

Regional Approach Brussels:

Energy Transition

28 October 2020



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About COGEN Europe

Our Mission

Cross-sectoral voice of the cogeneration industry.

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



What is Cogeneration

Cogeneration

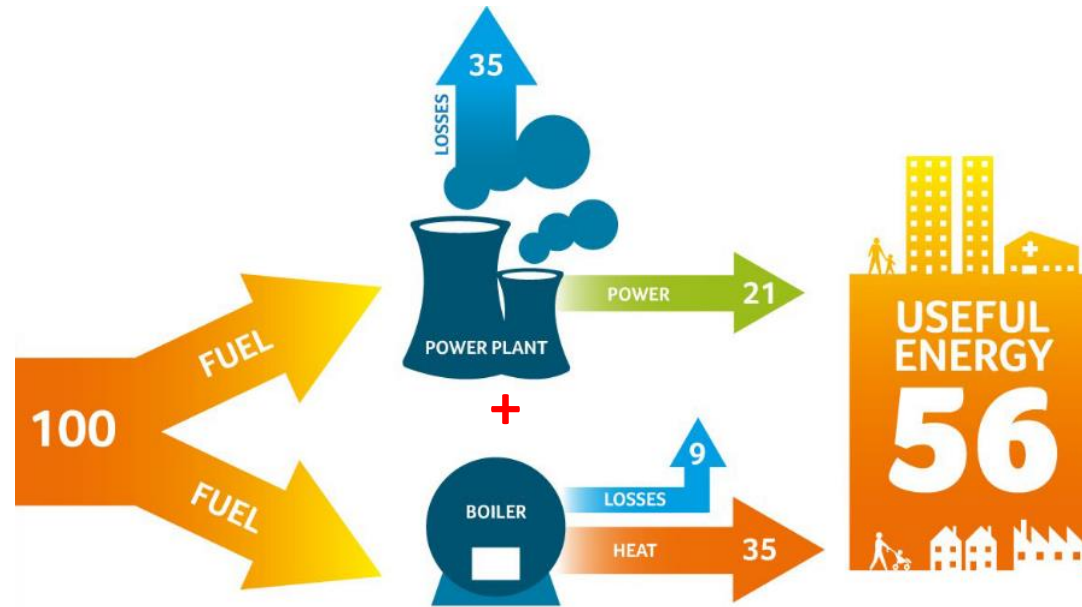
Single Input

Two Outputs



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

Cogeneration: Benefits of Efficiency

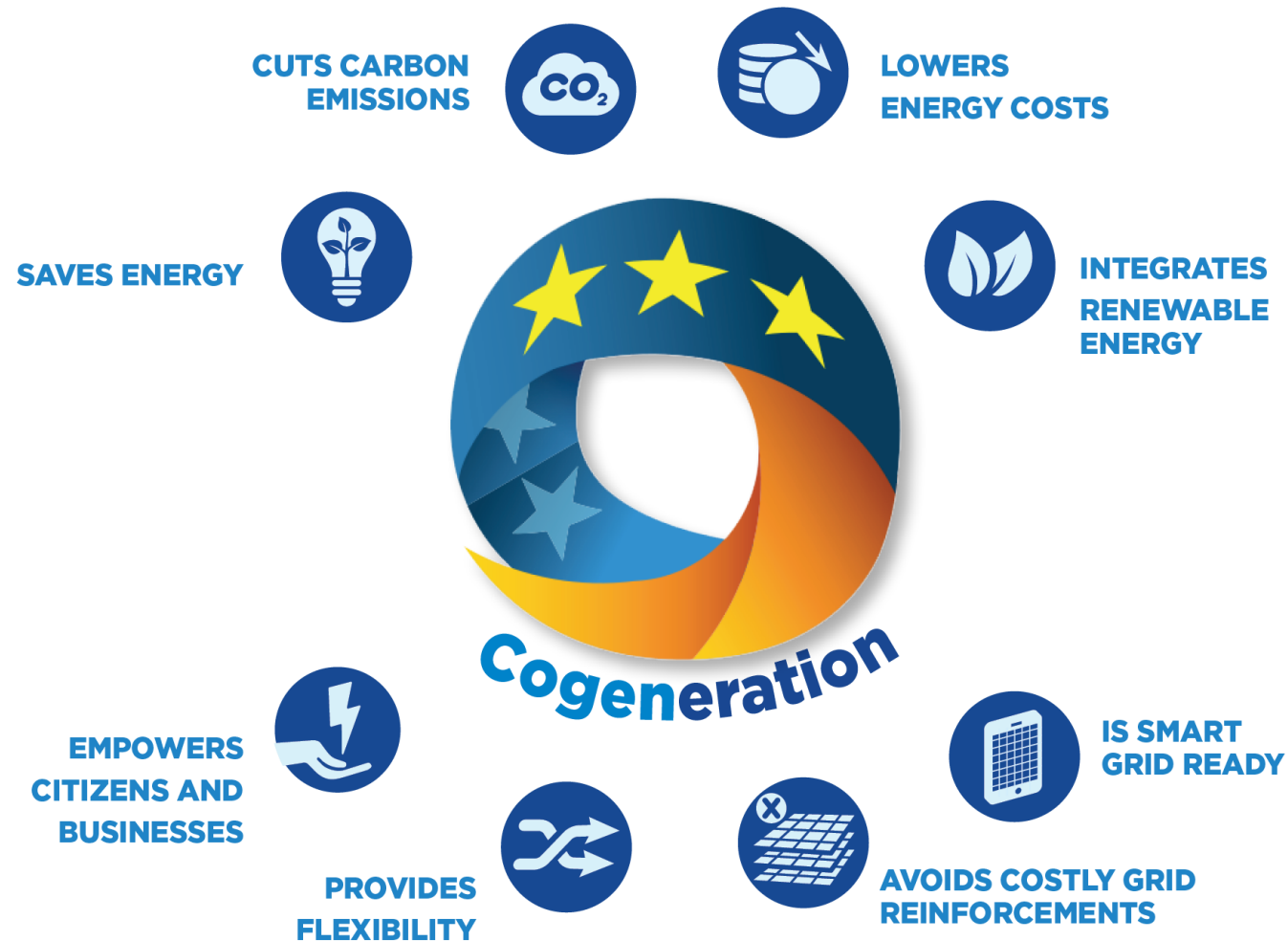


- Transforms more than 80% of the energy into useful heat and electricity for factories, offices, public buildings and homes.



- Saves up to 40% energy compared to the separate supply of electricity and heat from conventional power stations and boilers.

