

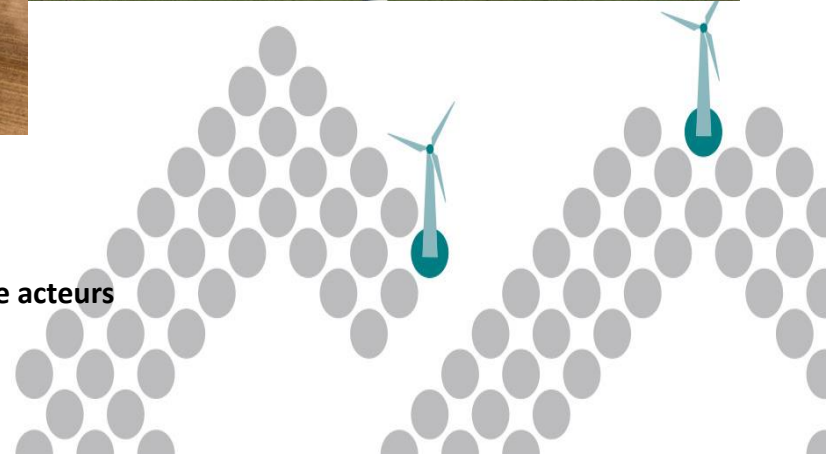
The Feldheim Project: Energy self sufficiency and local added value through Renewables

A joint project of Energiequelle GmbH, the farmer's cooperative and the residents of Feldheim



2 avril 2020: Conférence en ligne sur les bioénergies : les agriculteurs comme acteurs
de la transition énergétique

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Energiequelle GmbH since 1997

Based in the federal state of Brandenburg



Wind Energy
727 WTGs
in Germany and France
1.294 MW



Photovoltaics
33 photovoltaic plants
in Germany, Spain and Italy
67 MWp



Biogas
18 biogas plants
in Germany
12 MW
of electric power



**Power Grid
Operation**
20 high-voltage substations in
Germany with 1.743 MVA



Storage
1 energy storage
facility in Germany
10 MW

The village of Feldheim

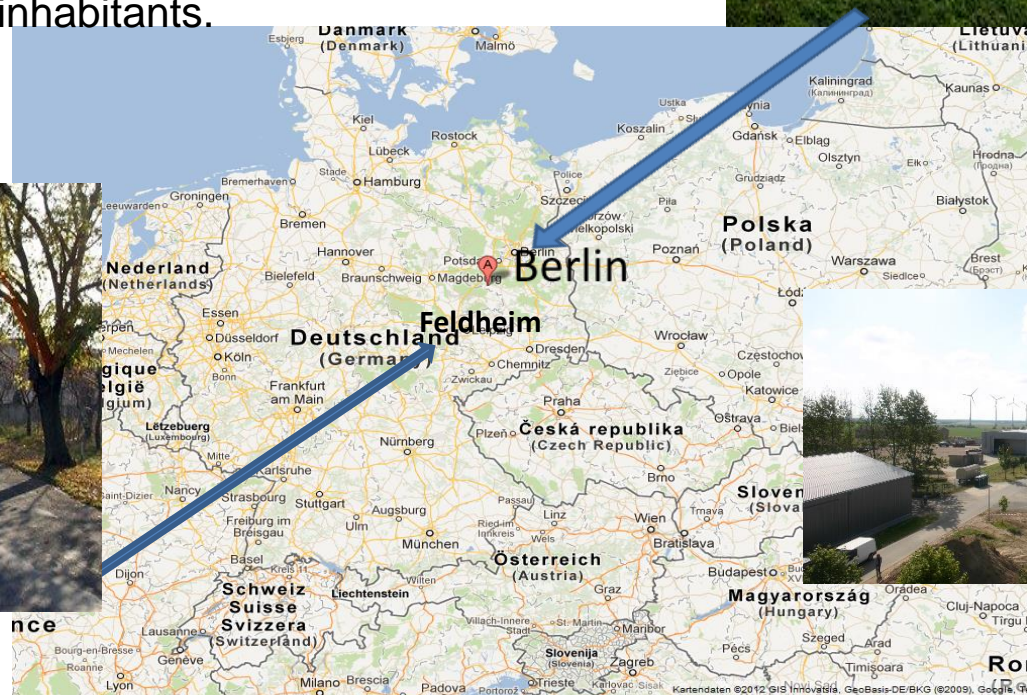
Feldheim is home to around 130 residents.

