



---

## YOUR TALENT OUR EXPERTISE

---

## A word from the CEO

Jean-Luc Karnik

---

For over 40 years, IFP Training has been offering training courses covering the entire Oil & Gas value chain as well as the Powertrain industry. Often referred to as a partner of excellence, we are proud of the strong relationships that we continue to build with our clients in order to accompany them in their workforce's competency development.

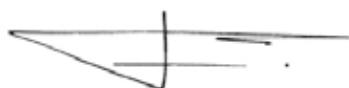
I would like to highlight the numerous programs that lead to the certification of competencies ensuring that your employees are able to work efficiently without compromising safety. I encourage you to have a look at the career development paths that we provide in various fields of expertise to help you to identify the programs needed to strengthen your team from within.

Today's industry context makes it more important than ever to count on training experts to help develop your team. Our team of 100 permanent instructors and network of 600 industry experts are continuously working to understand your needs and find the right solution for you.

IFP Training courses are taught using active learning methods combined with industry applicable and innovative techniques such as relevant case studies and dynamic simulators. We offer trainings of a renowned quality with a proven track record of increasing business performance.

Every year, some 15,600 industry professionals, including managers, engineers, technicians or operators, from more than 80 countries across the world, take part in one of our 1,400 training courses, whether it be scheduled or customized as an In-house course.

This catalog provides you with a glimpse into our courses in the world of **Economics & Management**. With a panorama of services that we are constantly evolving, I am certain that we can provide you with the adequate solution that will contribute to the success of your projects.



Jean-Luc Karnik  
Chief Executive Officer



**A Partner  
of Excellence**

# Content

IFP Training .....	4
Course Index .....	21
Technical Fields .....	23 to 84
Paris Energy Happenings .....	23 to 25
Energy Economics .....	27 to 37
Upstream Economics .....	39 to 59
Trading & Shipping .....	61 to 66
Downstream Economics .....	67 to 77
Finance & Management .....	79 to 84
Keywords List .....	86
Registration .....	92
Terms & Conditions .....	94
Registration form .....	97

**IFP Training** is the market leader in training for the Oil and Gas, Chemical and Powertrain industries. Our mission is to develop and certify the competencies of industry professionals. We create unique partnerships with our clients that thrive on trust and communication. This is key to building **long-lasting relationships** with them.

As part of IFP Energies nouvelles (**IFPEN**), we have the knowledge of the Oil & Gas world at our fingertips. We offer integrated training courses that cover the entire Oil & Gas value chain as well as the powertrain industry. Through **a variety of training techniques and methodologies**, we create **innovative training courses** that provide your workforce with the skills they need to succeed. Our team of experts works closely with our clients to create customized training plans and deliver courses of value and quality.

As part of IFP Energies nouvelles,  
we have the knowledge  
of the Oil & Gas world  
at our fingertips



## Be part of something bigger, **The IFP Group**



IFPEN is an internationally recognized R&D center focused on improving industry technologies for energy, transport and the environment. Its research produces technological patents that are developed at an industrial scale via **its subsidiaries who are leaders in their domain**. They offer premium services to upstream and downstream companies. With this unique link between research and industrial worlds, IFPEN is also invested in education and professional training through a world-renowned university and a company dedicated to enhance professional competencies, IFP School and IFP Training.

### ► Some subsidiaries of the group:



IFP School offers applied graduate programs, providing students and young professionals from all over the world with education in the fields of energy with particular emphasis on **sustainable development and innovation**. These programs are offered in France or partially abroad through partnerships with other prestigious universities. In the latter case, students attend the program in both IFP School and their home university and receive a dual degree.

Together, IFP School and IFP Training regularly set up Master's degree and graduate diploma programs abroad for Oil & Gas companies. Hence, IFP School & IFP Training together bring these ambitious programs to the client's door. This solution contributes efficiently to our customers' long-term strategic goal of preparing their leaders for tomorrow.

Thanks to the international and multidisciplinary reach of the IFPEN group, IFP Training has a wider range of expertise and resources than any other Oil & Gas training organization.

## Your **Added Value**: IFP Training



When you partner with IFP Training, you confide in a **professional training organization** to increase your workforce's competencies.

Our team of industry experts engineers **tailored programs** aiming to deliver industry oriented and **applied training services**. These top-notch solutions have been provided for more than 40 years mainly through long standing relationship with our customers. This continuity is the key for understanding our **solid reputation**.

