

The societal value of CCS and how to reach greater public acceptance

CATO SPRING
CONFERENCE
20/03/2024

About Bellona

An independent, non-profit organisation that meets environmental and climate challenges head on.

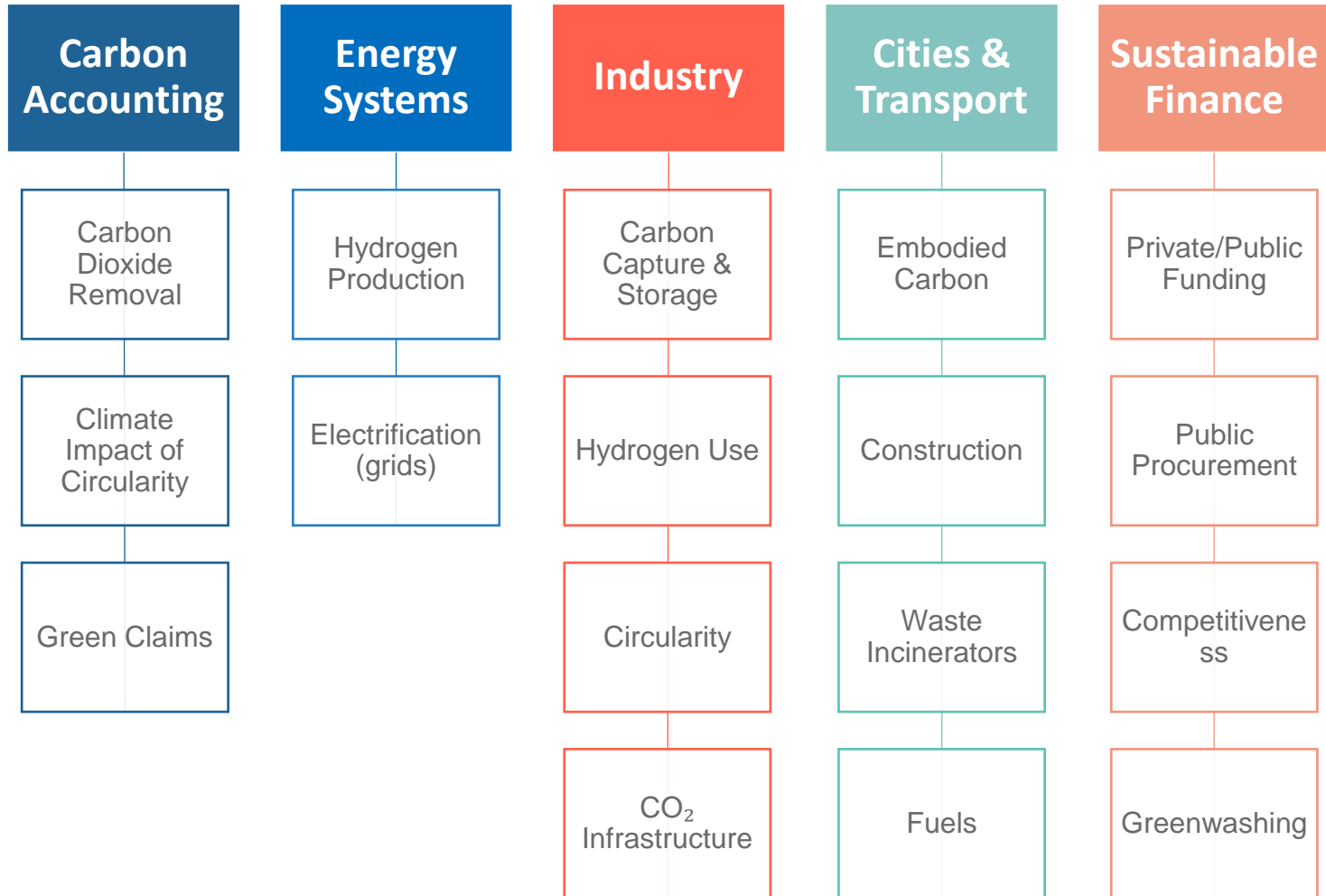
We are solutions-oriented and have a comprehensive and cross-sectoral approach to assess the economics, climate impacts and technical feasibility of necessary climate actions. To do this, we work with civil society, academia, governments, institutions and industries.

- Founded in Norway in 1986
- European office since 1994
- Berlin office since 2021



