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

COGEN EUROPE

COGEN EUROPE MISSION

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**

MEMBERS

National Associations

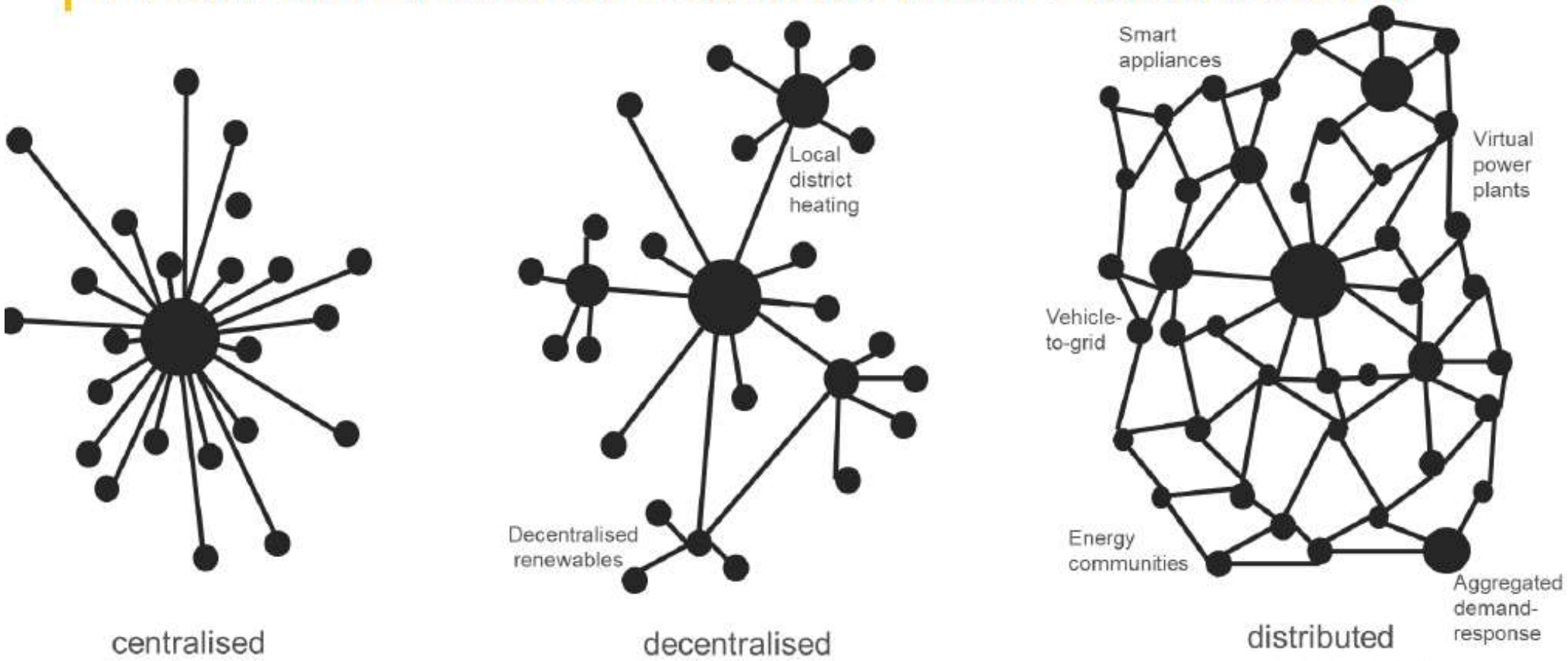
