

Maximising public and private strengths through partnership in developing renewable energies

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Economic Region Freiburg

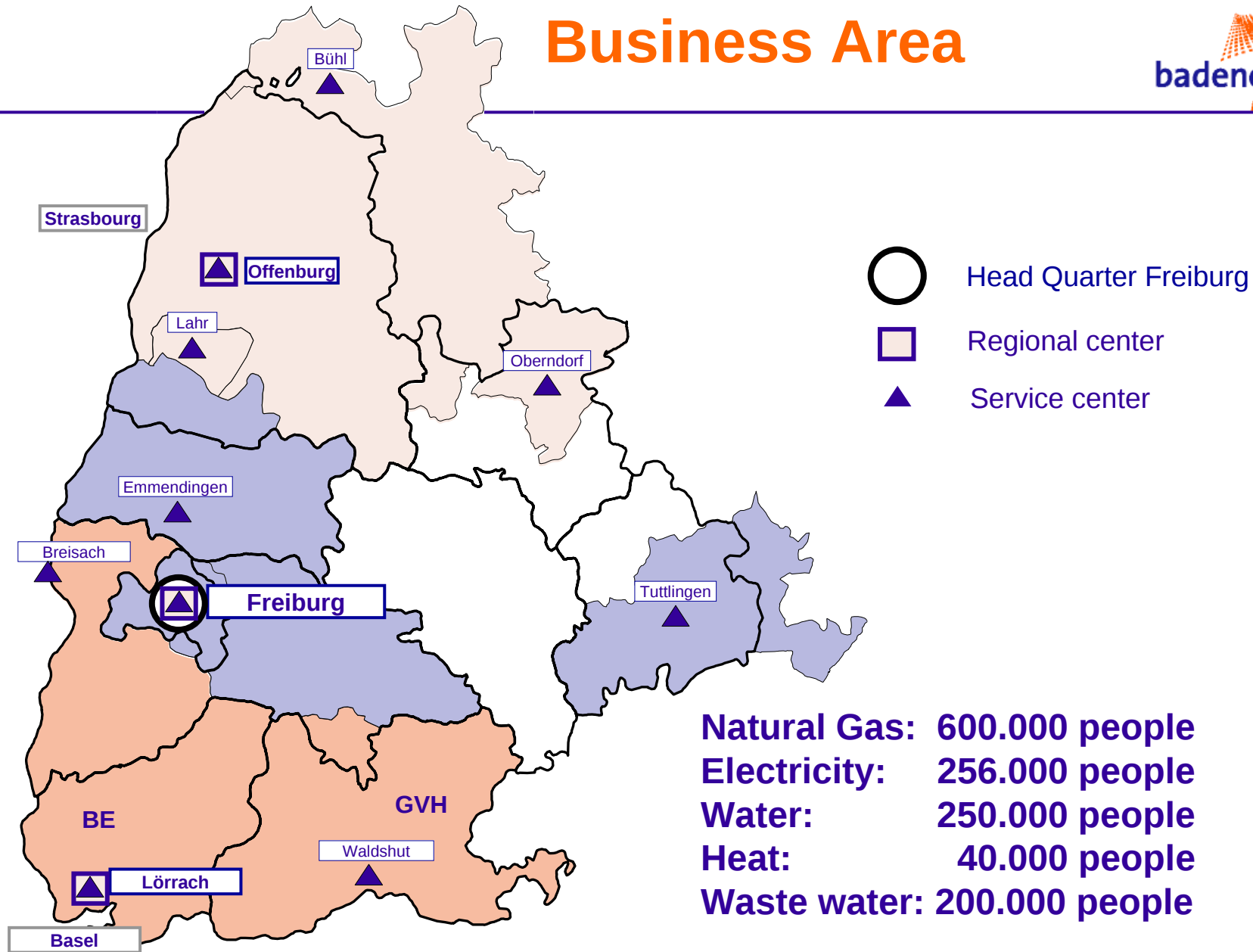
in the heart of Europe



Stadt Freiburg



Business Area



The badenova concept

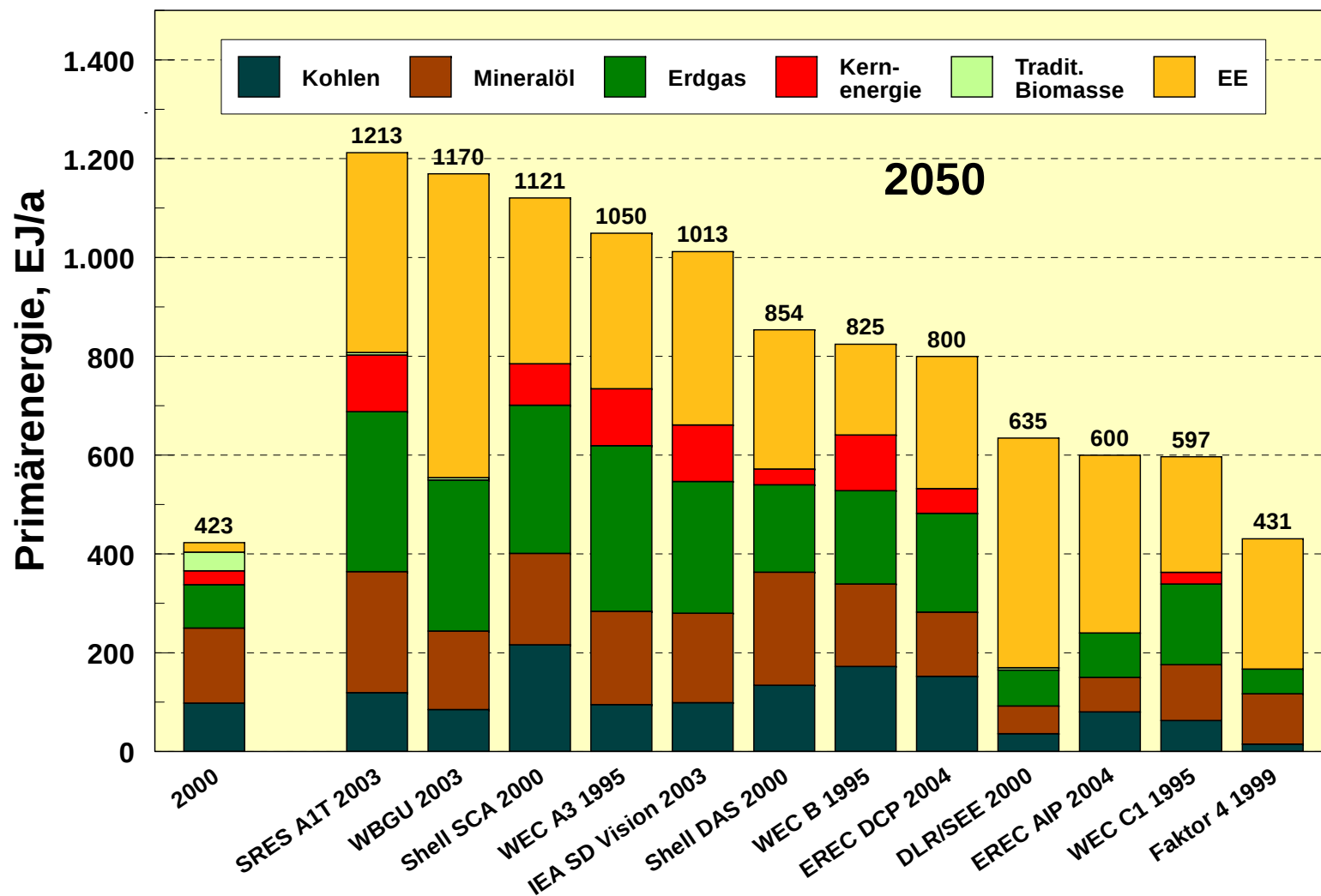


- badenova is the regional energy service company
- badenova is a public private partnership
shareholders: 53% public, 33% city of Freiburg,
20% communities of the region , 47% private
(Thüga/eon)
- The needs of the clients are in the center of our
company
philosophy
- badenova has employees, that identify themselves
deeply
with the enterprise and its aims
- As ecologically oriented service company badenova stands
for
sustainability and efficient use of resources

