IEE Project 'BiogasIN'

Financing options for Biogas Projects and its bottlenecks in Czech Republic

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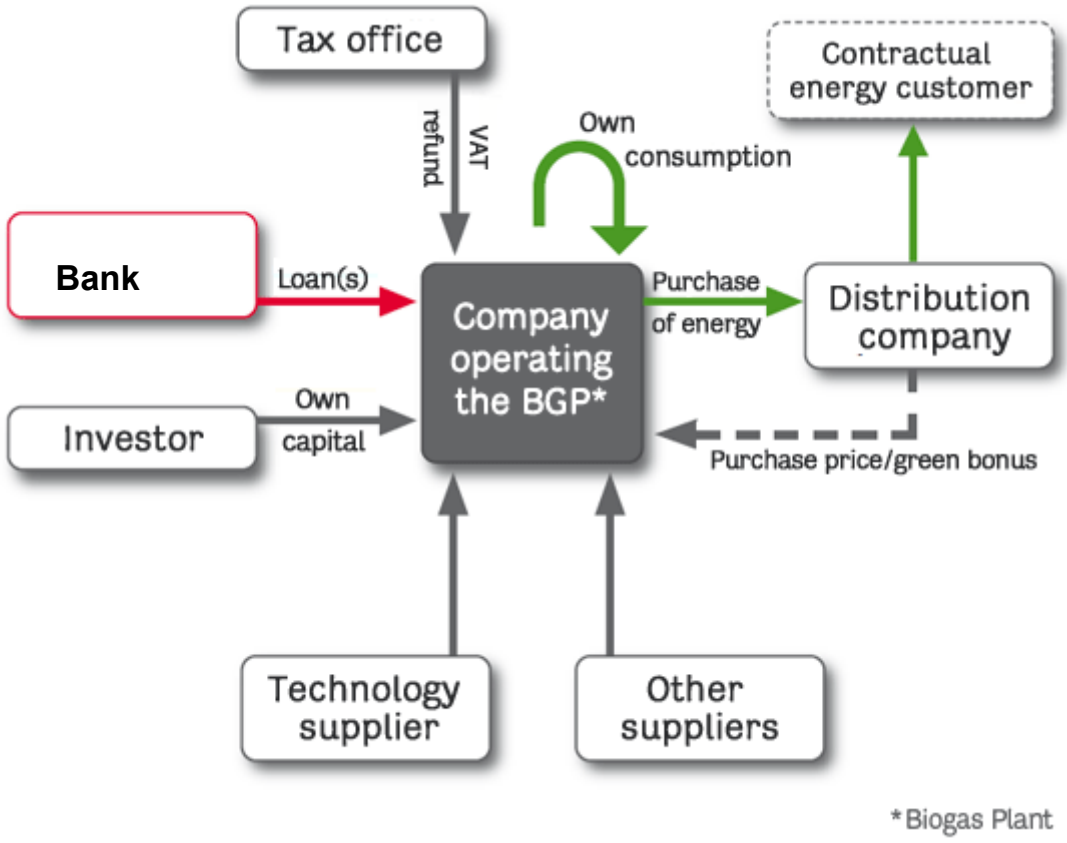
1 Introduction

Renewable energy sources are the frequently discussed topics. And it is not an exception in the banking sector, because without money no such a project can be implemented.

Biogas plants represent a real alternative for the meaningful utilisation of agricultural production and also the new business opportunity for farmers.

Produced electricity or heat can be used for the own consumption or can be supplied to the grid for the redemption price. Various forms of the national support mechanisms for the biogas plants are available - whether the guaranteed redemption prices/feed-in tariffs for the next 20 years, or the financial support from the operational programs for the renewable energy utilisation and secondary energy sources.

There is illustrated the example of the usual financial streams in the Czech Republic in the next scheme:



Picture 1 – Financing streams in biogas sector

2 Public support for biogas projects in the Czech Republic

Typical investors in biogas plants are single farmers, several farmers jointly investing in one biogas plant, municipalities, energy utilities, waste companies or industrial companies. The size of the biogas plant and the feedstock type influences the capital costs, but it usually varies about 4 000 €/kW. The average size of biogas plants in Czech Republic is about 400 – 600 kW. Therefore the capital costs are usually too high for financing only with equity capital, and thus, financing concepts usually include a large percentage of debt capital.

2.1 European support instruments

International support instruments for initial biogas project financing are available from EU Structural Funds and programmes and the European Economic Area (EEA) Financial Mechanism.

The EU Structural Funds (European Social Fund, European Regional Development Fund and Cohesion Fund) together form the largest part of EU financing available to the Czech Republic.

One of three investment operational programmes, “Infrastructure and Services,” includes promotion of energy efficiency and environmentally friendly energy. One of the activities promoted by the programme is support for electricity production in cogeneration from renewable energy sources (including biogas). This activity is financed by European Cohesion Fund and is implemented by Investment and Development Agency of Czech Republic called Czechinvest. Financing applies to public service providers – companies which are licensed to produce heat energy. Within the activity financing is provided for building new cogeneration electricity power plants that utilizes renewable energy sources or reconstruction of an existing boiler houses to a renewable energy co-generation units. The aim of this activity is to significantly increase the use of renewable energy sources in combined heat and power production, and decreasing dependence on imports of primary energy sources.

The **European Agricultural Fund for Rural Development (EAFRD)**, finances an activity called “Energy production from agricultural and forestry biomass” within the framework of the Rural Development Programme of the Czech Republic 2007-2013. The aim of this activity is to promote energy production from agricultural and forestry biomass including the use of biogas in cogeneration to generate and use electricity.

EU support Programmes as **7th Framework Programme, Intelligent Energy Europe programme etc.**, finance mainly different kind of scientific researches and dissemination information and exchange activities regarding the production and use of biogas, not investments in technologies. Some of them provide as well initial financing.

One of EU supporting programmes available for Czech Republic is also **LIFE+**, which is an instrument for European environmental project financing. One of the principal objectives of the programme is to stabilise greenhouse gas concentration in atmosphere.

Competitiveness and Innovation Framework Programme (CIP) focuses mainly on small and medium-sized enterprises and supports innovation activities and delivers business support services in the regions. Promotion of increased use of renewable energy and energy efficiency is one of the directions of the program. One of the three CIP’s operational programmes - The Entrepreneurship and Innovation Programme, provides investments for development of innovative environmentally friendly technologies.

Projects regarding environmental technologies and eco-innovation are also promoted by the **EEA initial mechanism**.

Nevertheless, all those programmes do not directly support investments in biogas plants. The closest programme that supports investments is **ELENA** technical assistance facility (European Local Energy Assistance) - a programme financed through the **Intelligent Energy Europe (IEE) programme** – to provide technical support for investments with minimum amount of 6 m €. ELENA covers a share of the cost for technical support that is necessary to prepare, implement and finance the investment programme, such as feasibility and market studies, structuring of programmes, business plans, energy audits, preparation for tendering procedures. Eligible for ELENA’s technical assistance are public entities.

For program period 2007 – 2013 can be used next EU funds for the Czech Republic:

- ✓ Rural Development Program of the Czech Republic
  - guarantor and coordinator: Ministry of Agriculture,
  - intermediary body SAIF (State Agricultural Intervention Fund),
  - source: EAFRD (European Agricultural Fund for Rural Development)
- ✓ Operational Program Environment
  - guarantor and coordinator: Ministry of Environment,
  - intermediary body SEF (State Environmental Fund)
  - source: ERDF (European Regional Development Fund)
- ✓ Operational Program Enterprise and Innovation
  - under Ministry of Industry and Trade,
  - intermediary body Czechinvest
  - source: ERDF

2.2 National support instruments

The construction of biogas plants in the Czech Republic is supported by the state. The operators of biogas plants have legislatively guaranteed redemption price of the produced electricity. The current feed-in price is determined by the Energy Regulatory Office.

Support Mechanisms and feed-in conditions for electricity from renewable energy sources

Law on the Promotion of Production of Electricity from Renewable Energy Sources

With August 1, 2005, a law on electricity from RES entered into force and implemented the EU Directive 2001/77/EC in Czech National legislation.

The law supports the production of electricity from RES, i.e.

- hydropower, wind power, biomass power plants, geothermal plants, PV,
- as well as electricity from mine gas from closed mines,
- and from biomass including landfill gas, sewage gas, biogas.

Operators of regional grid systems and of the distribution system are obliged to purchase all electricity from RES.

