Training - Low-carbon fuels and processes

BIOCPP-EN-P | Face-to-face only | 3 days

This session provides general technical information on the characteristics and processes leading to key bio-based products and intermediates: existing and developing biofuels, petrochemicals and chemicals

Level

Expert

Public

Professionals from different technical departments in sectors ranging from refining to petrochemicals or involved in the energy transition

Objectives

Attendees will be able to implement the following skills:
Upon completion of the training, participants will be able to:

- • List the main characteristics of bio-based products on the current market
- • describe the principle of existing and developing processes

Pedagogical & technical resources

- • Interactive course: active participation of the trainees through games and quizzes to grasp the key points of the course.
- • Joint construction of a diagram of all bio-processes.

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

Meet at least one of the following criteria:
• Have 3 months of proven professional experience in the energy sector, in a technical position.
• Or have followed a training course oriented towards the introduction to refining or petrochemical processes.

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

CONTEXT AND FEEDSTOCKS — 0.5 day

Challenges of carbon-free energy and bioplastics in the context of climate change.
Associated environmental and regulatory framework.
Process development strategy.
Different types of biomass: sugar biomass, starchy biomass, oilseed biomass, waste.

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Biomass generations: 1G, 2G, 3G
Other feedstocks:

- CO2, low-carbon hydrogen.
- Recycled plastics.

BIOFUELS AND PETROCHEMICAL INTERMEDIATES — 0.5 day

Description of hydrocarbon molecules families: Olefins, Aromatics, Paraffins.
Main characteristics and specificities of the different biofuels and comparison between them:

- For gasoline engine (ETBE, ethanol).
- For diesel Engine (FAME, HVO).
- For Jet (HEFA, FT-SPK, ATJ, DSHC).
- For the maritime sector (Methanol, NH3, GNL).

Other energetic fuels (H2 /e-fuels).
Main intermediates for access to plastics or chemicals: Olefins, Aromatics, Methanol, Syngas.
Main polymers: Bio-based vs. biodegradable, bioplastics, recycled plastics.

LOW CARBON PROCESSES — 2 days

Overview of processes for transforming feeds into intermediate and finished products: feedstocks and treatments, process diagrams, different technologies when relevant, typical operating conditions, advantages and drawbacks, comparison and maturity.
Current processes:

- ethanol by fermentation.
- ETBE by etherification.
- FAME by transesterification.
- HVO-HEFA by hydrotreatment.
- Co-processing.

Advanced processes:

- Biogas by digestion
- Biomethane by digestion or methanation.
- Different routes to syngas.
- Methanol and Ammonia via Syngas.
- Fuels by Fischer-Tropsch via syngas.
- Olefins by dehydration of alcools (ethanol and methanol).
- Different routes for SAF by ATJ, DSHC.
- Bio-crude /Py-oil by pyrolysis of biomass, wastes or plastics.
- Bio-oil by hydrothermal liquefaction.
- E-fuels production.

Sessions

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.
Please contact our disabled persons referent to check the accessibility of this training program : referent.handicap@ifptraining.com

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IFP Training

This training course is offered under the **Alliance4Training** brand

Training - Field Operator

BOINT-EN-P | **Face-to-face only** | **60 days**

This course provides the knowledge and know-how for the specific field operator position. Successful participants will be granted the “Field Operator” IFP Training Vocational Certificate

IFP Training Certificate

Vocational Certificate

Level

Knowledge

Public

Newly recruited operators in the refining, petrochemical and chemical industries

Objectives

Attendees will be able to implement the following skills:

- Monitor the facilities in an autonomous way, in compliance with Safety and Environmental rules
- Safely perform all routine operations related to operator duties, as well as the key non-routine ones
- Identify equipment deficiencies, explain their root causes, and take appropriate action
- Communicate effectively with their colleagues

Pedagogical & technical resources

- The training program is structured by alternating: Classroom training (2-week sessions) including theoretical and practical courses and On-the-Job training (typically 1-month sessions) 100% on-site, in their facilities, with instructors' help
- Even during classroom training, lots of practical exercises and applications
- Instructors having extensive Oil & Gas downstream experience, helped by company mentors
- Continuous assessment completed by a final exam in front of a jury)

Assessment of achievements

Continuous assessment

Prerequisites

Having already been pre-recruited by an Oil & Gas company
Although not mandatory, a technical education is desirable

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

CLASSROOM TRAINING (THEORETICAL & PRACTICAL) — 55 days

Professional basic training:

- Physical parameters; liquid vapor equilibria notions; fluid flow; heat transmission.

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- Chemistry: basic notions, industrial chemical reactions.

Products and processes:

- Quality tests, specifications; sampling safety procedures; refining processes; safety aspects.
- Storage tanks, reception and expedition facilities; utilities; environmental protection; energy.

Equipment operation and safety:

- Pressure vessels (columns, drums, reactors) description and operation.
- Rotating equipment (centrifugal and positive displacement pumps, compressors, steam turbines, electric motors).
- Thermal equipment (heat exchangers, furnaces, boilers).
- Instruments (sensors/actuators), process control.

Safety in plant operation.

ON-THE-JOB TRAINING

Presentation, initial recommendations and safety instructions:

- General technical information: presentation of the refinery, main feeds and products.
- Safety: safety rules, specific instructions, control and protection, prevention, fire extinction exercises.
- Injury and life protection: preparation of rescuer degree.

General training on the job:

- On different production units: equipment identification; operation follow-up.
- Identification of operator tasks, responsibilities of each member on the shift team.

Specific job position study:

- Process, feeds and product characteristics, circuits.
- Equipment field control; safety; operational instructions, procedures.

Controlled practice in job position:

- Achievement of the various tasks involved in the job, under control of the assigned people on the shift team.

KNOWLEDGE ASSESSMENT 5 days

Continuous assessment during training modules. Final written exam at the end of the theoretical training.
Rating of practical exercises and on-the-job trainings, based on presentations and written reports.
Personal job-based final report, describing assigned unit and operator day-to-day activities, rated.
Final examination to confirm proficiency (knowledge of circuits, equipment and processes, job practice).

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Training - Current and future fuels

CARBU-EN-P | Face-to-face only | 3 days

This training allows you to follow the evolution of fuels, which is strongly linked to the reduction of polluting emissions from transport. It will give a global vision of fuels from conventional fossil fuels to e-fuels, including biofuels

Level

Expert

Public

Executives, engineers and technicians in the automotive, refining, petroleum products or agrofuels trading industries, concerned by the evolution of fuel quality, in relation to the technologies applied to engines

Objectives

Attendees will be able to implement the following skills:

- Identify the different energies available and necessary for mobility
- List the key properties of current and future land, sea and air fuels
- Understanding the influence of fuel composition and manufacturing on emissions

Pedagogical & technical resources

An interactive pedagogy in the form of exchanges with the group, activities that allow the concepts presented to be quickly integrated

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

CONTEXT, ISSUES, REGULATIONS AND DEFINITIONS — 0.5 day

Global warming.
Regulatory frameworks (COP-RED – International – European – French).
Environmental assessment from well to wheel.
Definitions: carbon footprint, carbon intensity, LCA, certificates, biofuels, e-fuels-RFNBO.

BIOFUELS FOR GASOLINE ENGINES — 0.75 day

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Properties sought for gasoline: volatility, combustion, toxicity, corrosiveness, stability.
Exhaust pollution: origin and composition of emissions.
Composition and methods of manufacture of current gasolines.
Resources and production processes of renewable fuels and use. Contribution of new biofuels to the reduction of CO2 emissions from vehicles:

- Biofuels for gasoline engines: Ethanol and ETBE.
- Hydrogen: use as such or fuel cell for electric cars.

