



Navigating regulations and standards across the hydrogen sector

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The production of hydrogen has been largely driven by chemical and refining industries, however more recently, industry and government agendas, COP26, and the ongoing conflict in Ukraine have begun to pile on the pressure and drive further innovation in the low-carbon hydrogen (LCH) space. On the back of this mounting pressure, we are starting to see more new hydrogen projects be announced while existing smaller projects flourish and grow.

A ‘world-leading’ hydrogen economy

Policymakers around the world are also taking further action. In the UK, the government’s hydrogen strategy was published just last year and sets out what government and industry must do during the 2020s and beyond to establish a “world-leading” hydrogen economy. It sets out an initial target of 5GW of production capacity by 2030, continuing to increase through to 2050 as part of its plan to achieve ‘net zero’ emissions.

The strategy recognises that for these ambitions to be met, a “rapid and significant scale up” will be required. At present, very low amounts of low-carbon hydrogen (LCH), especially large-scale production is in operation. This and other factors are of presenting stakeholders across the hydrogen sector with significant challenges, chief among which is ensuring that they are ready to navigate the many regulations and standards that might apply to them.

“ There are several schemes available right now that aim to introduce low carbon certification across the hydrogen space but none of them are being taken up on a global level and cover all the regulations across each region, or country. This is something that must be addressed—and it likely will in the coming years.”

Three challenges for hydrogen sector firms

1. Regulatory developments



To see the scale of the potential LCH market become a reality we need to navigate a number of risks and challenges. As we just mentioned, arguably the biggest among these is the fast-paced developments in legislation and regulations. This often leaves companies unsure of the route to approvals in an ever-changing landscape.

Although many regulations, standards, guidelines, and codes have already been established through years of hydrogen use across industry, growth of LCH sector is in new regions, across wider range of end uses and with requirement of strong focus on social license to operate the industry is seeing an increased level of both global and national regulations and standards being adapted or introduced. The key is to ensure we address safe use of hydrogen in a timely manner to enable project developed while ensuring we do not introduce undue complexity.

The EU's 'Fit for 55' package of proposals for introducing new and updating existing EU legislation is an example of how newly developed regimes will have an impact on how organizations approach and are affected by the hydrogen economy. Firms must therefore be ready to address gaps that exist between their own and different regulatory regimes in a dynamic way.

As well as new "rules" we also see new people entering the market across all project stakeholders from manufacturers, operators to regulators we also see reduced number of people who have strong knowledge, this leads to a lack of confidence and trust which needs to be built.

2. Cross-market growth



As the LCH sector continues its rapid growth trajectory, to meet the growth in supply chain we are likely to see an increased growth in equipment and plant export across the global.

The problem here is that in some areas, such as China, which is currently the largest producer of hydrogen, have an established supply chain but may not have experience of exporting this equipment globally, meaning work has to be done upfront to ensure manufacture to export location standards can be met and are understood. In a dynamic regulatory environment, with no common global standards the challenge is further exaggerated.

