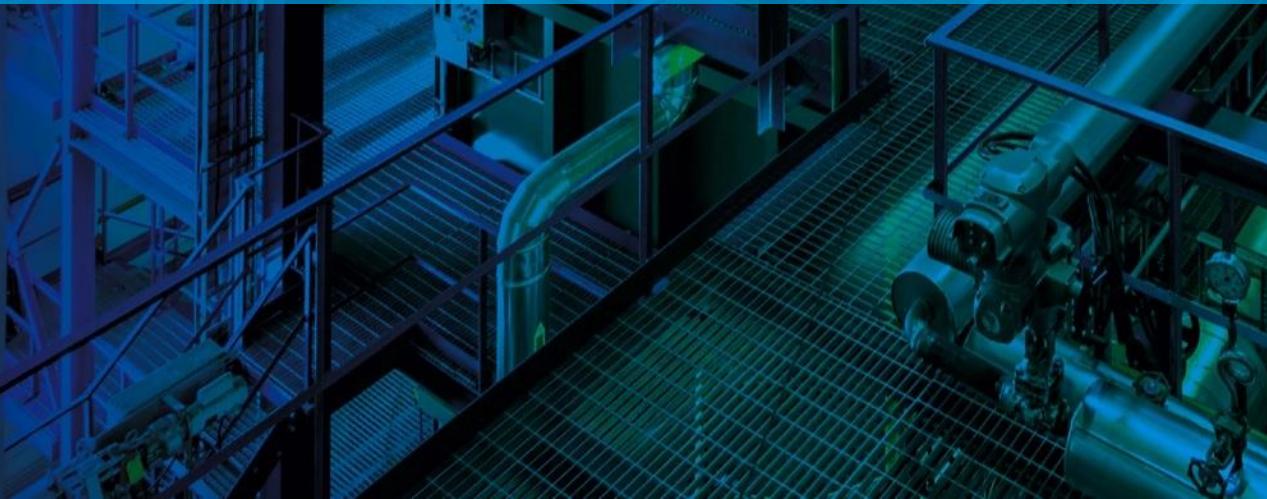


Développement de la cogénération basse tension en Europe

1 February 2018

Paris

Francois Paquet



COGEN
EUROPE The European Association
for the Promotion of Cogeneration

COGEN Europe



Association européenne représentant le secteur de la cogénération en Europe auprès des **institutions européennes** et autres acteurs de l'énergie



fait la promotion des **bénéfices de la cogénération en vue de sa plus grande utilisation en Europe**



Affaires Publiques



Gestion de projets européens



Dissémination d'information



Fondée en 1993 et basée à Bruxelles



Membership couvrant toute la value chain

National Members
(representing
+75% of CHP
capacity in Europe)



Corporate Members
(covering
the entire
energy
value chain)