Comparison between these different fuels.

BIOFUELS FOR DIESEL ENGINES 1 day

Properties sought for diesel: combustion, resistance to low temperatures, composition.
Pollution by diesel engine exhaust: particulates, NOx.
Composition and formulation of engine diesel.
Resources and production channels of renewable diesel fuels and use. Contribution of new biofuels to the reduction of CO2 emissions from vehicles:

- Biofuels for diesel engines: FAME fatty acid esters and HVO hydrogenated oils.
- BTL second-generation diesel biofuels.
- Hydrogen: Fisher Tropsch or e-fuel.
- Use of other dual-fuel fuels for marine fuels: Methanol, Ammonia, LNG.

Comparison between these different fuels.

BIOFUELS FOR JET 0.5 day

Properties of JET – The emissions of JET into the air.
Composition and manufacture of fossil JET in the refining scheme.
Biofuels for turbines (aeronautics):

- Main production routes certified or in the process of certification of Biojet fuels: hydrotreated vegetable oils, synthetic biojets, biological routes.

E-fuel for aviation:

- Impact of new fuels on logistics, aircraft and turbine operation.

SUMMARY OF THE DIFFERENT ALTERNATIVE FUELS 0.25 day

Summary of fuels used in:

- Petrol engines.
- Diesel engines.
- Marine engines.
- Turbines for aeronautics.

Group activity.
Conclusion and answers to questions.

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This training course is offered under the **Alliance4Training** brand

Training - Operation of a Chemical Production Unit

CRC-EN-P | **Face-to-face only** | **4 days**

This training provides greater autonomy in the operation and optimization of the unit

Level
Skilled

Public
Site operating personnel involved in the operation of the unit(s) to be studied in more detail: chemical, petrochemical or refining industry: field operators, console operators, chief operators, as well as technician

Objectives
Attendees will be able to implement the following skills:

- Explain the characteristics of the chemical transformation(s) and separations implemented and the associated operational requirements
- list the operating parameters, the role of the control loops and the process control elements implemented
- detect the cause of the main malfunctions and know the appropriate corrective measures

Pedagogical & technical resources

- The program and content are adjusted according to the types of processes implemented on the site, under cover of a confidentiality agreement if necessary
- Content and case studies are applied to site units
- Numerous references on sites with very varied characteristics

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites
No prerequisites are necessary to follow this course

Responsable
IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

MAIN SECTIONS OF THE UNIT — 0.25 day

General diagram of the unit and detail of the reaction zone.
Main operating conditions: temperatures, pressures, flow rates; control.

CHEMICAL TRANSFORMATIONS — 0.5 day

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Composition of the feedstock and the reaction effluent - Nature of the feed and characteristics of the products.
Nature and characteristics of the reactions carried out: thermal effect, complete or balanced, catalyzed or not.
Nature of the catalyst (if relevant): mode of action, impact of poisons, causes of aging, etc.
Operating parameters: temperature, pressure, proportion of reactants.
Potential influence of operating conditions on the conversion rate, reaction rate, yield of undesirable products, etc.

EQUIPMENT & MATERIALS USED — 0.5 day

Reactors: type (plug flow, mixed), internal (nature of the wall, arrangement of the catalyst, agitators), associated materials and thermal fluids,
Separation equipment: distillation, filtration, etc.
Specific instrumentation, control and automation implemented, safety equipment (valves, rupture discs, inhibitor injection system, etc.°;

ANALYSIS OF OPERATING CONDITIONS — 1 day

Material balance - Thermal balance.
Influence of operating conditions: temperature, pressure, flow rate, etc. in an operating situation.
Conversion rates, selectivity and yield observed.
Reaction cycle: duration, evolution of parameters during the period. Operating constraints (catalyst aging, nature of effluents, variation in feed quality, etc.).
Operating conditions and parameters for the fractionation and downstream purification process.

UNIT OPERATION AND INCIDENTS — 0.75 day

Operation tuning case studies
Nature and origin of potential malfunctions: contamination of the feed, runaway, etc.
Safety Instrumented Systems.
Safety procedures. Consequences.

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Training - Environmental Management

ENVMGT-EN-P | Face-to-face only | 5 days

This course provides a thorough and applied knowledge of best industry standards and practices for appraising environmental matters throughout the life cycle of a field development, to implement the management of impact and risks throughout the life cycle of a project from exploration up to abandonment

Level

Knowledge

Public

Managers, advisors, engineers, and operations staff involved in management of environmental issues all along the lifetime of a field development

Objectives

Attendees will be able to implement the following skills:

- Explain the fundamentals of environmental management in terms of risks and impacts
- Describe techniques, fundamentals and contents of environmental impact assessments
- Identify mitigation measures
- Select key performance indicators, and set up environmental management plans
- Explain the content of an oil spill contingency plan

Pedagogical & technical resources

- Several applications and illustrations
- Several case studies and teamwork sessions

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

FUNDAMENTALS OF ENVIRONMENTAL MANAGEMENT — 0.5 day

Why environmental management is necessary. Concept of sustainability.
Definitions: environmental impact, significance, accidental vs. operational discharges, discharge and pollution.
Legal standards: definition, standard determination. Best available technology. Best environmental practices.

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Environmental Quality Standards (EQS), discharge standards - Regional, international, conventions.
Introduction to social management.

ENVIRONMENTAL, SOCIAL & HEALTH IMPACT ASSESSMENT — 1 day

Risk assessment: concept of hazards, risks, hazard identification and risk assessment process.
Impact assessment throughout the lifecycle of the project.
Aspect and potential impact identification.
Sources of environmental information.
Impacts on atmosphere: air pollution, GHG emissions.
Impacts on aquatic resources: water pollution and water availability.
Impacts on land resources: ground pollution and land use.
Impacts on biodiversity.
Socio-economic and cultural impact.

ENVIRONMENTAL MANAGEMENT PLAN — 0.75 day

Concept and elements.
Control measures to reduce air emissions.
Control measures to reduce water consumption and water pollution.
Control measures to reduce land pollution and use.

MONITORING & REPORTING — 0.5 day

Key performance indicators, Industry performance - Trends.
Environmental monitoring and surveillance.
Green house gases estimation and reporting.

WASTE MANAGEMENT PLAN — 0.5 day

Strategy - Type of waste.
Waste collection.
Transport and storages (primary, final...).
Treatments options (biological, thermal desorption).

MANAGEMENT OF ENVIRONMENTAL EMERGENCIES — 0.75 day

Identification of spill scenarios.
Oil spill contingency planning strategies: onshore and offshore cases.
Typical resources for oil spill contingency plans.

STAKEHOLDERS ENGAGEMENT — 0.25 day

Stakeholders identification.
Engagement and information process.
Stakeholders engagement plan review.

ENVIRONMENTAL MANAGEMENT SYSTEM — 0.5 day

Elements of environmental management systems.
Referentials and certification. ISO 14001.
EMS as part of integrated management systems.
Environmental culture and leadership in the organization.

ENERGY MANAGEMENT — 0.25 day

Introduction to energy sources.
Energy efficiency. Measures for improvement.

