

BILFINGER SE



**BILFINGER**

# Development and project approach towards hydrogen investments and selected case studies

H2 fórum 2022 - Příležitost pro transformaci

Ústí nad Labem | 27. 9. 2022

# Bilfinger

Leading international service provider



## Positioning

Leading service provider for the process industry

## Range of services

Solutions along the entire life cycle of an industrial plant  
#1 or #2 in EU markets rankings

## Employees

About 30,000

## Revenue 2021

€3,737 million



Making sure our clients can concentrate on what they do best:  
.... their core business.



# Bilfinger Tebodin

## Locations in Central & Eastern Europe



>550 consultants, engineers and project managers



Largest engineering group in the region with a revenue of € 42.4 million in 2021



Focus to safety with 0 LTIs



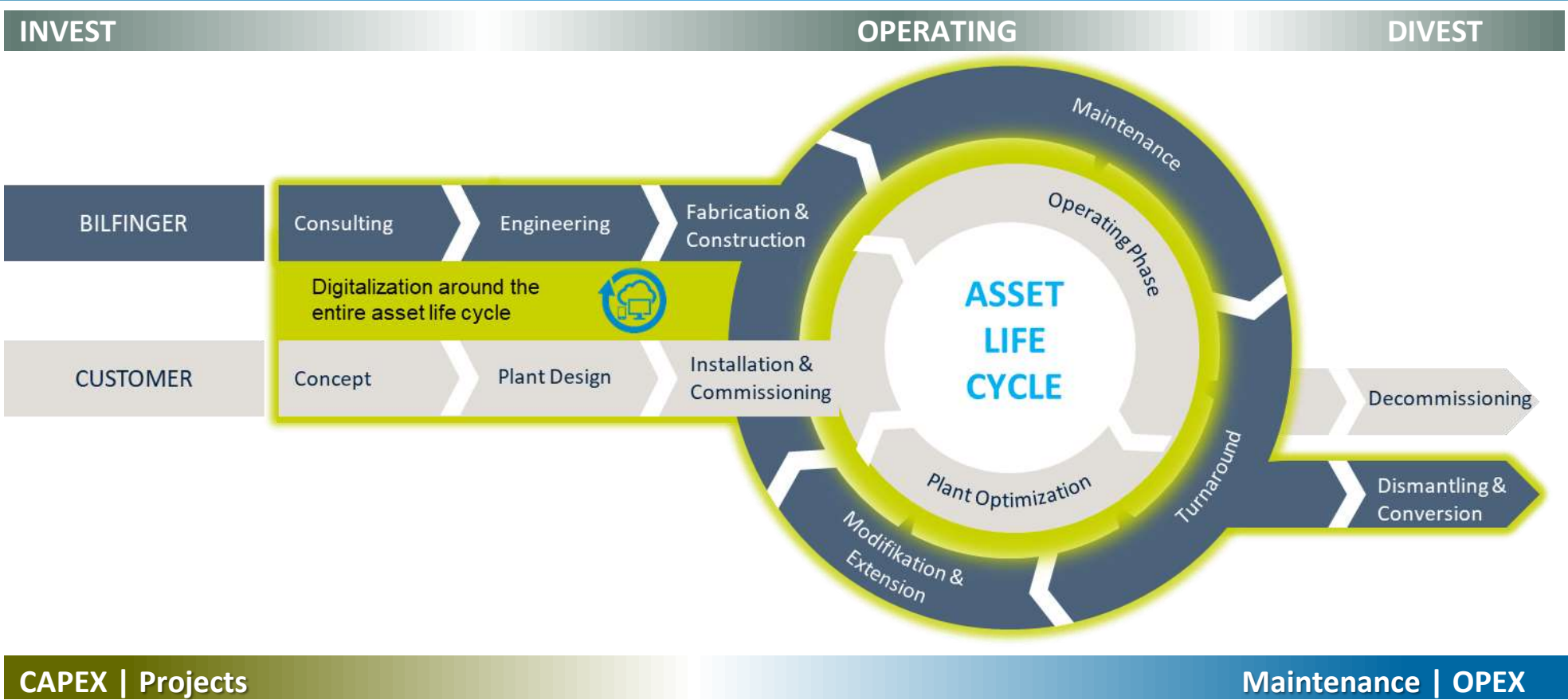
Own Quality Management system and OHSE manuals



