



Marsh Specialty

# Clean Hydrogen

Supporting the energy transition



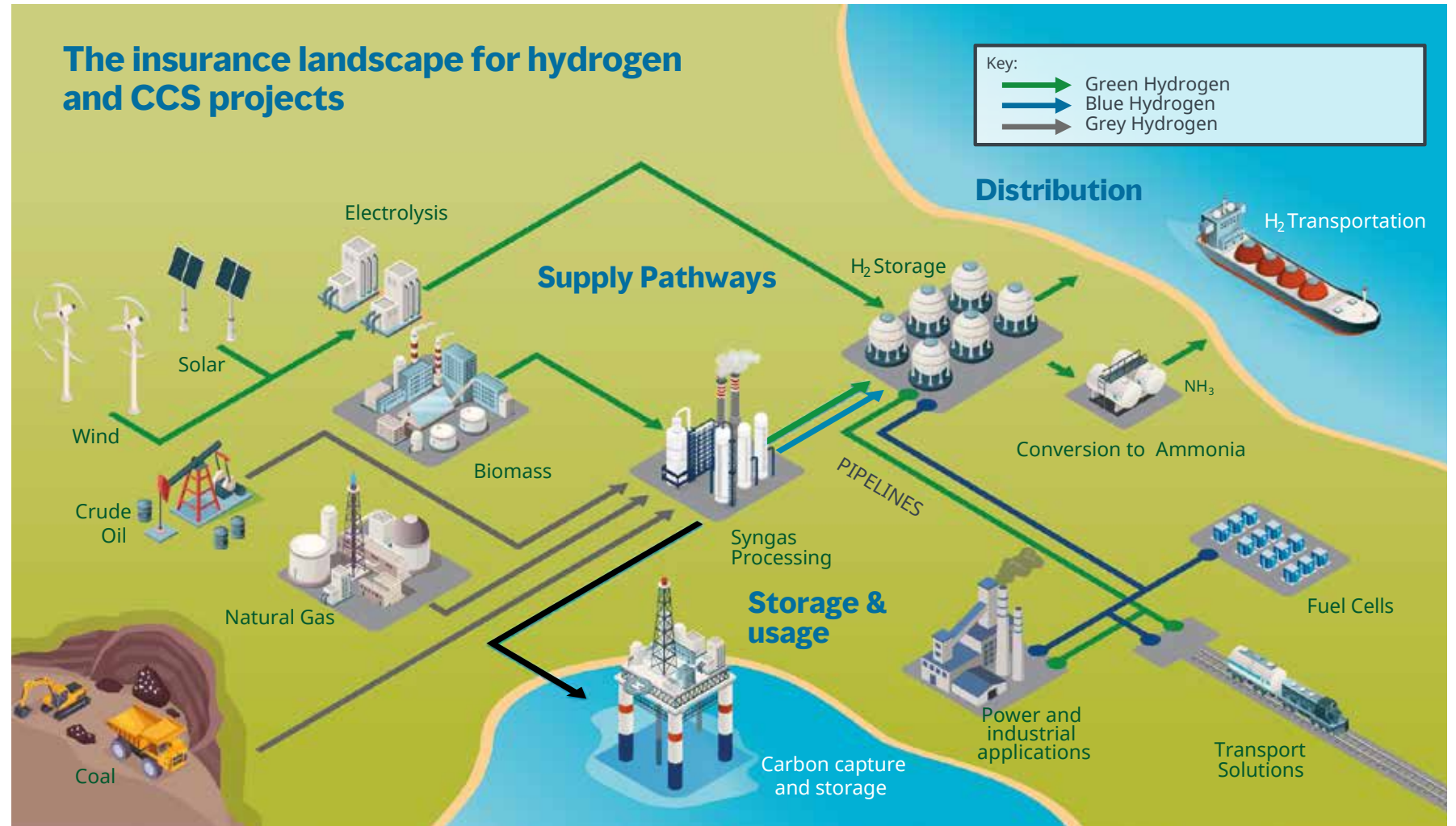


Clean Hydrogen is set to play an important role in helping industries and countries reduce their carbon emissions. The benefits of clean hydrogen as a storable, and transportable energy source in an increasingly electrified world is widely recognised. So, as the race to decarbonize dramatically accelerates, governments and hard-to-abate industries are investing strongly in clean hydrogen production and carbon capture and storage (CCS) facilities.

Marsh Specialty teams working across the energy and power, construction, credit, and cargo industries provide expert risk engineering analysis, tailored risk and insurance advocacy and global placement services covering the full value chain of hydrogen and CCS investments. We provide comprehensive risk management and transfer solutions from feasibility studies through to the operational stages of your project.

## CLEAN HYDROGEN SUPPLY AND DISTRIBUTION PATHWAYS

Clean hydrogen production facilities will need to be integrated into existing energy networks. In some cases, existing infrastructure in refineries and gasification plants will be used in combination with new storage and transportation networks. In other cases, new electrolysis facilities will need to be built and integrated with solar or wind plants to produce green hydrogen from renewable energy sources.



