



Federal Ministry
of Education
and Research



PHOENIX –

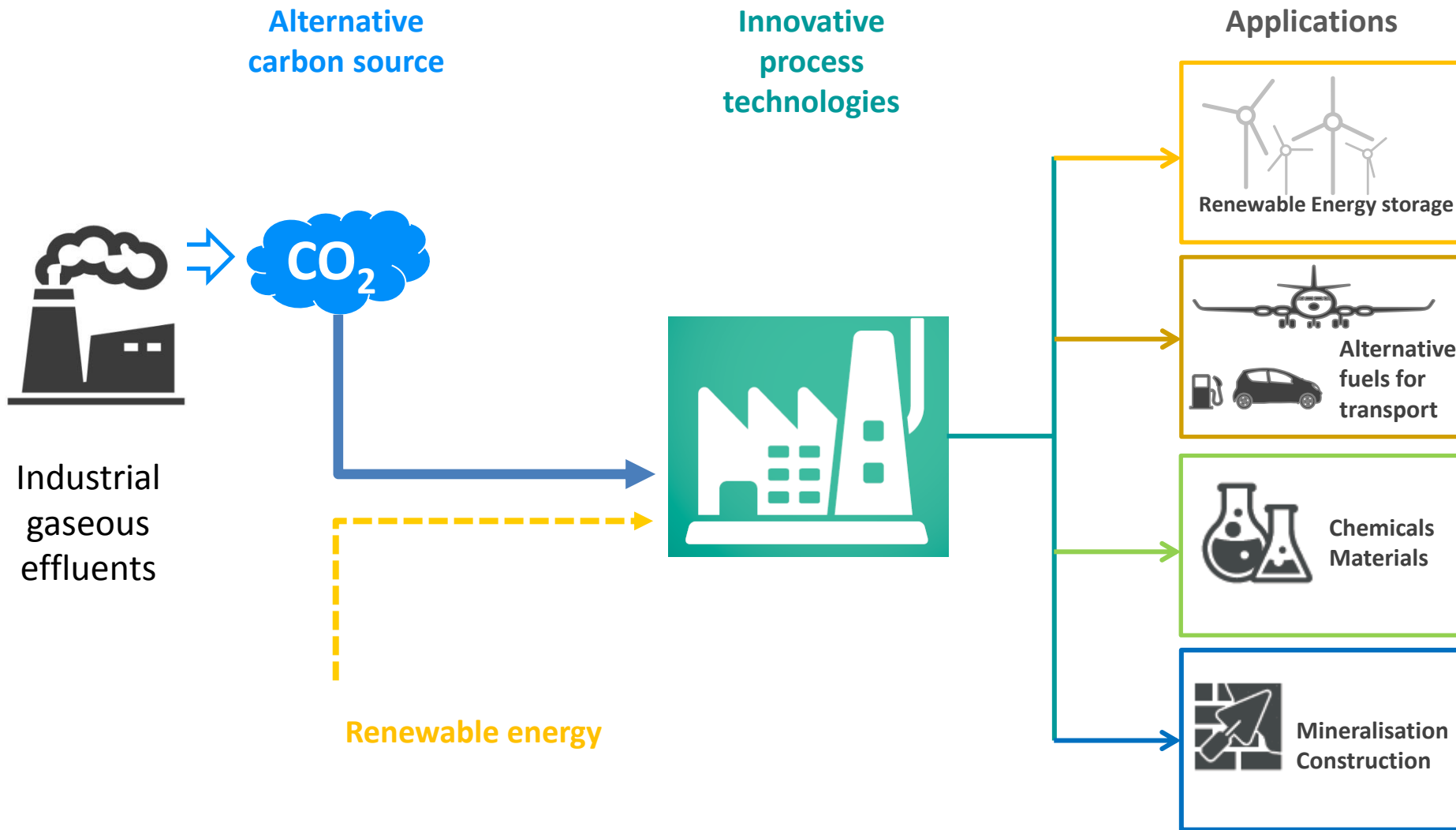
A European integrated approach to CO₂ valorisation

