



Summary

Recent publications

- [The Biogas Quick Check tool in all languages](#)
- [Regional Newsletters in native languages](#)

Biogas Potential in Regions

- [Rhône-Alpes: a necessary territorial approach](#)
- [Regione Abruzzo energy department meets the future protagonists of the biogas technology](#)
- [Finally a license to operate in Geer -Belgium!](#)

- [Castilla y León a region with a future biogas potentiality](#)
- [Opportunities for Anaerobic Digestion in South-West England and Wales](#)
- [Biogas in Slovenia](#)
- [Project development in Malopolska](#)

Others

- [Next steps of the Renewable Energy Directive](#)
- [Energy Intelligent for Europe Info Day](#)

<http://www.biogasregions.org/>

Recent publications

The Biogas Quick Check

The Biogas Quick check is a tool for potential biogas plant site based on questions and benchmarking system for farmers and consultants. Without specific technical knowledge it is possible (i.e. for municipal or chamber technicians or elected people) to fill in this quick check which will show the potential for building a successful biogas plant. With the result of this Quick Check the decision to continue with an opportunity study will be made easier and will be based on a structured evaluation. The Quick check tool was prepared by WFG Schwäbisch Hall mbH with the support of all partners and exist now in all languages – **Test it**

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|-------------------|----------------------------|--------------|------------------------------|
| ▪ Abruzzo | in Italian | ▪ Severn Wye | in English |
| ▪ Castilla Y León | in Spanish | ▪ Slovenia | in Slovenian |
| ▪ Malopolska | in Polish | ▪ Wallonia | in French |
| ▪ Rhône-Alpes | in French | | |

Regional Newsletters

The partners regions of the Biogas Regions project are publishing a regular e-newsletter in their own languages presenting the last biogas development in their region. These newsletters are targeted to stakeholders from agriculture, municipalities and agro-food industry. Have a nice reading!

- | | |
|-----------------------------------|--|
| ▪ Abruzzo - in Italian | N°1 , N°2 , N°3 , N°4 , N°5 , N°6 |
| ▪ Castilla Y León - in Spanish | N°1 , N°2 , N°3 , N°4 , N°5 |
| ▪ Malopolska - in Polish | N°1 , N°2 , N°3 , N°4 , N°5 |
| ▪ Rhône-Alpes - in French | N°1 , N°2 , N°3 , N°4 , N°5 , N°6 |
| ▪ Severn Wye - in English | N°1 , N°2 , N°3 , N°4 , N°5 , N°6 |
| ▪ Slovenia - in Slovenian | N°1 , N°2 , N°3 , N°4 , N°5 , N°6 |
| ▪ Steiermark Feldbach - in German | N°1 , N°2 , N°3 , N°4 , N°5 , N°6 |
| ▪ Wallonia - in French | N°1 , N°2 , N°3 , N°4 , N°5 , N°6 |

Biogas Potential in the Regions

Rhône-Alpes: a necessary territorial approach

In Rhône-Alpes we have chosen two sectors for biogas development: the first one is agriculture and territorial approach and the second one is agro food industry.

We have produced a quick check tool so that farmers can check and evaluate their projects. This tool, in French, is the first step to inform and help the project owner. The evaluation concerns inputs (volume and security of



supply), digestate (output valorisation), local integration, financing, heat valorisation.... Results give information as to whether it is possible to go directly for a feasibility study and call for proposal (for constructors), or to conduct an opportunity study, or, eventually, to change the project.

We are currently accompanying 5 different projects mainly on biogas cogeneration. Due to the very low electricity tariff, it's suitable to have a good heat valorisation, and the profitability level size could be of 1 MWe (30 000 tons input, 28 000 t output, 5 M€ investment without district heating) and more. For this kind of project questions appeared, that concern:

- The concurrence between projects for supplies, especially for agro food industrial inputs. The regional agency's role will be to organise the supply.
- The necessary territorial approach for profitability. Unlike natural gas cogeneration, biogas cogeneration runs and produces heat all the time (7800 h/y). So it's important to find customer for both winter and summer heat valorisations (industrials, hospital...) or to have a territorial approach with a district heating. But that takes the local authorities' implication for building this district heating.
- Actors implications: those kinds of projects are very difficult and need time (for explanations, decisions, other barriers to be broken through), due to the very big number of actors that need to be involved in the project: industrials, local authorities, farmers.... But they can be the most "territorial efficient" projects and, for a regional agency, the most interesting ones.
- The concurrence or the good choice between renewable energies around the district heating building: wood energy or biogas cogeneration, which is the more efficient (technically, local development, energetically...) for the territory? We need to create new tools to help local decision-makers.
- The public acceptance. With Biogas Regions, we are working on good ways of communication.
- The valorisation of output (28000 t): high costs for spreading, transport, or treatment to separate water?
- Energy crops production.