Three challenges for hydrogen sector firms

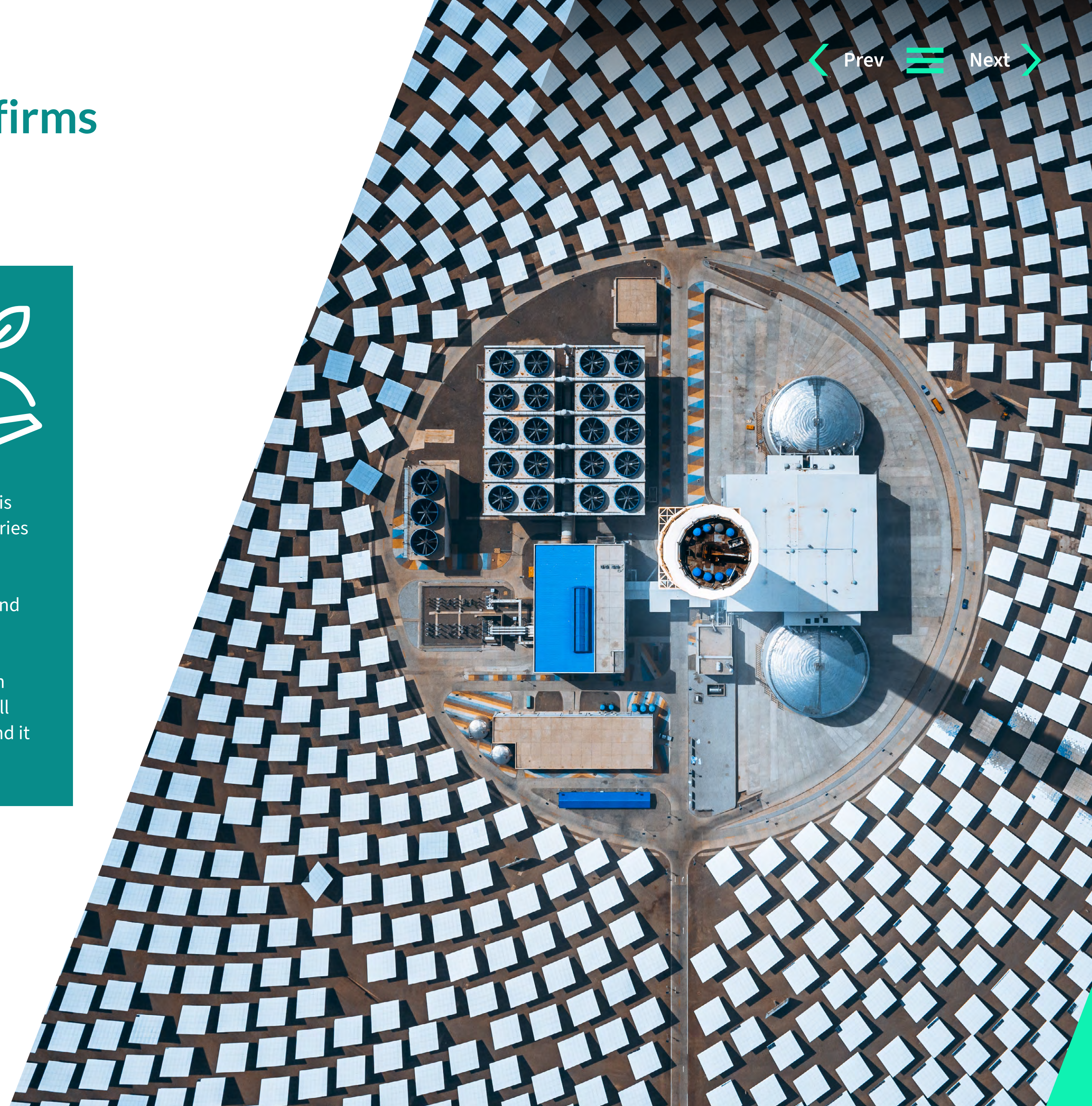
3. Defining ‘green’ hydrogen



We know what low-carbon or ‘green’ hydrogen is; it’s hydrogen that has been generated by renewable energy or low-carbon energy. But this definition means different things to different countries and regulators—how ‘green’ does green hydrogen need to be for it to qualify as green?

This may sound like a non-issue, but there’s currently no globally accepted definition, and this could cause trade friction and limit the commercial viability of the projects. If different countries are playing by their own rules, it’s going to be very difficult to trade this hydrogen globally. Like other schemes such as carbon footprint and GHG verification, it makes sense to have an independent source such as an assurance body reviewing credentials to provide assurance and consistency, to aid trade.

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Navigating the evolving hydrogen landscape with LRQA

As a global leader in assurance, LRQA's experts are equipped to advise firms on the latest developments in both global and national hydrogen sector regulations and standards (including ISO and IEC) and help them overcome these and other key challenges as they navigate the global LCH landscape.

“LRQA has a deep understanding of regulations and technical expertise, our experts are constantly working on equipment inspection and certification projects across the world. What this means is that when there's a gap, we can review from first principles and take into account other know regulations and standards, to advise on existing best practices or potential routes to market.”

The global scope of our work also means that we're never just looking at a particular regulatory regime or standard in isolation. We're therefore able to advise on what's going on elsewhere in the world and what this means for their operations. Helping to produce approval roadmaps for projects avoiding undue complexity and considering global best practice.

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Why LRQA?

Experience and expertise – with experts on international committees around the world, LRQA is highly experienced in the development of standards and regulations that protect safety and quality, build confidence in the market and inspire investment.

Since 2003 LRQA has been active in a number of international hydrogen initiatives including the International Partnership for Hydrogen and Fuel Cells in the Economy (IPHE) Regulations, Codes, Standards & Safety (RCSS), the Mission Innovation Challenge on Clean Hydrogen, and the International Energy Agency Safety Task.

1. Expediting locally – working with local regulators and vendors, and with an understanding of the supply/demand risks, LRQA staff help to ensure delivery of the right products at the right time.

2. Expertise – LRQA subject matter experts understand hydrogen, and the unique requirements of hydrogen infrastructure, so they can help with design reviews and specifications to ensure the procurement of fit-for-purpose products.

3. Global vendor assurance – building trust and confidence in the supply chain, including gap analysis to global standards upfront.

4. Complete range of assurance services – with no pre-existing global or regional standards for measuring the carbon credentials of hydrogen, LRQA can validate and verify everything from product design through to emissions. Typical services include due diligence, onsite inspection, vendor assessment, design verification, product certification, carbon footprint and GHG emissions verification.





YOUR FUTURE. OUR FOCUS.

About LRQA:

By bringing together unrivalled expertise in certification, brand assurance, cybersecurity, inspection and training, we've become a leading global assurance provider.

We're proud of our heritage, but it's who we are today that really matters, because that's what shapes how we partner with our clients tomorrow. By combining strong values, decades of experience in risk management and mitigation, and a keen focus on the future, we're here to support our clients as they build safer, more secure, more sustainable businesses.

From independent auditing, certification and training; to technical advisory services; to real-time assurance technology; to data-driven supply chain transformation, our innovative end-to-end solutions help our clients negotiate a rapidly changing risk landscape – making sure they're shaping their own future, rather than letting it shape them.

Get in touch

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