Benefices de la mini/micro-cogeneration



Empowering
energy
consumers



Balancing
renewables



Decarbonising
heat
and electricity
production



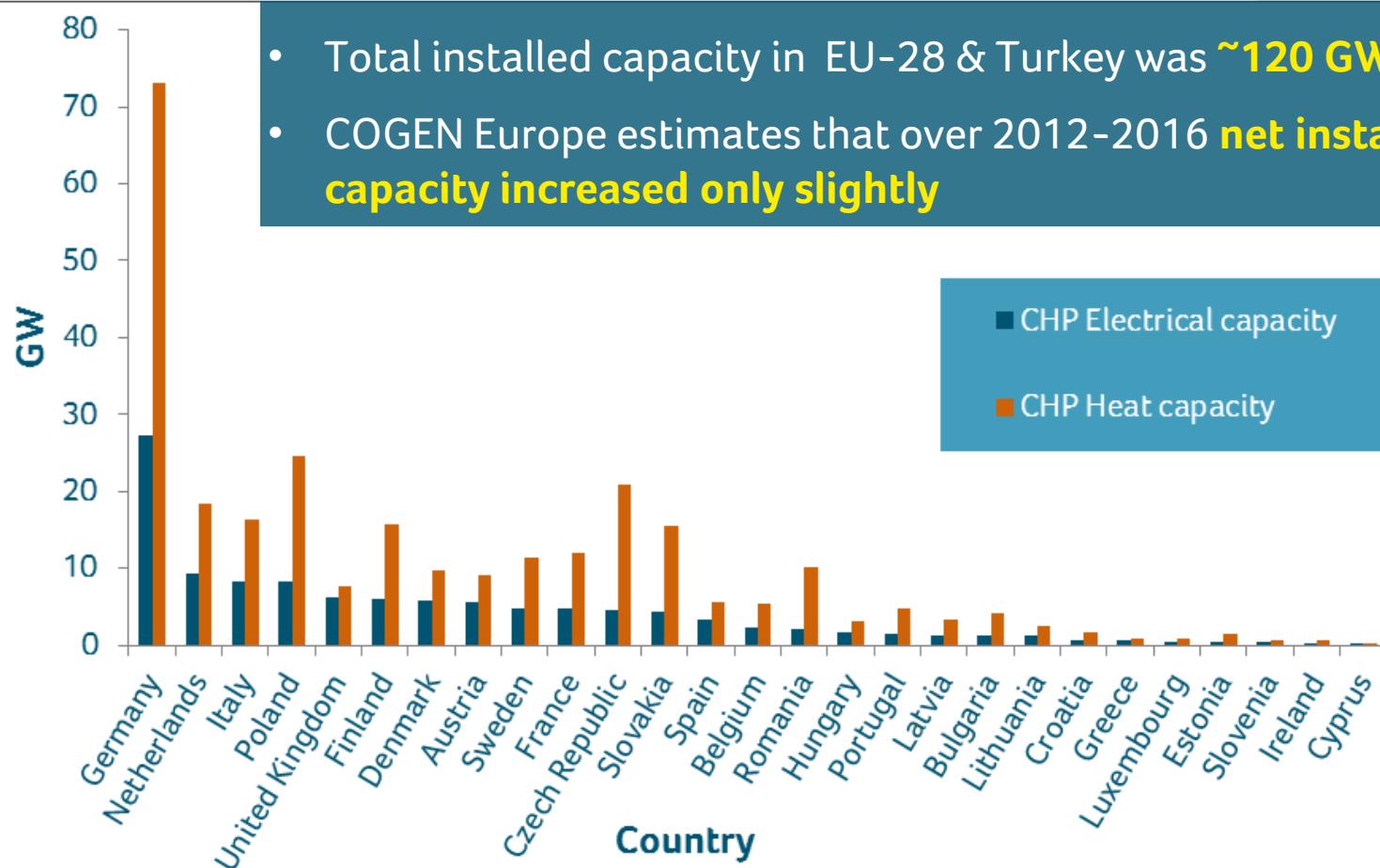
Saving primary energy
and supporting
energy security



Fostering
economic growth:
job creation
through
innovation

Cogénération en Europe – État des lieux

Capacité installée



Source: COGEN Europe, based on Eurostat data, 2015

Cogénération en Europe

- ✓ Croissance modérée dans la plupart des marchés
- ✓ **Croissance dans les segments de la cogénération industrielle, commerciale et renouvelable**
- ✓ **Segments sous pression des marchés de l'énergie et de l'instabilité législative:** la cogénération pour les filières industrielles (grandes) **et la cogénération utilisant le gaz**

Micro/mini-cogén en Europe



41%

La cogénération filière commerciale connaît une croissance forte dans la plupart des marchés nationaux (positive on-site spark spreads - BE, CZ, DE, HU, IE, PL, SI, UK).



24%

Micro-CHP growth is concentrated in three European countries representing 24% of European installed CHP capacity (BE, DE, SI)

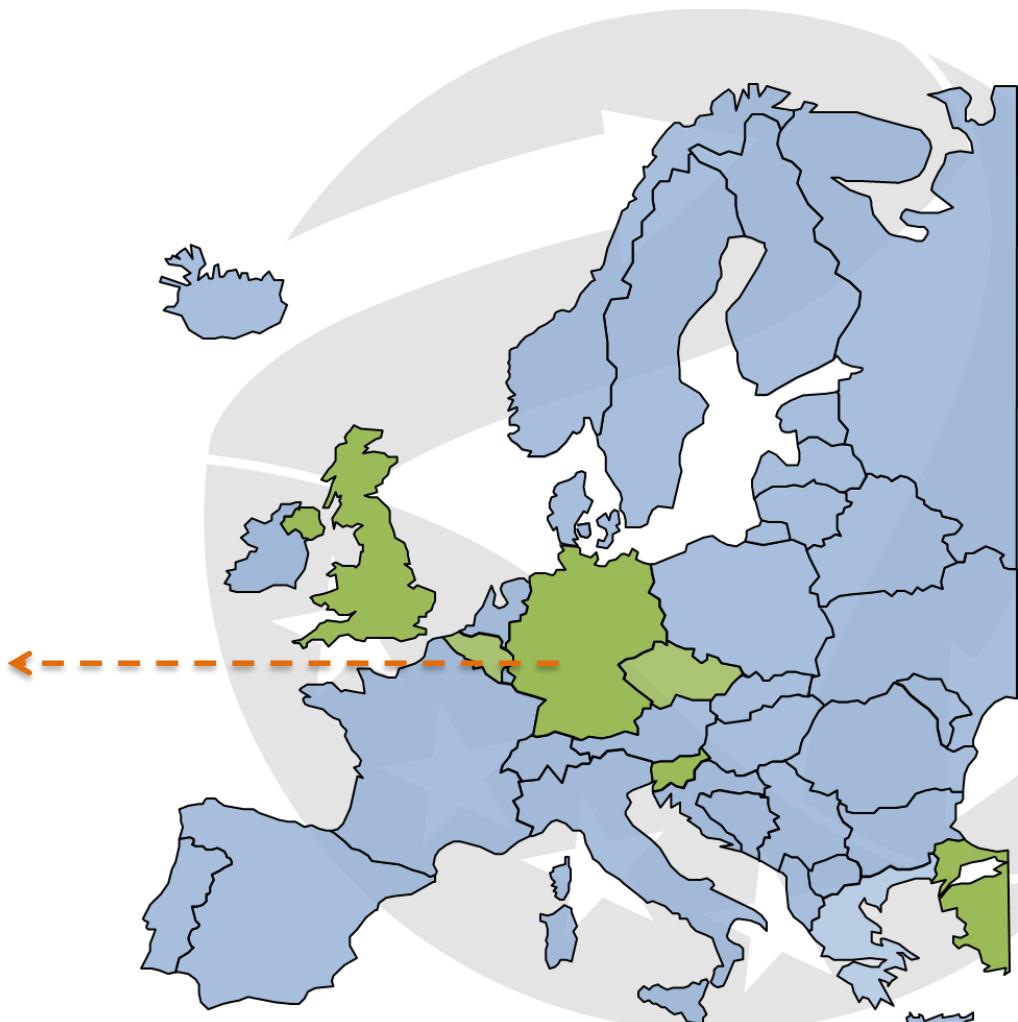
Source: COGEN Europe Snapshot Survey, 2015-2017