In France, the regulation is still evolving and a new window is opened on biogas grid injection. So we will include this new perspective in our next opportunity studies.

i Rhônalpénergie-Environnement, Valérie Borroni, valerie.borroni@raee.org

Abruzzo Region energy department meets the future protagonists of the biogas technology



During July 2009 Regione Abruzzo Energy Department has organized and performed all the necessary activities for the opportunity studies development, preliminary step for the feasibility studies.

Regione Abruzzo includes four provinces, Chieti, L'Aquila, Pescara, and Teramo, therefore our objective was to cover as much territory of the four provinces as possible. For this reason before starting the activities we consulted with the members of the Advisory Committee who have a real everyday contact with farmers, breeders and food industry stakeholders. Their advice has been fundamental to spot easily and quickly not only those

farms and industries with a good potential for a future biogas plant, but also those actors who are sensitive to environmental issues and see in renewable energies such as biogas a good opportunity for the future. As a matter of fact, the motivation of the actors when it comes to new technologies is a key success factor that should always be taken into consideration.

Regione Abruzzo staff visited 5 farms in Teramo province, all located in a limited area. The five farms deal with cow breeding and have an average of about 200 animals each. The biggest obstacle spotted concerns energy crops to be used as input material in the biogas plant. Since all the crops available in the areas are used for animal feeding, there would be a need to buy it from another area thus increasing transportation costs. Moreover the initial investment cost to build a biogas plant was considered too high to be paid individually. For these reasons and because the biogas quick check tool was not promising on a single farm scale, the data used were combined and we obtained good results from the consortium.

In Chieti province there is a very motivated breeder owning about 500 animals including cows, pigs, sheep and horses who has energy crops available. The Quick Check Tool performed on his farm data gave a very positive result/ for whom the quick check tool gave a very positive result.

In L'Aquila province, located in an area of industrial agriculture, there is a food – processing plant willing to get rid of its vegetable production waste and looking into eliminating the disposal costs through a biogas plant. In this case as well the motivation is very high and the results of the quick check tool show us a good potential for a future biogas plant.



i Regione Abruzzo, Energy and Environment Department, Iris Flacco, Iris.flacco@regione.abruzzo.it

Finally a license to operate in Geer ! (BE)

After 4 years of intense work by the company Biogas Development SA, the authority of the Walloon Region has finally granted to this company a license for the construction of a biogas plant. So, the Geer inhabitants will see soon a biogas unit on their territory. This one will produce electricity and heat.

This project is supported by a cooperative of 32 farmers from the Geer surroundings (suppliers of biomass and digestate users), by the company Hesbayefrost (frozen vegetables, biomass supplier) and by the authority of Geer (heat recovery thanks to a network)

The biomass which will be injected into the digester is composed of:

- 12 000 T of maize,
- 12 000 T of manure from farm project members,
- 5 400 T of pig manure from farm project members ,
- 7 500 T mashed carrots (peels from Hesbayefrost) ,
- 1 500 T mashed potatoes (peels from Hesbayefrost),
- 10 000 T of treatment plant mud from Hesbayefrost,
- 750 T of grass-cuttings from Geer inhabitants.

In total, 49 150 tonnes of material will be collected and recycled each year. In the future, one objective is to replace manure by by-product coming from farms (beet leaves, stalks of beans, residues of spinach, Brussels sprouts, etc...).

By degradation, these materials will produce biogas. This one will produce with cogeneration technology on one hand electricity, sold to the networks of electricity providers as planned with the green certificates system, and on the other hand, heat which must feed a drying unit. Indeed, the woody biomass harvested by pruners will be processed into pellets. Finally, the digestate (the ultimate product of raw materials "digestion") will be applied as fertilizer on the farmers' fields, replacing chemical fertilizers.

To finance this project, eight million Euros will be released, before construction of the plant and its inauguration, scheduled for the end of 2010.

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Castilla y León a Spanish region with a future biogas potentiality (ES)

The Bioenergy Action Plan in Castilla y León foresees a great development for the biogas sector in the region and it has recently elaborated a resources analysis which summary is shown in the table below:

Concept		Current estimation				
		Surface (thousand of ha)	Residues production (thousand t/a)	Primary energy (ktep/a)	Costs (€/t)	Costs (€/toe)
Energy crops	herbaceous	85	295	42	135-200	948-1.404
Agriculture residues			1.083	32		
Farmer residues		-	4.412	479		
Industrial residues	From agro food industries	-	209	79		
Urban residues	Organic fraction	-	231	2		
	Sewage sludge	-	13	4		
	Lawn cuttings	-	-	-		

Source EREN

Taking into account the resources and all the conditions needed for a biogas plant; from the beginning of the project BIOGAS REGION, in November 2007, until now 23 potential biogas locations have been detected in Castilla y León. This potential could reach a total of 17, 4 MWe and investment of 30,6 M€, which means the use of almost 1,000,000 tons per year of raw material as feedstock, producing around 70,000,000 m³ of biogas per year. The next step will be valuating the use of that amount of biogas.