Benefits of Cogeneration

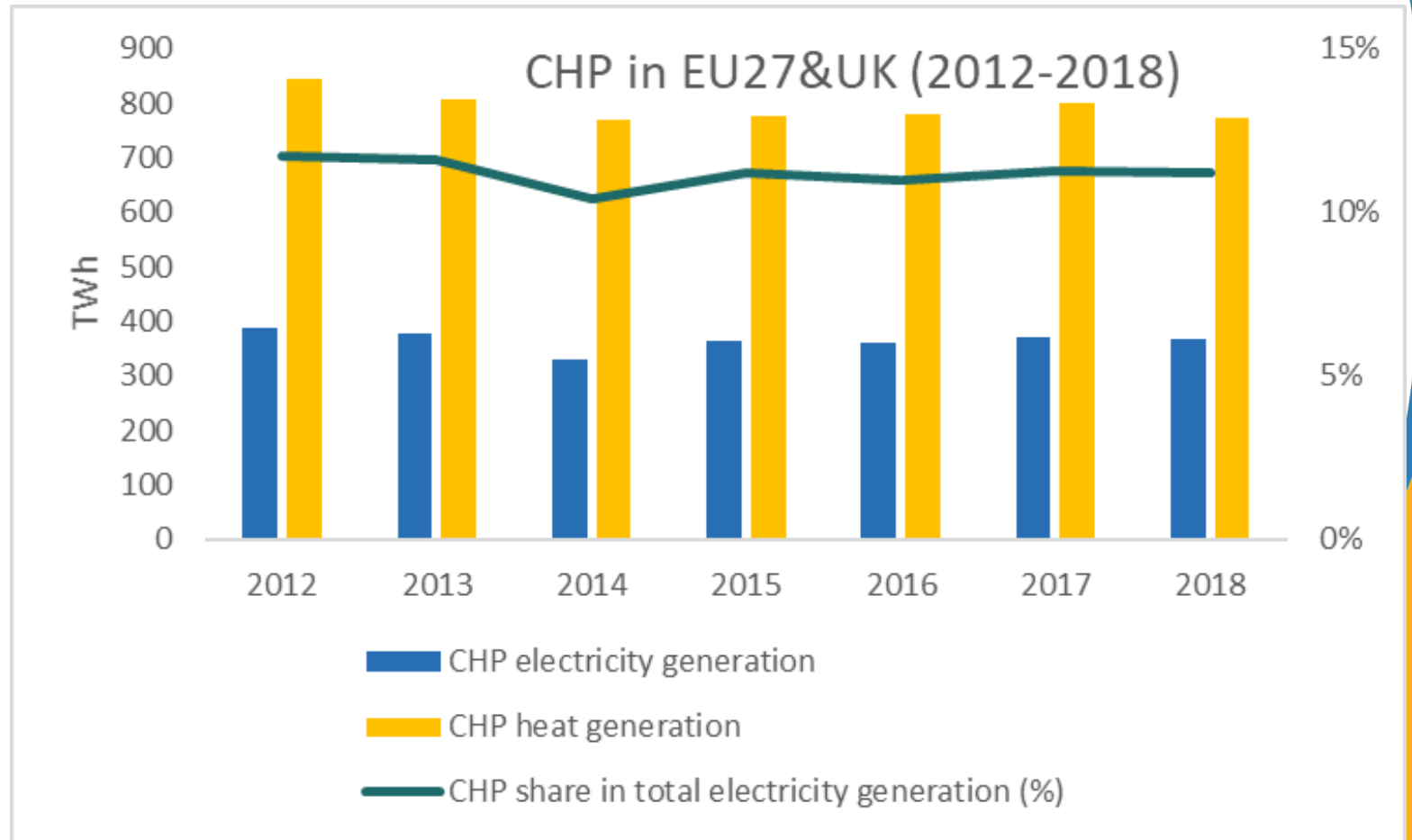


Overview of CHP in Europe - Today

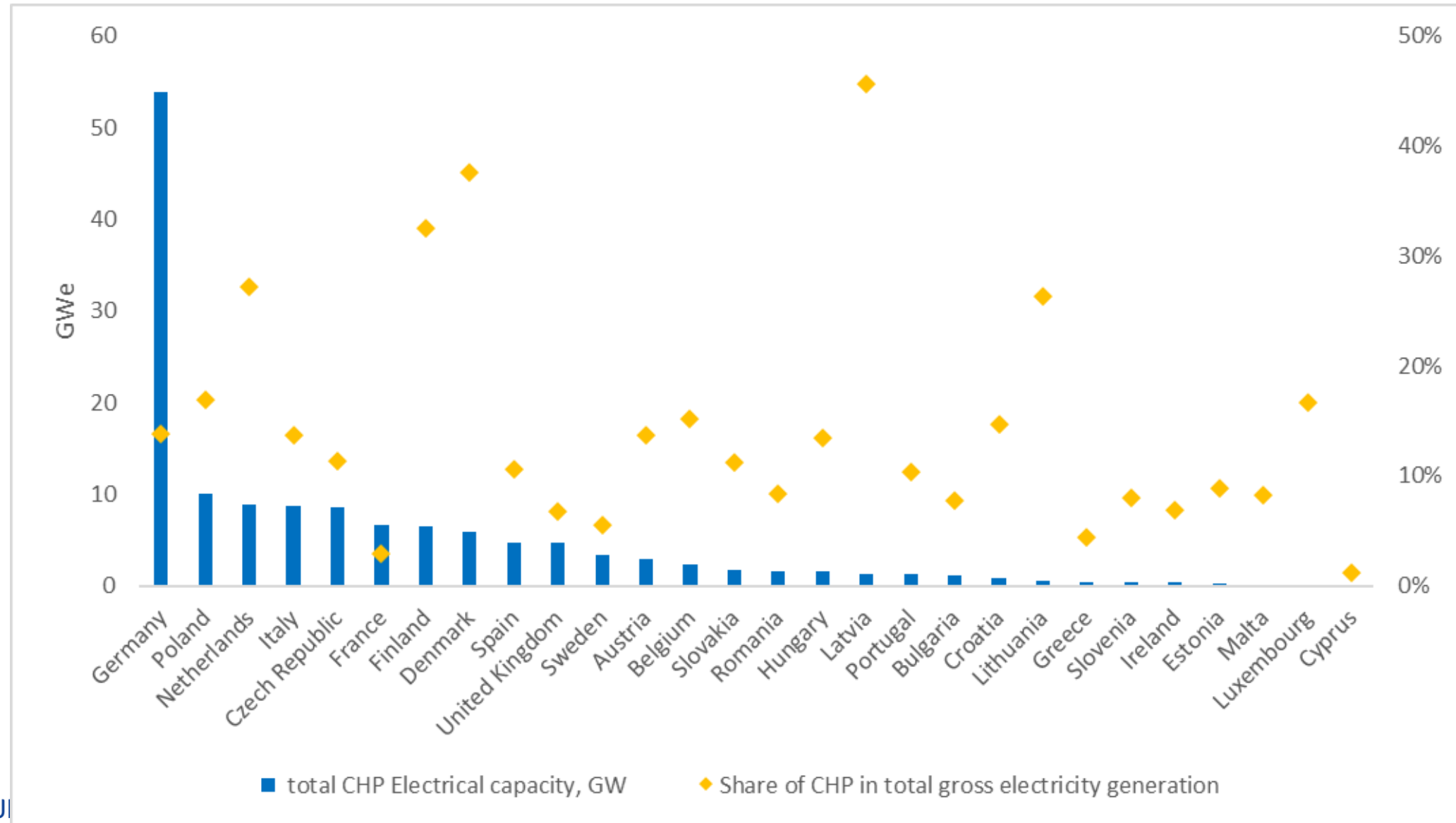
CHP in Europe - Overview

Electricity and Heat Generation (2012-2017)

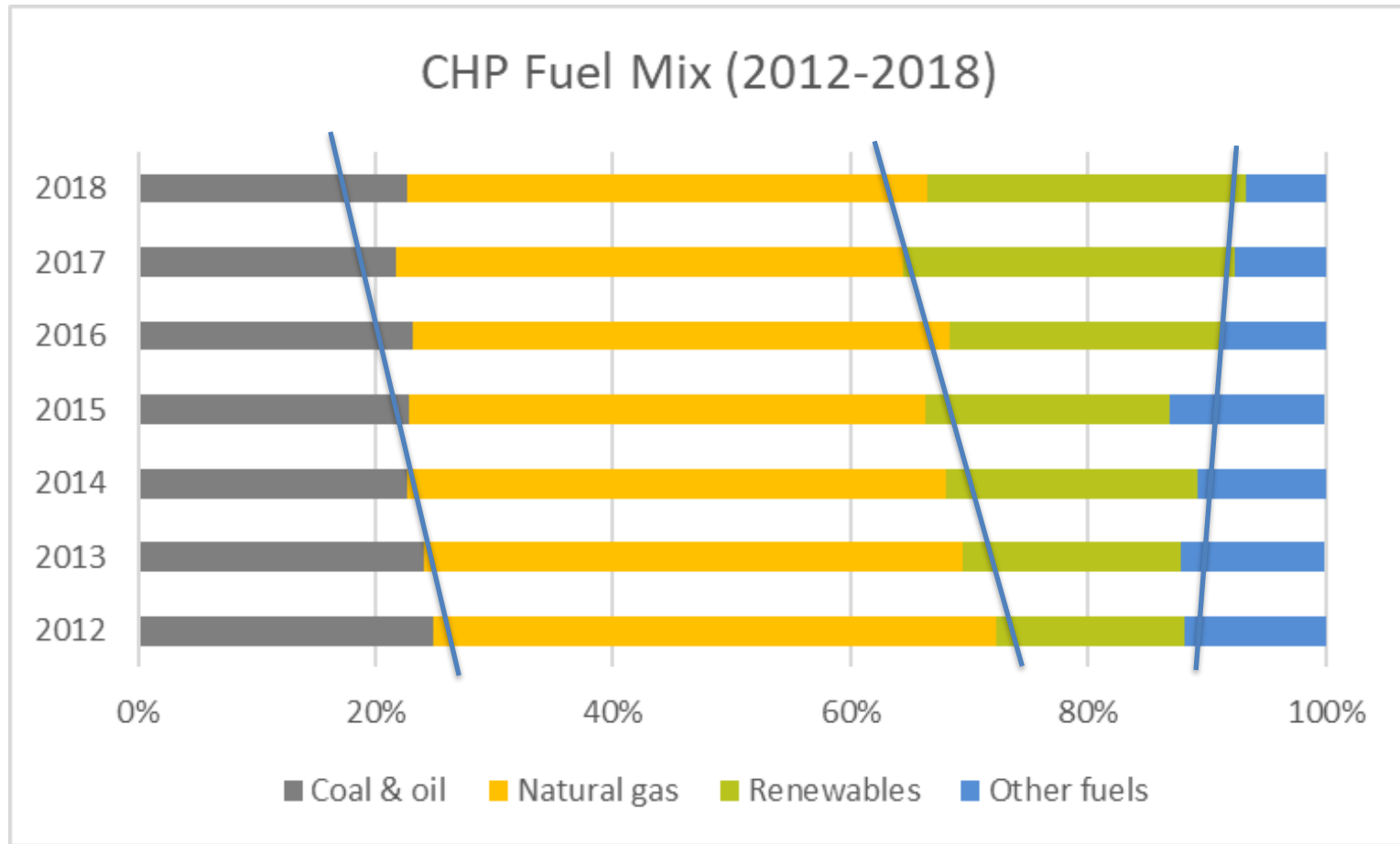
- 117 GWe of HE CHP installed in 2018, 85% of all CHP.
- CHP represents 11.2% of total electricity and ~18% of the heat in EU27 & UK, with potential for it to double by 2030.
- CHP across the EU reduces up to 250 Mt of CO₂ & ~400 TWh of primary energy today (equivalent to the emissions of ~150 million petrol cars).