Dr. Stefanie Roth

Project Management Resources and Sustainability
Project Management Jülich

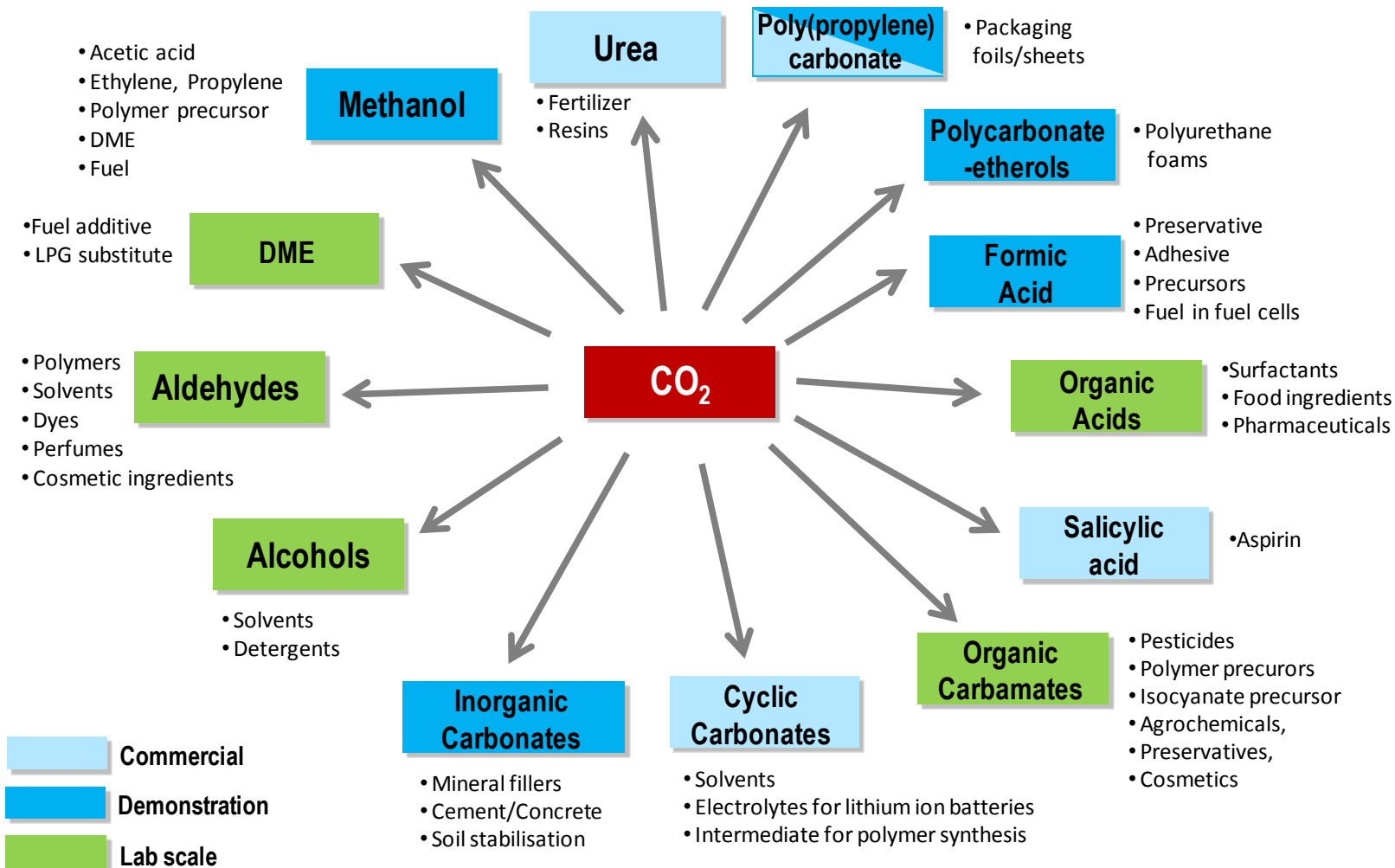
ACHEMA Congress, 16 June 2018

CO₂ valorisation



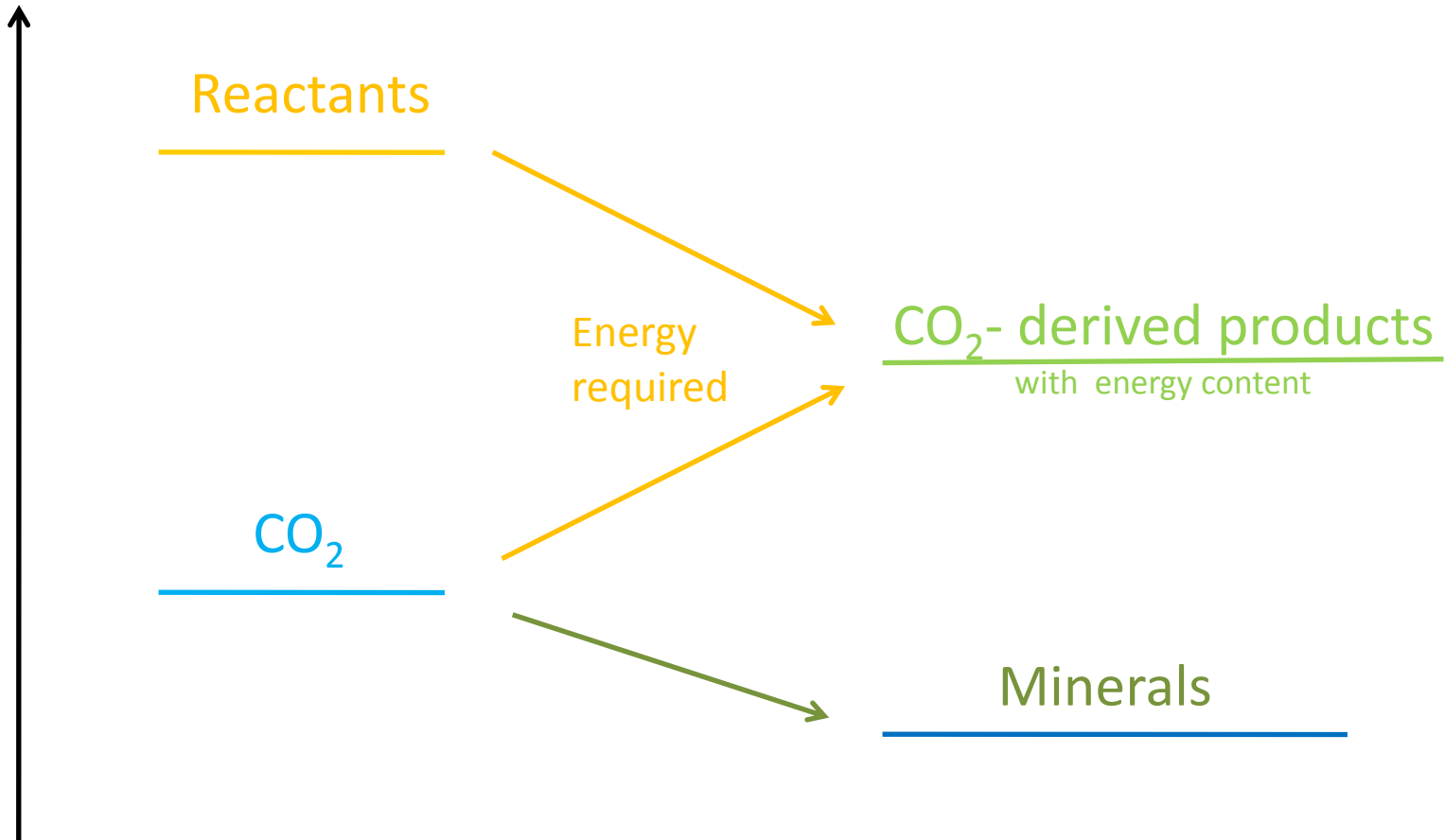


CO₂ derived products



CO₂ valorisation

Energy



BMBF's activities in CCU

- **CO₂ as sustainable raw material**

Focus: to broaden the raw material base and supply a stable and independent carbon source for the future

CCU areas: capture and purification, mineralisation/carbonation, chemicals and polymers, direct conversion of CO₂ with renewable energy

- **CO₂-valorisation as part of the ‚Energiewende‘**

Focus: chemical energy storage, electrification of industrial processes with CCU

CCU areas: PtX (via H₂)

