



# **COGEN** **europe**

ATEE, 23 Janvier 2014  
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Changing the way  
Europe provides heat and electricity  
For a sustainable future

# COGEN Europe

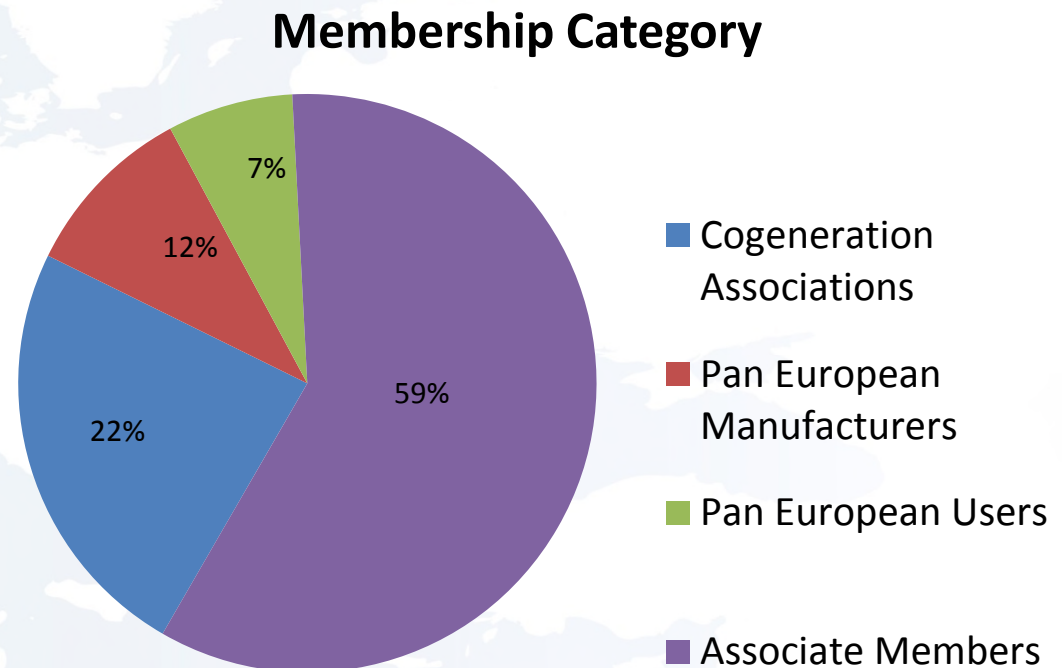
- ❑ Quelques mots sur COGEN Europe
- ❑ Les chiffres du marché européen de la cogénération
- ❑ Le marché de la micro-cogé pour une sélection de pays
- ❑ Législations communautaires impactant la micro-cogé
- ❑ conclusions

# COGEN Europe

COGEN Europe, the European Association for the Promotion of Cogeneration

70 members in 24 countries:

15 National COGEN Associations  
+ Pan European Manufacturers  
+ Pan European Users  
+ numerous associate Members



# COGEN Europe membership





# Who we are

## Structure

- European trade association for the promotion of cogeneration
- COGEN Europe was established in 1993 and is headquartered in Brussels
- The secretariat employs 6 people

## Our approach is

- On behalf of our members we promote the wider use of cogeneration as part of Europe's sustainable energy strategy
- To this purpose we participate in the EU legislative process and meet key decision makers at the European Commission and European Parliament
- We work closely with other stakeholders, such as industry associations (EREC, CEFIC, CEPI, FoodDrink Europe), NGOs (CAN, WWF, FoE)? other energy efficiency associations (CECED, EuroACE...), the International Energy Agency (IEA)...
- Further increase our visibility through good working relations with Brussels-based media/press (EurActiv, European Voice...)

