



INFORSE-EUROPE



International Network for Sustainable Energy



INFORSE-Europe Sustainable Energy NGO Seminar

European Green Capital, Hamburg, Germany
August 22-26, 2011

HAMBURG ENERGIE

Renewable Projects as

Key to sustainable energy production

Gut Karlshöhe, August 23rd 2011

Volker Malle



**HAMBURG
ENERGIE**

Sustainable and lasting energy supply for Hamburg and the surrounding area

- ❑ Electricity free of coal- and nuclear power
- ❑ An offer to all citizens of Hamburg and the surrounding area
- ❑ Profits will be reinvested in the region
- ❑ Aim is own production capacity of 50%
- ❑ Hamburg as a location shall benefit by
 - Creation and preservation of jobs
 - Support of the economy
 - Protection of the environment



Milestones

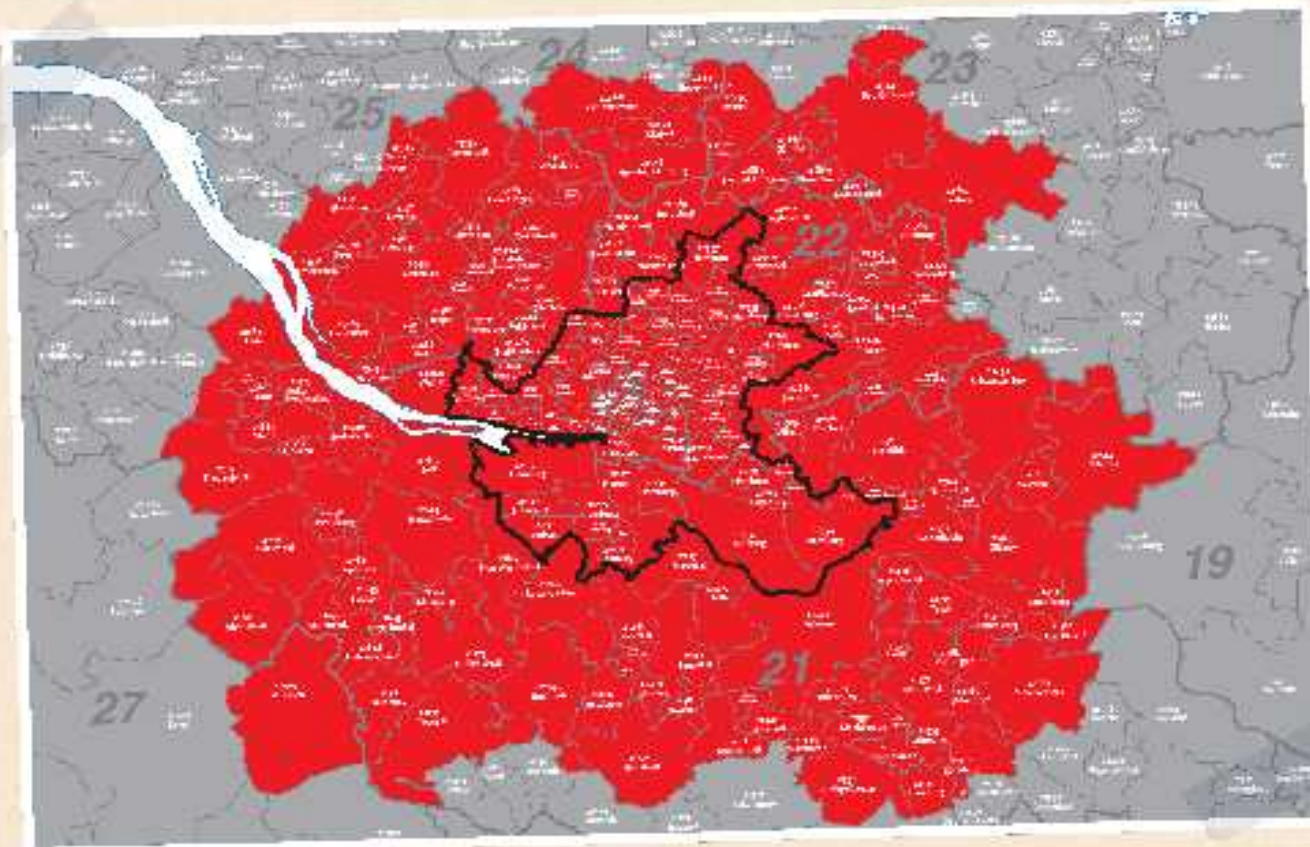
- 30.Sept. 2008
government to
supplier
Decision by Hamburg
form own communal energy
- 15.May 2009
ENERGIE
Formation of HAMBURG
ENERGIE
- 07.Sept. 2009
supplying
consumers
HAMBURG ENERGIE starts
electricity for private
- 17.Dec. 2009
First PV-plant in production
- 19.Dec. 2009
ENERGIE Solar
Formation HAMBURG
ENERGIE Solar
- 18.Aug. 2010
consumers
Gas supply for private
consumers



