

**SYSTEMIC**
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Biogas finance from the perspective of the banking sector:

What information is needed when applying for a loan?

When investing in technologies for nutrient, organic matter and water recovery from digestate it is only logic to apply for a bank loan for such a project. Unfortunately, in some countries depending on the regional situation and market, banks are starting to become more reluctant in financing new large biogas projects, because they could be high risk loans.

Also, there are of course differences in the way different financial institutions look at agricultural loan applications. Regardless of the situation in your region, it is therefore always good to come well-prepared when applying for a loan. With this brochure, the SYSTEMIC project intends to give you some tips and tricks on how to make a complete and well supported proposal for a loan application for nutrient recovery from digestate.

Who is applying for the loan?

**Describe who the main person is behind the company.
In the case of a partnership, this can be a group of people.**

Their professional competence and entrepreneurship

Give an overview of their professional history and short description of previously accomplished projects. When this is accompanied with a track record of excellent financial data of realized projects, this gives confidence in the loan applicant.

Their engagement

Illustrate the engagement of the person(s) behind the project. For example, try to show that their technical knowledge and entrepreneurial spirit was actually involved in setting up the concept and design of the project and the financial plan.

When banks see that an entrepreneur is fully engaged in a project from the beginning, this builds trust.

Clientship

When going for a loan to your usual bank, you will probably already have built up a certain degree of trust. If you are a new client at a bank, you will still need to prove your reliability (i.e. can you pay back the loan?)? In this case, you need to be extra prepared when applying for a loan by creating a realistic, well-supported business plan. This is also the case if you are going to another bank than your usual bank and you need to be able to argue convincingly why you preferred them over your regular bank.

The legal structure

Liability / Involvement

A good capital structure and acceptable equity of the company is important. The start-up of a new installation or technology often results in increased costs, while income or savings usually take a while to materialise. A good solvency provides a buffer. A subordinated loan and/or a guarantee from the plant owners or managers can add to the creditworthiness (see further "Debts").

Cooperation

Describe who is part of the partnership and who does what.

For example, who are the shareholders?

Is there a cash injection from certain parties or people?

Who are the operators at the plant and at what level are they involved in the business?

Describe the agreements that were made in case the partnership is dissolved or there is need for additional capital, to prove the continuity of the company in such cases.



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Structure

Describe the whole financial structure of the company:

Assets

What is owned by the company or not? Is this full ownership or not?
For example, is the land on which the installation is located fully owned by the company or not?
Are the cogeneration units fully owned by the company or leased? The assets should be valued in line with their market value.

Stocks

What is in stock and how was it correctly valued?
For example, a company has a certain mass of corn in stock and indicates this as owned stock. However, if the value of the corn is estimated higher than the market value, this creates the idea of having capital the company does not have. Bankers will notice such strange fluctuations in stocks and will dig deeper into the details. Also, if the corn is in stock, but not digestible anymore, it is of course also devaluated.

Receivables and supplier debts

Are the receivables and supplier debts in balance? What are the payment terms? Are there uncollectible receivables in the balance sheet like for example from a supplier that has become bankrupt.

Debts

Are there debts of the managers towards the company (asset) or of the company towards the manager (liability). A loan from the managers to the company is considered positive, because it proves that the manager has faith in the project. If a manager provides a subordinated loan to the company, this expresses this even more, because in the case of major losses, the manager would only be able to collect his debts from the company after all other creditors have gotten their share.

Cash

Cash is important to bear unforeseen costs and to finance the start-up. Also, in the case of digestate treatment technologies, future profits come mainly from cost reductions. It can take some time before the eventual cost reduction is seen in the balance sheets. It is also very important to make a good estimation of unforeseen costs (see further "Liquidity").

Capital

The minimum capital of the partnership at the start of the project needs to be proportional to the investment cost of the project. For example, a minimum capital of 20,000 € is not enough to qualify for a loan of 1 million €.

The bottom line is that the company has to prove that it is financially healthy.
For existing companies who have a track record of several years, all this information is published. New companies will have to prove this with estimations, forecasts, etc.



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Financial parameters

There are three parameters that describe the financial healthiness of a company, and which will be discussed during a loan application.

Profitability

The ratio between capital employed and the profit it has earned. Profitability is an important parameter for long-term decisions.

If positive, it drives a company to further growth and development.

It is calculated on company-specific figures.

For existing companies who have a track record of several years past profits can be taken into account. For new companies it's all based on estimations and forecasts.