Sessions

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Pau - From 11/02/2026 to 11/06/2026 **4360 €/HT**

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Training - Environmental and Social Risk Management

ENVSOC-EN-P | Face-to-face only | 5 days

This course provides a thorough and applied knowledge of best industry standards and practices for appraising environmental and social matters that need to be handled cautiously throughout the life cycle of an upstream project, from design to construction and operation of Oil & Gas processing facilities

Level

Knowledge

Public

Managers, advisors, engineers and operations staff involved in oversight or management of environmental and social issues all along the lifetime of an upstream project

Objectives

Attendees will be able to implement the following skills:

- Understand the global prevailing context for the Oil & Gas industry
- Grasp legal requirements and standards with respect to impact on local environment and populations
- Understand techniques and contents of environmental and social impact assessments
- Identify mitigation measures, perform stakeholders' mapping and build public consultation and disclosure plans
- Select key performance indicators, and set up monitoring with environmental and social management plans

Pedagogical & technical resources

- Several applications and illustrations
- Several case studies and teamwork sessions

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

ENVIRONMENTAL ISSUES RELATED TO E&P ACTIVITIES — 0.25 day

Historical overview of impact awareness, management.
Definitions: environmental impact, significance, accidental vs. operational discharges, discharge and pollution.

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THE STAKES — 0.75 day

Environmental issues: local, regional, global.
Air, water (availability, pollution), biodiversity, wastes.
Kyoto protocol, carbon dioxide accounting, cap and trade, clean development mechanisms.
Toxicity, ecotoxicity.

ENVIRONMENTAL RISK ASSESSMENT (ERA), LEGAL REQUIREMENTS/LEGAL STANDARDS: NATIONAL, REGIONAL, INTERNATIONAL — 0.25 day

Environmental Risk Assessment (ERA).
Legal standards: definition, standard determination, best available technology, best environmental practices.
Environmental Quality Standards (EQS), discharge standards - Regional, international, conventions.

ENVIRONMENTAL IMPACT ASSESSMENT - PROJECTS — 0.5 day

Environmental impact assessment activities throughout the life cycle of a field, tools used for impact prediction.
The EIA process, scoping an EIA, ENVID (Environmental Hazard Identification), environmental management plan. Case study.

ENVIRONMENTAL RISK MANAGEMENT - PRODUCTION ACTIVITIES — 0.5 day

HSE MS - EMS (ISO 14001), continuous improvement processes.
Key environmental procedures: wastes management, chemical management, monitoring.
Oil spill contingency planning.

MONITORING & REPORTING — 0.5 day

Key performance indicators, industry performance - Trends.
Environmental monitoring & surveillance.
Green house gases estimation and reporting.

ENVIRONMENTAL RISK MANAGEMENT - ABANDONMENT — 0.25 day

SOCIAL ISSUES RELATED TO E&P ACTIVITIES: THE RISKS, THE STAKES & THE STRATEGIES — 0.5 day

The risks and the stakes. Some high profile cases (human rights, NGOs activism, etc.).
Documentary viewing and discussion on social risks in E&P activities.
How to change practices and image?

PARTICIPATIVE SOCIAL IMPACT ASSESSMENT AS A RISK MANAGEMENT TOOL — 0.5 day

Participative social impact assessment: definition, business case and standards, process.
Social management plans and monitoring. Focus on special topics: involuntary resettlement, local communities, business in conflict zones.

STAKEHOLDER ENGAGEMENT — 0.5 day

Stakeholder engagement: definition and business case.
Public consultation and disclosure plan (steps and techniques).
Stakeholder mapping.
Stakeholder engagement: misguiding assumptions and key success drivers.

CASE STUDY: SOCIAL SCREENING OF AN OIL & GAS PROJECT — 0.5 day

Based on a group work, participants should prepare a:

- Stakeholder mapping.
- Social impacts identification and mitigation plan.

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Training - Polymers Extrusion and Pelletizing

EXTRU-EN-P | **Face-to-face only** | **3 days**

This course provides a better knowledge of the equipment and physical phenomena used in the extrusion and granulation of polymers, and a better understanding of the operating rules

Level

Skilled

Public

- Operating staff in charge of the operation of extruders; pelletizers and ancillary equipment
- Technical staff involved in the operation or maintenance of this kind of facilities

Objectives

Attendees will be able to implement the following skills:

- Describe the phenomena involved in an extruder
- Explain settings
- Assign the role of safety and automation

Pedagogical & technical resources

- The content may be customized for a particular type of machine or for products if information is provided in advance
- Otherwise, standard products are covered: PolyEthylene, PolyPropylene. It can be implemented on specialties polymers and compounds
- Case studies based on industrial cases

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

EXTRUSION OF THERMOPLASTIC - PROCESS DESCRIPTION — 0.25 day

Aim of the extrusion, general layout description and the various steps of the polymer treatment.
Operating principle of raw material feeding system.

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Operating principle and different cross section areas: feeding system, filling, melting, degassing, compression, transport, pelletization.
Different types of screws, advantages and drawbacks.
Different types of extruders: single screw, counter-rotating or co-rotative twin screw, BUSS type mixers, advantages and drawbacks.
Operating principle of pellets conveying.

TECHNOLOGY & OPERATION OF EXTRUDERS 1.5 days

Drive: motors and starters, variable speed drives, gearboxes, loads, overload safety devices, structure of the thrust bearings, auxiliaries..
Extruder: feeding systems, blockage prevention; different section of screw and barrel, adjusting the temperature; starting diverter valve and start-up operation; fouling filters monitoring and filter changing device, the die plate: technology, different heating systems, pressure monitoring, calculating the percentage of blocked holes, risk of damage. The pelletizer, different cutting systems, calculation and adjustment of knifes speed, water flow, water temperature, monitoring of pellets size/shape.
Principle of heat exchange in the die plate and temperature control.

AUTOMATION & SAFETY 0.25 day

Review of the machine safety principles (flow charts, logic diagrams).

PRODUCT QUALITY 0.25 day

Different grades manufactured; specifications in relation to the applications.
Laboratory tests: equipment procedures, visualization of various types of defects.

INFLUENCE OF OPERATING PARAMETERS 0.75 day

Fluidity, viscosity: dynamic viscosity, definition, effect of shear rate, kinematic viscosity, melt index (MI), testing conditions, temperature effect.
Consequences: control of the temperature as a function of the polymer grade and feedrate.
Required power: the influence of the feedrate, the MI and temperature: guidelines.
Equipment reliability.
Application: troubleshooting, solutions, items to be checked.

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Training - M&A in the Energy World

FAE-EN-P | Face-to-face only | 2 days

Current developments in the energy sector are expected to lead to a new wave of mergers and acquisitions (M&A). Traditional Oil & Gas players will have to adapt (or continue to adapt for the most advanced) their business portfolio to the energy transition, and also to meet the challenges of the recent health crisis. The growth of Renewable Energy could also lead to consolidation amongst the first entrants as the sector matures. The objective of this training is to enable participants to successfully manage their acquisition operations and/or asset sales so that they can best position themselves for the future

Level

Knowledge

Public

Oil & Gas, Renewables companies' commercial, technical, financial managers and support functions staff involved in external growth operations. Public administration decision makers and personnel (industry, finance, energy, environment)

Objectives

Attendees will be able to implement the following skills:

- Lead/contribute to an M&A project through a structured process
- Evaluate assets to buy or sell using different methods (e.g.: multiples, discounted cash flows)

Pedagogical & technical resources

- Exercises
- Analysis of recent transactions
- Case studies: setting the maximum purchase price
- Case study: Critical review of a sale and purchase contract clauses
- Quiz

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

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KEY STEPS & RISKS OF M&A TRANSACTIONS — 0.2 day

The various types of transactions: assets/equity.
The main stages of an acquisition/divestment project.
M&A transactions risks: key success factors.
Key participants in the process.