Distribution area



HAMBURG ENERGIE LIEFERGEBIETE



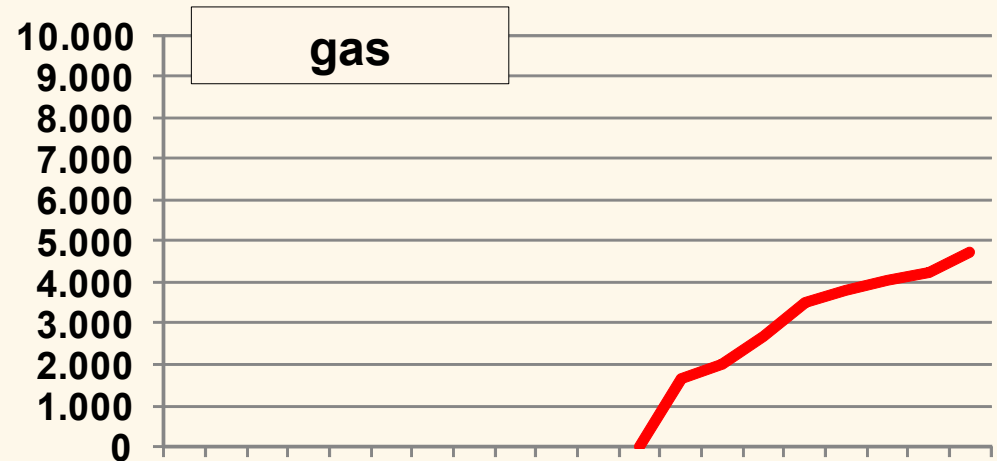
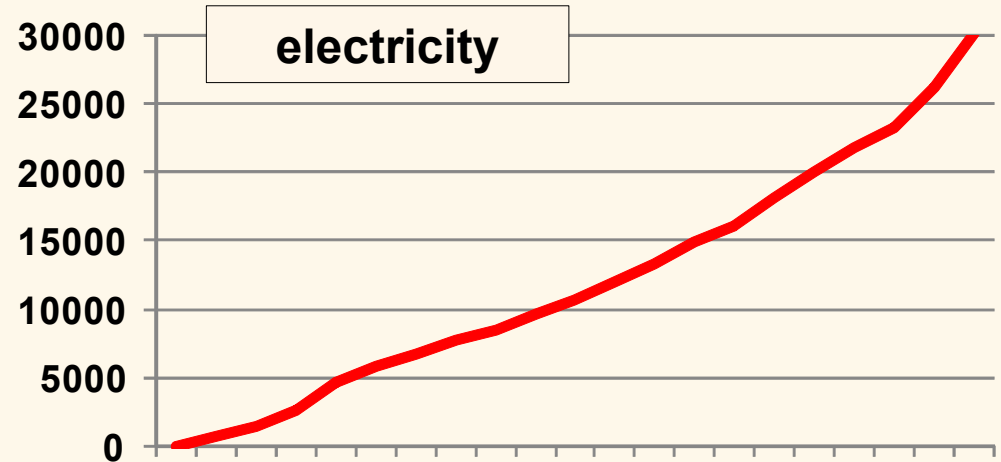
www. *ich-schliess-mich-an*.de

