



Cogeneration

Symposium: Highly efficient cogeneration systems

Company presentation of 2G Energy AG, Aart de Graaf



Agenda

1.	Why Cogeneration?
2.	The 2G Group
3.	Product Overview
4.	Careers at 2G
5.	Outlook



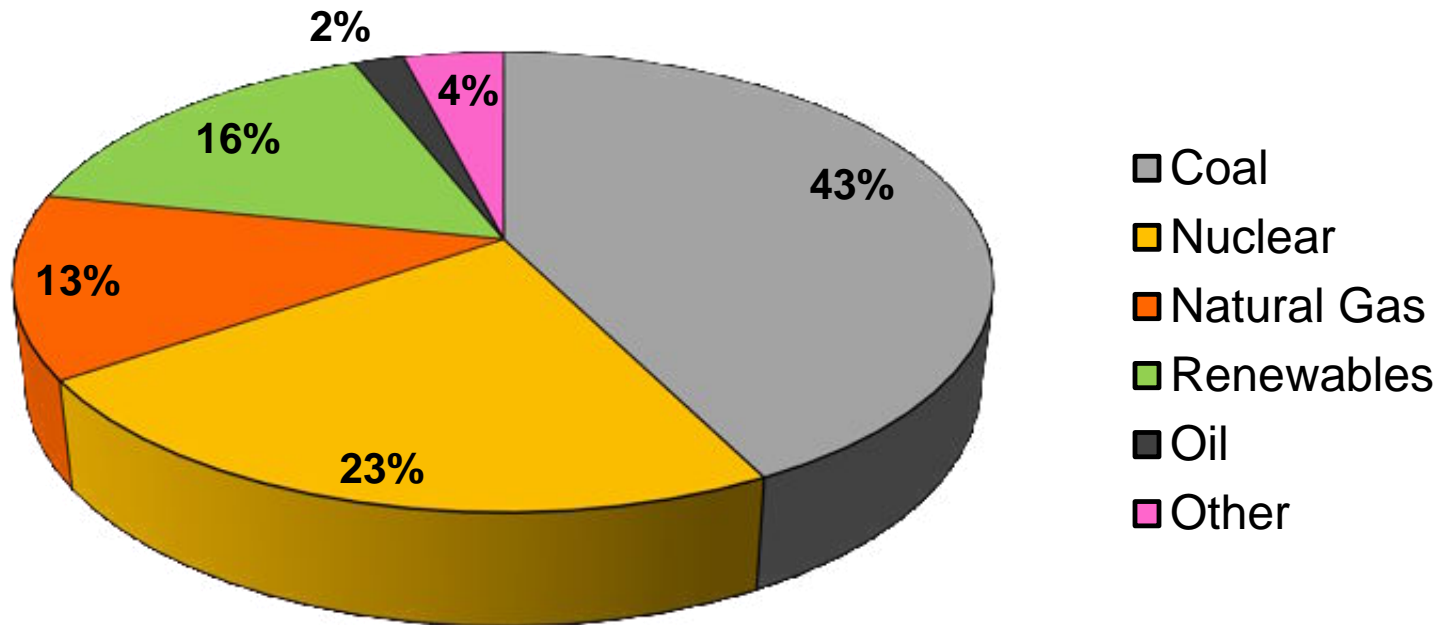
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Why Cogeneration?

The German Mix of Energy 2011





Why Cogeneration?



Fukushima Disaster March 2011

in the mid-term no nuclear plants in Germany anymore

„ENERGIEWENDE“



Why Cogeneration?



Energy generation in coal-operated power plants results in losses of 72% „Hot Air“

Environment?
Price for electricity?



Why Cogeneration?

Solution?

