

ARGUS HYDROGEN AND FUTURE FUELS SERVICE



We offer downloadable data including 'live vs announced' manufacturing capacity.

Argus direct

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Company	Technology	Company HQ country	Current capacity in MW/yr	Announced capacity targets in MW/yr
Adani				
Ansaldo				
Asahi Kasei				
Beijing CEI/Beijing SinoHy Energy				
Bloom Energy				
Ceres Power				
CPH2				
Cummins (Hydrogenics)				
Cummins Enze				
Cummins Iberdrola				
Electric Hydrogen				
Elogen				
Enapter				
EvolOH				
Fortescue				
Genvia				
GHFG				
Green H2 Electrolysis				
Green Hydrogen Systems				
Greenzo				
H2B2				
H2e Power				
Hanwha hydrogen				
Hitachi Zosen				
H-Tec Systems				
Hydrogen Pro				
Hymath				

As well as a monthly update of firm electrolyser orders:

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Announcement made	Manufacture	Customer	Project	Electrolyser type	Size in MW	Contract value (mn)	Contract value \$(mr)	Delivery date	Used for	Manufacturer country
Nov 22				Alkaline	40.0					Norway
Oct 22				Alkaline	150-170					Norway
Oct 22				PEM	5.0					US
Oct 22				PEM	20.0					US
Oct 22										UK
Oct 22				PEM	1.2					Portugal
Sep 22				PEM						Norway
Sep 22				PEM	3.2					Portugal
Sep 22				PEM	50.0					US
Sep 22				PEM	343.0					US
Sep 22				SOEC	500.0					Denmark
Aug 22				Alkaline	30.0					Germany
Aug 22				Membraneless	200.0					Israel
Aug 22				PEM						UK
Aug 22				PEM	120.0					US
Jul 22				PEM	300.0					US
Jul 22				PEM	2.0					Germany
Jul 22				Alkaline	60.0					Germany/Italy
Jul 22				PEM	2.5					France
Jul 22				Alkaline	200.0					Norway
Jul 22				PEM						Norway
Jul 22				PEM	5.0					US
Jul 22				Alkaline						Norway
Jul 22				Alkaline	200.0					Germany/Italy
Jun 22				Alkaline						Norway
Jun 22				PEM	2.0					Germany
May 22				PEM	1,000.0					US
May 22				Alkaline						Norway
May 22				JS plant	5.0					China
May 22				PEM	4.0					UK
Apr 22				PEM	10.0					US
Apr 22				Alkaline	40.0					Germany/Italy
Apr 22				Alkaline						Norway
Apr 22				Alkaline	0.9					Denmark
Apr 22				Alkaline	2.0					France
Apr 22				PEM	2.5					US
Mar 22				Alkaline						Norway
Mar 22				Alkaline						Norway
Mar 22				PEM	50.0					Germany
Mar 22				PEM	1.0					France
Mar 22				Alkaline	0.9					Denmark
Feb 22				rogen Hub	25.0					US
Feb 22				PEM						Norway
Feb 22				Alkaline	220.0					Norway
Feb 22				Alkaline	25					Belgium

We also offer 'quick snips' of emerging demand so that your sales team can be at the front of opportunities as they arise:

European Parliament votes signal support for EU hydrogen use

The European Parliament has voted in favour of two legal reports that could bolster hydrogen use later this decade. Parliament voted in favour of mandating that hydrogen refuelling stations be deployed every 100km along main roads by the end of 2027. It separately also called for a quota making it compulsory for ships to use at least 2pc of renewable fuels of non-biological origin, such as hydrogen and its derivatives, by 2030 and 6pc from 2035 - alongside larger overarching targets for the maritime sector to reduce greenhouse gas emissions. The votes set out parliament's position for negotiations with EU member states that are expected to take place later this year.

Lhyfe eyes 200MW Dutch hydrogen plant for chemicals

French hydrogen firm Lhyfe has announced plans for a 200MW renewable hydrogen production facility in the Netherlands to supply feedstock for the Groningen region's chemical sector. The company aims to commission the plant in 2026 at the Delfzijl chemical cluster in the northeast of the country. Delfzijl already has strong demand for hydrogen and this is likely to grow, Lhyfe says. The plant will produce 55 t/d of hydrogen - equivalent to over 20,000 t/yr - averting 2.2mn t of CO2 emissions within 10 years, Lhyfe says. Construction of the facility is subject to obtaining required permissions and a final investment decision.

