

YOUR TRUSTED ADVISOR ON THE
JOURNEY TO A SUSTAINABLE FUTURE



CAPABILITY OVERVIEW

Hydrogen and its Derivatives



**Genesis has a dedicated
energy transition team with a
solid track record in hydrogen
projects.**

**Our goal is to provide
confidence in your hydrogen
investment.**



Hydrogen and its Derivatives

HOW WE CAN HELP

Our development experts provide independent services that deliver early phase design and engineering our clients can rely on.

At Genesis, we understand the economic and technical challenges facing hydrogen projects. Our objective is to ensure clients are provided with phase appropriate engineering and economics for assured decision making in their investment.

Genesis has worked on many key green and blue hydrogen projects globally and has cemented a significant track record from prefeasibility to FEED.

HOW WE ADD VALUE

- In the execution of more than 25 hydrogen projects since 2020, we have developed a deeper understanding of the changing landscape in technology maturity and uncertainties in hydrogen markets.
- We are not a technology company, nor an OEM company - we are an established consultancy with more than 30 years experience in holistic technology and integrated design.
- Our extensive experience has shown us that many hydrogen projects have hidden costs, including civil, owner, safety systems, brownfield or feedstock integration costs. Our experience of building up a holistic technical cost from a basic concept is applied across all hydrogen projects, providing real levelised costs of hydrogen (LCOH).
- With our tools, we can rapidly assess multiple hydrogen concepts and optimise the levelised costs of hydrogen.
- We perform rapid evaluation to direct your investment and we work with our clients to take their development to the final investment decision (FID).

AVAILABLE TOOLS

- Ultra Front End™ Suite (UFE™)
- Genesis Carbon Assessment Tools™ (Gen-CAT™)
- Asset Development Evaluation and Planning Tool (ADEPT)
- Brownfield cost estimating tool
- Access to commercially available software and databases
- Genesis in-house LCOH models
- Green Hydrogen System Optimization tool
- Rapid Screening tool

OUR SERVICES



KEY INVESTMENT DECISIONS

- Technology selection and system integration
- Analysis of revenue streams and hydrogen carriers (NH₃, LOHC, synthetic fuels, methanol)
- Management in variability in feedstocks & exports
- Energy intermittency management
- Onshore and offshore developments



SUSTAINABILITY

- Lifetime carbon footprint assessments and optimisations
- Reuse of transportation infrastructures
- Environmental impact assessments
- Water resourcing management



ENGINEERING DESIGN

- Site layout studies and brownfield integration
- Pipeline and material engineering
- Flow assurance and dynamic modelling
- Technical safety studies



COST ESTIMATION AND FINANCIAL SERVICES

- Real cost estimation and generation of LCOH
- Funding application support
- Economic and market analysis

CONTACT US

Initial enquiries regarding our hydrogen and its derivative services can be directed to:

EMEA: **Helen Coleman**

APAC: **Michael Horko**

AMERICA: **Ashutosh Kak**

enquiries@genesisenergies.com



Hydrogen and its Derivatives

Our Track Record

More than 25 early phase projects executed recently. All uses of hydrogen and its derivatives (NH₃, MeOH, efuels); clusters / hubs and full value chains.

Real Cost Estimating

We have levelised cost of hydrogen (LCOH) models and digital optimisation tools (energy system design tools) to understand the economics now and in the future.

Our Processes in Complex Developments

We offer 30 years of experience in:

- Project management and framing
- Concept screening and selection and value engineering
- Early engagement, decision management and technology assessment (performance assurance, TRL).

Leveraging Our Organisation

We are wholly owned by Technip Energies with more than 60 years of experience in EPC, hydrogen and ammonia.

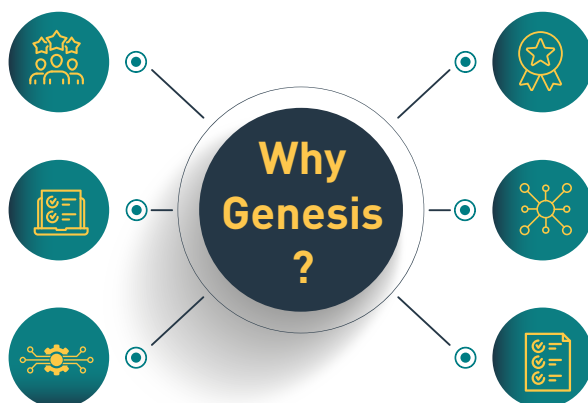
Holistic Systems Integration

We are not a hydrogen company or a renewable company. We understand issues with systems integration including renewables (balance of electrons), storage (balance of molecules), constructability and markets.

