

Project: BiG>East

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Local implementation strategy for biogas projects in Latvia

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1. Introduction

The “BiG>East” project in Latvia came to the right time for the development of Latvian biogas sector. The national Biogas Development Program has been recently introduced and biogas as sustainable and high potential energy source started to be recognized by different institutions and society in general.

At the end of 2007, when project started, only three biogas plants were into operation – two landfill gas plants and one installation using sludge from wastewater treatment plant. The first biogas plant using agricultural feedstock was at the stage of development. Together with improvements in RES legislation and introduction of feed-in tariff in Latvia, from the beginning of 2008 a number of new biogas projects started to develop, the majority of which being agricultural biogas projects.

In 2009 there were 58 companies (with total installed electrical capacity 52,87 MW) that received quotas for the mandatory purchase of biogas electricity. However, in 2010 only 4 companies has started or completed construction of biogas plants and it is expected that by the end of the year some 6-8 more companies could finish the construction works. The remaining projects are still pending mainly due to the lack of financial resources and difficulties in public acceptance.

Financing options for biogas producers are available from different sources:

- From the Ministry of Environment, supporting projects where fossil fuels are replaced with RES.
- From the Ministry of Economy in form of feed-in tariff (two options are available – for electricity generated in CHP plants and for electricity generated using biomass (RES-E)).
- From the Ministry of Agriculture the support is provided for energy production from agricultural or forestry origin biomass.

Nevertheless, the comparatively good framework conditions did not ensure as rapid development of biogas market in Latvia as expected.

In this report the local implementation strategy for biogas projects in Latvia is proposed and discussed. The strategy is based on experiences from the work carried out in the BiG>East project, including the Mobilization Campaigns and biogas training activities implemented in Latvia.

The target groups of this strategy report are politicians, researchers and decision makers primarily at municipal level.

The aim of the report is to give strategic recommendations on how to facilitate the implementation of biogas plants at local level. In the beginning is given an overview of the local biogas market and barriers, while in chapter 4 local implementation strategies for Latvia are discussed and presented.

2. Local biogas market

Different studies show that due to the available biomass resources, Latvia has significant biogas potential. The highest biogas potential in Latvia is related to agricultural waste materials and specially grown biomass (grass, maize, and other energy crops) thus the future biogas plants likely will be located in rural areas where agricultural wastes like manure and other organic leftovers from agricultural activities are available.

In 2007 when the Ministry of Environment introduced the Biogas Production and Utilization Development Program, there were three biogas plants operating in Latvia. Since that only one new agricultural biogas plant has started the operation and few other are currently in construction.

An overview of existing biogas installations, biogas potential and biogas feedstock availability is given in BiG>East summary report¹, which also includes an analysis of the environmental impacts of biogas production and use. Besides the environmental impacts, there are as well important social and economical factors. Both of them are particularly important for local community. Development of biogas market on local level can solve a number of social and economical problems by:

- Job creation and new income opportunities
- Facilitation of rural development
- Substitution of fossil energy and energy imports
- Promotion of the use of currently unused agricultural land.

In order to facilitate the biogas market development, different policies and biogas support mechanisms in Latvia has been introduced. More information on biogas policies and support mechanisms is provided in BiG>East report on assessment of biogas policies in Latvia².

¹ Deliverable 2.8 available at <http://www.big-east.eu/>

² Deliverable 3.1 available at <http://www.big-east.eu/>

3. Barriers for local market development

Development of local and national biogas market is highly affected by different barriers (market, financial, social, legal and administrative barriers, and other biogas sector related barriers).

According to the analysis implemented in BiG>East project the most crucial barriers for the development of a biogas project nowadays in Latvia are³:

- The lack of regulations and legal bases for biogas development (incl. biogas use in transport and injection into natural gas grid) and the lack of continuous, targeted, well-considered and well-planned state support for biogas projects in Latvia, e.g. providing of investment guarantees for biogas project developers.
- The lack of local energy agencies, as well as a lack of trained staff and experts in municipalities and local governments for the evaluation of energy related projects.
- Liberalization of electricity market in Latvia is more a theory than a reality, causing the dependence from one dominating electricity generation, transmission and distribution company and thus establishing connection to electricity grid is a very time consuming, expensive and bureaucratic procedure.
- The lack of statistical data and the lack of information on biogas potential spatial distribution.
- Low awareness on biogas and its environmental benefits in Latvian society.

One of the most significant administrative barriers that biogas project developers are facing is too complicated permitting procedure. Permitting procedure for setting-up a biogas plant in Latvia involves number of steps and permits issued on national, regional and local levels. Permitting procedure can be divided in three categories:

- Construction permit (issued on local level by local or regional Construction Board).
- Permits and documents related to environmental issues (initial environmental impact assessment, application for technical regulations issued by Regional Environmental Board, integrated environmental pollution permit, waste transportation and storage permit – all of them issued at regional level).
- Permits and documents related to energy production and sale (permit for introduction of new electricity generation capacity, licence for heat and/or electricity sale, conditions and technical regulations for grid connection, application for feed-in tariff – all of them issued on national level).