Corporate Members

Vision of Smart Integration of Local Energy Systems

Kamila Waciega, Veolia/Chair of COGEN Europe's Energy Policy WG

COGEN EUROPE

From centralised towards more distributed



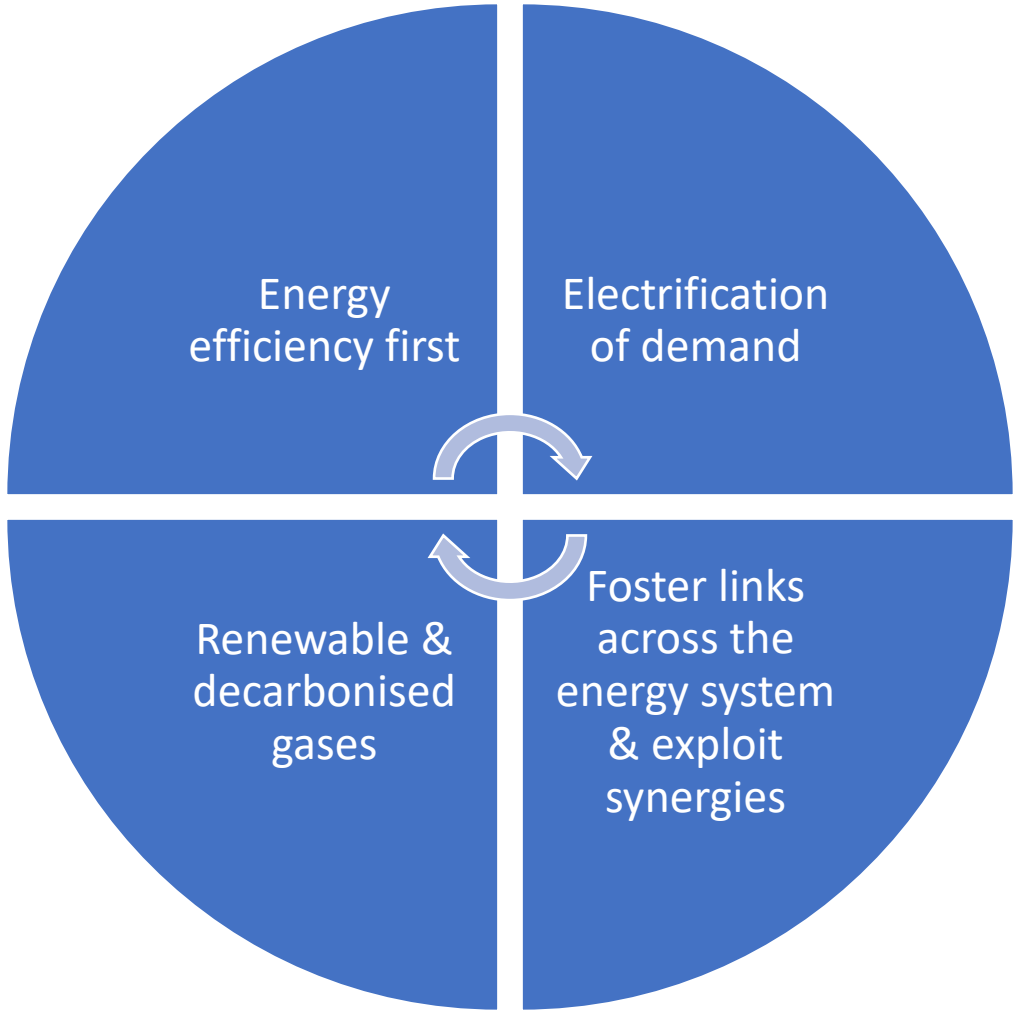