CHP by Country in 2018



CHP Fuel Mix in the EU (2012-2018)



CHP fuel mix influenced by fuel price dynamics, support schemes and availability of renewable fuels at local level:

- Stable share of natural gas use in CHP.
- Rapid increase of RES, reaching close to 30% in 2017 (from 13% in 2009).
- Steady decline in solid fossil fuels and oil use in CHP.

Cogeneration National Snapshot Survey (2019-2020)

Expert contributions from **15** CHP national experts...



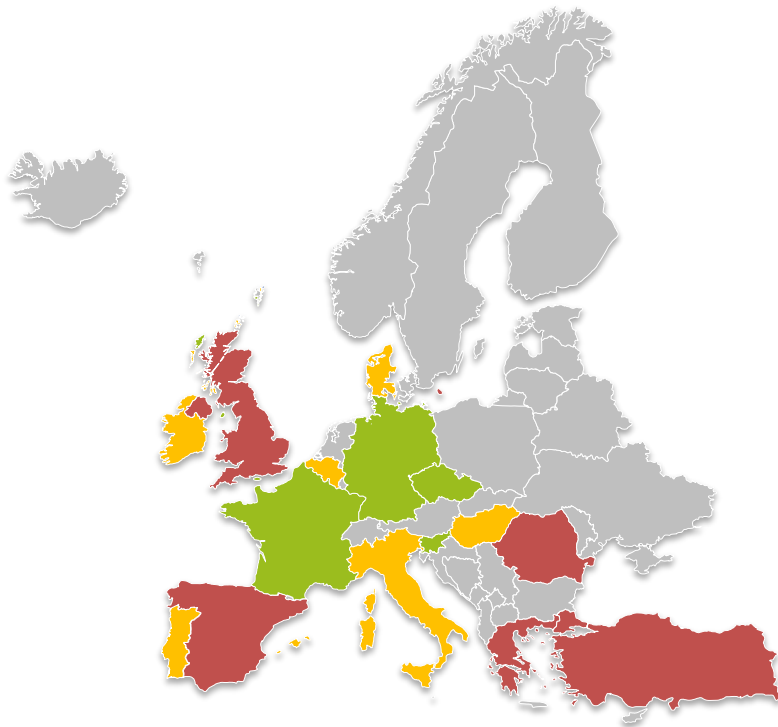
2019-2020 Cogeneration National Snapshot Survey

...representing **71%** of installed capacity **in EU27, UK & Turkey**

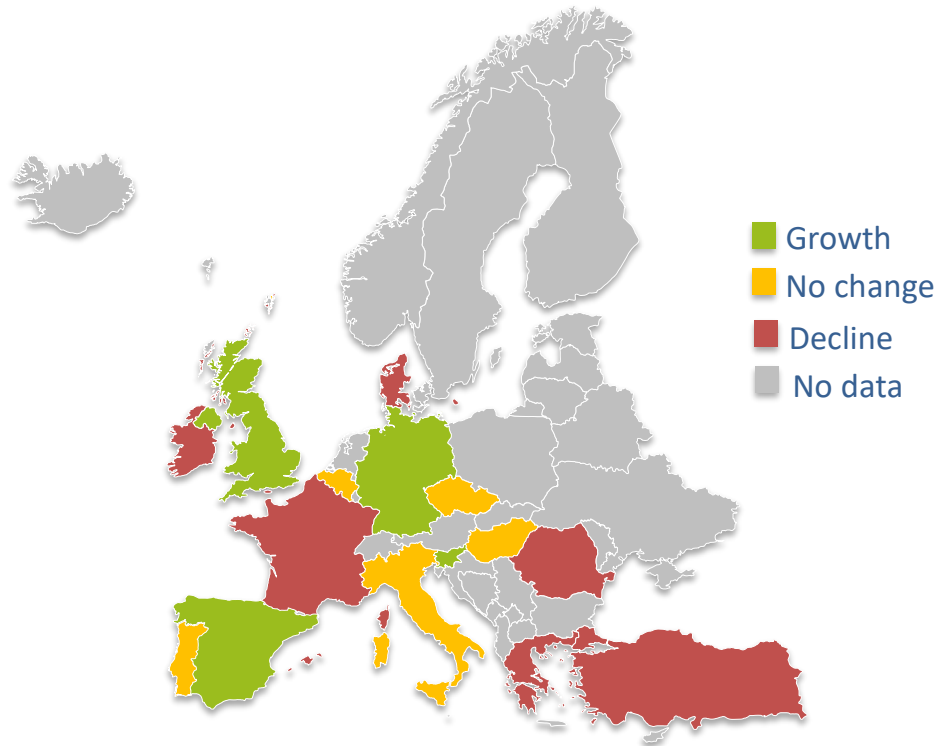
...capturing the **European CHP industry sentiment**