Focus Areas

Our strategy

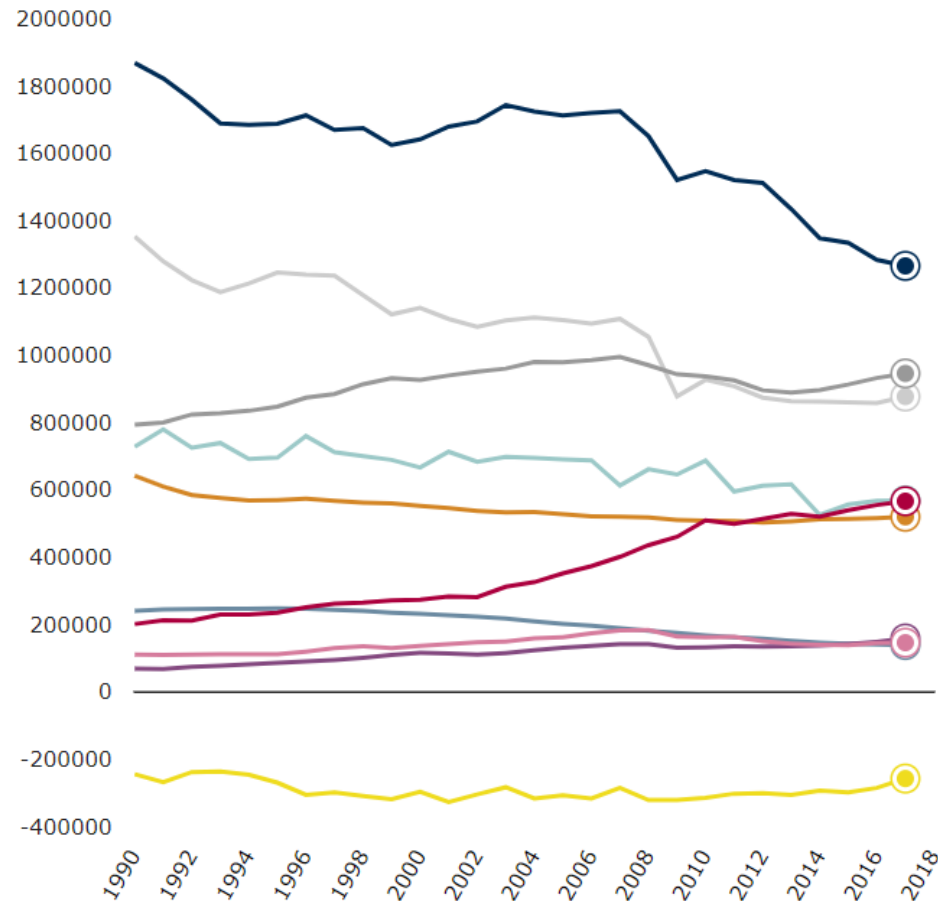


3 criteria for successful climate solutions

- 1 The Climate aspect**
Greenhouse gas reductions
- 2 The Trade-offs**
Resource use intensity and effect on decarbonisation pathway
- 3 The Timing**
Deployment potential at scale near-, mid- or long-term

Emission sources

kt CO₂ equivalent



Legend

- Energy supply
- Industry
- Transport
- Residential/commercial
- Agriculture
- Waste
- International aviation
- International shipping
- CO₂ biomass
- LULUCF
- Total excl. LULUCF

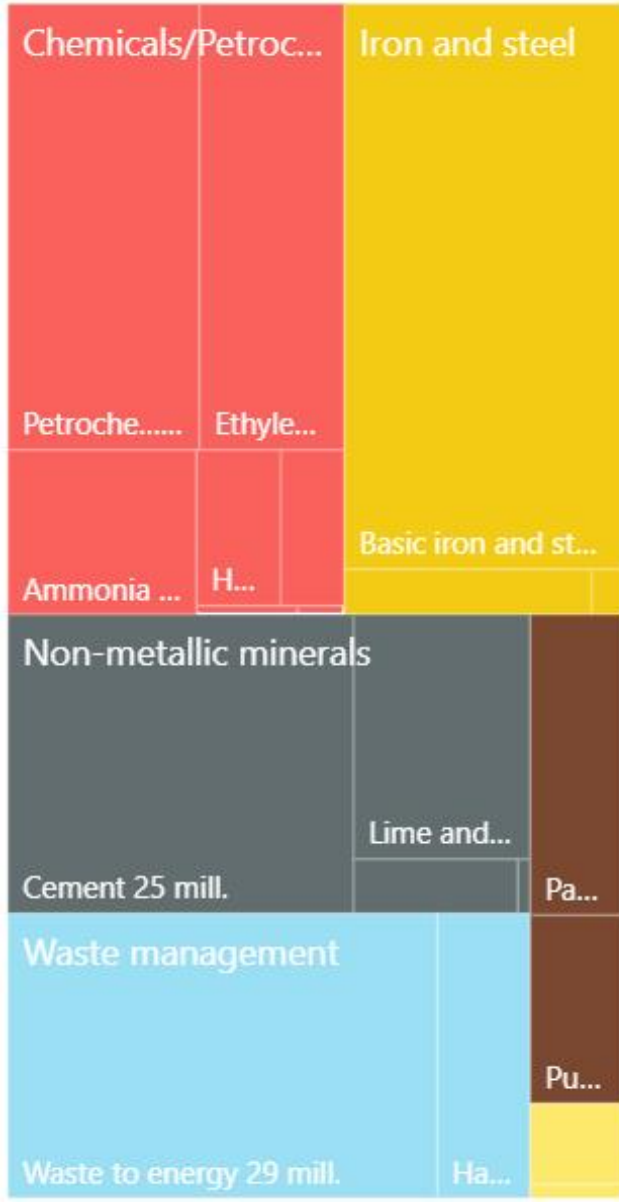
Heavy industry accounts for ≈19% of EU's emissions*.