Allemagne

KFW433

KFW433

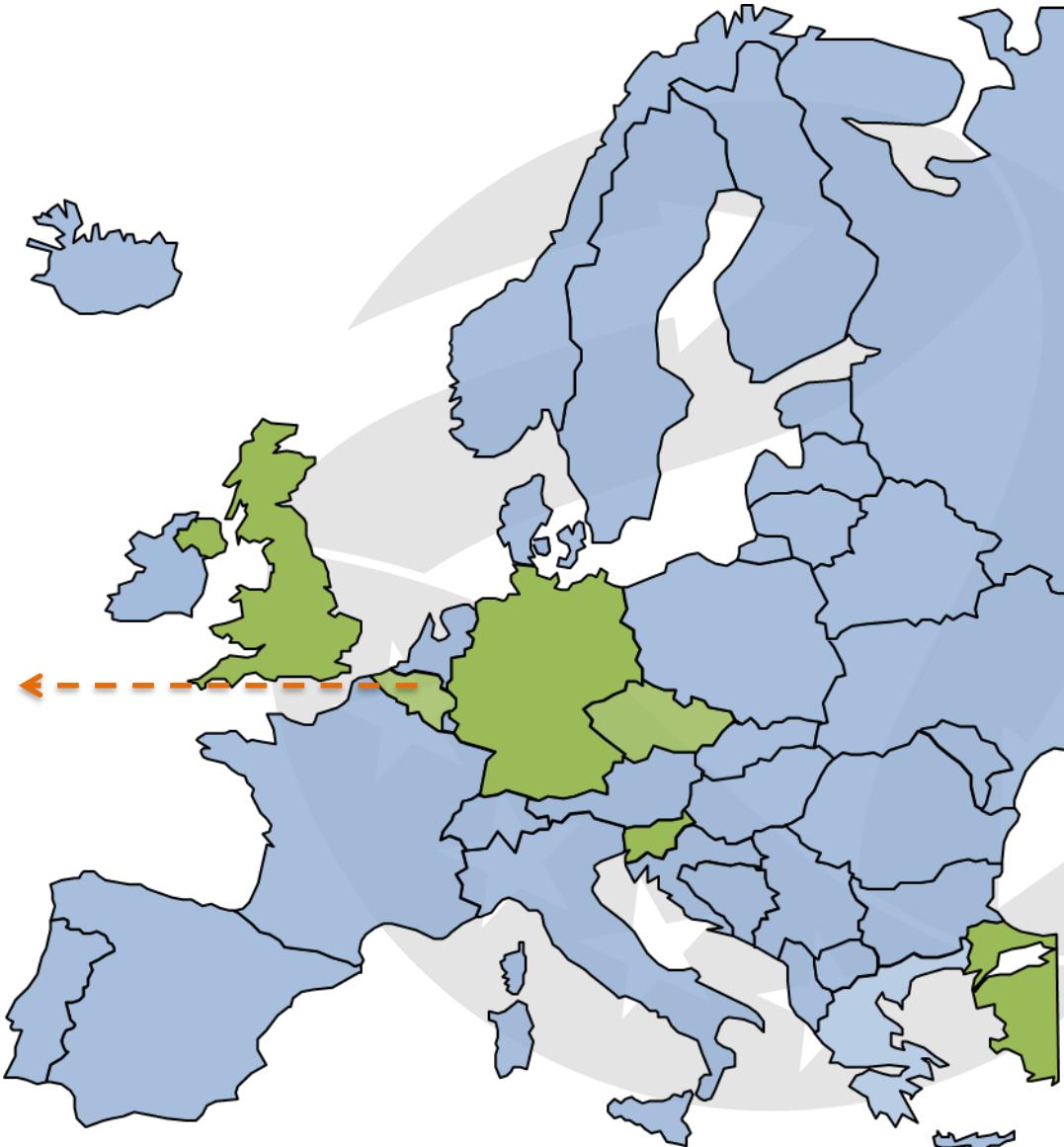
- Period: **started in 2016**
- German NOW NIP grant scheme administered by KfW bank
- Beneficiaries: **End customers**
- Eligible size: 0.25 kWe – 5 kWe
- Grant value per system:
€5,700 – €28,000