Producers of electricity can choose from two support schemes:

- Fixed feed in tariffs
- Green Bonuses

Fixed Feed-in Tariffs: In case of the fixed price, the electricity has to be purchased by the operator of the distribution system for regulated fixed prices. The price is valorised through a price index of the industrial producers. There is alittle risk in this option. The feed-in tariffs are fixed each year for one year ahead for each type of RES. They are fixed in a way that the conditions for meeting the indicative target of 8% until 2010 are met, and that the 15-year payback period of the investments is ensured. For new installations, the feed-in tariff/redemption price of the green electricity is valid for the year of commissioning, and the price index is guaranteed. For existing installations, the price of the year 2005 is guaranteed, and the price index is applied also. Stability of the redemption price is guaranteed for a given installation for 15 years.

Green Bonuses: In the case of the Green Bonuses, the producer sells electricity on the market for the wholesale price. In addition, he receives a premium (=Green Bonus) (in CZK/MWh) from the distribution system operator. This way, the risk is higher, but the revenue is also higher. Green Bonuses are fixed one year ahead for individual types of RES in a way that the total of revenues for the average purchase price is higher than that for the fixed purchase prices. The payback period for investments is shorter. The Energy Regulatory Office will take into account the increased risk entailed in placing green electricity on the market, therefore higher revenue is given. The price of the Bonus is flexible according to the redemption price of the electricity.

The Energy Regulatory Office determines the feed-in tariffs and the green bonuses each year in advance. The prices may not be lower than 95% of the value of the year before. Prices are set on the following assumptions:

- Return of investment of 15 years
- Prices are differentiated according to the renewable energy source
- Prices are differentiated by the year of commissioning

Feed-in Tariffs and Green Bonuses for biomass/biogas in 2011

The Energy Regulatory Office's Price Decision No.2/2010, that came into effect on 8 November 2010:

Biomass Electricity generation by ...	Feed-in Tariff [€/MWh]	Green Bonuses [€/MWh]
firing category O1 biomass in new plants commissioned between 1 Jan 2008 and 31 Dec 2011	188	148
firing category O2 biomass in new plants commissioned between 1 Jan 2008 and 31 Dec 2011	145	105
firing category O3 biomass in new plants commissioned between 1 January 2008 and 31 December 2011	108	68
firing category O1 biomass for generating units commissioned before 1 Jan 2008	160	120
firing category O2 biomass for generating units commissioned before 1 Jan 2008	131	91
firing category O3 biomass for generating units commissioned before 1 January 2008	104	64
firing category O1 biomass in existing plants	116	76
firing category O2 biomass in existing plants	87	48
firing category O3 biomass in existing plants	60	20
co-firing category S1 biomass and fossil fuel mixtures	-	56
co-firing category S2 biomass and fossil fuel mixtures	-	29
co-firing category S3 biomass and fossil fuel mixtures	-	0
parallel firing category P1 biomass and fossil fuels	-	67
parallel firing category P2 biomass and fossil fuels	-	40
parallel firing category P3 biomass and fossil fuels	-	11
Biogas, landfill, sludge and mine gas		
Biogas firing in category AF1 biogas stations	169	129
Biogas firing in category AF2 biogas stations	145	106
Firing of landfill gas and sludge gas from wastewater treatment plants (WTTPs) after 1 January 2006, incl.	103	64
Firing of landfill gas and sludge gas from WTTPs between 1 January 2004 and 31 December 2005	117	77
Firing of landfill gas and sludge gas from WTTPs before 1 January 2004	121	82
Firing of mine gas from closed mine	103	64

used exchange rate: 1 €=24.4 CZK

The inclusion of the various types of biomass in categories O1, O2 and O3 for the purpose of dedicated biomass firing, in categories S1, S2 and S3 for the purpose of co-firing biomass and fossil fuel mixtures, and in categories P1, P2 and P3 for the purpose of biomass and fossil fuel parallel firing, and the inclusion of biogas stations in category AF1 or AF2, is set out in a separate legal regulation. [1]

[1] Public Notice No. 482/2005 Coll., laying down the types, methods of use, and parameters of biomass in respect of support for electricity generation from biomass, as amended;

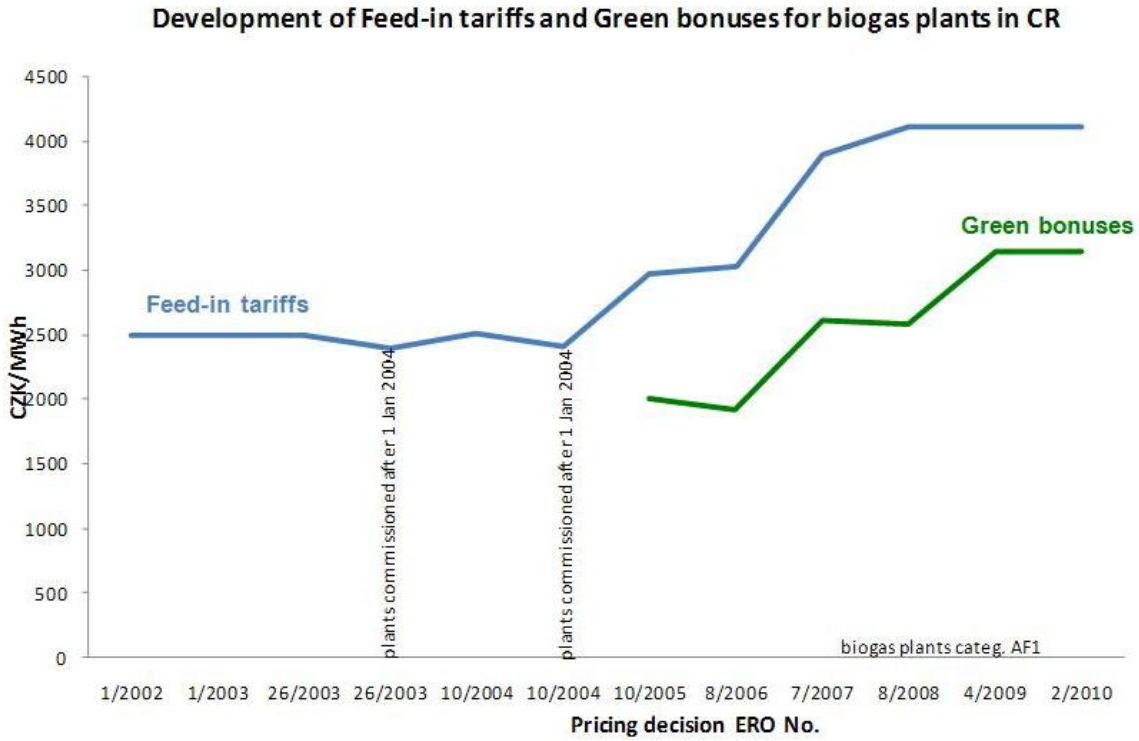
and Public Notice No. 453/2008 Coll., amending Public Notice No. 482/2005 Coll., in §4, art. 2 b):

AF1 category includes biomass originating from purpose-grown energy crops for the production of biogas, if it consist more than half of the dry content of the feedstock and the rest of the feedstock is specified in Annex no. 1, of this Notice, Table 2

In case of biogas were by the year 2008 differentiated biogas stations under commissioning period, and since 2009 they are divided into two categories, depending on the type of biomass. In contrast with that, plants using landfill gas and sludge gas from WTTPs were merged in the one category in the same year and divided by the term of commissioning.

In addition to the gas originating from biological processes is in the Czech Republic supported also the production of electricity from the mine gas from abandoned mines. Although it is a quaint situation, when within the frame of promotion of RES is supported the fossil source, but in many cases is used in this way the gas, that was previously burned uselessly (and it must be burned from the two reasons: first, there is a danger of explosion, and secondly, methane is twenty times more effective greenhouse gas than carbon dioxide produced by him after burning).

In the next Graph is showed the development of Feed-in tariffs and Green bonuses for biogas plants in the Czech Republic:



Source: Pricing decisions of ERO

Moreover, the revenues from the biogas plant operation were exempted from the income tax in the year of the start-up and the next five years. This exemption does not apply today, unfortunately.

Investors can get a grant for the construction of renewable energy sources using biogas up to 30% of eligible costs from the national grant programs. Currently are offered three possible grant resources.

1. Rural Development Programme (RDP)

Measure III.1.1 Diversification into non-agricultural activities

Ministry of Agriculture

This program supports farmers who want to start or expand their activities, particularly in the area of production and processing. Support is provided for selected areas of economic activities. A significant part of the support is oriented at the construction of facilities for the processing and use of renewable energy sources. The amount budgeted for this measure for the whole programming period is approximately 150 million EUR.