CHP Market Developments in Europe (2017-2020)

CHP Installed Capacity



CHP Generated Electricity



- CHP growth in countries accounting for ~45% of installed capacity.
- Diverging capacity and generation trends for DK, ES, FR & UK.

* Percentages represent aggregated installed capacity of countries indicating growth (in green), no change/uncertain (in yellow) and decline (in red).

CHP Support Available, but Insufficient

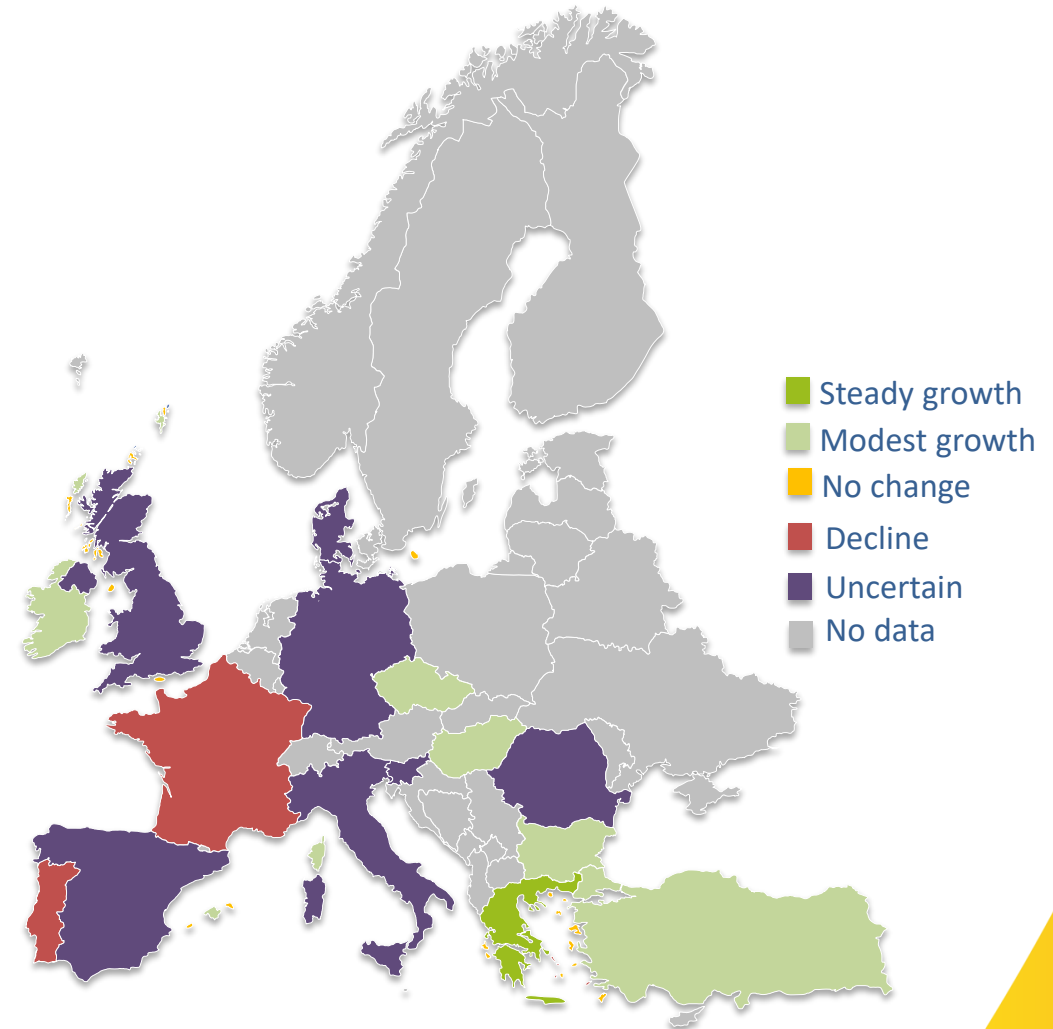
	Feed-in tariff	Feed-in premium	Tender/Auction	Grants	Certificates	Tax incentives	Capacity mechanisms	No support
Belgium				✓	✓	✓		
Czechia		✓		✓				
Denmark					✓		✓	
France								✗
Germany	✓	✓	✓	✓			✓	
Greece		✓						
Hungary						✓		
Ireland							✓	
Italy				✓	✓	✓	✓	
Portugal	✓							
Romania		✓						
Slovenia	✓	✓	✓	✓				
Spain	✓					✓		
Turkey								✗
UK					✓	✓	✓	

- In ~40% of markets policy framework considered unfavourable.
- Support phased out or significantly reduced recently (DK, FR, UK).
- National climate & energy plans (NECPs) adequately assess CHP in only 17% of markets (CZ, SI, TR, IT).