Belgique

Flandres:

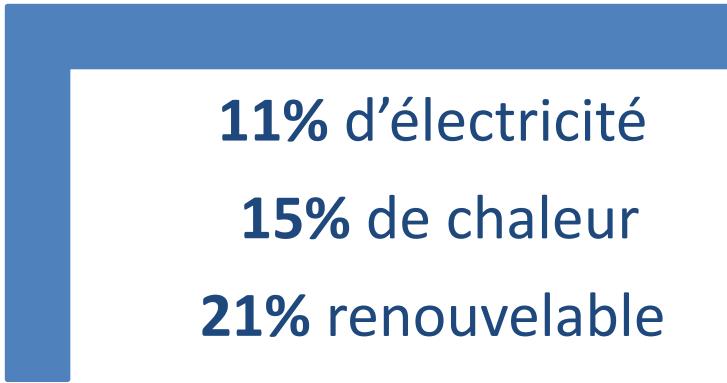
- Certificats verts remplacés pour la cogénération en dessous de 10kWe à partir du 1 janvier 2018
- Soutien à l'investissement:
 - Energies conventionnelles: Subside limité à maximum 30% des coûts d'investments
 - Biogaz: Subside limité à maximum:
 - 65% small enterprises
 - 55% medium enterprises
 - 45% large enterprises