Certificates ISO 9001, ISO 14001, ISO 45001

[Link to online map](#)

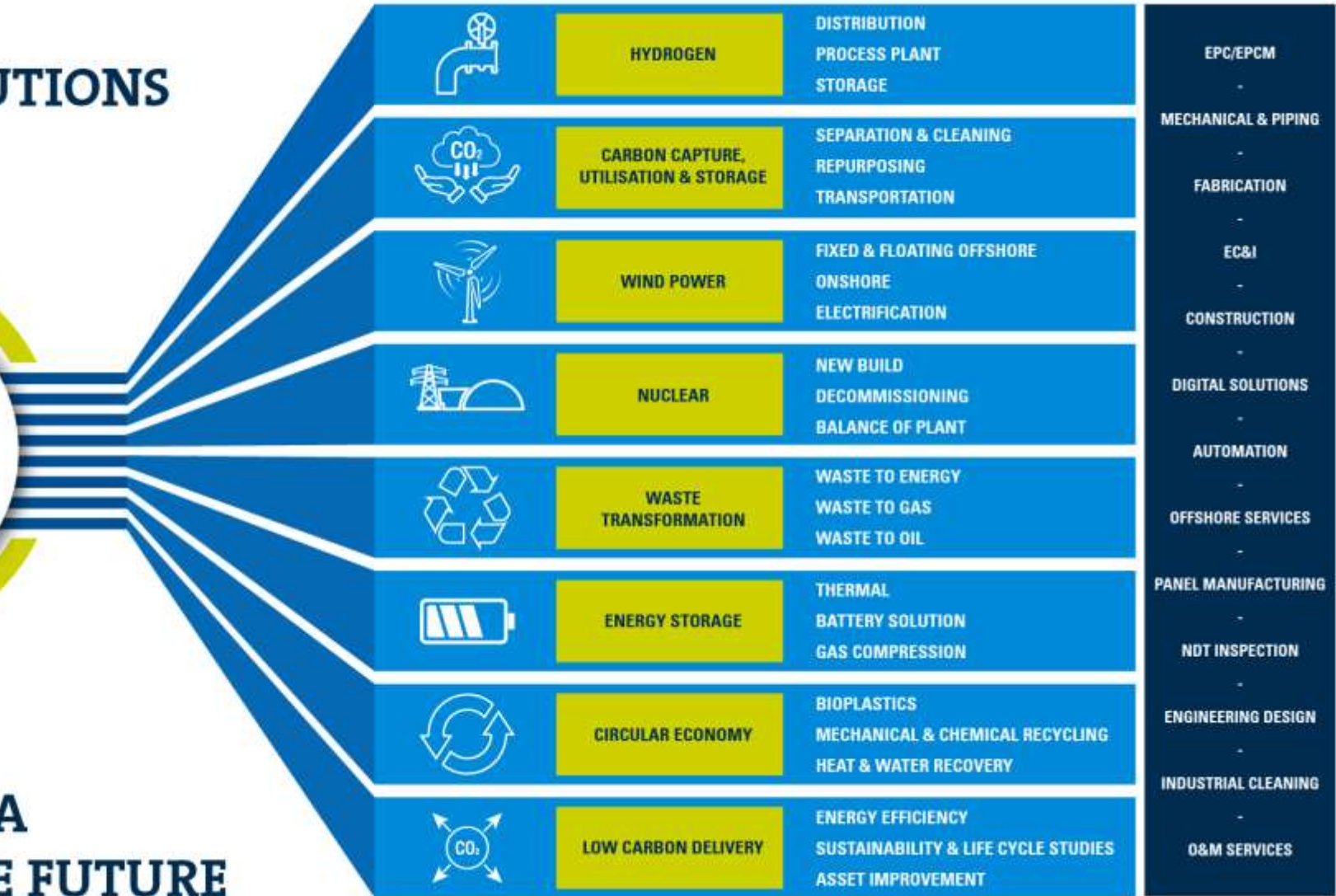




# BILFINGER ENERGY SOLUTIONS



## DELIVERING A SUSTAINABLE FUTURE



# Three pillars in Energy Transition

Supporting clients' route map towards a carbon neutrality

## Power Station Duisburg | Germany



### Energy Efficiency District Heating Unit

- General contractor for Basic and Detail engineering, supply, fabrication, erection, documentation, commissioning and S/U
- 1 atm. dual zone accumulator (43.800 m<sup>3</sup>), Steel structures (~70 to), 11 heating pumps, ~300 valves, ~150 measuring points, Electrical system (2 pc. 6,3 KV transformer, 690 V and 400 V LV system + USP, Software, automation, Siemens T3000, Fire alarm system, HVAC

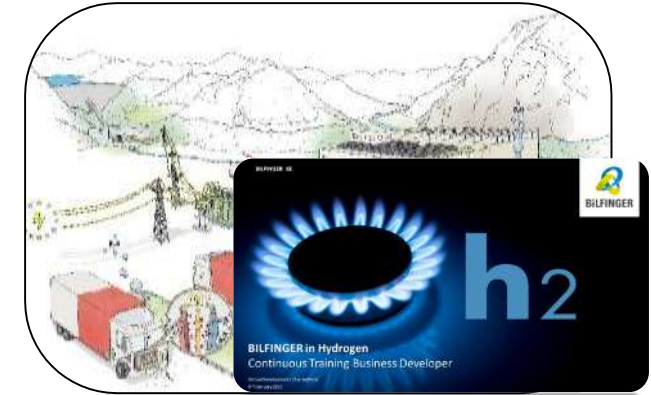
## Waste Treatment AVR | The Netherland



### Carbone Capture and Utilization project

- EPCm services : conceptual engineering + support in basic engineering and execution.
- 1st large-scale CO<sub>2</sub>-capture in Netherlands
- to energy plant flue-gasses, purified, CO<sub>2</sub> is captured from waste liquefied and transported to greenhouses as a CO<sub>2</sub> horticulture-fertilizer.
- Plant capacity: 150Kt of CO<sub>2</sub> per annum