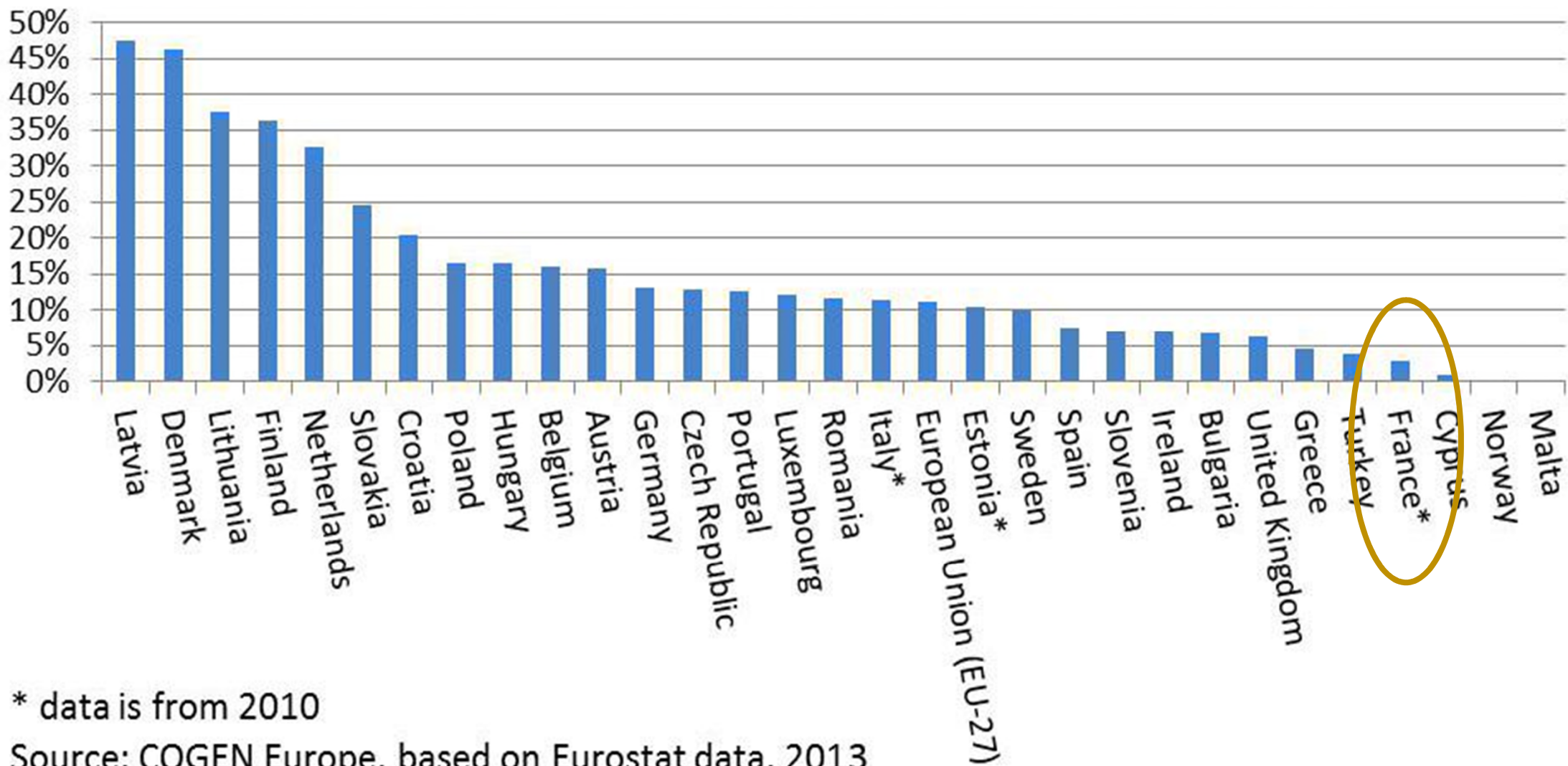
# Cogeneration in Europe

- Cogeneration is the most efficient way of using a primary fuel to produce electricity, it has a small environmental footprint, and is fuel independent.
- 11% of Europe's electricity is provided by cogeneration plants today, with an equivalent quantity of heat supplied for European buildings and industry.
- The EU cogeneration fleet can power over 3.9 million EU households and heat over 1.8 million EU households.
- Over 100,000 Europeans are employed in the cogeneration sector from the supply side to operation of the equipment.
- Cogeneration has the commercial potential to provide at least 30% of Europe's electricity and an equivalent quantity of heat.
- Cogeneration provides energy efficiency today in applications ranging from the 1,200 MW refinery at Immingham (UK) to the 1 kW domestic micro CHP units.
- Cogeneration encourages distributed generation and challenges current models of electricity supply. It is an established application in chemicals industry, paper industry, oil refining, district heating, hospitals, universities and agriculture.

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# Share of CHP in total electricity generation

