

Hydrogen Services

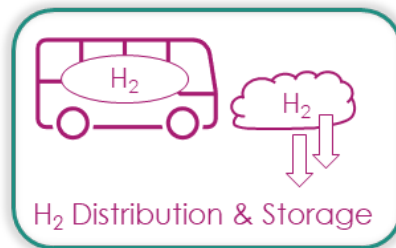
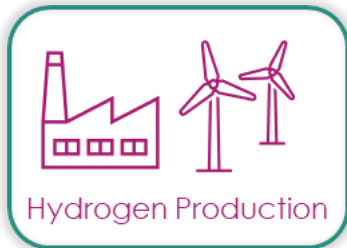
ERCE Statement of Capabilities



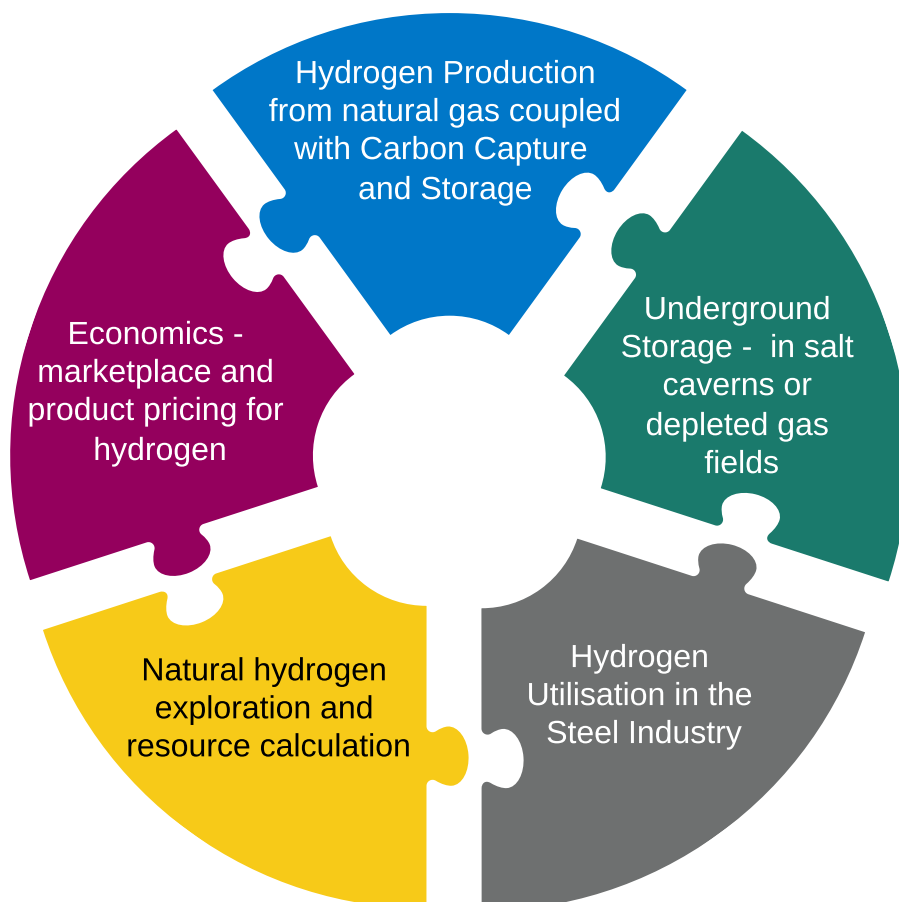
ERCE

The expertise tomorrow needs

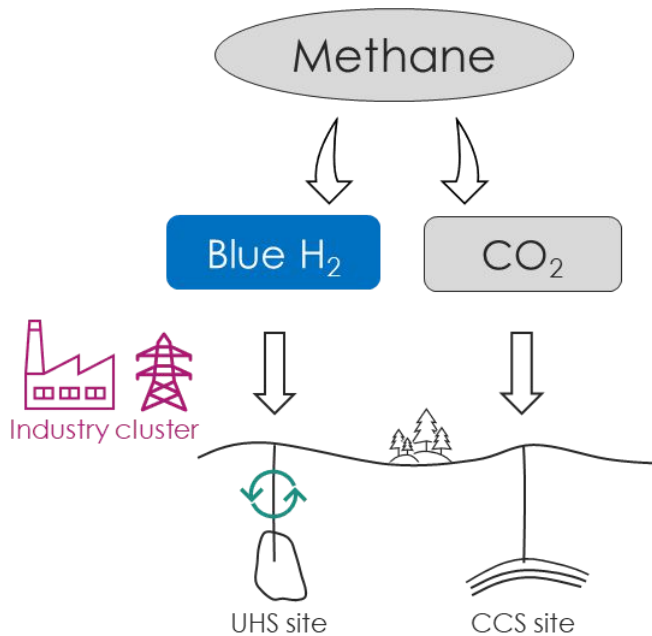
Governments globally have identified hydrogen as a key fuel and energy storage medium in their climate action strategies