## H2 Production MPREIS | Austria

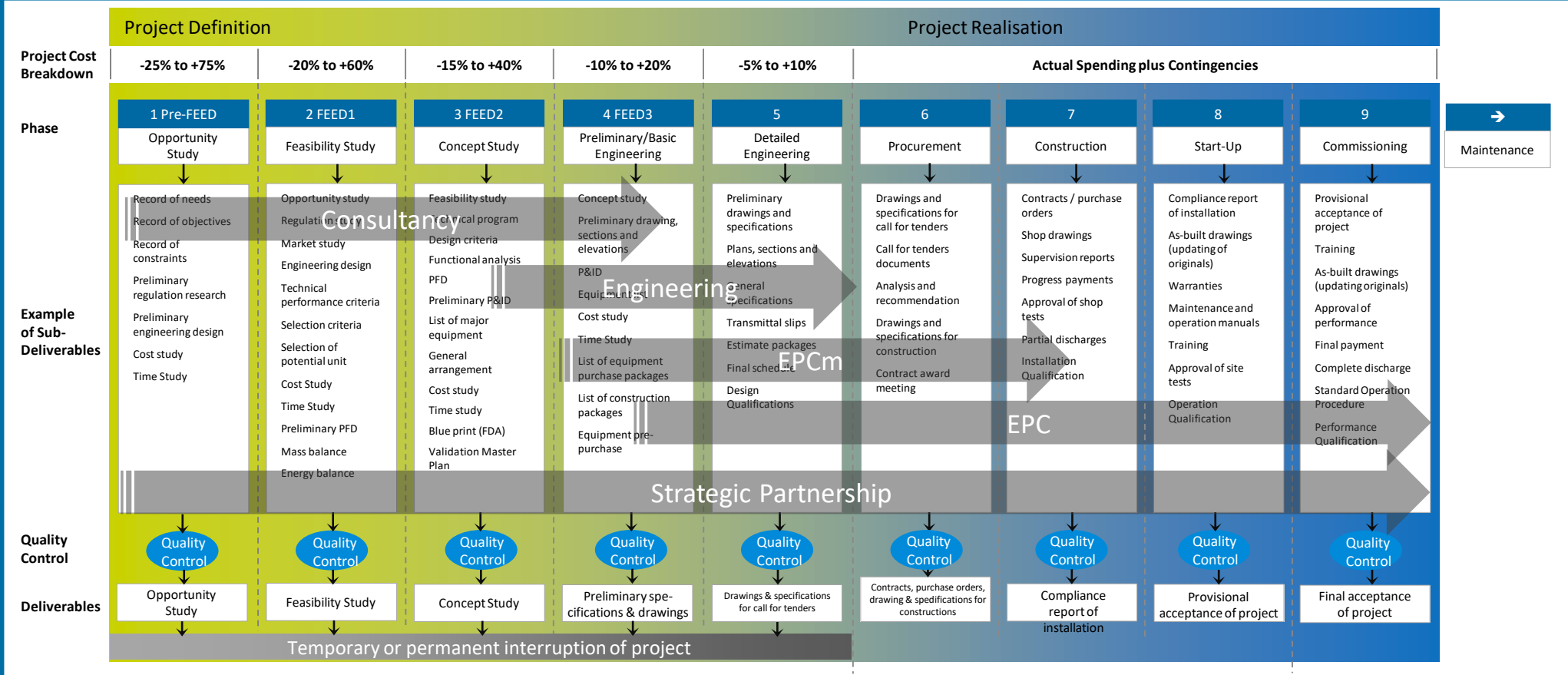


### Hydrogen Production & Utilization Unit

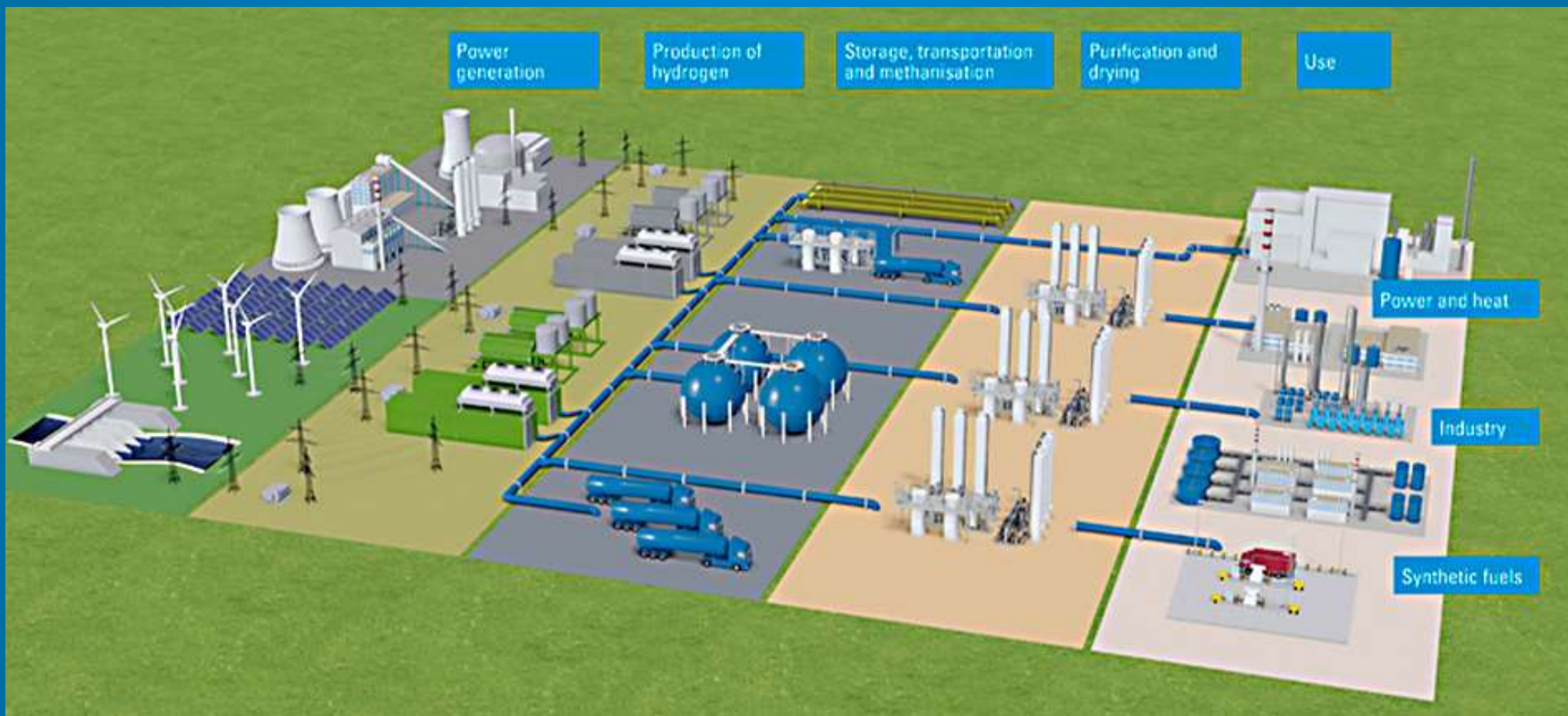
- Hydrogen production of up to 1.300 kg/d (3 MW) utilised for process heating and for FECV vehicles of the local delivery pool
- Detail Engineering of interconnecting piping, Mechanical erection of electrolyser and auxiliaries
- Delivery and erection of piping, pumps and valves (hydrogen, water, district heating, thermal oil, N<sub>2</sub>)