AF2 category includes all other biomass than is specified in AF1

In the years 2007-2010 were registered with the Ministry of Agriculture, a total of 171 applications for investment support for new construction or renovation of existing biogas plants in the diversification of agricultural activities from the Rural Development Programme. For this purpose, total of roughly 3.5 billion, one quarter of the aid provided from the state budget and the remaining three quarters are from EU.

Apart from the biogas stations is supported, in accordance with the current trends, the development of technologies for cleaning up the biogas to power motor vehicles and for the public filling stations that can receive a subsidy of up to sixty percent of eligible expenses.

Current status of RDP implementation:

Applications from the year	2007	2008	2009	2010	Total
number of registered applications	29	24	35	83	171
amount of registered applications (mil. CZK)	637	542	536	1,300	3,000
number of approved projects	26	19	34	73	152
amount of applications submitted for reimbursement (mil. CZK)	582	472	135	0.7	1,200
paid (in mil. CZK)	581	456	66	-	1,050

Note:
an average installed electrical capacity of supported BPS is about 605 kW
an average grant is 17.8 million CZK
total installed electrical capacity of the approved projects from RDP is 92 MW

Source: Ministry of Agriculture

2. Operational Programme Environment (OPE) - the area of 3.1 under Priority Axis 3

State Environmental Fund

The Operational Programme for 2007-2013 includes the grant scheme “Exploitation of Renewable Energy Sources”.

Field support: 3.1 - Construction of new facilities and renovation of existing facilities in order to increase the use of RES for heat production, electricity generation and cogeneration.

Sub-area: 3.1.1 Construction and reconstruction of heat sources using RES.

3.1.2 Construction and reconstruction of sources of electricity using RES.

3.1.3 Construction and renovation resources for the combined generation of electricity and heat using RES.

The construction of new facilities and the modernisation of the existing facilities with the aim to increase the use of renewable energy sources for heat generation, electric energy generation and for combined heat and electric energy generation- Almost 363 million EUR have been reserved for this area, representing 54% of Priority Axis 3's resources.

Currently is opened the 18th call in sub-region of support of 3.1.2 Construction and reconstruction of sources of electricity using RES.

Restrictions of the call:

The maximum grant per project in subarea 3.1.2 can be achieved 50 million CZK.
The maximum grant per project in subarea 3.1.3 can be achieved 100 million CZK.

In subarea 3.1.3 will be accepted only the projects, where the recovery of produced heat reaches at least 20%, except for its own technological consumption. Projects with less use of heat will be accepted in the subarea 3.1.2.

Priority Axis 4 – Improving waste disposal and environmental remediation

Support area 4.1 Improving waste disposal

3. Operational Programme Enterprise and Innovations (OPEI) 2007-2013

Ministry of Industry and Trade of the Czech Republic

The construction of biogas plants can be supported also by the programs Eco-energy (OPEI) or the Guarantee program from the Českomoravská záruční a rozvojová banka a.s. (ČZRB), and there is a possibility to combine both supports, but the grantee can't be an agricultural subject.

The Ministry of Industry and Trade manages a programme of support of small and medium-sized enterprises (SMEs) named Eco-energy. This program implements the Priority axis 5 "Effective energy" from OPEI. The aim of the Eco-energy is to stimulate business activity of SMEs in the area of reducing energy intensity of production and increased use of renewable and secondary sources.

3 Private financing

In general, green energy market is still perceived as a risky investment and recently only few banks have introduced energy efficiency loans. Nevertheless, because the investments in renewable energy projects are still more intensive, the largest banks in Czech Republic are open to finance biogas projects under normal conditions as for other investments.

Since May 2007, **Česká spořitelna a.s. (CS)** has provided small and medium sized enterprises (SMEs) with the **"TOP Energyprogram"**, a set of comprehensive services and products supporting the preparation and implementation of innovative energy projects involving energy savings and production of energy from renewable sources. The program includes information service, advisory, funding and project management.

The Programme is designed for SMEs, public and non-profit organizations and for large corporations too. It is specialized in providing full package financing of Renewable energy projects (photovoltaic power plants, wind parks, small hydro power plant, and biogas/biomass power plants).

CS has established Special Finance Unit – Energy Team**,** the combination with other special products (EIB programmes) is possible too.

Financed can be up to 80% of overall costs and financing adjusted to fit the structure of subsidies is achievable too.

Komerční banka, a.s. (KB) has the Program for financing BGPs too.

There are some benefits in financing biogas projects:

- guarantee of various forms of the state support, that can make the investment into the biogas plants profitable and secure.
- there is a team of specialists for the alternative energy sources for individually consultations about the best way of financing already at the stage of business plan preparing.
- on one place it is possible to solve the financing sources as far as the useful insurance for the time of construction phase and for the operation phase too.

The support is provided for:

- elaboration of the business plan with respect to the future debt financing
- selecting of the optimal financing structure

The involvement of the financing experts during the project preparation can help to achieve the most efficient way of financing.

For example KB provides the following types of the loans for co-financing of the project:

- short-term bridging loan to cover VAT expenses
- medium-term advance loan for the subsidies
- long-term investment loan for the biogas plant development
- consolidation of the medium-term advance loan for the subsidies and the long-term investment loan for the biogas plant development into one loan with an extraordinary repayment upon collection of the subsidy

- principal payments deferral during the development and commissioning stages
- regular repayments from the revenues generated by the project – i.e. the revenues from the sales of electricity and/or heat

For persons interested in the utilisation of grant resources KB offers the use of specialised services in consulting department named KB EU Point. Banking consultants will find for free a suitable grant program for the project plan and the regional EU specialist could then provide consulting directly at the place of the project realisation.

What to do before the first meeting with the bank

Prior to the discussion with the bank, it is needed to have a specific idea about the project from the technical, economic, execution, and operational points of view. And to sum up all the information in a brief business plan. Beside the basic information about the investor, the bank specialist will also be interested in:

- the reasons leading to the project realization
- current status of the project
- project costs and their structure
- the own resources – the amount of the money that investor plans to invest in the project
- the expected location
- the structure and volume of raw materials, its ensuring, logistics, and storage
- the grid connection
- whether the heat will be used too
- considered supplier of the construction works
- the legal status – for a special purpose established, or an existing company

GE Money Bank (GE) is a member of CZ BIOM – Czech Biomass Association, which has in the long term supported the use of biomass and biogas energy in the Czech Republic. The reason for the association was the specialization of GE Money Bank in financing projects using renewable energy sources and the interest of active support of eco-energetics in the Czech Republic. This orientation is based on a global initiative of General Electric called Ecomagination, which supports environmental protection and renewable energy sources.

“We consider biomass and biogas as the most perspective renewably source with significant potential for realization in terms of CR. The application of these resources will have many positive societal effects, such as rural and agriculture development, but also in contributing to self-sufficiency and independence from unecological sources of energy,” says Miroslav Safarik from CZ Biom.

“With the active cooperation we want to contribute to the development of biomass and biogas in our country. We believe that our financial products will make these technologies accessible to all interested parties,” said Eva Dubovska, manager of the eco-energy sector in GE.

Loans at GE:
- financing up to 100% of the investment costs, according to the project type and investor’s economics;
- loan maturity to 15 years (according to the project type and investor’s economics),
- the possibility of choice between fixed and floating interest rate

The EU service at GE will help with the execution of grants from EU Structural Funds.

Finally it is appropriate to mention, that there are some private companies in Czech Republic concerned with mediation and consultancy in the project financing of BGPs (biogas plants), for example BAWAG Energy, EnviTec Biogas, Bioplyn tech servis s.r.o., etc.

4 Bottlenecks of Financing for Biogas projects in CZ

4.1 Method

A survey on bottlenecks of financing for biogas projects in Czech Republic has targeted two stakeholder groups.

The results are described below:

- interviews with the financing bodies (questionnaire Q2)
- interviews with the biogas investors (questionnaire Q3)

The survey includes the implementation of survey the two questionnaires Q2 and Q3 for the above mentioned groups.

In addition to the surveys with the questionnaires, we have also directly contacted banks and investors and interviewed them about biogas financing, and asked for fulfilling the questionnaire too. These interviews, telephone calls and e-mail corresponding were very important, because there isn't much taste to fulfill any questionnaire at all. It may be time consuming and seem not especially important only to ask for fulfilling something.

1. Interviews with the financing bodies

Having in mind that commercial banks are rather competitive environment, we decided to ask separately some of the main managers for interview about biogas investing. The question was if they would finance an investment in a biogas plant and under what conditions.