Globally, steel, cement, petrochemicals and chemicals contribute to 29.4% of global emissions**.

* 2017 data
** 2016 data

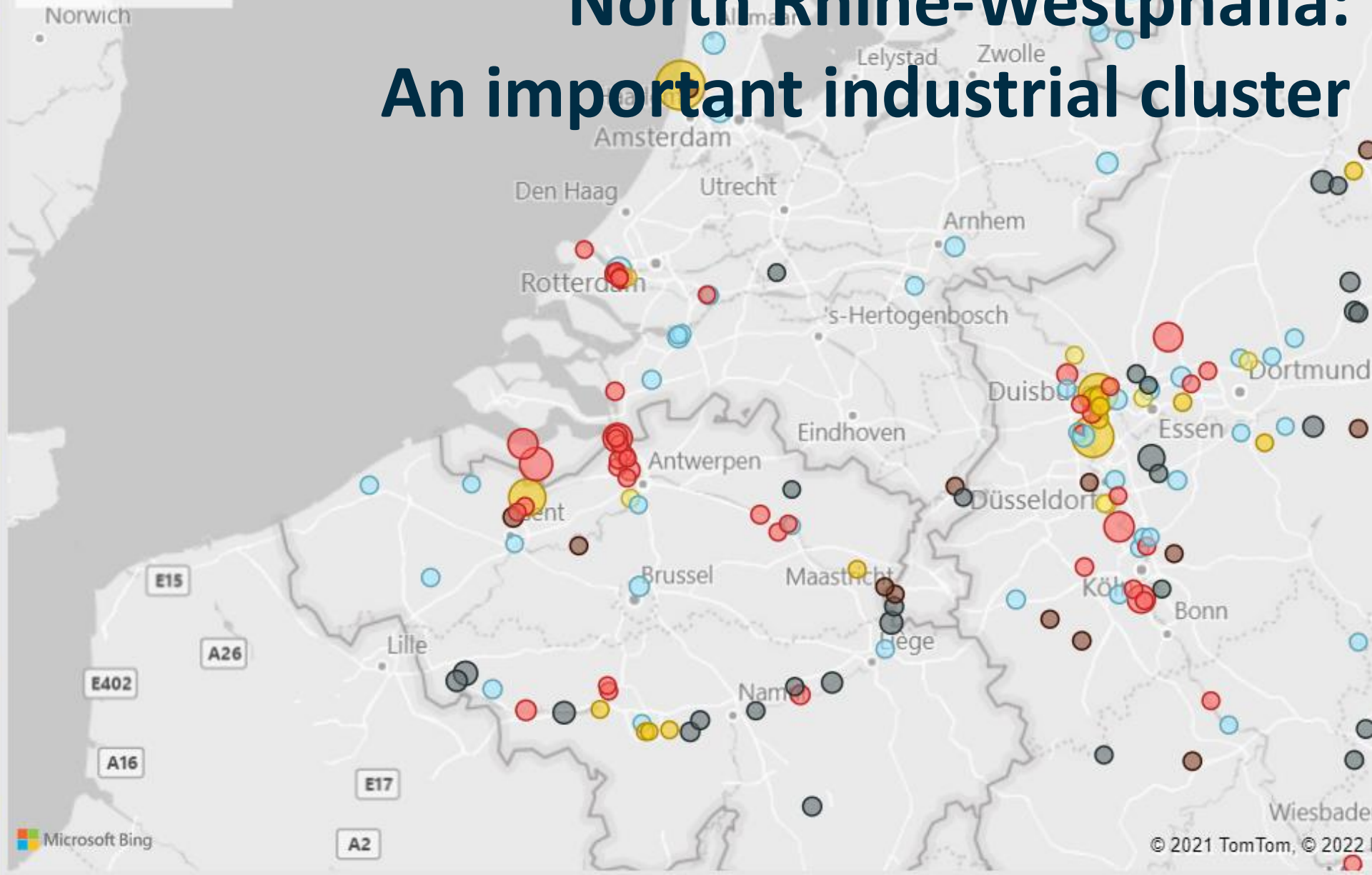
174 mill.