5-year CHP Outlook

Uncertainty in outlook for **55% of the CHP markets** in Europe, in the next 5 years.

Growth expected in gas-based CHP.

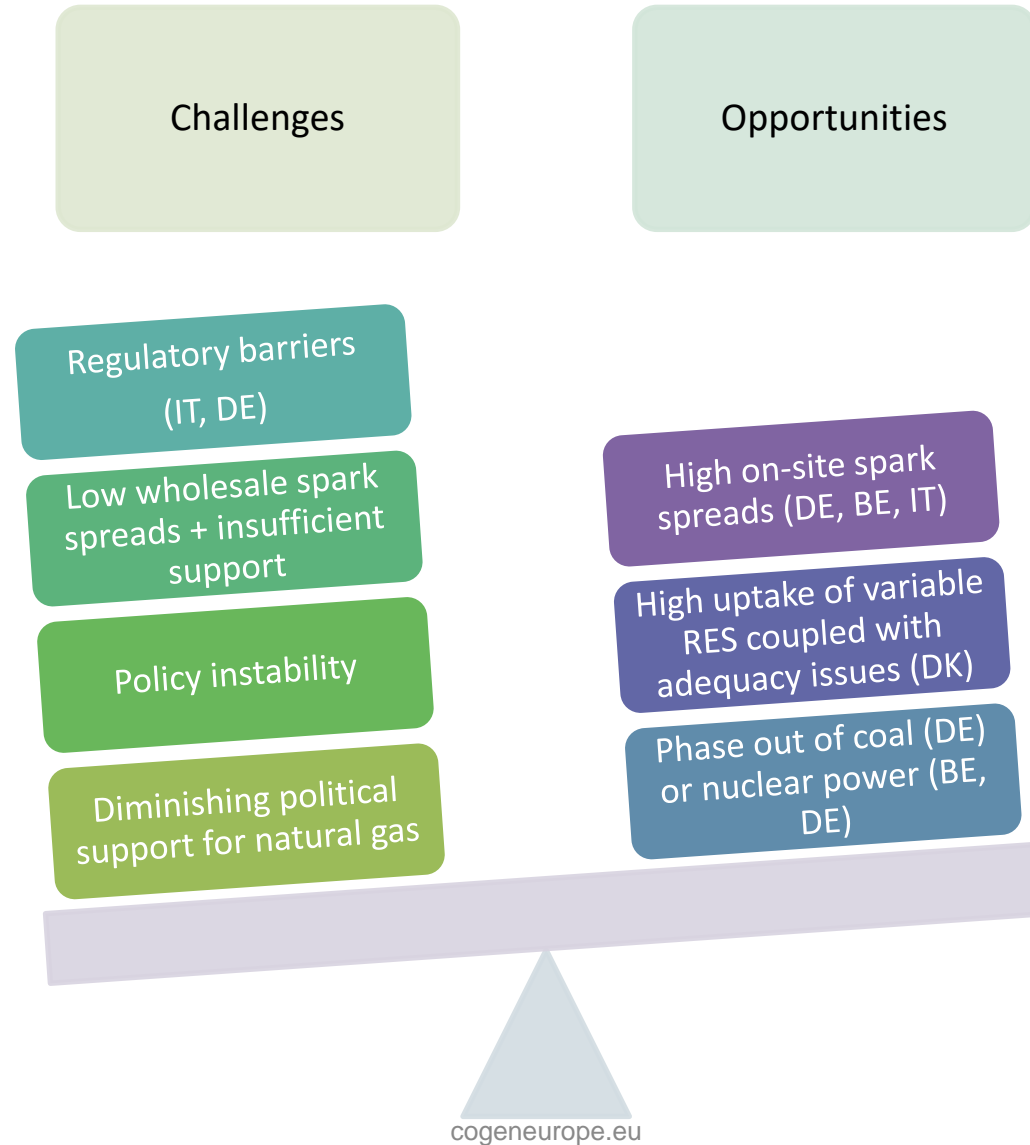


CHP Trends by Segment

Segment	Current Trend*	Outlook*	Key markets
RES	54%	56%	Across EU
Natural Gas	48%	45%	Across EU
DHC	57%	52%	SI, TK, CZ, UK, RO
Industrial	43%	62%	DE, ES, TK, SI
Commercial	47%	59%	BE, SI, TK, IE
Domestic	35%	64%	DE, BE, IT

* Percentages represent aggregated installed capacity of countries indicating growth (in green), no change/uncertain (in yellow) and decline (in red).

