the capacity of the 661 pending projects was around 14TWh/year, **77% up on 2017**. The production of biomethane injected into delivery grids continues to progress. It reached 714GWh in 2018.

### Sources

*Observ'ER - France's 2018 barometer of electricity from renewable resources*

*ADEME study – A 2030 vision of biomethane in France*

*Biogas review for Q4 of 2018 from the Ministry of Environment, Energy, and the Sea*

*ADEME – Panorama of renewably-sourced energy; 24/04/2016 gov. order on the development of renewable energy resources; DREAL (regional directorate), ADEME.*

## ANAEROBIC DIGESTION FOR FARMS: AN INNOVATION THAT GETS THE THUMBS UP

Anaerobic digestion is a promising sector with a host of potential benefits in terms of both the environment (waste handling, renewable energy production, decreased greenhouse gas emissions, etc.) and the diversification of farming activities, notably livestock rearing.

### Anaerobic digestion for farms at the service of ecological transformation

More and more organic waste and effluent is being produced in France over the years. These substances and their management constitute a source of nuisance for people and their environment, while paradoxically representing a potential renewable resource that should be exploited in order to **reduce its impact on the environment, anticipate changes in legislation, and cash in on of its energy and therefore financial potential**.

That's the context that brought anaerobic digestion into being. This biological process takes organic waste and effluent and turns it into a residue—the digestate—while releasing biogas, composed mainly of methane and carbon dioxide. **Anaerobic digestion produces an interesting alternative to chemical fertilizers: the liquid phase of the digestate is a plant food while the solid phase enriches soil in organic matter.**

### Anaerobic digestion for farms: a winning model for farmers

Big ambitions buoyed by the enthusiasm aroused by biogas in the farming sector with the numerous benefits of anaerobic digestion:

- dual value channels of organic matter and energy, specific to anaerobic digestion and absent from other sectors
- less organic waste to be reprocessed in other channels
- decrease in greenhouse gas emissions by supplanting fossil fuels and chemical fertilizers
- ability to process fatty or wet organic waste that otherwise cannot be naturally composted
- limited odour release thanks to the airtight digester and closed buildings with air cleaning systems
- answer to odour issues in muck spreading

Modern anaerobic digestion lets farmers diversify their activities while providing a steady additional income stream with the sale of electricity and covering heating needs, which at a time of rising energy costs cannot be neglected. Lastly, thanks to anaerobic digestion, farms can be much more self-sufficient.

**Undertaken alone, collectively, or on a territorial basis, anaerobic digestion for farms has an excellent environmental balance.**

### Improvement points and prospects in anaerobic digestion for farms

Although farm-based anaerobic digestion provides farmers with financial and environmental advantages, several points still need improving. That's why ADEME has published the results of a survey on 80 anaerobic digestion installations that it conducted in November, 2016. The report shows the importance of public aid to the materialization of anaerobic digestion projects, which represent a big investment (anywhere from 300,000 to 15 million euros). This public participation currently amounts to almost €300m a year in France in the form of investment subsidies and premiums on purchase prices.

## ANAEROBIC DIGESTION IN DISTRICTS AND REGIONS

Collective or district-wide anaerobic digestion brings together various local stakeholders (local authorities, farmers, factories, material suppliers, digestate users, investors, etc.) in an anaerobic digestion project. It sets out to pool risks and costs to reach a financially viable project size and enable processing of waste from all over the district by anaerobic digestion.

The objective is to generate a full-scale business activity by processing organic waste and selling energy obtained from renewable resources. The materials profile is quite varied: waste and effluent from farms as well as agri-food factories, unsold, expired, or damaged food products and other leftovers, green waste, industrial and municipal sewage sludge, etc.

### Utility of district-wide anaerobic digestion projects

Collective projects are interesting from a number of viewpoints, notably,

- monetization of fermentable waste and other by-products of activity in the territory
- production of energy from renewable resources, contributing to an energy self-sufficient district
- maintenance and creation of delocalization-proof activities
- alternative to mineral fertilizers for soils

A collective project furthermore enables substantial economies of scale when it comes to investments and operating costs. Funding, profitability, and hence the long-term viability of this type of project are often easier to obtain, even if it comes up against administrative constraints necessitating the use of additional technologies.

### From biogas production to biomethane injection: a solution for tomorrow's regions

While value can be extracted directly from anaerobic digestion biogas by burning it to produce heat and/or electricity, the gas can also be purified to yield "biomethane", which can then be odorized and injected into natural gas delivery grids.

This clean energy holds many advantages on a district or regional scale:

- reduction of greenhouse gas emissions: biomethane injection saved 40,400 tonnes of greenhouse gas emissions in 2016, a figure that could rise to 750,000 tonnes/year by 2020
- improved district waste management by producing energy from this renewable resource
- preservation of soil and water table quality by replacing chemical fertilizers with organic fertilizers (from the digestate).

### Bio-CNG, THE SERIOUS ALTERNATIVE

Bio-CNG is one of tomorrow's solutions for fighting pollution and global warming. Aware of the potential of this fuel, which holds many advantages over petrol and diesel, vehicle makers have already developed vehicles running on CNG: over 18 million vehicles in use worldwide and almost 14,000 in France.

#### Bio-CNG, the 100% renewable local fuel

**In France, 35% of CO<sub>2</sub> emissions come from road transport. New solutions have been introduced over the last few years to reduce the ecological impact of vehicles.** Among these is the use of a renewable, available fuel: Compressed Natural Gas or "CNG" from abundant natural seams, which in its renewable version we call bio-CNG. CNG starts life as the same gas used for household heating, hot water, and cooking. It is natural gas from fossil deposits and is composed of methane. This same methane can be produced locally from anaerobically digested waste, whereupon we speak of bio-CNG, the renewable CNG.

Anaerobic digestion is a bacterial fermentation process that turns waste into digestate (residue from the anaerobic digestion process), which is used as a fertilizer, while releasing biogas. The gas undergoes purification to become bio-methane. This gas can then be injected into the natural gas delivery grid to be used for bio-CNG fuel.

#### Undisputed environmental and economic impact

**Bio-CNG is the best fuel for lowering CO<sub>2</sub> emissions, with reductions of up to 97% compared with diesel.** The only unburnt hydrocarbon released by engines running on it is methane, a non-toxic gas that **also reduces noise pollution by 50% compared with diesels as it causes less vibration.**

Bio-CNG is a genuine economic asset for districts. Fuel consumption in towns is often very high, so alternative fuels need to be sought. Bio-CNG fits the bill perfectly. **In real terms, a city dweller produces nearly 70kg of anaerobically digestible refuse every year, which could be used to make roughly 4kg of bio-CNG, the equivalent of 62kms in a car or light van. On a town-wide scale, that represents quite a potential: organic refuse from 200 inhabitants could produce enough fuel to cover the yearly consumption of a car or light van.**

Last but not least, **bio-CNG is a major lever in local job creation.** Value extraction from bio-methane leads to recruitment: jobs linked to the design and construction of distribution terminals—drawing offices, contractors, hauliers, civil engineering firms, OEMs making compressor components, etc. Jobs are also created in the operation and maintenance of distribution terminals. **In total, counting only jobs linked to distribution terminals (and disregarding manufacture), estimates for 2020 say that 250 to 1500 people a year will find employment in newly created jobs that can never be delocalized.**

## POWER2GAS, THE ELECTRICITY STORAGE SOLUTION OF TOMORROW

Power2Gas is a forward-looking solution that converts electricity generated from renewable resources into hydrogen gas. This storable energy source can then be transported in natural gas delivery grids. This innovative technology addresses one of the biggest objectives of the energy transition: reducing greenhouse gas emissions by a factor of 4 and increasing the share of renewables in the energy used by end consumers.

