

Q1 2021 Global Hydrogen Market Snapshot



Q1 2021 low-carbon hydrogen market key takeaways

Q1 saw the third most low-carbon hydrogen project announcements since we've been tracking



- 55 low carbon hydrogen projects were announced in Q1 2021 totaling 2.4mmtpa of total low-carbon hydrogen production; electrolysis projects announcements totaled 11.4GW; the electrolysis pipeline has ballooned to 61.4GW.



- Brazil saw the largest project announcements in terms of low-carbon hydrogen production: 0.6mmtpa. This was driven by one announcement of the world's largest electrolysis project.



- The leading sector this quarter was steel/metals with 6 projects totaling 0.62mmtpa. The ammonia sector was second with 4 projects totaling 0.57mmtpa.



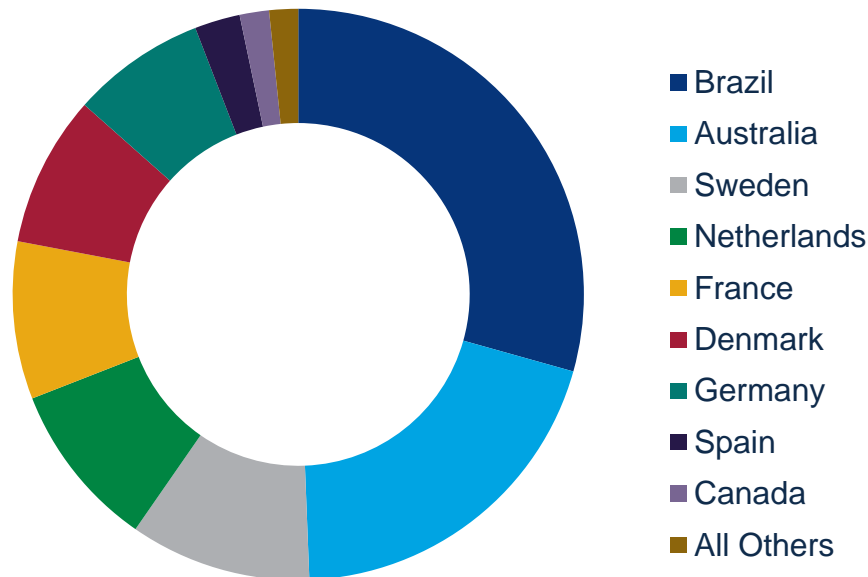
- An estimated 473 hydrogen refueling stations are now operational globally.



- Serbia announced a hydrogen strategy outlining 0.05mmtpa of production by 2030 and 2.5mmtpa by 2050.

Source: Wood Mackenzie

Q1 2021 announced estimated low-carbon hydrogen production by country* (mmtpa)

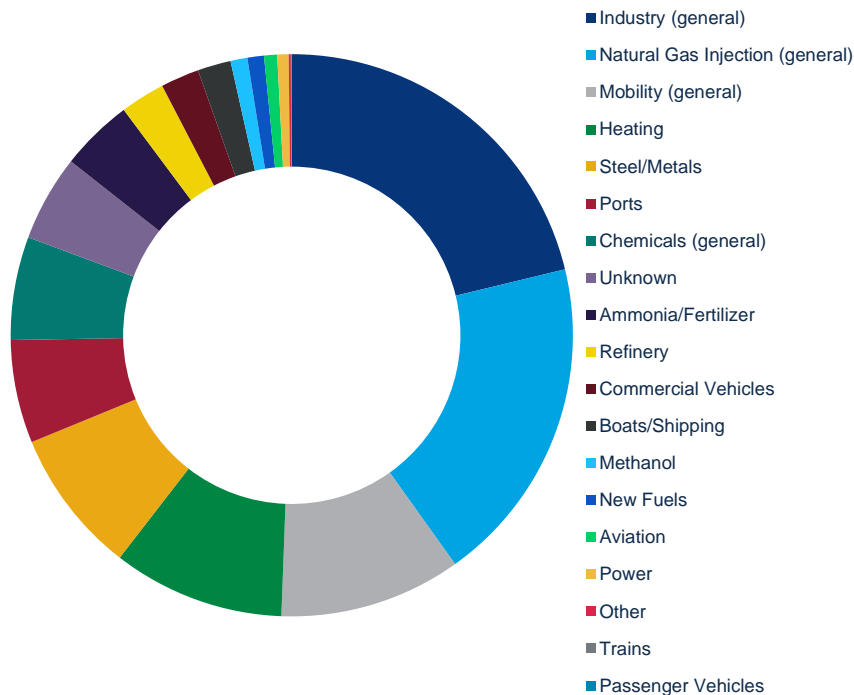


*Changes were made to the Teesside project in Q1 2021, but the project was originally announced in Q1 2020 and thus is not shown above