Rufen Sie uns an unter
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Development of private customers



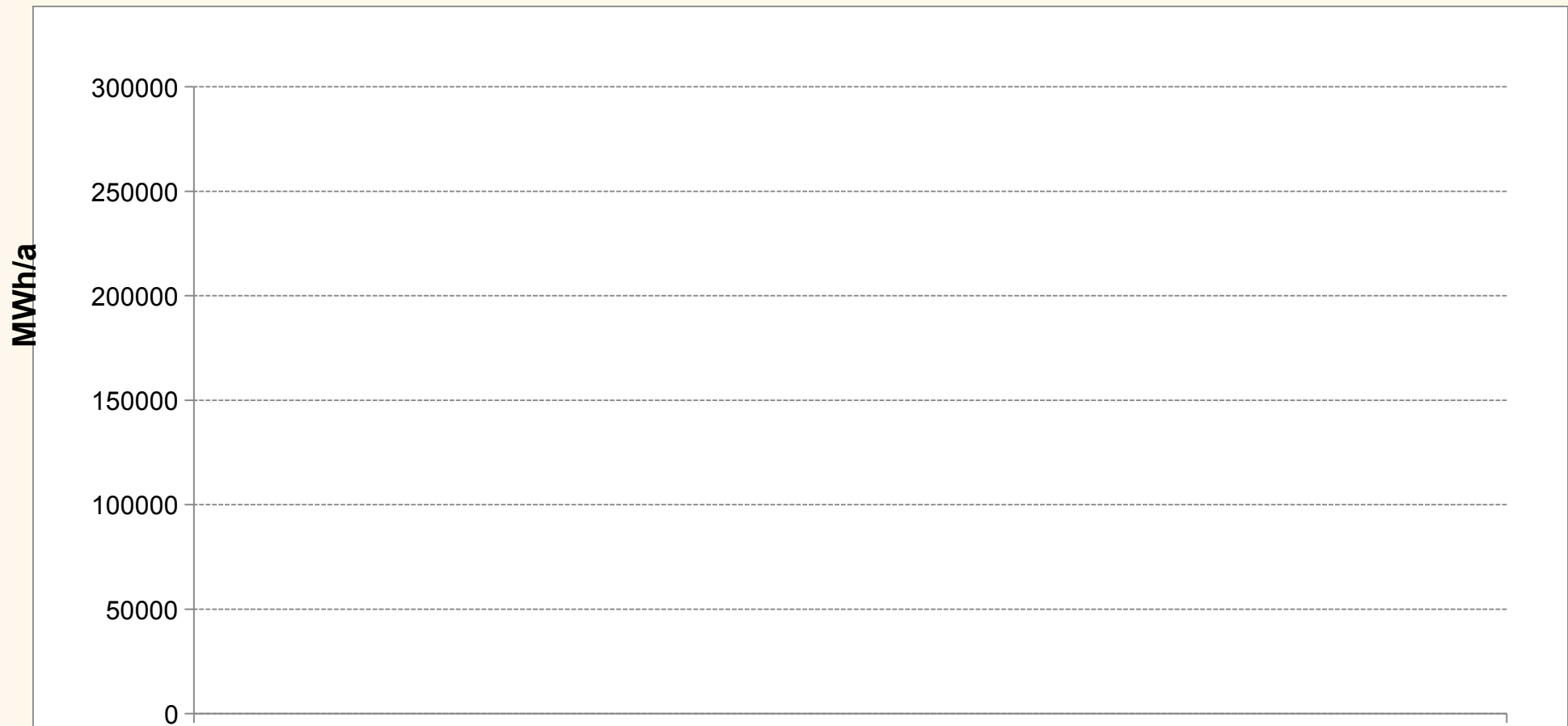
- Re-establishment of a town-owned energy supplier
- Midterm-planning: No.2 in the Hamburg market
- Longlasting customer relationship for sustainable economical success