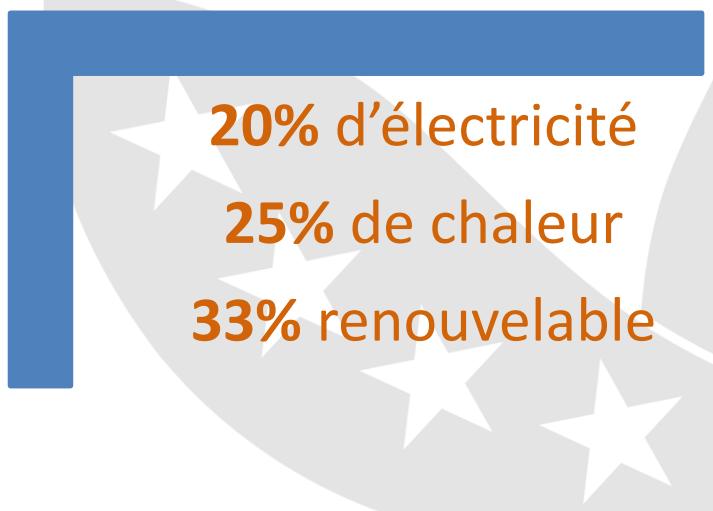
Cogénération - Potentiel en Europe



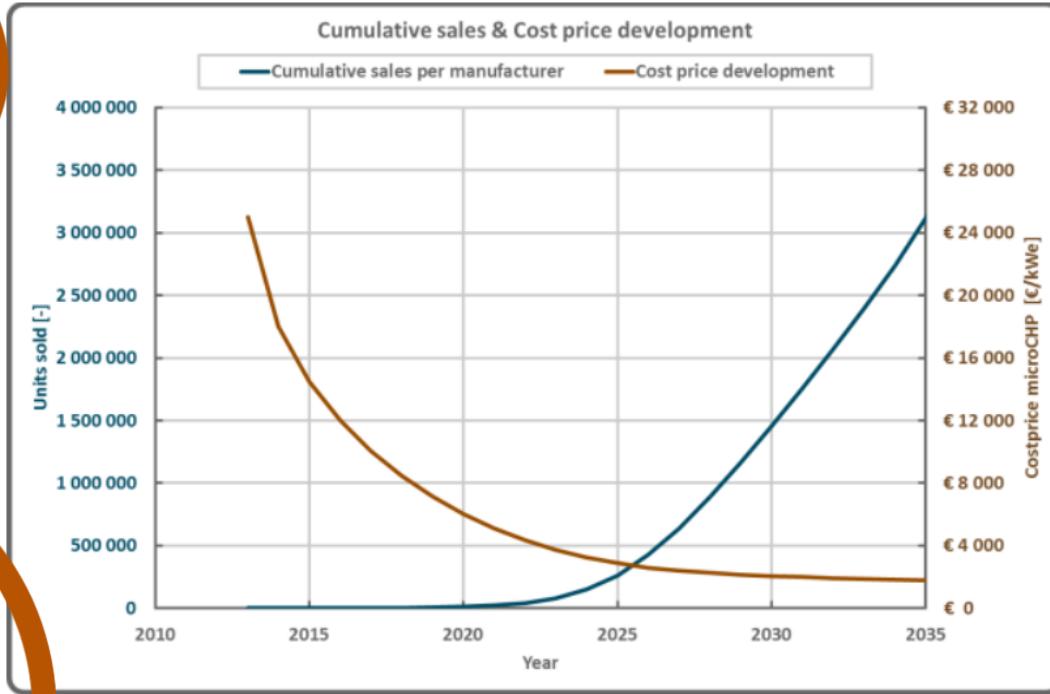
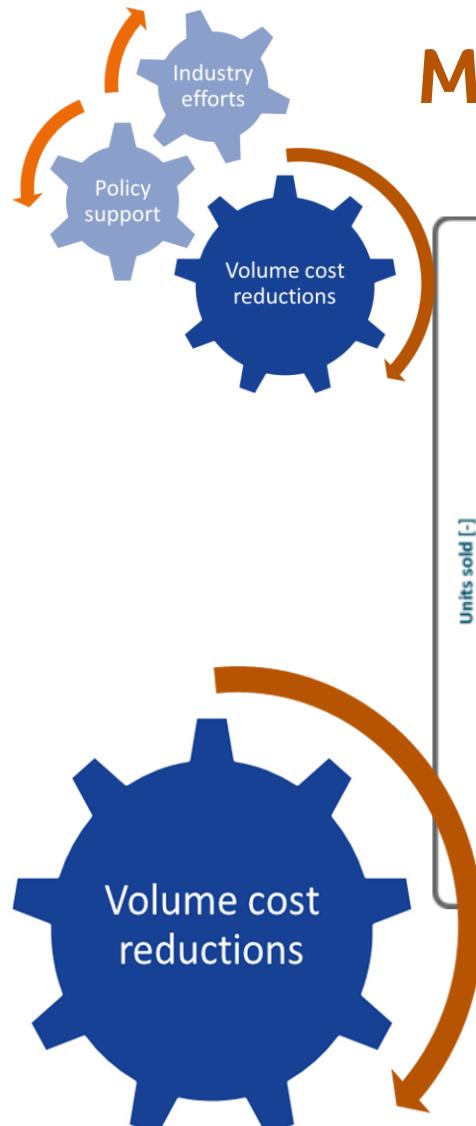
Aujourd'hui



Potential pour 2030



Micro-CHP potentials by 2030



15% cost reduction for every doubling of production volumes

3000 €/kWe production cost expected in 2025

Source: [CODE2, May 2013](#)



Cogénération - Potentiel en Europe (2)