# Project Approach

## From Definition to Realisation



# Hydrogen value chain





# Hydrogen @ Bilfinger

Strategic partner across the entire asset development



H2 Production

Treatment

Compression &  
Liquefaction

Storage &  
Transportation

Utilisation

## Hydrogen Potentials planning



- Market Investigations and Due Diligence
- Feasibility Studies for on- and offshore hydrogen productions
- FEED Studies, Conceptual and Basic Engineering
- Cost Estimations
- Project Services, incl. Construction Management
- Safety Studies, Hazid, Hazop, SIL

## Hydrogen Production & Utilization Plants



- Project Management
- Interface engineering, expediting, balance of plant
- Implementation of main units (like electrolyser, dispenser)
- Integration into client's systems
- Turnkey Design and Build integrator

## H2 Readiness



- Prognoses of gas composition in transport systems
- Tightness of pipeline systems
- Storability inside underground caverns
- Limitations for process plants like gas dehydration units
- Losses with gas compressors
- Accuracy of metering and analyzing devices
- Quality of combustion in industrial and private sector

## Hydrogen Operations Services



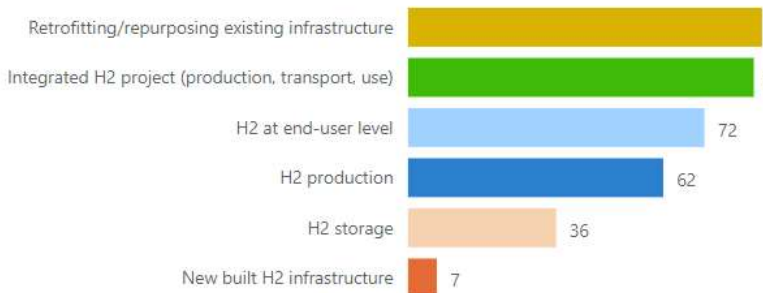
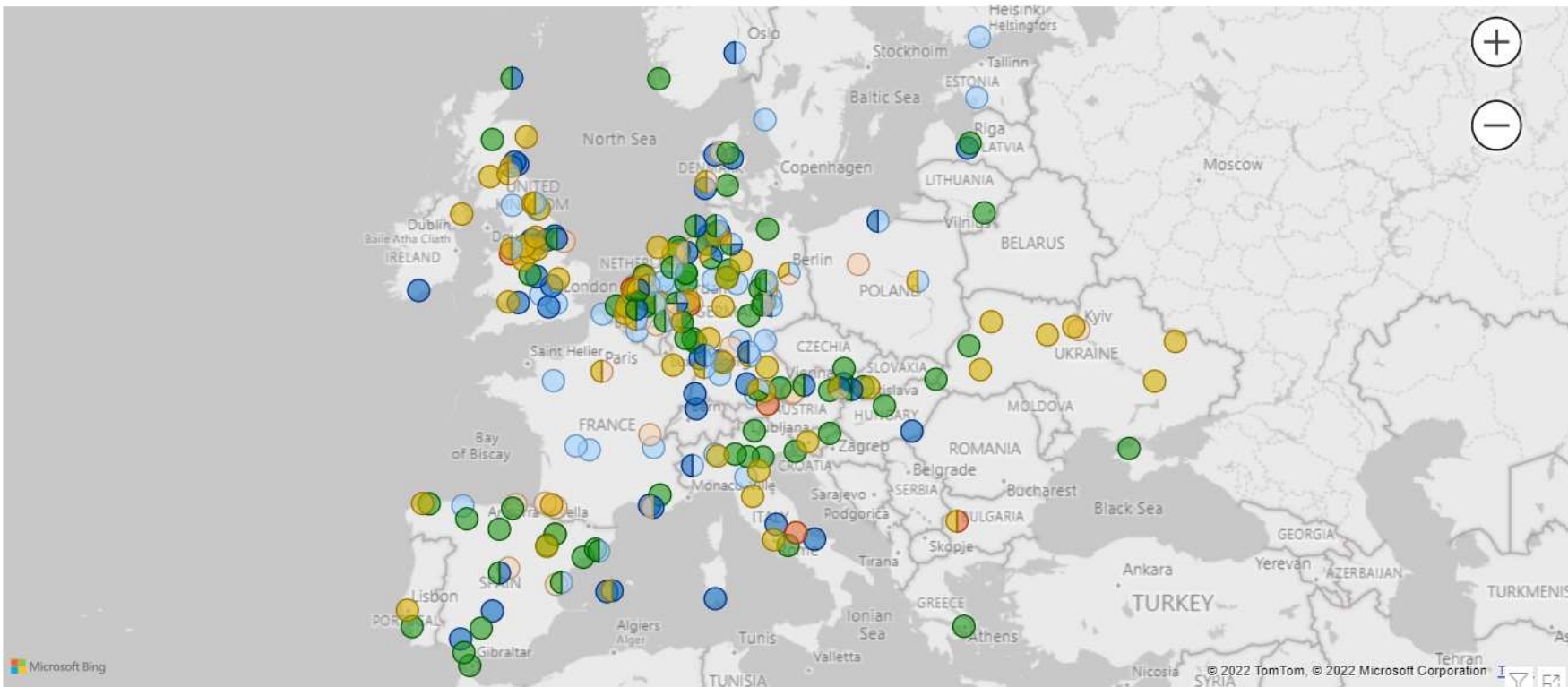
- Maintenance Concept & Manuals
- Regular Inspections and Maintenance
- On demand Services
- Calibrations
- Trainings

Start date

Project promoter

Filters

- Country
- Type of project
- Project maturity
- Start date



Project name	Project promoters	Country	Timeline	Project maturity	Scope & goal
Greening of Gas	NET4GAS	Czech Republic	2018-2029	Project	hydrogen by volume.  Demonstration project of P2G technology (0,5MW) for hydrogen and biomethane production and subsequent injection of produced gases into the transmission system.  The project is based on the use of two technologies, the first is the technology for the production of pure hydrogen by electrolysis of water and the second is bio-methanation - the production of biomethane, where the source of CO2 is biogas.

# Bilfinger Clients



# Gasunie

## Green hydrogen storage project

**Hydrogen, an important carrier of green energy, is to be stored in large-scale salt caverns**

**Bilfinger contributing engineering expertise to help offset imbalances in supply and demand of green energy**

**New storage facilities are an important step for the development of the national hydrogen economy and energy transition in the Netherlands and Europe**

**76 million cubic meters of hydrogen gas  
26 million kg of hydrogen**





**WE  
MAKE  
IDEAS  
WORK**

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