Piloting in an industrially relevant environment

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Bio Base Europe Pilot Plant

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Bio Base Europe Pilot Plant

Mission statement

To enable the transition to a sustainable bio-based economy

through

Development, scale-up and custom manufacturing of bio-based product and processes

Renewable Carbon

Different sources of **renewable carbon** exist

Recycling

Biomass

CO_2 utilisation

Sources of C1 molecules

Steel manufacturing

CO_2 utilisation

Waste gasification

Cement manufacturing

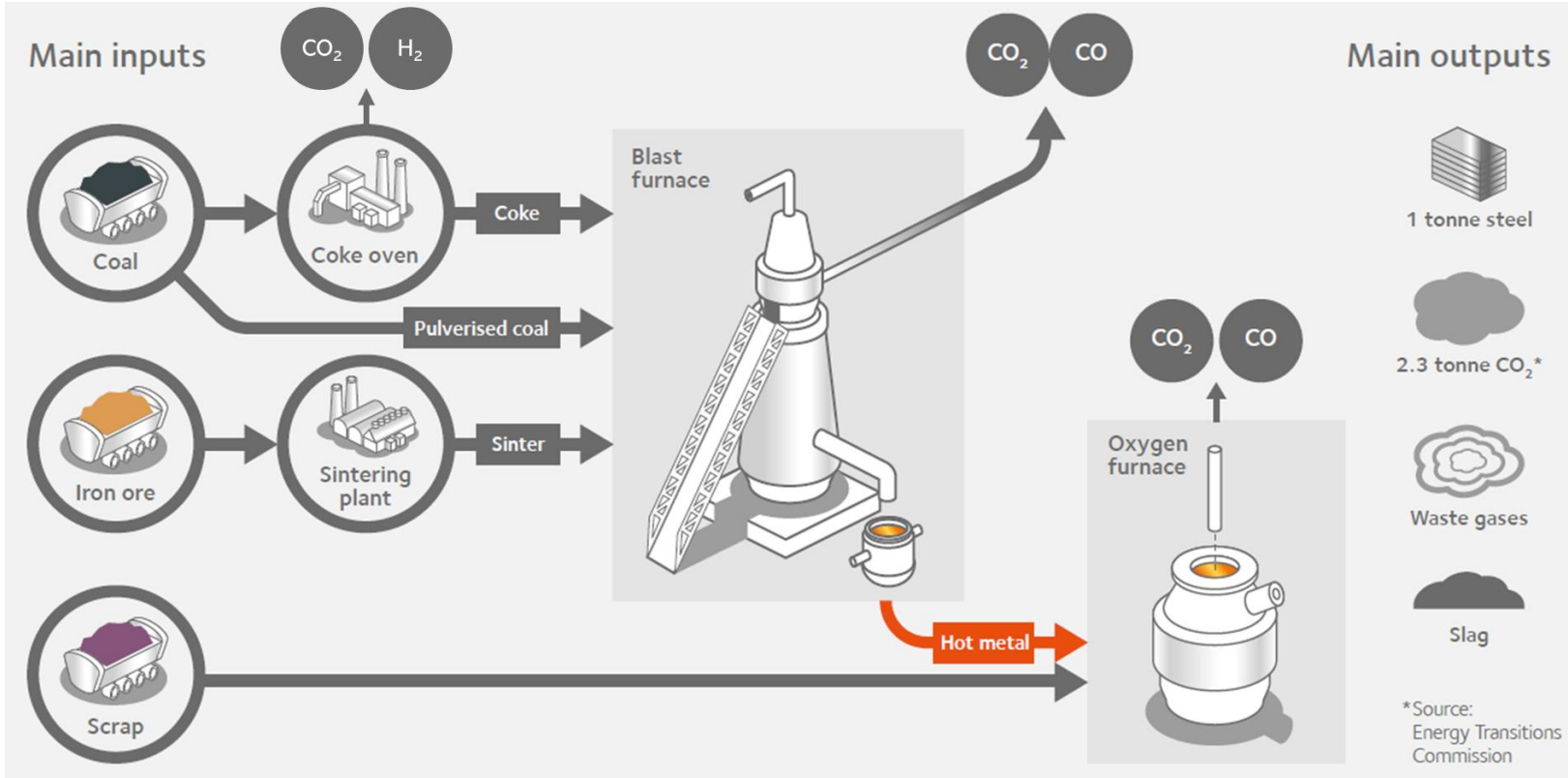
Power plants

Fermentation

Steel manufacturing

Steel manufacturing

- Coke Oven Gas (**COG**)
- Blast Furnace Gas (**BF**)
- Basic Oxygen Furnace Gas (**BOF**)



Adapted from ArcelorMittal Climate Action Report

MOVIE

Carbon Capture and Utilisation (CCU)