We have addressed the most important Czech banks with the survey questions:

1) GE Money Bank
2) Komerční banka, a.s. (KB)
3) Česká spořitelna, a.s. (ČS)
4) Československá obchodní banka, a.s. (ČSOB)
5) Českomozavská záruční a rozvojová banka, a.s. (ČZRB)
6) Raiffeisenbank a.s.

2. Interviews with the biogas investors

The survey and also the own BiogasIN project was announced during the opening project presentation at the traditional Czech Biogas Association's Conference in Třeboň in October 2010. In addition, the survey was announced on the web sites czba.cz too. The questionnaire Q3 was also posted to the project web site and Czech Biogas Association's web site for download. After that, the Q3 has been sent via e-mail to more than 60 addresses of biogas investors by which we assumed some interest or experiences from permitting procedures, to participants of the Třeboň's Biogas Conference.

20 questionnaires were fulfilled and some of the project developers had discussed personally with CzBA the financing situation of biogas plants in Czech Republic.

4.2 Bottlenecks from the viewpoint of the financing bodies

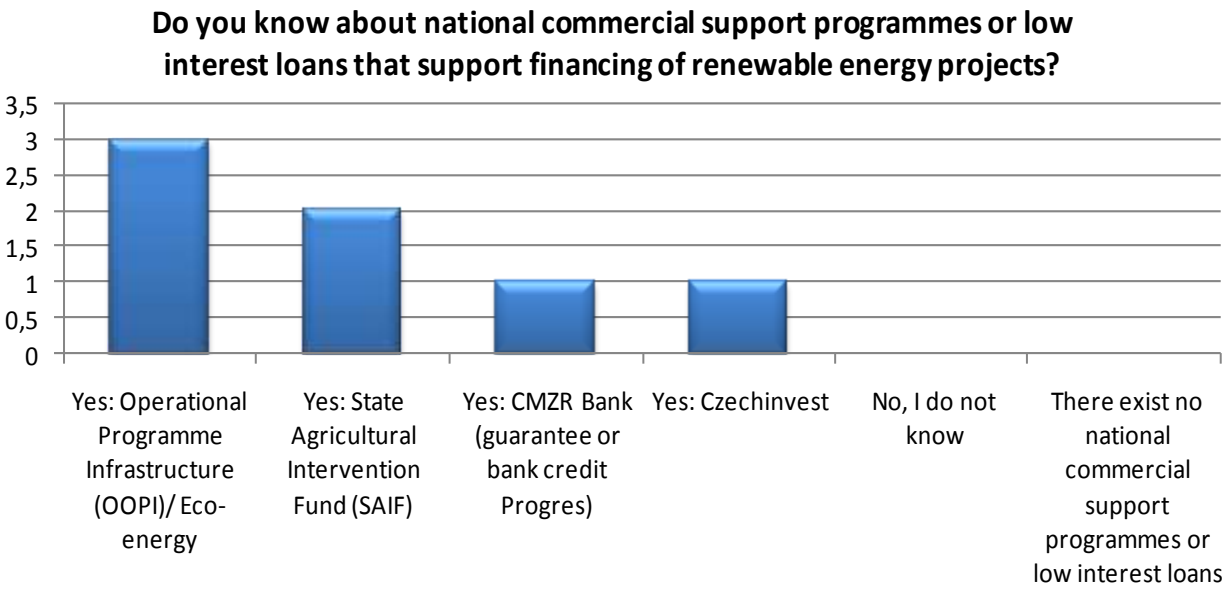
Describe the results of the interviews and highlight the problems in the financing opportunities and process from the financing bodies viewpoint.

From results of our survey through financing institutions we have found, that a special program for financing BGPs:

1. GE Money Bank
2. Česká spořitelna, a.s. (ČS)
3. Komerční banka, a.s. (KB)

All of them have been described in the previous capture. All of them have special experts for renewable projects and employ a designated expert for biogas project.

There are displayed the answers on the mentioned question about national support programmes or low interest loans supporting renewable energy projects in the next graph.



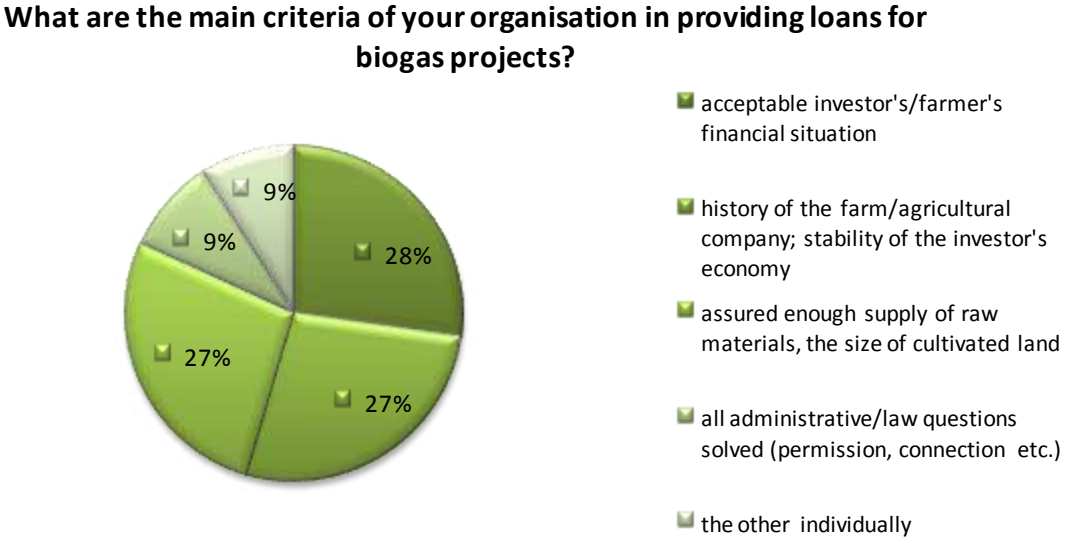
State Agricultural Intervention Fund is an accredited financial agency established by the Ministry of Agriculture, an intermediary of the financial support from the European Union and national resources. The pillar of the financial support are the direct payments, paid out by a simplified system, i.e. per hectare of cultivated land. The great opportunity for agriculture represents the Rural Developments Programme, which started in 2007.

Established in 1992 by the Ministry of Industry and Trade, CzechInvest is the investment and business development agency of the Czech Republic whose services and development programmes contribute to attracting foreign investment and to developing Czech companies.

All respondents answered that they offer both – project and loan (private/business) financing, and all mentioned banks provides the option of a grace period for biogas projects.

To the question, if it is easier to receive a loan for a small scale plant, or for a medium and large plants, 67% answered that it makes no difference and the rest stated that it is easier to get a loan for medium or large plants.

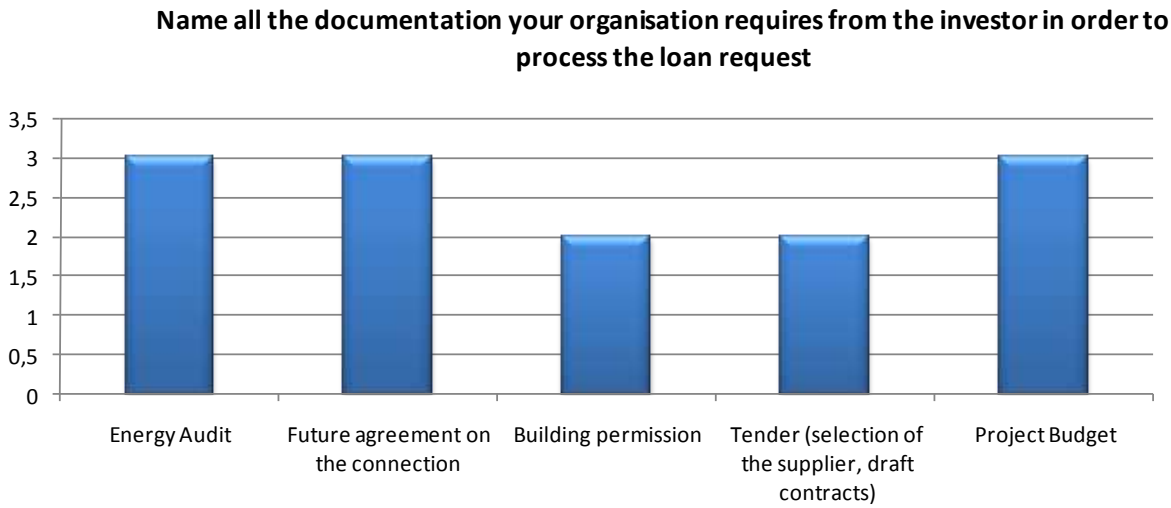
As far as the main criteria for providing loans is concerned, 28% is the main criteria the acceptable investor's/farmer's financial situation, for 27% it is the history of the farm or agricultural company and assuring enough supply of raw materials, and the size of cultivated land.



