

Introduction

The objective of the regional strategy and action plan is to determine the technical potential for the production of biogas, to identify the barriers and obstacles in the specific region and country and to elaborate a strategy for a successful development of biogas production. The fields concerned are: waste from agriculture and its effluents, energy crops (eg. maize and grass), organic waste from the municipal waste stream (green waste and food waste) and the waste from food processing industries.

The strategy sets out objectives for the medium and long term period and proposes measures to improve the feasibility of biogas technologies. The strategy development has benefited from the involvement of the Advisory Committee members who collaborated in the elaboration of the present document and will revise and approve the final draft.

In a Region such as Abruzzo, it's important to develop a very simple strategy in order to disseminate at first the main characteristics of this technology, to make all the potential stakeholders aware of the economic and technical aspects. It is also important to establish a link between stakeholders, experienced consultants and company who supply the technologies that can support them in the choice that can suite the local characteristic of farms, industries etc.. (size of the plant, raw materials..). So the short term period should be a strong dissemination activity and, in the meantime, to suggest the public authorities to support this technology with funds, facilities that can foster the building of plants.

Identification of obstacles and barriers

The development of biogas production is very often hindered by obstacles and barriers. In order to elaborate a strategy for overcoming these each partner will identify for his specific context on the national and regional level the problems preventing a stronger uptake.

The barriers that Regione Abruzzo/ARAEN analyzed in the development of the biogas chain in Abruzzo have been detected, with the contribution of the members of Advisory Committee, both in the production stage (raw material, producers) as well as in the consumption stages. Regione Abruzzo at the moment has no experience in such kind of plants so there is the general difficulty to take on with a new technology. The main are:

- No standardized procedure for system design and prediction of the quantity of gas produced;
- Low awareness in the agricultural and agro-food sector;
- Difficult economical framework;

- Difficulty of collecting local raw material;
- Lack of awareness of the product biogas among farmers, breeders and citizen;
- Potential producers demand complete but simple, clear and understandable information;

Technical barriers

- No standardized procedure for system design and prediction of the quantity of gas produced. As in Regione Abruzzo there are no such kind of plants the barriers is represented by the difficulty to predict the quantity of gas produced in a single farm and, more difficult, in an association of farms. So also the evaluation of the size and the components of the plant and the technology to be used represent an obstacle.
- Difficulties in raw materials collection at a local level. Lack of awareness on the Biogas among farmers, breeders and citizens.
- At the moment there is not a district heating network to be fed with the heat produced
- There are consultants able to plan the biogas plant, but companies that sell and install them are located in the north of Italy or in foreign countries and this point makes it difficult to encourage these technologies.
- Digestate: there is a lack of information about the possible use of the digestate as fertilizer and it is necessary that the digestate suites with the agricultural good practice issues and the nitrate directive.
- Energy crops: there is not production in the region and some research has to be done to study the cultivations to be started in the region.

Economic aspects

- Subsidies and funds received by the farmers per cultivated hectare are insufficient; therefore energy crops can't be as competitive in market as food crops;
- The investment cost to build a biogas AD plant are really expensive and the payback time is usually more than 5-10 years. Moreover, banks and financial bodies are not willing to take long term risks if the turnover of the plant is not guaranteed

Social aspects

The main social barrier has been detected in the lack of information and awareness about the use and consumption of biogas between general public and the farmers.

Most of the people don't know what biogas is and how biogas can be used. Due to this situation, all the local actors underline the necessity to increase the information (quantity and quality) offered in particular to farmers and breeders. In particular, some of the potential producers demand complete but simple, clear and understandable information, which allows biogas to be identified as a guaranteed and validated product.

Moreover there is no collaboration and an existent network between farmers, local authorities, local industries, and local population.

Results

As mentioned in the final document in Italian, the biogas produced in landfills is used for electricity that is usually fed into the grid. A small amount is dedicated to self-uses.

From the studies carried upon the situation of the Region it comes out that the potential small term development is to produce electricity from the biogas produced by anaerobic digestion of manure. This energy could be injected into the grid. As the long term development it can be used also for small district heating systems or for fuel as vehicles but attention must be paid to the biogas quality that has to suite with the gas of the existing heating grid and to the one used as fuel.

List of the actions:

1. set up a regular connection between the political stakeholders of the different Regional Departments of the Regional Government: Energy and Environment, Agriculture, Waste Transport and Economic Development in order to develop measures, funds and other activities to foster the construction of biogas plant;
2. information campaigns: at least one event per year in order to disseminate this technology and to make people aware of the progress made during the year before.
3. Set up a regular link between all the potential stakeholders in order to make all the action stronger.
4. Regular surveying of the amount of materials that can be used as substrate in biogas plant on order to have available and updated data on the potential of the region or provinces
5. Set up a regular communication between the stakeholders and the company that built such kind of technology and other association that work in the filed of biogas and renewables
6. Site visits to existing plants where farmers can talk with the owners;
7. Training of potential operators
8. Economic investigations in collaboration with representative of banks in order to set up possible financial plans
9. Food industries waste: investigation of the advantage of use that in biogas plant instead of other final uses, especially if the industries are located nearby farm or other food factory.
10. Foster the development of projects increasing the cooperation between different companies who provide raw materials. This will also allow to optimize the substrate to increase the yield of biogas produced,

In particular:

1.

Action	Set up a connection between the representative of the different regional public departments :
Details	Meeting with the managers of other Regional Departments in order to plan and to develop measures, funds and other activities to foster the construction and upgrading of biogas production plants, the use of the digestate, facilitation of energy distribution etc...
Deadlines	April 2009
Player	ARAEN with Energy and Environment Department , Agriculture Department, Wastes Department, Transports Department and Economic Development Department
Target group	Farmers, breeders, food-industries, waste management companies

2.

