

The logo for the SET PLAN Conference 2015 is located in the top left corner. It consists of a right-angled triangle with a thin blue border. Inside the triangle, the text "SET PLAN" is written in a large, bold, black sans-serif font. Below it, the word "Conference" is written in a smaller, regular black sans-serif font, and at the bottom, the year "2015" is written in the same regular black sans-serif font.

**SET
PLAN**
Conference
2015

Research, innovation
and competitiveness
for the Energy Union

SMART CITY: INTEGRATING ELECTRICITY AND HEAT AT LOCAL LEVEL

Thierry Lagoda, Mayor Beckerich, Luxembourg

SESSION 3

Participation of the consumer in the energy transition
Tuesday 22 September 2015

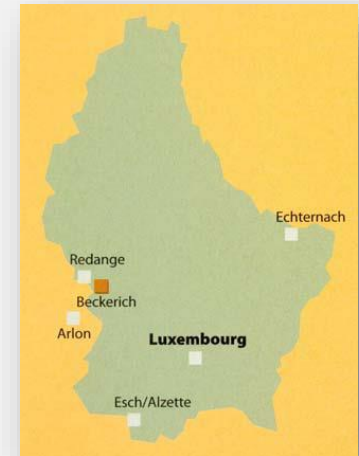
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1 Putting Beckerich on the Map

- Located on the Belgian border in the Western region of Luxembourg
- 2432 inhabitants
- 849 households
- 28,41 km²
- 295 ha public + 405 ha private forest





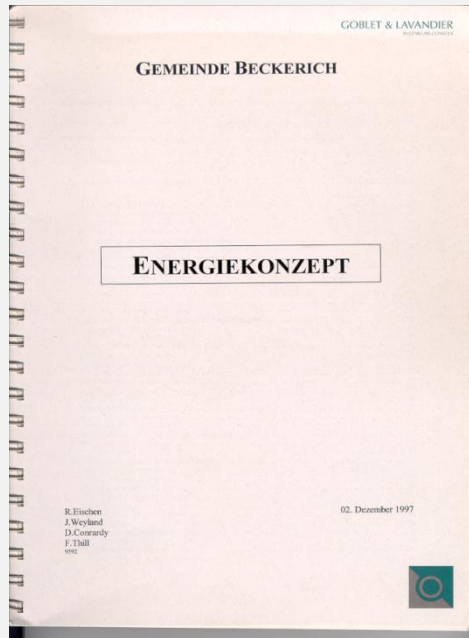
2 Turning Point in the History of Beckerich

1995: Adhesion of Beckerich to the Climate Alliance

50 % CO₂ savings until 2010

Solidarity with countries of the southern hemisphere

**Sustainable development becomes an omnipresent
subject in the town council!**

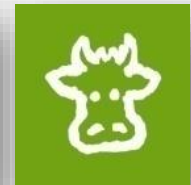


3 On the way to Energy Autarky

1997: Beckerich has been the first rural municipality in Luxembourg developing an **energy strategy** for its territory

The energy strategy put a focus on:

Energy efficiency, solar energy, wood and biogaz





4 Solar energy

- The municipality installed its first solar panel in public space to make its citizens aware of this green technology

Consequence: **increase of private solar panels**
-> *more than 70 private solar panels installed*

- First community solar panels in Luxembourg installed on the roof of the local warehouse
Other community solar panels followed.





5 Biomethanisation - Synergie between municipality and farmers



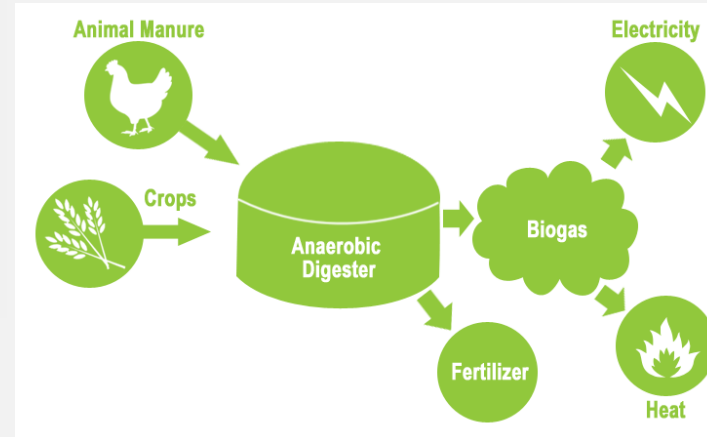
- Bringing into service: 2004
- Electrical output: 600 kW / Thermal output: 720 kW
- Biogas cooperative of 19 farmers
- Total invest: 4.000.000 €
- State subsidy (47%)
Private investment (2%) = 4.000 €/farmer
Loan (51%)



5 Biomethanisation - How it works



- Production of electricity (12.000 kWh/d)
- Side products: Heat (14.700 kWh/d) and Fertilizer





5 Biomethanisation - Benefits for Agriculture

Remains of the organic material after
the extraction of methane = DIGESTATE



12 storage vats

→ Shorter journeys → less pollution

→ Farmer fertilizes by spreading the digestate on his
farmland



6 Wood chip heating plant

- Built in 2008 to cover the increasing demand on energy in the municipality.
- Thermal output: 2 MW
- Contrary to the biogas plant, the wood chip burner only produces heat and no electricity.
- Bringing into service of a second wood burner end of this year





6 Wood chip heating plant

Types of wood used in the heating plant:

- 295 ha public + 405 ha private forest
- Waste of woodworking industry
- Landscape gardening i.e. tree-cut etc.





7 District Heating Network

Placed at the disposal for:

- Inhabitants
- Municipal buildings
- Companies



14 km of pipes – 1°C/km loss of heating

The heat network supplies 4 of 8 villages with
renewable heat



7 District Heating Network

Advantages:

- No boiler combustion
- No gaz and oil
- More space
- No smell
- Service 24/24h
- Price guarantee fixed for 15 years
- +- 2500€ costs for a connection



➤ big success!



7 District Heating Network

Number of connections to the heating network:



- Households: 177 3470 kWh
- Companies: 4 3113 kWh
- Public buildings: 14 1418 kWh
- **Total: 209 8001 kWh**

Heat consumption in 2014: 6.300.000 kWh = 630.000 L

Another 100 households will be connected in a near future

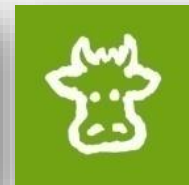


8 Vision for 2030

-> Energy Autarky!

By the year 2030, renewable energy allows us to produce:

- **42 %** of the electricity (**100%** low tension electricity)
- **48 %** of the heat needs for the whole municipality





9 How can we achieve this goal?

- A strong political commitment fixed by a concrete goal
- A clear strategy based on objective facts and figures
- A creative and well worked-out communication and PR-concept



9 How can we achieve this goal?

- A regular evaluation of the achieved progress
- An active participation of all actors concerned
- A continuous exchange of experience and good practice



9 How can we achieve this goal?

- National framework conditions supporting local actions
- Identification with the developed vision

europaean
energy award **GOLD**

10 In recognition of 20 years of
hard work

Beckerich will be the first municipality in
Luxembourg receiving the European
Energy Award Gold after a first
certification.



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