tonnes CO2



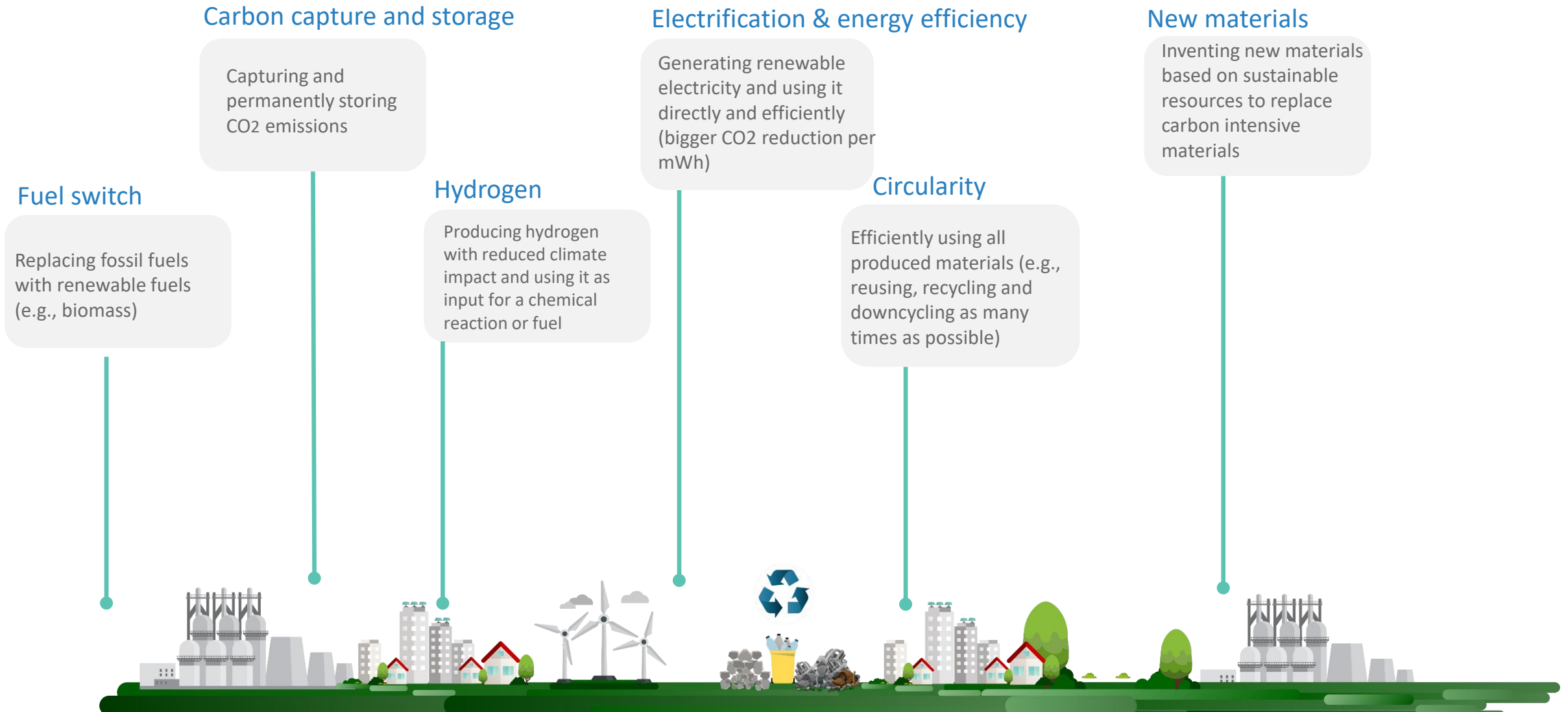
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facilities



The Netherlands, Belgium and North Rhine-Westphalia: An important industrial cluster

The basic dictionary of industrial climate action



CCS is necessary in the fight against climate change



To build the green transition

Concrete, steel, iron and polymers are important building blocks of a lot of renewable energy technologies



