# Hydrogen Supply Chain Management Training Course

Professional Development Training Course Outline

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| **Category** | Renewable Energy | **Duration** | 5 Days |
| **Base Fee** | $1,500 USD | **Delivery Mode** | Online / On-site Hybrid |

## Course Introduction

Hydrogen Supply Chain Management Training Course is a designed to equip professionals with the knowledge and strategic capabilities required to manage the emerging hydrogen economy, from production and conversion through storage, transportation, distribution, and end-use. As hydrogen projects increasingly integrate green hydrogen, renewable energy, electrolysis, Power-to-X, hydrogen carriers, refuelling infrastructure, digitalisation, and energy-transition strategies, effective supply-chain management is becoming critical to project viability. The course develops an end-to-end understanding of hydrogen logistics, demand forecasting, inventory optimisation, procurement, transportation planning, terminal operations, supply-chain resilience, cost optimisation, sustainability, and risk management. Current hydrogen training programmes similarly emphasize the complete value chain, including production, storage, transport, applications, safety, standards, and real-world case studies.

Participants will explore how to design and optimise secure, resilient, cost-effective, low-carbon hydrogen supply chains while responding to evolving markets, infrastructure constraints, regulatory requirements, and customer demand. Emphasis is placed on digital supply-chain visibility, AI-enabled forecasting, data analytics, route optimisation, lifecycle thinking, ESG, carbon intensity, techno-economic analysis, and operational resilience. Practical exercises and case studies will connect strategy with real-world decision-making, including hydrogen production-to-user networks, transport-mode selection, storage planning, supply disruption scenarios, and distribution optimisation. The course is particularly relevant as hydrogen logistics increasingly requires integration between energy systems, industrial operations, transportation networks, infrastructure, and sustainability objectives.

## Programme Curriculum

**Hydrogen Supply Chain Management Training Course**

**Introduction**

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**Course Duration**

5 days

**Course Objectives**

By the end of the course, participants will be able to:

1. Analyse the end-to-end hydrogen value chain from production to final consumption.
2. Develop strategic hydrogen supply-chain models aligned with business and energy-transition objectives.
3. Evaluate green, low-carbon, and renewable hydrogen production pathways from a supply-chain perspective.
4. Assess hydrogen storage, compression, liquefaction, and carrier options for different logistics scenarios.
5. Optimise hydrogen transportation and distribution networks using cost, capacity, safety, and sustainability criteria.
6. Apply AI, predictive analytics, digital twins, IoT, and real-time visibility concepts to hydrogen logistics.
7. Improve demand forecasting, inventory optimisation, capacity planning, and supply balancing.
8. Evaluate procurement, supplier management, contracting, and strategic sourcing within hydrogen projects.
9. Develop supply-chain resilience strategies for disruptions, infrastructure constraints, and market volatility.
10. Apply risk management, HSE, regulatory compliance, and operational governance principles across the hydrogen value chain.
11. Assess CAPEX, OPEX, logistics costs, lifecycle economics, and Levelized Cost of Hydrogen (LCOH).
12. Integrate ESG, decarbonisation, carbon-intensity management, and circular-economy principles into supply-chain decisions.

13. Design practical hydrogen supply-chain optimisation strategies using industry case studies, scenario analysis, and business simulations.

**Target Audience**

1. Hydrogen and renewable-energy professionals
2. Supply-chain and logistics managers
3. Procurement and strategic-sourcing professionals
4. Energy, oil & gas, and industrial operations managers
5. Project managers and infrastructure planners
6. HSE, risk, quality, and compliance professionals
7. Government, policy, and energy-transition professionals
8. Consultants, engineers, investors, and sustainability professionals

**Course Modules**

**Module 1: Hydrogen Economy & End-to-End Supply Chain**

- Hydrogen value chain mapping
- Green hydrogen, low-carbon hydrogen, and Power-to-X supply-chain fundamentals.
- Key supply-chain stakeholders, infrastructure requirements, demand centres, and offtake models.
- Supply-chain network design and identification of critical bottlenecks.
- **Case Study:** Mapping a renewable-powered hydrogen project from electrolyser production to industrial offtaker and identifying cost and infrastructure constraints.

**Module 2: Hydrogen Production, Conversion & Supply Planning**

- Overview of **electrolysis, renewable integration, reforming, and emerging production pathways**.
- Production capacity planning and alignment with **renewable-energy availability**.
- Compression, liquefaction, and conversion into **hydrogen carriers** such as ammonia and LOHCs.
- **Demand forecasting, production scheduling, and supply-demand balancing**.
- **Case Study:** Developing a supply plan for a green-hydrogen facility affected by variable renewable-energy generation.