- By 2030, power2gas will be a fully operational technology in France, without any technological disruption or new transport infrastructure requirements.
- On the 2035 horizon, ADEME evaluates France's yearly hydrogen-from-electricity potential via power2gas at roughly 30TWh.
- In 2050, power2gas installations could also produce 5–18TWh of heat and 3,400 to 11,700kT of oxygen alongside the hydrogen output.
- In 2050, when an anticipated 50% of the energy used in France will be from renewable resources, power2gas production would be 20 to 30 TWh/year of grid-injectable green gas.

## PYROGASIFICATION: THE MOST INNOVATIVE ANSWER

Pyrogasification is a thermochemical process that extracts gas for use in synthesis (syngas) from biomass or selected refuse (RDF). This syngas is then processed with a view to generating electricity or heat or to making synthetic methane for injection into the grid. The final gas obtained is called "second generation (2G) biomethane" when derived from renewable input stock and "recovered methane" when derived from non-renewables (RDF).

Pyrogasification processes are very different from anaerobic digestion and can provide innovative, high-performance answers that complement anaerobic digestion. They can optimize energy value extraction from many types of biomass and refuse that are currently worthless as materials or difficult to process.

This sector, whose pioneer projects are expected in 2020, will thus be an effective future complement to the renewable gas output from anaerobic digestion. An in-depth study conducted by GRDF in 2013 concludes that the technical potential for biomethane production via gasification lies between 150 and 250TWh/year for the 2030–2050 period (in the scenario used). Considerable quantities of synthetic methane from pyrogasification might therefore be expected. Although these figures still need confirming and the synthetic gas purification step requires further technological validation, these estimates nevertheless show the interest of pyrogasification/injection in the scope of France's "Grenelle" environmental objectives, on an equal footing with biomethane from anaerobic digestion.

### Sources:

*Club Biogaz ATEE*

*ADEME*

*Observ'Er, Ministry of Ecology, Sustainable development, and Energy*

*[www.agriculture.gouv.fr](http://www.agriculture.gouv.fr)*

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*[www.lafranceagricole.fr](http://www.lafranceagricole.fr)*

*[www.injectionbiométhane.fr](http://www.injectionbiométhane.fr)*

## 2. FRANCE'S BENCHMARK GATHERING ON RENEWABLE GAS REBRANDS ITSELF

In 2019, EXPOBIOGAZ expands its horizons to become the renewable gas exhibition, a benchmark gathering in France covering the whole range of solutions for renewable gas production and its value channels: anaerobic digestion, pyrogasification, power2gas, transportation.

With an enhanced, expanded offering, the EXPOBIOGAZ exhibition's impetus is completely in line with new national market prospects, with new objectives facilitating the maintenance and development of jobs and thus the long-term viability of the French sector.

### A REPRESENTATIVE OFFERING FROM A SECTOR IN FULL GROWTH

This year's exhibition offering will be particularly **expansive and varied, with over 260 exhibitors and brands showing off their solutions. An all-time record edition in terms of offering.**

- Companies and brands exhibiting their know-how and innovation, industrial and manufacturing companies with turnkey solutions and specific answers to meet every need of project owners and initiators, : Power2Gas solutions, pyrogasification solutions, anaerobic digestion plant suppliers, equipment suppliers (pre-processing, digestion, purification), digestate exploitation solutions, injection and CHP solutions, after-sales & maintenance, CNG vehicle makers, and associated services.

### A BROAD SPECTRUM OF VISITOR PROFILES

EXPOBIOGAZ is directed at **many and varied professional profiles** covering the whole of the sector's know-how chain as well as project initiators or investors interested in this sector of the future, 70% of whom are deciders involved in:

- farming and breeding
- public institutions (local councils and economic development agencies)
- industry (agri-food & drinks, paper mills, large-scale distribution, unpacking and unpacking)
- waste and sewage treatment (technical burial centres, organic waste energy recovery)
- biogas-related equipment and techniques (biogas-specific equipment makers, biogas-related service providers, OEMs, biogas engineering/project assistance)
- biomethane fuel (CNG infrastructure manufacturer, vehicle builder/distributor/equipment maker)
- energy (producers, operators, services to energy)

## AN EXHIBITION AT THE CORE OF A BUOYANT REGION IN RENEWABLE GAS RESOURCES

The exhibition is being held in Hauts-de-France, a region brimming with potential. As France's **most productive region in both agriculture and renewable gas**, Hauts-de-France offers a strategic position to stakeholders across the whole of the biogas-biomethane-bioCNG sector.

At the end of January, 2019, 33 anaerobic digestion plants have already seen the light of day, especially in the Nord and Pas-de-Calais departments. Five more are under construction, with roughly 180 projects in all.

### Key facts and figures

- Recorded number of biomethane injection projects pending: 54 in 2017 against **108 in 2018**
- **With 188 GWh/year, the Hauts-de-France region comes top of the 2018 regional class in terms of maximum installed capacity**
- **With 11 biomethane injection sites, Hauts-de-France comes third in the 2018 regional class in terms of installed units**
- **With 2,409GWh/year, Hauts-de-France comes second in the 2018 regional class in terms of maximum capacity of recorded biomethane injection projects pending.**

## AN EXHIBITION THAT PLACES JOBS AND TRAINING AT THE FOREFRONT

In France, records show 500 businesses and 700 anaerobic digestion sites creating jobs that are virtually delocalization-proof. Direct employment is generally linked to operation, whereas indirect employment is more involved with design, construction, energy, and reintegration with the soil.

Key figures:

- **2,250** direct jobs in 2015
- **10,000** direct jobs in 2030
- **60,000** indirect jobs in 2030

(sources: SER, ATEE, Négawatt Scenario)

## THE MOST SOUGHT AFTER PROFILES FOR RECRUITMENT

- Biogas site operation managers  
*Good field skills, engineer or higher technician profiles*
- Maintenance technicians  
*Often involving travel*
- Anaerobic digestion process engineers  
*Mainly in drawing offices with a developer or constructor*
- Development project managers

## EXPOBIOGAZ puts jobs and training at the core of its event with the Talent Forum (“Forum Des Talents”)

In order to address the sector’s current **job and training issues**, a **new device** created in partnership with Biogaz Vallée® will take its place at the heart of the exhibition: the Talent Forum.

This area, organized into 3 specific hubs, is dedicated to the respective issues of training, skill improvement, and recruitment often encountered by the market. It will facilitate constructive exchanges on these recurring themes as well as encounters between all the stakeholders.

### AN EXHIBITION THAT MEANS REAL BUSINESS

EXPOBIOGAZ is now firmly established as a real business booster thanks to a **whole range of services for the benefit of exhibitors and visitors alike**. The event thus helps network the whole cross-section of sector representatives attending the exhibition.

### Business Meetings

In order to fulfil the expectations of professionals constantly on the lookout for partners or markets, EXPOBIOGAZ provides a **free business appointments service**: “Business Meetings”.

