Germany’s CHP roadmap:
The CODE2 project for Cogeneration in Europe

Adi Golbach

Co-funded by the Intelligent Energy Europe Programme of the European Union
CODE2 (Cogeneration Observatory and Dissemination Europe)

Project description:
- CODE2 is a continuation of CODE1, which identified for the first time the cogeneration potential in the 27 EU Member States and established regional information networks.

Objective:
- CODE2 aims to develop a plan for action for the 27 (+1) EU Member States to realise the identified cogeneration potential.

Method:
- Creation of 27 (+1) individualised National Cogeneration Roadmaps and one European Cogeneration Roadmap
- Establishment of national CHP coalitions (involving industry, policy-makers and interest groups)
- Assessment of micro-CHP and bio-energy CHP potential
- Development of practical guides for target sectors (food, paper, hospitals and commercial premises) and the exchange of best practice examples
- Organisation of high-profile events in Brussels to inform EU policy-makers

More info: www.code-project.eu
Additional*:
- 1000 TWh heat
- 455 TWh power
- With 122 GWe

* without Croatia
The CODE2 team consists of the following partners:

1. **COGEN Europe**, the European association for the promotion of cogeneration (Belgium)
2. **HACHP**, the Hellenic Association for Cogeneration of Heat & Power (Greece)
3. **Jožef Stefan Institute** (Slovenia)
4. **FAST**, Federazione delle Associazioni Scientifiche e Techniche (Italy)
5. **COGEN Vlaanderen** (Belgium)
6. **Energy Matters** (Netherlands)
7. **Berlin Energy Agency** (Germany)
8. **KWK kommt** (Germany)

For more information visit [www.code-project.eu](http://www.code-project.eu) or send an email to [info@code-project.eu](mailto:info@code-project.eu)
Regional CODE2 leaders

Project Coordinator: Fiona Riddoch, COGEN Europe, fiona.riddoch@cogeneurope.eu

- **Eastern Europe region:** Stane Merše, Jožef Stefan Institute (JSI), stane.merse@ijs.si
  Countries: Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia

- **Northern Europe region:** Adi Golbach, KWK kommt, adi.golbach@kwkkommt.de
  Countries: Austria, Denmark, Finland, Germany and Sweden

- **North Western region:** Joni Rossi, COGEN Vlaanderen, joni.rossi@cogenvlaanderen.be
  Countries: Belgium, Ireland, Luxembourg, Netherlands and United Kingdom

- **South-Eastern Europe region:** Costas Theofylaktos, Hellenic Association for the Cogeneration of Heat and Power (HACHP), hfa@heatflux.eu
  Countries: Bulgaria, Cyprus, Greece, Romania

- **South-Western Europe region:** Giorgio Tagliabue, Federation of the Scientific and Technical Association (FAST), giorgio.tagliabue@gmail.com
  Countries: France, Italy, Malta, Portugal, Spain
Development of the German Roadmap

- Up to May 2013 - 1st Draft Roadmap
  - with input from discussions in Working groups, conferences, internet forums
- June/July - Extensive Interviews with 17 Experts from all relevant use areas in
- Up to December 2014 – Presentations on 3 conferences
EU CHP electrical and heat capacity in 2011

- CHP Electrical capacity
- CHP Heat capacity

Countries and their respective capacities are represented on the chart.
Development of CHP power production in Germany

Source: Federal Environment Agency (www.uba.de)
Fuel Input for CHP Power Production

![Bar chart showing fuel input for CHP power production from 2003 to 2011. The chart indicates the following fuel inputs (in TWh):

- **2003:** Kohle 1.7, Öl 1.8, Gas 2.5, Biomasse 3.2
- **2004:** Kohle 2.6, Öl 2.4, Gas 4.3, Biomasse 6.4
- **2005:** Kohle 2.2, Öl 3.9, Gas 8.1, Biomasse 10.5
- **2006:** Kohle 2.0, Öl 2.8, Gas 12.2, Biomasse 20.8
- **2007:** Kohle 2.3, Öl 2.6, Gas 13.3, Biomasse 19.3