DETERMINING THE PURCHASE/SALE PRICE — 1 day

The different valuation methods: multiples (comparable transactions, EBITDA, PER), discounted cash flows.
Discounted cash flow method and analysis criteria refresher (NPV, IRR, Payback time). Calculating the residual value/terminal value.
Defining the maximum purchase price (or minimum sale price) taking into account synergies/di-synergies and risks.
Price adjustment options to manage uncertainties/close valuation gaps between buyer and seller.
Taking into account debt.

DUE DILIGENCE & DEAL STRUCTURING — 0.4 day

Preparing an information memorandum.
Risk management. The due diligence process and datarooms.
Choosing the legal and tax structure of the transaction.
Assessing the impact of competition laws.

NEGOTIATIONS & KEY CLAUSES OF SALE & PURCHASE AGREEMENTS — 0.4 day

Pros and cons of the various sale methods: auctions, negotiations.
Counterparties' assessment.
Conditions/ precedents.
Commitments and guarantees.
Completion adjustments.

Sessions

Rueil-Malmaison - From 09/08/2026 to 09/09/2026 — **1980 €/HT**

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IFP Training

This training course is offered under the **Alliance4Training** brand

Training - Downstream Panel Operator

FBMOC-EN-P | **Face-to-face only** | **35 days**

This course makes possible a rapid mastery of panelist skills. The facilities are optimized and operated in a pro-active way Successful participants will be granted the “Panel Operator” IFP Training Certificate

IFP Training Certificate

Vocational Certificate

Level

Knowledge

Public

Experienced field operators moving to panel operator positions in refining and petrochemical plants

Objectives

Attendees will be able to implement the following skills:

- Specify the elements of communication that allow you to work effectively in a team
- Explain the process studied
- Identify risks to equipment
- List unit settings to optimize production and product quality
- Identify possible causes of process disruption
- Specify the points to be taken into account in order to prepare, start and stop a unit

Pedagogical & technical resources

- Case studies and applications on generic dynamic simulators: 80% of the time spent in the training center
- Reminding of necessary theoretical and technical fundamentals directly through simulator handlings
- Training involves on-site work and supervision from mentors in the plant
- Permanent interactive delivery method
- Some pedagogical activities of this course can take place in OLEUM's facilities (subject to availability)

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners’ understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

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Program

WELCOME (IF IN OLEUM FACILITIES)

- Welcome/safety. PPE distribution. Presentation of the training.

PANEL OPERATOR DUTIES & CONTROL ROOM ACTIVITIES — 2 days

Panel operator role within the operation team; control room staff. Reporting and handover duties.
Plant documentation: inventory, content, usage, role and duties of the panel operator.

BASIC PROFESSIONAL TRAINING — 2 days

Notions of industrial chemistry. Fluid mechanics: pressure, flowrates, fluid flow, pressure drops.
Heat exchange: exchange mechanisms, resistance to heat transfer.
Liquid-vapor equilibrium of pure substances and mixtures.
Simulators: impact of operating parameters on the chemical reaction performances, heat exchanges through various types of heat exchangers, separation in a flash drum.

PROCESS CONTROL, AUTOMATION & DCS USAGE — 6 days

Process control:

- Constitution of a control loop, symbols used. Sensors and transmitters. Control valves.
- Controllers operating principles, inputs/outputs, internal parameters and tuning.
- Complex control loops (cascade, split range, multiple calculation blocks). Advanced control basics.
- Simulators: Valves characteristic curves. PID parameters tuning. Heat exchanger duty control. Split range configuration. Behavior analysis of complex control loops.

Distributed Control System (DCS):

- Architecture and system components. Man - Machine Interface (MMI). Trends tools. Information flux between site and control room.

Automation:

- Safety instrumented systems: PSS, ESD, HIPPS, EDP; architecture and relationship with DCS. Safety logics and cause & effect matrix.
- PLCs and automation: grafcet analysis, study of specific sequences.
- Simulators: furnace safety logics.

EQUIPMENT OPERATION — 8 days

For each: working principles, technology, ancillary systems, process control scheme monitoring, operation, alarms, safety devices.
Pumps, compressors, drivers:

- Simulators: filters switch, operation of pumps; changes in operating conditions, capacity control of compressors, troubleshooting of a compressor; start-up of a steam turbine driven centrifugal compressor.

Thermal equipment: heat exchangers, air coolers, furnaces, boilers:

- Simulators: fouling of a heat exchanger; changing fuel supplied to burners, coil fouling, start-up and shutdown of a furnace.

Specific equipment for a given assignment unit (gas turbines, solid handling, extruders...).

PRODUCTS & PROCESSES — 8 days

Composition and physico-chemical properties of feeds and products.
Commercial product quality requirements, specification and standard tests. Mixing rules.
Process units: role, principles, main equipment, specific hazards. Influence of the main operating parameters on the operation, consequences on process and products. Material balance.

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Distillation, absorption, stripping.
Utilities: flare systems, air production, effluent treatment units, steam, water treatments...:

- Simulators: start-up and shutdown, operation and control of various process units (for instance: two-product distillation columns, multi draw-off distillation column, amine absorption and regeneration, sulfur recovery unit, hydrotreatment unit).

INTEGRATED PLANT SAFE OPERATION — 6 days

Panel operator safe behavior:

- Radio communication, other communication equipment. Teamwork, responsibility sharing. Transmission of know-how.
- Alertness, forward thinking plant operation. Alarm management.
- Application: role plays using the simulators (with panel operator views and FODs).

HSE in operation:

- Product, equipment and process-related risks; prevention and protection.
- Risks related to operation of equipment, to decommissioning-commissioning and start-up of equipment, specific prevention measures.
- Routine operations. Permit to work, work order, consignations and isolations.
- Special operations: SIMOPS, black start. Emergency operation and crisis management.
- Impact of plant operation on gas release into the atmosphere and on the wastewater treatment unit; minimization of releases.

Integrated plant operation:

- Steady state runs: routine checks, operating windows, integrated plant behavior (inertia, interferences).
- Global performances, margin optimization/impact of quality gaps.
- Identification, analysis and reaction to upsets and equipment failures; stabilization.

Simulators: field round on a running process unit; commissioning, start-up and shutdown procedures, justifications of different steps; inhibition management; operations in downgraded situations; practice of emergency operations.

ASSESSMENT — 3 days

Continuous assessment (including practical exercises on simulators).
Final test with real-life situation simulation exercises to validate objectives.

To French entities : IFP Training is referenced to DataDock ; you may contact your OPCO about potential funding.
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IFP Training

This training course is offered under the **Alliance4Training** brand

Training - The Essentials for Field Operators

FTBO-EN-P | **Face-to-face only** | **40 days**

This course provides operators with the knowledge and know-how required for safe, efficient and reliable field operations

Level

Knowledge

Public

- Operators of oil refineries or chemical plants, without any operator certification background
- Technicians or staff to be retrained as operators in the chemical, petrochemical or oil industries

Objectives

Attendees will be able to implement the following skills:

- Specify the elements of communication that allow you to work effectively in a team
- List the monitoring points of a unit
- List the types of operations of a unit
- Identify risks to equipment
- List unit settings to optimize production and product quality
- Identify possible causes of process disruption
- Specify the points to be taken into account in order to prepare, start up and shut down a unit

Pedagogical & technical resources

- IFP Training classroom training uses interactive delivery methods (tutorials, case studies, role playing)
- During classroom training, short practical on-site exercises on specific pieces of equipment
- In between IFP Training classroom modules, On-the-Job Orientation on Clients' assigned unit

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

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PIPING - VESSELS - STORAGE TANKS - DRAWINGS — 6 days

Valves, fittings, flexible hoses, safety devices/interlocks. Vessels, storage tanks. Identification symbols for various items of equipment.
Block diagrams, flow sheet, P&ID. Introduction to isometric drawings.