Action	Information campaigns:
Details	Meeting during events dedicated to renewable energy sources or other events related to renewables or agriculture to disseminate this technology and to make people aware of the progresses made during the previous year. Inform stakeholders on the regulation and the funds available on the region for such kinds of plants
Deadlines	Long term : one per year
Player	Members of AC and ARAEN
Target group	Farmers, breeders, food-industries, citizens and schools

3.

Action	Set up a regular link between all the potential stakeholders in order to make all the action stronger.
Details	During events dedicated to renewable energy sources or other events related to renewables or agriculture at a regional level. Newsletter
Deadlines	Long term : one per year
Player	Members of AC and ARAEN
Target group	All the potential stakeholders

4.

Regular surveying of the amount of materials that can be used as substrate in biogas plant on order to have available and updated data on the potential of the region or provinces
Updated database available for all the potential stakeholders
Long term : one per year
Members of AC , ARAEN , local Universities
all the potential stakeholders

5.

Action	Foster the development of projects increasing the cooperation between different companies who provide raw materials.
Details	Farmers association know the territory and where the farms are located so they can try to investigate for possible cooperation, supported also by the use of the results of the Biogas region Project and tools.
Deadlines	Short term : action of Biogas Regions project Long term: action surveyed by ARAEN
Player	Short term: Farmers association Long term: Food industries association , Chamber of Commerce , ARAEN ,
Target group	all the potential operators

6.

Action	Set up a regular communication between the stakeholders and the company that built such kind of technology and other association that work in the field of biogas and renewables
Details	Contact experts and biogas plant company and invite them to take contacts with farmers and breeders association.
Deadlines	Short and Long term : from now on
Player	Members of AC , ARAEN ,
Target group	all the potential stakeholders

7.

Action	Site visits to existing plants where farmers and breeders can talk with the owners of the plant;
Details	There are companies in the north of Italy that organize site visit to biogas plant. It's necessary to make regional potential stakeholder aware of these site visits with newsletter, invitations, giving contacts of the farmers association to these companies. Try to find some funds to support a part of the travel cost
Deadlines	Short and Long term : from now on
Player	Members of AC , ARAEN ,
Target group	all the potential stakeholders

8.

Action	Training of potential operators
Details	Organize seminars or training courses that could be paid in part from regional funds, category associations and from the operators themselves
Deadlines	Long term : one per year starting from 2009. One per Province
Player	Members of AC , ARAEN ,
Target group	All the potential operators and technicians

9.

Action	Economic investigations in collaboration with representative of banks in order to set up possible financial plans at a local level
Details	Financial plans: spotting local banks that could propose and guarantee specific financial support
Deadlines	Short term : December 2009
Player	Representative of banks , ARAEN ,
Target group	all the potential operators

10.

Action	Food industries: investigations on the advantages to invest on biogas plants, especially if the industries are located nearby farm ors other food industries
Details	Annual surveying on the location of the plants and their possible cooperation with nearby farmers in order to set up a possible collaboration for biogas production (i.e. the quick check tools can be made available to the association and Chamber of Commerce that can use it and with an annual report ARAEN can benefit of the results). Possible analysis of similar plants in the rest of Italy and data made available
Deadlines	Long term starting from 2009
Player	Industries association, Chamber of Commerce , ARAEN , Agro food Industries District in Teramo (one of the 4 provinces in Abruzzo)
Target group	all the potential operators

11.

Action	Foster the development of use of biogas as fuel
Details	Make an investigation on the regulations and the technical issues
Deadlines	Long term: action surveyed by ARAEN also within other IEE project related to transports
Player	Long term: Transport companies , Chamber of Commerce , ARAEN , national experts
Target group	Transport companies, municipalities

12.

Action	Heat use in district heating
Details	At the moment in Abruzzo there are no existing district heating network, both small and medium sized, so this goal is a long term one. The strategy should start from the very making an investigation on the regulation , the technical issues , related investment. Using biogas for heat production should be taken into consideration when writing the project.
Deadlines	Long term: action surveyed by ARAEN also within other IEE project or other regional measures
Player	ARAEN, Local Energy Agencies
Target group	Farmers, breeders and owners of nearby buildings, municipalities

13.

Action	Implementing energy crops
Details	It is important to inform farmers and breeders about energy crops, which are not very common in our region yet. Energy crops cultivation in marginal areas (lands that are not cultivated anymore and that could be used for energy crops) should be improved by complete information and financial support to farmers. To recover more agricultural areas to energy crops within an agronomic-energetic chain, it's necessary to set a complete development program, to put together a transversal professional partnership of producers, processing plants, representatives of consumers. First of all, it's necessary to detect cultivable marginal areas and the availability of farmers to cultivate energy crops, as long as the product marketing is ensured and economic-financial incentives are granted.
Deadlines	This is a long term goal and at the present time the objective is to encourage the installation of AD plant using as substrate manure.
Player	ARAEN, Local energy agency. Agriculture Regional Department; ARSSA, AD
Target group	Potential investors, farmers, municipalities

14.

Action	Digestate: foster the use of the digestate as fertilizer
Details	Analysis of the digestate contents Analysis of area where it can be spread These data should be available to possible investors in order to have quick and easy data on the possible use and the economic value.
Deadlines	
Player	ARAEN, Local energy agency. Agriculture Regional Department; ARSSA, AD
Target group	Potential investors, farmers and breeders