***Decentralised
generation of energy***



Combined Heat and Power

Functionality of a Combined Heat and Power Plant (CHP)

100 % Gas



41 % Electricity

46% Heat

Technical Advantages CHP:

- The heat of the combustion process can be used (more than 80% total efficiency)
- Decentral and highly flexible
- Reliable System (Security of Supply)



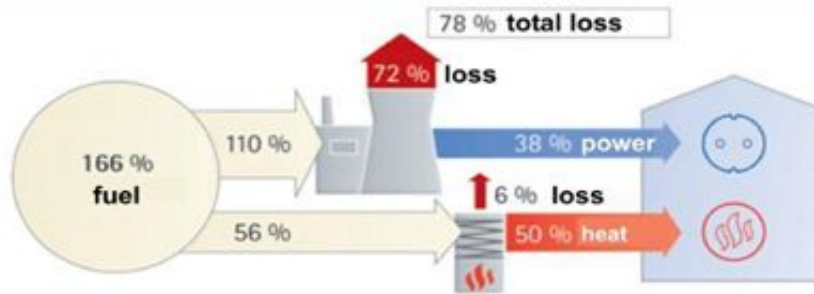
Why Cogeneration?

Comparison: Cogeneration vs. Separate Generation

COGENERATION (CHP)



SEPARATE GENERATION (power station + boiler)





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The 2G Group

The 2G Group: Key Facts

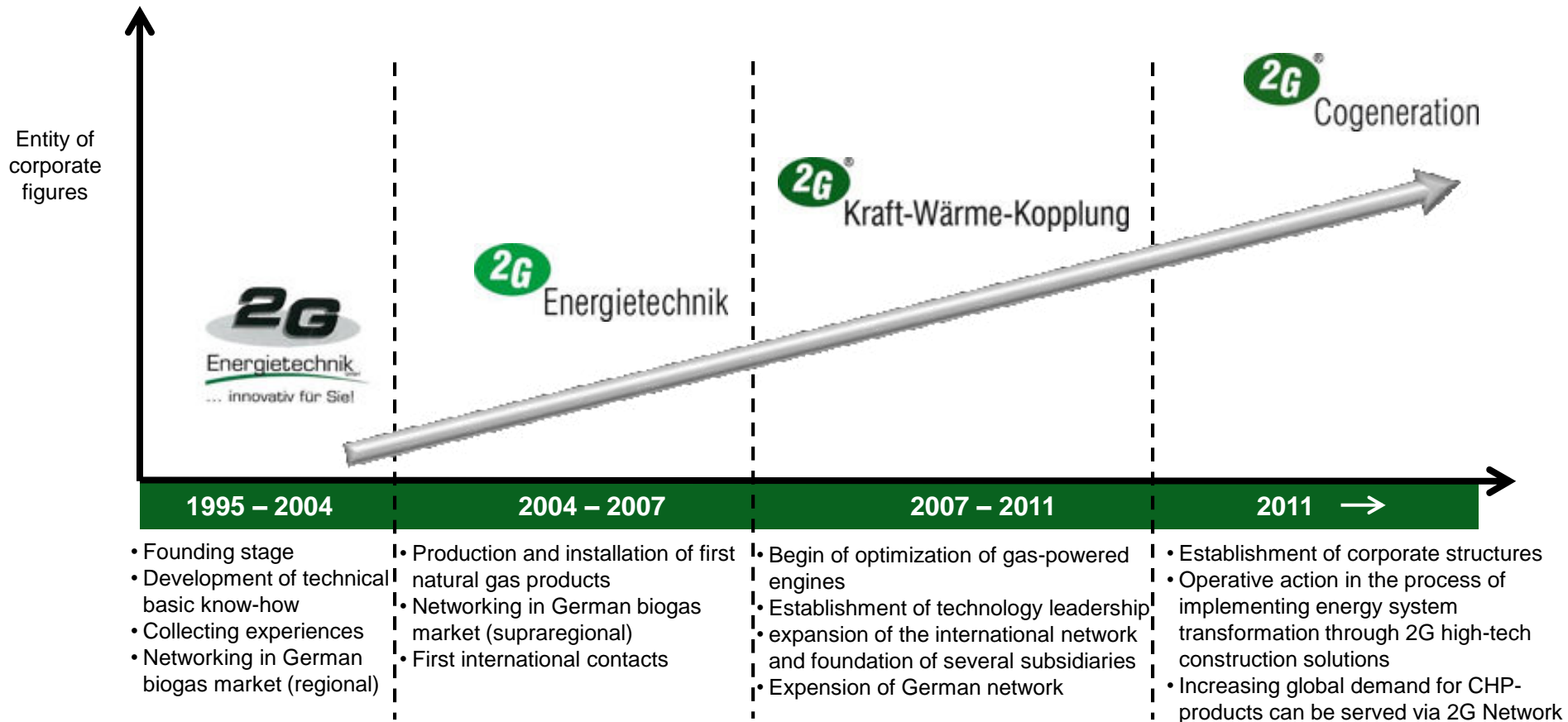
- Founded 1995
- Headquarters in Heek / North West of Germany
- Manufacturing and distribution of CHP plants for biogas and natural gas applications (20 – 2,000 kW electrical power)
- Strong focus on R&D
- Solution provider: development, project engineering, production, service
- Since 2007 listed at the German stock market
- 520 employees
- 4,000 CHP plants in more than 20 countries
- Turnover 2012: 146.5 Mio. EUR