- Field applications: equipment recognition, practical exercise of line-plotting, demonstration equipment in the workshop (when available).

INSTRUMENTATION & CONTROL DEVICES — 7 days

Physical variables used in process operations (pressure, temperature, flowrate, density, specific gravity).
Components of a control loop. Instrumentation: workings and operation.

- Field applications: practical exercise on control loops, demonstration loops (if available), work on Man-Machine Interface in control room.

HEAT EXCHANGE EQUIPMENT — 7 days

Heat, energy and heat transfer. Heat exchangers: technology, main types, workings and operation.

- On-site practical exercise on a heat exchanger.

Furnaces and boilers: technology, combustion, draft and operation.

- On-site practical exercise on furnaces/boilers.

ROTATING MACHINERY — 8 days

Fluid flows.

- Rotating machinery field recognition.

Centrifugal and positive displacement pumps.

- On-site practical exercise on pumps.

Centrifugal and reciprocating compressors.
Single stage, back-pressure steam turbines.

- On-site practical exercise on a compressor or turbine.

Electric motors operation.
Extruder.

PROCESSES - PRODUCTS - SAMPLING & TESTING - UTILITIES — 5 days

Basic chemistry. Chemical products and chemical solutions: composition and hazards.
Chemical reactions.
Vapor pressure and boiling point.
Distillation: principles of the separation, distillation columns.
Products. Quality control tests. Sampling.
Principles of manufacturing processes.
Notion of material and heat balance.
Manufacturing process diagram.
Utilities: flare network, wastewater treatment, cooling water, air production.

- On-site practical exercise on different processes (main equipment, operating conditions).

OPERATORS' TOOLS - SKILLS & ORGANIZATION — 2 days

Plant documentation: inventory, content, usage.
Radio communication. Teamwork.
Reporting and handover duties.

- Role plays.

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SAFETY — 5 days

Product hazards: flammability, toxicity, physical hazards.

- Job Safety Analysis for field operators' routine activity (equipment check, circuit alignment, sampling, etc.).

Emptying processes: blind and gasket fitting, degassing and inerting, entering a vessel.
Example of procedures for equipment shutdown and start-up.
Safe behavior.

- Field hazard recognition and prevention means plotting.
- Case studies - Group work. Lessons learned.

ASSESSMENT (DURATION INCLUDED IN THE PREVIOUS CHAPTERS)

Continuous assessment: written tests and oral presentations.

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Training - Low-Carbon Hydrogen - H2BC

H2BC-EN-D | Distance only | 3 days

To provide the necessary technical knowledge on hydrogen, its value chain and its production methods, making it possible to understand and anticipate the challenges of the development of hydrogen as a solution in the energy transition

Level

Expert

Public

Engineers, technical executives or project managers involved in hydrogen logistics and/or production

Objectives

Attendees will be able to implement the following skills:

- describe the different modes of production, storage and transport of hydrogen
- understand the strengths and limiting elements of each pathway

Pedagogical & technical resources

- Highly interactive synchronous training. Quiz.
- Through our LMS, training documentation, applications and complementary content are shared.

Assessment of achievements

Quiz

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

CONTEXT — 0.5 day

Brief overview of climate change: current situation, regulatory framework, impacts on businesses.
Priority applications for low-carbon hydrogen: energy carrier, chemical intermediates, industrial H2.
Hydrogen “rainbow,” low-carbon hydrogen: distinguishing between different terms, costs, orders of magnitude, advantages, and limitations.

HYDROGEN STORAGE AND TRANSPORT — 0.75 day

Physicochemical properties of hydrogen.
Regulatory aspects - Safety.
Packaging : Compression, liquefaction, hydrogen transformation .
Description of the different types of hydrogen storage:

- Buffer storage in production sites before transport.
- Natural cavities.

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- Cryogenic storage.
- Absorption or adsorption of hydrogen in a solid or liquid.

Description and use of the different modes of transport for hydrogen:

- Pipeline Transportation.
- Transport by road, rail and sea.

HYDROGEN USES 0.25 day

Hydrogen needs in the refining industry.
Hydrogen for mobility.
Manufacture of synthetic fuels.

FOSSIL HYDROGEN PRODUCTION 0.25 day

Grey hydrogen production methods: reforming and catalytic steam reforming of hydrocarbons, partial oxidation (POx), "hybrid" autothermal reforming (ATR) route:

- Schematic diagram, main operating conditions. Examples of achievements.
- Characteristics of the hydrogen produced.
- Energy considerations. Selection criteria.

FOCUS ON ELECTROLYSIS 0.5 day

Electrolysis: principles and reactions.
Presentation of the different technological blocks around the electrolyser: water treatment, hydrogen purification, storage, compressors and other equipment.
Dimensioning of the electrolyzer power supply. Specific constraints related to intermittency. Electrical auxiliaries.
The different types of electrolysers: alkaline, PEM and solid oxide:

- Description.
- Special features. Pros and Cons.
- Maturity and initial feedback.
- LCOH, Efficiencies, Current Density, and Power Requirements .

Possible recovery of the heat and oxygen produced by the electrolyser.

LOW-CARBON HYDROGEN PRODUCTION WAYS 0.75 day

Production of fossil hydrogen with CCS. The different modes of CO2 capture: cryogenics, amine process, other solvent-based processes, membrane-based processes, etc.
Water electrolysis with renewable energy.
Production from biomass: gasification.
Purchases of Renewable Certificates of Origin.
Other pathways: photoelectrolysis, native H2, plasma, etc.
Comparison of the different production methods.
Case Studies.

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Training - Low-Carbon Hydrogen - H2BC

H2BC-EN-P | Face-to-face only | 3 days

To provide the necessary technical knowledge on hydrogen, its value chain and its production methods, making it possible to understand and anticipate the challenges of the development of hydrogen as a solution in the energy transition

Level

Expert

Public

Engineers, technical executives or project managers involved in hydrogen logistics and/or production

Objectives

Attendees will be able to implement the following skills:

- describe the different modes of production, storage and transport of hydrogen
- understand the strengths and limiting elements of each pathway

Pedagogical & technical resources

- Highly interactive synchronous training. Quiz.
- Through our LMS, training documentation, applications and complementary content are shared.

Assessment of achievements

Quiz

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

CONTEXT — 0.5 day

Brief overview of climate change: current situation, regulatory framework, impacts on businesses.
Priority applications for low-carbon hydrogen: energy carrier, chemical intermediates, industrial H2
Hydrogen “rainbow,” low-carbon hydrogen: distinguishing between different qualifiers, costs, orders of magnitude, advantages, and limitations.

HYDROGEN STORAGE AND TRANSPORT — 0.75 day

Physicochemical properties of hydrogen.
Regulatory aspects - Safety.
Packaging : Compression, liquefaction, hydrogen transformation.
Description of the different types of hydrogen storage:

- Buffer storage in production sites before transport.
- Natural cavities.

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- Cryogenic storage.
- Absorption or adsorption of hydrogen in a solid or liquid.