Key Factors Impacting CHP at National Level



Vision for the Future

COGEN Europe Vision

The cogeneration sector is committed to creating a resilient, decentralised, carbon neutral European energy system by 2050, with cogeneration as its backbone:



empowering European citizens and industry to generate their own efficient, reliable and affordable clean heat and power locally

bringing together heat, electricity and gas networks, allowing the efficient integration of substantial amounts of renewable energy and providing energy when and where needed

enabling an integrated energy system and a cost-effective transition towards a sustainable future

Putting Energy Consumers at Centre

Bundestag (Berlin)



European Commission (Brussels)



European households



All use cogeneration



Hospital



District heating



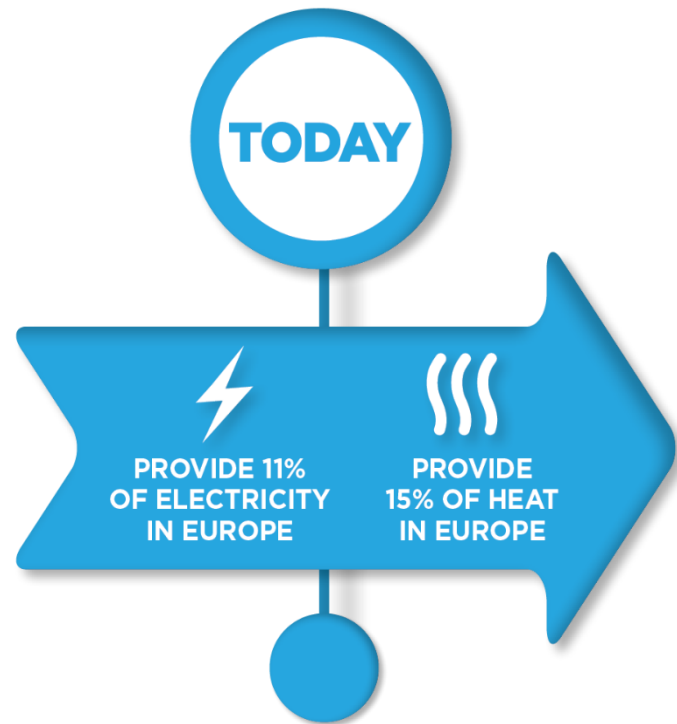
European industry

Key Local Integration Solution...



A key role today
that will grow in
the future.