Agnostic Reviews

Experience in:

- Screening of licensors and vendors (pre-NDA)
- Working with licensors (NDAs)
- Agnostic technology assessments



SOME OF OUR PROJECTS

Blue & Green H2 Study

Client: Energy Institute

Scope: Assessment of the emissions and efficiency of hydrogen value chains.

Hydrogen Project

Client: Energy company

Scope: Pre-FEED scope focussed on the hydrogen pipeline transport system.

36W Green Ammonia Study

Client: Energy Company

Scope: Confidential feasibility study

Acorn - Blue Hydrogen & CCUS Studies

Client: Energy company

Scope: Feasibility, technology screening and concept select study phases.

Norway Blue Hydrogen and Blue Ammonia Studies

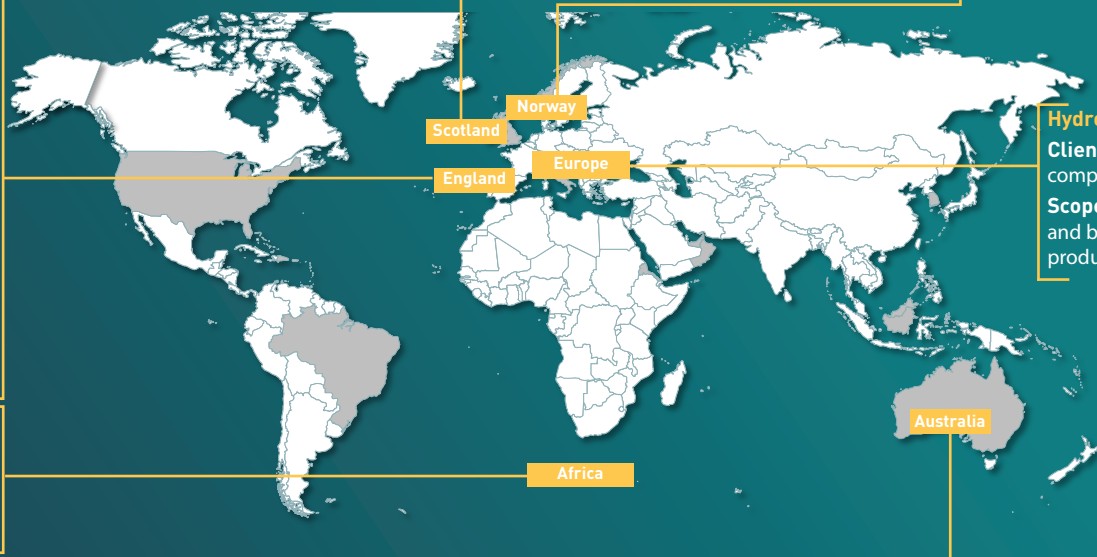
Client: Energy company

Scope: Genesis led study with support from Technip Energies for a prefeasibility definition.

Hydrogen Loop Study

Client: Private investment company

Scope: Confidential green and blue hydrogen to produce synthetic fuels.



Blue Ammonia Study

Client: Energy Company

Scope: Prefeasibility study for the production of hydrogen, conversion to ammonia, CO₂ sequestration and export transport studies.

Ammonia Viability Study

Client: Energy company

Scope: Independent techno-commercial viability study: coal gasification-based ammonia and urea project.

Blue vs. Green Hydrogen & Ammonia

Client: Energy company

Scope: Confidential techno-economic comparative assessment of hydrogen production and transport vectors: 1.5-2 GW.

Renewables and Hydrogen

Client: Pilot Energy

Scope: Feasibility study for the integration of renewable power production and H₂ conversion into Australian power systems, LCOH assessment.

Green Ammonia Study

Client: Energy company

Scope: Feasibility Study for a floating green ammonia facility.



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