Training Course on Advanced Flare and Vent Gas Recovery and Utilization

Professional Development Training Course Outline

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

Course Introduction

In today’s energy-driven industrial landscape, flare and vent gas recovery and utilization have become critical components in achieving operational efficiency, reducing emissions, and complying with global environmental regulations. Training Course on Advanced Flare & Vent Gas Recovery & Utilization is tailored to equip professionals with in-depth knowledge of flare gas minimization, vent gas recovery, and the latest technologies for gas capture and monetization.

As industries strive to meet net-zero goals and reduce greenhouse gas emissions, mastering the science and strategy behind flare gas recovery systems (FGRS) becomes essential.

This hands-on course dives into regulatory frameworks, design optimization, environmental impact analysis, and real-world case studies from the oil & gas and petrochemical sectors. It will empower participants to transform environmental liabilities into revenue-generating opportunities. Whether you're a plant operator, engineer, or policymaker, this training provides the tools to convert flare and vent gas into a sustainable energy asset.

Programme Curriculum

Training Course on Advanced Flare & Vent Gas Recovery & Utilization

Introduction

In today’s energy-driven industrial landscape, flare and vent gas recovery and utilization have become critical components in achieving operational efficiency, reducing emissions, and complying with global environmental regulations. Training Course on Advanced Flare & Vent Gas Recovery & Utilization is tailored to equip professionals with in-depth knowledge of flare gas minimization, vent gas recovery, and the latest technologies for gas capture and monetization.

As industries strive to meet net-zero goals and reduce greenhouse gas emissions, mastering the science and strategy behind flare gas recovery systems (FGRS) becomes essential.

This hands-on course dives into regulatory frameworks, design optimization, environmental impact analysis, and real-world case studies from the oil & gas and petrochemical sectors. It will empower participants to transform environmental liabilities into revenue-generating opportunities. Whether you're a plant operator, engineer, or policymaker, this training provides the tools to convert flare and vent gas into a sustainable energy asset.

Learning Objectives

1. Understand key concepts in flare gas recovery and utilization
2. Identify environmental and economic benefits of vent gas recycling
3. Apply advanced flare minimization techniques
4. Comply with global emission reduction regulations (EPA, OGCI, IEA)
5. Evaluate the performance of flare gas recovery systems (FGRS)
6. Integrate green technologies in gas utilization processes
7. Design and implement closed-loop gas recovery infrastructure
8. Interpret flare gas composition and flow modeling data
9. Conduct environmental risk assessments for flaring operations
10. Optimize process safety in high-pressure gas handling
11. Analyze cost-benefit scenarios for flare gas-to-power conversion
12. Utilize AI & IoT tools for predictive maintenance in FGR systems
13. Review case studies of successful gas recovery projects worldwide

Target Audiences

1. Process Engineers
2. Environmental Engineers
3. Plant Managers
4. Safety & Compliance Officers
5. Petroleum Engineers
6. Energy Consultants
7. Sustainability Managers
8. Policy & Regulatory Professionals

Course Duration: 5 days

Course Modules

Module 1: Fundamentals of Flare & Vent Gas Recovery

- Introduction to flare & vent gas systems
- Types and sources of waste gas emissions
- Environmental impacts of flaring
- Key terminologies and measurement techniques
- Regulatory landscape overview (EPA, EU, etc.)
- **Case Study: Flare System Audit at a Middle Eastern Refinery**

Module 2: Flare Gas Recovery System (FGRS) Design & Optimization

- Components and layout of FGRS
- Pressure balancing & recovery efficiency
- Compressor technologies and selection
- Material compatibility and flow dynamics
- Heat integration and energy reuse
- **Case Study: Design Optimization in a Gulf Coast Petrochemical Plant**

Module 3: Vent Gas Management Techniques

- Venting vs. flaring: strategic decision-making
- Vapor recovery units (VRUs) & control valves
- Storage and reuse strategies
- Data logging and monitoring
- Leak detection and repair (LDAR)
- **Case Study: VRU Deployment at Offshore Platform**

Module 4: Emission Reduction & Environmental Compliance

- Quantifying GHG and methane emissions
- Understanding international flaring standards
- Compliance strategies and reporting
- Using software tools for emissions modeling
- ESG metrics and performance indicators
- **Case Study: Compliance Strategy for a Canadian LNG Exporter**

Module 5: Advanced Technologies & Digital Solutions

- AI/ML applications in flare management
- Digital twins for process simulation
- Smart sensors and predictive analytics
- SCADA and DCS integration
- Data-driven operations and control loops
- **Case Study: IoT-Enabled FGRS at an Asian Gas Processing Facility**

Module 6: Economic Feasibility & Project Financing

- CAPEX and OPEX evaluations
- Flare gas-to-electricity cost modeling
- Carbon credits and trading systems
- Funding models and private investment
- ROI analysis and economic metrics
- **Case Study: Gas Monetization Project in Sub-Saharan Africa**

Module 7: Safety Considerations in Flare Recovery

- Process hazard analysis (PHA)
- Fire & explosion risk control
- Safety Instrumented Systems (SIS)
- Emergency shut-down (ESD) protocols
- Operator training and drills
- **Case Study: Safety System Upgrade in South American Refinery**

Module 8: Future Outlook & Sustainability

- Roadmap to zero routine flaring (ZRF)
- Role of flare recovery in circular economy
- Integration with hydrogen production
- Global energy transition trends
- Corporate sustainability reporting (CSR)
- **Case Study: Net-Zero Flaring Initiative by Major Oil Company**

Training Methodology

- Instructor-led live sessions with real-world examples
- Hands-on simulation & group exercises

- Detailed engineering design reviews
- Role-playing for safety and compliance scenarios
- Interactive case study discussions & peer learning
- Visual aids including P&IDs, schematics, and flow diagrams

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

Start Date	End Date	Location	Price
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

Email: info@fineskilltrainingcenter.com | Website: www.fineskilltrainingcenter.com