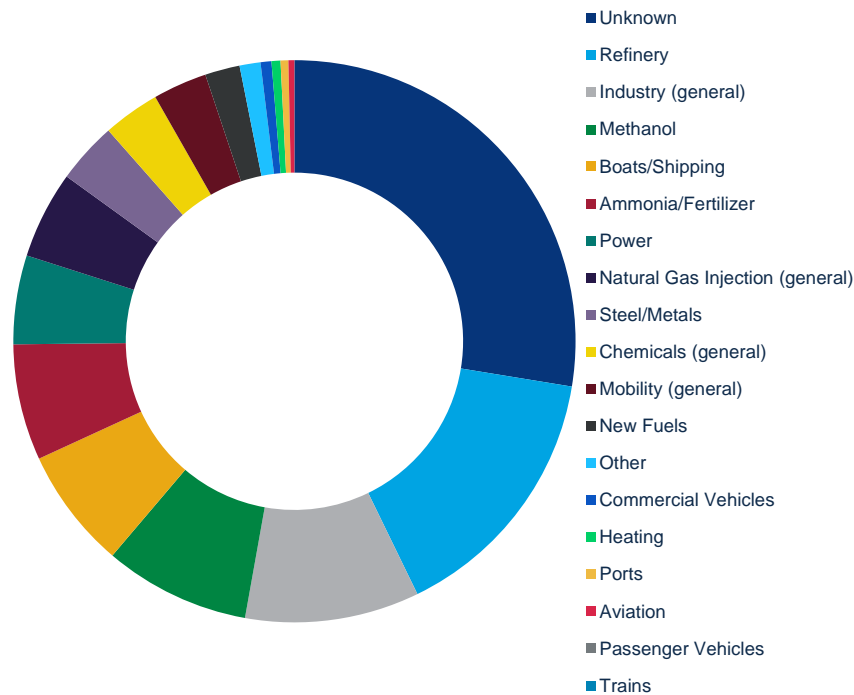
The overall pipeline is diverse but still too early to say which sector(s) will prevail

But the 2020-25 pipeline, also vague, is more concentrated in traditional hydrogen sectors

Production end use* of entire project pipeline (mmtpa)



Production end use of 2020-25 project pipeline (mmtpa)

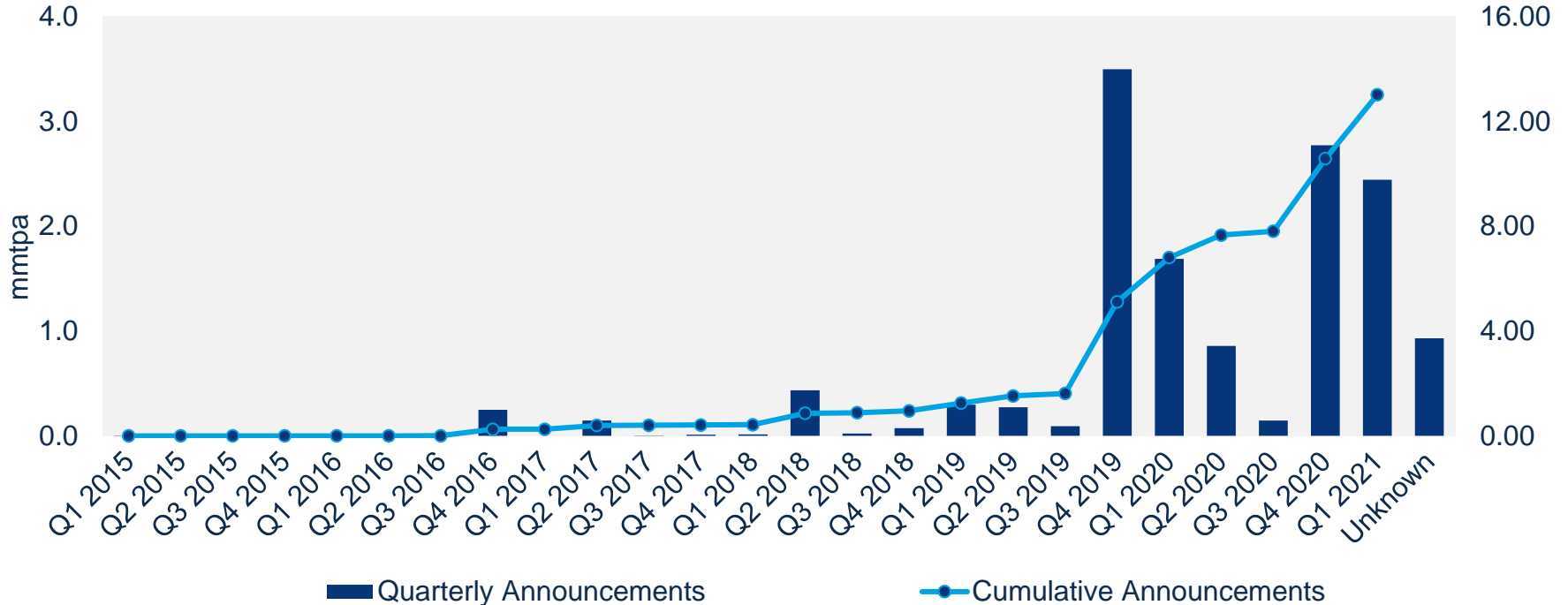


Source: Wood Mackenzie
 *See slide 17 for definition of end-use sectors

If it feels like the hydrogen market has exploded recently, you are correct

Announcements since Q4 2019 constitute 87% of all projects with known announcement dates

Low-carbon hydrogen project announcements by quarter, Q1 2017 – Q1 2021 (mmtpa)



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