Climate & Energy Targets



EFFICIENCY UP



EMISSIONS DOWN

Cogeneration delivers
today
2020

11-17%
of EU Energy Efficiency
target

16%-25%
of EU GHG target

Cogeneration will deliver
tomorrow
2030

up to 23%
of EU Energy Efficiency
target*

up to 25%
of EU GHG target

Source: EU funded project CODE2

* Assuming a 40% energy efficiency target in 2030



Pathway to a Competitive European
Fuel Cell micro-CHP Market

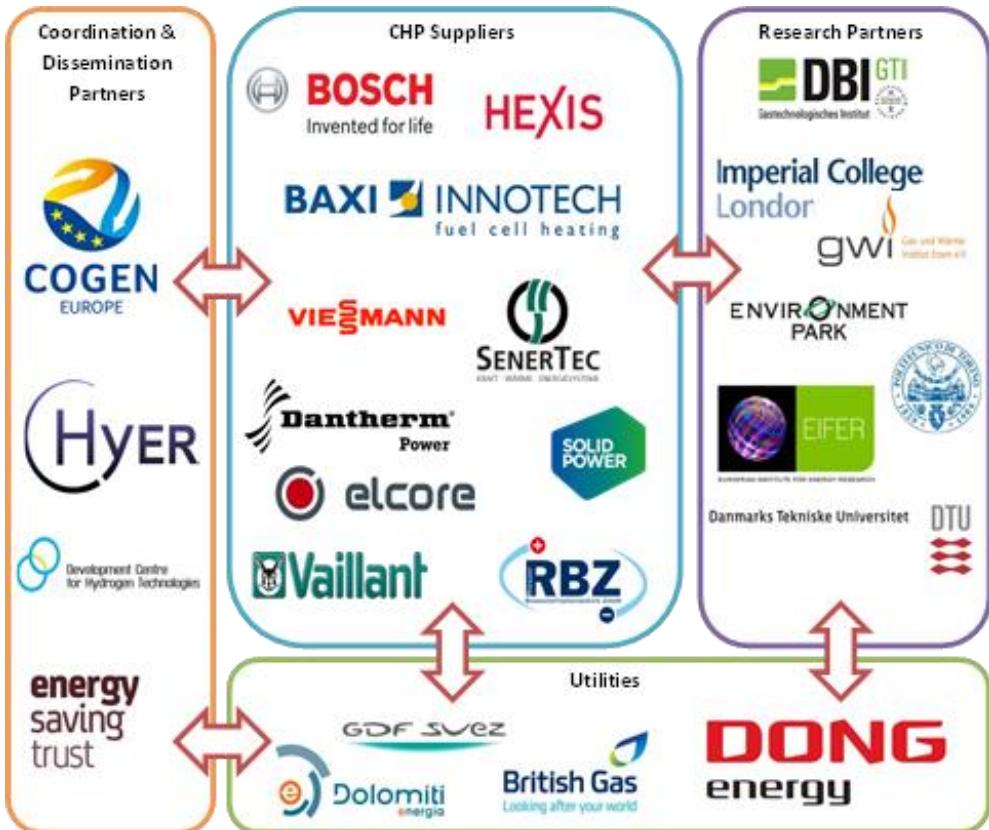


COGEN Europe
coordinator of EU funded projects

ene.field*

Fuel Cells x Combined Heat and Power

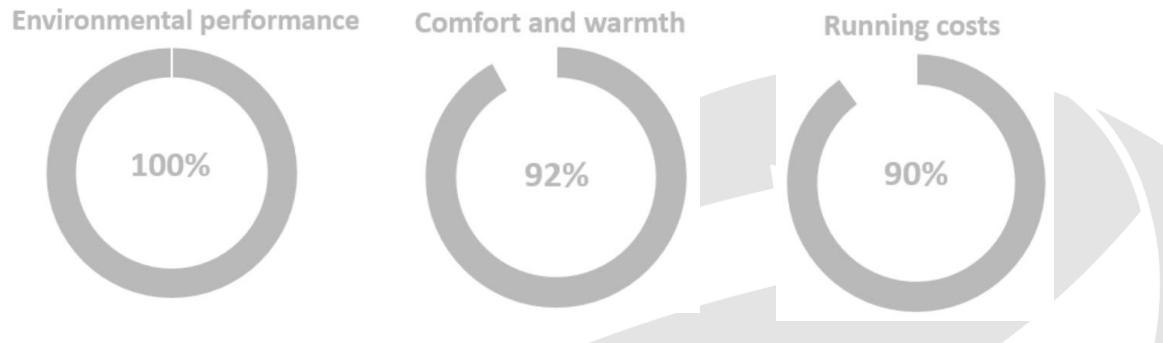
2012 - 2017



1,046 Fuel Cell micro-CHP systems
deployed across 10 key EU countries.

Ene.field project findings

Customer satisfaction



Important distribution network cost reductions

in 2030



Micro-CHP displaces more carbon intensive power, while reducing grid losses

CO2 emission reductions



PACE

2016 - 2021

Pathway to a Competitive European
Fuel Cell micro-CHP Market



8
Partners

Representing
manufacturers,
utilities & research
community

> 2,500
Fuel Cell micro-
Cogeneration
units

To be deployed
across Europe
between 2016-
2021

>500
Systems per
manufacturer

Established
production
capacity per
manufacturer

10

Countries

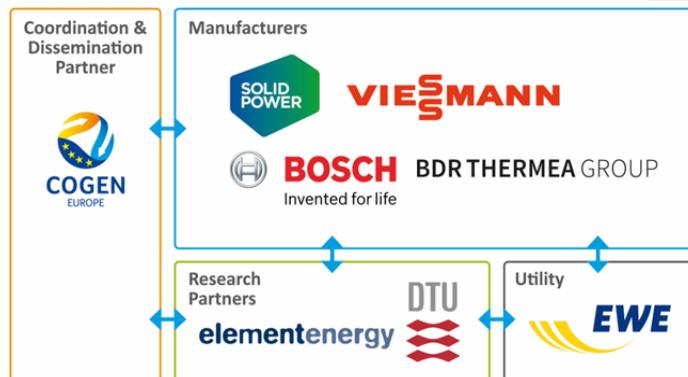
4
Countries

€90m
Total budget

Including €33.9m
Horizon 2020
funding via FCH JU

>10,000

FC micro-
cogeneration
units/year post 2020



- Field trial + installer training + targeted market & policy development activities
- Field trial + local installer training