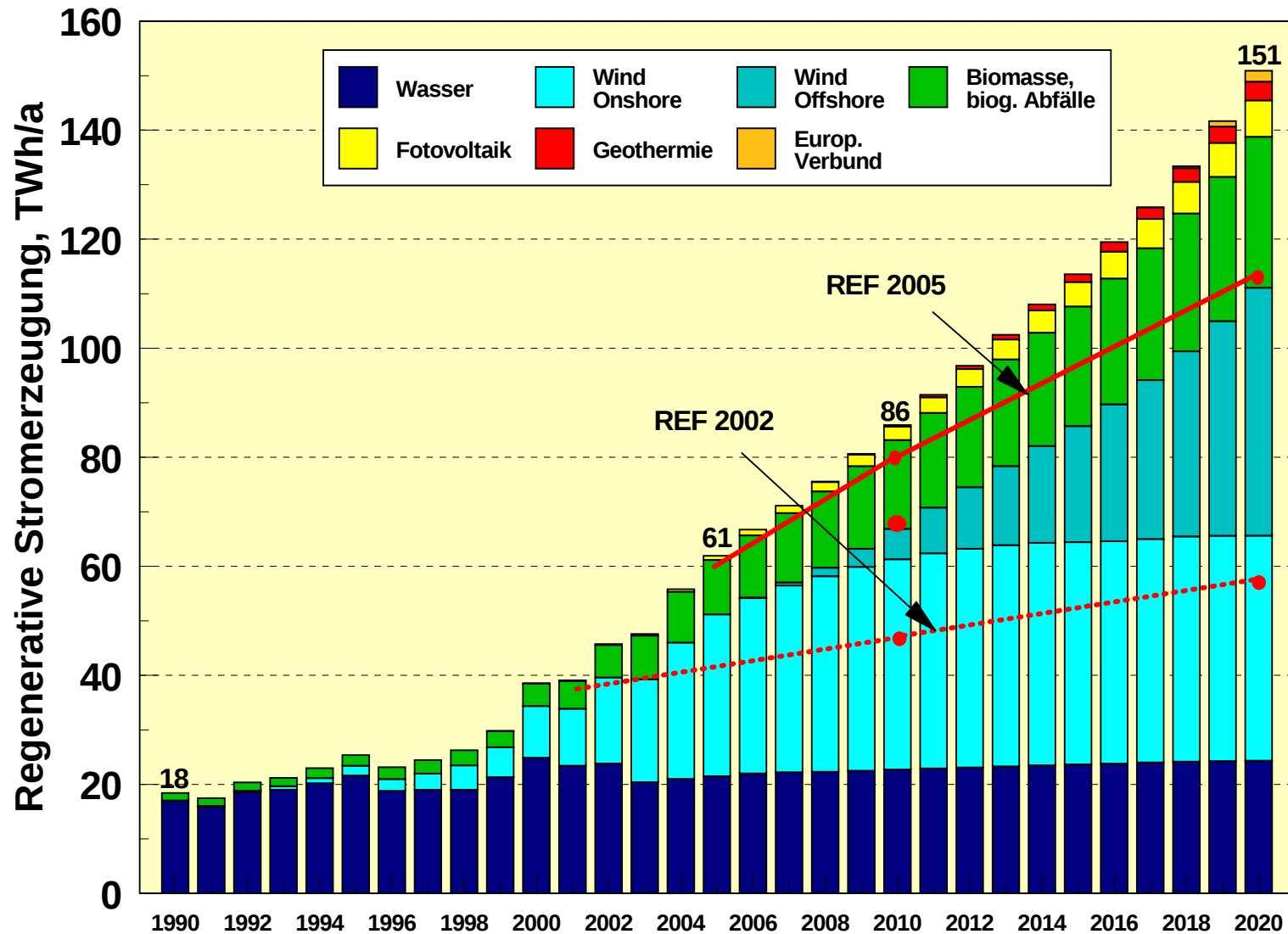
Preconditions for ecological acting

- market and societal acceptance
- economics

The global energy supply of the year 2050 ist dominated by the use of renewable energies – in any of the scenarios made



Renewable power generation until 2020 under the frame of EEG



badenova acts ecologically responsible

- renewable energies
- Fund for Innovation in climate and water protection
- Support programs
- Shared ownership projects
- Contracting projects



CO₂ -reduction

Total yearly CO₂ reduction sums up to about 400.000 t/year i.e.
emission of about 130.000 cars