The next part of the survey was about required documentation for the loan request. The next graph represents the mostly frequented answers:

1. Energy Audit
2. Future Agreement on the connection
3. Building permission
4. Tender (selection of the supplier, draft contracts)
5. Project Budget

The next answers varied according to the relevant financial institution – it contained eg.. Project Intent, specification of the technology, information about investor including financial statements, Feasibility Study, ownership lists, grant documentation etc.



The received answers varied also in case of the question "**Is a defined proportion of equity capital required for biogas projects?"** 34% requires at least 5% proportion of equity capital, 33% requires typically 15% of equity capital, and the remaining 33% indicated that the equity capital is not required.

As far as the time that the negotiation for biogas projects takes on average, it was founded, that:

- in one case it takes only 2-3 weeks after delivery of all necessary documents,
- the next answer was about 8 weeks (probably the whole process),
- other respondents said that it is very individual.

The financial risk of financing biogas projects was estimated in 67% as low, and only in 33% as high.

The main risks for financing biogas projects can be summarized:

1. Technological risk (technology selection, defects, etc.) - 43%
2. Operational risk (lack of inputs, irresponsible operator, problems during construction) – 29%
3. Financial risk (possible breach of grant conditions, the debt burden of the borrower) – 28%

From other essential answers can be mentioned: wrong evaluation of the project cash flow; risk associated with inoperability of biogas plant; failures; or problems with the connection.

Risk rate can be described as follows: financing of this type of project is different and new activity from the other client's activities. The biological process is not really easy to operate and not very explored yet, stability of the biological process, and external risks are hardly influenceable by client.

The estimation of financial risk of a loan for biogas projects compared to loans for other renewable energy projects resulted in 67% answers with "No difference" and the remaining 33% judged it as "Low" financial risk.

Those risks are not quite comparable, in the case of PVP and WPP, the technology and the choice of the location is the main risk. In the case of biogas projects, we consider the technology a and the feedstock as the main risk. Other respondents saw no significant difference, and consider every project as individual.

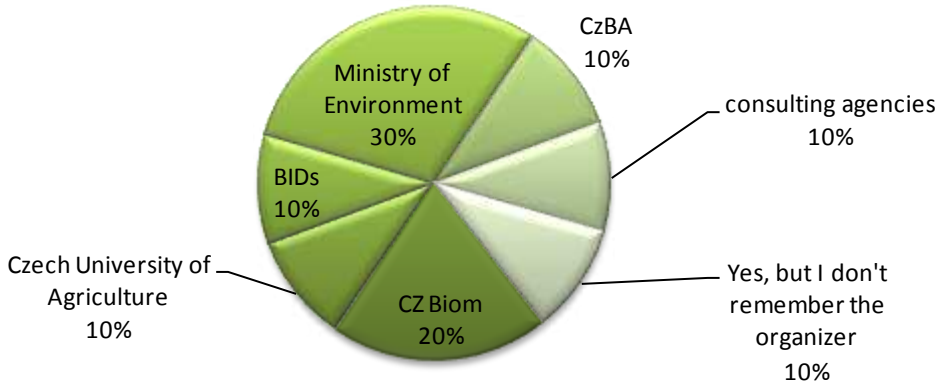
The main bottlenecks for financing a biogas plant could be summarized as follows:

1. the actual legal uncertainty in relation to the National Action Plan for RES and the amendment of the Renewable Energy Sources Act.
2. relatively short history of these projects on the Czech market
3. ensuring the own raw-materials, investor's stability, size of cultivated land etc.

Each project is judged individually, that is why some of respondents didn't specify the explicit barriers. The main factor for successful project and follow approval of the financing biogas plant is ensuring the own input materials, sufficient history of the agricultural company, stability of the investor's economy, size of cultivated land and the general contractor with references.

Finally, in the last question were mentioned trainings targeting renewable energies. The answers were mainly positive, the question is, if the trainings were always valuable and gave the needed information.

Have you ever participated in a training course targeting renewable energies?



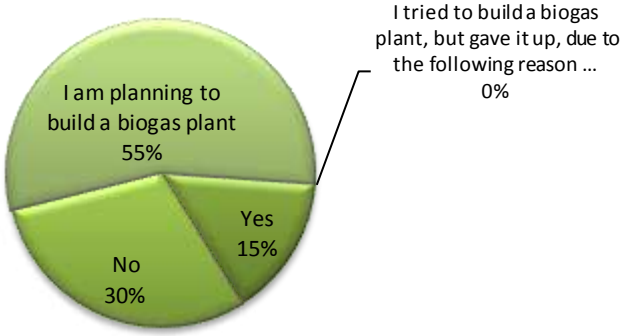
4.3 Bottlenecks from the viewpoint of project developers

As far as project developer viewpoint is concerned, the results of the survey among biogas investors and developers (Q3) are presented in the following section. The problems in the financing opportunities and during the financial process were highlighted.

Each result is accompanied with the response intensity, which could indicate either low interest or low experience related to the issue of the question.

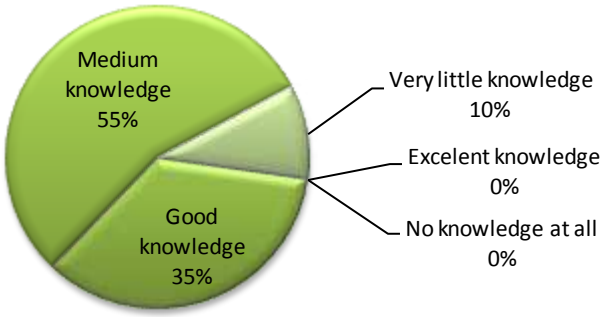
From the first graph we can see, that most of the respondents (11) said, that they are planning to build a biogas plant, which indicates a large interest in this area. Only 3 people from our research have already implemented a biogas plant.

Have you already implemented a biogas plant?



The next question was asking about the biogas knowledge. As we could expect, the most of respondents fulfilled the medium knowledge. Some of answering people choose the good knowledge, especially those who have already some experiences from implementing a biogas plant.

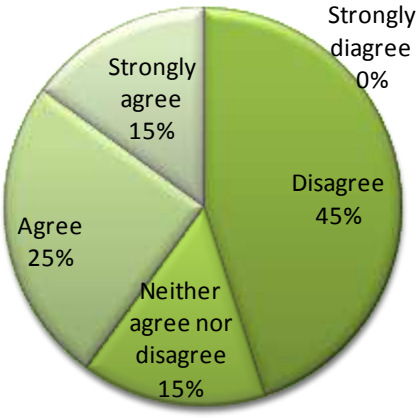
What is your knowledge about biogas?



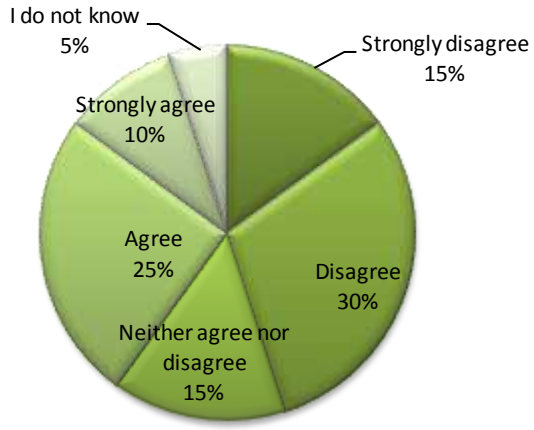
The next part of the questions of the survey was asking about the general satisfaction with the financing procedures in Czech Republic.

The opinion of the statement “It is currently very difficult to get the any loans in general” was following:

"It's very difficult to get any loans in general"



"It's very difficult to get loans for biogas projects"



As we can see in the pie charts above, the most respondents answered that it is not very difficult to get any loan in Czech Republic in general. And the same was found about loans for biogas projects. This can indicate that the main problem in Czech Republic is not to get a loan, but mainly in the permitting system and in the approach of some state and responsible authorities.

As far as banks are concerned, the investors have identified the main Czech banks which are prepared for financing biogas projects. In the next graph we can see, how the bank employees are prepared and informed about these projects.