Liquidity

Liquidity indicates the extent to which a company can meet its current payment obligations (<1 year). It describes the available resources of the company on the short term. Cash is often needed for investments to absorb unforeseen circumstances and to bridge the period between extra costs and extra income/savings. It is important to pay the necessary attention to all outstanding debts. Unpaid invoices are also debts.

A **cash planning**, month by month, for the next 2 to 3 years is often no luxury. Especially with larger investments.

This is a monthly balance, including estimations for all incomes and expenses.

It gives you a much closer look on the current financial status of the company and allows you to predict how this will evolve in the short term. It will also help to anticipate financially difficult periods (short-term) and allow to discuss solutions with the bank in advance.

It's important to make realistic estimations of for example chemicals or additive costs, to take into account the payment terms to suppliers and to follow up unpaid or unreceived payments.

A cash planning can help you create a few "worst case" scenario's, relevant for your business. For example, the subsidies or premiums for green electricity may drop, or the market price for manure may drop, or a critical technology in your treatment cascade fails for longer period,...

This can help you estimate how much cash would be needed as back-up to bridge these financial difficult periods.

Solvency

Solvency is used to gain insight into the financial health of a company in the longer term, it says something about the ability to repay both short-term and long-term debts. It can be seen as the financial buffer of the company. It is calculated as the ratio of equity to balance sheet total. The desired level depends on the risk and should in general not be lower than 20 % after investment. A negative equity – the result of repeated losses – makes additional financing very difficult. Usually, banks do not give loans to companies with negative capital, except if shareholders guarantee the loan with their private equity.

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What does the investment include?

Explain in detail the business strategy and business plan including an estimation of the impact of the new investment on the profitability of the business.

Business strategy

The business strategy goes further than a business plan. Since an amortisation of NRR technologies often takes up to 10 years, you will need to estimate how this investment will fit into your further business development of the next 3-5 years. This means that you will have to look into the future and make some predictions.

For example, some questions you might ask about the further development of your company:

Do you want to continue to grow?

Do you want to valorize the biogas as bio-methane or liquified biogas?

Will the plant be succeeded/inherited?

Which other (large) costs will come in the near future: renewal of the CHPs? Other new technologies, pilot testing? Are there investments in land foreseen?

These are all large (future) investments, but they must be taken already into account because they can jeopardize the payback of your current loan.

Including all these future plans, the current investment still has to be feasible.

If not, you can also try to set up back-up plans. For example, in case of take-over of the company, maybe a different company structure is needed to ensure the amortisation of the investment?

Business plan

This describes the business plan (current situation, short term) including the new technology for which you are applying for a loan.

Technology

Describe in detail the technology you want to implement and its effect on your current business case.

Rarely turnkey

Be aware that NRR cannot be seen as turn-key or "plug-and-play" technologies. The performance of the technology can differ depending on the digestate composition and cannot be copy-pasted from the performance of the technology on other waste streams or waste water treatment.

This is even more prominent when it concerns a cascade of technologies: a slight variation in digestate composition (for example with changing feedstocks) can have effect on the performance of subsequent process steps and the composition of the end products.

The implementation of NRR technologies in a digestate treatment process is therefore often tailor-made for a specific plant and its design.

Make sure that you are aware of all these complexities, and that you have calculated time and budget for start-up, finetuning and optimization of the technologies within your current business.

Advanced technical know-how

As the technologies are complex and require technical expertise for robust operation, you will need to argument how you will take care of this technical know-how:

The key here is to honestly and realistically evaluate the skills of yourself and your operators:

- What is your (operator's) existing knowledge and experience with the technology
- Would it require extra training and how much would this cost?
- How does this additional staff effort fit in the existing operation of the plant?
 - How much time must be spent to operate the new technology? And is this feasible for the current staff? If not, how much extra staff members should you need for this?
- To what extent can you depend on support service of suppliers/consultants? How much would you rely on this and how much would this cost?



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Operational reliability

Provide estimations on investment costs (incl. installation cost, automatization), operational costs (i.e. manhours, maintenance costs, wear and tear, chemical use, etc.) composition of the expected end products.

Make sure that your estimations are realistic and include how you calculated the estimations and the related costs.

You can use own experience with similar technologies, refer to other (similar) businesses with this technology or use information/studies done by technology providers etc.

For end products, it is probably not possible to make a detailed estimation of the product composition. However, at least try to describe which and how many products you expect. An estimated mass balance (based on mass or dry matter content) can be valuable to further support your case.