- Major asset for award of quality-label:
 - 50 % of the sold renewables-electricity must be produced by own planned and built renewables power plants



Comparison of planned Sales- and Production-figures



Target of HAMBURG ENERGIE: 50 % own production capacities

Production/Contracting

Wind

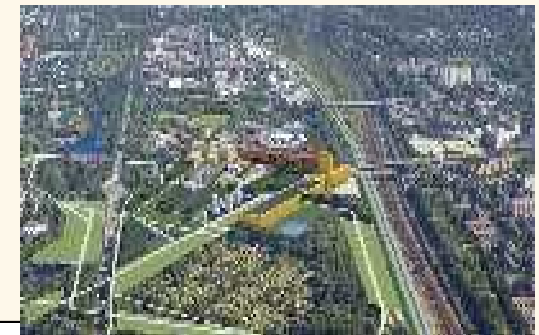
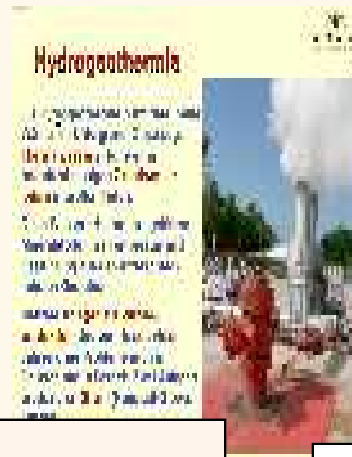
Photovoltaik

