Hydrogen Transportation Infrastructure Training Course

Professional Development Training Course Outline

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

Course Introduction

Hydrogen Transportation Infrastructure Training Course provides a practical, industry-focused foundation for understanding the rapidly evolving hydrogen mobility ecosystem, including hydrogen production interfaces, transportation networks, hydrogen refuelling stations (HRS), storage, distribution, fuel-cell electric vehicles (FCEVs), safety systems, digital infrastructure, and project development. As countries accelerate low-emissions hydrogen, zero-emission mobility, and energy-transition investments, transportation infrastructure is becoming a critical component of hydrogen value chains.

This course equips professionals with the knowledge to evaluate, plan, design, operate, and manage hydrogen transportation infrastructure across road, fleet, logistics, port, and multimodal applications. Participants explore hydrogen corridors, HRS network planning, high-pressure storage, hydrogen pipelines, liquefied hydrogen logistics, safety and risk management, standards, permitting, techno-economics, financing, and digitalisation. Current industry developments including expanding hydrogen vehicle and refuelling programmes and the growth of announced hydrogen pipeline and storage projects make these capabilities increasingly relevant to infrastructure planners and energy-transition professionals.

Programme Curriculum

Hydrogen Transportation Infrastructure Training Course

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Course Duration

5 days

Course Objectives

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

1. Explain the hydrogen mobility ecosystem and its role in the net-zero transition.
2. Analyse hydrogen transportation pathways, including compressed and liquefied hydrogen.
3. Evaluate hydrogen refuelling station (HRS) technologies, configurations, and capacity requirements.
4. Apply principles of hydrogen storage, compression, dispensing, and distribution.
5. Assess hydrogen corridor and fleet infrastructure requirements.
6. Understand fuel-cell electric vehicle (FCEV) infrastructure integration.
7. Apply hydrogen safety, hazard identification, risk assessment, and emergency-response principles.
8. Interpret relevant codes, standards, regulations, permitting, and compliance requirements.
9. Evaluate hydrogen infrastructure economics, lifecycle costs, utilisation, and business models.
10. Analyse hydrogen supply-chain resilience, logistics, and multimodal transportation.
11. Explore digitalisation, smart HRS, IoT monitoring, data analytics, and predictive maintenance.
12. Develop strategies for low-carbon, scalable, and resilient hydrogen transportation networks.
13. Assess real-world projects and formulate bankable hydrogen mobility infrastructure strategies.

Target Audience

1. Energy and hydrogen professionals
2. Transport and mobility planners
3. Infrastructure and civil engineers
4. Mechanical, electrical, and process engineers
5. Fleet and logistics managers
6. Government and regulatory officials
7. Investors, project developers, and consultants
8. Sustainability, ESG, and energy-transition professionals

Course Modules

Module 1: Hydrogen Economy and Transportation Ecosystem

- **Hydrogen value chain**
- **Green, low-emissions, and renewable hydrogen** concepts and market drivers.
- Hydrogen mobility applications across **cars, buses, trucks, fleets, and logistics**.
- Hydrogen's relationship with **electrification, energy security, and decarbonisation**.
- **Case study:** Development of a hydrogen mobility ecosystem and city-cluster deployment strategy.

Module 2: Hydrogen Transportation Technologies

- **Compressed hydrogen** transportation and high-pressure logistics.
- **Liquefied hydrogen** transportation, storage, and handling considerations.
- Hydrogen pipelines, tube trailers, and emerging **multimodal supply chains**.
- Transportation economics, distance, volume, utilisation, and infrastructure selection.
- **Case study:** Selecting the optimal hydrogen delivery pathway for a regional freight corridor.

Module 3: Hydrogen Refuelling Stations and Network Planning

- HRS architecture, major equipment, compression, storage, and dispensing.
- Station sizing based on **vehicle demand, throughput, utilisation, and peak loads**.
- Strategic location planning for **hydrogen corridors and fleet depots**.
- Station reliability, redundancy, maintenance, and operational considerations.
- **Case study:** Designing an HRS network for hydrogen buses and heavy-duty trucks.

Module 4: Hydrogen Storage, Compression and Distribution

- **High-pressure hydrogen storage** fundamentals and system configurations.
- Compressors, cascade storage, dispensers, valves, piping, and instrumentation.
- Hydrogen distribution networks and interface with production facilities.
- Storage optimisation and **supply-demand balancing**.
- **Case study:** Optimising storage and compression capacity for a high-throughput HRS.

Module 5: Safety, Risk Management and Regulatory Compliance

- Hydrogen properties, hazards, detection, ventilation, and controlled environments.
- **HAZID, HAZOP, risk assessment, emergency planning, and safety management**
- Separation distances, equipment protection, leak detection, and operational controls.
- Codes, standards, certification, permitting, and regulatory interfaces.
- **Case study:** Risk assessment for a hydrogen refuelling station located near a transport depot.

Module 6: Hydrogen Vehicles, Fleets and Mobility Integration

- **Fuel-cell electric vehicle (FCEV)** architecture and hydrogen consumption.
- Bus, truck, fleet, rail, and other mobility applications.
- Fleet transition planning and infrastructure-demand forecasting.
- Vehicle-to-station operational coordination and **fleet optimisation**.
- **Case study:** Transitioning a municipal bus fleet toward hydrogen mobility.

Module 7: Infrastructure Economics, Financing and Project Development

- **CAPEX, OPEX, total cost of ownership (TCO), and lifecycle economics**.
- Hydrogen price formation and station utilisation economics.
- Public-private partnerships, grants, blended finance, and investment structures.
- **Bankability, offtake agreements, demand aggregation, and project risk**
- **Case study:** Financial and commercial assessment of a regional hydrogen corridor.

Module 8: Digitalisation, Sustainability and Future Hydrogen Mobility

- **Smart HRS**, IoT sensors, remote monitoring, automation, and digital twins.
- Predictive maintenance, operational analytics, and infrastructure optimisation.

- **Renewable hydrogen integration** and lifecycle carbon assessment.
- Hydrogen hubs, ports, logistics corridors, and integrated energy systems.
- **Case study:** Building a digital, resilient, low-carbon hydrogen mobility network.

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

Start Date	End Date	Location	Price
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:

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