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- CCU
  - Direct use
  - Conversion
    - Chemical CCU

    - Biological CCU

Carbon Capture and Utilisation (CCU)

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	Gas requirements	Process conditions	Product specificity	Product types	Technology Readiness
Chemical CCU	Fixed CO_2/H_2 ratio	Elevated pressure and temperature	More by-products	Mostly fuels, simple chemicals	High
Biological CCU	More tolerant to impurities	Ambient process	High specificity	Wide range incl. complex products	Low

Bridging the ‘valley of death’ of CCU?

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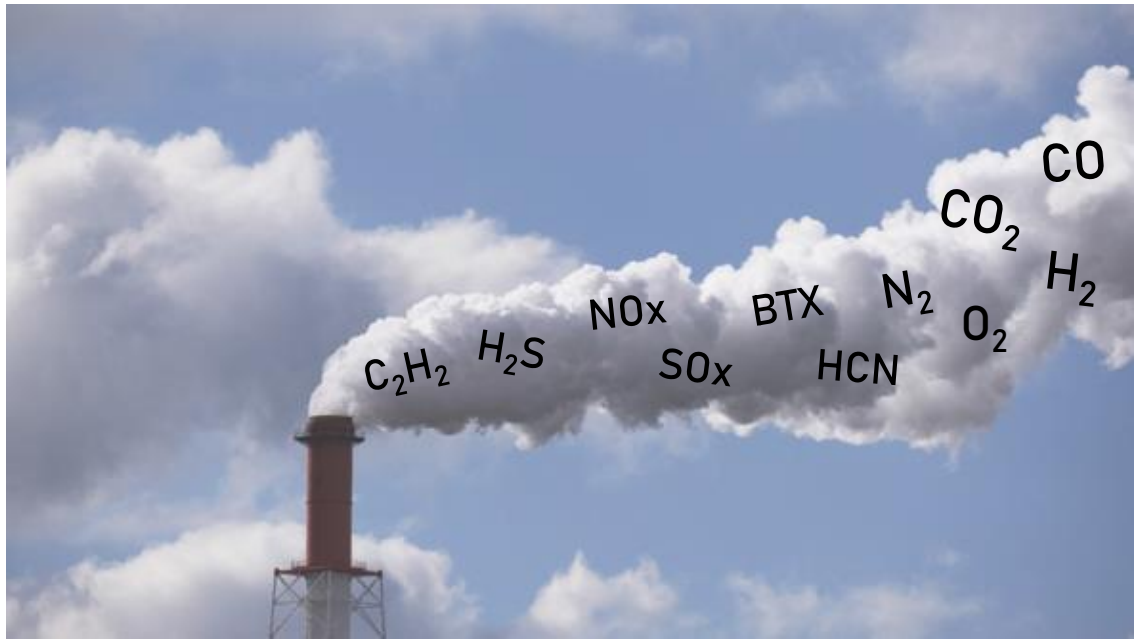

4 x 1 L and 10 L gas fermentation bioreactors

- **Dissolve** contaminants into fermentation medium
- **Add** contaminants to gas mixture
- **Compress** gas at emitter and bring to the lab

Bridging the ‘valley of death’ of CCU?

