

# DAEDAL AFFILIATED

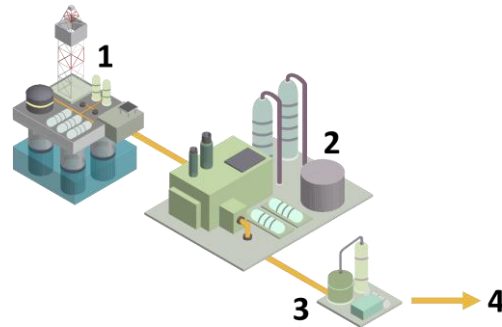


## Zero-carbon technology for hydrogen production

Hydrogen is a versatile clean energy carrier, allowing mobility with no emissions. It is vital for refining & chemical industries. Currently it is mainly produced from natural gas by so-called steam methane reforming (SMR) resulting in significant CO<sub>2</sub> emissions (“grey” H<sub>2</sub>). To meet the ambition of net-carbon neutral future, **DA** has developed a low cost solution to transform industrial wastes, e.g. produced by oil industry, into “blue” hydrogen.

## How does it work?

**DA** units are fully electrified and could be powered with renewable electricity. The units could be easily integrated into existing industries to utilize its waste & water for production of “blue” hydrogen.



Schematic representation of an option for implementation of **DA** units for production of hydrogen: (1) crude oil extraction; (2) refinery; (3) **DA** “blue” hydrogen production system; (4) final utilization of hydrogen (refinery needs or customers).

## Economics

As a case study, analysis of existing refinery in Northern Europe has been performed. **DA** unit offers the solution to valorise industrial wastes produced on the refinery with production of high-value hydrogen. The solution reduces hydrogen demand on the refinery from external sources (from SMR) and reduces carbon footprint together with related penalties for CO<sub>2</sub> emission.

Estimation for existing refinery*	
Total plant capacity, barrel/day	360 000
Total hydrogen demand, kT/y	165
Benefits of <b>DA</b> <sup>1</sup> unit	
Total hydrogen demand coverage, %	25
IRR <sup>2</sup>	69%
Payback years	1.1

\*Market location: North of Europe

<sup>1</sup> Price estimation for power 0.04 €/kWh; “Blue” hydrogen price assumed to be 1.57 €/kg

<sup>2</sup> IRR – investment on 2 years with 10 years of operation

## More details

If you are interested in **DA** technology or would like to get more details on our solutions, you could reach us at [info@dadada.ee](mailto:info@dadada.ee) or drop us a call at +372 712 42 44