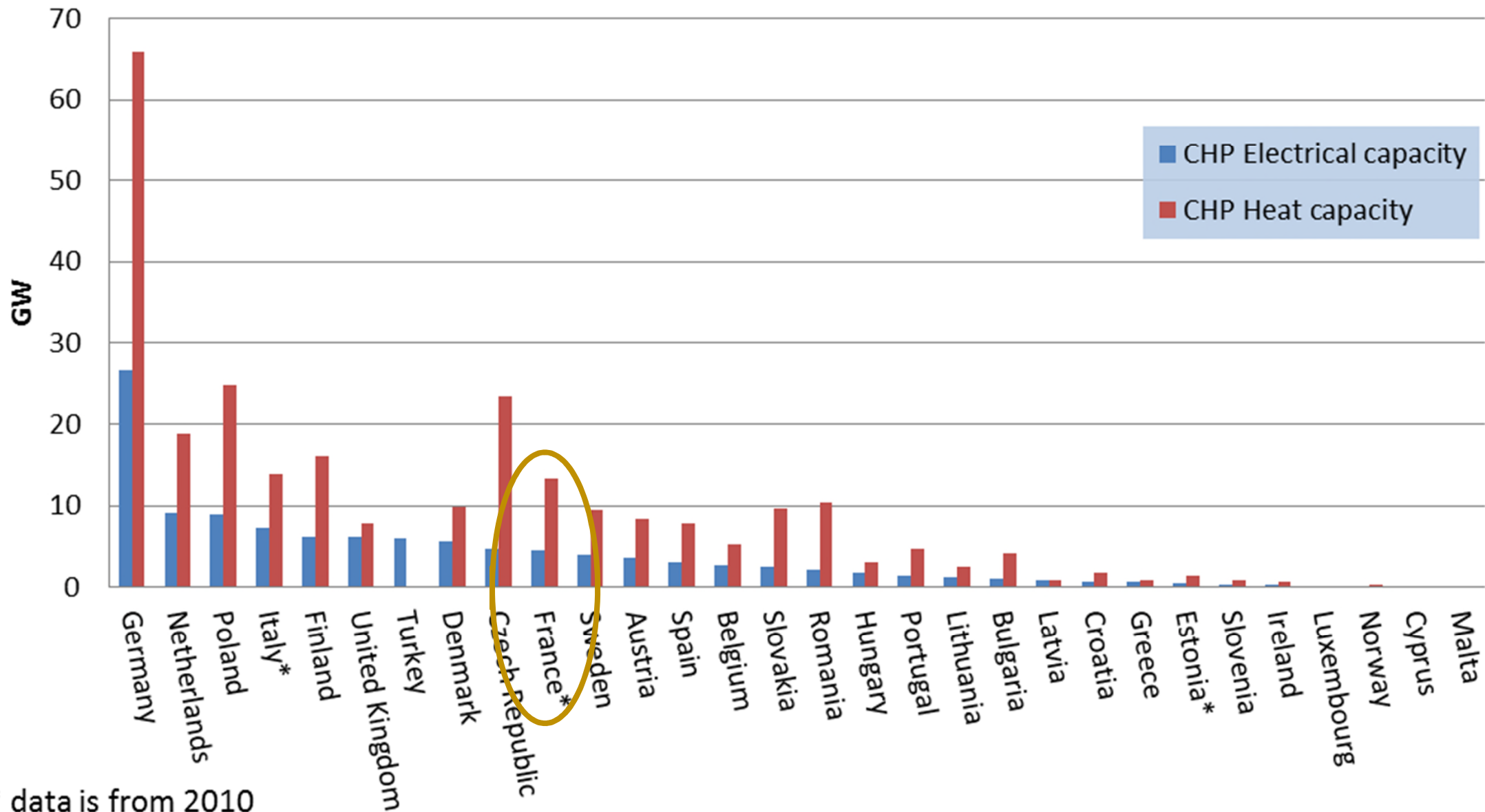


\* data is from 2010

Source: COGEN Europe, based on Eurostat data, 2013



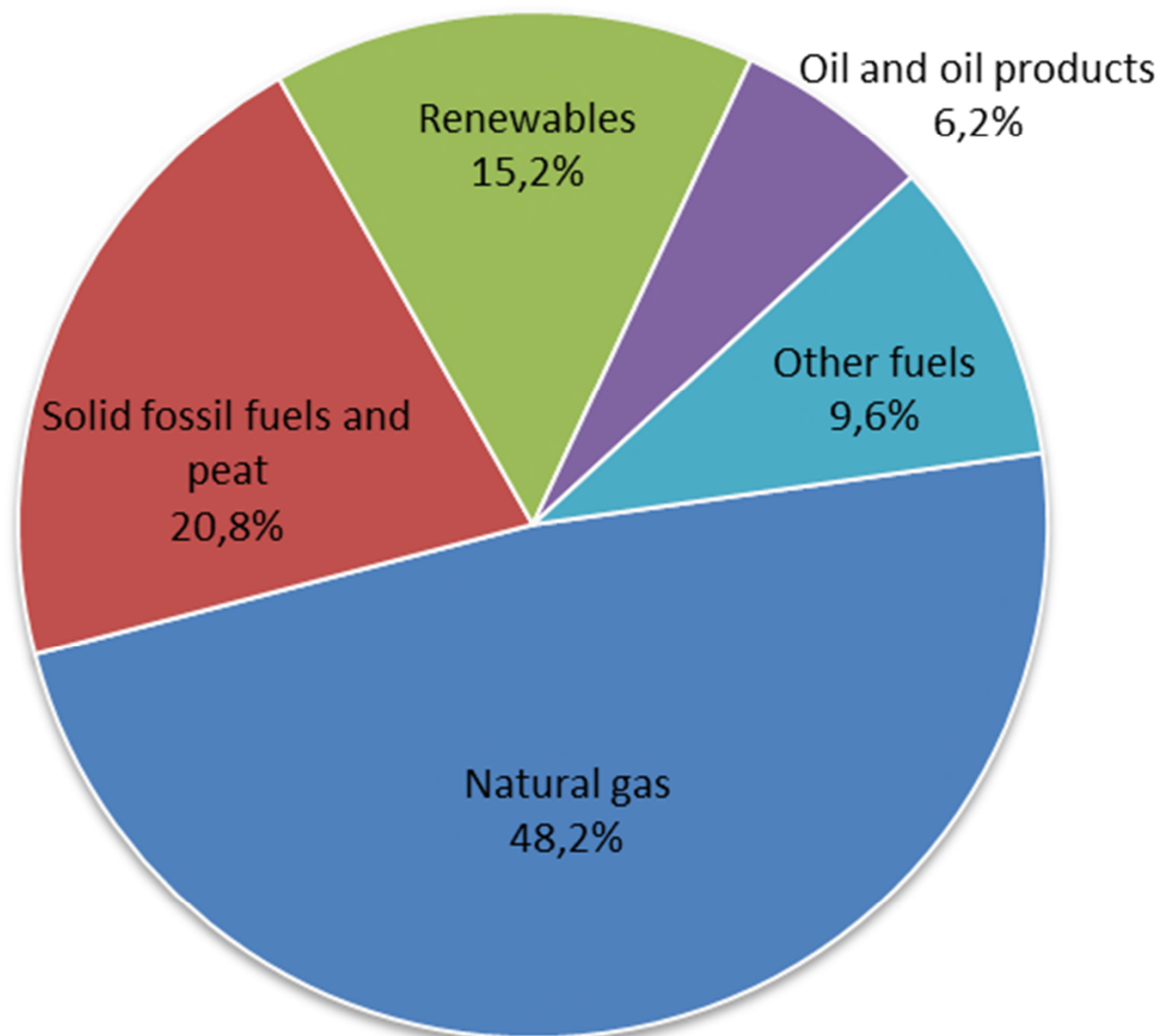
