Executive Summary: Hydrogen Economy

- The "Hydrogen Economy" (HE) refers to the use of hydrogen (H2) as a low-carbon fuel, particularly for heat and fuel cell EVs, as well as a means for seasonal energy storage and long distance energy transport
- The HE idea is not new[1] (1970's oil shock, 1990s, mid-2000s) but seems to be "different this time" as various supporting drivers are aligned
- HE interest revolves around "blue" (H2 + CCS[2]) and "green" hydrogen[3], which represent both opposing camps and potential allies in the transition to a HE[4]
- Fundamental HE technology has finally reached pre-commercialisation phase, but significant effort is still required to drive the cost curve as well as build out the broader HE ecosystem – this is leading to an explosion in innovation and start-ups
- H2 has the potential to penetrate many different end-sectors, with Transport (the competitiveness of battery EVs notwithstanding) and Industrial Heat seem as the most promising in the medium-term

- While the HE can be complementary to electrification, it can also be seen as a defensive "molecule" response from fossil fuel incumbents
- Policy, industrial and investment activity in the HE has exploded over the 2019-2020 timeframe and, although there is a risk of near-term over-enthusiasm, the outlook for the sector looks bright
- Given the stakes, investor interest – especially among corporates – is very strong, with the "commercial traction" bar lower than for many other cleantech sectors

[1] coined by John Bockris in 1970; [2] carbon capture & storage; [3] hydrogen produced via electrolysis with renewable energy; [4] "Grey" Hydrogen already exists but is not low-carbon

Source: CleanTech Capital Advisors