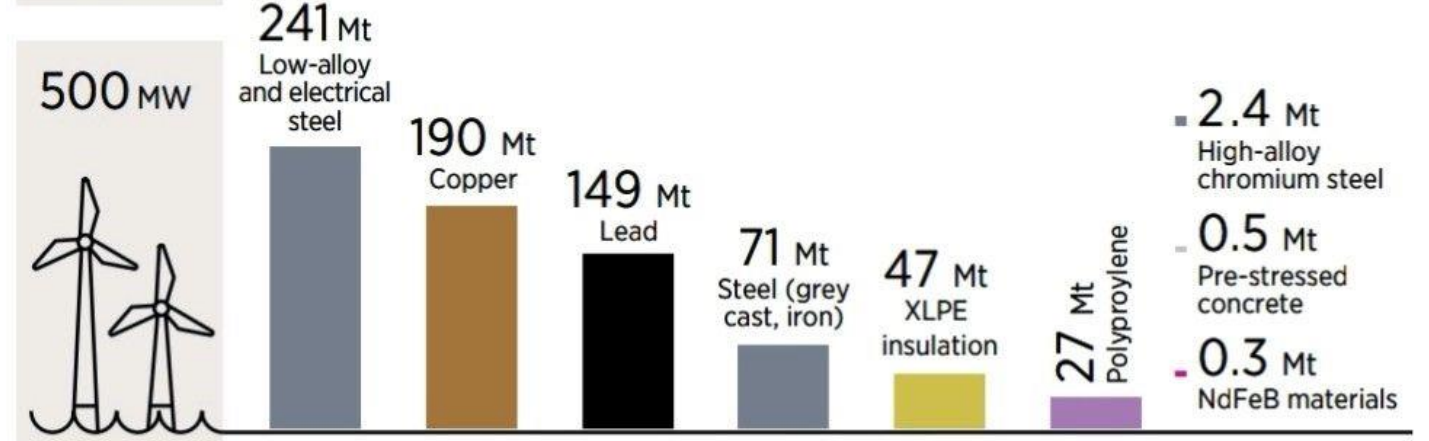
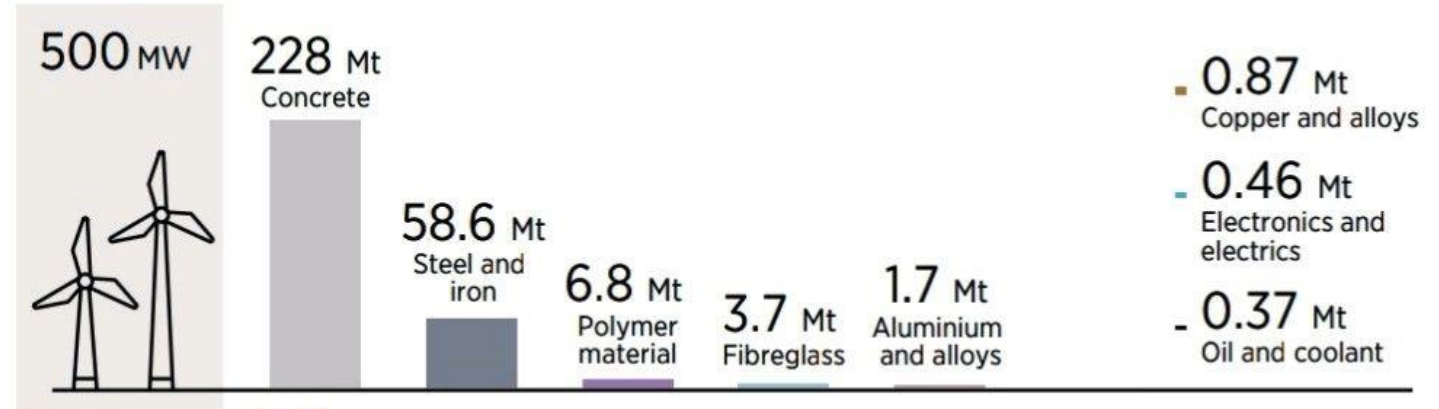
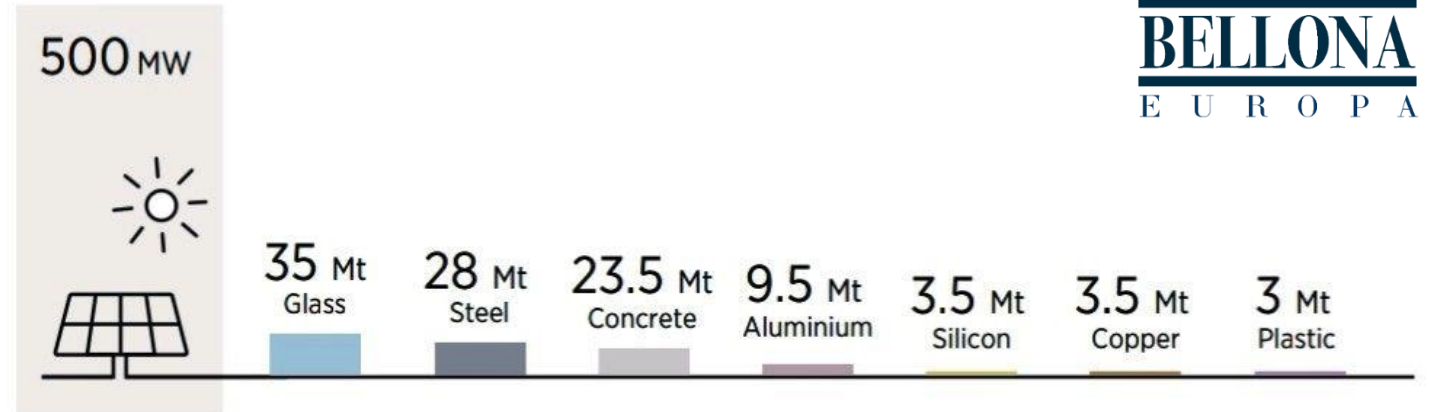
CO2 To eliminate 'unavoidable' emissions

No CO2 emissions left behind; process emission will have to be dealt with.



To enable a just transition

Hard to abate sectors like steel and cement provide jobs for a considerable amount of people.