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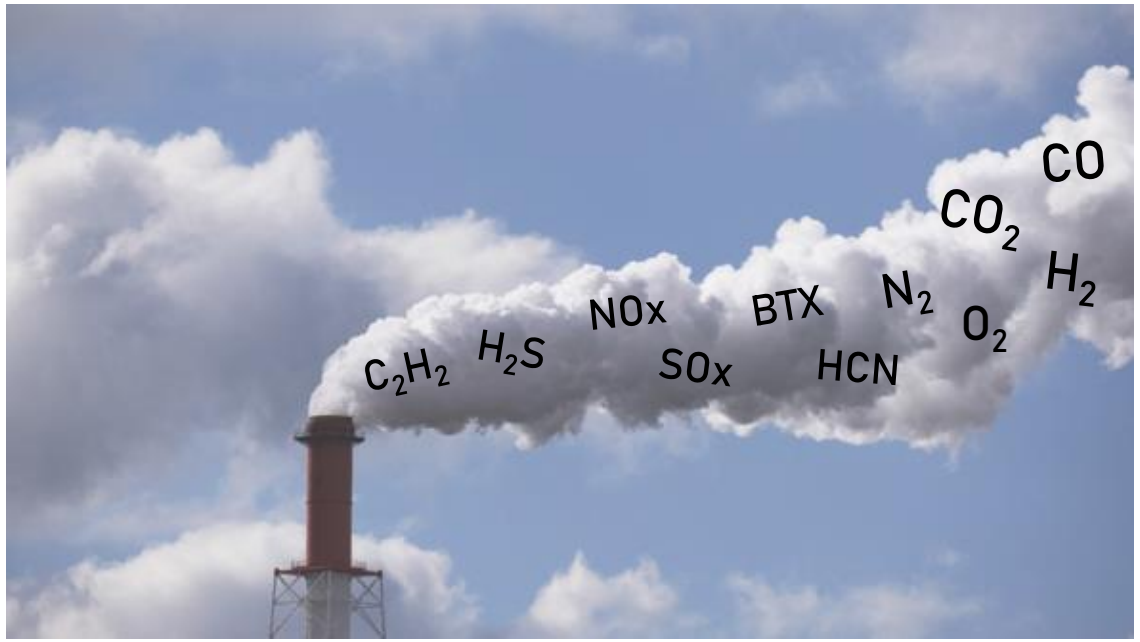
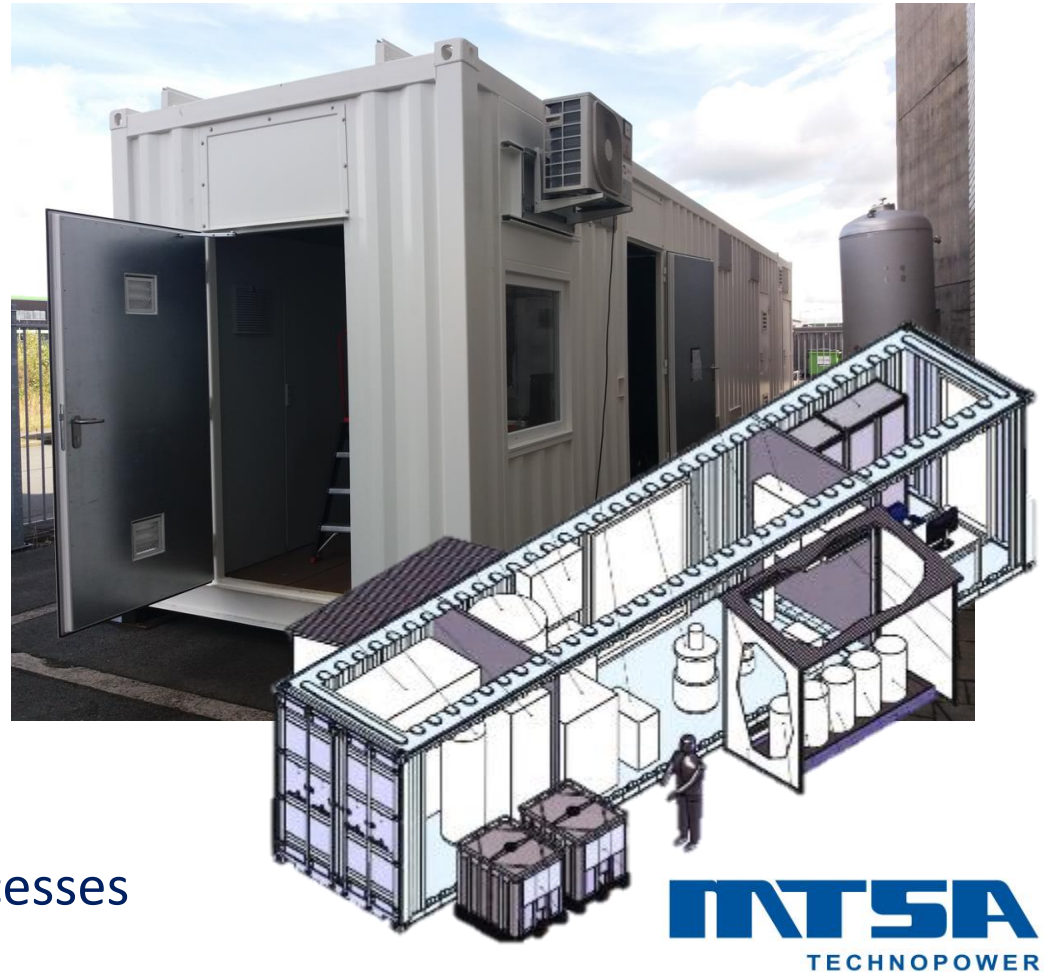