centralised

decentralised

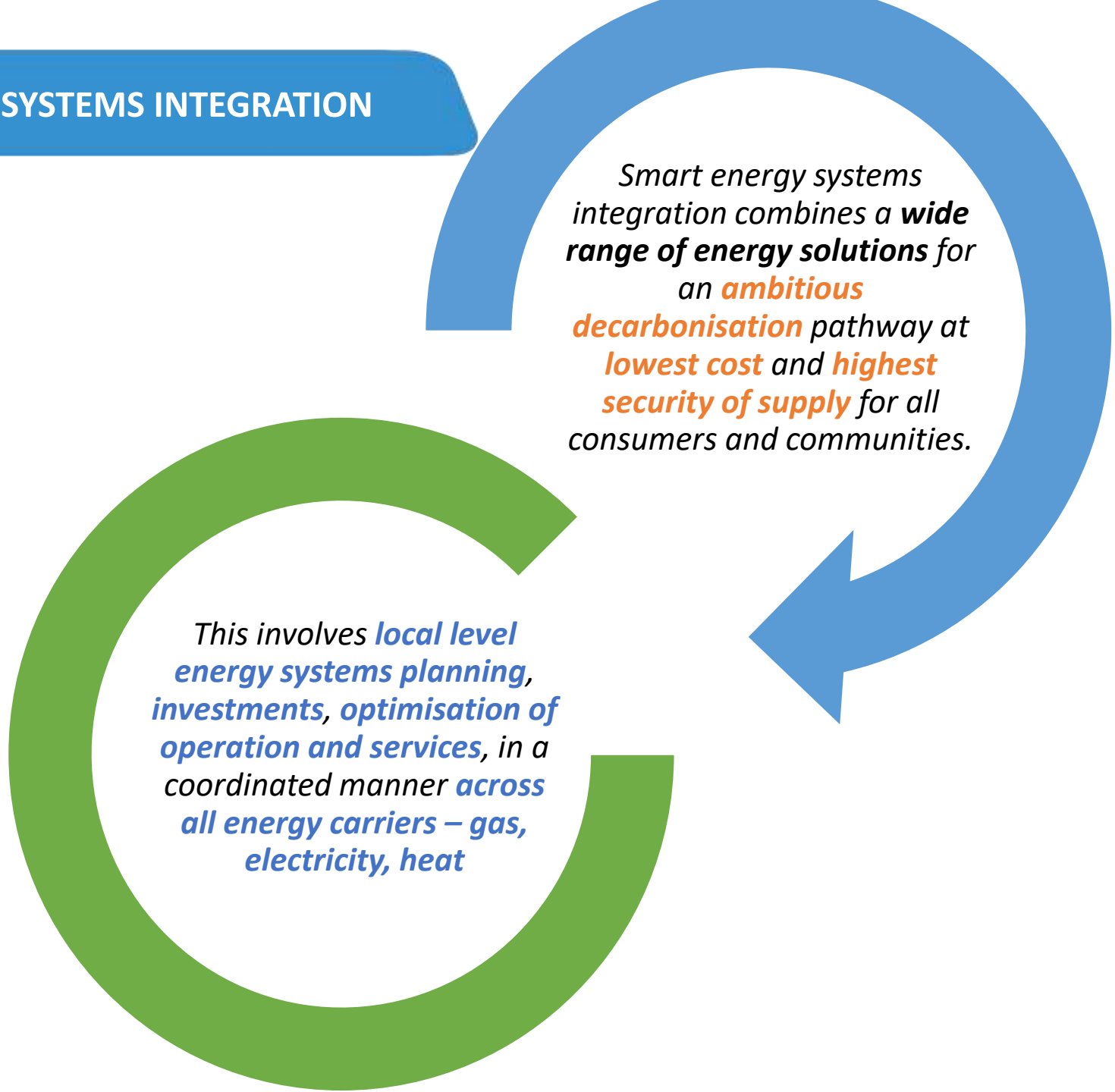
distributed

European Commission

EUROPEAN COMMISSION: MAIN PILLARS OF SECTOR INTEGRATION



PRINCIPLES FOR SMART SYSTEMS INTEGRATION



