POWER & HEAT BOOST

COGEN EUROPE

Interactive Webinar - 19 May 2020

Smart Integration of Local Energy Systems
A Vision of Smart Integration of Local Energy Systems

Kamila Waciega, Veolia

Success Stories

Kiel Project: Integrating flexible power and efficient district heating
Klaus Payrhuber, INNIO Jenbacher Gas Engines

Nice Smart Valley: Integrated distributed energy for Cote d'Azur
Régis Contreau & Philippe Garrec, Gas Réseau Distribution France

Q&A

Key principles for Smart Systems Integration at Local Level
Cross-sectoral voice of the cogeneration industry in Europe

Work with EU Institutions and stakeholders to shape better policies by:

- **Building a Robust Evidence Base**
  Demonstrating the benefits of cogeneration

- **Using the Expertise of Our Membership**

- **Establishing Strong Coalitions and Partnerships**
National Associations

Corporate Members
Vision of Smart Integration of Local Energy Systems

Kamila Waciega, Veolia/Chair of COGEN Europe’s Energy Policy WG
From centralised towards more distributed
EUROPEAN COMMISSION: MAIN PILLARS OF SECTOR INTEGRATION

- Energy efficiency first
- Electrification of demand
- Renewable & decarbonised gases
- Foster links across the energy system & exploit synergies
Smart energy systems integration combines a wide range of energy solutions for an ambitious decarbonisation pathway at lowest cost and highest security of supply for all consumers and communities. This involves local level energy systems planning, investments, optimisation of operation and services, in a coordinated manner across all energy carriers – gas, electricity, heat.
Cogeneration transforms 90% of the energy into useful heat & power for factories, offices, public buildings and homes.
Do more for less

- Up to 40% energy saved
- Cut carbon emissions
- Reduce energy bills
INTEGRATING ENERGY SYSTEMS EFFICIENTLY & FLEXIBLY

Core Integration Solution

• Liking **electricity**, **heat** and **gas**

• Improving **system efficiency**

• **Minimising waste** of valuable resources (e.g. biomethane, H2, biomass)

• **Boosting flexibility** by supplying dispatchable power

• **Lowering energy systems cost**

• Bringing value at **local level**, near consumers
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System level efficiency and flexibility across electricity, heat & gas

- Fuel cell micro-CHP in homes
- CHP with District Heating
- CHP in public buildings
- Industrial CHP
**Today, cogeneration delivers**

- Up to **40%** energy saved compared to the separate production of heat and power
- **250M tons** CO₂ avoided/y
- **11%** of EU’s electricity
- **16.5%** of EU’s heat

**By 2030, cogeneration could deliver**

- **20%** of EU’s electricity highly efficiently from increasingly renewable sources

**Additional and upgraded cogeneration could deliver**

- **350 Mt** CO₂ avoided/y
- **>1/3** of the additional efforts towards an increased 50-55% EU GHG reduction target
- **18%** of the EU Energy Efficiency target
COGEN EUROPE RECOMMENDATIONS

• Apply across all energy networks & sources
• Foster CHP as an efficient & system integration solution

Energy efficiency first

Electrification of demand

• Introduce robust criteria to promote only renewable and efficient electrification
• Complement electrification with CHP

Renewable & decarbonised gases

Foster links across the energy system & exploit synergies

• Ensure strategic long-term planning of integrated infrastructure at local level
• Remove barriers to integration solutions like CHP

• Promote all applications, including heat in buildings
• Prioritise the use of CHP to maximise efficiency
Support smart local integration solutions like CHP

Propose fit-for-purpose approaches for allocating energy savings, emissions and fuels to electricity and heat from CHP.

When comparing CHP with the separate production of heat and electricity, take into account the national and, where possible, local energy mix that CHP displaces.

Incentivise the flexible operation of CHP, where the application allows it.

Properly account for avoided electricity grids CAPEX & OPEX, thanks to CHP.
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Imagine what cogeneration can do for the next generation.