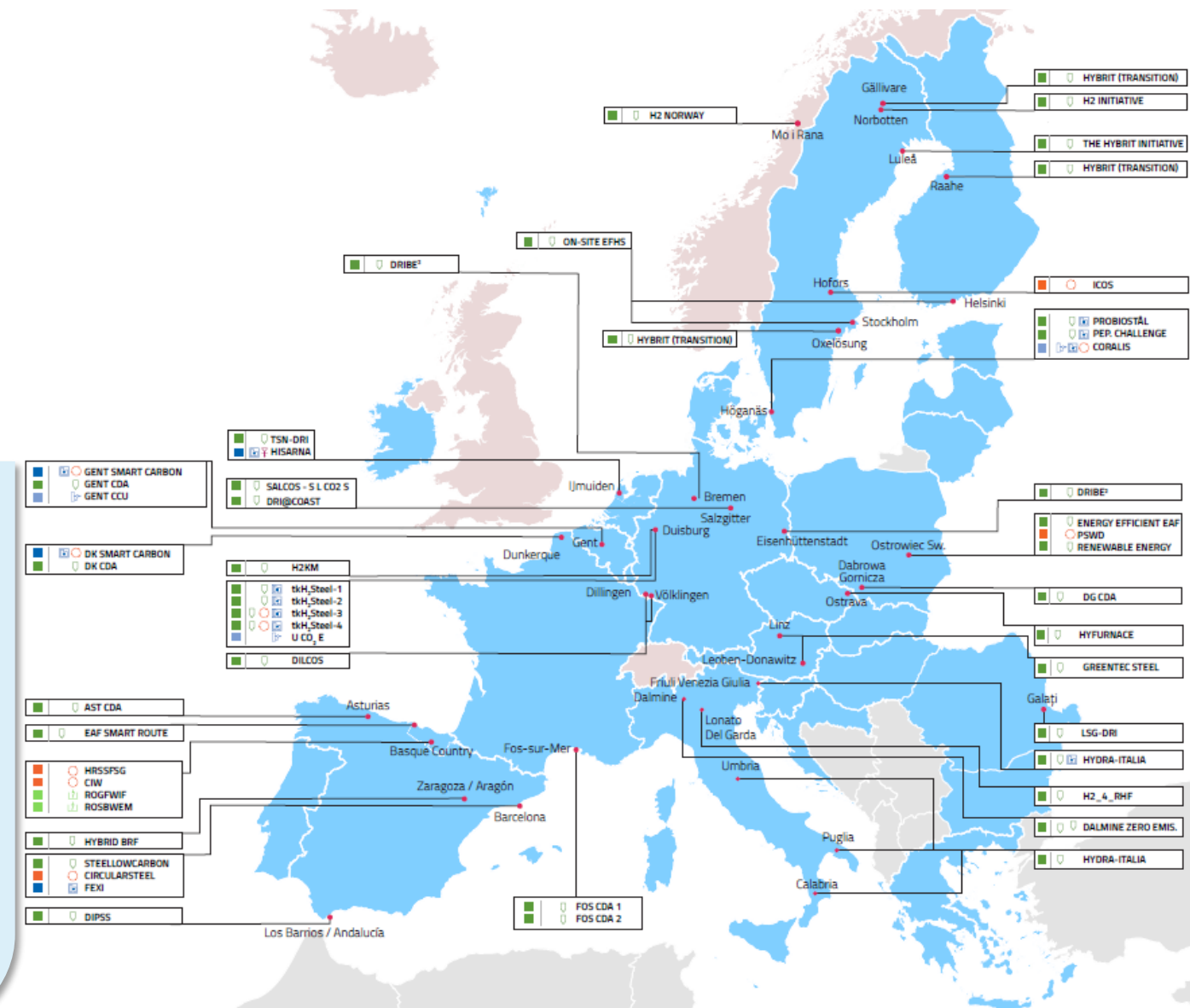
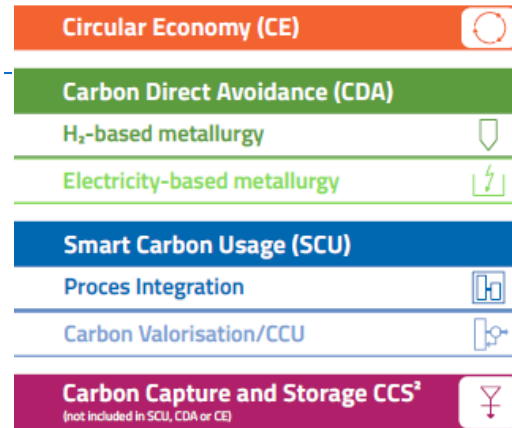