# CHP electrical and heat capacity in 2011



\* data is from 2010

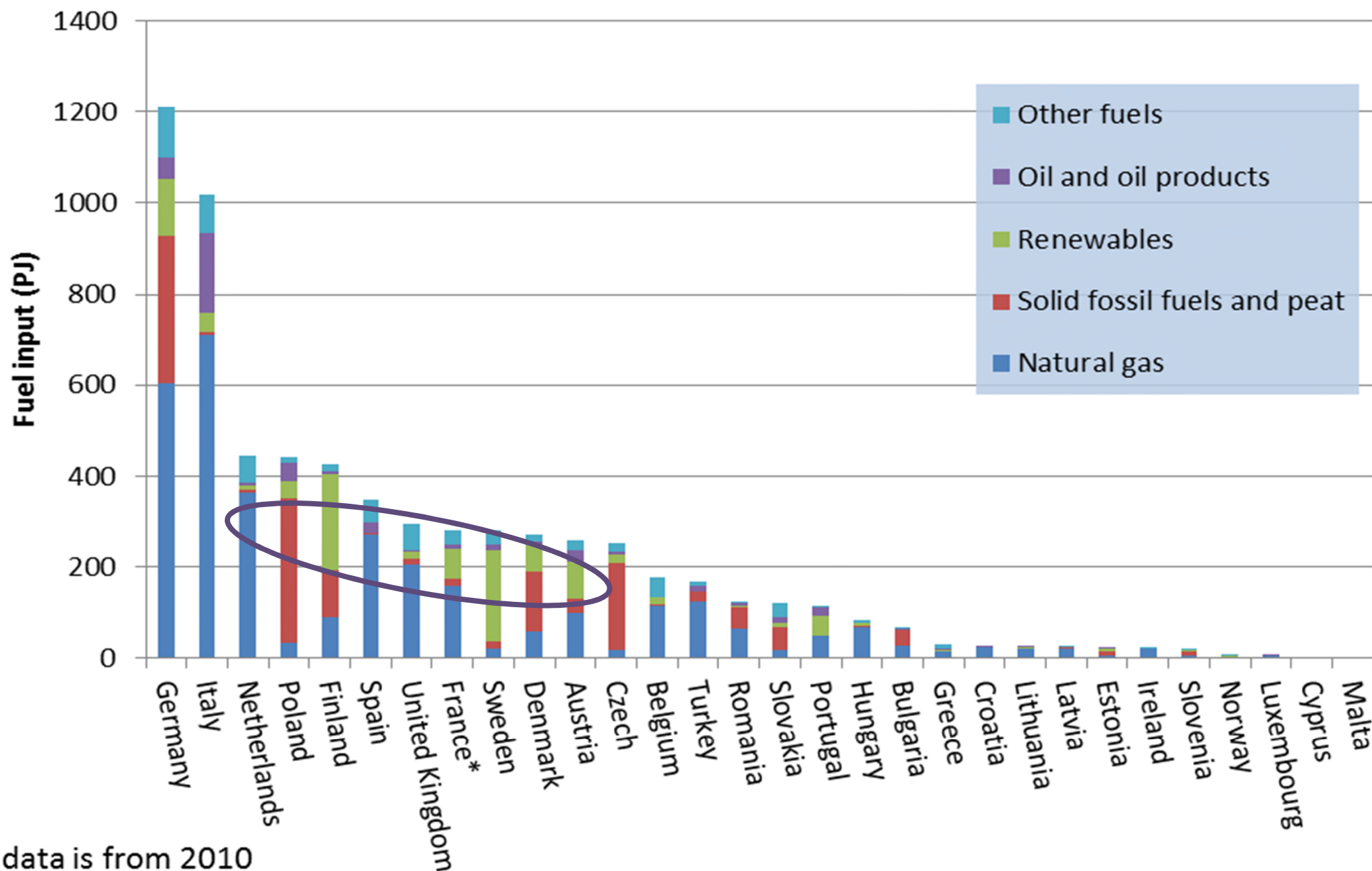
Source: COGEN Europe, based on Eurostat data, 2013