Description and use of the different modes of transport for hydrogen:

- Pipeline Transportation.
- Transport by road, rail and sea.

HYDROGEN USES 0.25 day

Hydrogen needs in the refining industry.
Hydrogen for mobility.
Manufacture of synthetic fuels.

FOSSIL HYDROGEN PRODUCTION 0.25 day

Grey hydrogen production methods: reforming and catalytic steam reforming of hydrocarbons, partial oxidation (POx), "hybrid" autothermal reforming (ATR) route:

- Schematic diagram, main operating conditions. Examples of achievements.
- Characteristics of the hydrogen produced.
- Energy considerations. Selection criteria.

FOCUS ON ELECTROLYSIS 0.5 day

Electrolysis: principles and reactions.
Presentation of the different technological blocks around the electrolyser: water treatment, hydrogen purification, storage, compressors and other equipment.
Dimensioning of the electrolyzer power supply. Specific constraints related to intermittency. Electrical auxiliaries.
The different types of electrolysers: alkaline, PEM and solid oxide:

- Description.
- Special features. Pros and Cons.
- Maturity and initial feedback.
- LCOH, Efficiencies, Current Density, and Power Requirements.

Possible recovery of the heat and oxygen produced by the electrolyser.

LOW-CARBON HYDROGEN PRODUCTION WAYS 0.75 day

Production of fossil hydrogen with CCS. The different modes of CO2 capture: cryogenics, amine process, other solvent-based processes, membrane-based processes, etc.
Water electrolysis with renewable energy.
Production from biomass: gasification.
Purchases of Renewable Certificates of Origin.
Other pathways: photoelectrolysis, native H2, plasma, etc.
Comparison of the different production methods.
Case Studies.

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Training - Main Polymers PE/PP/PS

MAIPOLY-EN-P | Face-to-face only | 5 days

To provide comprehensive information on polymers and polymerization processes used to produce polyethylenes, polypropylenes and polystyrene

Level
Skilled

Public
Engineers and technical staff interested in the manufacturing of commodity polymers

Objectives
Attendees will be able to implement the following skills:

- Understand the global technical and economical structure of commodity polymers, by far the biggest outlet of petrochemistry
- Master the link between product slate and process selection in function of company marketing strategy
- Know the main industrial commodity polymers processes available for licensing, and their main characteristics
- Be aware of the main industrial safety and operational problems

Pedagogical & technical resources
Applications and case studies treated in small groups, based on typical situations encountered in the normal or unsettled operation of these units

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites
No prerequisites are necessary to follow this course

Responsable
IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

MAJOR POLYMERS — 0.5 day

Various polymer families: commodities, engineering, high performance polymers.
History of polyethylene development.
History of polypropylene development, the youngest of all commodity polymers. Various types of grades (homo, block, random, isotactic, syndiotactic, atactic...); their main applications.
Project management in petrochemical industry. Patent strategy. Staging of projects Order of magnitude of

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investment costs.
Fixed and variable cost for site production and outside logistics.
Polymer pricing mechanisms. Notion of economical spread. Explanations of the causes of polymers wide price fluctuations.

CATALYTIC SYSTEMS USED FOR POLYOLEFINS PRODUCTION — 0.5 day

Review of the various types of catalytic systems for polyolefins.
Mass and heat transfer in the heterophasic polymerization of polyolefins.
Multigrain model of the growing particles and variations around this model.

IMPLEMENTATION OF POLYMERIZATION - MAIN POLYETHYLENE & POLYPROPYLENE PROCESSES — 1 day

Techniques implemented in polymers production: solution, bulk, emulsion, suspension or slurry, gas phase. Advantages and drawbacks of these techniques, consequences for process implementation.
Main processes involved in production of polyethylene and polypropylene. Basic schemes and average operating conditions. Influence of operating parameters (temperature, pressure, reactants proportion) on product quality.

POLYETHYLENES - POLYPROPYLENES & OTHER COMMODITY POLYMERS — 2.5 days

General presentation of high pressure and low pressure polyethylene processes, with the various types of polymers grades they can produce. Low, medium, high, ultra-low density...; narrow, broad molecular weight distribution; low, high melt indexes...
Main applications per family of grades.
High pressure processes. Heat transfer in reactors and conversion rate. Comparison of autoclave, tubular mono-injection, tubular multiple injection reactors; consequences on product quality. Specific equipment technology used in HPPE (hypercompressors, letdown valve...).
Safety risks associated with ethylene decomposition.
Main low pressure catalytic processes. Main characteristics of catalyst and reactor types. Which market do they serve? Announced developments.
Various polymerization processes available for polypropylene production (gas phase, loop, liquid pool...). Staged polymerization for broad molecular weight distribution and impact copolymers. New development with single reactor double reaction zone.
Polymer finishing. Extrusion. Storage. Logistics. Supply chain.
Main safety issues. Catalyst killing system in case of emergency.

POLYSTYRENE PROCESSES — 0.5 day

Main design and operation characteristics.
How to treat run-away in case of thermal initiation.

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Training - Overview and Challenges of the Energy Mix

MXE-EN-P | Face-to-face only | 4 days

This course aims to provide an updated overview of the energy sector and the upcoming economic, political and environmental challenges (Covid-19, climate change, supply and demand crisis, unconventional Oil & Gas...). Participants will get a complete overview of both fossil fuels and renewable energy sources, with their respective benefits and burdens

Level

Knowledge

Public

Engineers from the energy sectors (oil, gas, renewables, power), industrial partners, executives (banking, insurance, consulting), public administration staff, PhD and postgraduate students

Objectives

Attendees will be able to implement the following skills:

- Describe the main stages (upstream, downstream, trading) of the oil and gas sectors and understand the technical and economic characteristics of hydrocarbons (production, outlets, availability, market)
- Analyze the advantages and disadvantages of each energy and interpret the evolution of factors affecting the supply and demand of the energy mix
- Identify the actors of the energy scene and their strategic lines (states, international organizations, public and private companies in the sector)
- Understand the role of renewable energies in the energy mix (maturity, intermittency, carbon footprint)

Pedagogical & technical resources

- Quiz and videos on the fundamentals of the energy sector
- Board game about the different steps of an oil or gas project
- Team game on the composition of the energy mix and the role of renewables
- Team game on factors affecting crude prices, the upstream sector and trading

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

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INTERNATIONAL ENERGY SCENE — 0.5 day

Energy resources: definition, characteristics, conversion factor.
Climate change & energy transition: supply/demand asymmetry, Kaya's identity analysis.
Short and long-term forecasts (Covid-19 crisis, supply situation, climate change) and IEA scenarios.

OIL SECTOR ISSUES — 1 day

Stakeholder's strategy: NOC, IOC, majors, international organizations.
Upstream: stages and technical-economic aspects of the Exploration-Production.
Oil contracts and principles of oil rent sharing.
Downstream: refining economics and margins, capacity and new projects.

GAS SECTOR ISSUES — 1 day

Structure of the gas value chain: production, treatment, transportation, storage.
Pros and cons: natural gas and LNG in the energy transition.
Markets & grids, introduction to gas contracts.
Focus on current trends: crisis, market, evolutions, technological breaks...

RENEWABLES ISSUES & ENERGY TRANSITION — 1 day

Overview of the main renewables: solar, wind, hydro, bio, geothermal.
Comparison and competition: outputs, costs, availability, pros, limits.
CCUS technology and use of renewables in the Oil & Gas sector.
Stakeholders' strategy and supply chain presentation.