CO₂Plus – Broadening the raw materials base

Funding period: 2016-2019, 12 joint R&D-projects

Funding volume: 17.5 Mio Euro plus 5 Mio Euro industrial
investment

Focus:

- **Chemicals and Polymers**
- Electro- and Photocatalysis
- **CO₂-separation**

Hall 9.2, Stand E83!

www.chemieundco2.de

<http://www.fona.de/en/20935>

(Digital press file)



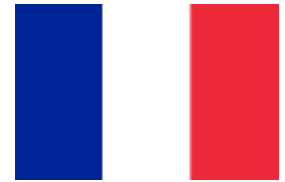
The PHOENIX Initiative

founded: June 2017

Partner: Core group from France, Germany,
The Netherlands, in close collaboration with Cefic

Objectives:

- European integrated approach to ensure that CO₂ valorisation technology developments can be transformed into real benefits for Europe
- Support fast implementation of promising CO₂ valorisation technologies on European level
- Optimise public and private partnership by involving and connecting **all** relevant stakeholders



Objectives

Improve Investor confidence:
supportive
regulatory/political
framework

Prioritise in companies:
High position on internal
investment ranking lists

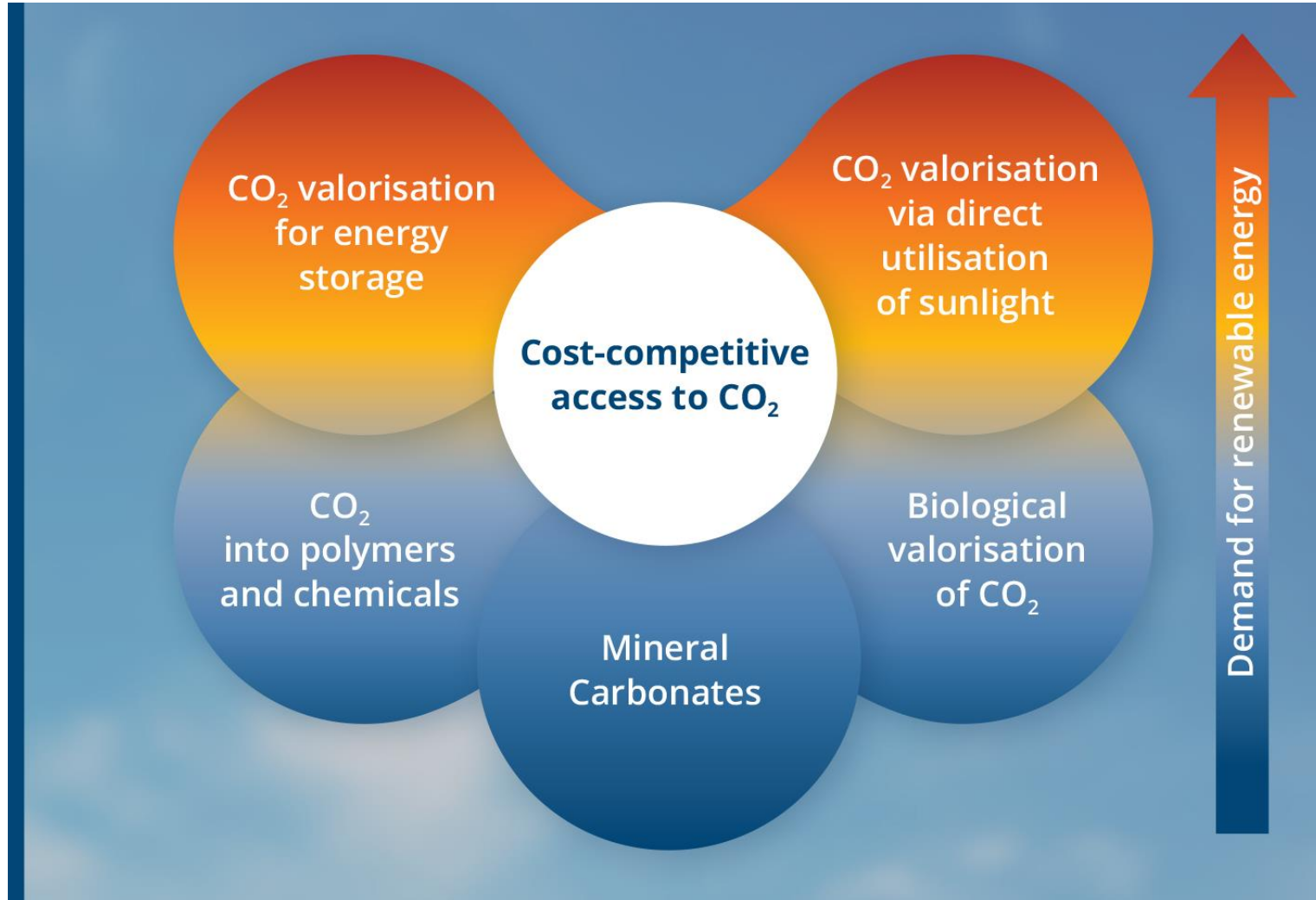
Close funding gaps:
Public and private
funding of projects >
TRL6
(state aid and IPCEI)