Permits and accreditations

Describe all legal requirements that are necessary to implement the technology and market the end products. Include, if you will be able to meet the requirements, how long this will take and how much this will cost.

For example,

- Legislation on the ReNURE criteria (i.e. the use of alternative N fertilisers from manure above 170 kg N/ha/year) is not official yet. So, don't base the your profit calculation on legislation that is not yet enforced.

Huygens, D., Orveillon, G., Lugato, E., & Tavazzi, S. (2020). Technical proposals for the safe use of processed manure above the threshold established for Nitrate Vulnerable Zones by the Nitrates Directive (91 / 676 / EEC). <https://doi.org/10.2760/373351>

- To certify a technology as alternative hygenisation method is costly and cannot be taken for granted. Argument with similar cases how certain it is that your technology will receive the certification.
- Regarding legislation on marketing of products towards the private sector, export of end products, discharging/re-using end-products: it is not necessary to show that you are aware of all details and that you would comply with the requirements, but knowledge of the relevant regulatory requirements shows the bank that you are involved in the project and builds trust in you as an entrepreneur.

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How much needs to be financed?

This is the financial part of your business plan and strategy.

Full investment plan

Use official quotations or evidence based estimations to make a closed financial plan: include all costs, payback of other loans now and in the near future (3-5 years). Also include cost for land and/or notary costs!

If there are any "small" costs that you might finance yourself or other things you will do yourself (f.e. building part of the technology). Explain how you will finance this exactly and if you have the time to do all this work yourself.

As stated above (Business Strategy), include also all necessary or planned future investments.

How much can it yield or save?

Describe and calculate/estimate how the investment will financially improve your business.

- **Technology, additives, electricity:** estimate the efficiency of the technology, estimate the profit from heat certificates, green electricity certificates, etc. Take a certainty margin on the efficiency (cfr. Worst case – best case scenario).
- Make sure you have a plan for continued payment in case of **succession**
- **Sales markets:** prove your knowledge of the market of the produced end products. The quantity and type of product (cfr. a new product vs. known product) determines its relevance in the financial plan. Support your product revenue estimations by prove of negotiations or – if possible - by contracts with consumers / off-takers or a plan for export abroad (incl. relevant legislation!).

You don't need a fully developed market strategy (incl. niche market penetration, product finetuning etc.) at this stage:

For now it is important to get your technology to produce a product for which you foresee an (existing) market. At a later stage you can still work on further market expansion (with associated higher profit margins).

Guarantees?

Is the whole system financially sustainable?

Take everything into account to create a sellable package, which than can stand as your back-up in case you cannot repay your debts.

For example, a building is not useful if the land on which it stands is not part of the property.

If the land is owned privately you will have to decide if it will be included in the business package or not.

Make an estimation of the total value of the total business package.

This is the value of the property in case of forced sale.

The down-side of a tailor-made NRR treatment cascade is that it is not directly transferable as a whole to another plant. In case of a forced sale, it will be dismantled and each component will have a lower value than the system would have as a whole.

Insurance

Make sure you have insurance to cover unexpected costs. For example, machine breakdown, service interruption, fire insurance. Also ask technology suppliers for insurance/guarantee on the performance of the technology!



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Financing will be based on the worst case

To estimate how big the loan will be, the bank will always look how much can be repaid in the worst case scenario. However, this can differ in different European countries. *For example, some countries tend to look at capital over repayment capacity and vice versa.*

An own contribution in the financing often is needed to make it feasible and as a token of confidence in the own project

The share of the loan financed investment obviously depends on the risk (the bank is taking). For example, the sector, the technology, market of end-products, etc.

The bank will finance the loan, taking into account a safety margin, to make sure you are able to repay the bank within a normal financing term including some general maintenance and replacement of equipment. Some current financing terms are for example pumps and engines <7 years, concrete or warehouse: 20 years, reverse osmosis unit: 10 years

It is also important to match the repayment frequency of the loan (from monthly to annually) with the expected cash flow. Equal capital repayments are preferable to annuities.

Take into account the short term

In case of **construction and start-up of technologies**, there is always a lag phase with no or little income or/and higher costs. This can even take up more than 1 year! Take this into account and describe how you will bridge this financial gap. A cash flow planning is certainly useful for estimating how long the start-up period will last and how much cash will be needed to bridge this period.

It may be possible to defer capital and interest payments, however, don't forget that you will always have the **interim interest** you will need to pay.

If you make use of subsidies, this also takes a while before you officially have this money on your bank account. Make sure you have the capital to pre-finance these subsidies.