# CHP fuel mix for EU-27 in 2011



Source: COGEN Europe, based on Eurostat data, 2013

# CHP fuel mix by countries in 2011



\* data is from 2010

Source: COGEN Europe, based on Eurostat data, 2013

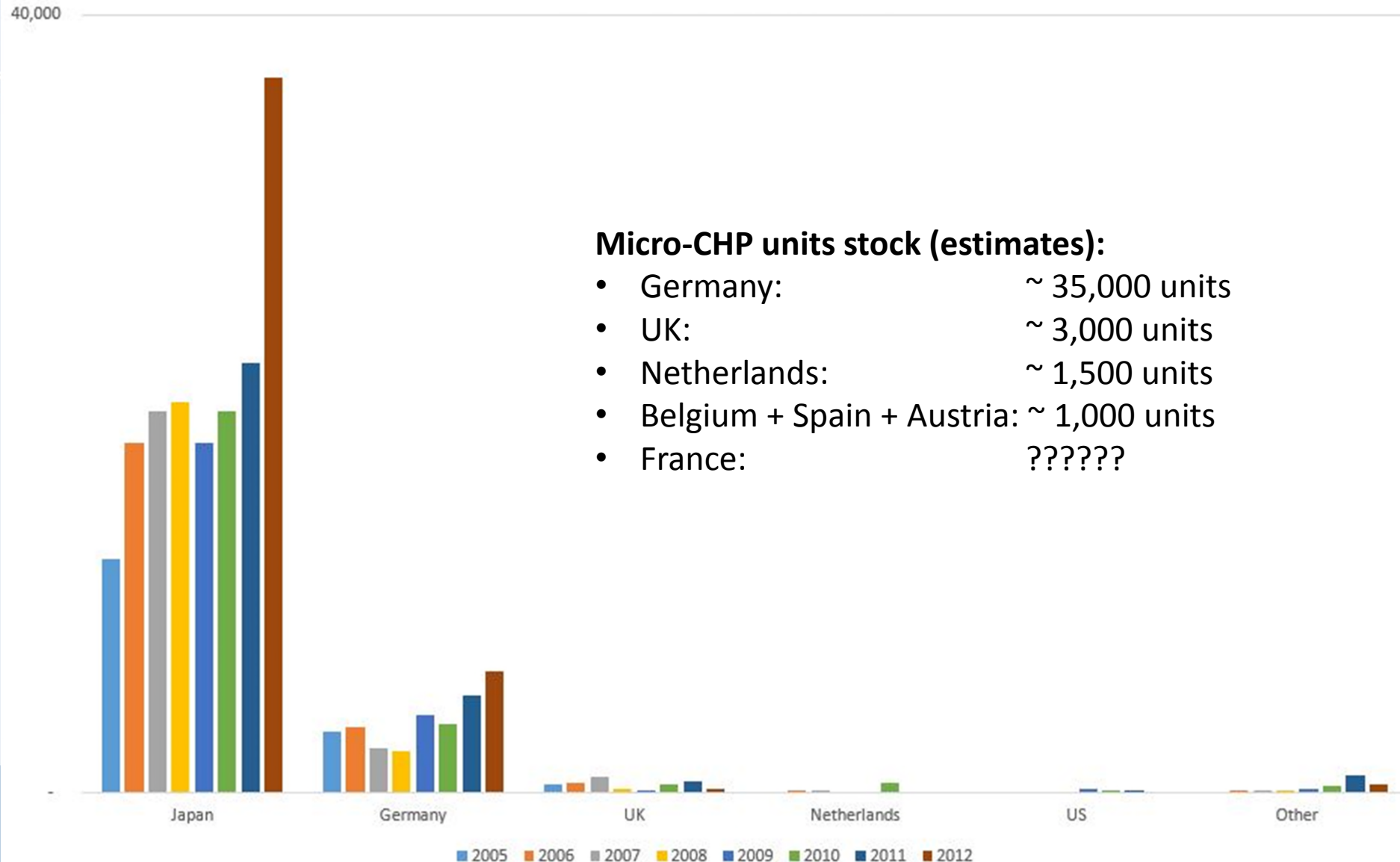
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# Micro-CHP markets & policies across EU