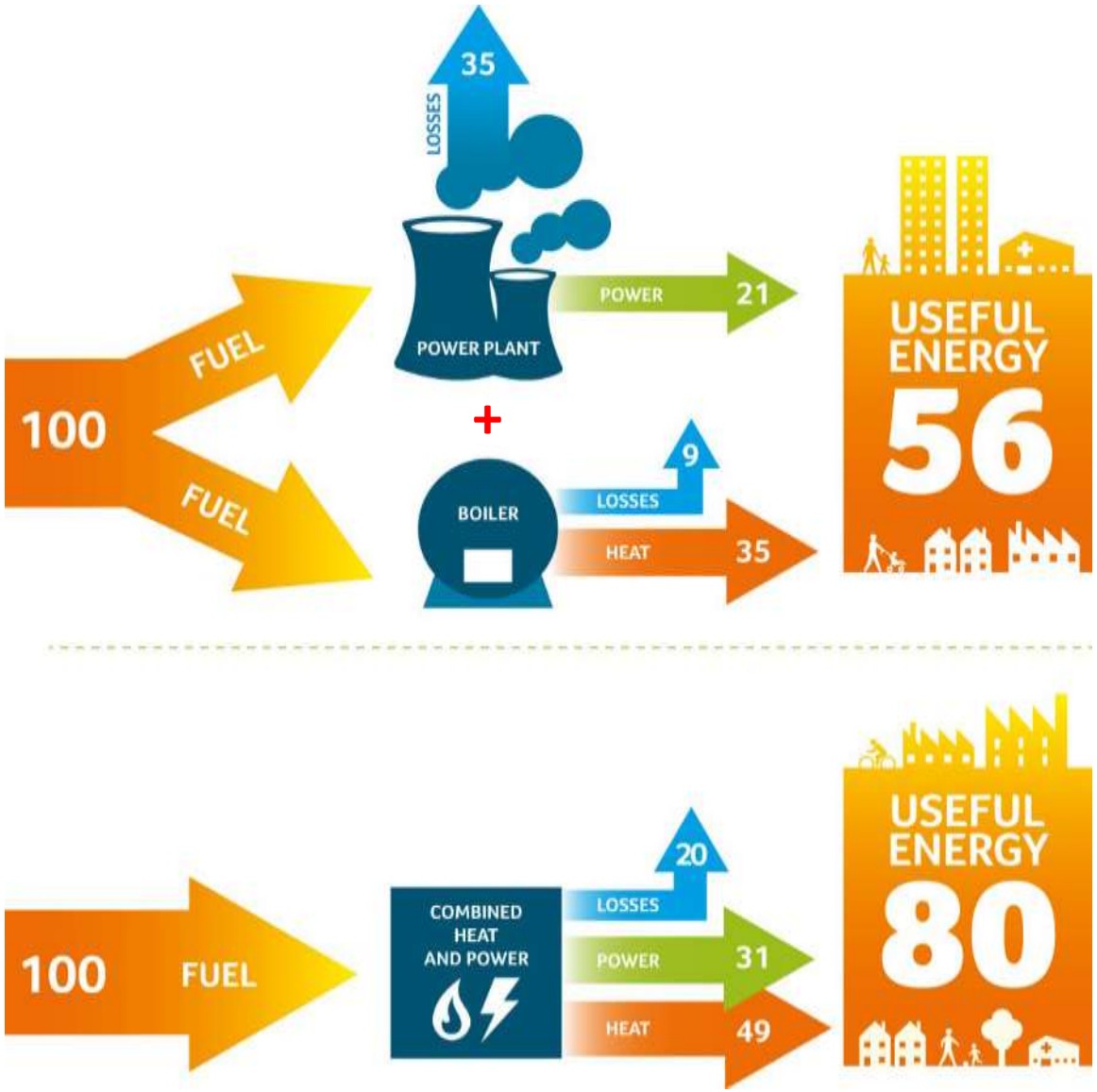
WHAT IS COGENERATION

Single Input

Two Outputs

Cogeneration transforms **90%** of the energy into useful heat & power for factories, offices, public buildings and homes.