**Module 3: Hydrogen Storage & Inventory Optimisation**

- **Compressed hydrogen, liquid hydrogen, underground storage, and carrier-based storage** concepts.
- Storage capacity planning and **inventory optimisation**.
- Safety, quality, availability, and operational considerations in hydrogen storage.
- Buffer-stock strategies and **business continuity planning** for supply disruptions.
- **Case Study:** Selecting a storage strategy for a hydrogen distribution hub experiencing fluctuating customer demand.

**Module 4: Hydrogen Transportation & Distribution Logistics**

- Comparative assessment of **pipelines, tube trailers, liquid hydrogen transport, shipping, and hydrogen carriers**.
- **Route optimisation**, transport scheduling, fleet planning, and network configuration.
- Infrastructure capacity, delivery windows, geographic constraints, and logistics costs.
- Digital tools for **transport visibility, tracking, optimisation, and predictive logistics**.

- **Case Study:** Designing an efficient hydrogen delivery network connecting a production plant with multiple industrial and mobility customers.

**Module 5: Procurement, Supplier Management & Contracting**

- **Strategic procurement** for electrolysers, storage systems, compressors, transport equipment, and infrastructure.
- Supplier qualification, **total cost of ownership**, quality assurance, and vendor performance.
- Contracting approaches for hydrogen production, transportation, storage, and offtake.
- **Supplier-risk management, localisation, dual sourcing, and supply-chain resilience**
- **Case Study:** Building a procurement strategy for a hydrogen hub facing equipment lead-time and supplier-capacity challenges.

**Module 6: Digital Hydrogen Supply Chains & Advanced Analytics**

- **AI-powered supply-chain analytics**, demand forecasting, and predictive decision-making.
- IoT sensors, connected assets, **real-time visibility**, and digital control towers.
- Digital twins for hydrogen production, storage, transport, and distribution networks.
- Data-driven optimisation of **inventory, routes, asset utilisation, and maintenance planning**.
- **Case Study:** Using a digital supply-chain dashboard to identify delivery delays, capacity constraints, and optimisation opportunities.

**Module 7: Safety, Risk, Compliance & Supply-Chain Resilience**

- Hydrogen-specific **HSE, risk assessment, emergency planning, and operational controls**.
- Supply-chain risk identification across production, storage, transportation, and distribution.
- **Business continuity, scenario planning, crisis response, and resilience engineering**.
- Overview of relevant **codes, standards, quality requirements, and regulatory compliance**.
- **Case Study:** Creating a supply-continuity plan following an infrastructure disruption affecting hydrogen deliveries.

**Module 8: Hydrogen Supply-Chain Economics, Sustainability & Future Markets**

- **LCOH, CAPEX, OPEX, logistics costs, total cost of ownership, and techno-economic analysis**
- **Carbon intensity, lifecycle assessment, ESG, sustainability reporting, and decarbonisation**
- Hydrogen market development, cross-border trade, export corridors, and emerging demand sectors.
- Strategic optimisation of **cost, reliability, carbon footprint, service levels, and resilience**.
- **Case Study:** Comparing alternative hydrogen supply-chain configurations and selecting the most commercially and environmentally viable model.

## Training Methodology

- Interactive lectures and presentations.
- Group discussions and brainstorming sessions.
- Hands-on exercises using real-world datasets.
- Role-playing and scenario-based simulations.
- Analysis of case studies to bridge theory and practice.
- Peer-to-peer learning and networking.
- Expert-led Q&A sessions.
- Continuous feedback and personalized guidance.

**Register as a group from 3 participants for a Discount**

**Send us an email: info@fineskilltrainingcenter.org or call** *+254769199797*

***Certification***

*Upon successful completion of this training, participants will be issued with a globally- recognized certificate.*

***Tailor-Made Course***

*We also offer tailor-made courses based on your needs.*

**Key Notes**

**a.** The participant must be conversant with English.

**b.** Upon completion of training the participant will be issued with an Authorized Training Certificate

**c.** Course duration is flexible and the contents can be modified to fit any number of days.

**d.** The course fee includes facilitation training materials, 2 coffee breaks, buffet lunch and A Certificate upon successful completion of Training.

**e.** One-year post-training support Consultation and Coaching provided after the course.

**f.** Payment should be done at least a week before commence of the training, to Fineskill Training Center account, as indicated in the invoice so as to enable us prepare better for you.

## Upcoming Scheduled Sessions

| Start Date | End Date | Location | Price |
|---|---|---|---|
| **23 Nov 2026** | 27 Nov 2026 | Online | $1,000 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $1,500 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $3,000 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $3,000 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $6,000 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $4,500 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $6,000 |
| **23 Nov 2026** | 27 Nov 2026 | Physical | $6,000 |

Ready to enroll or request a customized program? Book online or contact us:

**Register Online Now**

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