All permitting procedures are centralized and stated by national or local regulations. The only action at local level is related to the construction permit (see Figure 1). Receiving the construction permit is one of the most critical steps for biogas facilities. To receive the construction permit, in case of biogas plants it is necessary to organize a public discussion.

³ Deliverable 3.2 available at <http://www.big-east.eu/>

During the last years, the number of biogas projects, mainly intended next to the pig farms, has been refused due to the negative public acceptance.

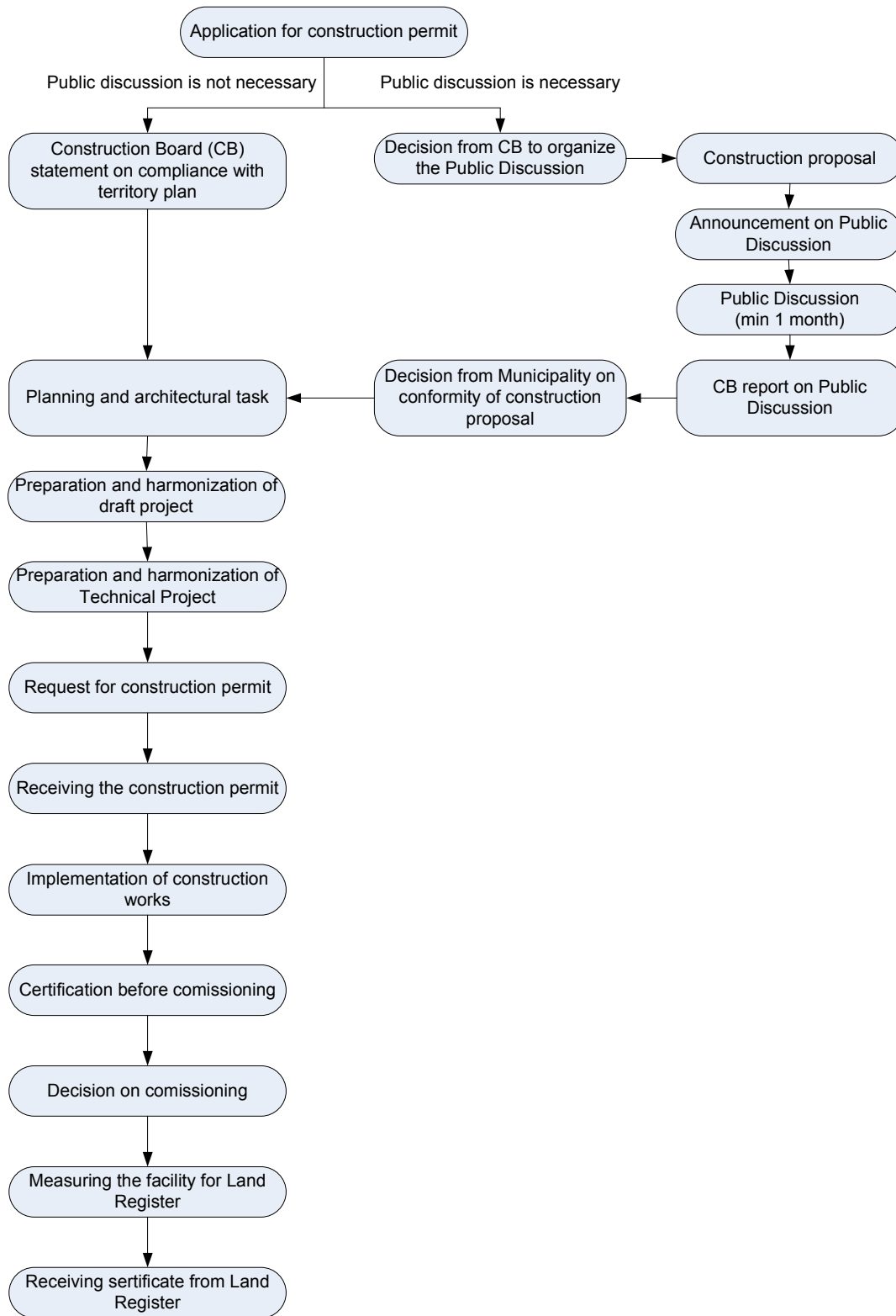


Fig.1. Diagram describing procedure of biogas plant construction process

Another important barrier is availability of funding. Despite the number of financing options provided for biogas projects in Latvia, it is still not easy to secure complete economical viability. Both because of comparatively high investment costs that biogas project has compared to more traditional biomass projects and low lending activity from commercial banks caused by the current Economic Crises.

4. Local implementation strategy

Taking into account the framework conditions and barriers described above, the local implementation strategy should focus on following three problems:

- Public acceptance of biogas projects and raising awareness of public sector.
- Quality and sustainability of new biogas installations.
- Collecting of local experiences and know-how, capacity building of administrative sector.

4.1. Raising awareness and reliability from public sector

During the last years in Latvia there has been a number of quarrels and suspicion of corruption cases related to “green” energy and to biogas in particular. This political background causes negative influence and refusal from society. Even being aware of all benefits that bioenergy can bring for the local community and society in general, the first public reaction is still distrustful and faithless.