## CARBON CREDIT AND EMISSIONS TRADING VALUE PROTECTION

Clean hydrogen investments can reduce CO<sub>2</sub> emissions for end users where hydrocarbon based fuels or feedstocks are substituted with hydrogen. Emissions can also be reduced where traditional hydrogen production using natural gas or coal is combined with CCS, or where renewable energy sources are used in the production process. In regions with carbon credit or emissions trading schemes, monetary value can be created by reducing the overall cost of production, or by providing an advantaged position for emissions trading.

This creation of new and additional value introduces a novel type of business interruption (BI) exposure that traditional BI policies are not designed to address. Where such schemes exist, Marsh Specialty can design and place the enhanced BI insurance solutions that you need to protect this additional financial value. This insurance coverage enables you to recover the lost value that would have been generated from the sale of excess emissions allowances, or to contribute to an increase in costs associated with losing a carbon credit.

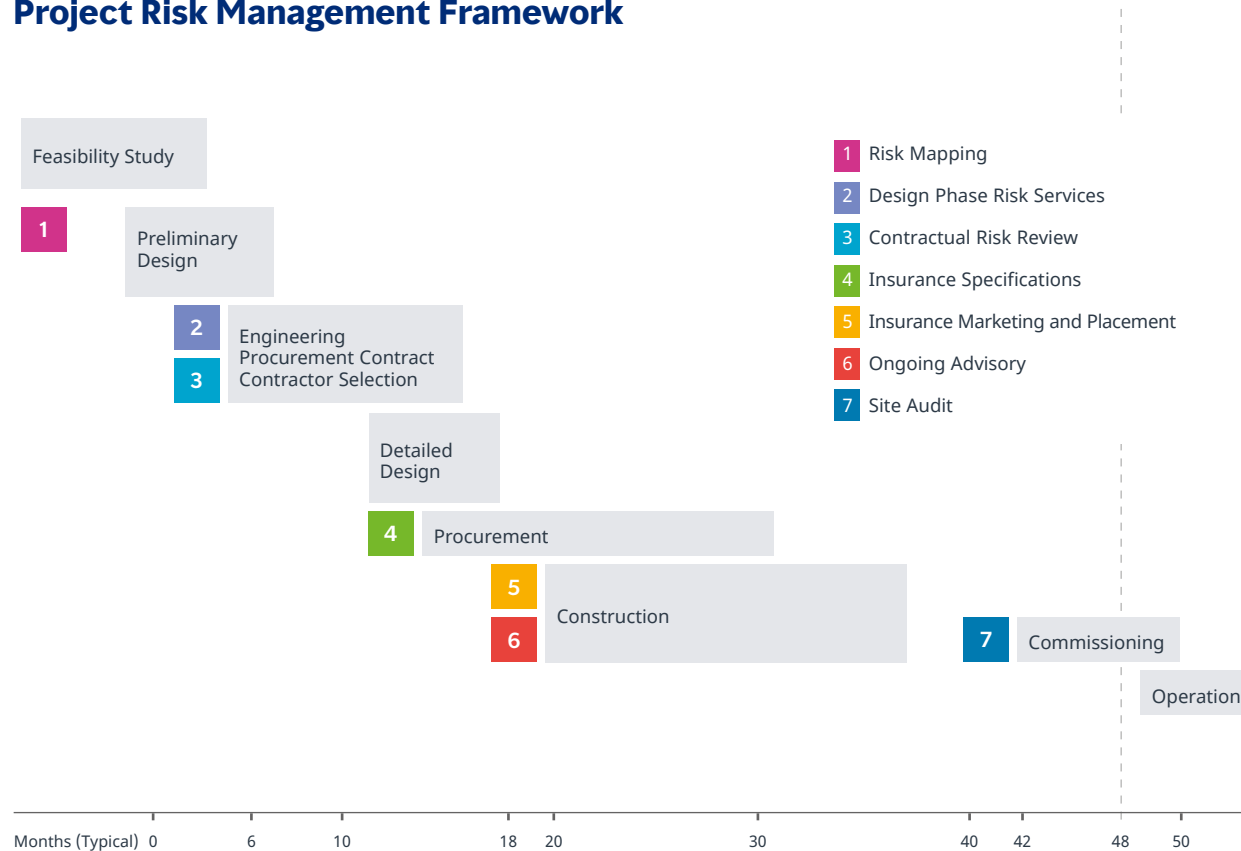
Some industries may also be subject to regional obligations to increase the use of renewable energy sources. This may be administered through the issue and trade of renewable obligation certificates, or via similar schemes. In circumstances where a project is planned to contribute to such an obligation, this contribution may be lost or delayed if property damage or project delays occur. The financial impact can be covered by adapting delay in start-up (DSU) insurance coverage.

New insurances are also under development to support CCS cluster developers. These insurances will address risk exposures related to a release of CO<sub>2</sub> as well as the loss of government incentives that may result should the CCS operation suffer an interruption.



“ Marsh Specialty can design and place enhanced business interruption insurance solutions to protect your financial interests.