Improve Synergies:
Coordination of RD&I
funding activities on MS
and EC level

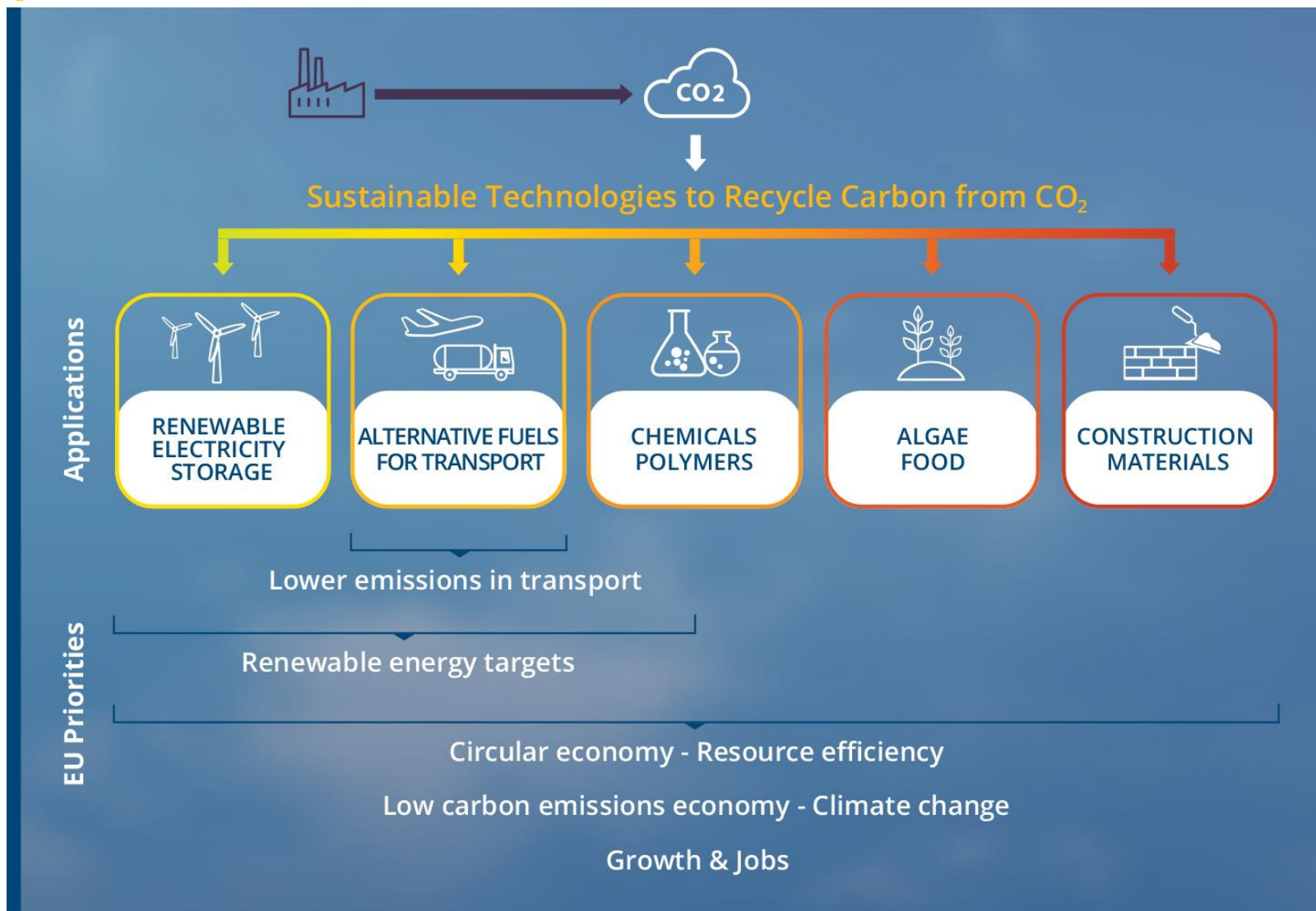
**Tackle cross-cutting
challenges:**
e.g. Infrastructure

