

Train the Trainer seminar Part 2 (Graz)

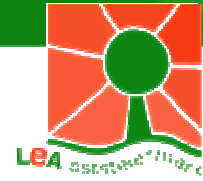
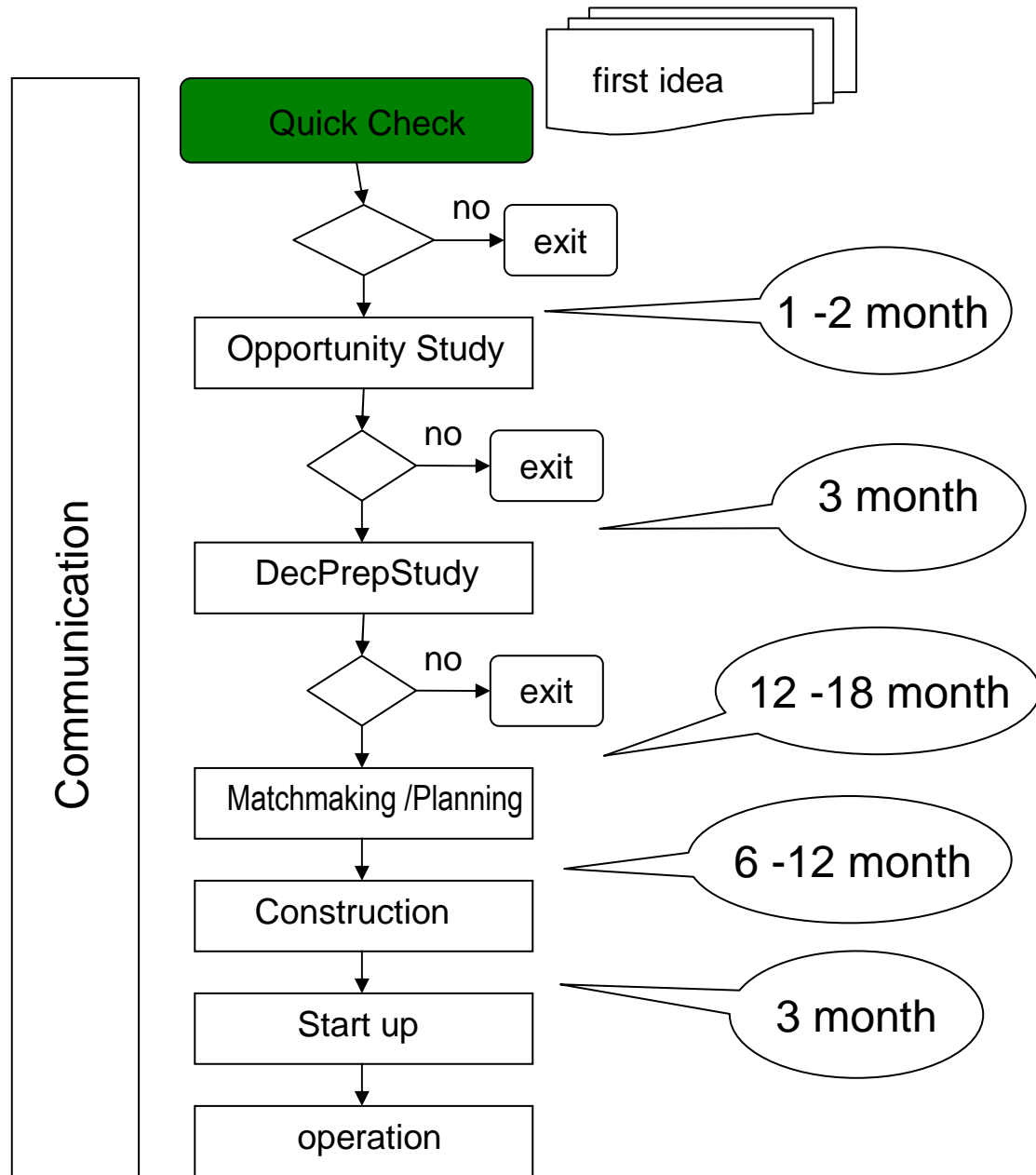
# Quick Check (case study 2)