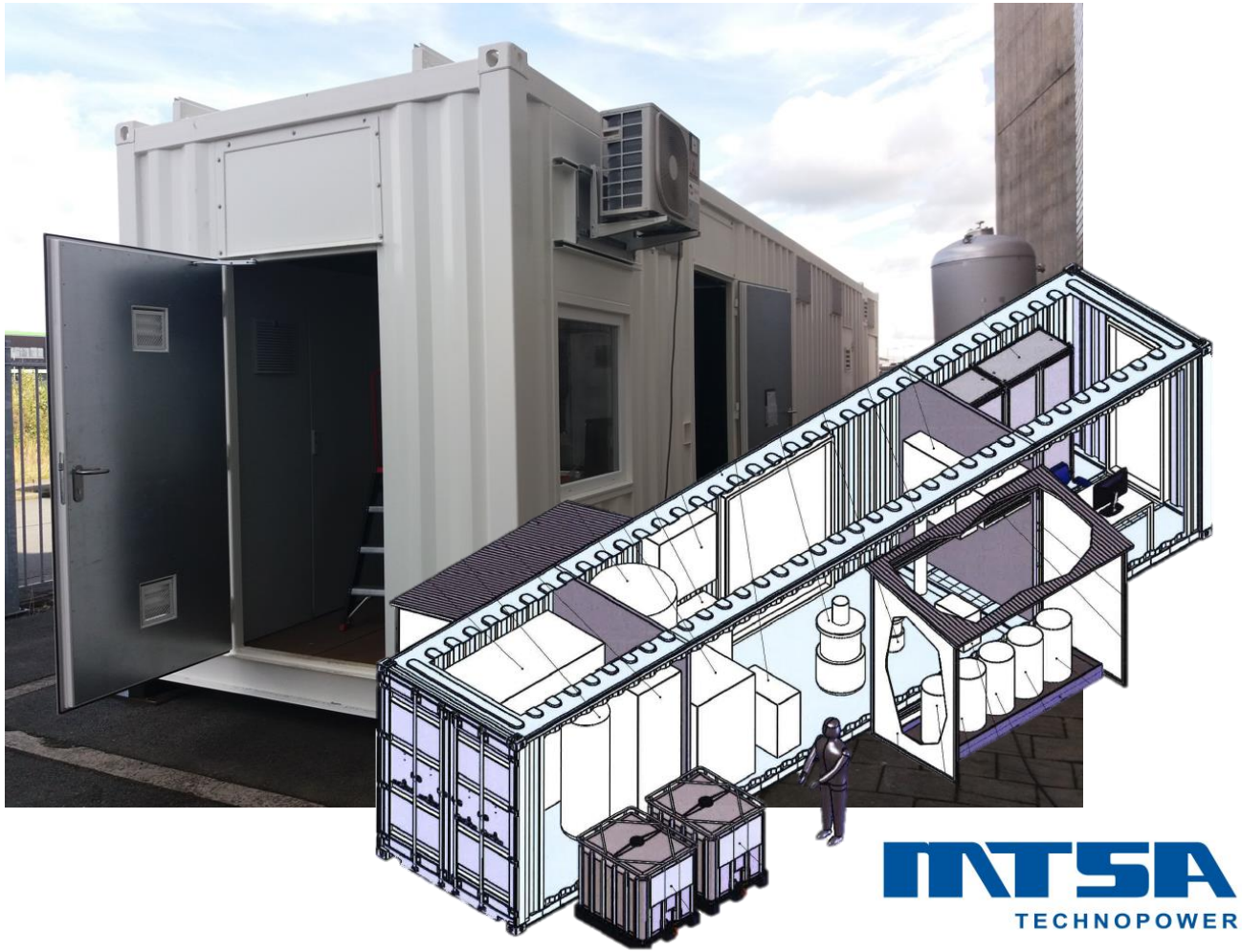
- **Bring plant to emission source**
- Most **reliable** approach to **validate** gas fermentation processes

