



Global Hydrogen Review 2021

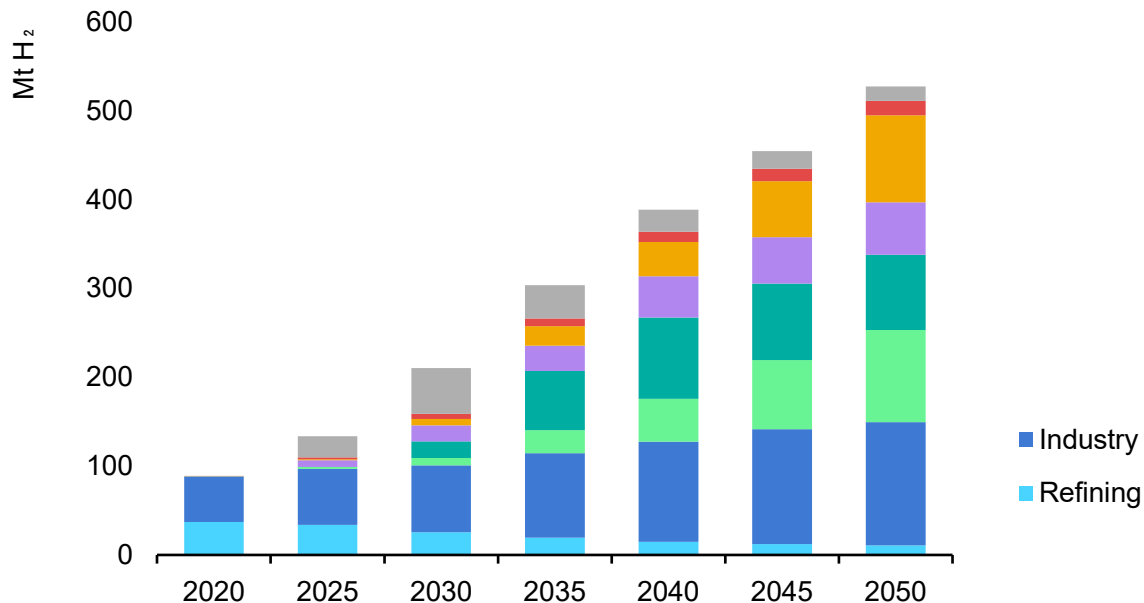
Dr. Uwe Remme

Experts' Group on R&D Priority-setting and Evaluation, 24 November 2021

- Hydrogen had many false starts but there are strong signals for the energy sector that this time could be different – momentum is turning into action:
 - A growing number of governments is defining the role of hydrogen in their energy strategies
 - Industry is moving to seize the opportunity and is increasing hydrogen-related investments
 - International cooperation has taken centre stage
- Many factors are at play that may explain the momentum; efforts to mitigate climate change and the growing number of net zero commitments are important factors
- The future for hydrogen looks bright but whether on-the-ground progress is fast enough and going in the direction required for hydrogen to play its part in addressing climate change is a key question

Hydrogen is an important contributor to a net-zero energy system

Global demand for hydrogen by sector in the NZE, 2020-2050

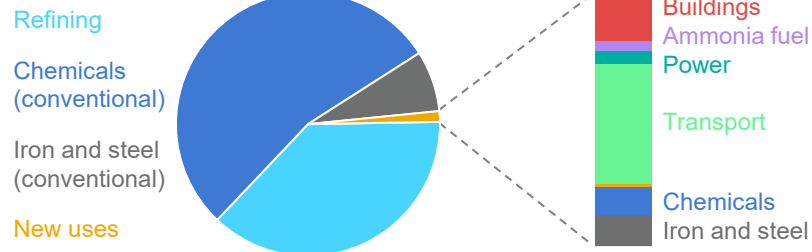


In the NZE, hydrogen demand grows sixfold by 2050, with a critical role in particular in sectors such as industry and long distance transport