CASE STUDIES — 0.5 day

Economic calculations on Oil & Gas and renewables projects.
Opex, capex, revenues, assumptions, taxable income, cash flows, IRR.

Sessions

Rueil-Malmaison - From 09/29/2026 to 10/02/2026 — **3360 €/HT**

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Training - Commissioning and Start-Up of Process Units

OPDEM-EN-P | Face-to-face only | 5 days

Prepare participants to manage commissioning and start-up operations

Level
Skilled

Public
Supervisors, engineers and technicians of oil/chemical companies or engineering, involved in the commissioning and start-up of new units

Objectives
Attendees will be able to implement the following skills:

- Present pre-commissioning, commissioning and start-up activities on a project from the perspective of their programming and management
- Specify the basis for supervising or delegating activities in a context of mastering the specific constraints related to these operations

Pedagogical & technical resources
Cases studies on the precommissioning, commissioning and start-up of typical units

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites
No prerequisites are necessary to follow this course

Responsable
IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

PROJECT BACKGROUND & COMMISSIONING PHASES — 2 days

Main phases of a project.
Engineering studies (FEED, Detail) and anticipation of commissioning activities.
Project contract type and impact on commissioning activities.
Integration of commissioning activities into the project process: mechanical completion, pre-commissioning, commissioning and start-up activities during the project steps.

ORGANIZATION — 1 day

Commissioning procedures. Interfaces with the different engineering disciplines according to the types of

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contract.
Plant/project breakdown into systems and subsystems. Execution plan for commissioning and start-up. Setting up of commissioning/start-up teams. Split of responsibilities. Preparation of the list of precedents. Start-up phases: pre-commissioning, commissioning and preparation for start-up, performance tests, provisional acceptance, mechanical guarantees, final acceptance. Hand over.

SAFETY — 0.25 day

Risks related to the auxiliary fluids and the introduction of hydrocarbons. Risk evolution between construction, commissioning and start-up. Control of the risks related to modifications during the different phases.
Pre-Start-up Safety Review (PSSR).

END OF CONSTRUCTION - PRECOMMISSIONING — 0.75 day

Precommissioning activities: static verification of equipment, hydraulic tests and equipment cleaning, involvement of operations in the mechanical completion, punch-list, actions follow-up and close out.

COMMISSIONING — 0.75 day

Commissioning activities. Cleaning, flushing, blowing and drying. Dynamic testing.
Synchronization of control loops and Programmable Logic Controller (PLC).

START-UP & ACCEPTANCE — 0.25 day

Start-up permit: checks required before oil-in. Leak tests, air removal, raw materials introduction.
Transition towards industrial production: performance tests, temporary and final acceptance, responsibility transfer.

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Training - Overview and challenges of renewable energies

PANENR-EN-P | Face-to-face only | 3 days

This training provides a global vision of renewable energies, their share in the European and global energy mix, as well as a technical and economic overview of the available solutions

Level

Awareness

Public

People interested in the energy transition, renewable energies and decarbonation issues

Objectives

Attendees will be able to implement the following skills:

- Briefly describe the techniques used in the different renewable energy production sectors
- List the main advantages and disadvantages of these production chains

Pedagogical & technical resources

- Provision of introductory material prior to the training course
- Sub-groups activities, business cases, educational games
- Illustration by concrete industrial cases and current events

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

ENERGY TRANSITION AND CURRENT CONTEXT — 0.5 day

World energy scene: supply & demand, actors, findings and perspectives.
The place of renewable energy in the French, European and global energy mix.
Neutrality, budget and carbon bubble: commitments, constraints, risks and opportunities.
Energy & Climate: decarbonation and electrification.

SOLAR ENERGY — 0.5 day

Different production methods: thermodynamic, photovoltaic, thermal, passive.

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Technology and state of the art - Main production sites and current projects.
Main applications.
Cost of electricity production and GHG emissions during the life cycle.
Application: Sizing of a production plant.

WIND ENERGY — 0.5 day

Different production methods: Onshore – Offshore – Floating. Advantages and disadvantages.
Different types of wind turbines. Principle of operation.
Technology and state of the art - Distribution of production in the world.
Cost of electricity production and GHG emissions during the life cycle.
Application: Analysis of a production site.

BIOENERGIES — 0.5 day

Biomass, Biogas and Biofuels - Associated technologies and end uses.
Place of bioenergy in France and in Europe.
State of the art and main projects in progress.
Cost of electricity production.
Application : Production of biogas by methanization.

MARINES ENERGIES — 0.25 day

Main production methods: hydroelectricity, tidal, current, wave, osmotic.
Current state of art and main projects underway.
Cost of electricity production and life cycle GHG emissions.

GEOTHERMAL ENERGY — 0.25 day

Geothermal energy for power and heat production - Main technologies.
Advantages and disadvantages - Impact on the environment.
Integration with existing production sites.
Cost of electricity production and life cycle GHG emissions.

HYDROGEN INDUSTRY — 0.5 day

Hydrogen: an energy carrier.
The different colors of hydrogen depending on the production method.
End use of hydrogen. Constraints of use.
State of the art and main projects in progress.

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Training - Commodity Polymers Manufacturing

PPLAS-EN-P | Face-to-face only | 3 days

This course provides a comprehensive information on polymers and polymerization processes used to produce polyethylenes, polypropylenes, polyvinylchloride and polystyrenes

Level

Knowledge

Public

Professionals interested in polymers production

Objectives

Attendees will be able to implement the following skills:

- Explain the principles of polymerization techniques and the main characteristics of manufactured polymers
- Describe the operating conditions of polymerization processes

Pedagogical & technical resources

- This course can be adapted for distance learning
- Presentation of polymer samples from the manufacturing plants
- Presentation of end uses application samples

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

POLYMER TYPES & NATURE — 0.25 day

Polymer constitution: monomers, macromolecules, building blocks.
Various kinds of polymer: fibers, elastomers, plastics.
Plastic types: thermoplastics and thermosets.
Main commodity polymers: polyethylenes, polypropylenes, polystyrenes and polyvinylchloride.
Economical aspects relating to these commodity polymers.

POLYMER PRODUCTION - ASSOCIATED PROPERTIES — 1 day

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Main polymerization reactions: polyaddition, polycondensation.
Basic characteristics of polymer reactions: heat of reaction, activation mode, etc.
Different arrangements of monomer building blocks in polyaddition: atactic, syndiotactic or isotactic polymers; random block; graft; alternate polymers.
Relationship between end uses implementation and main polymer properties. Impact on properties.
Main tests used to get polymer characterization: melt index, viscosity index, etc. Test signification, relationship with polymer structure.
Consequences regarding polymer implementation techniques (extrusion, injection, etc.).

POLYMERIZATION IMPLEMENTATION - MAIN COMMODITY PLASTIC PROCESSES — 1.75 days

Techniques implemented to produce polymers: solution, bulk, emulsion, suspension, gas phase techniques.
Advantages and drawbacks of those different techniques consequences on processes implementation.
Examples applied to the main processes used to manufacture the major thermoplastics: polyethylenes (PE), polypropylenes (PP), polystyrenes (PS) and polyvinylchloride (PVC).
Flow charts and principles of processes. Some typical operating conditions.
Influence of operating parameters (temperatures, pressures, monomers ratio and proportion of any chemicals involved in the reaction) regarding the quality of polymer obtained.
Some pretreatments of polymers outside the reactor before the transformation step.