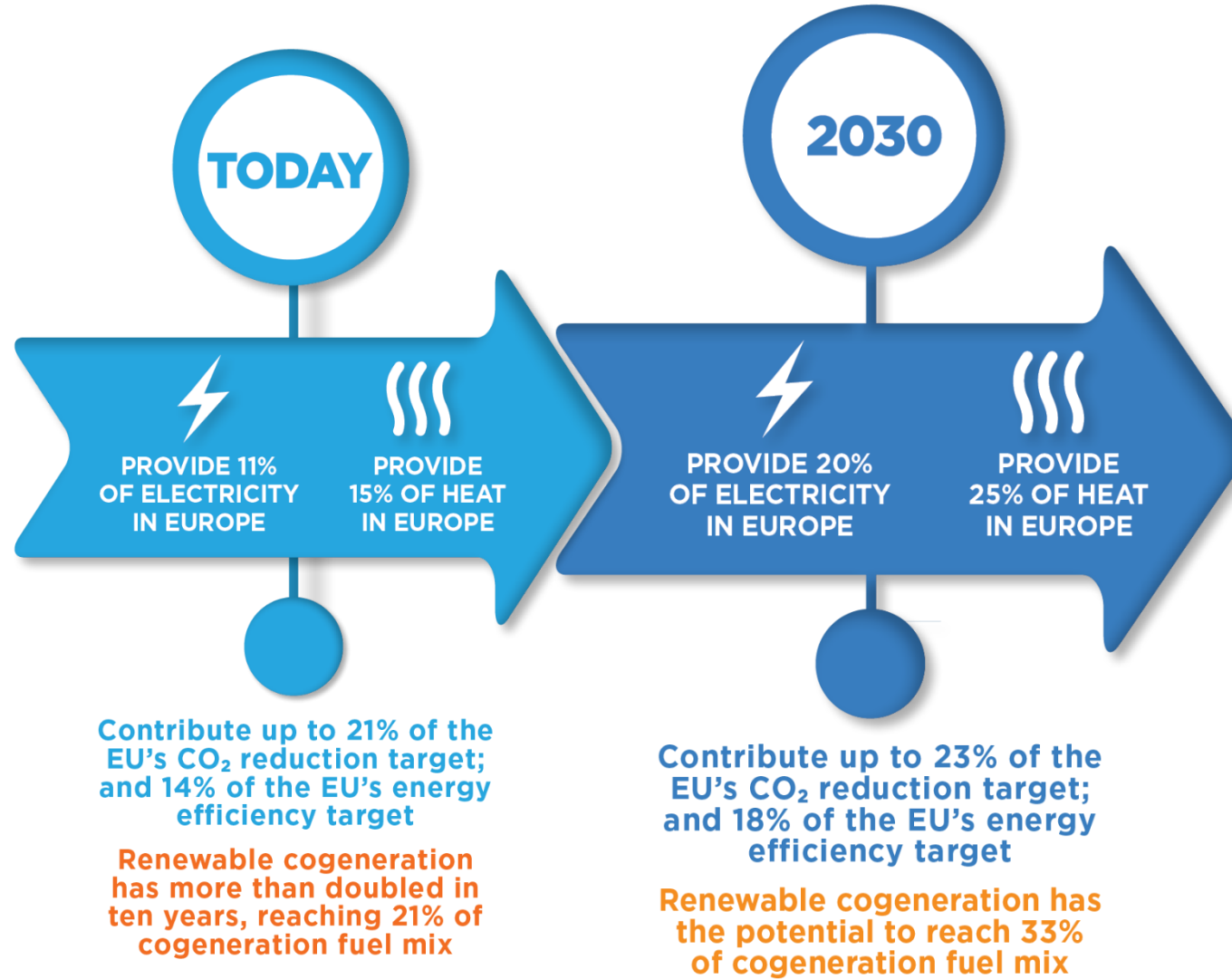
Today



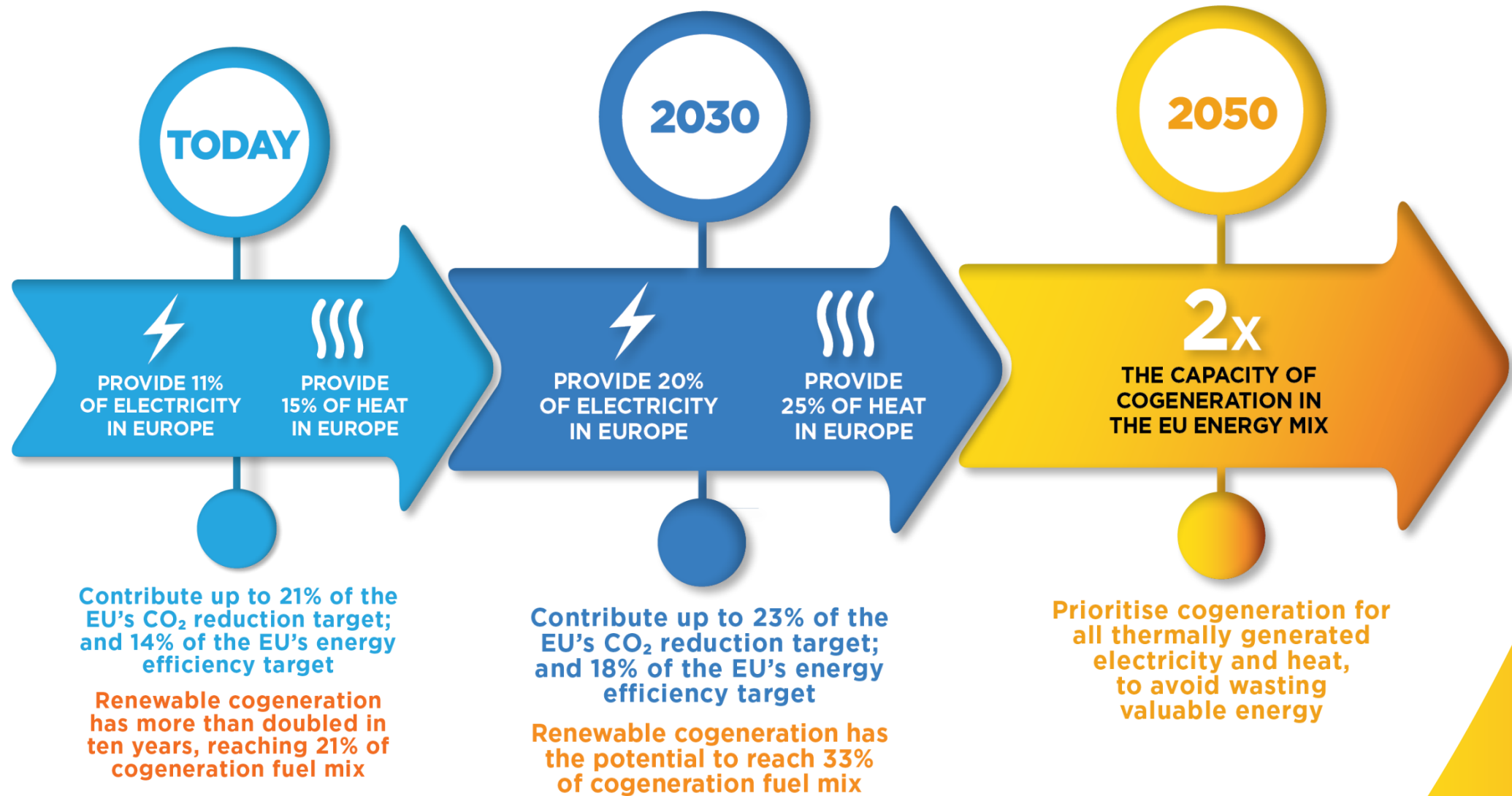
Contribute up to 21% of the EU's CO₂ reduction target; and 14% of the EU's energy efficiency target

Renewable cogeneration has more than doubled in ten years, reaching 21% of cogeneration fuel mix

2030



2050



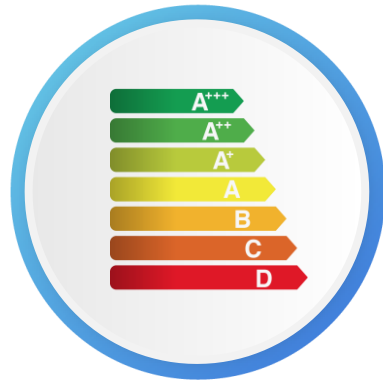
Sneak Peek – COGEN Europe Study

CHP's Multiple Benefits in 2050



€4-8 Bn

↓ cost for
energy system



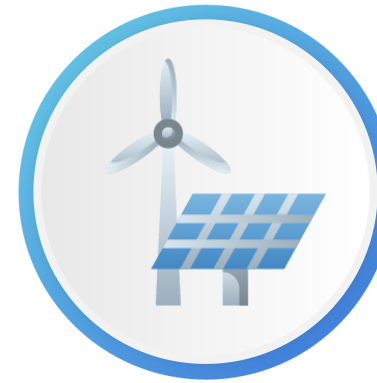
150–220 TWh

↑ energy savings
across energy system



~20%

↓ remaining CO₂
emissions



13-16%
of total electricity

and ~30-36% of flexible
**thermally generated
power** at times of low
wind & sun and to cover
peak demand



19-27%
of total heat

and **52-100% of thermal
heat** in buildings,
industry & district heating

* excluding off-grid RES for P2X generation.

** excluding furnaces.

*** excluding furnaces; DHC for industry is 100% CHP.

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