MTSA TECHNOPOWER

Bio Base Mobile Pilot Plant

BIOCON-CO_2

- **Scale-up** of processes
- **Validation** in industrial conditions
- **Stand-alone operation**
  - 3 Fermenter vessels
  - 2 Industrial gas feeds
  - Built-in H_2-generator
  - Customized gas mixture
- **Pressure** up to 8 barg



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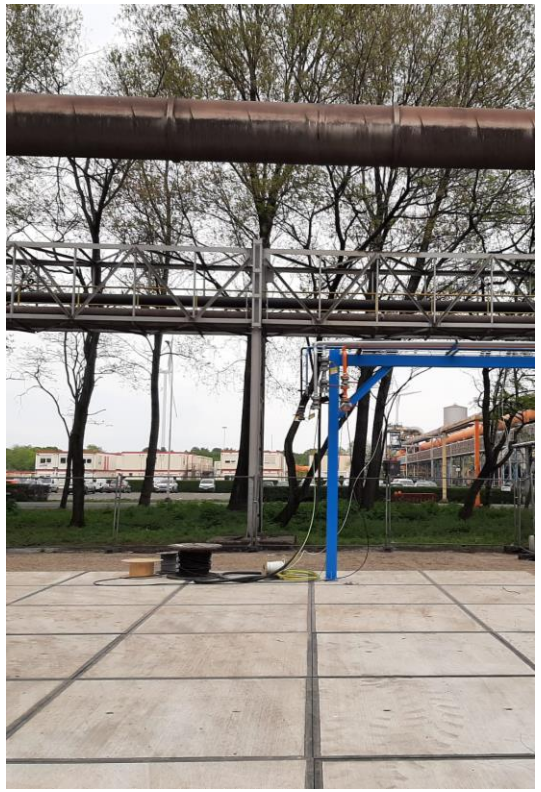
Piloting at AMG

Civil works
at site AMG



Installation
of piping

Arrival
of pilot

Thank you

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