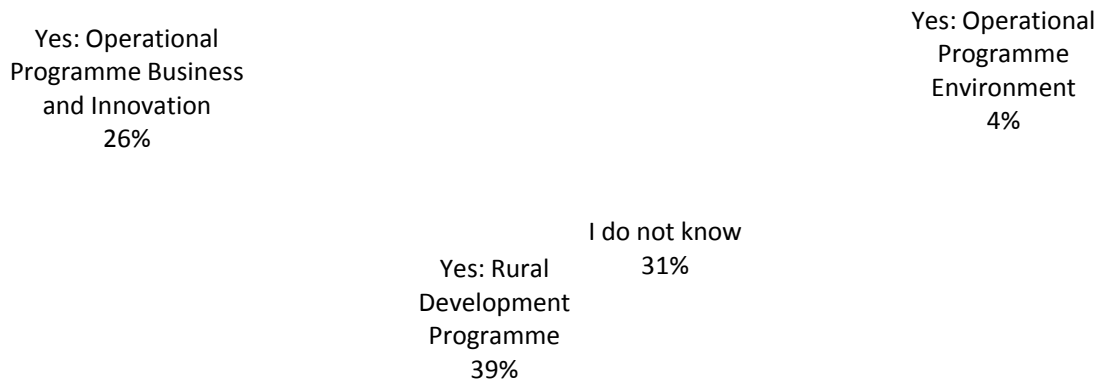
Are employees at banks informed about financing options for biogas projects?

If we ask about internal bank specialists for renewable energy projects, the answer was positive in the case of KB a.s. and GE Money Bank, 5 respondents didn't approach any bank for biogas financing, and 4 of them claimed that they didn't forward them to a specialist.

For the question about **biases against biogas projects** there was 45% No answers, 35% "I don't know" and the rest 20% agreed with that claims.

The awareness about European support programs for financing biogas projects is relatively good; the result of the survey is designed in the next graph below.

Do you know any national or European support programs for financing of biogas projects?



The question whether **banks or public authorities offer guidelines or checklists for financing in biogas projects,** was answered with the following results:

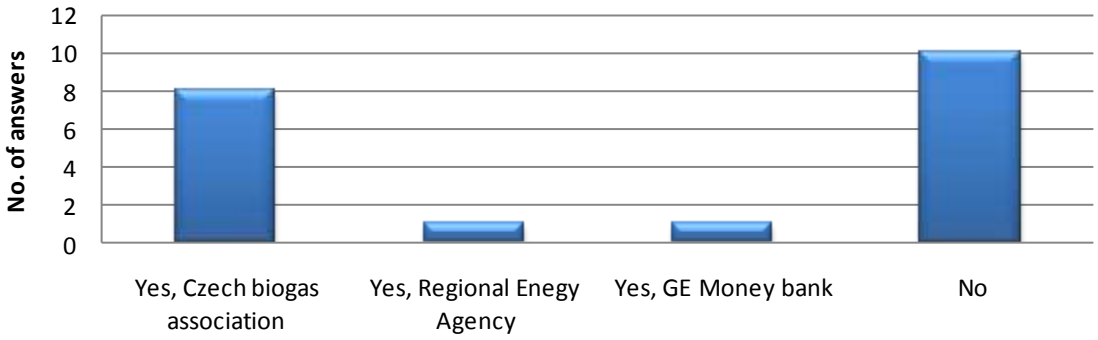
40% I don't know,

30% Yes, but only offered by banks,

25% Yes, such guidelines are offered by both, banks and public authorities,

and 5% No.

Do you know who can provide information on financing options for biogas projects?



From the question pictured in the graph above it is evident, that **the awareness about provided information** is not very good in Czech Republic and it should be better.

The type of financing is usually **project financing (50%** of respondents), 40% use financing by banks and only 10% finance these projects from private sources.

67% of home-banks provide loans for biogas projects and only 16% had to go to another bank institution.

83% have chosen a bank in the Czech Republic and **the negotiations with bank took usually about 7-10 weeks**.

67% of the respondents evaluated the difficulties with finding the bank willing to finance biogas project as “Easy” and 33% even as “Very easy”.

A summary of documentation required by banks in order to process a loan request:

27 % requires the contract with supplier,

20% requires Feasibility Study,

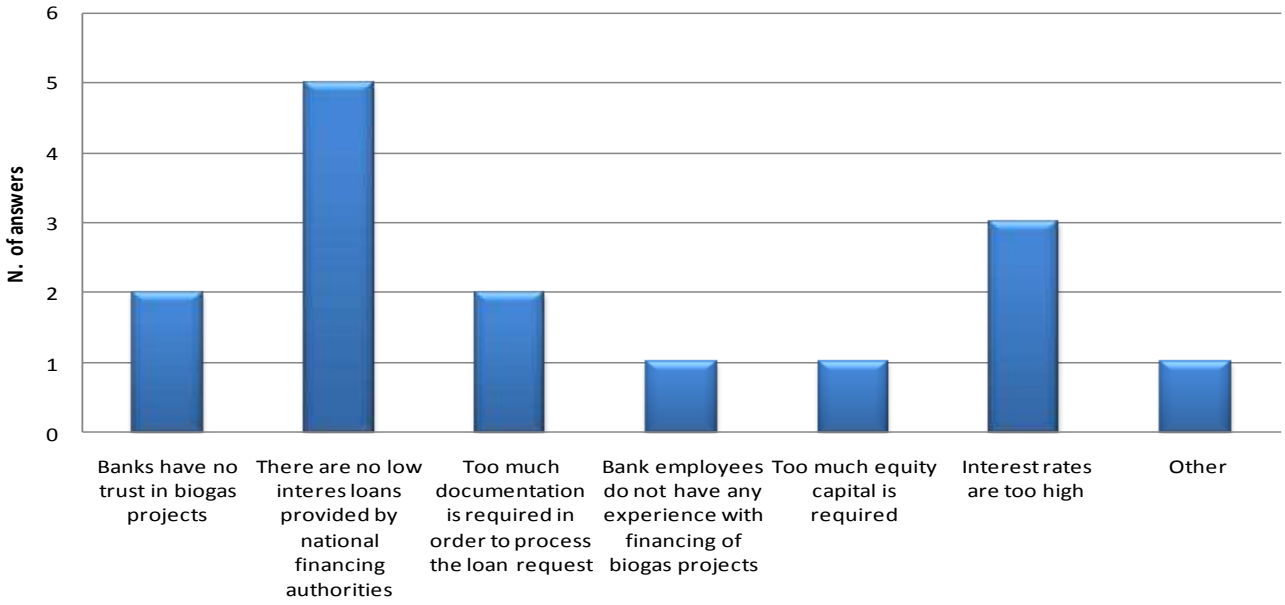
20% Building Permittion,

20% EIA,

and 13% indicated that they required all the documentation relating to the project.

The next question was very interesting and it deserves the graphical presentment.

What are the main problems for financing procedures?



The most of answers concerned the lack of low interest loans provided by national financing authorities and too high interest rates.

<u>The main bottlenecks for financing biogas plants from the view of project investors and developers</u> were described as follows -

- ✓ poorly ensured feedstock capacity (37%)
- ✓ ensuring of the areas for the digestate application (25%)
- ✓ low level of prepared projects (25%)
- ✓ there are not any fundamental problems in financing biogas plants (13%)

The <u>professions of respondents</u> were various, of those, that replied this question can be named:

- PhD. student
- farmer
- environmental consultant
- beef breeder
- specialist in waste management

The answers on the question about training courses targeting renewable energies were similar as in the previous chapter, and it can be summarized as follows:

33% - Yes, but I don't remember who has organized it

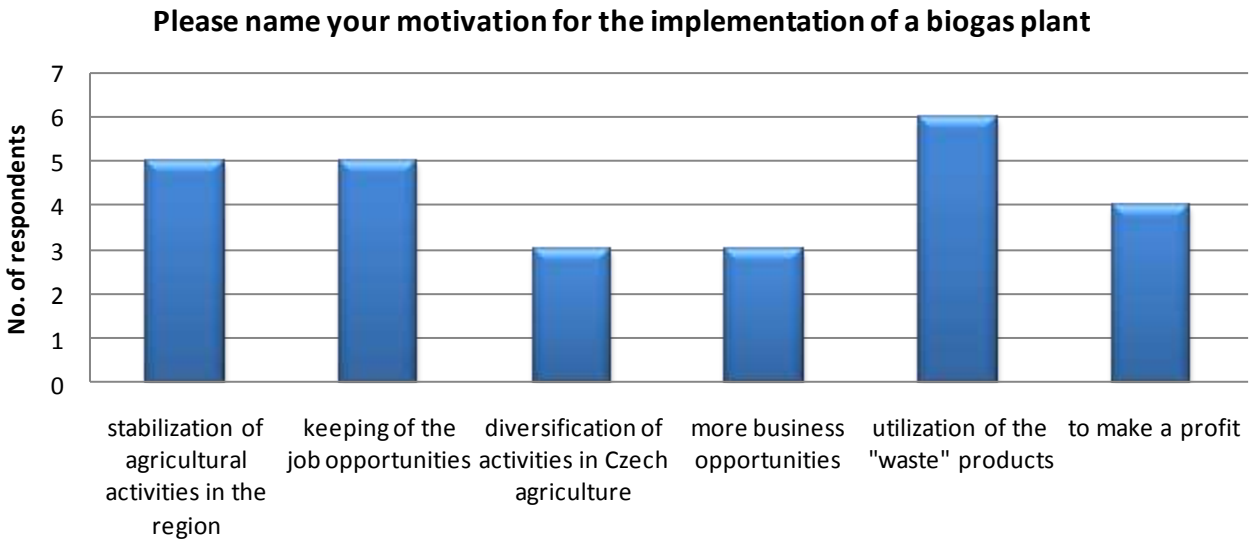
29% - Yes, organized by Czech biogas association

14% - Yes, organized by Ministry of Environment

10% - Yes, organized by Regional Authority

14% - No

And finally, in the last graph is displayed the motivation for the implementation of biogas plants.