Big cogeneration plants (WVK, KGW)	330.000 t/a
30 Small cogensets 5,5 kW bis 6 MW	30.000 t/a
regiostrom	12.000 t/a
regiowind	20.000 t/a
Solarthermie	2.500 t/a
regiosonne	1.000 t/a
„Erdgas jetzt“	12.000 t/a
„Tankeschön“	400 t/a
	ca. 400.000 t/a

Fund for Innovation in climate and water protection



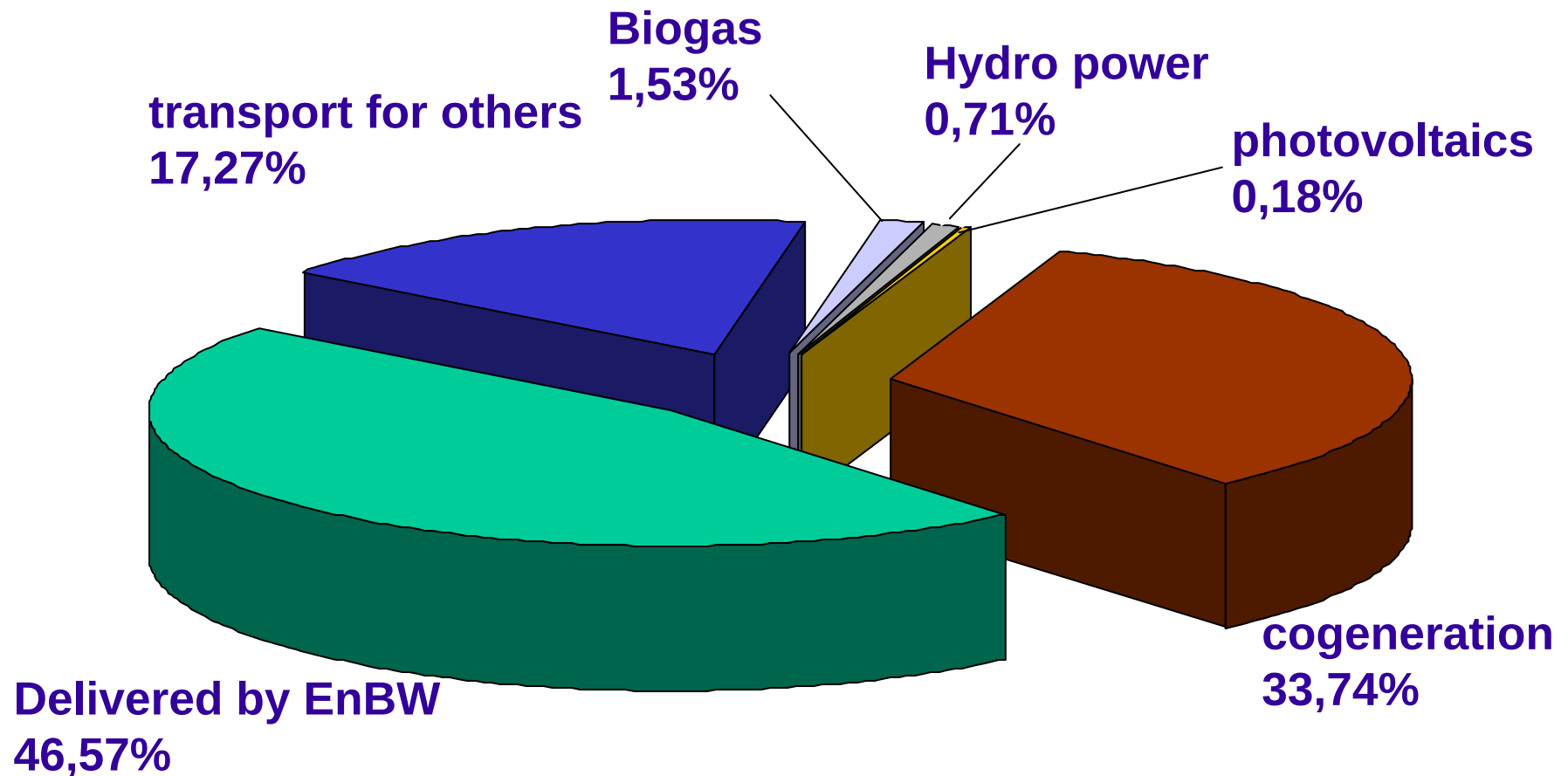
9,76 Mio. € since 2001

- 89 Projects supported
- About 54 Mio. € investments

So does it work:

