

# LOW-CARBON TECHNOLOGIES IN REFINING AND PRODUCTION

|             |            |              |            |
|-------------|------------|--------------|------------|
| Start Date: | 18/01/2027 | End Date:    | 22/01/2027 |
| Categories: | Oil & Gas  | Venues:      | Milan      |
| Formats:    | In Person  | Instructors: |            |

## OVERVIEW

This course explores a range of low-carbon technologies applicable to refining and upstream production. It provides technical and strategic insights into emissions reduction, energy efficiency, process electrification, renewable integration, and circular economy practices in hydrocarbon operations.

## OBJECTIVES

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

- Identify key emission sources in refining and production operations.
- Evaluate and select low-carbon technologies suited for process optimization.
- Apply energy efficiency strategies and waste heat recovery methods.
- Integrate electrification and renewables into conventional systems.
- Support decarbonization strategies using digital tools and circular models.

## COURSE OUTLINE

1. Emission Profiles and Decarbonization Challenges in Refining & Production 2. Low-Carbon Technology Options: CCS, Fuel Switching, Heat Recovery 3. Process Electrification and Renewable Energy Integration 4. Digital Tools for Emissions Monitoring and Optimization 5. Circular Economy and Industrial Symbiosis in Hydrocarbon Operations

## TARGET AUDIENCE

Process engineers, energy managers, operations supervisors, and technology advisors working in upstream and downstream hydrocarbon sectors.

## METHODOLOGY

Technology demonstrations, system modeling, emissions tracking labs, and strategic scenario exercises.

## CONCLUSION

Participants will be equipped to identify, implement, and manage a portfolio of low-carbon

technologies that enhance efficiency and reduce emissions across refining and production operations.

**DAILY AGENDA**

**Day 1: Emissions Landscape in Refining & Production**

Understanding sources of GHGs and decarbonization challenges in oil & gas operations.

**Day 2: Technology Options and Process Upgrades**

Exploring CCS, alternative fuels, and low-carbon retrofitting technologies.

**Day 3: Electrification and Renewables**

Incorporating solar, wind, and electric systems into traditional operations.

**Day 4: Digital Solutions and Performance Monitoring**

Using IoT, AI, and digital twins for emissions optimization and tracking.

**Day 5: Circular Strategies and Integration Planning**

Designing closed-loop systems and leveraging industrial symbiosis for sustainability.

*For more information, please contact us:*

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