The most common feedstock available in the region is manure from pig farms (58%) and from chicken farms (33%).

8 from the 23 potential biogas installations have been selected by the Biogas Regions project in order to develop an opportunity study. These eight are summarized in the table below:

KIND OF FEEDSTOCK	PROVINCE	ESTIMATED SIZE OF THE PLANT Mwe	POTENTIAL INVESTMENT M€	ESTIMATED BIOGAS PRODUCTION m ³ / year
pig manure; rest from slaughter; organic waste	Segovia	4	13.3	8,000,000
pig manure; organic waste	Soria	1	4	4,000,000
residues from dairy industry	León	0.5	2	2,000,000
pig manure; organic waste	Salamanca	0.4	1.2	1,600,000
ovine manure; rest from slaughter; others	Valladolid	0.4	1.2	1,600,000
pig manure; bovine manure; energy crops	León	0.5	2	2,000,000
pig manure; rest from slaughter; energy crops	Soria		2	2,000,000

The new Quick-check tool, a questionnaire to quickly check the potential for a new biogas plant, is now available in Spanish. The questionnaire is divided into two sub-sections: first the KO-criteria and second a questionnaire about biogas including the evaluation of at least the minimum conditions that a future biogas plant will require for being successful.

All the potential biogas plants have been checked and the chosen ones have been mainly selected on their securities of raw material supply, good location, good financing, and closeness to an electrical grid evacuation.

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Opportunities for Anaerobic Digestion in South West England and Wales



The UK government appears to have quite suddenly awoken to the opportunities offered by anaerobic digestion (AD). The Assembly government in Wales, it seems, is even keener on seeing the technology employed, particularly as means of treating source-segregated food waste. The timing of the Biogas Regions project could hardly have been better as far as England and Wales is concerned but this does not mean that prospective developers have been clamouring to receive opportunity studies from SWEA. Waste management contracts are often handled by larger companies that have usually moved beyond these early pre-feasibility stages before expressing any tentative interest in public. Where SWEA has been able to become involved and provide opportunity studies is at the much smaller scale and almost always on-farm. The

implications for this are fairly obvious – the opportunity studies are often demonstrating that the projects are rather marginal from an economic perspective. It is at this stage that landowners are encouraged to work together and seek out more and varying feedstocks. One promising scenario has been the poultry farms where huge quantities of lpg can be displaced by heat from a biogas CHP engine. The limiting factor, of course, is the difficult nature of poultry litter as an AD feedstock. Diluting this high nitrogen material is another reason for cooperation!

The most promising of the potential projects with which SWEA/Biogas Regions has become involved revolves around a large estate that uses around 175 hectares as only very lightly grazed parkland. A major music festival is held there annually and the land is also used for camping and other recreational activities. The grass is currently mown and dumped in piles in the estate woodland. It will not be a surprise to those that know a little about AD technology that the opportunity study indicates that this “waste” feedstock provides an excellent basis from which to build an economic proposal. The difficulty will be translating this theoretical opportunity into a practical and workable model that takes into account the desirability of utilising the heat, the need to gain land-use planning consent and comply with other regulations, connecting to the electricity network at reasonable cost and a host of other considerations.

iSWEA, Severn Wye Energy Agency, Andy Bull, andy@swea.co.uk

Biogas in Slovenia



Recently, quite a few (agricultural) biogas plants have been constructed in Slovenia. This year the Government of the Republic of Slovenia adopted the Regulation on supports for the electricity generated from renewable energy sources (biogas). However, the Regulation has to be ratified by the European Commission. In the Regulation, biogas plants are divided after the nominal power of cogeneration engine. Also, bonuses will be introduced. Thus electricity coming from smaller biogas plants will be paid more as well as biogas plants which will utilise greater amounts of slurry and agricultural substrates and those which will use more heat energy outside the biogas plant itself (distant heating, etc.).

At the end of August 2009 there are eleven agricultural biogas plants with the incorporated nominal power of 13,7 MW_e in Slovenia. In the eastern part of Slovenia, the area with the greatest potential for biogas plants, two new biogas plants started to operate this summer, each one generating 1 MW electric power. They use slurry and energetic crops as input substrate. It is especially encouraging that the biogas plant Dobrovnik will also send its heat energy to the neighbouring greenhouses in which orchids are grown. Until now, the heat energy from biogas plants has been used only for heating of the biogas plant itself and of the belonging farm buildings while it has not been distributed elsewhere.