Micro-CHP sales by county



## Micro-CHP units stock (estimates):

- Germany: ~ 35,000 units
- UK: ~ 3,000 units
- Netherlands: ~ 1,500 units
- Belgium + Spain + Austria: ~ 1,000 units
- France: ??????

# Germany

German CHP law (2012) covers from micro to large scale CHPs

Target: 25% CHP share in electricity production by 2020

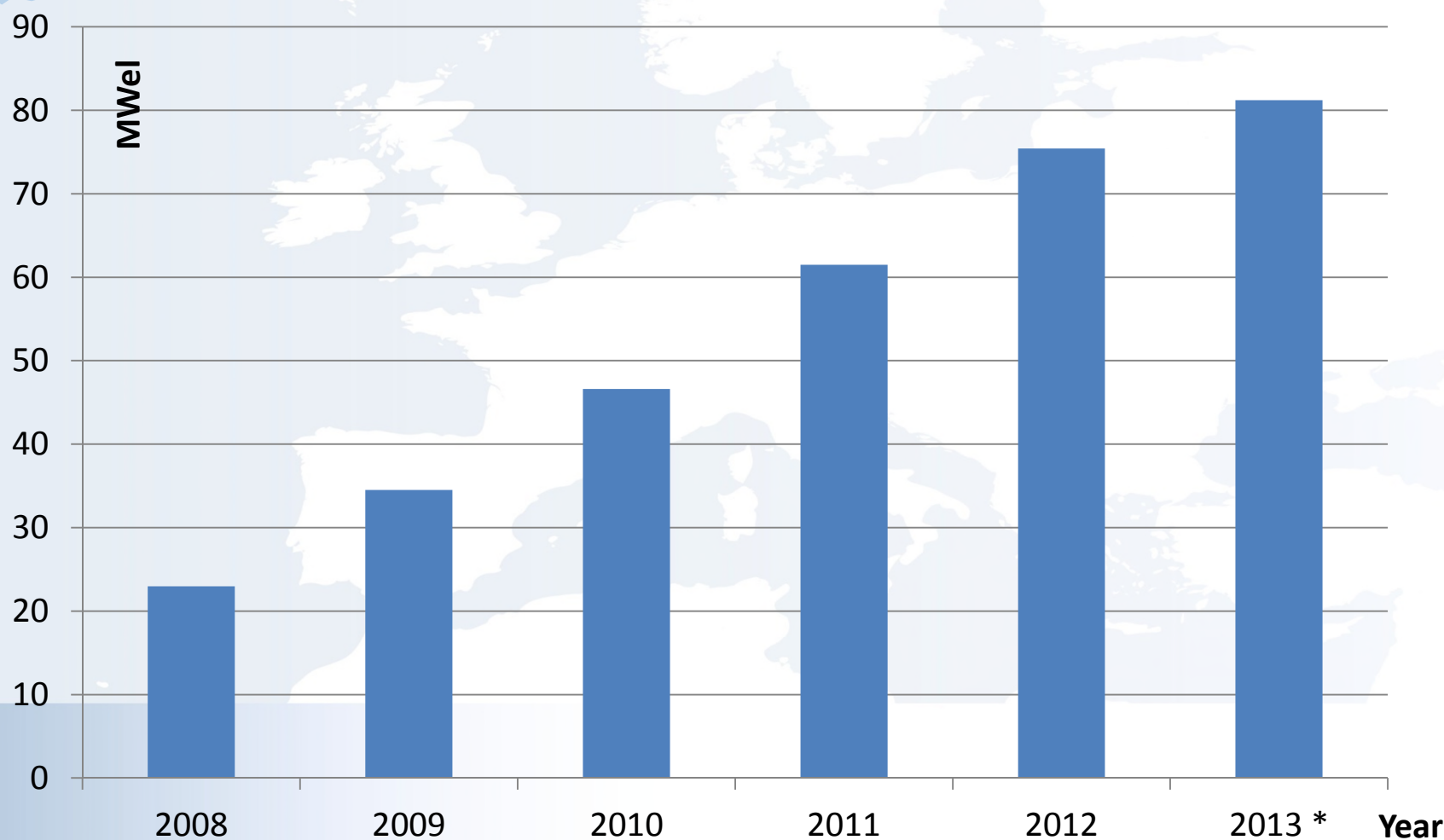
**Main instrument= Feed-in-premium of 5.41 ct/kWh for 10 years/30000 foh**  
on top of agreed market price (Guaranteed market price equivalent to the average EEX base load electricity price in the previous quarter)  
+ 0.1 to 3 ct/kWh (Avoided network charges for exported electricity)

