

Project: BiG>East

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Local implementation strategy for biogas projects in Slovenia

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Matjaž Grmek

ApE d.o.o.

Litijska 45, Ljubljana

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Introduction

Situation in Slovenia, as already explained in WP3, is different from the other BiG>East partner (addressing) countries. In the recent years there has been a rapid development on biogas production and use in Slovenia.

The raise begun with the feed-in tariff system introduced in 2002 for the so called “qualified electricity” production for electricity from RES, biogas production included. However its position was quite low within renewable energy sector. This was symbolically represented by the fact that it was not included with the name biogas but under broader label – other production, just not to let it out. It was just not seen as an important player. As a result at start feed-in tariffs were not very favourable for biogas production. Things got improved with their change in 2006.

Due to its specifics (prize categories and duration of the support) however it led to building of mainly bigger agricultural biogas plants (optimal size was just below 1MW) and leaving out smaller agricultural biogas installations. There was also a lack of other means of financial support like soft-loans and investment subsidies. For smaller farmers it was just too risky to build a biogas plant with help of pure commercial loans and consequently only big players could afford it.

This was pretty much the situation at the beginning of the BiG>East project. There were some 5 agricultural biogas plants in operation at the time with total installed (electric) capacity of 3 MW. Now at the end of the project there are much more. At the end of the year 2009 the figure was 13,8 MW with more than 30 MW in plan/construction for 2010. Even if only half would be realised this is more than all previously installed. Still these are mainly bigger biogas plants.

At the first promotional event that was held in municipality Markovci in March 2008 exactly the same problem was perceived as a major obstacle. Namely there was a farmer - potential investor interested in building a plant, there was a mayor in favour and municipality giving all the needed support with permissions, land etc. there was a positive climate among the people in the village about it, but there was just not enough incentive available for the farmer to enable him to make such a big investment. Two years later after the situation had change both in feed-in tariff's part and subsidy schemes for farmers and results are shown immediately. Not only is the biogas plant in Markovci starting its operation in April 2010 but another one is in preparation/construction in the same municipality! We would like to think this is also at least to some minor extent also due to our efforts within the BiG>East frame.

Farmer scale biogas plants sector is the less developed and with the biggest potential left. On this most of the agricultural experts and even according to some biogas plant developers this is the main area of future development in Slovenia. The potential for bigger ones is mostly consumed whereas there seems to be a growing interest among farmers for biogas production. Unfortunately Ministry of Agriculture is a bit behind and it is not very active in renewable energy aspect of the agriculture. Hopefully the situation would change with the national action plan for renewable energy preparation.

From this perspective also the promotional activities within BiG East in Slovenia were set. In Slovenia there were a lot of promotional activities on bioenergy and RES in general going on recently. The events were mainly of broader scale encompassing all stakeholders from politics, policy makers, experts, NGOs to the general (interested) public. Sometimes there was an impression created that the convinced (of the 'RES cause') convince the convinced and politics showed because they should and not because they would like to make a difference. Therefore we wanted to give support to a concrete potential project rather than make another event for its own sake.

Few years ago we were approached by the municipality Markovci to make a local energy concept for them. Being a rural community one of the most sensible project it seemed biogas production on a farm and use of heat for district heating system. They were very fond of idea as they (municipality and farmer) really wanted to realise the project, but there were some second thoughts on the side of the other policy makers.

The other event was of similar local nature although a bit larger scale and with broader audience. It was organised at an agricultural educational centre in Gorenjska region - Biotechnical Centre Naklo, where they practice eco farming and they want to become a demo centre for renewable energy as well. The region is one of the least developed what biogas is concerned and with the best potential for (smaller) agricultural biogas plants. They too want to make a biogas plant, although because of small scale and eco farming prohibits the use the neighbouring farmers' feedstock, what would otherwise mean much better economic viability of the project. Since the change of feed-in tariffs system in 2009, which brought new, better options (higher tariffs for under 50kW electric power installations, additional bonuses when using manure, etc.) for smaller scale biogas plants the options are a bit better not enough however for the moment. They are therefore looking of making use of other financial means such as research projects funding etc.