The CCS Ladder

Developed by Bellona and E3G

Criteria for the CCS Ladder

1

Competition from alternative technologies

2

The Mitigation potential

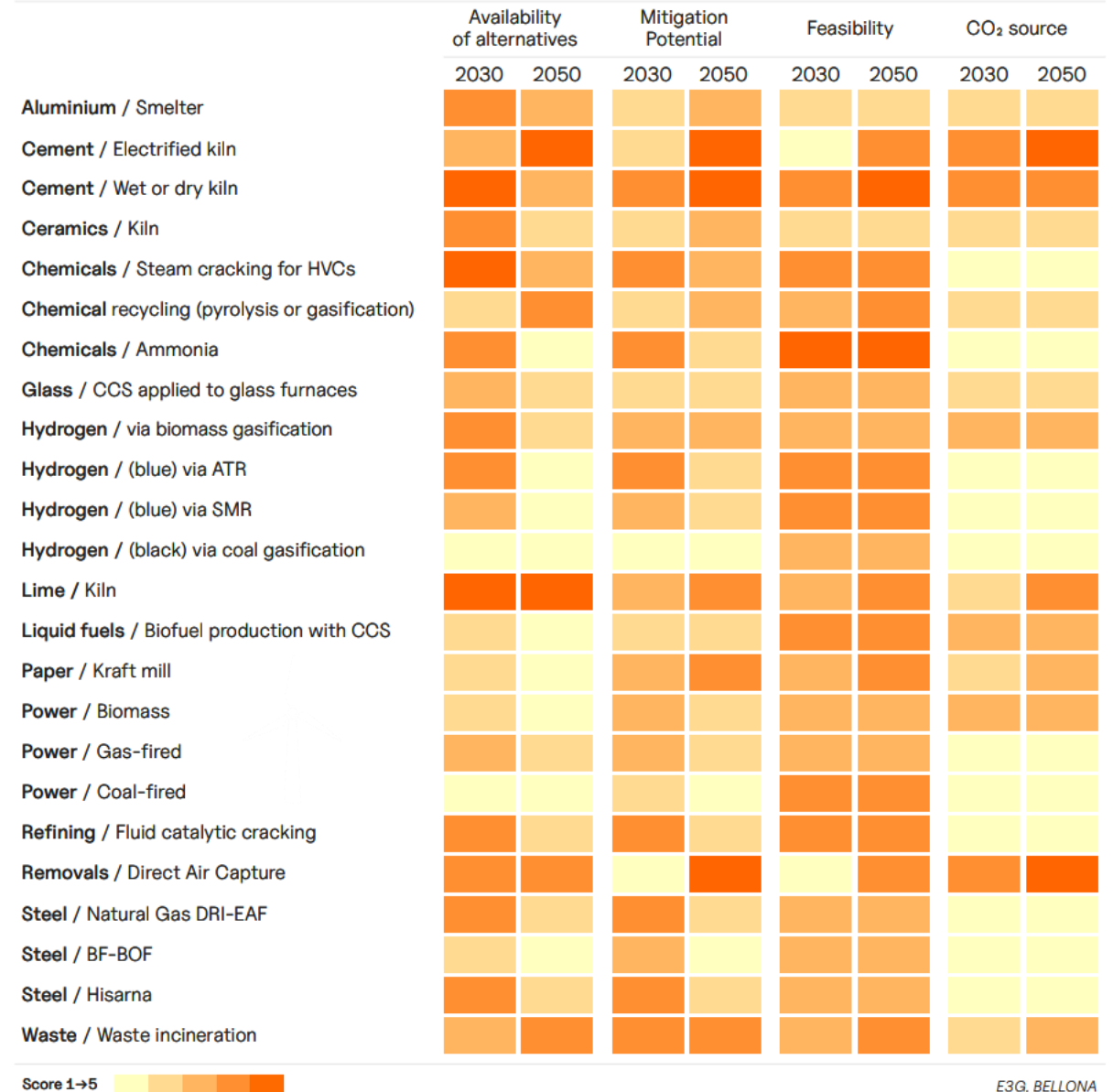
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Feasibility of CO2 capture

4

The CO2 Source

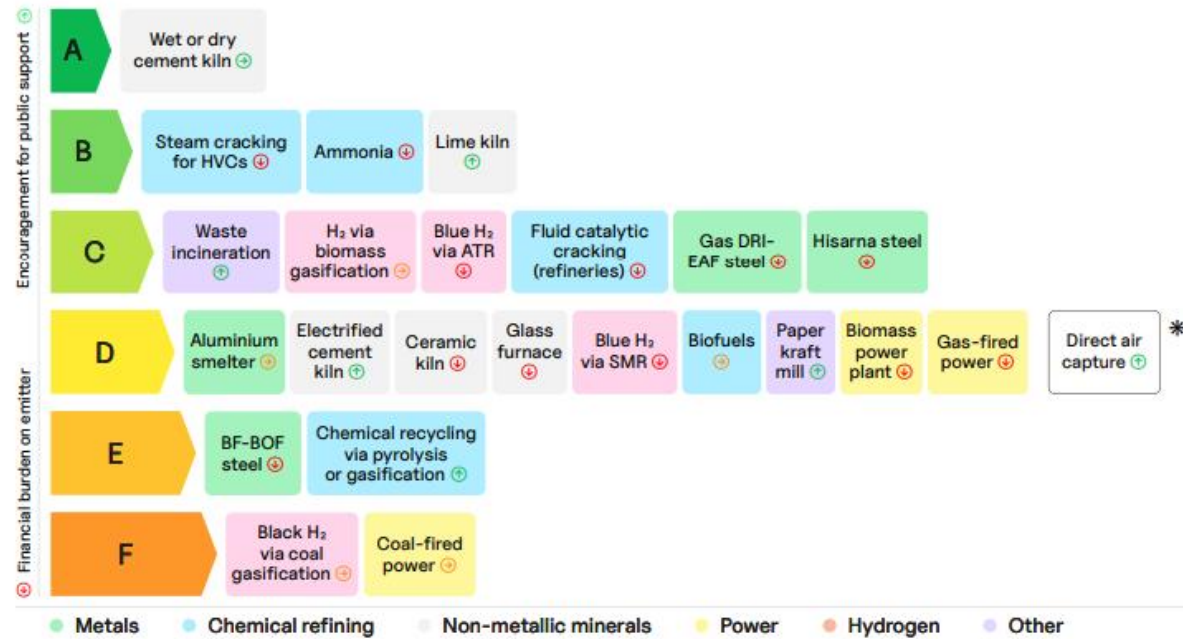
CSS applications heatmap (2030–2050)