COGENERATION: THE BENEFITS OF EFFICIENCY



Do more for less

- **Up to 40%** energy saved
- Cut carbon emissions
- Reduce energy bills

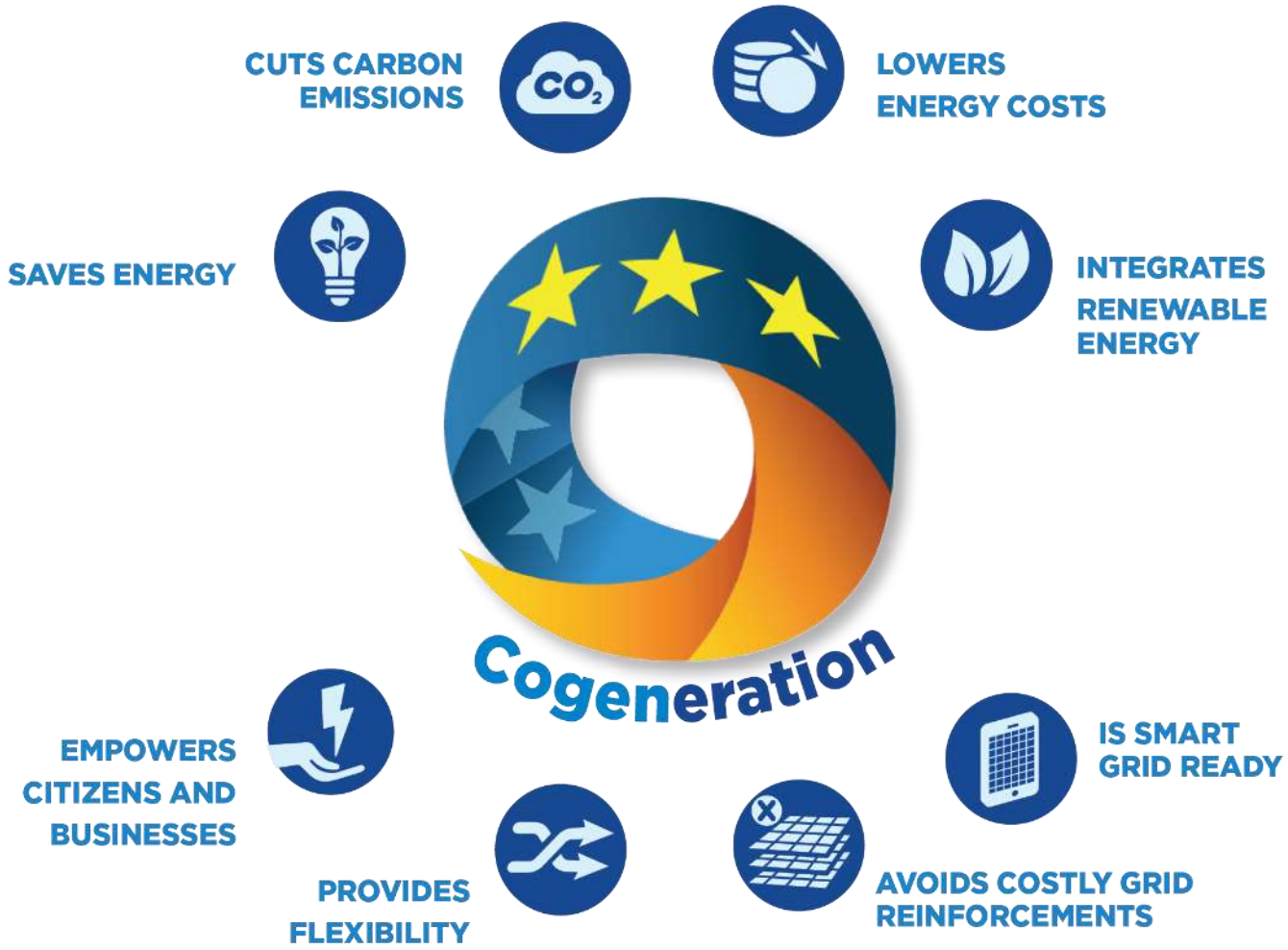
COGEN EUROPE

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