On both occasions feedback was that such events are needed and are of much help to potential investors but also to other interested stakeholders. Since it gives an experts', neutral or the view from outside (in terms of investor's and municipality's intentions) outlook on the potential biogas production projects they are easier accepted than the views of directly involved, which are many times accompanied by fear of potential hidden agendas and potential safety/environmental hazards by the local community.

Mobilisation campaigns

Municipality Markovci

The **first mobilisation campaign** was held in municipality Markovci on 13 March 2008. It was so to say tailor made event for the municipality. On the mayor's request and suggestion that this would be best to do it was focused on the potential investors, municipality administration representatives and directly interested people and not to a broad public. This would be the next step if the projects would turn out feasible. They simply wanted to see things clearly as it seemed that their information so far were a bit controversial. This fact was reflected also through its publication - announcement it was mainly personal, through telephone calls and e-mails.

It was composed of the two parts; first morning one was a set of presentation of the project and some basics on renewable energy with the focus on biogas production and RES supporting scheme held by Aleks Likovič Jan from ApE.



The second part of the meeting continued in the afternoon in the mayor's conference room. Here the previous presented options were further discussed and concrete experiences and problems perceived on the local level presented. The BiG East experience and findings were used and presented. Discussion was quite vivid and fruitful. The conclusions however were not in favour of investment to biogas plant under conditions of the time, but to wait for better times instead.

It is was much to our delight when we later found out that project was realised when conditions improved during the BiG East project time and that already another project in the same municipality was in the pipeline.

Biotechnical Centre Naklo

The second promotional event was organised in Biotehnični center Naklo (Biotechnical Centre) in Strahinj on 30 March this year.

In contrast with the first one this was set wider to a broader audience but still of local flavour. There were a lot of national events on renewable energy, biogas comprised, going on recently in Slovenia, where a lot is being said, representatives from various ministries introducing them and talking about the importance of the RES and then at the end of the day only convinced remain and convincing the already convinced. Although promotion of renewable energy is never enough the outcomes of such events are many times questionable. We just did not want to make another one like that again. Instead we wanted to make a more focused local event, which could make a change for a change.

Through the project's starting - analysis phase we found out that smaller - farm scale biogas plants is the missing sector in Slovenia what agricultural biogas production is concerned. We looked therefore for a possible project for case study in this category. It turned out that in Biotechnical Centre Naklo are already considering the idea of building their own small biogas plant. They comprise of a secondary (agricultural) school and a vocational college and they run a small eco-farm. Their environmental awareness can be seen also through the use of renewable energy. They started with planning biomass heating system, the first renewable project realised, however, was a PV plant on one of their stables. The investor was a local utility company Elektro Gorenjska. The centre Naklo wants to continue this way and become also a local renewable energy centre as well.

The event had a very good promotion through the local media and found its way also on an agricultural internet forum (traktor.net). The local Radio Kranj recorded a short interview with Matjaž Grmek, ApE in which potential for agricultural biogas projects in the region was presented and invitation to the event was made. The announcement was on the air the day before the event. The announcement – invitation was of course published at the BC Naklo web site but also on some other web sites of various organisations (NGOs and associations). Participants were of very different background; there were some local farmers, although quite few, some students were present and also some people from other parts of Slovenia came – somehow to compensate their absence from the seminars, which they could not join at the time. There was also a reporter from STA (Slovenian Press Agency) present and he made an interview with Mr. Drago Papler from Gorenjske Elektrarne who also participated at the event.