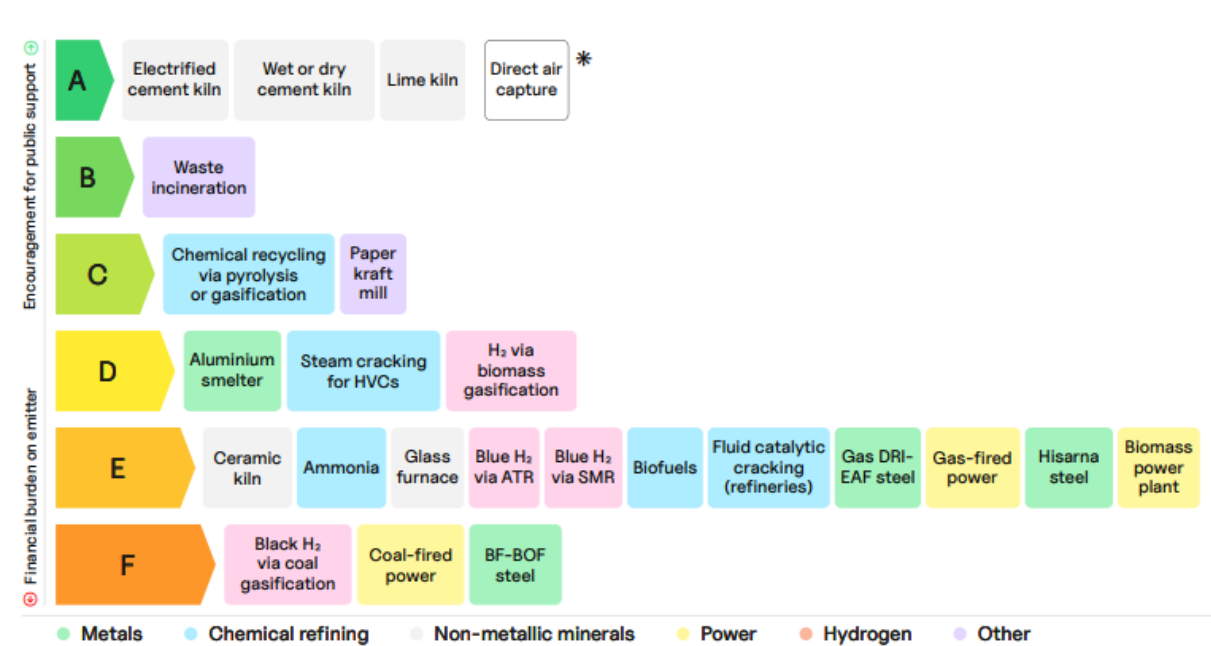
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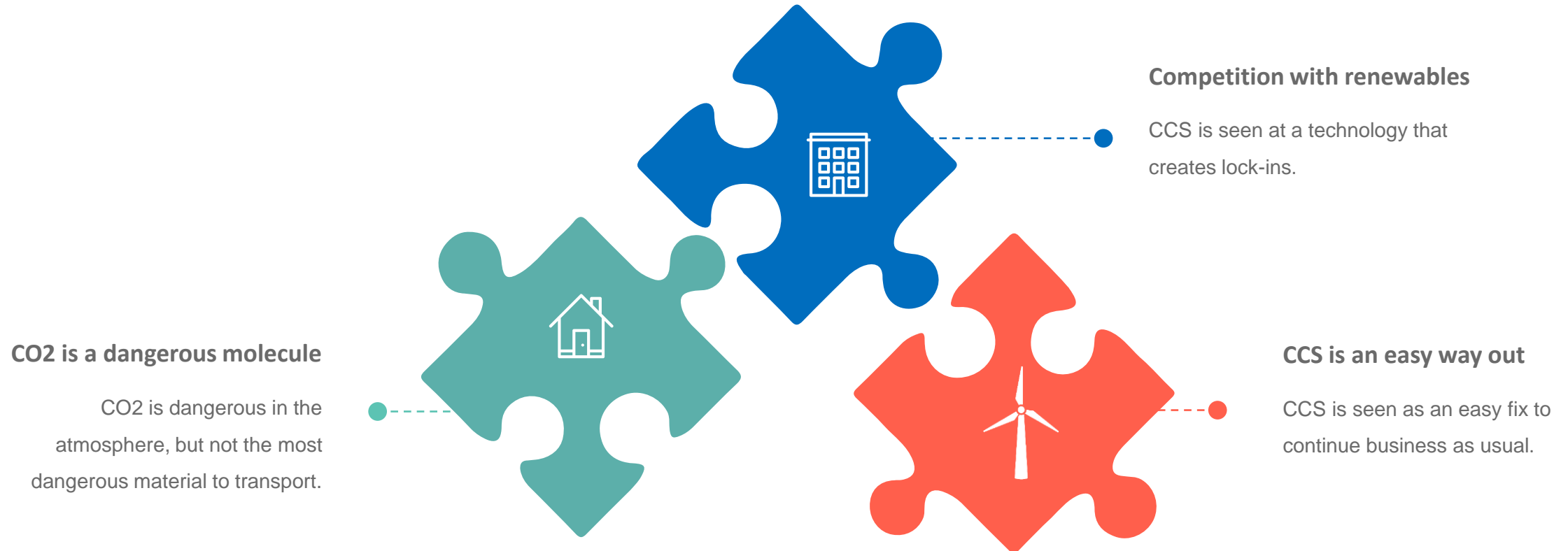
2030