The chart is sourced from Öko-Institut on the basis of the Federal Statistical Office, BNetzA and ÖI-BHKW-Datenbank.]
The Roadmap

• Barriers
• Strategic consequences
• Other challenges
• The Way: Proposed Measures
• The roadmap path in numbers
• implementation
The action field

Barriers & Weak Points

- Complexity
  - Deficits in Information
  - Knowhow
    (all use areas)

Strategy

Other Challenges to be considered
Awareness and Knowhow on CHP

Results of the assessment in 17 experts interviews in June/July 2013

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poor; 2. low; 3. early Interest; 4. Interest; 5. active

68% of the answers situated the indicated area.
The action field

**Barriers & Weak Points**

- **Complexity** ➔ **Deficits in Information - Knowledge** (all use areas)
- **Economy & Financing** (DH, Industry, μCHP)
- **Inhibitory environment of regulations** (DH, on-site)
- CHP support system to complicated for private households (on-site)

**Strategy**

- Boost Information & Knowhow
- Set economic incentives & investment security
- Strengthen CHP by energy services
- Adapt regulatory environment and support system

**Other Challenges to be considered**

- EED
- Security of supply interplay with wind and sun
- Switch to RES for CHP transition to biofuels and wind gas
- 80% CO2-reduction up to 2050
The Road
proposed measures

- Long term information campaign
  - General Public
  - Industry
  - Communes
  - Improve Statistics

- Formation & Certification
  - Planning engineers
  - Advisers
  - Installers

- Adaption of CHP law and RES law
  - Additional payment for supply security
  - Temporal differentiation of the CHP bonus
  - Indexation of bonus heights (COGIX)
  - Simplification for μCHP support

- CO₂ thresholds for new heating systems
  - Depressingly, aligned with the 80%-reduction target up to 2050
  - Nation wide unified values
  - Carrying out by the municipalities

- Oblige municipalities to heat and cold supply concepts
  - Simplified standard planning software
  - Reduce implementation deficits

- Support CHP by Energy Services
  - Equality Energy service with self-generation
  - State guarantee; Collateralisation fund

- Adapt regulation environment to CHP, inter alia:
  - Tenancy Law
  - Condominium Law
  - Tax law
  - Network Access / network charges
CHP Roadmap path of power production compared to business as usual
CHP Roadmap path of heat production compared to business as usual
### Effects and key numbers

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
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<tr>
<td>Total CO2 reduction, Mio. t/a</td>
<td>-119</td>
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<tr>
<td>Share in total energy-related CO2 emissions</td>
<td>16%</td>
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<tr>
<td>Share in energy sector CO2 emissions</td>
<td>33%</td>
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<tr>
<td>Primary Energy Saving, TWh/a</td>
<td>-220</td>
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<tr>
<td>Decrease of total PE, %</td>
<td>-6%</td>
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<tr>
<td>Bio Energy Share in CHP Fuels 2030</td>
<td>33%</td>
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</table>
Implementation
The „Vehicle“

CHP Rount Table

- accompanies
- discusses
- proposes

Policy
Accociations
Science

HARMONY
Experts workshop in September 2013

- 30 personally invited participants from policy, industry and academics
- The Draft Roadmap has been confirmed.
- Several participating institutions and experts have declared support and willingness to participate in the proposed CHP roundtable.
- A significant involvement of politics in the working group is considered important.
- First positive feedback from policy; dates for presentations in the Government Parliamentary fractions have been made.
Thank you for your kind attention

more Information and connection:

www.kwkkommt.de (German)

www.code2-project.eu (English)

Linkedin: Adi Golbach (English)

Xing-Gruppe Kraft-Wärme-Kopplung
(German)

Twitter: kwk_kommt (German)