Geographic situation:

Around 90 km southwest of Berlin

Travelling time to Berlin: 1,5 h by car or by train.

In 2002, the village lost its status as independent community being incorporated into Treuenbrietzen, a town of around 8.000 inhabitants.



Farmer's cooperative ‚Fläming‘

- Emerged in 1990 from the formerly GDR Agrarian Production Cooperative (‚LPG‘)
- Many Feldheim residents are members
- 35 staff
- 1,700 hectares, less favoured soil productivity, no natural water courses
- Predomantly fodder crops / energy plants (mais, rye), some forestry
- Pig breeding: 600 sows / 10.000 piglets/y
- 400 head of dairy cattle
- Biogas plant (electricity and heat)



Feldheim biogas plant

- Commissioned in 2008
- Installed power: 526 kW
- Inputs: 8.600 m³ manure (pig, cattle)
- Output/y:
 - 4,200 MWh (el)
 - 4,000 MWh (th)
- Heat is used to cater households for heating and hot water
- Ownership: Farmer's cooperative 50%, Energiequelle 50%.

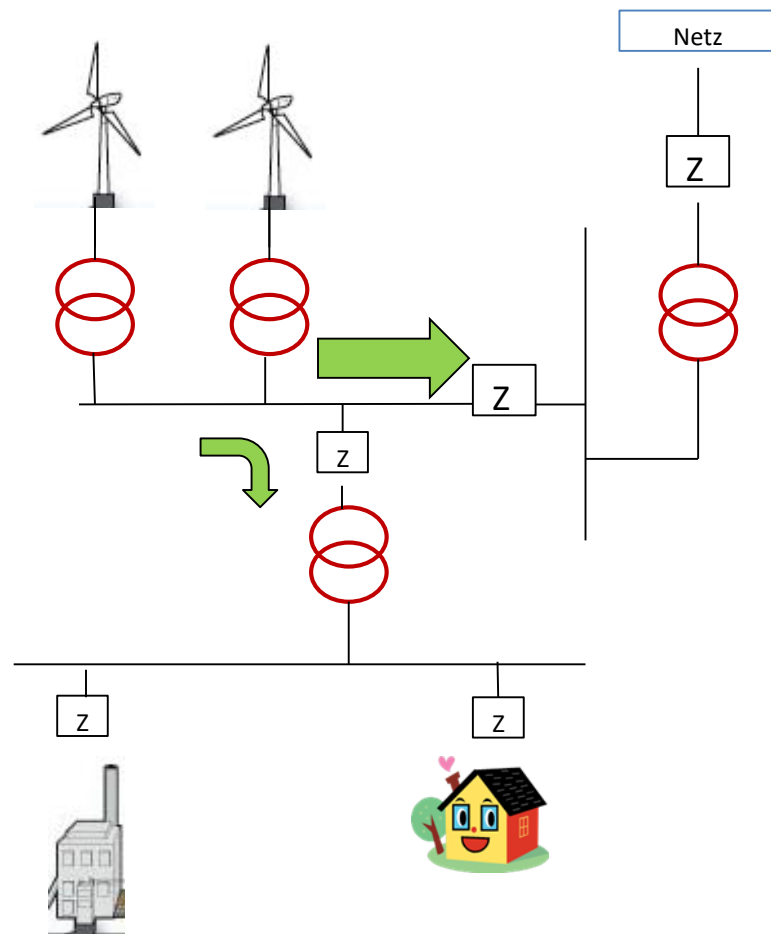
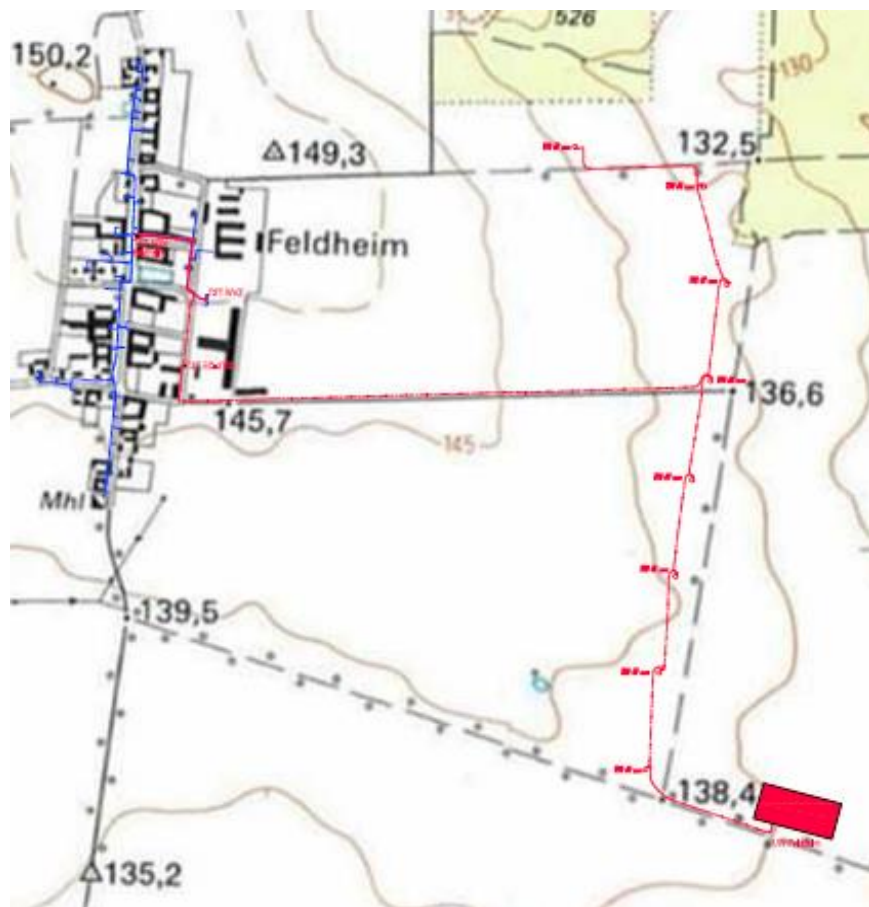