Usually the public opinion is split between supporters and rejecters of biogas plants. In public discussions supporters base their arguments on highlighting the economical, social and environmental benefits of biogas plants, but rejecters are concerned about intentions of project developers and the influence that facility will have on their living area (smells, transportation load, etc.).

According to the Law on Self-Government some of the municipality main permanent functions include:

- To be responsible for the improvement of and sanitary condition of their administrative territory,
- To encourage business activity in their administrative territory and to take measures to decrease unemployment,
- To issue permits and licenses for entrepreneurial activity,
- To set the order of construction works in compliance with the development plans of their respective administrative territories.

Biogas issues are directly or indirectly related to all of the above mentioned functions and consequently municipalities are playing important role on facilitating the biogas project implementation on local level. Considering the biogas not only as a benefit of biogas facility owner, but also recognizing the additional benefits that this kind of activity brings to the community and moreover explaining those benefits to the public, could be a starting point for creating favourable conditions and changing the public opinion for the sake of biogas.

There are different actions that can be done on local level to create favourable conditions for biogas development and to increase the social acceptance of biogas projects. Providing good examples for local people and raising their awareness on biogas technology and the benefits that it brings are very important step in changing the public opinion. That can be

done by organizing existing biogas site visits and mobilizing people in local Mobilization Campaigns. Mobilization campaigns can be implemented as a part of public discussion procedure held before issuing a construction permit (see Fig.1) for new biogas facility in the region.

During the implementation of BiG>East project in Latvia, two Mobilization Campaigns for different stakeholder groups were organized on national level. The main objective of Mobilization Campaigns was to motivate and convince decision makers, financial institutions and municipalities to support new biogas production facilities.

The first Mobilization Campaign organized in Latvia was very important in means of addressing and mobilizing biogas market actors and understanding the actual problems they are facing.

The aim of the second Mobilization Campaign was to discuss the role of biogas technology in solving the environmental problems as well as to discuss the administrative barriers and give solutions on how to overcome them.

The success of both campaigns were proved by the number of participants, mostly employed at top management levels, number of attracted media representatives and the later response in different media, including National Television and Internet portals.

Detailed information together with photos on both Mobilization Campaigns is given in reports developed during the BiG>East project⁴.

4.2. Quality and sustainability criteria for future biogas plants

To give a reference point for biogas project evaluation authorities and to ensure that only sustainable and economically justified projects are supported, it is necessary to develop detailed quality and sustainability criteria for future biogas plants. A set of criteria could include:

- Efficiency of the heat energy use,
- Security of biogas feedstock availability,
- Transportation distance of biomass and digestate,
- Availability of land for spreading digestate,
- Reliability of used technology and competence of technology supplier,
- Priority should be given for biogas plants using waste products (e.g., manure, organic waste from food industry and households, etc.),
- Differentiation of biogas plants by installed capacity is also possible.

Elaborated quality and sustainability criteria can be used by financing authorities and commercial banks in project evaluation and thus contributing to minimizing technological, organizational and financial risks. Criteria can be used also by competitive administrative

⁴ Deliverable 7.2 available at <http://www.big-east.eu/>

bodies that are responsible for permitting and transferred into requirements set by construction, energy related and environmental permits.

4.3. Learning from local experiences

Now, when the first agricultural biogas plants in Latvia are starting their operation, it is very important to collect experiences and draw the first conclusions and lessons learnt. A local know-how should be gained on both – technical and administrative issues. This can be done by supporting independent research organizations that will collect experiences and do analysis on issues like feedstock quality, gas yields from country specific biomass, differences in biogas plant operation due to the cold climate conditions, quality of digestate, overall life cycle assessment of biogas plant in Latvia, etc.

When addressing the administrative issues, it is important to do the evaluation of previous biogas projects. This will help to avoid any mistakes and to improve the performance of future biogas projects. The improvements can be introduced by updating the set of sustainability and/or quality criteria or by posing new requirements in environmental and construction permits.

Local good practice examples can significantly contribute for rising awareness and public acceptance of future biogas plants in Latvia.

5. Conclusions

During the last few years the framework conditions for biogas projects in Latvia improved and thus a number of new biogas plants are under construction. During this time, the “BiG>East” project significantly contributed for raising awareness and building capacity of local biogas market actors. This has been done by organizing Mobilization Campaigns for different decision maker groups, by publishing the first comprehensive literature on biogas in Latvian language (Biogas Handbook) and providing a number of training activities for farmers, potential biogas plant operators, investors, administrative organizations and other biogas market stakeholders.

Based on the feedback received from participants in trainings and Mobilization Campaigns, and biogas framework conditions, the local implementation strategy has been developed addressing three main tasks for biogas sector development: public acceptance of biogas projects, quality and viability of new biogas installations and collection of local experiences and know-how. All these tasks are complementary and actions taken in one task are having impact on other. Accordingly, learning from own experiences will contribute to avoiding mistakes and increasing the quality of biogas projects in future. From the other side, biogas projects complying with sustainability and quality criteria will prove their viability and create positive image of biogas in society.