## Trnovska Vas (Slo)

16. – 17. April 2008, Christian Sakulin, Karl Puchas

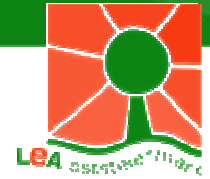


# Logic model

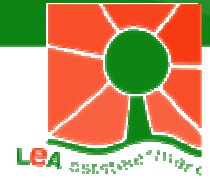


# Quick Check?

- The QC is a fast assessment.
- The QC shall answer the question “In principle, is a biogas plant possible at this location?”
- Expert know-how on biogas and detailed information is NOT needed.
- The QC should be carried out by an operator/farmer himself. At this level, it is not necessary to hire an expert.
- An expert will be involved after a positive QC.



# 1. k.o.- criteria

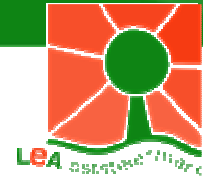


These criteria are describing all components and basic conditions which exclude the construction of a biogas plant.

If one of the following criteria applies to the planned biogas plant, the project has to be stopped immediately.

Respectively, a re-orientation of the biogas project is required!

# 1. k.o.- criteria



These criteria are describing all components and basic conditions which exclude the construction of a biogas plant.



- The operator faces protests of older/other existing projects.  
 yes  no
- Feedstock: The availability of the feedstock is not ensured (long term – 5 years).  
 yes  no
- Utilization of digestate: There is not enough area for spreading the fertilizer (respectively: there is no customer or market for the fertilizer)  
 yes  no
- The necessary infrastructure (connection to energy network, connection to streets) is impracticable.  
 yes  no
- The necessary permission for building a biogas plant on this estate is missing.  
 yes  no
- Less than 2500 m<sup>2</sup> are available for the construction of the biogas plant.

## 2. Location

- adequate size of the area/estate (example: 500 kW<sub>el</sub> about 10 000 m<sup>2</sup>)

rationale:

okay  not okay

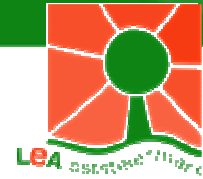
an area of about 15,000m<sup>2</sup> is existing

- enough land area for a possible extension of the plant?

rationale:

okay  not okay

beside the estate of 15,000m<sup>2</sup> there are also some other estates existing (agricultural land).



## 2. Location

- Location of estate (groundwater, flood water, carrying capacity of ground, noise, smell, neighbours, distance to feedstock suppliers, main wind direction)

okay  not okay

### rationale:

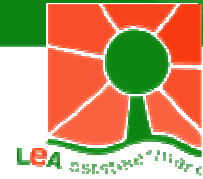
no troubles for ground water and from flood water are expected,

there is no information available about the carrying capacity of ground

noise and smell is sensitive to the neighbours

the necessary feedstock is available within a distance of about 15 km

the main wind direction is okay (away from the village to the open area)



## 2. Location



- Land use planning is suitable for the biogas plant (permission)?

okay     not okay

- In 10 – 20 years the location is surrounded by ...?

(blocks of flats, agriculture, industry)

okay     not okay

rationale:

the village is based on agricultural structures; This is likely to remain for the next 15 years

# 3. feedstock

- sufficient amount of feedstock (energy-crops, liquid manure, bio wastes etc.)  
example: for a 500 kW<sub>el</sub> plant about 10,000 tons per year.

rationale:

more than 500 ha agricultural land is available

a minimum 25,000 tons energy crops could be produced on these fields

okay     not okay

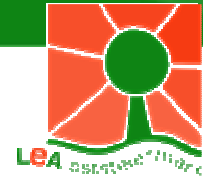
- Source of feedstock:

okay     not okay

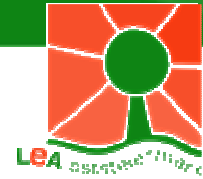
rationale:

The bigger part of the feedstock is provided by the operator(s); respectively, the feedstock is available in the surrounding area of the planned biogas plant.