This service is available to all visitors, offering all of them a chance to make the most of their exhibition attendance by organizing more encounters and developing their network.

With this service, EXPOBIOGAZ provides a concrete answer to professional expectations.

With 551 business appointments made and kept at the 2018 edition, this service, squarely aimed at exchange and business development for exhibitors and visitors alike, has proven its performance.

### EXPOBIOGAZ 2019 IN FIGURES

**260** exhibitors and brands

**34%** of exhibitors from abroad

**30%** first-time exhibitors

**11%** of regional exhibitors

**20** institutional partners

**over 30** conferences over the 2 days

**2** site visits

**2** assistance measures for project initiators

**1** agricultural village

**1** Innovation Award

**1** employment & training area

### 3. EXTENSIVE PROGRAMME OF IN-SHOW EVENTS AND ACTIVITIES

As the go-to gathering of sector professionals, EXPOBIOGAZ promises a programme full of in-show events and activities. Professionals will be able to take part in many exhibition highlights that are both concrete and future-looking, in order to learn, stay informed, exchange, and discover all the market's innovations and trends:

- **Innovation Award:** all exhibitors have an opportunity to **promote their innovations by entering the EXPOBIOGAZ Innovation Award** contest, which every year rewards new stakeholders in the sector.
- **2 days of open-access conferences**, dealing with a comprehensive range of topical subjects and organized by Club Biogaz ATEE and Biogaz Vallée®: funding, employment, training, quality labels, R&D, etc.
- **2 site visits** on the eve of the exhibition: BIOGAZ PEVÈLE and the SYMEVAD sorting plant for value and energy recovery from materials
- **Agricultural village:** an area dedicated to exchange, advice, and feedback among farm owners, farm operators, breeders, wine growers, etc.
- **Exhibitor forum:** an area dedicated to talks and discussions by exhibiting companies
- **The Talent Forum:** area dedicated to employment and training
- **SOS Project Initiator:** an assistance tool for taking advantage of custom advice and making the most of one's visit, run by Biogaz Vallée®
- **Guided visits on the topic of bio-CNG transportation, organized by AFGNV, France's CNG association**
- **Vehicles on show:** an exhibition area for farming vehicles
- **The National Renewable Gas Assembly** event hosted at the exhibition on the morning of 12th June and run by the Renewable Energies Syndicate

## EXHIBITION PROGRAMME

### OUR CONFERENCES

## Wednesday, 12th June

### CONFERENCE CENTRE

#### 8am–8.30am

Presentation of the “Club Biogaz” annual report and of the representatives elected from the renewing Colleges

Speakers:

- Michel Spillemaecker, President, Club Biogaz ATEE
- Marc Schlienger, Executive officer, Club Biogaz ATEE

#### 8.30am–9.15am ATEE

Presentation of the Qualiméthà label and blank audits with inspection agencies, drawing offices, and constructors

Speakers:

- Arnaud Diara, Head of missions at Club Biogaz ATEE
- Main contractor assistant, main contractor, constructor, OEMs, conformity appraisal body

#### 9.15am–9.45am

VALBIOM: anaerobic digestion in Wallonia and its provinces, VALBIOM’s role and actions

Speaker: Cecile Heneffe, Anaerobic digestion expert with Valbiom

Organized by **CLUB BIOGAZ ATEE**

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#### 10.00pm -10.45pm

Cautionary points and good practices in preparing a project’s execution and anticipating the operation of an anaerobic digestion plant

Presenter: Dominique Fritz, Communication manager with BIOGAZ VALLÉE\*

Speakers:

- Stéphanie Gandet, Associate lawyer at GREEN LAW AVOCATS
- Stéphane Dutremée, Chairman of BIOGAS ENGINEERING
- Pascal Alexis, Manager of ALEXIS ASSURANCES

#### 10.45AM–11.30AM

Biomethane injection in France – review and prospects nationwide and in Hauts-de-France

Presenter: Dominique Fritz, Communication manager with BIOGAZ VALLÉE\*

Speakers:

- Christophe Bellet, Biomethane Development officer with GRDF
- Mathilde Garret, Biomethane product manager with GRTgaz
- François-Xavier Letang, Farmer, manager of anaerobic digestion sites in Ile-de-France and Hauts-de-France

Organized by **BIOGAZ VALLÉE\***

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11.45am–12.15pm Opening speech

12.15pm–12.45pm Innovation Award presentation ceremony

Organized by **EXPOBIOGAZ**

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#### 1.15pm–2.00pm

How to negotiate and obtain the best value from one’s biogas, from production to local consumption

Presenter: Dominique Fritz, Communication manager with BIOGAZ VALLÉE\*

Speakers:

- Remy Companyo, Co-founder of ILEK
- Arnaud Bilek, Co-founder of GAZ’UP
- Account of a biomethane production project initiator’s experience

Organized by **BIOGAZ VALLÉE\***

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#### 2.00pm–2.45pm

What place does sludge occupy in a sewage treatment station's biomethane production?

Presenters:

- *Dominique Fritz, Communication manager with BIOGAZ VALLÉE\**
- *Océane Rase-Pourchon, Waste processing mission leader with AMORCE*

Speakers:

- *Bruno Maneval, Water Department Manager at GRENOBLE ALPES METROPOLE*
- *Olivier Begouen, Process development manager at GIRUS–Groupe ELCIMAÏ*
- *Jean-Yves Gardoni, Chairman of Gâtinais Biogaz*

Organized by **BIOGAZ VALLÉE\***  
in partnership with **AMORCE**

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#### 2.45pm–3.45pm

Impacts and opportunities of biogas development in employment and training in France

Presenter: *Dominique Fritz, Communication manager with BIOGAZ VALLÉE\**

Speakers:

- *Lea Molinié, Mission leader in anaerobic digestion for farms and renewably-sourced and other energies from the Ministry of Agriculture and Food*
- *A representative from the training and research general directorate of the Ministry of Agriculture and Food*
- *Etienne Halbin, Teacher of agronomics, energy, anaerobic digestion, carbon footprints and Coordinator of the D.U., C.S. and B.P.R.E.A. training courses at EPL AGRO DE LA MEUSE*
- *Anne Lafferrerie, Biomethane project mission leader with GRDF*
- *Jean-Philippe Burtin, General manager of recruitment agency BOREA*

Organized by **BIOGAZ VALLÉE\***

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#### 3.45pm–4.45pm

Sector Strategic Contracts ("CSF") – How the sector is mobilising to reduce costs and advance the local share of equipment and services

Presenter: *Aurélie Picart, Executive officer on the SECTOR STRATEGIC COMMITTEE*

–*The new energy industries*

Speakers:

- *Grégory Lannou, Manager at BIOGAZ VALLÉE\**
- *Olivier Guerrini, Renewable gas production Industrial Manager at ENGIE*
- *Sylvain Frédéric, Mission leader in the GRDF Biomethane Project*
- *Robin Apolit, Renewable gas mission leader and Geothermal energy manager at the Renewable Energies Syndicate*

Organized by **BIOGAZ VALLÉE\***

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#### 4.45pm–5.45pm

Assessing the services provided by anaerobic digestion in order to optimize their value recovery – Results of work on positive spin-offs in the scope of the Sector Strategic Contract ("CSF")