**EUROFER**

THE EUROPEAN STEEL ASSOCIATION

# Key steel low-CO<sub>2</sub> projects of the EU steel industry



- **60** projects
- Technology Readiness Level : at least **TRL 7**
- Starting year: all **before 2030**
- Potential CO<sub>2</sub> abatement in 2030 : **80 Mio tons/year** (over 1/3 of current direct and indirect CO<sub>2</sub> emissions)
- **Capex** needs : **31 bn** EUR
- **Opex** needs : **54 bn** EUR



# SCALING UP low carbon steel

## Technical challenges

### ENERGY NEEDS



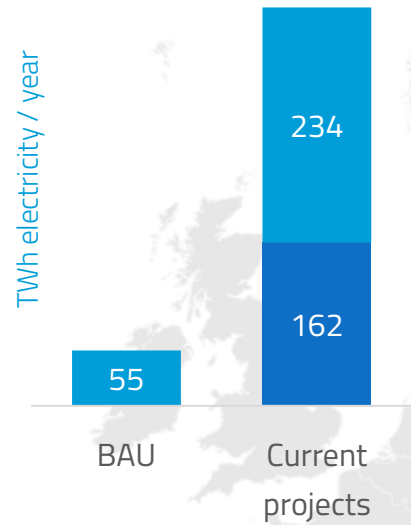
Up to **400TWh/year** of CO<sub>2</sub>-free electricity, including **230 TWh** for the production of **5.5 Mt hydrogen**

# 7x MORE

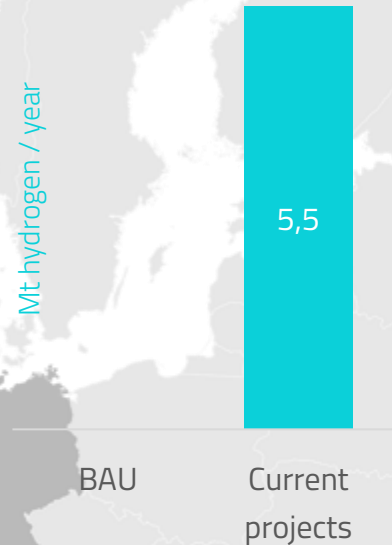
than what the sector purchases from the grid **today ( = Germany)**



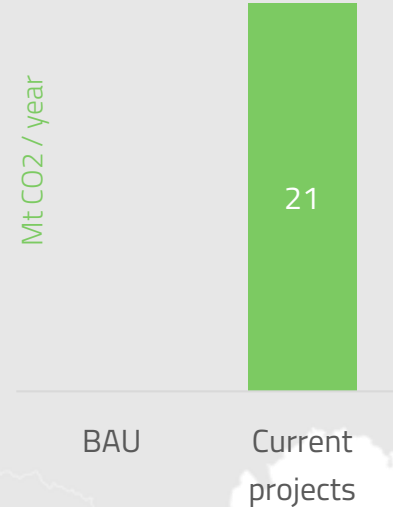
### Electricity use 2050



### Hydrogen use 2050



### CO<sub>2</sub> to be stored



- For steel production
- For hydrogen production

- Hydrogen required

- CO2 to be stored

Excludes electricity generated on-site with waste products

SOURCE : EUROFER low-Carbon Roadmap, Nov 2019

# Key issues under DA on renewable hydrogen

- **Monthly correlation criteria** shall become the *default rule* for hydrogen in industry as most technically appropriate solution for a baseload consumption profile (art. 4(2)).
- **Geographical correlation criteria for PPAs-covered RFNBO production** shall be set at country level to protect the case of MS with many bidding zones relying on internal electricity trade and with industrial ecosystems located far away (art. 4(2)).
- **Demand aggregators:** RFNBOs producers shall be able to source electricity via PPAs signed with aggregators as hedge solutions for baseload consumers against cases of low production period via certification schemes complying with the provisions of the DA (art. 4).
- **RES share threshold for grid-electricity in the bidding zone approach shall be set at 70% as reference value potentially achievable by many MS (art. 4(1)).**
- **Grandfathering clause to be extended until 2030 (art. 7 and 8).**

# Key issues under DA on GHG emissions savings methodology

- **The arbitrary definition of “unsustainable processes”** severely undermine legal and investment certainty of CCU projects in industry by affecting the calculus of emission from supply of inputs  $-e_{\text{ex use}}$  (i.e., emissions from inputs existing use or fate) and the emission savings potentials of CCU products (Recital 7).
- **The 2035 sunset date for considering emissions captured from “unsustainable processes” as avoided emissions** will disincentive economic investments already in in the next 3 since ROIs for CCU projects require at least 10 years of secured revenues (Recital 7).
- **Emissions value to be attributed to the supply of rigid inputs** (e.g.,, blast furnace gases and displaced energy) **by referring to average national grid** (with high carbon footprint  $>100\text{gCO}_2\text{eq}$ ) **will make it impossible for CCU products to meet the 70% threshold**. If renewable electricity would be included in the equation, the results will be positively different (Annex, para. 10(a)).