New uses for hydrogen are unlocking demand

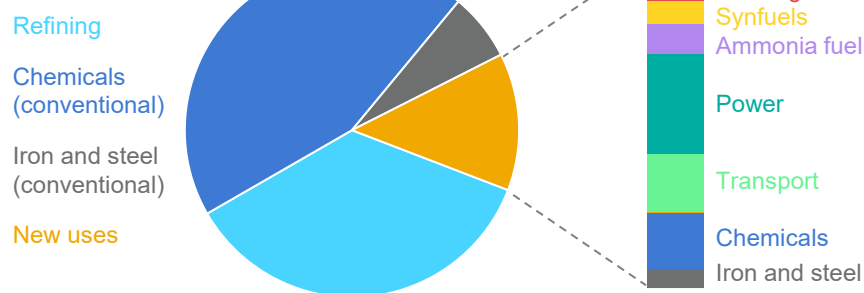
Under current trends, 2030

105 Mt of hydrogen



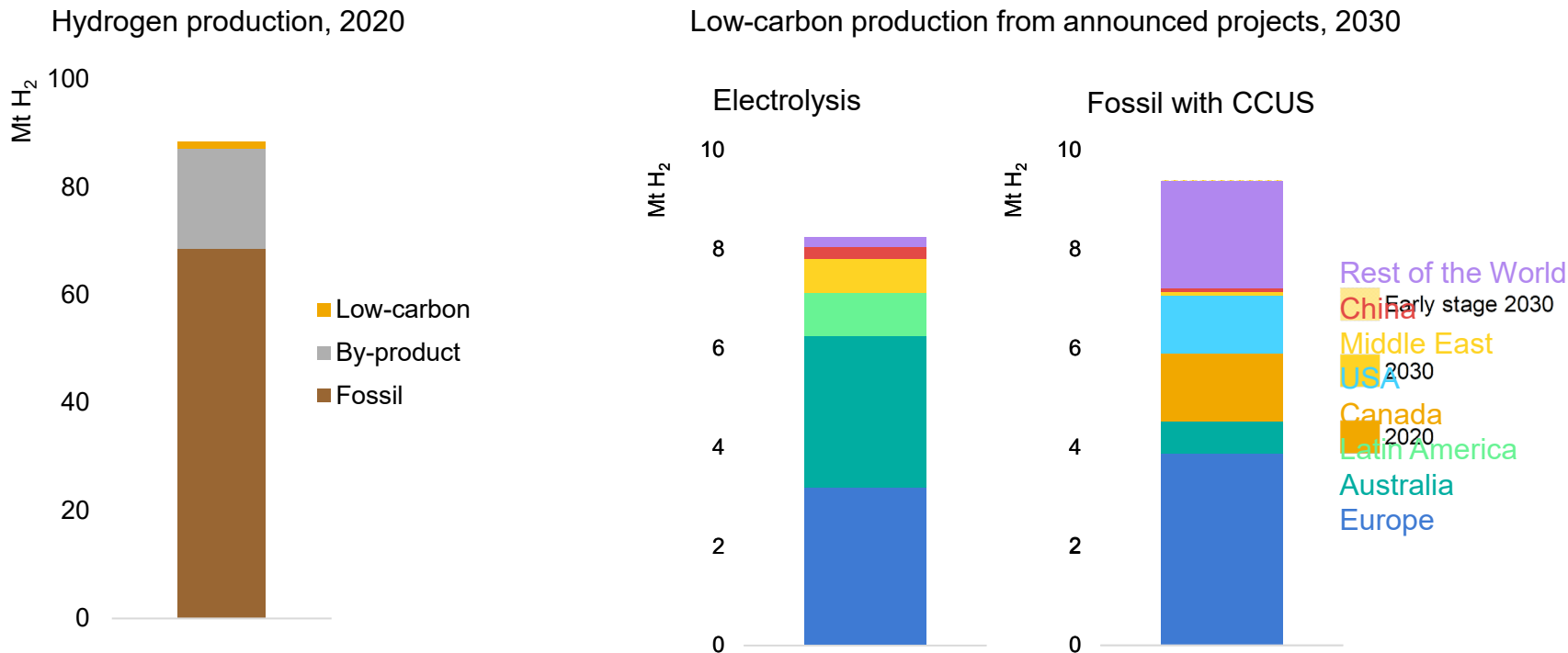
With government pledges, 2030

120 Mt of hydrogen



The use of hydrogen is slowly expanding into new areas, but an expansion at the scale needed for net-zero emissions by 2050 will require more ambitious and concrete policy efforts

The dawn of low-carbon hydrogen production



Announced projects to produce low-carbon hydrogen are growing quickly, particularly in Europe, Australia, Canada, the United States and the Middle East. Around 17 Mt of low-carbon hydrogen could be produced by 2030

- Develop strategies and roadmaps on the role of hydrogen in energy systems
- Create incentives for using low-carbon hydrogen to displace unabated fossil fuels
- Mobilise investment in production, infrastructure and factories
- Provide strong innovation support to ensure critical technologies reach commercialisation soon
- Establish appropriate certification, standardisation and regulation regimes

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