- Based on a decision of our stakeholders annually 3% of the earnings (the last five years about 1,8 million €/year) are put in this fund
- Each badenova-client may apply for funding
- Projects are evaluated and selected by an independent expert group
- Maximum support is 250.000 € per project

Electricity Mix in Freiburg



Total electric consumption 1.252 GWh

Available fund regiostrom: ca. 600.000 € per year

Investment volume in the region: 10-15 Mio. € pro Jahr

regiostrom-Anlagen save 12.000 tons CO₂ per year

regiostrom-clients use 28.000 MWh electricity per year

Jahr

How it works :

- > 1,51 cts/kWh additional fee, administered in a certified fund
- > Money only spend for new installations in hydro power, biomass and solar
- > Regional value added



regiowind: 20.000 t CO₂ reduction per year



regiowind:

- 6 wind turbines in Freiburg each 1,8 MW
- 16,8 Mio. kWh electricity
- Investment 13 Mio. €

regiowind plus:

- 2 Windkraftanlagen in Lahr/Seelbach each ,5 MW Leistung plus 200 kW PV
- 4,5 Mio. kWh electricity
- Investment 4,3 Mio. €

regiowind St. Peter:

- 2 Windkraftanlagen each 2 MW Leistung
- 6 Mio. kWh electricity
- Investment 4,5 Mio. €