Presenters:

- *Dominique Fritz, Communication manager with BIOGAZ VALLÉE\**
- *Hélène Berhault-Gaborit, Activity coordinator at AAMF*

Speakers:

- *Jacques Pierre Quaak, Joint chairman, FRANCE GAZ RENOUVELABLES, Founder member of the Farmer's Anaerobic Digestion Association of France (AAMF)*
- *Jean-Marc Onno, Farmer and Biogas producer, GUERNEQUAY farming company Vice-Chairman of AAMF*
- *Yves Simon, Chairman, SDE03– Allier department energy syndicate*
- *Francis Claudepierre, Farmer and Biogas producer in the BRIMBELLES cooperative, Chairman of AAMF*

Organized by **BIOGAZ VALLÉE\***  
in partnership with **FRANCE GAZ RENOUVELABLES**

## THURSDAY, 13th June

Organized by CLUB BIOGAZ ATEE

### 9.00am - 9.20am

State-of-progress review of the biogas sector in 2019

Speaker:

*Marc Schlienger, Executive officer, Club Biogaz ATEE*

### 9.20am - 10.05am

Round-the-table discussion on Club Biogaz's "Workgroup contract":

Handover of works, presentation of the "Guide to good contracting practices in the scope of anaerobic digestion plant design and construction"

Speakers:

- *Marie Verney of Club Biogaz ATEE*
- *Xavier Marchand of Carakters*
- *Stéphanie Gandet of Green Law Avocats*
- *Nicolas Mallein of UNICA Conseil*
- *Xavier Van Der Laan of GRDF*

### 10.20am - 10.35am

Preparing and anticipating anaerobic digestion project execution: preparing your injection project and your funding request

Speaker:

- *Jérôme Hoerner, CIC-Crédit Mutuel*

### 10.35am - 10.50am

Funding an on-farm anaerobic digestion installation

Speaker:

- *Olivier CAUQUET, Caisse Régionale Nord de France (Crédit Agricole)*

### 10.50am - 11.15am

In 2019, funding of farming projects as seen by biogas producing farmers and the Hauts-de-France Chamber of Agriculture

Speakers:

- *Arnauld Etienne, Expert in Anaerobic digestion with the Nord-Pas de Calais Chamber of Agriculture*
- *Francis Claudepierre of AAMF (farmers' association)*

### 11.15am - 11.30am

Putting together a funding package, constructors who take shareholdings in "project companies"

Speaker:

- *Philippe Spannagel, Naskeo Environment*

### 11.30am - 11.45am

Raw biogas purchasing or how to cement a partnership to minimize your risks and optimize your value recovery from biogas

Speaker:

- *Arnaud de Veron, Air liquide*

### 11.45am - 12 noon

SRADDET (Regional scheme for the planning, sustainable development, and equality of territories) in the Auvergne-Rhône-Alpes region for anaerobic digestion: what regional investment funds are there?

Speaker:

- *Lionel Catrain, Climate Air Energy consultant with SRADDET, Auvergne-Rhône-Alpes region*

### 12 noon - 1.00pm

Round-the-table discussion with the morning's speakers on the funding of projects

*Round-the-table discussion led by Lionel TRICOT of Elanor Consulting*

**1.30pm - 2.00pm**

Algae.4.biomethane—a microalgae cultivation and codigestion project for renewable gas production

*Speakers:*

- *Thierry Ribeiro, Unilasalle (Beauvais)*
- *André Pauss, UTC (Compiègne)*

**2.15am - 3.00pm**

Main aspects of materials regulations

Fertilizers in France and BENELUX: focus on digestates

*Speaker:*

- *Fabrice Marcovecchio, LDAR, Aisne department Analysis and Research Laboratory*

**3.00pm - 3.45pm**

National Biogas and Anaerobic digestion Technical centre Conference: “WIKIMETHA”, professional training courses, CO2

*Speaker:*

- *Alice L’Hostis, Manager, CTBM – National Biogas and Anaerobic digestion Technical centre*

*This programme was established on 22nd May, 2019 and may be subject to modifications beyond the organizer’s control.*

## EXHIBITORS' FORUM

An area dedicated to talks and discussions from exhibiting companies

*Programme established on 13th May, 2019 and subject to possible modifications beyond the organizer's control*

### Wednesday, 12th June

#### 9.00am - 10.00am

Green gas in the Lille Metropolitan area, the full story: presentation of the Euraméthanization label in support of anaerobic digestion plants on farms and project submission initiatives for the development of CNG and bio-CNG stations

*Speakers:*

- *Alain Bezirard, Vice-Chairman in charge of energy, Métropole Européenne de Lille*
- *Erwan Lemarchand, Energy, sustainable development and energy transition manager, Métropole Européenne de Lille*
- *Aymeric Butin and Maxime Lassalle, Project leaders, Métropole Européenne de Lille*

Organized by **MÉTROPOLE EUROPEENNE DE LILLE**

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#### 10.00am - 10.30am

METHA'MORPHOSE: momentum and a collective regional ambition for underpinning injected biomethane development in the Hauts-de-France region

*Speakers:*

- *Didier Cousin, Territorial Manager of GRDF Hauts de France and joint leader of the Regional Injected Biomethane Operational Collective ("CORBI")*
- *Didier Copin, Regional Manager, Rev3 Mission at the Hauts de France Regional Chamber of Commerce and Industry and joint leader of CORBI*

Organized by **CORBI Hauts-de-France**

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#### 10.30am - 11.30am

Energy value recovery from wood pruned or cleared from plantations (orchards and vineyards)

Talk in the scope of the European UP-Running project results and their publication

*Speaker: Mohamed Amine Lamsaim, Industrial risk consultant, Services COOP de France*

Organized by **SERVICES COOP DE FRANCE**

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#### 1.00pm - 1.30pm

Guided tour\* (with audio guide) for a better appreciation of bio-CNG transportation

Review of the state and ambitions of the Bio-CNG sector

*Speaker: Gilles Durand, General Secretary, AFGNV*

\*sets off from the Exhibitors' Forum at 1.30pm

Organized by **AFGNV**

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#### 1.30pm - 2.00pm

Evolution of the industrial biomass market in the anaerobic digestion sector within the AgriBioSource/HBI network

*Speakers:*

- *Kevin Blondel, AgriBioSource*
- *Daniel Pacheco Gonzalez, HBI*

Organized by **AGRIBIOSOURCE**

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#### 2.00pm - 3.00pm

PPE and the right to inject, a new context

*Speakers:*

- *Xavier Passemard, GRDF*
- *Anthony Mazzenga, GRTgaz*
- *Didier Marron, TEREKA*

Organized by **GRDF**

## WEDNESDAY, 12th JUNE (continued)

### 3.00pm - 4.00pm

Circular economy and gas delivery grid injections: value extraction and alternative treatment of certain resources in the regions!