Technology Fields





European priorities





Timeline

Phase 1, Exploration

- National declarations of intent
- Selecting instruments for formal collaboration
- Interaction with stakeholders

Phase 2, Preparation

- **Definition of formal collaboration**
- Interaction with stakeholders
- Preparation of the implementation in national schemes

Phase 3, Implementation

- Implementation of PHOENIX in national schemes
- Enhanced CO₂ valorisation through PHOENIX

Public Launch

Public Launch: EU Industry Day, 22 February 2018, Brussels



Main focus:

- Public information and Networking
- Launch of Webpage: <http://www.phoenix-co2-valorisation.eu/>
- Welcome interested Member States to join the initiative

International Workshop

Frankfurt, 22 March 2018: ~55 participants from 8 countries

Main Focus:

- Networking and Overview over activities (countries and industry)
- Feedback *on* and *for* the PHOENIX-Initiative

Workshop (round tables)

- Identification of existing projects and funding demands for higher TRL/demonstration level projects in the technological areas
- → helps PHOENIX to shape future funding activities

Results of Workshop:

- ✓ Significant number of **concrete project pitches**
- ✓ Activities in many European countries
- ✓ “**ready project ideas**” in the areas *Chemicals and Polymers, Mineralisation and Power-to-X*
- ✓ **Industrial symbiosis** at well chosen locations is seen as key to success
- **Regulation hurdles** are hampering market entry → harmonised LCA guidelines needed
- No funding available for **high TRL** – still significant risk for companies

Where can PHOENIX help?

- ✓ Bridging the gap from R&D into the market
- ✓ Support **new type of collaboration**: along the whole value chain, from CO₂ emitter to product consumer
- ✓ Facilitate **partnership across borders**, strengthening Europe's industrial leadership role
- ✓ **Improve communication** – directed at policy makers and the public
- ✓ Support the development of **standardised LCA guidelines**
- ✓ Work towards a dedicated **labeling system for CCU products**

Planned Activities

Formalisation

- In the process of setting up a Memorandum of Understanding

More Communication:

- Public appearances at conferences
- Establish own workshop series?

Project funding:

- Work towards transnational funding of demonstration projects – find other countries and regions to join
- Work towards an IPCEI or similar activity



Planned Activities

Harmonisation of LCA guidelines

- Collection of existing projects/ activities and articles
- PHOENIX proposes a workshop to DG RTD with all relevant EC stakeholders

European Commission R&D&I:

- Comment on official CCU reports – e.g. SAM advice on CCU
- Propose CO₂ valorisation as strategic value chain for IPCEI strategic forum
- Propose CO₂ valorisation as part of strategic priorities in Horizon Europe



Contact and Further Information



<p>France Xavier Montagne xavier.montagne@recherche.gouv.fr Paul Bonnetblanc paul.bonnetblanc@developpement-durable.gouv.fr</p>	<p>Germany Helmut Löwe Helmut.loewe@bmbf.bund.de Stefanie Roth s.roth@fz-juelich.de</p>
<p>The Netherlands Gerdi Breembroek Gerdi.breembroek@rvo.nl</p>	<p>Cefic Pierre Barthelémy pba@cefic.be Sophie Wilmet swi@cerfic.be</p>

www.phoenix-co2-valorisation.eu