The price of producing the energy crops are on a very high level. A long term availability of the feedstock from energy crops is thus not ensured.



# 3. feedstock



- The feedstock is available in the long run (minimum 5 years)

okay  not okay

rationale :

The substrates, respectively the energy crops, are not ensured for a long time period

- Biogenous residues require complex and costly processing steps.

okay  not okay

rationale :

Because of the complex processing steps, the investment and operating costs are much higher

## 4. utilization of digestate/fertilizer

- Does an area of adequate size exist for the spreading of the fertilizer?  
(maximum limit for fertilization, distance to the output area, own areas, contracts for the spreading on foreign areas)  
 okay  not okay

rationale:

Very close to the planned location there is a lot of agricultural land.

Most of the farmers of the municipality are non animal farmers, therefore they have a need of nutrients

- Is another utilization of digestate possible/necessary?  
(composting, dry fertilizer etc.)  
 okay  not okay

rationale:

at the moment there is no other utilization essential; Using the digestate as a fertilizer is the cheapest option.



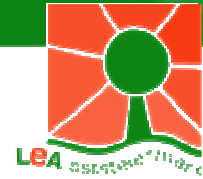
## 4. utilization of digestate

- Is a pre-treatment of the digestate necessary and/or planned?  
(solid phase: separation and composting of solids  
liquid phase: **pre-treatment for discharging into on-site preflooder**)

okay     not okay

rationale:

because of the need of nutrients (see before) there is no need of an other utilization of the digestate



## 5. utilization of energy

- connection to the electricity grid (transformer) within a short distance

statement:

okay  not okay

There is no existing transformer, but it is possible to realise it within a short distance

- heat demand in the surroundings of the biogas plant (peak load – demand in summer)

statement:

okay  not okay

It is planned to supply the village of Trnovska vas with thermal energy  
at the moment a heat demand in summer is not present

- cooling demand in the surroundings

statement:

okay  not okay

there is no need for cooling in the surroundings



## 5. utilization of energy



- Feeding-in of biogas (purchaser, level of pressure, peak load – demand in summer)

statement:

okay  not okay

There is no gas grid

- Is biogas marketable as fuel for transport?

statement:

okay  not okay

At the moment, there is no possibility of biogas as a fuel for transport!

## 6. social environment

- Is the plant supported by the residents, neighbours, the mayor etc.?

statement:

okay    not okay

the mayor and also some residents are supporting the initiative

- Mood of residents, neighbours to the issue „biogas“?

statement:

okay    not okay

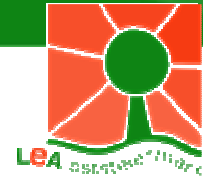
no discord is known

- Mood of residents, neighbours to the operators?

statement:

okay    not okay

no discord is known



## 7. operator

- Does the operator have the necessary time resources (planning, construction, operation)?

statement:

the operator(s) will have some time resources!

okay  not okay

- Willingness to cooperate of the partner (in the case of a community plant)?

statement:

the involved partners like to cooperate!

okay  not okay

- Does the operator have the necessary know-how?

statement:

the operator(s) do not yet have the know how, but they like to get know-how about the biogas technology

okay  not okay



# 7. operator



- Are capital resources available?

statement:

okay     not okay

capital is available from the cooperating partners (respectively the company of ELEKTRO MARIBOR as partner)

- Does the operator have the necessary “creditworthiness”?

okay     not okay

statement:

capital and also the borrowing capacity/ creditworthiness is available by the cooperating partners (respectively the company of ELEKTRO MARIBOR as partner)

Thank you for your attention