German, US firms ink H2 truck deal for nearly €1bn

German e-mobility firm Quantron will deliver 500 heavy-duty fuel-cell trucks to US logistics company TMP Logistics under a framework contract signed in mid October, according to the German state of Bavaria. The orders are to be finalised by the end of 2024 and will cumulatively be "worth almost €1bn [\$983mn]", according to the Bavarian government, which has provided Quantron with funding to develop fuel-cell trucks. The trucks will be delivered under the German firm's 'Quantron-as-a-Service' scheme, which also includes maintenance, insurance, infrastructure and green hydrogen supply. Quantron is working with partners to develop hydrogen production sites and refuelling infrastructure.

Brazil could get large-scale H2 plant for 'green' steel

Norwegian renewable hydrogen company Hydro Havrand and Swedish steelmaker H2 Green Steel are considering building a renewable hydrogen plant in Brazil for production of "green" steel. The firms are eyeing a greenfield project that could provide enough hydrogen for the production of 5mn t/yr of decarbonised steel through direct iron reduction. Although they did not specify the size of the envisaged hydrogen facility, H2 Green Steel is planning to deploy an 800MW electrolyser



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ARGUS HYDROGEN AND FUTURE FUELS SERVICE



This Argus service is an essential for electrolyser manufacturers. We cover the decarbonised hydrogen industry from production to e-Fuels, with a strong focus on policy and technology. We also produce sector-specific news-flow to keep you on-top of peer activity and emerging opportunities.

Stargate to supply electrolysers to Poland's Rockfin

06 Oct 22, 14:00 - Hydrogen Oil products Corporate Joint ventures and alliances Fundamentals Infrastructure Plant proposal Net zero Green manufacture

London, 6 October (Argus) – Estonian electrolyser manufacturer Stargate Hydrogen has signed a letter of intent to supply Polish industrial machinery maker Rockfin with equipment for hydrogen projects in an offtake agreement that could include 100MW of electrolysers between 2025 and 2030.

Stargate will deliver the first electrolyser in 2023 to Rockfin, which plans to use exclusively Stargate electrolysers for its "Green Box" container concept. Rockfin plans to combine components including electrolysers, compressors, water demineralisation and hydrogen purification inside a customisable containerised unit for production and storage of hydrogen.

Stargate was one of a number of companies approved to receive state aid under the EU's €5.4bn Hy2Tech important project of common European interest (IPCEI) initiative. It plans to expand its electrolyser manufacturing capacity to 1GW/yr by 2026 from 100MW today.

Rockfin makes equipment including turbines, generators and compressors for the oil and gas industry and has manufactured industrial hydrogen equipment since 1997, but is now pursuing opportunities in renewable hydrogen – adding the container concept, purification membranes, and water demineralisation for electrolysers to its product range.

"The role of green hydrogen in the oil and gas sector is growing rapidly as green hydrogen is starting to become cost competitive with grey hydrogen," Stargate said.

"Supplying electrolyser stacks to Rockfin allows us to scale up our manufacturing faster and establish a strong footprint in the oil and gas sector," Stargate chief executive Marko Virkebau said.

By Aidan Lea

Plans emerge for UAE electrolyser manufacturing

21 Oct 22, 14:44 - Hydrogen Circular economy CO2 reduction Technology Corporate Joint ventures and alliances Net zero

Hamburg, 21 October (Argus) – UAE oil and gas engineering firm MMEC Mannesmann and German engine maker AVL Schrick are planning to jointly manufacture electrolysers in the UAE, with a focus on solid oxide electrolyser cell (SOEC) technology.

The two companies have formed an alliance to manufacture electrolysers using "next-generation" technology, MMEC's chief executive Anas Aljuaidi said. The electrolysers are to be deployed for "multi-GW" hydrogen production in the UAE by 2030, he said.