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Figure: Biogas plant Kolar 2 has 1 MW electric power; today, its owner, Marjan Kolar, has already two biogas plants (2 x 1 MW_e)

Project development in Malopolska (PL)

The production of Renewable Energy in Poland amounts to 4% in 2009. To meet the European Union requirements this percentage must increase very fast. Electricity and heat production from biogas is the best way to do it. According to the Polish Government, by year 2020 every municipality should have at least one biogas plant producing electricity and heat. The plant is supposed to have between 0.7 till 3 MW Power. The planned substrates for the plants are energy crops and agricultural waste.

Recent actions in the project in Malopolska.

The Biogas Regions project in Malopolska Region stepped into the final stage. The first information seminar took place on 23 September 2009. It was prepared for the representatives of municipalities and institutions connected with renewable energy. The meeting was successful and met big interest from participants especially on the possibility of biodegradable waste reduction for the municipalities in the Biogas Plants. It's important, because Poland has to fulfil the U.E. requirements concerning the biodegradable waste that goes to landfills.

Opportunity studies

In the present stage the project is focused on identifying potential investments in biogas technologies. During the meetings and information activities we are promoting the Biogas Quick Check Tool. On this basis we have chosen four sites that are suitable to conduct the further analysis using the Biogas Calculator. Currently potential investors are providing additional data about planned substrates.

Development of Biogas Plants in Poland.

Agrogaz, a company that invests in Biogas Plants has put into operation the first big Biogas Plant in Poland. The investment of combined 2,1 MW Power was built in the northern part of Poland in Liszków. Electricity and heat will be produced from energy crops. The solutions used in the plant are based on the technology from Schmack Biogas company. This technology is successfully running in 280 locations in Germany, Austria, Holland, Japan and Luxemburg.

Actions planned for the next period

The next planned actions in the project are:

- Second information seminar for agriculture sector and food processing industry,
- Study tour for key players,
- 5 Opportunity studies,
- 2 Decision preparing studies.

i MAES - Malopolska Agencja Energii i Srodowiska, Tomasz Lis, tomek.lis@maes.pl

Others

Next steps of the Renewable Energy Directive

The new Directive on renewable energy sets ambitious targets for all Member States, such that the EU will reach a 20% share of energy from renewable sources by 2020 and a 10% share of renewable energy specifically in the transport sector. It also improves the legal framework for promoting renewable electricity, requires national action plans that establish pathways for the development of renewable energy sources including bioenergy, creates cooperation mechanisms to help achieve the targets cost effectively and establishes

the sustainability criteria for biofuels. The new Directive should be implemented by Member States by December 2010.

This Directive 2009/28/EC requires each Member State to adopt a national renewable energy action plan. These plans are to set out Member States' national targets for the share of energy from renewable sources consumed in transport, electricity and heating and cooling in 2020, taking into account the effects of other policy measures relating to energy efficiency on final consumption of energy, and adequate measures to be taken to achieve those national overall targets, including cooperation between local, regional and national authorities, planned statistical transfers or joint projects, national policies to develop existing biomass resources and mobilise new biomass resources for different uses, and the measures to be taken to fulfil the requirements of Articles 13 to 19 of Directive 2009/28/EC.

Within the REPAP2020 project EUFORES has produced the brochure: "National Renewable Energy Action Plans (NREAPs)- Paving the way for 2020" as guidelines and supporting document for the design phase for the NREAPs. The brochure contains an explanation of the Commission template, contacts as well as studies and projects which provide helpful background information for the drafting of the action plans. The information provided might also be useful for your members and other stakeholders who deal with the NREAPs. The brochure, which is a supporting document for the design phase of the National Renewable Energy Action Plans (NREAPs) is available in [21 official EU languages](#).

i European Commission : <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32009L0028:EN:NOT>
Repap 2020: <http://www.repap2020.eu/>

Energy Intelligent for Europe Info Day

The 2010 Energy Intelligent for Europe Info Day was organised in Brussels on the 3rd of February 2010. This information session gave a head start to tabling your next project proposal. The next call for proposal will be launched mid of March 2010.



Valerie Borroni, the coordinator of the Biogas Regions project got the opportunity to present the present the objectives and as well the first results obtained thank to the cooperation.

Thanks to the added value of the German and Austrian experienced partners, the seven highly motivated regions have successfully mobilised the different sectors involved (such as farmers, food industry and local authorities), have elaborated a biogas strategy and action plan and have stimulate the market for having concrete biogas implementation.

i http://ec.europa.eu/energy/intelligent/index_en.html

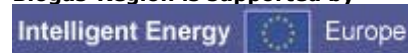
Legend (Valerie Borroni – Rhônalénergie-Environnement & Dano Dubolino – EACI at the IEE Info Day)

Edited by FEDARENE with the support of the Biogas-Regions Project partners

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Biogas-Region is supported by



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