The 2G Group

Strategic orientation - 2G in transition














The 2G Group

Overview



100%	90%	80%	90%	100%	100%	100%	100%	49%
 2G Energietechnik GmbH Foundation: 1995	 2G Home GmbH Foundation: 1999	 2G Drives GmbH Foundation: 2010	 2G Solutions of Cogeneration S.L. Foundation: 2008	 2G Italia Srl Foundation: 2011	 2G Energy Ltd. Foundation: 2011	 2G Polska Sp. z o.o. Foundation: 2011	 2G Manufacturing Inc. Foundation: 2012	 2G Cenergy Power Systems Technologies Inc. Foundation: 2009



The 2G Group

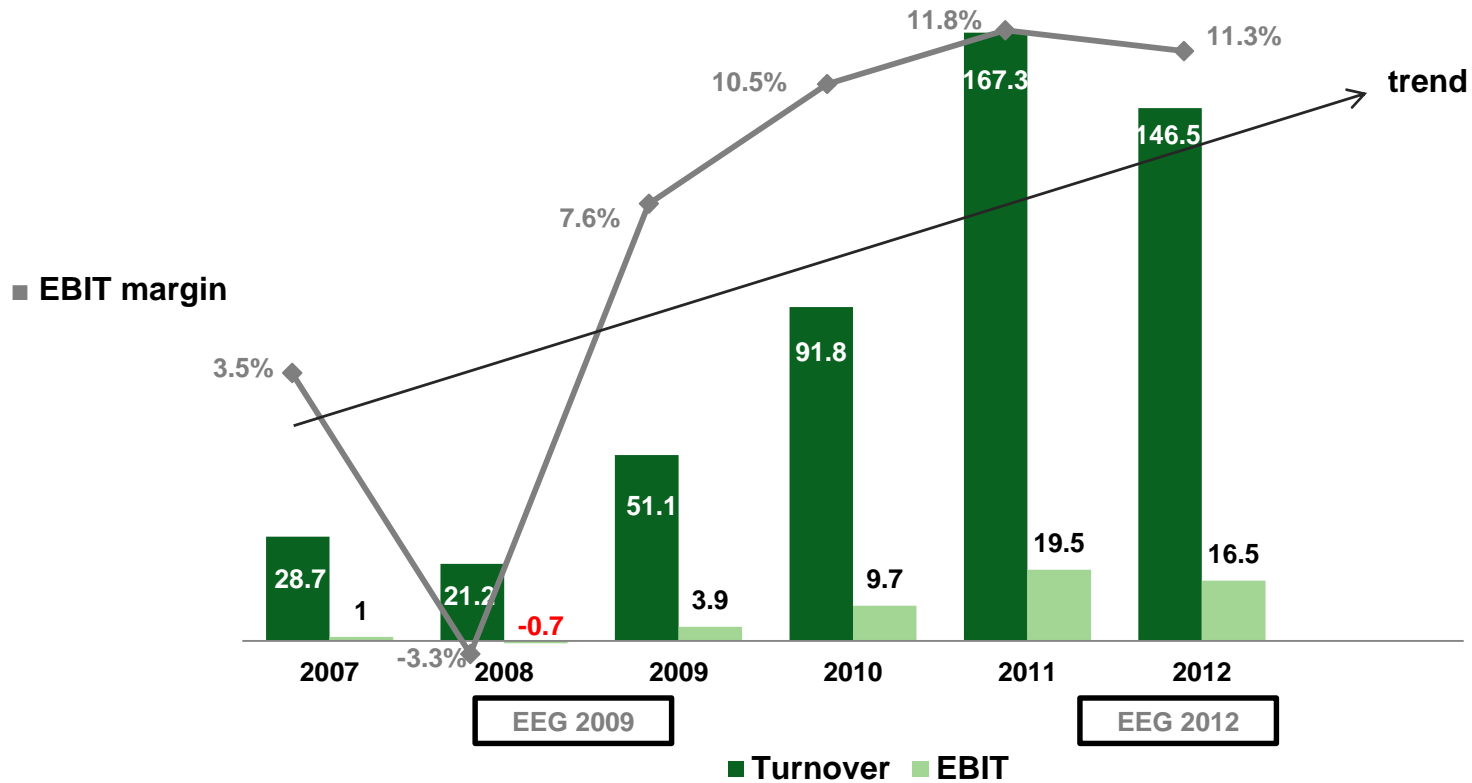
Target Markets





The 2G Group

Development of sales and EBIT since 2007





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Product Overview

Portfolio

Product Group	Power Range	Type of fuel
G-Box [®]	20 to 50 kW	Natural Gas
filiUS [®]	50 to 150 kW	Biogas
2G-KWK-Series	100 to 400 kW	Natural Gas / Biogas
agenitor [®]	200 to 450 kW	Natural Gas / Biogas
avus [®]	500 to 2.000 kW	Natural Gas / Biogas





Product Overview

G-Box (Natural Gas: 20 - 50 kW)





Product Overview

G-Box (Natural Gas: 20 - 50 kW)





Product Overview

filius (Biogas: 50 kW – 150 kW)





Product Overview

agenitor (Biogas / Natural Gas: 220 kW – 450 kW)





Product Overview

avus (Biogas / Natural Gas: 500 kW – 4.000 kW)





Product Overview

avus (Biogas / Natural Gas: 500 kW – 4.000 kW)





Product Overview

Possibilities of installation



Container



Concrete Sound Enclosure



Machinery House



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Careers at 2G

Young and innovative team

- Average age 32 years
- Outstanding possibilities for personal development
- Huge amount of trust towards new colleagues
- High responsibilities for job entrants





Product Overview

Apprenticeship at 2G

- „Dual System“ Opportunities
- Apprenticeship at the shop floor (mechanics and electricians) and in the office (office clerks)
- Around 25 apprentices.
Sharing know how with int partners

Link to universities

- Plenty of internships for students
- Majority of R&D personnel wrote a bachelor / master thesis on the topic „CHP“





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Outlook

Targets

- Establishing the 2G brand in national and international markets
- R&D activities remain a crucial part of 2G's business model
- Offering assessable solutions for demanding energy supply – decentralized, flexible and efficient CHPs
- Looking for strategic cooperation's for the international sales & services activities
- Focus on Europe and Americas
- 2020: approx. 15 % EBIT-margin & turnover of approx. 300 mio. €



Thank you for
your attention!

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