The utilization of waste product was on the first place with its 6 answers, then goes the stabilization of agricultural activities in the region and keeping of job opportunities (both 5 answers), next was profit making and at the last position we can see the more business opportunities and the diversification of activities in the Czech agriculture.

5 Conclusion

Current feed-in tariff ensures that biogas investments are paid back within 6 to 9 years, while the power purchasing contract is valid for 12 years. If long term supply of feedstock is not ensured, the biogas investments are exposed to risk of storages or unacceptable price rise.

With regard to the implemented interviews we have found out that irrespective to the national laws, which are inclined to biogas projects, the financing procedure for biogas projects in Czech Republic is frequently a complicated and long lasting process – about 1years per one biogas plant. Almost all interviewed biogas operators have been complaining about it.

In fact, the experiences in relation to negotiations with Czech banks are mixed.

First, practically all the banks (staff) are positive towards the biogas project and it seems to be in a great interest to the banks. Then the banks start to "complicate" with documentation, thus the process of negotiation ones lasted up to 50 weeks ...

There is a lack of knowledge about biogas in general by the bank employees and the financing decision makers and often misunderstanding of the project specifics, when the biogas plant installation, its start-up and achievement of steady fermentation conditions, is completely different from, e.g. photovoltaic, that operates right after the installation.

On the other hand, the biogas plants can also contribute to a cleaner environment that gives to the investors and their employees not only financial, but also the moral satisfaction. The organic waste utilization and energy production from renewable sources has certainly a great future. The legislation will be positive to the efforts aiming to the cleaner environment and consequently to the development of the biogas branch.

Sources

Energy Regulatory Office

http://www.eru.cz/user_data/files/legislativa/english/notice_458/CR_2_2010_en.pdf

Czech Energy Agency

www.czrea.org

Ministry of Industry and Trade

http://www.mpo.cz/default_en.html

Operational Programme Environment (OPE) - State Environmental Fund

www.opzp.cz

Investment and Business Development Agency

www.czechinvest.org

State Agricultural Intervention Fund (SAIF)

www.szif.cz

Ministry of Agriculture of the Czech Republic

http://eagri.cz/

Czech Business Web Portal

http://www.businessinfo.cz/cz/clanek/program-rozvoje-venkova/mze-podporuje-stavbu-bioplynovych-stanic/1001615/59701/

KB a.s., Program for financing of biogas plants:

http://www.kb.cz/en/companies/companies-with-a-turnover-over-60-million/program-for-financing-of-biogas-plants.shtml

Annex I: Questionnaire on financing procedures for biogas projects (Q2 for financing organisations)

IEE Projekt 'BiogasIN'

Průzkum financování bioplynových projektů v České Republice

Dotazník pro finanční organizace

Dotazník Q2

D.5.3., WP 5

Česká bioplynová asociace

2010

BiogasIN Projekt

BiogasIN projekt "Rozvoj udržitelnosti trhu s bioplynem ve Střední a Východní Evropě" (Smlouva č. IEE/09/848) je podporována Evropskou komisí v programu "Inteligentní energie pro Evropu". Cílem programu "BiogasIN" je účinně zlepšit podmínky pro instalaci nových zařízení na výrobu bioplynu v 7 zemích východní Evropy: Bulharsko, Chorvatsko, Česká Republika, Řecko, Lotyšsko, Rumunsko a Slovinsko.

Projekt "BiogasIN" spočívá v partnerství 10 evropských organizací. Koordinátorem projektu je národní energetická agentura v Chorvatsku "Hrvoje Pozar Energy Institute". Odpovědným zástupcem pro Českou Republiku je Česká bioplynová asociace.

Více informací o projektu BiogasIN je k dispozici na webových stránkách: **www.biogasin.org**

Cíl průzkumu

Jednoduché a transparentní financování projektů pro bioplynové stanice, je důležitým předpokladem pro realizaci nových bioplynových stanic., průzkum bude vytvářen za pomoci finančních organizací, s cílem zlepšit a zjednodušit finanční postupy v České republice. Výsledky tohoto průzkumu budou prezentovány odpovědným účastníkům a společnostem podílejícím se na bioplynových projektech v České Republice.

Vyplnění dotazníku trvá asi 5 minut.

Tento dotazník byl vypracován podle projektu WIP Renewable Energies (www.wip-munich.de), Německo, ve spolupráci s Českou bioplynovou asociací.

Kontakt

Zašlete prosím tento dotazník po vyplnění zpět e-mailem/poštou do **30. ledna 2011** na adresu:

Česká bioplynová asociace, o.s.
Ing. Jan Matějka
Na Zlaté Stoce 1619,
CZ-37005, České Budějovice
Telefon: +420 602 425 755
Email: jan.matejka@czba.cz

Dotazník můžete vyplnit také přímo na webových stránkách: **www.czba.cz**

Děkujeme Vám za Váš příspěvek k podpoře a rozvoji výroby a využití bioplynu v České Republice!

6 Obecné informace o možnostech financování

6.1 Poskytuje Vaše organizace půjčky na projekty z obnovitelných zdrojů energie?

□ Ano

□ Ne

□ Nevím

6.2 Poskytuje Vaše organizace půjčky zejména na bioplynové projekty?

□ Ano

□ Ne

□ Nevím

6.3 Zaměstnává Vaše organizace odborníky na obnovitelné energie?

□ Ano

□ Ne

□ Nevím

6.4 Zaměstnává Vaše organizace odborníky na bioplynové projekty?

□ Ano

□ Ne

□ Nevím

6.5 Znáte nějaké podpůrné programy, nebo nízkoúrokové půjčky, které podporují financování obnovitelných zdrojů energie?

□ Ano, prosím vyjmenujte:

a) _____

b) _____

c) _____

d) _____

□ Ne, nevím.

□ V České Republice neexistují dotační programy, nebo nízkoúrokové půjčky.

6.6 Které způsoby financování se nabízí pro financování bioplynových projektů?

□ Soukromé / podnikatelské půjčky

□ Projektové financování

□ Oboje je možné

□ Nenabízíme financování bioplynových projektů

□ Další: _____

6.7 *Poskytuje Vaše organizace možnost bezúročného období(období bez splácení úvěru poskytovateli) pro bioplynové projekty?*

□ Ano

□ Ne

□ Záleží na: _____

6.8 *Je, podle Vašeho názoru jednoduší…*

□ …získat půjčku, jako malý podnik, samostatný investor/zemědělec, nebo

□ …získat půjčku, jako střední/velký podnik, sdružení investor/zemědělců.

□ nejsou žádné rozdíly.

7 Předpoklady, Vaší společnosti pro financování bioplynových projektů.

7.1 *Jaké jsou hlavní podmínky Vaší společnosti k poskytování půjček pro bioplynové projekty?*

a)_____

b)_____

c)_____

d)_____

e)_____

7.2 *Vyjmenujte veškeré potřebné dokumenty, které Vaše společnost vyžaduje od investora za účelem zpracování žádosti o úvěr:*

a)_____

b)_____

c)_____

d)_____

e)_____

f) _____

g)_____

h)_____

i) _____

j) _____

7.3 *Je stanoven podíl vlastního kapitálu pro bioplynové projekty?*

□ Ano, alespoň_____%

□ Ne

7.4 Jak dlouho v průměru trvá projednávání půjčky pro bioplynové projekty?

Prosím napište číslo v týdnech: _____

8 Všeobecný názor na bioplynové projekty?

8.1 Jak obecně hodnotíte riziko financování bioplynových projektů?

□ Velmi vysoký

□ Vysoký

□ Nízký

□ Velmi nízký

□ Nevím

8.2 Jaká jsou hlavní rizika financování bioplynových projektů?

a)_____

b)_____

c)_____

8.3 Prosím napište důvod vašich odpovědí v otázkách 3.1 a 3.2!

8.4 Jak odhadujete finanční riziko úvěrů bioplynových projektů, ve srovnání s úvěry na jiné projekty obnovitelných zdrojů energie?(např. větrné elektrárny, solární energie, geotermální zařízení…)?