Speakers:

- *Annabelle Brousse Cleret, Gasification Project Manager*
- *Robert Muhlke, "Liquid Biomass 4 Biomethane" Project Manager*

Organized by **GRTGAZ**

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### 4.00pm - 6.00pm

Intermediate energy-rich crops ("IERC"): With IERCs, fields become energy sources too

Speakers:

- *Sylvain Marsac, Helène Lagrange-ARVALIS-Institut du végétal (the plant institute)*
- *Marie Bazet, animal feed and food division Manager at EURALIS*
- *Lea Molinié, agricultural anaerobic digestion Mission leader for the Ministry of Agriculture and Food*

Organized by **ARVALIS** in collaboration with **GRDF**

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## THURSDAY, 13th June

### 9.00am - 10.00am

Safety and reliability of biogas purification units

Speakers:

- *Sander Reijerkerk, Engineering department Manager and David Bossan, Company Chairman, Arol Energy*
- *Greg Malcolm, Business Manager of Air Products*
- *Christian Streicher, Gas Treatment Sales Director in the Axens Group*
- *Xavier Touffut, Manager of the Industrial risk, Health, and Environment department at Bureau Veritas*

Organized by **AROL ENERGY**

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### 10.00am -12.00pm

Value recovery from biogas at Veolia: your refuse contains money!

Speaker: *Anna Ourliac*

Organized by **VEOLIA**

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### 12.00pm - 1.00pm

Presentation of the renewable gas production sector in the Netherlands: current situation and prospects

Speaker: *M. Frederik Gast, Biogas Plus BV*

Organized by **EMBASSY OF THE NETHERLANDS**

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### 1.00pm - 1.30pm

Guided tour\* (with audio guide) for a better appreciation of bio-CNG transportation

Review of the state and ambitions of the Bio-CNG sector

Speaker: *Gilles Durand, General Secretary, AFGNV*

\*sets off from the Exhibitors' Forum at 1.30pm

Organized by **AFGNV**

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### 1.30pm - 2.00pm

Evolution of the industrial biomass market in the anaerobic digestion sector within the AgriBioSource/HBI network

Speakers:

- *Kevin Blondel, AgriBioSource*
- *Daniel Pacheco Gonzalez, HBI*

Organized by **AGRIBIOSOURCE**

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**2.00pm - 3.00pm**

Various funding solutions for your anaerobic digestion project

Speakers:

- Suzanne Renard, *Energie Partagée*
- Yann Guezal, *Banque Populaire Grand Ouest*
- Henri Le Goas, *Engie Biogaz*
- Pierre Yves Eon, *GRDF*

Organized by **GRDF**

**AGRICULTURAL VILLAGE**

The agricultural village, a real place of exchange and encounters among farmers. Themed training workshops are on offer over the exhibition's 2 days, providing advice and assistance for the realization of anaerobic digestion projects for farms.

The agricultural village workshops are organized and run by the **Hauts-de-France Chamber of Agriculture**, the **French Farmers' Anaerobic digestion Association (AAMF)** and the **Federation of Biogas Producing Farms (FEBA)**.

**PROGRAMME OF WEDNESDAY, 12th JUNE**

**10.00am - 11.30am**

Sourcing of anaerobic digesters

Close up on the production of intermediate crops for energy: techno-economics and biodiversity

**12 noon**

AAMF/FEBA "METHAPERO" social for farmers on the FEBA stand

**2.00pm - 3.30pm**

Professionalization of the agricultural anaerobic digestion sector

Close-up on the AAMF charter, FEBA initiatives, the Hauts-de-France biogas producing farms group

**3.30pm - 5.00pm**

Value recovery from digestate

Close-up on agronomic trials and specifications

**PROGRAMME OF THURSDAY, 13th JUNE**

**10.00am - 11.30am**

Collectives

Close-up on the creation of the collectives and sanitary accreditation

**12 noon**

AAMF/FEBA "METHAPERO" social for farmers on the AAMF stand

**2.00pm - 3.30pm**

Local appropriation of projects and positive spin-offs

Close-up on the guide to "running your anaerobic digestion project in liaison with the stakeholders in your area"

In partnership with:



## THE TALENT FORUM

By Expobiogaz & Biogaz Vallée®

### JOBS AND TRAINING AT THE FOREFRONT

Aimed at professionals seeking employment or training, young graduates, businesses with jobs to fill, the Talent Forum at this edition occupies a new area at the core of the exhibition, entirely dedicated to employment and training.

Facing up to the sector's current issues and the training and recruitment difficulties often encountered by market stakeholders, the Talent Forum will enable everyone, visitors and exhibitors alike, to reap the benefit of constructive exchanges on this recurring topic and also facilitate encounters. **500 businesses and 700 anaerobic digestion sites have been counted in France, making an employment potential of over 60,000 jobs by 2030.**

**This area is organized into 3 dedicated hubs:**

#### ▪ TRAINING HUB

Training is of course essential to the success of a project. That's why 7 organizations and schools will be presenting their offerings of initial and ongoing training in anaerobic digestion and biogas.

A unique occasion for exchange with students and concrete accounts of experience.

- EPL AGRO CFPPA DE LA MEUSE
- EPLEFPA du Périgord
- CFPPA AGRICOLE LAVAL
- ENSAIA (Ecole Nationale Supérieure d'Agronomie et des Industries Alimentaires) – UNIVERSITÉ DE LORRAINE
- INERIS FORMATION
- OFFICE INTERNATIONAL DE L'EAU
- AFPA de Lille
- Discover also training courses on offer from
- INRA on the Grand Narbonne stand F64
- UNILASALLE on stand G67

#### ▪ RECRUITMENT HUB AND JOB CAFE

An area where job seekers can contact recruiters and discover the full range of jobs on offer, browse the available vacancies, and take advantage of their attendance to meet recruiters directly, with an area where they can complete their initiative by leaving their CV for perusal

#### ▪ TV STUDIO HUB

A real TV Studio recreated at the centre of the Talent Forum, run by the staffs of Actu-Environnement and Emploi-Environnement.

It's the ideal place for announcing job vacancies and specialist training courses or showcasing a trade in the anaerobic digestion and renewable gas production sector. Everyone will be free to make a pitch in front of the cameras and put the spotlight on their subject!

## VEHICLES ON SHOW

### o OUTDOORS

ON THE LILLE GRAND PALAIS FORECOURT, AN EXHIBITION AREA WITH TWO FARMING VEHICLES PRESENTED BY **MANULAND** - STAND **G62A**:

**JCB 435 S loader**

**JCB 437 HT loader**

### o INDOORS

TWO MORE FARMING VEHICLES WILL BE WAITING FOR YOU TO DISCOVER INSIDE THE EXHIBITION HALL

**NEW HOLLAND** ON STAND **G58B** PRESENTS:

**CNG agricultural tractor with CNG station and platform**

**MANULAND** ON STAND **G62B** PRESENTS:

**JCB 560-80 telescopic handler**

**AGRI PLUS**

## GUIDED TOUR OF BIO-CNG TRANSPORTATION ORGANIZED BY AFGNV

Eight members of AFGNV, the French CNG Vehicle association, all of them references in CNG and bio-CNG for transportation (ENDESA, GRDF, GRTgaz, PRIMAGAZ, CIRRUS, LEDJO ENERGIE, ENGIE, and AIR LIQUIDE), will be subjects of the two bio-CNG guided visits organized by AFGNV at the EXPOBIOGAZ exhibition.