ERCE focuses on five main service offerings in the Hydrogen sector:



Paving the Way for a Sustainable and Energy-Secure Future



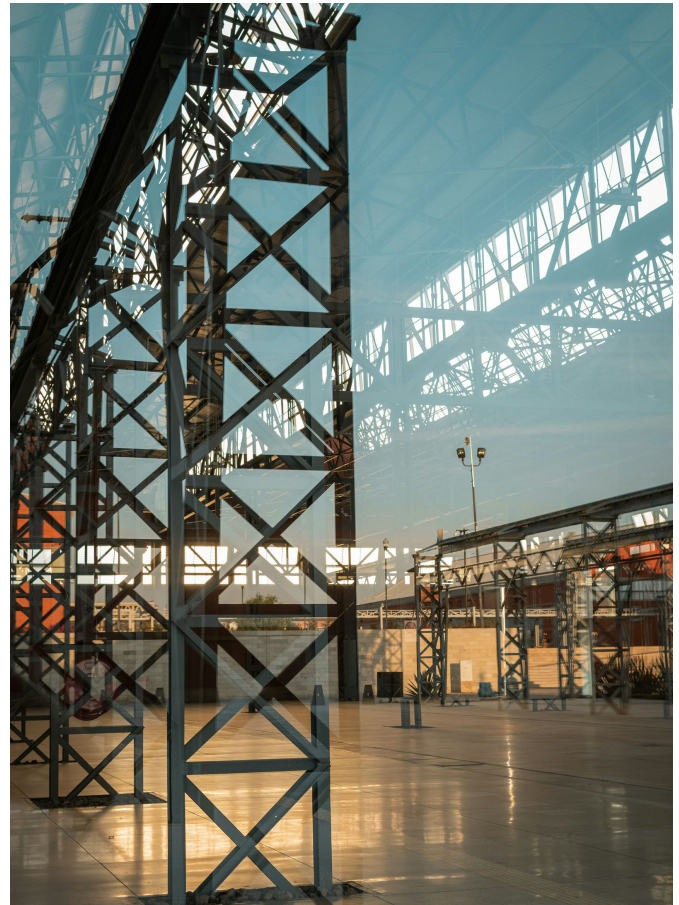
Hydrogen production from non-renewable sources are CO₂ emitters - such CO₂ emitters need to be matched with underground storage to match policy targets from governments and demands from customers.

"Governments are looking to use Carbon Capture and Storage (CCS) industrial clusters as a mechanism to move into Hydrogen Production and Storage"

As such, any potential industrial CCS site can be viewed as a catalyst to a hydrogen economy. ERCE can match emitters to most suitable local and international storage, and provides assistance with midstream business model.

At ERCE we combine our historical expertise in CCS, facilities and gas storage operations, with our expertise in clusters to evaluate the technical potential of a site for blue hydrogen generation.

ERCE also offers advisory services regarding hydrogen applications in the steel industry: Steel as a customer for buying hydrogen or for CO₂ Storage.



We work closely with our clients to create bespoke solutions to new opportunities

Leveraging Underground Expertise to utilise Hydrogen

Governments worldwide are planning a significant growth in **Offshore Wind farms** as part of the Climate Action Plan. Green energy produced through renewable sources like wind, can be converted into H_2 and **stored underground** as a short- and medium-term energy reserve.

Typical geological storage sites for natural gas are in salt formations, depleted gas fields or saline aquifers and these structures are also suitable for hydrogen storage. Learnings from natural gas storage and CO_2 sequestration are crucial to understand the opportunities and challenges related to hydrogen underground storage.