**Micro-CHP incentive programme** - investment bonus ranging between 1,425 – 3,325 euros for installation with capacity from 1 up to 20 kWel

Callux Pilot Project - demonstration project for fuel cell micro-CHP

# Germany

Newly installed electrical capacity of micro-CHP per year in Germany (2008-2013)



# Germany

## Beyond the installation numbers...

- Germany is currently EU's leading micro-CHP market with annual sales ranging between 4,000-5,000 units
- Domestic micro-CHP appliances (below 1-2 kW elec) were representing a fraction of annual sales until 2010 (about 250 units sold in the year 2010) but latest intelligence suggests figures over 1,000.
- First commercial model of a domestic fuel-cell appliance to be launched this year (Viessmann for April 2014? → thank you Panasonic of Japan...)
- For the whole micro-chp market segment (below 50 kW elec), the predominant technology, accounting for approx. 60% of sales, is ICE. However, Stirling based micro-CHPs have a sizeable market share and fuel cell micro-CHP shows good prospects



# United Kingdom

- Feed-in-tariff of 12.89 pence/kWh for micro-CHP below 2 kWe during 10 year, with an export rate of 4.64p/kWh (could be around 4,500 € over 10 years)
- Part of the Microgeneration Certification Scheme
- Eligible under the UK Green Deal - financing mechanism allowing energy-efficiency improvements to be paid through savings on energy bills
- Key points at national level:
  - Huge population of gas boiler to be upgraded-replaced-displaced....
  - low-carbon heat pathway
  - Micro-CHP is the only fossil fuel technology supported through the FiT scheme, confirming the government is commitment to promote the deployment of this technology.

# Belgium

- Federal government incentives (tax income rebate)
- Flemish Region
  - Green certificates & quota obligation based on primary energy savings and profitability technology bandings (an IRR of 12% is guaranteed)
  - Green certificate worth around 3.5 € cent/kWh
- Brussels and Walloon Regions
  - Green certificates & quota obligations based on CO2 savings
  - Investment grant of up to 20% and 30% of investment in Wallonia and in Brussels respectively
  - Green certificate worth around 7 € cent/kWh in Brussels and 1 in Wallonia (10 for biomass fired CHPs)

# Additional country specific information

- Dynamic markets are emerging in Belgium, Austria, Slovenia, Czech Republic and Poland.
- The support mechanisms vary from country to country, via investment grants in Germany, Belgium, Austria, feed-in-tariffs (in the UK, Czech Republic), feed-in-premium (in Germany), green certificate schemes in Belgium and as part of demonstration projects (e.g. in Germany and the Netherlands)
- European manufacturers are still making progress in rolling-out the technology despite the difficult economic conditions and governments struggling to balance their budgets.

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# EU legislation impacting micro-CHP

- Energy Efficiency Directive (2012/27/EU)
- Energy Performance of Buildings Directive (2010/31/EU)
- Lot1 Eco product Design & Energy labelling (813/2013 & 811/2013)
- Network Codes (in progress)
- European Parliament Microgeneration Resolution
- To watch out at EU level!