Tours will take place from 1pm to 2.45pm on Wednesday, 12th June and also on Thursday, 13th June

- 1.00pm: Reception at the exhibitors' forum area
- 1.10pm: Review of the state and ambitions of the sector by Gilles Durand, Secretary General of the AFGNV
- 1.20pm: Question time and exchanges
- 1.30pm: Start of the transportation-themed itinerary
- 2.45pm: End of itinerary

## The Innovation Award

**The Innovation Award at the Expobiogaz exhibition sets out to showcase creativity and the quality of products and services on show. Eleven products and services have been shortlisted for this edition after preliminary selection by the judges' panel.**

The Innovation Award will be presented to the winner on **Wednesday, 12th June at 12.15pm** in the Conference Centre, following the exhibition opening ceremony.

## The judges

There are nine judges on the panel for the Expobiogaz 2019 Innovation Award:

- Helène Berhaut-Gaborit, Technical Expert with the French Combined Chambers of Agriculture
- Arnaud Etienne, Expert in Anaerobic digestion, Nord-Pas de Calais district Chamber of Agriculture
- Sylvain Frédéric, Mission leader, GRDF Biomethane Project
- Alice L'Hostis, Manager, CTBM (National Technical Centre for Biogas and Anaerobic digestion)
- François Morier of MORIER Process
- Thierry Ribeiro, Lecturer-researcher in bioprocesses: anaerobic digestion, UNILASALLE
- Marc Schlienger, Executive officer, Club Biogaz ATEE
- Stéphane Signoret, Editor-in-chief, Energie Plus magazine
- Lionel Tricot, Founder and manager of Elanor Consulting

## Appraisal criteria

- Ongoing or breakthrough innovation in the French market
- Product maintenance guarantee
- Easy implementation
- Benefit of assistance measures
- Product reliability: Outcome of R&D
- Installation cost/ROI
- Site operator gains
- Solution to the needs of many users

## Overview of the 11 nominations for the EXPOBIOGAZ 2019 Innovation Award

### AGRIKOMP France - Stand B36

AgriKomp France is a business specializing in anaerobic digestion for farms. For more than 12 years, agriKomp France has been helping French farmers with their anaerobic digestion projects from design through to plant maintenance. The company is currently the leader in anaerobic digestion on French farms, with nearly 80 running installations.

### **Nominated innovation: "akCockpit"**

akCockpit is a Web app for monitoring and controlling anaerobic digestion plants. It is used for managing one or more biogas installations with CHP plants or gas purification systems. Data from the process control systems and CHP/purifier unit, information on the feedstock, oil and laboratory analyses: akCockpit shows all the important plant information at a glance, resulting in operator time savings.

### **BIOENTECH - Stand D46**

BioEnTech puts data analysis and modelling at the core of its innovative solutions for the advanced control of environmental bioprocesses (anaerobic digestion and water treatment). It offers innovative, integrated solutions for real-time optimization of plants.

#### **Nominated innovation: “IR-SCAN”**

A diversified range of substrates helps guarantee good payback from anaerobic digestion plants. When developing co-digestion, we need to determine the biochemical composition of the substrate and understand its impact on reactor performance. To cope perfectly with the diversity of substrates in co-digestion plants and in order to maintain the performance guarantee, the company has developed IR-SCAN® technology. IR-SCAN® enables the rapid (3- or 4-day), complete characterization of substrates (BMP, COD, CH<sub>4</sub> production kinetics, lipid, protein, and sugar percentages) using NIRS methods. Characterization of substrates using conventional means (BMP test) usually takes 1 to 2.5 months. With this method, the operator anticipates and understands the impact on digester performance and avoids the risk of acidification and inhibition in digesters.

### **BIO-VALO - Stand A61C**

BIO-VALO facilitates technical design studies and prototype developments concerning the conversion and monetization of organic matter used to produce biogas (anaerobic digestion, hydrogen, etc.) and biomolecules. BIO-VALO ensures businesses and laboratories have proper conditions for conducting their pilot tests and trials.

#### **Nominated innovation: “Bio-energy optimization and innovation platform”**

This bioenergy optimization and innovation platform features tools for the whole development chain: prototype design, development studies, validation, innovation on a pre-production scale. The prototypes tested are dedicated to the conversion and monetization of organic matter used in anaerobic digestion as well as in the production of advanced biofuels (methanation, bioCNG, “Hythane”, Hydrogen, etc.) and green chemicals.

### **BYOSIS GROUP BV - Stand B62BC**

Byosis Group BV is a digester solutions provider whose main emphasis is on treating spent digestates and gaseous effluents.

#### **Nominated innovation: “Nitrogen stripping”**

Ammonia can be stripped from separated or even unseparated liquids in a digester. This ammonia is captured using sulphuric acid and recovered in the form of a transparent, pH-neutral liquid fertilizer with 8% nitrogen concentration. The effluent can be recirculated to the digester to control internal ammonium levels, so that flows of nitrogen-rich concentrated effluent (chicken litter, food waste) can be enriched without adding water. The effluent can alternatively be channelled to a biological waste water treatment plant whose size is drastically reduced thanks to the elimination of ammonia.

### **IDEAL TECHNOLOGIES - Stand A23**

IDEAL Technologies is an SMB that designs, makes, and markets on-site industrial waste processing equipment with a single purpose: to convert waste into resources.

#### **Nominated innovation: “BIODECONDITIONER™ S PADDLE DEPACKER”**

Our BioDECONDITIONER™ S DEPACKER technology is used in unpacking unsold or unused products discarded by super- and hypermarkets, hospitals, schools, and others. It separates the packaging from the organic waste to enable value recovery from the throughput. With less than 1% inert material remaining in the organic broth, the result is an ideal feed material for anaerobic digestion, while the packaging is spin-dried to make it usable as a fuel. With its compact size and its price of under €100k, this system opens up a seam of as-yet untapped energy resources.

### **LiLiBox solutions by AZOLA - Stand E14**

LiLiBox solutions by AZOLA is a spin-off from ENGIE’s GNL research centre and Storengy. It purifies, liquefies and stores biomethane, releasing its producers from the constraints of gas transport grids.

#### **Nominated innovation: “LiLiBox - Little Liquefaction Box”**

LiLiBox (Little Liquefaction Box) is a buffer storage system that enables biomethane producers to monetize the whole of their year-round production without being constrained by grid requirements.

The system comes on an 8m by 18m platform housing all the functions:

- Purification and liquefaction of biomethane by a unique, innovative process
- A liquid biomethane storage system
- A system enabling the liquefied biomethane to be revaporized for injection into the grid.

The assembly runs unattended and features a modular design to facilitate transport, meaning it can be easily relocated and reconnected throughout its service life. The absence of rotating machinery leads to significantly lower maintenance costs (less than €5k/year), power consumption (less than 5kW peak total) and initial outlay.

### **METROPOLE EUROPEENNE DE LILLE (MEL) - Stand D06**

The council of the Greater Lille conurbation is mainly concerned with urban services, waste treatment, water and sewage management, public transport, renewable energy development, highways, urban amenities, and economic development.

#### **Nominated innovation: The “Euraméthanization label”**

To assist development in the sector, MEL has launched the “Euraméthanization” metropolitan accreditation label.

