



Co-funded by the Intelligent Energy Europe
Programme of the European Union

> **BioEnergy Farm II** <
Manure, the sustainable fuel for the farm

BioEnergy Farm II

Project meeting: Expert training 1,
Schwäbisch Hall

First impression of the feasibility scan
by Berry de Jong

This project is supported by Intelligent Energy - Europe



WP 4 Tools

Development of a:

- Quick online feasibility scan
- Offline expert feasibility calculator

- The experts (You!) are about to use the offline expert version



BioEnergy Farm 1 Tool

This project is a follow up of BioEnergy Farm I
The BEF 1 tool is focussing on large scale co-digesters:

- The feasibility calculation does not fit with small scale installations
- Database is filled with irrelevant parameters due to the smaller scaling
- Farm scale needs different scenarios compared to large scale installations



User profile

Report

Subsidy rules used:
Netherlands



File

User Input

1 Biomass

2 Energy and installation

3 Storage

4 Costs and subsidy

Output

Financial results

Consultant version

Logoff

Manure input mix

Substrate Manure Name	Number of animals	Time spent indoors months	Supply	Supply	Costs EUR/ton
			m3/year	ton/year	
Dagverse melkkoeienmest (Liquid manure)	150	10	2.563	2.588	-7,5
Vleesvarken mest (Liquid manure)	200	12	220	222	0
Leghennen mest (Solid manure)	15.000	12	270	135	0

Delete

Add

Co-substrates input mix

Substrate Cosub Name	Supply	Costs
	ton/year	EUR/ton
Mais ingekuuld (Solid co-substrate)	5.000	50
Natuurgras ingekuuld (Solid co-substrate)	2.500	-5

Delete

Add



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Project settings

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Consultant version

Logoff

All values are in:

(€)

Electricity with heat
delivery

Biomethane

Investment

891.549

1.704.207

Yearly depreciation

74.114

141.836

Total revenues year

280.744

544.417

Total costs year

393.273

462.578

Profits per year

-112.529

81.839

Simple pay-back time

999,9

year

7,6

year

The results presented above give a quick indication regarding the feasibility of a biogas installation. Use the "Next" button to view more details. Feel free to contact us when you have further questions or if you want to perform a more detailed offline scan. Our experts are willing to help you with this offline scan.

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[Delete](#)
[Add](#)

Co-substrates input mix

Substrate Cosub Name	Supply	Costs
	ton/year	EUR/ton
Mais ingekuild (Solid co-substrate)	0	0

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All values are in:

(€)

 Electricity with heat
delivery

Biomethane

Investment

393.292

1.410.638

Yearly depreciation

32.733

117.512

Total revenues year

13.942

25.606

Total costs year

55.281

175.793

Profits per year

-41.338

-150.186

Simple pay-back time

999,9

year

999,9

year

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All values are in:

(€)

Electricity with heat
delivery

Biomethane

Digester

234.690

234.690

Storage

0

0

Digestate treatment

67.248

67.248

Flare

0

0

Pasteurisation

0

0

Rolling stock

0

0

Land

499

499

Civil Works

2.252

2.252

Boiler

0

946

CHP

38.754

0

Heat network

0

0

Connection to electric grid

0

0

Gas upgrade installation

0

931.077

Gas pipeline

0

30.237

Extra investment

0

0

Subtotal

343.444

1.266.949

Construction overhead

31.007

114.505

Advise and permits

18.841

29.184

Contingency

0

0

Startup

0

0

Subsidy

0

0

Total

393.292

1.410.638



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Energy			
	Electricity production	Heat production	Biomethane production
	(kWhe)	(MJ)	(Nm3)
Electricity with heat delivery	<input type="text" value="134.214"/>	<input type="text" value="876.034"/>	<input type="text" value="0"/>
Biomethane	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="35.125"/>

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In	(€)	Out	(€)
Sales of electricity	7.382	Average yearly depreciation	32.733
Selling heat	-0	Average yearly interest	8.597
Subsidy on electricity	6.561	Cost of biomass	-19.411
Subsidy on heat	0	Maintenance	31.275
		Use of electricity	2.113
		Use of heat	0
		Use of diesel	0
		Personnel	0
		Insurance	1.592
		Export of digestate	0
			0
Total	13.942	Total	55.281

Investment 393.292

Yearly profit -41.338

Simple pay-back time 999,9 year



User profile Report

Subsidy rules used: Netherlands



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Investment 393.292

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Simple pay-back time 999,9 year

www.bioenergyfarm.eu

→ Biogas scan



BioEnergy Farm 2 Tool

Excel based:

- Easily adjustable database
- Easily extendable calculation core
- No expensive software required



BioEnergy Farm 2 Tool

Some starting points:

- Minimal input needed from farmer
- Direct visible output
- Parallel calculation of possible cases



BioEnergy Farm 2 Tool

Scenarios

- CHP
 - Fertilizer production
- Green Gas/Bio-methane
 - Feed-in
 - Transport fuel
- Heat
- Biogas



BioEnergy Farm 2 Tool

Expected feedback:

- Differences between countries
 - Subsidy, investment, configuration, etc.
 - Example: Dairy cows NL
 - 8.000-10.000 kg milk
 - 30m³ slurry/cow,
 - 25-34m³biogas/m³ slurry
- Optimizing per case or standardised packages (turn key)?



BioEnergy Farm 2 tool

- Financial presentation
 - Payback period
 - Return on investment/Net present value
 - Total Cost Ownership
 - Fixed depreciation/cash flow



Open the tool

- Dropbox
 - goo.gl/gxl6Tb