2050



The perceived risk related to CCS



Bellona Europa's efforts

WG on Public Perception

CCUS FORUM

- Platform for CCS stakeholders to discuss and share their knowledge of the topic
- Output: Recommendation Paper
- In the future the platform should continue to serve as a place for knowledge exchange and the exchange of experiences

Just Transition Platform


WG CEMENT

- Platform gathering stakeholders from the cement industry located in Just Transition Territories
- Output: Recommendation Paper



Just Transition at the Heart of CCS Deployment in Europe

- A reminder of why we are advocating for decarbonisation solutions like CCS
- We need CCS to fully decarbonise harder-to-abate industries so we can harness their potential to contribute to our efforts to reach net zero by providing building materials for renewable energy infrastructure and our zero-energy homes.
- Harder-to-abate industries directly create over 1,5 million welfare-carrying jobs



JUST TRANSITION AT THE HEART OF CCS DEPLOYMENT IN EUROPE

OCTOBER 2023

Major societal transformations, such as the industrial or digital revolutions of the past, have resulted in both economic winners and losers. The same will occur in any transition without appropriate public intervention and support, including also the green transition. Given short timelines and the scale of transformation that needs to be undertaken to achieve net-zero emissions by 2050, certain regions are at risk of experiencing resulting negative impacts, unless they receive targeted support to facilitate a swift adjustment to a decarbonising landscape. This is particularly true for regions heavily dependent on harder-to-abate industrial activities. Carbon Capture and Storage (CCS) will play a crucial role in ensuring a Just Transition for all in such regions.

The focus on a Just Transition for all came onto the European Commission's agenda with full force in 2019, as climate change became top priority¹. Within the European context, it aims to address any potential negative social impacts of a rapid shift to a net-zero economy¹.

“ GREENING THE ECONOMY IN A WAY THAT IS AS FAIR AND INCLUSIVE AS POSSIBLE TO EVERYONE CONCERNED, CREATING DECENT WORK OPPORTUNITIES AND LEAVING NO ONE BEHIND. ”

- International Labour Organisation (ILO) (iii)

Since the industrial revolution, economic growth has been closely linked with the use of fossil fuels and increasing CO₂ emissions. While this phenomenon has created inequalities² and global disparities in political and economic power², it also manifested in economic development, an increase of employment, as well as a rise in living standards – at the expense of the

1 The European Commission established the Just Transition Platform, of which the WG Cement focuses, among other topics, on recommendations for a governance structure for an EU-wide CO₂ infrastructure with special focus on Just Transition Territories.


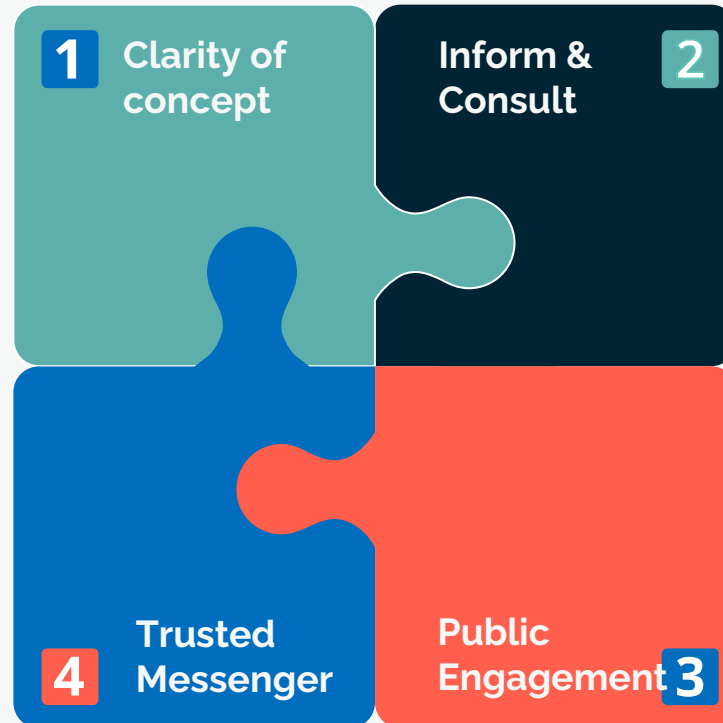


Photo credit: Adobe Images ana-toly_gleb

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How to gain greater public acceptance

Throwing CCUS and carbon removals all together is confusing



The risks, challenges and benefits should be made clear

Maintain transparency to maintain trust

Involve the greater public as early as possible

Get in touch!



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Thank You

Have a nice day!