□ Mnohem vyšší

□ Vyšší

□ Žádný rozdíl

□ Menší

□ Mnohem menší

8.5 Prosím napište důvod vaší odpovědi na otázku 3.4!

8.6 Jaké jsou, podle vašeho názoru, hlavní překážky financování bioplynových stanic v České Republice?

a)_____

b)_____

c)_____

9 Osobní údaje (nepovinné)

9.1 Prosím jmenujte finanční instituci, pro kterou pracujete.

_____

9.2 Jaká je vaše pozice ve firmě?

_____

9.3 Kolikrát Vaše společnost již poskytla finance pro bioplynové projekty?

_____ krát.

9.4 Kolikrát již Vaše společnost odmítla financovat bioplynový projekt?

_____ krát.

9.5 Už jste se někdy zúčastnil školení zaměřeného na obnovitelné zdroje energie?

□ Ano; organizované kým:_____

□ Ne

Děkujeme Vám za Váš příspěvek k podpoře a rozvoji výroby a využití bioplynu v České Republice!

Annex II: Questionnaire on permitting procedures for biogas project (Q3 for investors)

IEE Projekt 'BiogasIN'

Průzkum postupů při financování bioplynových projektů v České Republice

Dotazník pro investory

Dotazník Q3

D.5.3., WP 5

11/2010

Projekt BiogasIN

Projekt BiogasIN "Rozvoj udržitelnosti trhu s bioplynem ve Střední a Východní Evropě" (Smlouva č. IEE/09/848) je podporován Evropskou komisí v programu "Inteligentní energie pro Evropu". Cílem programu "BiogasIN" je účinně zlepšit podmínky pro instalaci nových zařízení na výrobu bioplynu v 7 zemích střední a východní Evropy: Česká Republika, Bulharsko, Chorvatsko, Řecko, Lotyšsko, Rumunsko a Slovinsko.

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Více informací o projektu BiogasIN je k dispozici na webových stránkách: **www.biogasin.org**

Cíle průzkumu

Jednoduché a transparentní finanční postupy pro bioplynová zařízení jsou důležitým předpokladem pro realizaci nových bioplynových projektů. Průzkum je zaměřen na současné i budoucí investory v oblasti bioplynových zařízení, za účelem zlepšení a zjednodušení postupů financování těchto zařízení v České republice. Výsledky tohoto průzkumu budou prezentovány odpovědným institucím a organizacím zapojeným do finančních procedur týkajících se bioplynových zařízení v České Republice.

Vyplnění dotazníku trvá jen asi 5 minut.

Tento dotazník byl vypracován podle projektu WIP Renewable Energies - Německo, ve spolupráci s Českou bioplynovou asociací.

Kontakt

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Děkujeme Vám za Váš příspěvek k podpoře a rozvoji výroby a využití bioplynu v České Republice!

1 Obecná problematika

1.1 Zúčastnil jste se již výstavby bioplynové stanice v ČR?

□ Ano

□ Ne

□ Plánuji vybudovat bioplynovou stanici (BPS).

□ Pokusil jsem se vybudovat BPS, ale vzdal jsem to z následujících důvodů: _____

_____

1.2 Jaké jsou Vaše znalosti v oblasti bioplynu?

□ Excelentní znalost

□ Dobrá znalost

□ Průměrná znalost

□ Velmi nepatrná znalost

□ Vůbec žádná

2 Obecná spokojenost s finančními postupy v ČR

Posuďte prosím následující tvrzení:
„Obvykle je velmi obtížné získat následující úvěry v ČR …"

2.1 Jakýkoli úvěr obecně

□ Rozhodně nesouhlasím

□ Nesouhlasím

□ Ani souhlas, ani nesouhlas

□ Souhlasím

□ Rozhodně souhlasím

2.2 Úvěr pro bioplynový projekt

□ Rozhodně nesouhlasím

□ Nesouhlasím

□ Ani souhlas, ani nesouhlas

□ Souhlasím

□ Rozhodně souhlasím

□ Nevím

3 Spokojenost s bankovními ústavy v ČR

3.1 Jsou zaměstnanci bank informováni o možnostech financování bioplynových projektů?

□ Ano; v jakých bankách? _____

□ Ne

□ Nevím

3.2 Nabídla Vám banka interního specialistu pro projekty využívající obnovitelné zdroje energie?

□ Ano; jaká banka? _____

□ Ne, nenabídli mi specialistu

□ Ne, nekontaktoval jsem žádnou banku pro financování bioplynového projektu

3.3 Myslíte si, že banky v ČR jsou zaujaté vůči bioplynovým projektům (např. z důvodu vysokých finančních rizik, nepředvídatelného vývoje …)

□ Ano

□ Ne

□ Nevím

4 Obecný přístup k informacím o programech pro financování bioplynových projektů

4.1 Znáte nějaký národní nebo evropský podpůrný program pro financování bioplynových projektů?

□ Ano; jmenujte prosím:

_____

_____

_____

□ Nevím o žádných dostupných programech

□ Nevím

4.2 Nabízejí banky, nebo orgány veřejné správy, návody nebo přehledy možností financování bioplynových projektů?

□ Ano, ale jen banky

□ Ano, ale jen orgány veřejné správy

□ Ano, tyto přehledy jsou nabízeny jak bankami, tak státní správou

□ Ano, tyto přehledy poskytuje:_____

□ Ne

□ Nevím

4.3 Víte, kdo poskytuje informace o finančních možnostech pro bioplynové projekty?

□ Ano, kdo? _____

□ Ne

5 Osobní zkušenosti s financováním bioplynových projektů

Pokud dosud nemáte zkušenosti s realizací bioplynové stanice, přeskočte laskavě následující otázky 5.1 – 5.6 a pokračujte kapitolou 6!

5.1 Jaký typ financování jste využili?

□ Financování bankou:

□ Financování projektu □ Tradiční úvěrové financování

□ Soukromá investice

□ Jiné: _____

5.2 Poskytla Vám Vaše současná banka úvěr na financování Vašeho bioplynového projektu?

□ Ano, moje banka mi poskytla úvěr

□ Ne, musel jsem využít služeb jiné banky k financování mého projektu

□ Tato otázka se mě netýká

5.3 Zvolil jste pro financování Vašeho bioplynového projektu banku v ČR nebo zahraniční?

□ Banka v ČR

□ Zahraniční banka

□ Tato otázka se mě netýká

5.4 Jak dlouho probíhala vyjednávání s bankou?

_____ týdnů

5.5 Jak obtížné bylo najít banku ochotnou financovat Váš bioplynový projekt?

□ Velmi snadné

□ Snadné

□ Obtížné

□ Velmi obtížné

5.6 *Jakou dokumentaci banka požadovala k vyřízení Vašeho úvěru?*

_____

_____

_____

_____

_____

_____

6 Důvody pro nepříznivé financování bioplynových projektů

6.1 *Jaké jsou hlavní problémy při financování bioplynových projektů v ČR?*

(Můžete vybrat i několik možností)

□ Banky nemají v bioplynové projekty důvěru.

□ Neexistují žádné nízkoúrokové půjčky poskytované státními finančními institucemi.

□ Při vyřizování úvěru je požadováno příliš mnoho dokumentace.

□ Zaměstnanci banky nemají žádné zkušenosti s financováním bioplynových projektů.

□ Je zapotřebí příliš vysoký vlastní kapitál.

□ Příliš vysoké úrokové sazby.

□ Jiné: Popište prosím v bodě 6.2!

6.2 *Jaké jsou, podle Vašeho názoru, hlavní překážky při financování bioplynových stanic v ČR?*

_____

_____

_____

7 Osobní údaje (nepovinné)

7.1 *Uveďte prosím Vaši profesi:*

_____

7.2 *Zúčastnil jste se již nějakého školení zaměřeného na obnovitelné zdroje energie?*

□ Ano; organizovaný kým: _____

Název kurzu: _____

□ Ne

7.3 Popište prosím Vaši motivaci pro realizaci bioplynové stanice

Děkujeme za Váš příspěvek k podpoře a rozvoji bioplynu v České Republice!