Biomass

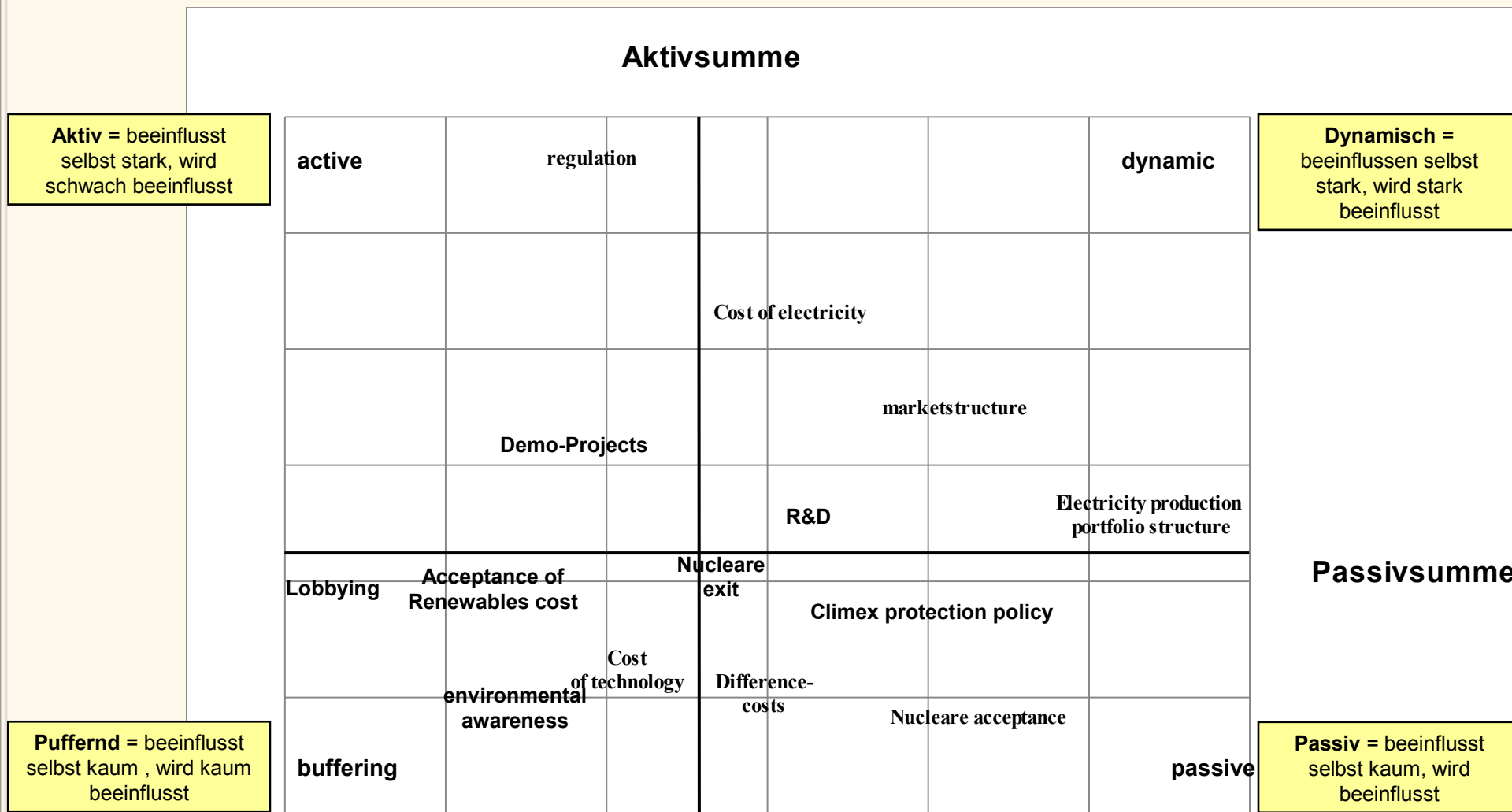
Deep Thermal

Services