RESPONDING TO THE ENERGY SYSTEM CHALLENGES



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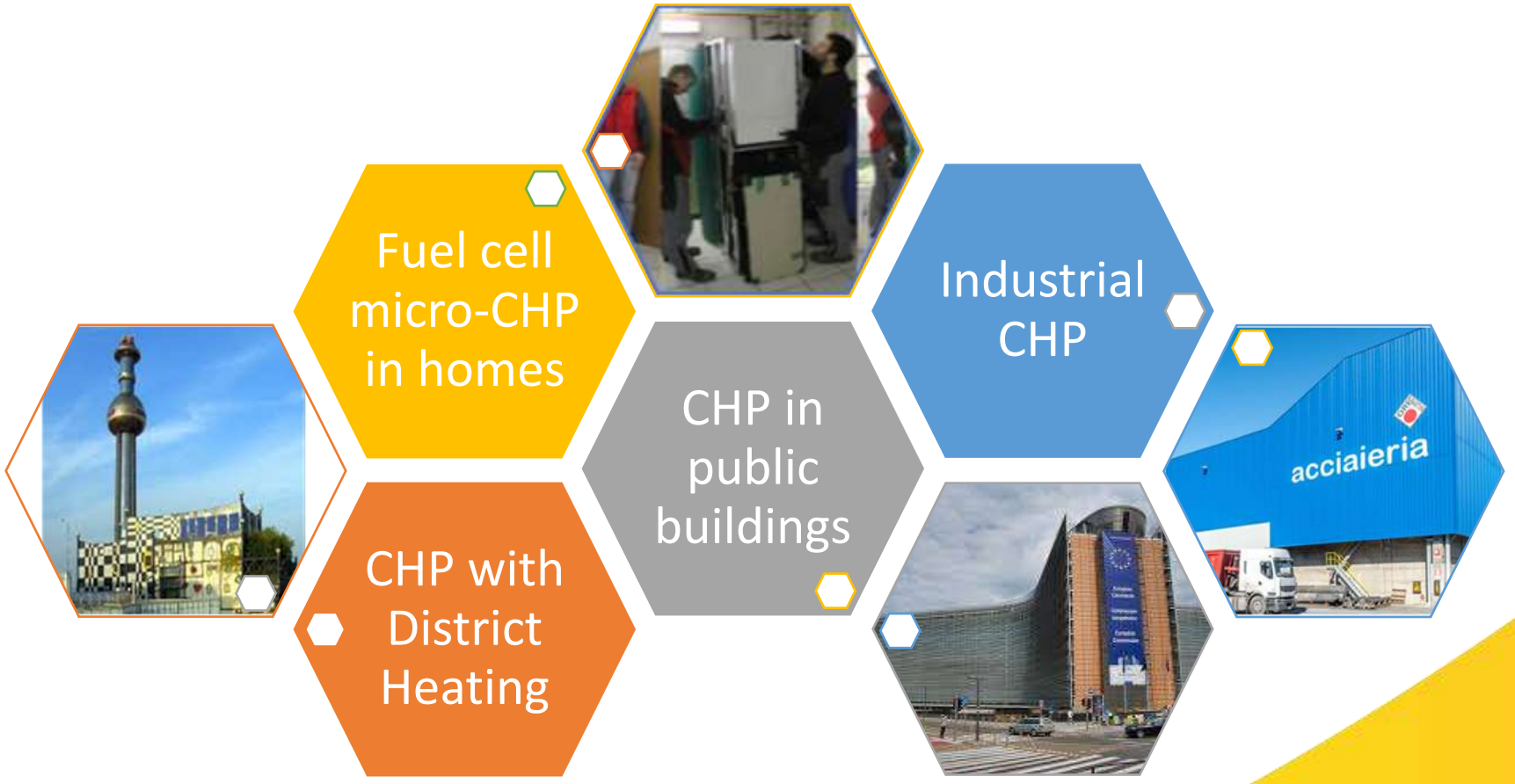
COGENERATION – A KEY INTEGRATION SOLUTION FOR ALL SECTORS