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Training - Practicing Commissioning

PRACOM-EN-P | Face-to-face only | 4 days

This course provides practical knowhow so as to get the participants directly confront the reality of the field

Level

Knowledge

Public

Operating and technical staff in charge of commissioning and start-up operations on field

Objectives

Attendees will be able to implement the following skills:

- Anticipate the risks while commissioning and start-up operations
- Identify the key points of the most current operations
- Proceed to main pre-commissioning and commissioning activities

Pedagogical & technical resources

- Experience sharing through applications and cases studies on Oil & Gas units
- Cases studies on the precommissioning, commissioning and start-up of units
- Analysis of incidents occurred while precommissioning, commissioning or start-up phases

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

COMMISSIONING & START-UP PHASES IN PROJECT CYCLE — 0.5 day

End precommissioning, mechanical completion, commissioning, ready for start-up, start-up permit, performance test runs, temporary and final acceptance.
Commissioning and start-up: a non-linear schedule. SIMOPS. Input data and reference documentation. Punch lists. Management of Change (MOC).

SPECIFIC RISKS TO COMMISSIONING & START UP — 0.5 day

Fluid behavior and energy associated hazards. Chemical and physical hazards. Flammability.

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Main risks induced by equipment, such as rotating, pressure vessels, thermal or naked flame equipment.
Risks related to utilities start-up: inert gas, nitrogen, steam, instrument air, water, fuel gas, diesel.
Risks evolution from construction to start-up. Transient phases. Safety reviews. Managing leaks.

WHAT TO DO BEFORE COMMISSIONING PROCESS UNITS — 1.5 days

End of construction: visual control and checks for static and rotating equipment (no energy, no fluid). Cold clamping. Check of installation standards for piping and instrumentation.
Precommissioning activities: hydraulic tests and process equipment cleaning.
Mechanical completion.
Particular case of Utilities facilities: pre-commissioning, commissioning and start-up (ready for operations).

COMMISSIONING OF PROCESS UNITS & START UP — 1.5 days

Chemical cleaning, flushing and blowing. Equipment drying and dynamic testing.
Particular case of instrumentation - Loops and DCS tests. Synchronization.
Preparation for the start-up of rotating equipment.
Prestart-up checks before oil-in. Plant line-up and test run.
Start-up: leak tests, air removal, oil-in. Heating up and hot bolting.
Update of documentation.

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Training - Sustainable Aviation Fuel - SAF

SAF-EN-P | Face-to-face only | 2 days

This training course deals with the different jet fuels that can replace fossil jet fuel with a view to reducing pollutant and CO2 emissions. It provides an overview of what can be considered in the choice of production schemes

Level

Expert

Public

Executives, engineers and technicians in the renewable industries, refining, trading in petroleum products or renewable fuels... concerned by the evolution of jet fuel quality, in relation to the technologies applied to aviation turbines

Objectives

Attendees will be able to implement the following skills:

- to know the certified SAF, their manufacturing and distribution ways
- understand the integration of SAF into conventional jet fuel production schemes

Pedagogical & technical resources

Interactive training with trainees

Assessment of achievements

Quiz

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

FOSSIL-BASED JET FUEL — 0.5 day

Origine and composition of fossil-based jet fuel through the process flow diagram in a refinery.
Main characteristics necessary for its use.
Air emissions from jet fuel combustion.

SAF-SUSTAINABLE AVIATION FUELS — 1.25 days

Context, Regulations and issues, general review of the different production sectors, environmental assessment from well to wheel.
Certification – taxation.
Main production routes certified or in the process of certification of SAF: hydrotreated vegetable oils, synthetic biojets, biological routes and e-fuel.

INTEGRATION OF SAFS IN THE REFINING INDUSTRIES — 0.25 day

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Modifications and adaptations: processes, storage, logistics.
Segregation of products and/or certificates.
Sustainability and Traceability.

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Training - Social Risk Management

SOCIAL-EN-P | Face-to-face only | 5 days

This course aims to identify and understand social issues related to Oil & Gas activities

Level

Knowledge

Public

Managers, advisors, engineers, and operations staff involved in oversight or management of operational, environmental and social issues throughout the lifetime of an upstream project

Objectives

Attendees will be able to implement the following skills:

- Identify and understand what constitutes a social risk (non-technical risk), an impact assessment and management
- Understand key concepts related to SIA and Social Impact Management Plans (SIMPs)
- Understand social management methodologies and their appropriate uses
- Design and implement of a stakeholder engagement strategy and plan
- Understand the main components of a Social Impact Management Plan (RAP, local content, etc.), including design and implementation

Pedagogical & technical resources

The training will have an interactive format providing room for practice and discussion. It will involve multimedia presentations, case studies, quizzes and teamwork sessions

Assessment of achievements

- Trainees are assessed throughout the training through practical application phases and interactions with the trainer
- A final on-the-spot evaluation may also be carried out at the end of the course and/or at the end of each module using tests designed to verify the learners' understanding and assimilation of the knowledge linked to the training objectives

Prerequisites

No prerequisites are necessary to follow this course

Responsable

IFP Training instructors, with expertise in the field and trained in modern teaching methods adapted to the specific needs of learners from the professional world

Program

SOCIAL ISSUES RELATED TO OIL & GAS ACTIVITIES: RISKS, STAKES & STRATEGIES — 1 day

Risk of overlooking non-technical risks.
How to spot non-technical risks?

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How to identify and understand the underlying mechanisms?
How to manage social risks?
Oil & Gas industry reaction to underlying mechanisms.
Why and how should they be managed as a risk and an opportunity?
Key risks areas for Oil & Gas industry and developed standards: transparency and corruption, business and human rights, operations in areas of conflict, etc.

STAKEHOLDER ENGAGEMENT — 1 day

Social License to Operate (SLO).
How to build this SLO?
What is the Free Prior & Informed Consent (FPIC) principle?
Stakeholders-business interactions analysis.
How to do a stakeholder analysis and mapping?
How to design and implement a stakeholder engagement plan?
How to design, implement and monitor a grievance mechanism?
What are the do's and don'ts in stakeholder engagement?

PARTICIPATIVE SOCIAL IMPACT ASSESSMENT AS A RISK MANAGEMENT TOOL — 1 day

Conceptual framework and techniques used for Social Impact Assessment.
International standards.
Definition of a social impact.
Links between environmental and social impacts.
Predict, analyze and assess the likely social impacts pathways and evaluate their significance.
Develop a mitigation strategy for negative impacts and an enhancement strategy for the project-related opportunities.
How to monitor social impacts?
How to assess a SIA quality?
How to achieve the full potential of a SIA?

SOCIAL IMPACT MANAGEMENT PLANS & MONITORING: TOOLS & PROCESSES — 0.5 day

Social Impact Management Plans (SIMP).
The main components of a SIMP.
How can a SIMP be operational?
What are the organizational and institutional arrangements that need to be developed?
The role for the project's stakeholders in a SIMP?
Implementation and results monitoring and reporting.

SOCIAL IMPACT MANAGEMENT PLANS & MONITORING: FOCUS ON SPECIAL TOPICS & ISSUES — 1 day

Depending on the audience's needs and expectations, a focus can be put on specific social issues and how to manage them through specific social impact management plans: Resettlement Action Plan (RAP), Community Development Plan and Social investments, local content, etc.

CASE STUDY: SOCIAL SCREENING OF AN OIL & GAS PROJECT — 0.5 day

Through a work in group, the participants will do a stakeholder mapping, a high level impact assessment with the use of a mind mapping and an identification of potential impacts and mitigation strategies.

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