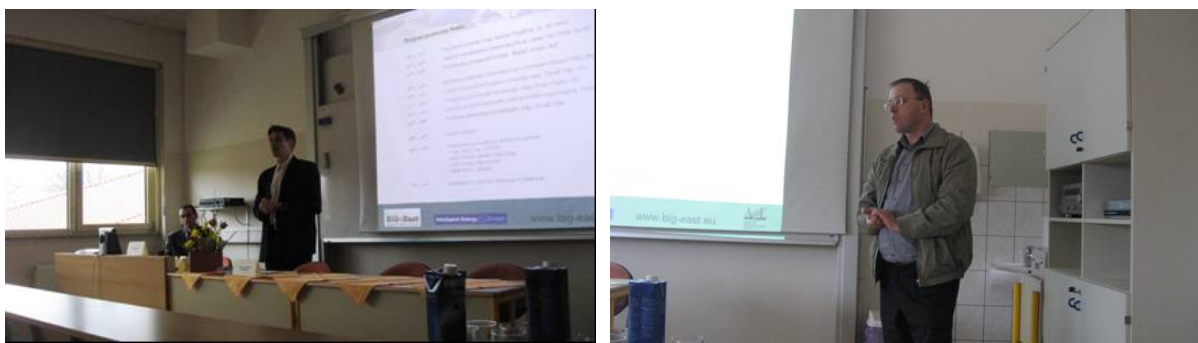
The event was designed in 3 parts – introductory part where representative from BC Naklo prof. Levstek who later made also an interesting presentation (and who jumped in place of Mag. Pogačnik, director of the centre, who joined us later on) opened the meeting with a presentation of the Centre and deputy mayor of Naklo Mr. Meglič made a welcome speech in which he stressed the importance of biogas that it could play for the local farmers, especially for stockbreeder, and the experience they have in the municipality so far. He also stressed very good cooperation of the centre with local community so far. After this introduction a series of experts' presentation were made where public was invited to participate with questions and remarks.

Presentation started with obvious Big East presentation by Matjaž Grmek followed by a study on biogas potential in agriculture with the focus on the Gorenjska region. The results of the study confirmed that Gorenjska is a very suitable region for smaller agricultural biogas plants. Presentation was continued by mag. Poje from Agricultural Institute of Slovenia presenting the current situation, basics on and conditions for biogas in Slovenia. Mag. Drago Papler from Elektro Gorenjska in his paper was relating to synergies they see between agriculture and (renewable) energy sector also directly referring to BC Naklo. Mr. Levstek from BC presented an interesting thematic he is currently doing research on – use of neural networks for biogas production processes. This section was closed by a presentation of mag. Poje (KIS) on social acceptance of biogas plants and needed soft skills for investors, a topic that was a bit neglected in the past, however that proved many times crucial for success of the future biogas (or most of the RES installations to be precise) plant.

For the final round there were presentations of some biogas equipment and service providers, among others also the new micro turbine technology was presented. This part appeared to be of the most interest to the participants if we look at their response. The vivid discussion on the possibilities and actual potential projects was going far after the foreseen hour and continued after outside of the room after the official end of the event.

Many participants expressed the need for more of such and similar events, some (e.g. Eco-stockbreeders from Čadrg near Tolmin) already asked if something similar could be organised at their premises. At BC Naklo as co-organisers were very satisfied with the event and it was a success according to them. For that partly the credit goes to them as they did a good job on technical part of the organisation as well as on the promotion one as they used their established connections in this regard.

Altogether around 40 participants (39 the number of coffees served during the break according to Ms Jerala from BC) were present; apparently some have not signed the presence list, as they arrived later or left earlier or perhaps just forgot about it.



Mr. Levstek welcomed everybody to BC, Mr. Meglič, deputy mayor of Naklo was next; photo: M. Jerala



Mag. Drago Papler and participants at BC Naklo; photo left: M. Jerala



Biotechnical Centre Naklo in Strahinj and the PV plant

BiG>East
Udeleženci Bioplina v kmetijstvu - Gorenjska

Biotehnični center Naklo, 30. marec 2010

ime in priimek	organizacija	ip pošta	podpis
1. URSULA VURMAN	IME	ursula.vurman@igp.si	[Signature]
2. MARIJA BAVENIK	IME	maria.bavnik@igp.si	[Signature]
3. TONČKA LEVSTROV	BE NAKLO	tonca.levstrova@bcn.si	[Signature]
4. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
5. MILICA KRANA	BO NAKLO	milica.krana@bo-naklo.si	[Signature]
6. VERA P. PAVIČ	BE	vera.pavic@bcn.si	[Signature]
7. IRENA ČUK	BE NAKLO	irena.cuk@bcn.si	[Signature]
8. SAŠO PAVIČ	BE	saso.pavic@bcn.si	[Signature]
9. EKO-BANC	BANC d.o.o. POKRTO	eco@bcn.si	[Signature]
10. MIRA FRANČIČ	LEAG	mira.franic@leag.si	[Signature]
11. EKATON KOPAR	LEAG	ekaton.kopar@leag.si	[Signature]
12. VOJKO ŠIBERT	LEAG	vojko.sibert@leag.si	[Signature]
13. MARIJA BAVENIK	LEAG	maria.bavnik@leag.si	[Signature]
14. JANA BAVENIK	LEAG	jana.bavnik@leag.si	[Signature]
15. ROV V. PAVIČ	LEAG	rov.pavic@leag.si	[Signature]
16. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
17. MARIJA KRANA	BO NAKLO	milica.krana@bo-naklo.si	[Signature]
18. JANA TRPČIČ	BE	jana.trpcc@bcn.si	[Signature]
19. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
20. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]