ERCE has experience in hydrogen storage in underground salt formations. We have worked closely with clients and advised them on:

The current understanding and technology in UHS

Their key design parameters and considerations

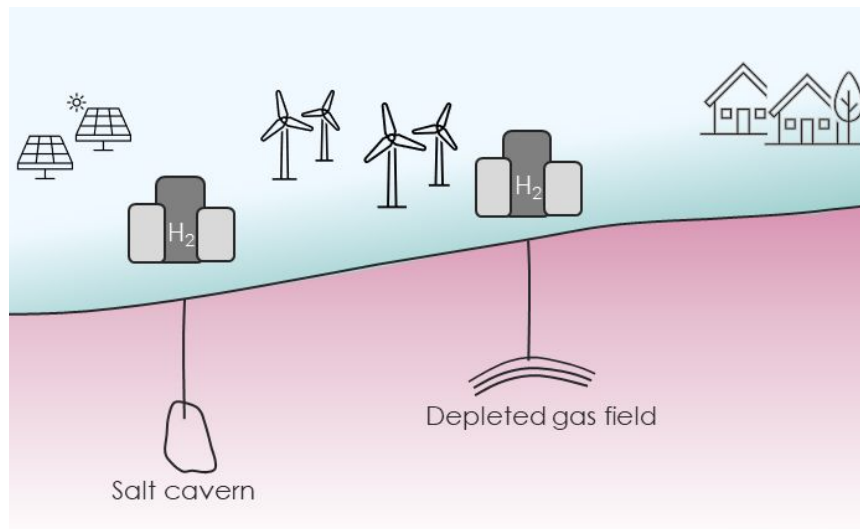
Operational pressures, stability, Technical Readiness Level etc.

Operational experience with gas and hydrogen

Leakage potential of different geological salt structures

Finding suitable geological storage sites within the client's license blocks considering nearby facilities in H_2 production, utilisation, and environmental impact

Estimation of the potential storage capacity



At ERCE we understand the subsurface

We also understand the real-life challenges of developing an economic project based on geological constraints and uncertainties.

Innovation in the Pursuit of New Energy Frontiers

Gold H₂

Natural Hydrogen shows promise as a new clean energy resource. There have been multiple recent successful drilling campaigns.

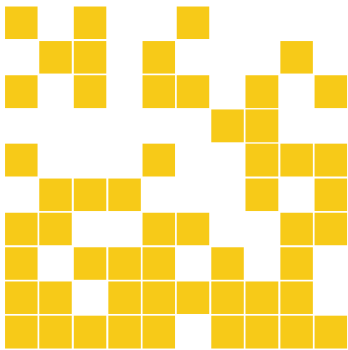
As with all new technologies, the industry still has plenty to learn to better understand its abundance, concentration and accessibility.



At the forefront of this new development, ERCE is supporting clients in the search and development of natural hydrogen resources.

We have the **expertise and experience** to work with upstream businesses as their technical support team and assist in subsurfaces evaluations like well testing and petrophysical analysis.

Our team of geoscientists, engineers and economists are ready to help your business, and to understand the **risks and opportunities** in your acreage.



At ERCE we learn with our clients and find unique ways to explore for new energies



Regulated Disclosure to Gain Stakeholder Confidence

ERCE has produced Qualified Person Reports (QPRs) and Competent Person Reports (CPRs) since the 1980s. We draw upon our experience regarding subsurface, wells, facilities, and financial challenges. This experience has been gained in the Oil & Gas, Carbon Capture and Storage, Geothermal, Helium, Lithium and Climate Disclosure industries.

Our in-house team of Geoscientists, Engineers, and Economists work together to evaluate all aspects of projects.

As evolving standards require, we integrate technical and commercial data, alongside permitting and ESG information, to take a holistic view of assets. We also commonly include climate disclosure in our evaluations.

Our team includes Chartered/Professional Engineers and Geoscientists, which allows us to comply with global reporting standards.

Our Competent Person experience comes from significant developments worldwide and our products are used during capital raises and corporate decisions gate processes.

ERCE are experts in international reporting standards. We can assist clients in selecting between reporting systems and standards, including **PRMS**, **COGEC** and **many more**.

We work closely with our clients to create bespoke solutions to new opportunities



Competent Person's Reports (CPRs) are essential for verifying the assets of exploration and production operations in advance of proposed financial transactions.



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Subsurface Knowledge can Support Commercial Decisions

Know what you are signing up to?

What kind of flexibility have you included in the contract to address the uncertainty of resource estimations? How will the uncertainty of capital expenditure (CAPEX) and operating expenditure (OPEX) affect your project? What if you need to drill more wells than initially planned? Will the planned operations affect your ability to meet the demands of the contract?

ERCE's team is experienced at collaborating with clients, economists and advisors to help them incorporate uncertainty into their commercial and legal agreements. When necessary, our in-house economists can also develop tools to quantify the impacts of uncertainty.

Uncertainty Exists in the Subsurface

Not sure what you are looking at?

A successful development starts with understanding what you know and don't know about the subsurface.

ERCE's Geoscience Team consists of specialists with a wide range of skills to understand the subsurface and estimate volumes of hydrogen in the ground.

