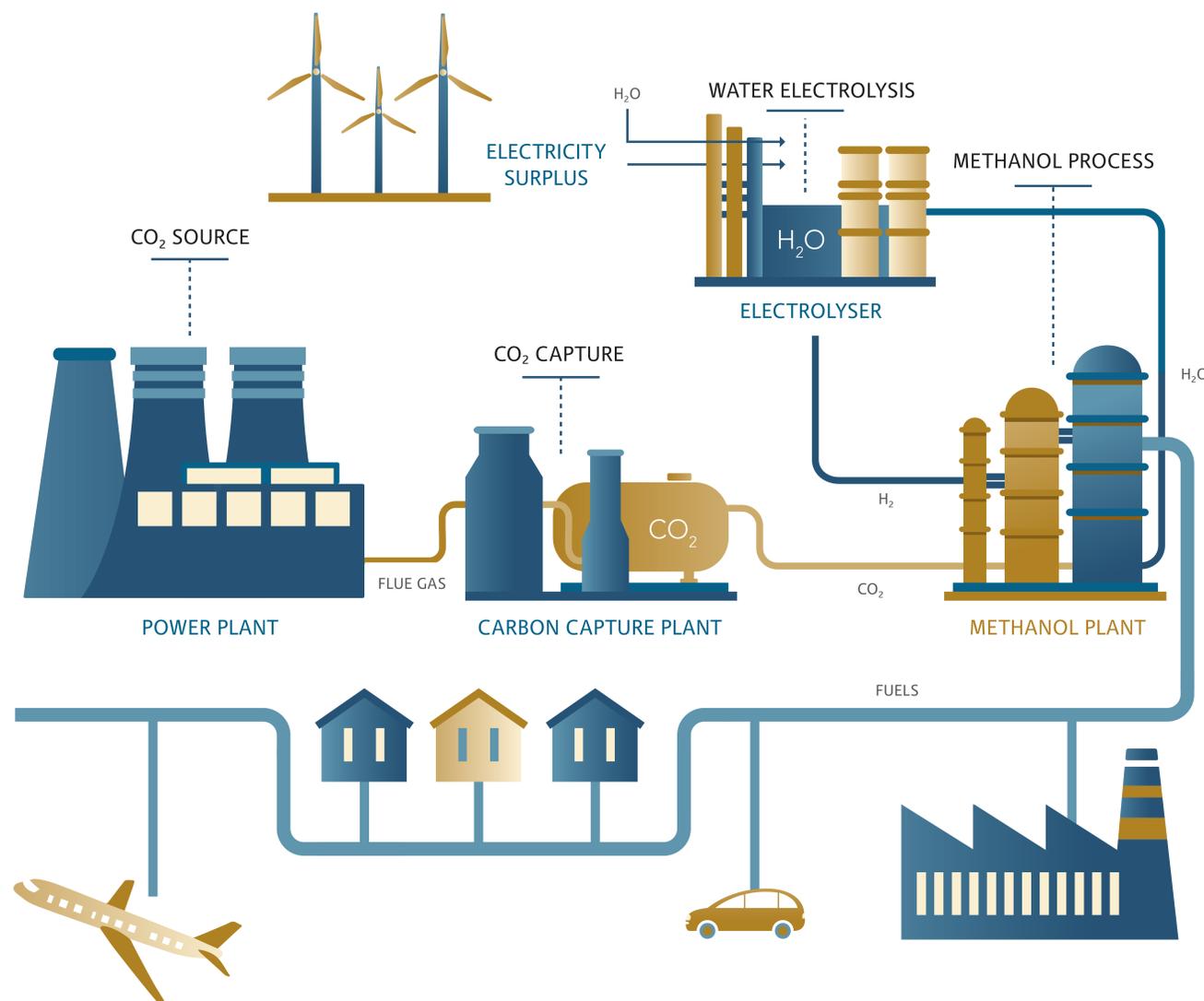




MefCO₂

(METHANOL FUEL FROM CO₂)
SYNTHESIS OF METHANOL FROM
CAPTURED CARBON DIOXIDE
USING SURPLUS ELECTRICITY
FROM RENEWABLE SOURCES



Methanol is one of the most common and widespread platform chemicals and is also widely used as a fuel in gasoline blends. Methanol is traditionally produced from natural gas or coal. Goal of the MefCO₂ project is to produce methanol from carbon dioxide CO₂ and to reduce the CO₂ emissions of industrial sources as fossil-fired power plants and processes such as steel or cement production. The other synthesis reactant, hydrogen H₂, is generated from water electrolysis using renewable energy.

MefCO₂ pilot plant

- Methanol production capacity: 1 t/day
- CO₂ utilisation: 1.6 t/day
- Electrolyser: polymer electrolyte membrane (PEM) up to 1 MW_e, improved dynamics
- Scalable production process
- Novel patent-protected catalyst with improved conversion and selectivity

Project team

- i-deals (Spain): coordination, dissemination and exploitation
- Hydrogenics Europe (Belgium): electrolyser technology developer
- Carbon Recycling International (Iceland): CO₂ to methanol technology developer
- Mitsubishi Hitachi Power Systems Europe (Germany): system integrator
- National Institute of Chemistry (Slovenia): catalysis and reaction engineering
- Cardiff Catalysis Institute (UK): research in catalyst synthesis
- DIME – University of Genoa (Italy): thermo-economic analysis and process optimisation
- University of Duisburg Essen (Germany): process modeling, analysis and optimisation
- RWE Power (Germany): site owner and operator of the PCC plant

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 637016. www.mefco2.eu