The label offers multifaceted project assistance to encourage high quality development of the anaerobic digestion for farms sector in the region. This includes technical, legal, and financial assistance from the MEL in several areas:

- MEL becomes a joint investor in agricultural projects in an assistance role, with a back-seat shareholding to secure the investment
- In the scope of its investment, MEL takes a close interest in the digester's outer design: landscape integration, environmental requirements, minimization of impact
- Participative investment proposed to local citizens in agreement with the project owners,
- District-wide dialogue and consultation with exemplary users, from design to execution then monitoring of the operational phase,
- Technical, legal, financial, and consultational support and expertise provided by MEL throughout the project
- An R&D brief

### **MÉTHA'Ventures - Stand A61E**

METHA'Ventures is a project developer and constructor who also provides a 3rd-party funding structure for clients wanting to obtain immediate income or savings but without sufficient investment capacity of their own.

METHA'Ventures also promotes territorial initiatives in collaboration with elected representatives in order to plan out biomass value channels and help make districts self-sufficient in energy through a circular economy approach.

### **Nominated innovation: "Aria Méthanisation"**

Aria Méthanisation is a range of simple, robust anaerobic digestion processes developed by Metha'Ventures.

- Solid channel: Silogaz (R), suited to static anaerobic digestion of manures, based on an innovative construction principle patented by Metha'Ventures. It makes biogas production from manures accessible without subsidy, with a payback time of 8–10 years, from the smallest plant to the largest with no size limit.
- Liquid channel: Pyramigaz (R), suited to anaerobic digestion of slurries and all mixtures of slurry/manure/farming by-products; patented breakthrough technology, liquid channel without overlying gas or moving parts, favouring reliability and performance.

### **NEW HOLLAND, represented by GODEFROY EQUIPMENT - Stand G58AB**

New Holland, the brand name of the CNH Industrial group's farming division, offers a huge range of tractor, harvesting, soil-working, and handling machinery as well as automation solutions and farm

decisional and management assistance. In France, New Holland is a leader in the tractor, combined harvester, and grape harvester sectors.

### **Nominated innovation: “Methane powered concept tractor”**

The concept tractor offers a futuristic vision of farm tractors with expressive, modern styling. They incorporate essential features like the ability to carry the high-volume tanks needed to ensure the running time users expect for a methane engine.

The Biomethane power technology, also used by other entities in the CNHi group in the fields of passenger transport (Iveco Bus) or haulage (Iveco), offers the same performance as a diesel engine of equivalent power. Polluting emissions (particles/NOx gases) are greatly reduced, and if Bio-CNG is the fuel, the carbon footprint is practically zero. A farm equipped with an anaerobic digester thus becomes energy self-sufficient, whatever its biogas monetization model. In CHP applications, the purification of biogas left over from the electrical injection quota yields clean, economical fuel as a value channel. With grid injection, the fuel is directly within the reach of vehicles. As in the transportation field, CNG is not only a positive environmental and societal statement but also financially interesting, with fuel cost savings easily outstripping the extra initial outlay.

### **VAISALA - Stand E34**

Vaisala is a world leader in environmental and industrial measurement. With over 80 years' experience in the sector, Vaisala enables observations for a better world. Working from its Finnish HQ, Vaisala employs some 1850 persons worldwide and is quoted on the Helsinki Nasdaq stock exchange.

### **Nominated innovation: “Vaisala MGP261 multigas probe”**

As the very first 3-in-1 instrument for in-line biogas measurement, Vaisala MGP261 measures methane, carbon dioxide, and humidity all at once, even in the most difficult environments.

It is optimized for processes like anaerobic digestion or the processing of agricultural, industrial, and municipal waste as well as sewage and landfill.

The new MGP261 uses Vaisala's own patented technology, CARBOCAP®, developed on the strength of more than 20 years' know-how in the infrared measurement of gases. Thanks to the accuracy and stability of its measuring functions, this compact, dependable instrument enables site operators to control their processes from end to end and optimize their plant productivity. They can also use it to monitor and control ambient humidity, limiting wear in CHP drives and other elements in the process.

### **WESSLING France - Stand E31**

Multi-disciplinary analysis laboratory and leading analyst in the scope of ANAEROBIC DIGESTION for BIOGAS and BIOMETHANE, the WESSLING group specializes in the provision of technical services in the environmental field. It was founded in 1983 by Dr Erwin Wessling in Germany.

With the Group's rapid expansion to today's thirty or so establishments, including 18 analytical laboratories dedicated to specific skills, it is now present across the whole of Europe, Russia, and China.

### Nominated innovation: “The “WBB – Wessling Biogas BlueBox”

The WBB is an automatic gas sampling system requiring no technical intervention by on-site staff other than connection to the grid.

Compatible with pressures from 50 bar to 10 bar, the system can catch all the usual components (siloxanes, chlorine, fluorine, sulphur, mercaptans, ammonia, mercury, VOCs, etc.):

- Easy connection (single click)
- Easy transport (box with modest dimensions)
- Risk free (no handling of products or glass tubes)
- No throughput or time adjustments needed
- And above all, no need of watching

This ATEX certified system can work at very low quantification limits, as when our sampling technicians pass, or even lower if wanted. The appliance can run 24/7, thereby increasing sampled volumes and minimizing the WBB’s downtime.

EXHIBITION FLOOR PLAN



## THE EXPOBIOGAZ EXHIBITION, BROUGHT TO YOU BY...

### GL events Exhibitions

With 200 events organised worldwide for professionals and the general public alike, GL events Exhibitions has acquired unparalleled know-how in the business of organising trade shows, a trade which requires ever more exacting skills in marketing, communication, and organisation while staying close to the people in its markets. The Expobiogaz exhibition is organized by the GL events Exhibitions Building-Wood-Energies department, which also manages four other major gatherings: BePOSITIVE, HyVolution, Lighting Days, and Eurobois.

### Club Biogaz ATEE

Exhibition joint organizer, the energy management organization ATEE, undertakes to promote progress in energy management and the reduction of greenhouse gas emissions. The Association sets out to favour closer management of energy in businesses and municipalities—and more generally to make users more aware of the actions available to save and manage energy, thus contributing to the national objective of reducing greenhouse gases—while enabling them to improve their own profitability. At present it has 2200 members.

ATEE brings together energy-chain stakeholders to collect their points of view and capitalize on their feedback. It thus units people with similar concerns on different horizons, enabling each of them to be better informed and more effective.

With a national network structured into regional groups, ATEE is a crossroads for exchange and reflection among its members. This networking increases actions close to the field and collaboration with other stakeholders.

The ATEE conducts an economy and technology watch for informing, sensitizing, and motivating. To help its members develop their knowledge and optimize their management and decision making, the Association publishes concrete summary information.

The ATEE works in the general interest. The association's modus operandi is to look beyond its members' individual interests, which can often be contradictory, and to look for points of agreement in a concern for the general interest.

In this open, consensus approach, ATEE brings the skills and experience of its members to bear in drafting proposals and discussing measures with the public authorities to progress energy management and the greenhouse gas combat.

5 Clubs operate under the association's aegis:

- Club Cogénération (CHP)
- Club C2E strives for the practical implementation of Energy Economy Certificate measures
- Club Biogaz aims to further development in the biogas production and value recovery sectors
- Club Stockage d'énergies (energy storage)
- Club Power2Gas.

With its regional delegations, the Association organizes almost 40 information days and France-wide visits to technical installations every year.

