2017 COGEN Europe National Snapshot Survey

Executive Summary
Overview of CHP in Europe
CHP in Europe - Overview


Data source: European Commission, Eurostat, 2017
CHP Generated Electricity and Share in Total Electricity Production by Country in 2015

Data source: European Commission, Eurostat, 2017
CHP Fuel Mix in the EU (2007-2015)

CHP fuel mix strongly influenced by fuel price dynamics & support schemes.
RES is increasing its share in the CHP fuel mix, reaching 20% in 2015.

Data source: European Commission, Eurostat, 2017
Expert contributions from **20** CHP national experts...

**2017 Cogeneration National Snapshot Survey**

...representing **95%** of installed capacity in EU28 & Turkey

...capturing the **European CHP industry sentiment**

...expanding outside of Europe, with **guest contribution from Japan**
CHP Market Developments in Europe (2012-2016)

Generally stable installed capacity but...

...more pronounced standstill or decline in generated electricity and share in total electricity production.
Main Factors Affecting CHP Markets at National Level

- Stable support schemes in some markets (especially for RES)
- Positive on-site spark spreads in key markets (positive impact on small scale CHP)
- Depressed wholesale spark spreads/low wholesale electricity prices
- Unpredictable regulatory framework
Policy Environment

Member States assessments of CHP/DHC potentials “nice-to-have”

Not clear

Hardly any follow up in terms of additional policy to realise the identified potential

No change

Positive

70%

60%

50%

40%

30%

20%

10%

0%

Negative

National Comprehensive Assessments of the Potential for CHP/DHC (EED, Art 14.1)

Developing policy to promote CHP/DHC based on identified potential (EED, Art 14.2)

Eligibility of CHP under Energy Savings Obligation (EED, Art 7)

Electricity system operators facilitating grid access for CHP (EED, Art 15)

Percentages represent the share of CHP in EU28 impacted by the implementation of specific Energy Efficiency Directive (EED) provisions.
Available Support for CHP
in EU28 & Turkey in 2016

- Feed-in Tariff
- Feed-in Premium
- Quota Obligation & Certificates scheme
- Investment aid/Capital grant
- Tax incentives
- Other
- No

Share of CHP market (Left Axis)

# of countries (Right Axis)
CHP Markets Outlook
In nearly 60% of the CHP markets in Europe, experts expect steady and moderate growth in the next 5 years.
CHP in Europe Outlook
Prerequisites for Growth

Better prospects for the CHP sector are contingent on:

✓ An ambitious implementation of the EED
✓ A favourable and stable policy environment taking an integrated view on the energy system & recognising the flexibility of CHP plants
✓ (EU) state aid policy adapted to potential and needs of CHP sector
✓ Applying fair/real-use grid tariffs charged on electricity self-produced & - consumed
✓ Improvement of energy market conditions
✓ Better awareness of CHP technologies
✓ Improved investment/financing opportunities
Getting the Clean Energy Package right for Cogeneration
Energy Efficiency Directive – Key asks

Apply energy efficiency across whole energy value chain
→ Account for both primary AND final energy

Set accurate EU PEF (Annex IV)
→ Proper methodology & value – current efficiency & 2.3 or higher
→ For EED only
→ For Ecodesign & Labelling of heaters account for seasonality and electrification impact on increasing carbon intensity of heating sector

Strengthen Energy Savings Obligation (article 7)
→ Ensure cogeneration is the preferred alternative to final energy saving up to 25%, as part MS flexibility to deliver Art 7 obligation
Renewable Energy Directive – Key asks

Support Biomass use in high efficiency cogeneration for installations larger than 20 MWth (thermal input) and limit alternative support where cogeneration is not feasible (Article 26.8)

Consider high efficiency cogeneration to increase renewable heat share in energy consumption
  → Ensuring cost-effective, reliable and efficient heat supply to different types of energy consumers (Article 23)

Reward efficient and low carbon flexibility solutions that support the integration of electricity from intermittent renewable
Cogeneration should be accounted in Member States Climate & Energy Plans (Art 19 & Art 4)

Member States should report on supply side efficiency as part of Annex II

References to limiting curtailment of cogeneration should be maintained as part Annex I
Electricity Market Design – Key asks

1. Maintain priority of dispatch for existing cogeneration projects & provide adequate definition for “significant modifications”, re-assuring market operators that the business case for their investment will not be lost (Electricity Regulation, Articles 11 and 12).

2. Maintain guaranteed access to the grid for high efficiency cogeneration, so limit curtailment as last resort solution especially for self-consumed electricity (ib.).

3. Include cogeneration in local economy as part of adequacy assessments (Electricity Regulation, Article 19).

4. Ensure transparent, cost-reflective and non-discriminatory network tariff structures based on the real use of the grid (Electricity Directive, Article 15.2).
Cogeneration outside Europe - Japan
Sneak Peak on Japan!

- CHP seen as key for security of supply
- Rapid growth in residential market
- Market entry of highly efficient CHP models
- CHP supported through tax incentives and subsidies (e.g. fuel cell micro-CHP) as part of energy & climate strategy
- New Feed-In Tariff for RES CHP
- Present growth expected to continue in the coming 5 years
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