AVL is developing SOEC technology as well as proton exchange membrane (PEM) electrolysers. In September, the firm opened a new test centre for the technology in Graz, Austria. It also operates a fuel cell test centre in Vancouver, Canada, and is building another one in Kecskemet, Hungary.

The alliance between MMEC and AVL may signal an intention to build electrolysers close to where they will be extensively deployed in the future. The UAE and the wider Middle East region have been widely touted as a prime location for producing electrolytic hydrogen, thanks to ample renewable power generation capacity. There have been few announcements for electrolyser manufacturing facilities to be established in the region so far, although some firms, such as Belgium's John Cockerill and UK-based Kenera Energy Solutions recently indicated that they intend to set up sites there.

SOEC technology is less established than its alkaline and PEM counterparts, but its proponents emphasise comparatively high efficiency rates. And a recent large-scale order placed by US renewable ammonia firm First Ammonia for 500MW of SOEC electrolysers from Danish technology firm Topsoe – which includes the option of eventually expanding the deal to 5GW – signals increasing confidence in the process.

By Stefan Krümpelmann

H2 plant construction spending trebles to \$1.5bn: IEA

27 Oct 22, 18:59 - Hydrogen Corporate Investment and Financing Fundamentals Infrastructure Net zero Green manufacture

London, 27 October (Argus) – Capital spending on hydrogen projects in operation or under construction trebled to \$1.5bn in 2022 compared with a year earlier, but investment must rise dramatically to move the needle on hydrogen, according to the IEA's World Energy Outlook.

There were further signs of growth, as 33 pureplay hydrogen companies tracked by the watchdog increased their collective market capitalisation by around \$20bn since mid-2020, while hydrogen technology start-ups raised \$700mn in 2021, up fivefold from 2020, it said.

But this is a drop in the ocean compared with global requirements – as \$700bn-850bn is needed just for the EU to meet its aim of 10mn t/yr production and 10mn t/yr imports by 2030, and the figure doubles once the cost of capital is included, the IEA estimates. The sum needed for global hydrogen scale up will be much larger still.

The challenge is made starker by difficulty of unlocking financing. Producers need credible 10-20-year contracts with utilities for energy input, offtakers, and the services firms offering engineering, procurement and construction. The simplest projects have three contracts, while the most complex require as many as 20, the IEA said.

The first mover projects have simple business models supplying existing hydrogen demand. Two of the world's largest electrolysers came online in 2022, and two more reached final investment decisions, the IEA said.

China-based Ningxia Baofeng Energy opened a 150MW electrolyser for its ammonia plant in southern Spain. Decisions to build projects in Shell for 200MW in the Netherlands, which will both supply hydrogen to...

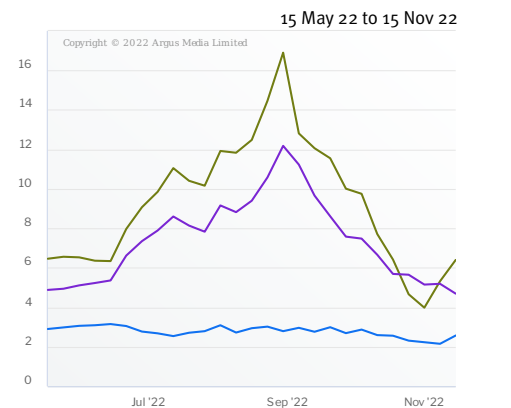
By Aidan Lea

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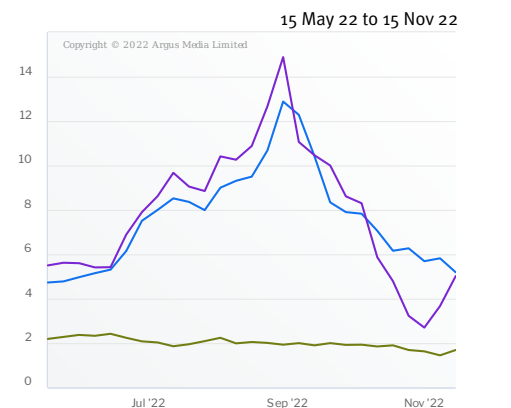
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