BiG>East

Biotehnični center Naklo, 30. marec 2010

ime in priimek	organizacija	ip pošta	podpis
21. JAZA KRIVAN	senožiti srbobice	krivan.jaza@igp.si	[Signature]
22. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
23. JERNEJ HORVAT	OPŽUPNA KRAJINA	jerne.j.horvat@opz.si	[Signature]
24. ALES PERDIAN	MEKA RECYCLING	ales.perdian@mekarecycling.com	[Signature]
25. UROŠ MIHLEČIČ	OPŽUPNA KRAJINA	uro.mihleci@opz.si	[Signature]
26. KARA JAVIČEK	LEAG	kara.javicek@leag.si	[Signature]
27. JANA KRANA	BO NAKLO	jana.krana@bo-naklo.si	[Signature]
28. DRAGO PAVIČ	padavice	drago.pavic@padavice.si	[Signature]
29. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
30. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
31. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
32. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
33. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
34. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
35. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
36. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
37. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
38. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
39. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
40. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]
41. IVA MIHLEČIČ	OPŽUPNA KRAJINA	iva.mihleci@opz.si	[Signature]

Presence list

Local level of biogas market

National legislative framework is rather complicated and procedures for permissions are long lasting especially with the entire necessary documentation gathering. However, there is now a new feed in tariff system introduced. The supporting period was prolonged to 15 years and higher prices for biogas plants were set as well as additional bonuses for smaller biogas plants and/or with prevalent manure use, which better stimulate investors to build smaller – farm scale biogas plants. The new 50 kW limit coming from other RE sectors, does seem to be little out of place, though.

This used to be one of the major complaints from the local rural sector in the past. Since feed-in premium excluded other type of grants, this led to building of larger and larger plants and leaving out the smaller farms as investment was too much for them and pay-back period too long. The consequence was that some new planned (big) facilities actually stepped over the local sustainability boundaries and came across disapproval of the local population.

State aid system does however exclude double financing what in practice mean that if subsidies or even soft loans are used the feed-in tariff get lowered accordingly. Therefore especially bigger investors are now avoiding soft loans from Eco fund and even subsidies from agricultural sector and take rather commercial loans instead as this mean they can attain the full electricity purchase price and hence better economy of the project. According Mr. Gjerkeš from Bioplin Gjerkeš, who is a big farmer according to the Slovenian standards, banks have now understand the sound investment into biogas plants and practically all would offer acceptable loans for it.

The problem remains, however, with smaller farms and hence potential smaller farm scale biogas plants. One of the most problematic issues is the lack of cooperation among farmers and the small size of an average farm. There would have been many possibilities of feasible smaller biogas plants if two or more farmers would join their forces. There has been some activities in this regard what forestry and other equipment through the so called “machine circles” organised by Kmetijsko svetovalna služba Slovenije (Agricultural Extension Service) within the Chamber of Agriculture and Forestry of Slovenia, where farmers join in groups and share their equipment and hence lower the production costs. The same organisation also provides a network of advisers and recently they started to educate them also on the possibilities of energy production based on RES and the opportunities they offer. It seems this could be the possible way to improve the situation on small scale agricultural biogas plants sector.

Since all municipalities are obliged to make an energy concept and they get more and more aware of the RE possibilities this is another way of coming to suitable biogas projects. Agriculture in many parts of Slovenia is in decline and is facing major problems because of uneconomic production, climate changes effects etc and much of the land goes unused or is turned into building land. Furthermore the providers, developers and biogas producers get more and more organised. They have already founded an association of biogas producers and are now into founding a cluster named Biogas Technology.