System level efficiency and flexibility across electricity, heat & gas



UNDEREXPLOITED POTENTIAL OF COGENERATION

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

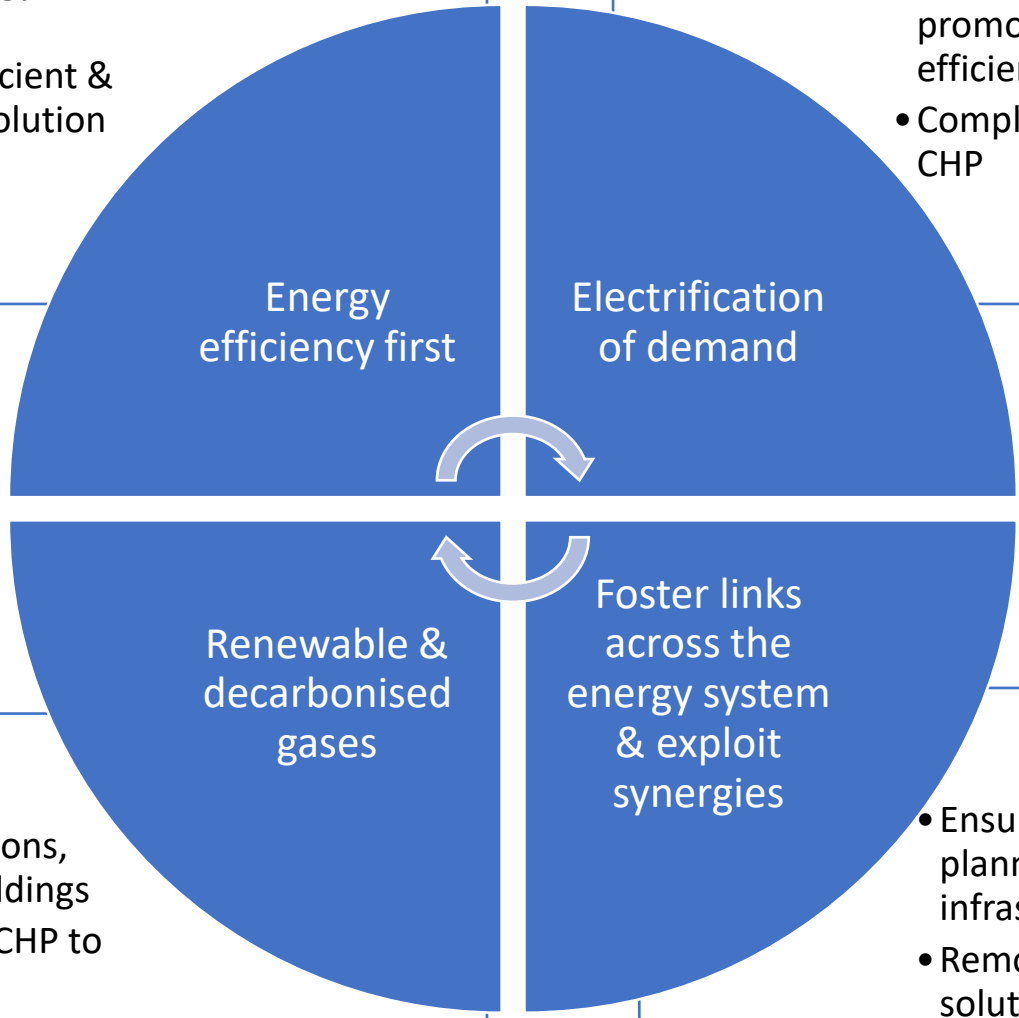
350 Mt
CO2 avoided/y

>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



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

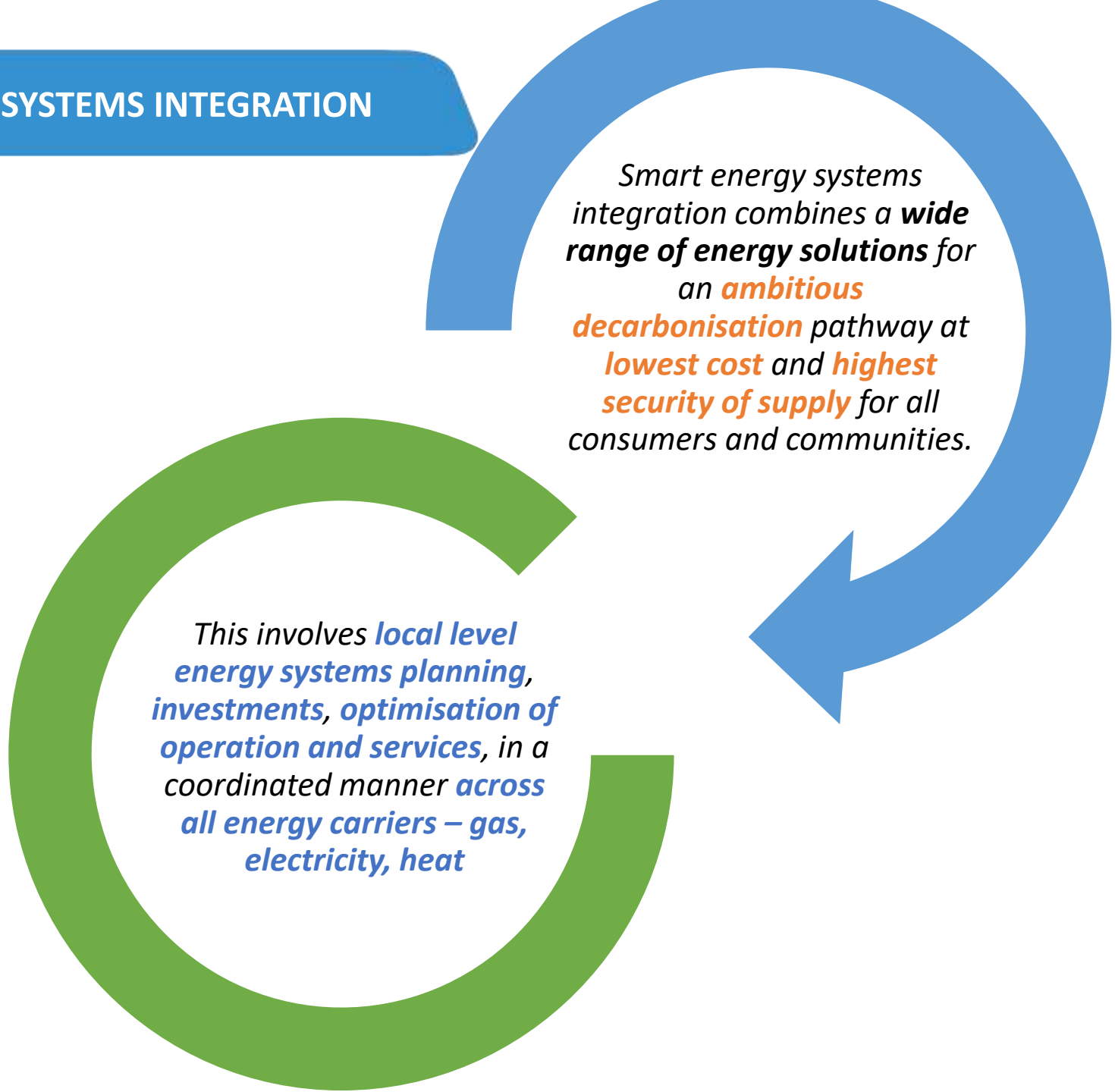
- Promote all applications, including heat in buildings
- Prioritise the use of CHP to maximise efficiency

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

PRINCIPLES FOR SMART SYSTEMS INTEGRATION

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

PRINCIPLES FOR SMART SYSTEMS INTEGRATION



THANK YOU

IMAGINE WHAT **COGENERATION**
CAN DO FOR THE NEXT GENERATION

COGEN EUROPE