

The world needs to rule in favour of green hydrogen

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Exactly 50 years ago, the world was reeling from the ‘oil-price shocks’ of the 1970s. In the decades after, came growing worry about the climate crisis. These set in motion a nascent search for using hydrogen as a fuel. But it was a bumpy road — the costs were just not matching up to those of readily available hydrocarbons. Cut to now, the reducing cost of renewable energy such as solar and wind and better cell technologies have made not just hydrogen, but also green hydrogen a possibility. The latter uses renewable energy to split water into its components. There is a major problem, however. Countries are building their green hydrogen game competitively and not collaboratively. To avoid a 1970s scenario, then, the world needs a global rules-based architecture.

Green hydrogen — a key fuel of the future — has the potential to decarbonise hard-to-abate sectors such as steel, freight transport, and petrochemicals. But it needs to be easily available, accessible, affordable and acceptable to all. This is especially critical for emerging economies and energy markets. Historically, energy security has been about diversification of sources and trying to avoid fluctuation of prices. Going forward, energy security will also be about having to do these in a carbon-constrained world and understanding that the energy demanders of the future and the fuels of the future will be different from the past. The year 2023 is an important political moment for this. The G20 Presidency under India is putting sustainability at the heart of global governance and energy architecture and there will be the first Global Stocktake of climate pledges and actions at the UN’s Conference of Parties.

At least 38 countries and the European Union have announced their hydrogen plans or policies, 63 bilateral partnerships have been drawn up, and several multi-party alliances have emerged, according to [research](#) by the Council on Energy, Environment and Water (CEEW). So, while several countries in the Global North are building green hydrogen ecosystems and partnerships, countries in the Global South with massive renewable energy potential (and thus some of the best location choices for producing green hydrogen cheaply) don’t have enough technology or investments flowing in to lower costs. This risks fragmentation and ambiguous rules for green hydrogen technology development, supply chains and trade. How should the common rules for an energy-secure green hydrogen economy be framed?

First, create safety, operational and quality standards for green hydrogen. Without common rules, every country and alliance will create their own safety and quality standards for hydrogen and its derivatives. Moreover, there is already purple, turquoise, green, grey and pink hydrogen. Countries need mutually acceptable protocols for production, storage, and use of the fuel, and a universal certification system. Consumers should know if their hydrogen is truly green. A technical committee can bring all parties to the table, including regulatory authorities, to set down collaborative rules and ensure compliance.

Secondly, establish a global green hydrogen alliance for fair and transparent trade. For a future where green hydrogen could fulfil much of the demand for fuels for heavy industries, no country can be allowed to disrupt global supply chains. For this, a global alliance that builds consensus around open market rules will ensure reduced non-tariff barriers, lower prices, greater scale and more healthy competition. The G20 can take the lead here.

Thirdly, build resilient supply chains. The electrolyzers needed to produce green hydrogen themselves need several critical minerals. Lack of access to these could stymie a successful scale-up of green hydrogen production. The global alliance should come up with ways to make supply chains robust, interdependent and address bottlenecks. For instance, there should be diversification and a distributed supply chain for the production of electrolyzers (which split water into oxygen and hydrogen) and the cells and membranes embedded in them.

Fourthly, co-develop technology rather than monopolise it or hope for advanced tech to be transferred. Developed and developing countries must co-develop innovative green hydrogen technologies for a sustainable future and not impose inaccessible technologies on the Global South. This can create an effective partnership between technology-rich and resource-rich countries. But this co-development needs intellectual property and financial rules, a guiding framework, and norms for co-developed projects.

Fifthly, de-risk investments into green hydrogen. Green hydrogen is more expensive than (more polluting) grey hydrogen — for its scale-up, costs will have to be lowered. A common funding pool can create a network of investors and financiers to finance collaborative projects, underwrite investments and provide guarantees. This pool can innovatively de-risk investments through green bonds and blended finance, and provide all members equal access to a partial risk guarantee.

Sixthly, gather data and make it transparent. The world needs transparent, real-time listing of green hydrogen projects, collaborations, partnerships, and data on emissions reductions through a single-window portal. This is the year of the Global Stocktake of the Paris Agreement, and such a portal can show the true potential of green hydrogen and if pledges are transforming into action.

Ultimately, the rules for decarbonised hydrogen must be equitable and legitimate. They must create a level-playing field to fulfil the energy needs of interested parties. When it comes to technology development and value chains, the principle of common but differentiated responsibilities must apply. A sustainable future, built at least partly on the foundations of a green hydrogen economy, must narrow rather than widen the technology divide. Hoping for the best is not enough. The only way to guarantee a green hydrogen future that is also just — and avoids another energy crisis — is to shape it together now.

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