WITH FIRST CLASS PARTNERS



CLOSE-UP ON SOME OF THE EXPOBIOGAZ EXHIBITION PARTNERS

Biogaz Vallée®

[@BioqazVallee](#) - [www.biogazvallee.com](http://www.biogazvallee.com)

Biogaz Vallée® promotes the ambition of giving biogas a full role in the French energy mix. Biogaz Vallée®, a national trade association, unifies, enlivens, and supports the anaerobic digestion sector in the aim of accelerating its construction and increasing value creation in territories across France.

Founded in November, 2011 under the impetus of industrial companies and France’s Aube department, Biogaz Vallée® directs its actions along 5 major axes: structuring the emerging biogas sector in France, promoting best practices, facilitating access to funding, supporting the creation of qualified industrial jobs in France, and stimulating innovation to remain competitive, marking the sector’s distinctiveness and eventually dispensing with subsidies.

Biogaz Vallée® is behind the creation of CertiMetha®, the new biogas and anaerobic digestion sector’s innovation and performance centre, recognized as an “Industrial Project for the Future.”

## Métropole européenne de Lille—the Lille metropolitan area

### The metropolitan anaerobic digestion policy

France’s “Energy transition for green growth” Act sets 2020 objectives of 23% renewables in the total national energy consumption and 2030 objectives of 40% less greenhouse gas emission than in 1990. The production of biogas as a 100% renewable energy source naturally occupies prime place in the metropolitan policy energy as each cubic metre of gas from anaerobic digestion means 2.3kg less CO<sub>2</sub> pumped into the atmosphere. Moreover, since the energy is produced purely locally, it enables the Lille metro area (MEL), France’s 4th largest conurbation with 1.2 million inhabitants, to be less dependent on energy imports.

### A pioneering conurbation in the development of biomethane



MEL has been a French pioneer in this field since the 1990s with the first buses running on biomethane. It headed up the European Biogasmax project, which demonstrated the technical reliability and financial performance of the biogas fuel sector. Since 2013, the whole of its bus fleet, some 428 vehicles, has been running on natural gas. The MEL urban bus system is the only one today to be wholly served by buses with CNG engines. Besides this, buses refilled at the Sequedin bus depot get a fuel containing a significant proportion (40%) of bio-CNG produced by the Organic Value Recovery centre. 10% of dustcarts also run on CNG.

depot get a fuel containing a significant proportion (40%) of bio-CNG produced by the Organic Value Recovery centre. 10% of dustcarts also run on CNG.

MEL also has state of the art equipment for developing biomethane production:

### The Organic Value Recovery Centre

This centre, which entered service in 2007, is the first French site to inject biomethane from organic waste into the natural gas delivery grid. MEL produces some 600,000 Nm<sup>3</sup> of biomethane per year.

### The Ovilleo sewage treatment plant



Ovilleo is the biggest sewage treatment plant in the North of France and has an anaerobic digestion unit attached for making biogas out of sewage sludge. The produced Biogas covers 94% of the factory’s heat requirements while supplying electricity to 800 homes all year round thanks to its CHP add-on.

### A new device: the Euraméthanization label

As the most rural conurbation in France, the territory boasts all the assets needed to develop anaerobic digestion for farms. To support the development of anaerobic digestion plants for farms, MEL created the “Euraméthanization” metropolitan accreditation label in 2019. The label offers technical, legal and financial assistance to facilitate the development of agricultural anaerobic digestion projects featuring high quality in the areas of technical issues, insertion, and acceptability.

@Photos: MEL – Vincent Lecigne; MEL – Antoine Repessé

## Methania and Metha'Morphose at the service of anaerobic digestion projects in the Hauts-de-France region

In our agriculturally dynamic region, well served by gas delivery grids, anaerobic digestion holds many advantages: conversion of organic waste to digestate usable as fertilizer, production of biogas as an alternative to fossil fuels, contribution to the upkeep of farming activity in the districts, creation or future-proofing of local jobs (the sector represents a potential of more than 6000 direct jobs by 2050). In short, a prime example of circular territorial economy.

This is the context in which the Hauts-de-France region aims to become the European leader in injected biomethane and has set itself the collective target of 40 green gas production units on the end-of-2020 horizon.

To accompany this ambition, institutional bodies (Regional government, Chambers of Commerce and Industry, ADEME, and others), energy suppliers (GRDF, GRTgaz), representatives of the farming world (Chamber of Agriculture among others) and many partners both public (DREAL, DRAAF) and private have created the Regional Injected Biomethane Operational Collective ("CORBI") and its associated brand name "Metha'Morphose" as a vehicle for their collective actions. A dynamic sector is thus in motion to accompany anaerobic digestion plant projects and develop a regionally excellent sector serving the whole territory.

Based on these observations, the Hauts-de-France regional Chamber of Commerce and Industry, in the scope of the rev3 mission, and the Regional Excellence cluster, Pôlenergie, have implemented the "Méthania" development programme to assist all businesses in the region's anaerobic digestion value chain to position themselves in this growth market.

This action is conducted notably with support from the Hauts de Regional Council in the scope of the rev3 mission, from the Chamber of Agriculture, from ADEME, and from GRDF.

This sector must be able to address the needs of all projects, be they injection or CHP, and help the emergence of bio-CNG stations.

Méthania's main objectives are to

- facilitate access by Hauts-de-France SMBs to a market in development
- assist SMBs in promoting know-how and skills
- represent the sector to the institutions and meet their needs
- showcase and reinforce regional stakeholders' potential for responding to projects
- Participate in the region's economic development

Contacts:

Jean Gravellier Pôlenergie (+33 633 18 36 17 [jean.gravellier@polenergie.org](mailto:jean.gravellier@polenergie.org)) and Nicolas Fievet of the Hauts-de-France region's rev3 CCI mission (+33 683 51 29 35 [n.fievet@hautsdefrance.cci.fr](mailto:n.fievet@hautsdefrance.cci.fr)).

## ESSENTIAL INFORMATION

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### ➔ Opening dates & times

Wednesday 12th June: 9.00am– 6.00pm

Thursday, 13th June: 9.00am–5.00pm

### ➔ Venue

Grand Palais

Lille, France

### ➔ Expobiogaz 2019 on the social networks

Twitter: @expobiogaz

Linkedin: <https://www.linkedin.com/company/expobiogaz>

### ➔ Press service

Amandine Chêne – +33 625 17 07 10 – [amandine@amandine-chene.com](mailto:amandine@amandine-chene.com)

Feel free to visit the Press Club located in the exhibition. It will be open throughout the event.

## SOURCES

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- Club Biogaz ATEE Press release “PPE: a moderated ambition and constraints for biogas and biomethane”
- Observ’ER - France’s 2018 barometer of electricity from renewable resources
- ADEME study – A 2030 vision of biomethane in France
- Biogas review for 2018/Q4 from the Ministry of Environment, Energy, and the Sea
- ADEME – Renewable energy panorama; 24/04/2016 govt. order on development of renewable energy sources; DREAL (regional directorate), ADEME.
- Club Biogaz ATEE
- [www.agriculture.gouv.fr](http://www.agriculture.gouv.fr)
- Sciences Eaux & Territoires
- [www.fne.asso.fr](http://www.fne.asso.fr)
- [www.bioenergiepromotion.fr](http://www.bioenergiepromotion.fr)
- [www.lafranceagricole.fr](http://www.lafranceagricole.fr)
- [www.injectionbiométhane.fr](http://www.injectionbiométhane.fr)

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