# Energy Efficiency Directive (2012/27/EU)

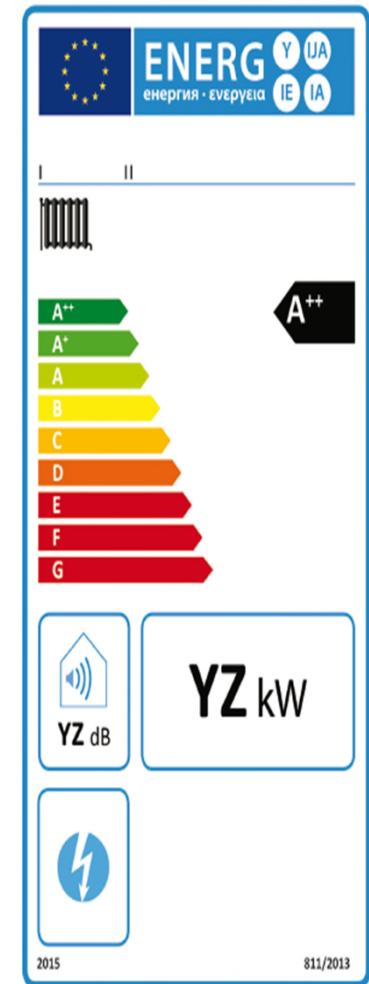
- Micro-CHP definition: a cogeneration unit with a maximum capacity below 50 kWe (Art. 2 (39))
- Member States are obliged to draft Comprehensive Assessments:
  - to identify heating and cooling demand to be met by high-efficiency CHP & DHC, including micro-CHP (Art. 14 (1) & Annex VII (d))
  - to include strategies, policies and measures up to 2020/2030 to meet the demand identified (Annex VIII (g))
- Recommendation for Member States:
  - to facilitate the grid connection to micro-cogeneration units
  - to simplify the installation procedure for micro-CHPs through an “install and inform” notification (Art. 15 (5))

# Energy Performance of Buildings (2010/31/EU)

- The EPBD creates a framework to systematically improve the performance of buildings in the EU
- The technical, environmental and economic feasibility analysis for a new built or renovation shall include high-efficiency alternative systems such as cogeneration/micro-CHP
- Already the case in a number of countries (via national standards, methodologies...)

# Energy labelling & ecodesign requirements

- Micro-CHPs are part of Lot1 ecodesign & energy labelling delegated regulations covering space heaters (813/2013 & 811/2013)
- Most micro-CHP will be assigned an A+ label, on a scale from G to A++
- Starting on 26 September 2015, Lot1 manufacturers will be required to label their products
- Voluntary labelling will be possible earlier than Sept. 2015



# Network Codes for generators (in progress)

- Introduces harmonised technical requirements on all generators > 800 W across the EU → installed 3 years after the entry into force of NC RfG (est. in Q4 2017/Q1 2018)
- Micro-CHP belongs to the Type A group of generators required to meet frequency stability requirements like:
  - staying connected and operational on the network between 47.5-51.5 Hz (various periods of time depending on synchronous zone)
  - reducing active power in overfrequency situations
  - Remote control of the unit capability
- Possibility for certain technologies/manufacturers to derogate to the requirements
- However costly the requirements are, they should enable the development of “smart” grids



# European Parliament Microgeneration Resolution (adopted on 12<sup>th</sup> September 2013)

- Calls on the Commission to focus more on realising the potential of small scale technologies, including micro-CHP
- Micro-CHP is mentioned as an important small scale technology that can help save energy in buildings, contributing together with renewables to zero- or positive- energy buildings
- A stronger role for DSOs
- More focus on product standards for small scale generators, rather than one-size-fits-all requirements

# To watch out at EU level!

- Horizon 2020 (replacement of FP7):
  - Work ongoing on RDD&I priorities for 2016-2020. energy efficiency + smart grids very well featured
  - Calls for 2014-2015 are already opened
- DG Energy to put more effort on DSM, customers engagement, building of aggregators via à vis the electricity grid → work on the decentralisation of the energy system
- Review of the EED (Energy Efficiency Directive) for mid year → an opportunity to re-open certain provisions of the legislation and clarify what is behind
- Proposal for 2030 Climate and Energy package -→ just launched yesterday! Confirmation that the European Union must continue to be a front runner in the fight against climate change, hence the implicit call for Energy Efficiency policies
- COGEN Europe to also introduce the “heat” parameter in the EU Debate

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# Save the dates!

## Energy labelling: Creating new markets for small-scale heat and power

*In the framework of the Conference on Product Policy “International Trends in Ecodesign & Energy labelling” hosted by the European Commission, COGEN Europe and EHI invite you to the official side event:*

**Wednesday 19 February 2014, 14:30h-16:00h**

Register [here](#)

With the recent publication of Delegated Regulation No. 811/2013, defining an EU-wide energy labelling scheme for space heaters, the large untapped potential for energy savings in buildings now appears to be within closer reach in Europe.

The session will explore the industry’s expectations regarding the energy labelling framework for space heaters in terms of rewarding innovation and motivating consumers to consider more efficient products.



# Annual Conference & Gala Dinner 2014

Save the Date: 3-4 April 2014, Brussels

Conference: Renaissance Hotel, Rue du Parnasse

Dinner: Bibliothèque Solvay

[Join us](#) to discuss cogeneration's role in supporting Europe's growth, competitiveness and supply security

*Keynote speaker: Dominique Ristori, Director-General, DG Energy, European Commission*





# Thank you for your attention

More information on <http://www.cogeneurope.eu/>