COGEN EUROPE

cogeneurope.eu

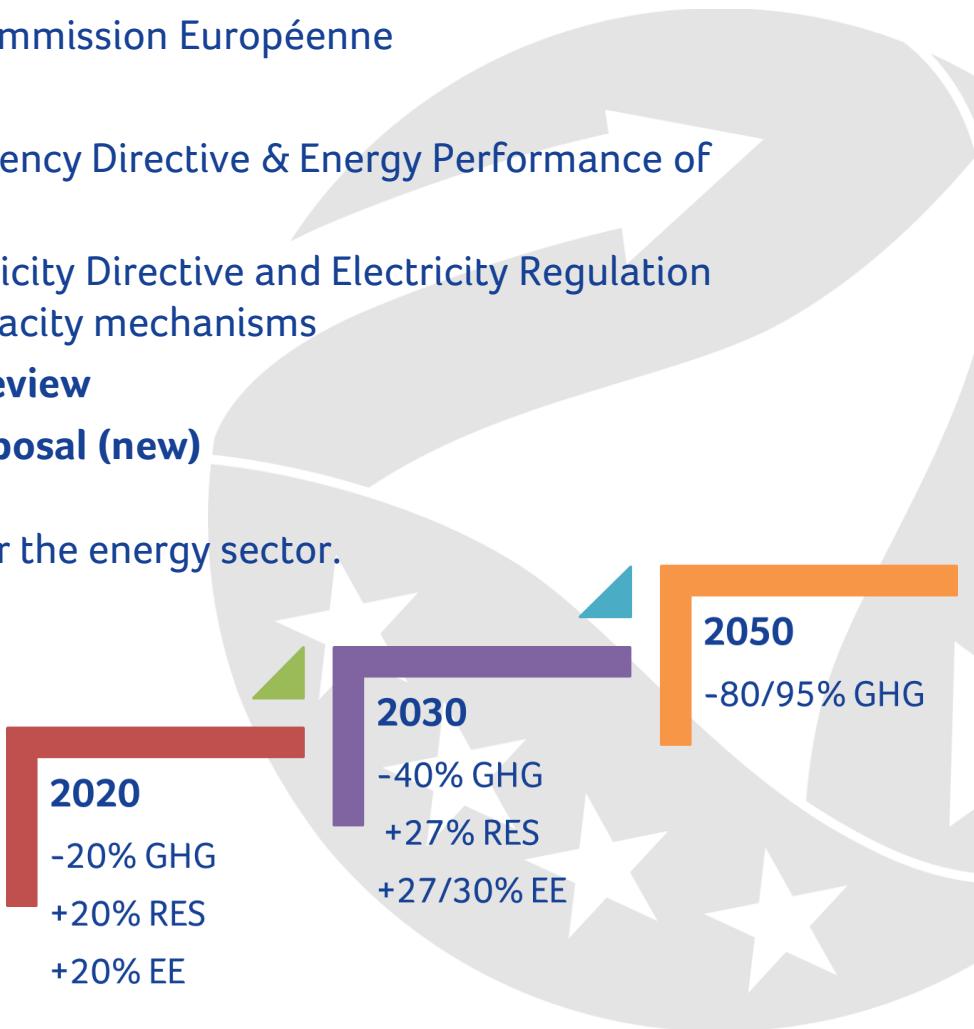


Cadre législatif européen impactant la mini/micro-cogénération

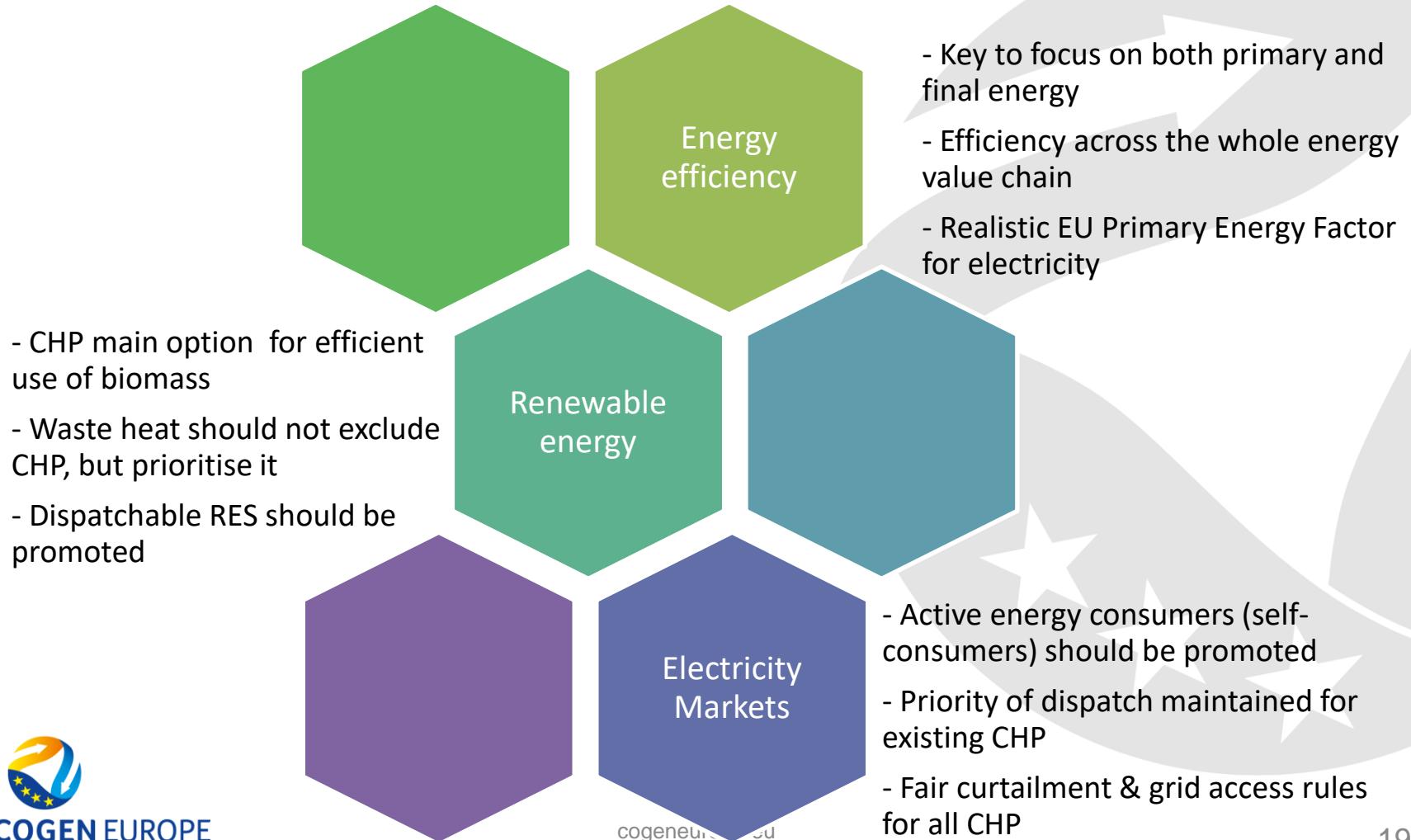
Energy Efficiency Directive (EED)	Heating & Cooling Strategy	Electricity Market Design	Network Codes (NC RfG)	On the radar
<ul style="list-style-type: none">- EED national implementation- Ensure that micro/mini-CHP are included in the Comprehensive Assessments- micro/mini-CHP promotion via energy audits in businesses- Simplified grid connection for micro-CHP	<ul style="list-style-type: none">- Commission to publish H&C Strategy on 10 Feb- Will make proposals on how to improve efficiency and decarbonise H&C in EU- CHP one of the key technologies	<ul style="list-style-type: none">- Focus on promoting flexible generation solutions to better integrate intermittent RES- Provisions to facilitate/prioritise grid connection of CHP by TSO/DSOs maintained	<ul style="list-style-type: none">- NC RfG to be adopted in February-March 2016- Micro-CHP eligible under the “Emerging Technology Classification”- Mini-CHP can benefit from a simplified “third party derogation” applied to a class of series produced generators	<ul style="list-style-type: none">- European Primary Energy Factor Review- Energy Labelling Directive Review- Energy Performance of Buildings Directive Review

“Clean Energy for all Europeans” Package

- Publié fin Novembre 2016 par la Commission Européenne
- Proposition législatives sur
 - **Energy Efficiency:** Energy Efficiency Directive & Energy Performance of Buildings Directive Reviews