They already put the forces together when giving suggestions for the new feed-in scheme and are now preparing a document in which they would propose some changes in newly introduced regulation from Environmental Agency ARSO, Ministry of Environment which biogas farms (also smaller ones) puts under the IPPC regulation constraints (if using more than 10 t manure per day), meaning additional and illogic barriers (as penalises the farmers who want to improve and lessen the environmental burden from manure use in contrast to the farmers they just put it on the fields and don't do anything about it) to the agricultural biogas production.

There is a long list of needed permits and steps (more than 30) from the planning start to the grid connection which does cost some time and effort to the investors (in most cases 1 to 2 years has to be count on, in best scenario 6 months), especially when in some parts the regulation is unclear and related ministries (energy, environment, agriculture) not well co-ordinated and when in doubt a more severe requirement is usually taken.

On the other hand things do seem to have change on the field of financing opportunities where many banks now offer commercial loans for the (mostly bigger) farmers to build biogas plant. Also the local energy planning, which is now obligatory for all municipalities, brings out more ideas on possible biogas projects. The main problem for the smaller biogas plants seems to be that farmers do not want to join one with other to create the so to say critical mass needed for a successful project and everybody seems to be on his own despite the fact that the average farm in Slovenia is very small.

Local implementation strategy

What the farmers' connecting is concerned there has been some work done through the agricultural extension service and the 'machinery circle' (strojni krožki) where especially machinery for wood fuel and biomass preparation is shared and hence lowering the costs of the production. This might be the good way to raise farmers' awareness of the possibilities such connecting brings with. Agriculture extension service is also doing now more on educating their network of advisers on biogas and renewable energy in general for agriculture sector. Similar efforts are done by Forest Service to bring together and motivate forest owners to make of use of the wood and who are many times also farmers. There is also the local energy planning obligation for municipalities which should further improve the overview of the possible biogas projects. Connected to the local authorities there is still a lot to be done what energy is concerned. This is true for both sectors; energy conservation/efficiency as well as for the renewable energy in general, and many times also for the general public as the authorities alike. Here the big share of the work is being performed by NGOs, e.g. Slovenian Biomass Association – SLOBIOM with its Regional Biomass Info Days and educational institutions like BC Naklo and Faculty of Agriculture and Life Sciences.

Through the BIG East project (but also from others like Biogas Regions for example) an informal network of stakeholders was formed of which all expressed the idea of continuing the started work, it is just to find the right framework (read finances) to do it. There is also an association of biogas producers formed which already gave some suggestions that were partly accepted when designing new feed-in support system. Even one of the biggest pro-

viders/developers of biogas plants came to conclusion that smaller biogas plants into every village as put it (a bit metaphorically) one of their representatives would be the right direction to go. Till now there is only one such smaller farm scale plant made so far, so there is a plenty of room for them for sure. To achieve that, however, all the above stakeholders have to cooperate and the biggest share of debt, if we may called that way, is most likely to be on the agricultural sector, where they seem to be a bit asleep till now. As already mentioned in order to reach the RES goals defined in the nREAP cooperation of the agriculture sector is crucial.

Conclusions

Biogas sector in Slovenia is experiencing big growth, the second largest behind PV market if we look at the renewable energy production. These means that in spite of not the best framework conditions – which did improved significantly recently what financial support is concerned - some bigger farmers and agricultural companies already found out the opportunities of biogas and also the need of the so called diversification of the farming activities. With the preparation of the national action plan for renewable energy which in our opinion calls for the bottom up approach in order to become successful and presumed participation of all the relevant ministries and experts in it also the picture on the top levels should improve. Especially when taking into account that there are already detailed studies on agriculture potential for biogas production available in Slovenia. What is more, the pilot project on geographical information system (EnGIS) which comprise all relevant sectors, from forestry to environment, from agriculture to the spatial planning and which brings information on the already realised renewable energy projects as well as the potential for the new ones could be one of the pillows for starting new RES projects. Especially when/if combined with the local energy planning which has to reflect the RES goals set on the national level.