Wind energy in Freiburg

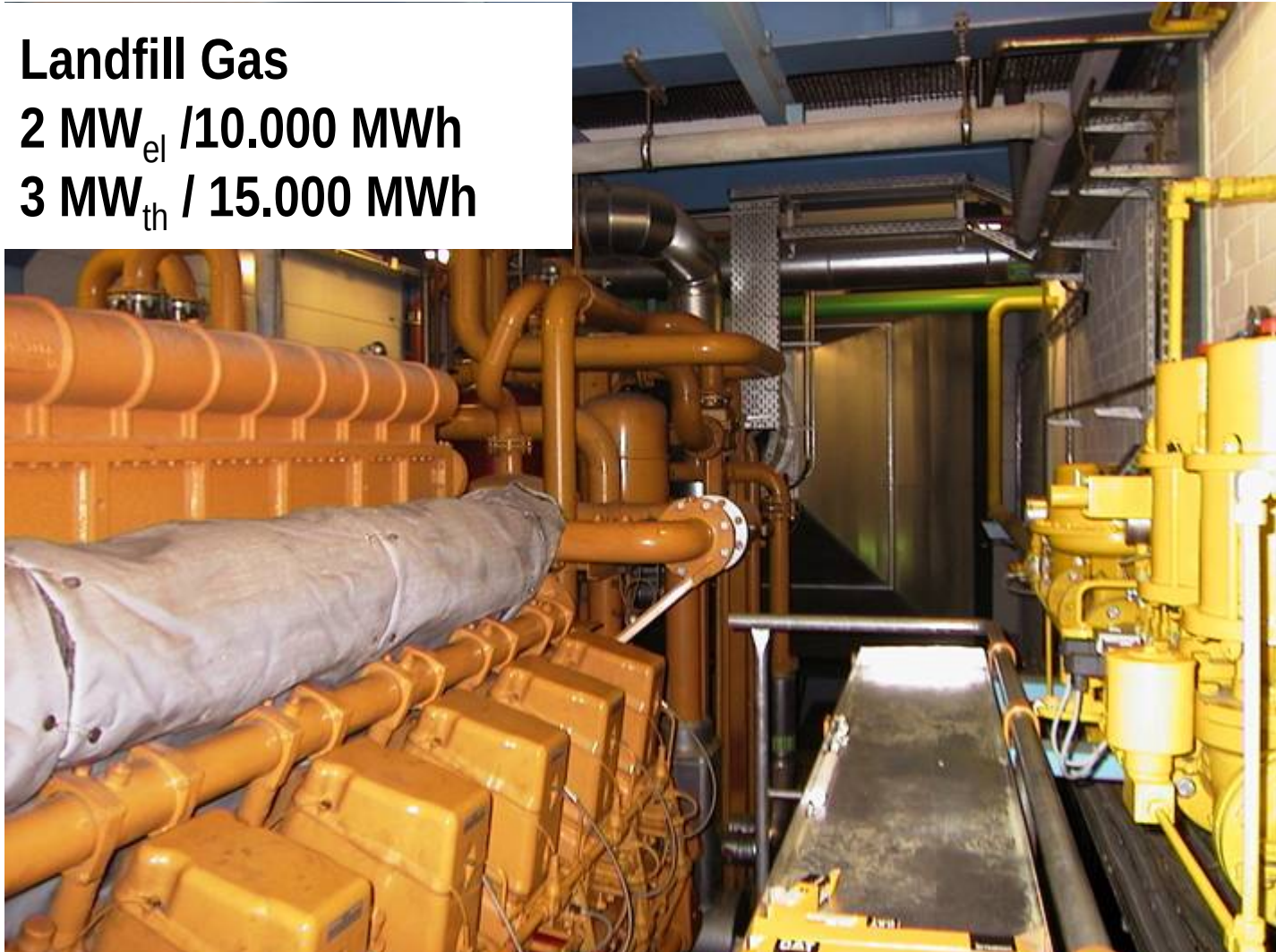


Cogeneration Landwasser

Landfill Gas

2 MW_{el} / 10.000 MWh

3 MW_{th} / 15.000 MWh



Bio-oil cogeneration at Solarfabrik in Freiburg

Bio-oil-cogeneration set

Power el: 40 kW

Power th: 60 kW

Electricity: 200 MWh/a

Heat: 300 MWh/a



Wood-cogeneration Vauban in Freiburg



Wood cogeneration plant
350 kW el.
2.300 kW th

Gas boiler
2 x 2.500 kW th

Heat
12.000 MWh/a

Electricity
1.000 MWh/a

Wood consumption
20.000 Sm³/a,



Wood pellets Spittelacker in Freiburg

Pellet boiler

Clients: 61
houses

Power: 400 kW

Heat: 630MWh/a

Pellets: 180 t/a



Shared ownership PV project regiosonne

New company founded by Sportclub Freiburg and
badenova

aim: 8.000 m² solar modules on buildings of SC and badenova

5 Mio. € capital invested

1 Mio. kWh solar electricity

So does it work:

SC Freiburg and badenova founder and basic capital

public shares starting with 1.500 €

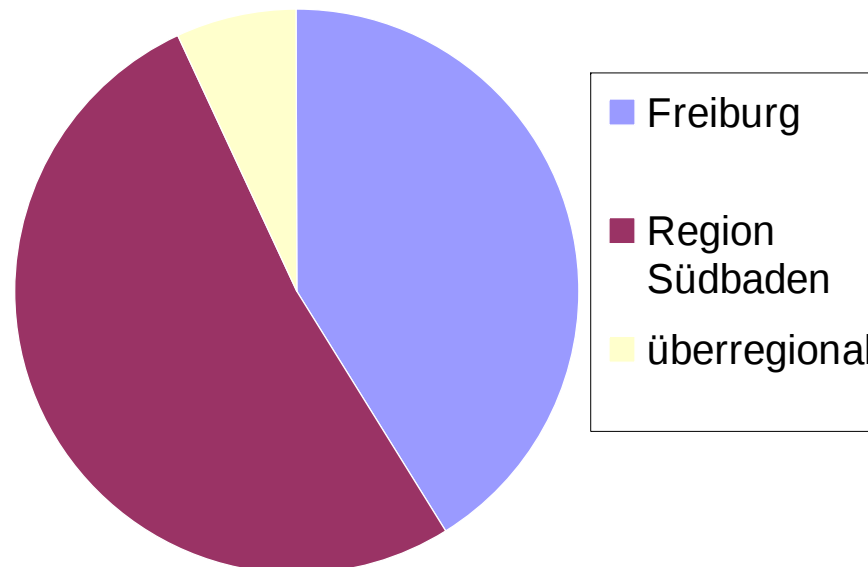
Option for members and annual card holders of SC Freiburg

earning: 6,2 % /a with an assumed generation of 935
kWh/kWp

Regional value added

Solar modules:	Solarfabrik, Freiburg
Inverter:	Sunways, Konstanz
Installation:	Craftsmen of the region
Performance control:	Fraunhofer ISE, Freiburg

Regionale Verteilung der 215 regiosonne
Kommanditisten



„Flunder“ Freiburg



badenova-Stadion