 - **Market Design Initiative:** Electricity Directive and Electricity Regulation Reviews, Sector inquiry into capacity mechanisms
 - **Renewable Energy Directive Review**
 - **Energy Union Governance Proposal (new)**
- Setting the 2030 policy framework for the energy sector.
- Three key aims:
 - Put energy efficiency (EE) first
 - Make Europe #1 in RES
 - Empower energy consumers



Clean Energy Package: Opportunités & risques pour la cogénération



Policy recommendations for mini/micro-cogeneration

- **Fully recognise consumer and system benefits of mini/micro-CHP in policy at the EU and national levels**
 - Including in methodologies in key policy mechanisms (energy labelling, building codes, Covenant of Mayors)
 - Fair electricity market design rules to mini/micro-CHP
- **Ensure support scheme stability and coherence**
- **Simplified administrative procedures**
- **Taken into account the decarbonisation and flexibility potential of gas networks (renewable gas) with fuel cell micro-CHP in national energy and climate strategies**

Prérequis pour la croissance

Perspective européenne

- ✓ Cadre législatif européen ambitieux, favorable, coherent, stable et implementé
- ✓ Amélioration des conditions des marchés
- ✓ Opportunités d'investments/financements améliorées
- ✓ “Better awareness” de la cogénération auprès des petits utilisateurs, des politiciens et financiers



Celebrating 25 years

Join us!

Anniversary
Annual
Conference,
Awards
& Gala Dinner

5-6 June, 2018

Brussels, Belgium



Merci pour votre attention!

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