## Project Risk Management Framework



## SUPPORTING YOUR HYDROGEN PROJECT

### Our approach

Marsh Specialty uses a structured project risk management framework to identify and manage risks throughout a project's critical path. Through workshops and detailed planning, we work with you to:


- Quantify and mitigate risks required to secure project finance.
- Help you improve your company and project risk profile.
- Ensure appropriate and cost effective insurance coverage for all production, CCS and supply pathways.

Our specialist risk and insurance advocates will:

- Conduct insurance risk analysis to assess potential property damage, business interruption and liability losses; including emissions related BI analysis if applicable.
- Advice on how to reduce overall project risk through insurance and financing mechanisms.
- Ensure that appropriate risk control features are incorporated cost effectively at the plant design phase, to avoid the need for subsequent and expensive plant retrofits.
- Review contractual documentation to ensure the appropriate stakeholder risk allocations and insurance specifications are provided.
- Ensure risk mitigation and project management measures are fully communicated to insurers to achieve cost effective coverage.

## INSURANCE PLACEMENT STRATEGY

Marsh Specialty will create and manage a competitive tender process to secure risk management solutions with global insurance markets. To select the appropriate insurance products and providers, we evaluate each project based on its location, technology, choice of contractor and equipment supplier.



Hydrogen projects can involve complex ownership and contractual arrangements which will require comprehensive risk management solutions to protect the interests of all project stakeholders. The core suite of required insurances includes:



### CONSTRUCTION PHASE

- Construction all risks.
- Delay in start-up (DSU).
- Third party liability.
- Sabotage, terrorism, political or regulatory uncertainty.
- Project cargo.



### OPERATIONAL PHASE

- Property damage.
- Business interruption - traditional and emissions related.
- Third party liability.
- Cargo
- Sabotage, terrorism, political or regulatory uncertainty.
- Technology failure or property damage caused by cyber attacks.



### ADDITIONAL COVERAGE FOR CONSTRUCTION AND OPERATIONAL PHASES:

- Environmental impairment liability.
- Professional indemnity.
- Contractor's plant and equipment.



Heat and power purchase agreement



Energy storage and charging agreement



Hydrogen supply agreement



Engineering, procurement, and construction (EPC) contract



Technology supply agreement



CO<sub>2</sub> sequestration service agreement



Hydrogen storage and transportation agreement



Operations and maintenance contract



Finance agreement

## Benchmarking

Our team uses current placement benchmarking data to provide accurate cost forecasts that will support budget setting and contract negotiations with the project stakeholders.

## Bespoke Marsh policy wording for integrated hydrogen projects

A comprehensive insurance package has been specifically developed by Marsh Specialty to meet the requirements of all types of hydrogen projects around the world. Our single policy wording minimizes potential coverage gaps to provide seamless insurance cover between the different project phases. Clean hydrogen projects utilizing renewable energy resources can elect to have the benefit of coverage for the potential contingent BI risks related to the source of renewable power.

## First year commercial operations

Combining insurance coverage for the project construction phase through to commercial operations means you will have certainty of cover for the first 12 months of commercial operations. This integrated approach will help you meet lender's requirements, and enhance the bankability of your project.

## Claims Advocacy

Successful claims management requires specialist experience and knowledge of the insurance markets, policy forms, and relationships with the claims handling teams. Our claims advocates have the expertise required to discuss complex, technical loss scenarios with all stakeholders in the value chain. In the event of a loss, our team develops a plan to aid the payment of claims as quickly as possible. We have claims advocacy teams located within all geographical regions which enables us to mobilize immediately to protect your interests.



## Managing contractual risk

The contractual structure of energy production and distribution can be complex. This is particularly crucial for hydrogen and CCS clusters as each party may be operating on a stand-alone contractual basis. Marsh Specialty has extensive experience in designing comprehensive insurance programs, tailored to the unique contractual arrangements of each project.

## Project finance

We take a proactive approach to project finance, starting with the production and submission of a detailed insurance strategy to project sponsors, lenders, and lender advisers. Our team will support your negotiations with legal advisers and the lenders' insurance advisers in order to rationalize insurance requirements for the benefit of the project.



# About Marsh Specialty

Companies in highly specialized industry and product areas benefit from the ability to access an integrated and globally coordinated team who are experts in their field.


These firms look to Marsh Specialty to provide data driven insights, service, advice and access to global insurance markets.

When clients partner with us, they get the depth of our global team of specialists – regardless of where they are in the world.

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## About Marsh

Marsh is the world's leading insurance broker and risk advisor. With around 40,000 colleagues operating in more than 130 countries, Marsh serves commercial and individual clients with data-driven risk solutions and advisory services. Marsh is a business of Marsh McLennan (NYSE: MMC), the world's leading professional services firm in the areas of risk, strategy and people. With annual revenue over \$17 billion, Marsh McLennan helps clients navigate an increasingly dynamic and complex environment through four market-leading businesses: Marsh, Guy Carpenter, Mercer and Oliver Wyman. For more information, visit [mmc.com](https://mmc.com), follow us on LinkedIn and Twitter or subscribe to BRINK.

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