Feldheim wind farm

- 60 turbines with 140 MW installed power (2019) Mostly on real estate of farmer's cooperative and/or other Feldheim residents
- Total output: 300,000 MWh/y. (aprox. 85,000 households)
- 1,000 MWh/y consumed in Feldheim via a direct underground cable
- 300,000 MWh/y. fed into public extra-high voltage network.



2008/2009 cable link wind farm between village and...



Local power distribution grid and district heating network



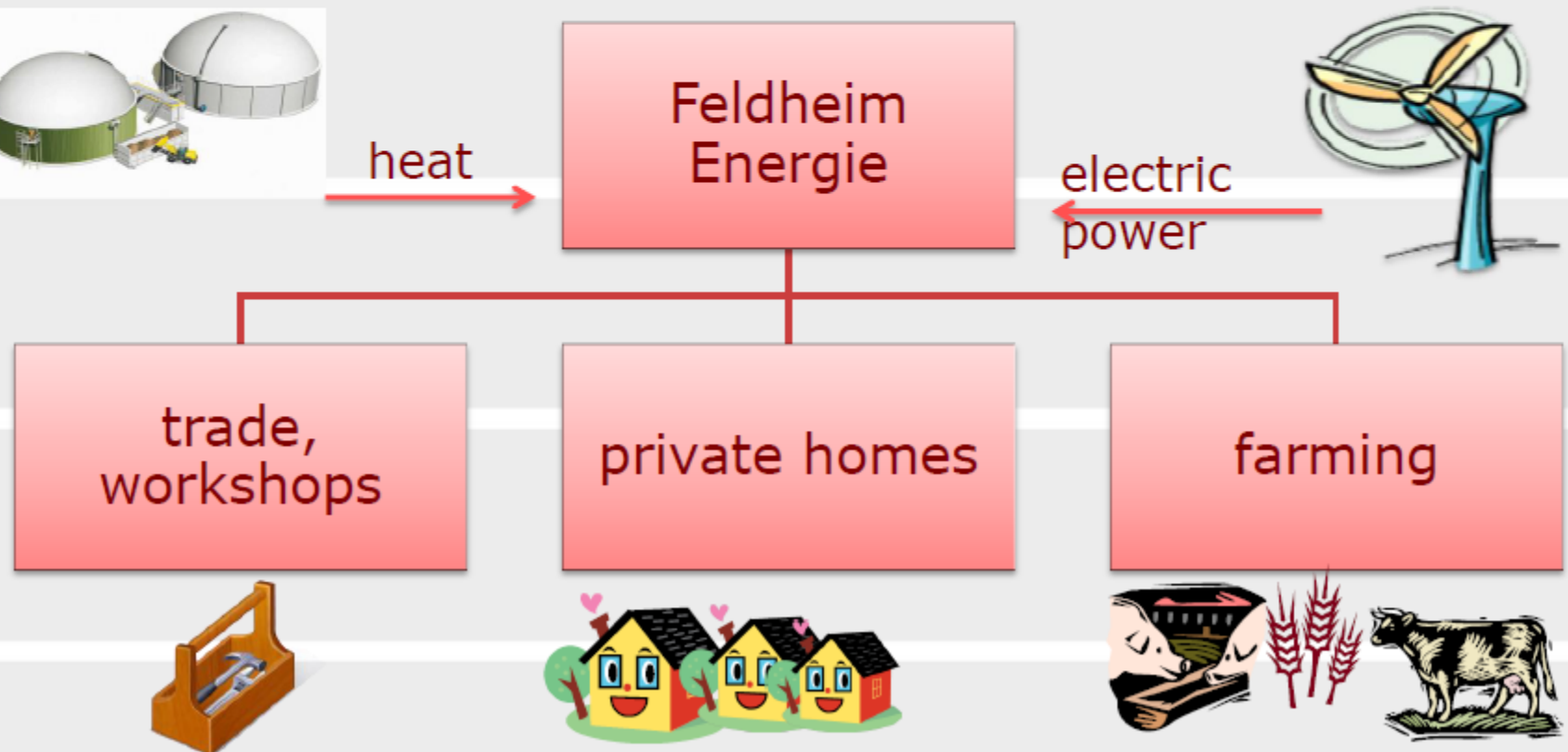
Biomass boiler

- Wood chips from surrounding forest industries, property of farmer's coop.
- Power: 299 kW(th)
- 2 buffertanks of 45 m³ each
- Comes in on very cold days



Formation of ‚Feldheim Energie‘ (2007)

A residents owned utility company with the purpose: Safe, local, economical and ecological supply of heat and electricity organized by and under the responsibility of the citizens; independence from the grids of conventional power utility companies.



Feldheim Energie - Facts & Figures

District heating:

- Total investment € 1,725,000
- Equity € 138,000
- Subsidies € 830,000
- Loans € 757,000
- Commissioned December 2009
- Basic charge € 29.95 per month
- Price per kWh 7.5 cts
- Consumption ~ 1.8 million kWh p.a.

Power grid:

- Total investment € 450,000
- Subsidies € 0
- Commissioned October 2010
- Basis charge € 5.95 per month
- Price per kWh 16.6 cts
- Consumption ~ 1 million kWh p.a.

2015: Battery storage facility

- Lithium-Ion-technology
- Power: 10 MW
- Capacity: 10,7 MWh
- Grid connection: Feldheim wind farm
- Commercialization: Primary balancing power



New Energy Forum Feldheim (2015)



3,500 visitors per year
Information and training centre around Renewables



At a glance:

Increased local added value; civic participation

- Residents earn additional income through leasing real estate for wind turbines (+ ,energy tourism‘)
- Farmers decrease their dependence from volatile prices for traditional farm products
- New jobs for less-favoured rural areas and securing the existing ones (technical and commercial operation of wind farm, biogas plant etc.)
- Low power prices (17 €ct/kWh vs. 30 €ct/kWh)
- All inputs produced locally, thus local added value
- Tax revenues for the local treasury (income tax, corporate tax, etc.)
- Revenues through ,energy tourism‘



Auf Wiedersehen im
Energieautarken Ortsteil
Feldheim