Our in-house Engineering Team then builds upon the geoscience work, to understand the challenges to producing the resource.

Due to our global reach and our work in various industries, we have experience across a wide range of geological systems. Our experience lets us quickly understand the subsurface challenges that govern your project.

As part of any study, we always ensure we understand the uncertainty in the data and are practiced in conveying that uncertainty and building tools to understand its potential impacts.

ERCE communicates subsurface and commercial uncertainty allowing you to take the first step to informed decision making



Knowledge is the cornerstone of due diligence, enabling informed decisions and minimising risks.



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Red Flag Review

The initial step in our M&A process is the Red Flag Review, which typically lasts 1-2 weeks. During this review, we carefully analyze the Information Memorandum and supporting information to understand the assumptions behind the seller's valuation statements. Our objective is to identify and prioritize the risks associated with the proposed production and cost profiles.

Full Due Diligence Study

If requested, we proceed to a Full Due Diligence Study, where we evaluate both subsurface and topsides information. Depending on the circumstances, we may need to verify the existing QP report or create an independent QP report. Our overall aim is to provide our clients with an understanding of uncertainty, which can assist them in assessing bid values.

During Full Due Diligence, we offer evaluations and can be commissioned to provide uncertainty regarding the following:

- Static models and In-Place estimates
- Recoverable volumes for a given development concept
- Forecast production rates
- Forecast recovery rates considering current technology and accounting for facilities constraints
- Forecast costs (OPEX, CAPEX, and ABEX)
- Intrinsic Project Value

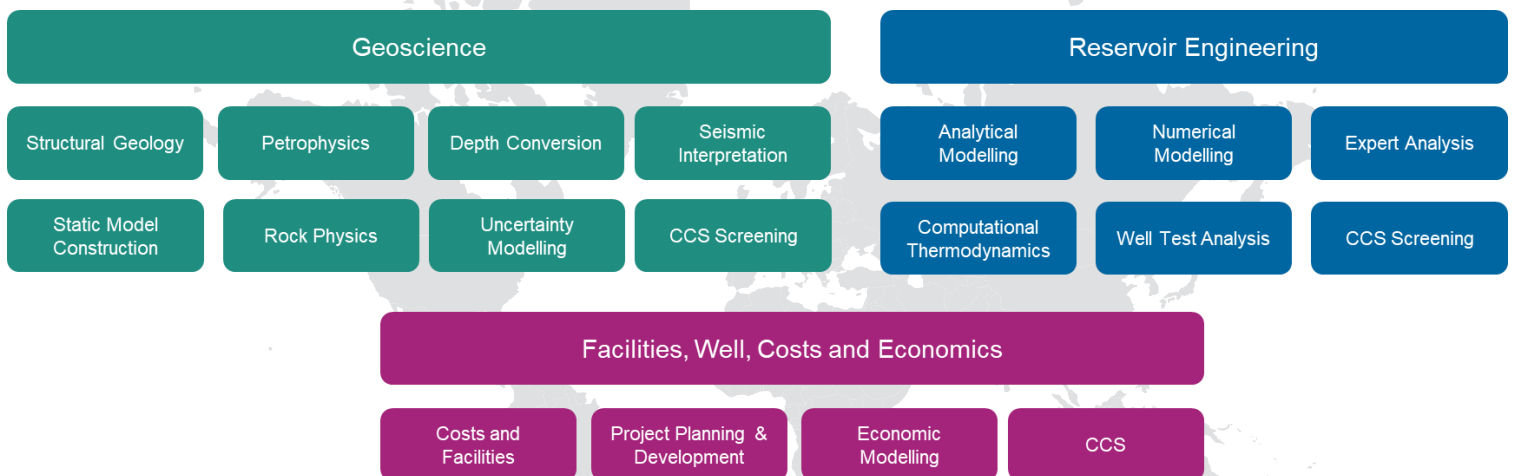
We can also assess coupled solutions with CCS and GHG emission verification. We work closely with our clients to create bespoke solutions for new opportunities.

ERCE's specialists understand subsurface, wells, facilities and economics

ERCE Technical & Commercial Capabilities

We bring an integrated understanding from traditional energy sectors, apply them to the transition technologies and businesses, and support our clients on the way to net zero.

Our staff are specialists in the application of international standards such as the SPE PRMS, Canadian NI 51-101 and ISO 14064 and the GHG Protocol.



ERCE is passionate about the future of hydrogen and would love to help add value to your hydrogen portfolio. Reach out to our Future of Energy Team, to explore opportunities to work with us.

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ERCE
The expertise tomorrow needs