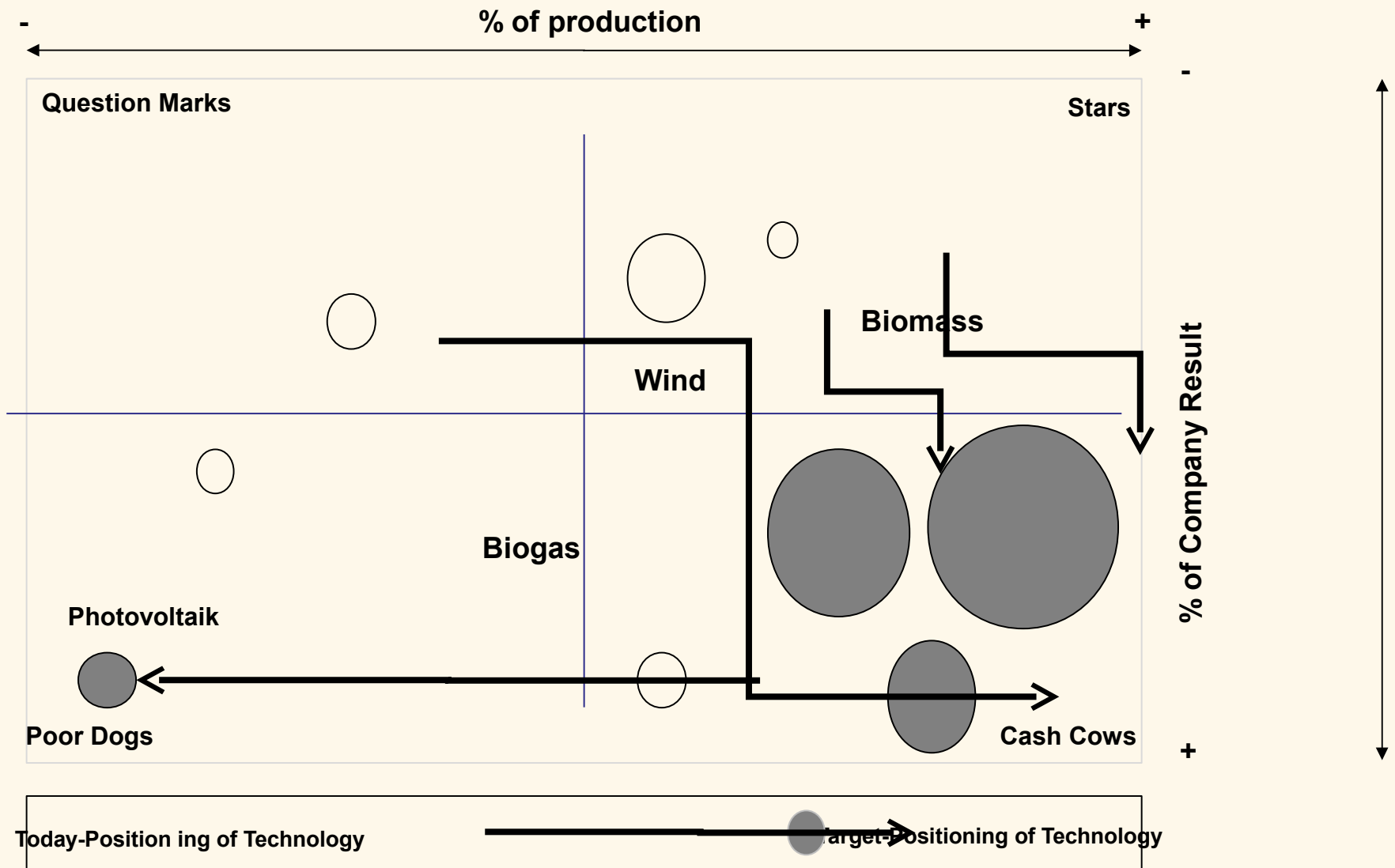
Contracting



System-Grid Sensitivity-analysis:



Preliminary Production Portfolio in a BCG-Matrix

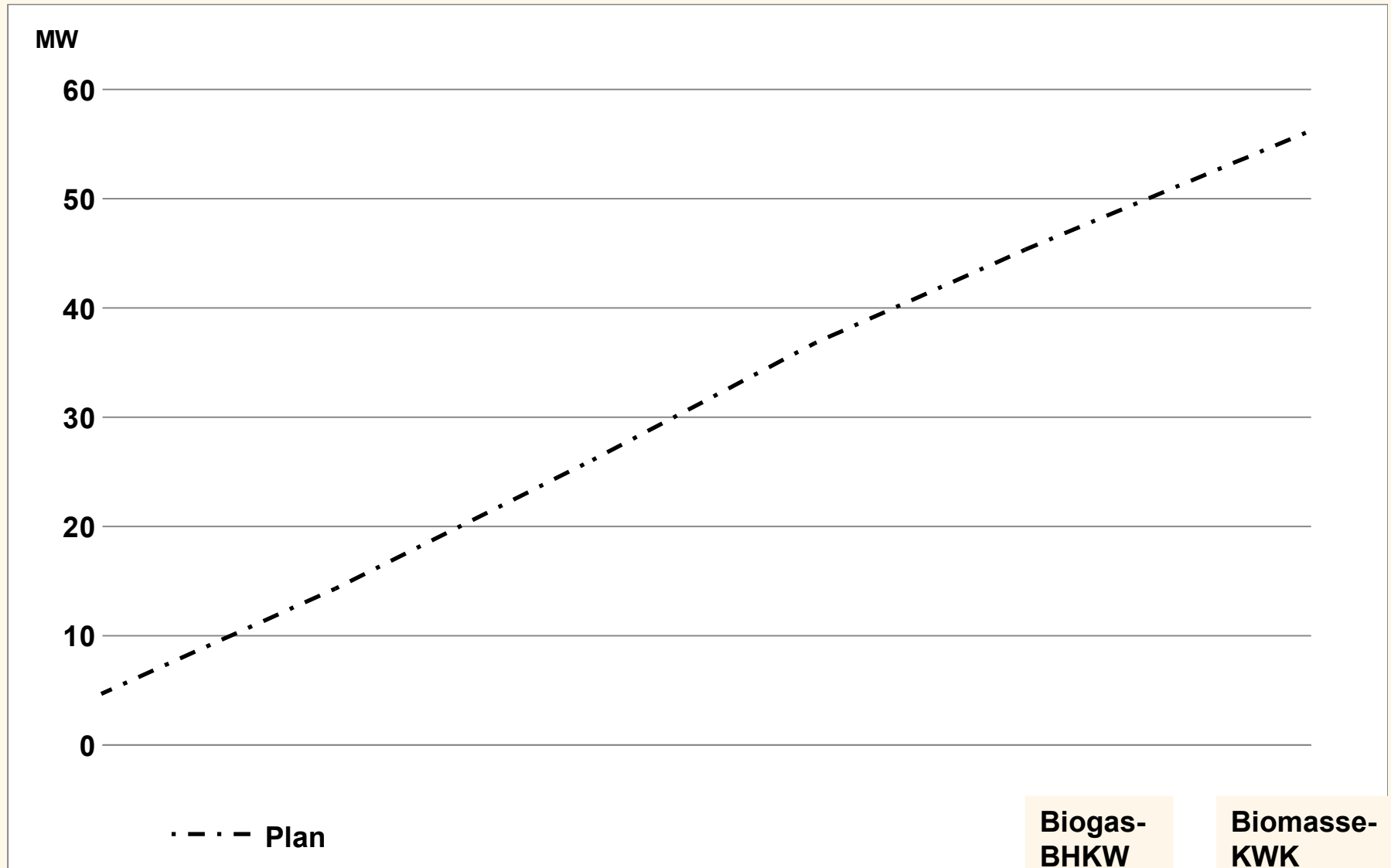


Corner Stones of the Strategic Planning

- ❑ HAMBURG ENERGIE intend to produce 50% of the sold electricity with own capacities
- ❑ HAMBURG ENERGIE owns no production facilities by 2009
- ❑ HAMBURG ENERGIE will cover all available technologies in the field of renewable energy production
- ❑ HAMBURG ENERGIE will realize projects only which are economical feasible on a stand-alone basis
- ❑ HAMBURG ENERGIE will hereby fulfill the customer claim to reinvest incomes from energy supply into renewables projects at the location Hamburg



Development of Production Capacity



Field of activity: Wind energy

In Operation

Windmill Obergeorgswerder Deich

- ❑ Rent of a windmill from the town of Hamburg, capacity 1,5 MW
- ❑ Start: January 2010

In Operation

Windparc Dradenau

- ❑ Operation of to Nordex N100Errichtung, capacity 2,5 MW each
- ❑ In operation since: December 2010

Under construction

Windmill Georgswerder

- ❑ Construction of a 3,4 MW Windmill (repower)
- ❑ Planned start: December 2011

Total production: 23.000 MWh/a

Total reduction of CO2: 11.500 t/a



Launched plants

„Energy mountain“ at Georgswerder

- ❑ Photovoltaic plant: 500 kWpeak
- ❑ Investment: approx. 2,1 Mio. EUR
- ❑ Date of commissioning: Dec. 2009

Production: 425 MWh/a

Reduction of CO₂: 210 t/a



HAMBURG ENERGIE SOLAR GmbH – 10 MW-citicens rooftop-power-plant at Hamburg

- PPP-modell
 - HAMBURG ENERGY stake 60%
- invest: about 24 m€
- Financing:
 - 85 % debt/ 15 % equity
- Equity provided by Hamburger Citizens by signing HAMBURG ENERGIE SOLAR bonds totaling 4 m€
 - certificate of 2.500 EUR pp, 10 pieces max
 - 6 % interest on a 10-years-term







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