Our results-driven training courses allow you to confidently invest in the competencies of your employees. Your return on investment is maximized thanks to a **highly efficient workforce**, ensuring a **productive and safe environment**.

## From **Upstream to Downstream & All That's In Between**

IFP Training's offer covers the entire Oil & Gas value chain, from the exploration and production to the refining, petrochemistry and trade of hydrocarbons. Our areas of expertise also include how engines are designed for optimal combustion as well as the economics and management aspects of the Oil & Gas industry. These vast fields of expertise brought together in a single training company make IFP Training one of a kind.

Our trainings are engineered for all categories of industry professionals, from **plant operators** and **technicians** to **engineers** and **managers**.

All our instructors exceed industry standards and our courses are constantly being updated with the most **relevant content**.

## Innovative Courses Executed to Perfection

IFP Training's approach is focused on what is "**need-to-know**" rather than "**nice-to-know**". Educational design is essential to formalize field experience, technical expertise and theory to end up with an effective process for the learners to acquire and further develop knowledge, know-how and interpersonal skills.

Our training methodology maximizes retention rates and participants' engagement through active learning techniques. Each course is built through **dynamic learning scenarios** keeping participants motivated and committed.

When participants are actively involved in a lesson, **they will remember more**.

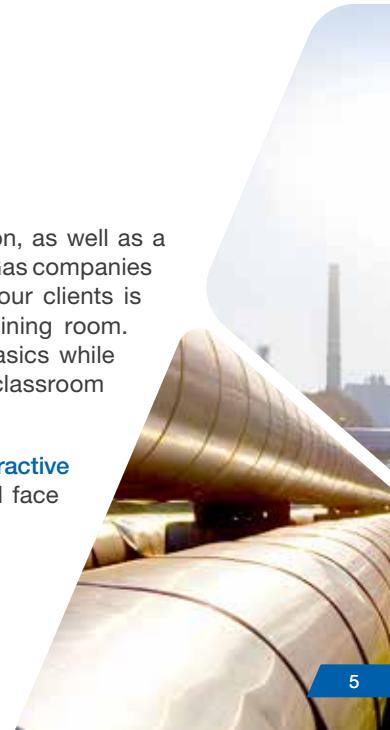
## RSI – Bringing your training experience to life



RSI is a leading international expert of process and control simulation, as well as a subsidiary of IFP Training. This collaboration allows us to provide Oil & Gas companies with **tailored simulation and training solutions**. The added value for our clients is bringing **real-case scenarios** encountered in their plant into the training room.

With Operator Training Simulators (OTS), newcomers will learn the basics while more experienced personnel will have the opportunity to face critical or emergency situations in a classroom environment.

Participants partake in a **unique learning experience** of both **instructor-led courses** and **interactive simulations**. This is the most efficient way to prepare your team to tackle complex processes and face unexpected situations.



Allow us to get inside  
**your world**



# Your Talent, Our Expertise

Depending on your expectations and constraints, IFP Training might either invite your personnel to join scheduled **public courses** in our training premises or specifically organize **tailored courses** at your own place. On demand, we can offer **long programs** that lead to an internationally recognized certification or a graduate degree in partnership with IFP School.

IFP Training provides **consulting services** ranging from competencies management, training center design, global certification approach, on-the-job coaching to training program engineering.

We also design **career paths** to help HR and management map out the development plan that is optimum for each employee.



## In-House Training How, Where & When You Want

IFP Training's skilled and dedicated team is comprised of **100 permanent instructors** and a network of **600 industry experts**. Bolstered by their rich industry experience, We design **high-quality** and personalized training sessions from scratch, guaranteeing a **high success rate**. Our technical content is aligned with your expectations and we develop relevant study cases that allow an **immediate practice** of acquired knowledge.

It is valuable for the participant to be trained in the environment they work in, so that they can benefit from On-the-Job Training and On-Site coaching. Hence, we offer **flexible In-House training** services at your choice of location, in your training center or ours.

A number of our courses are available in an online and in-person **blended learning** format to fit better into your schedule.



## Public Courses Scheduled All-Year-Round

IFP Training offers a portfolio of public courses that gives you the possibility to send over your employees to benefit from **industry applied training** and exchange with other professionals in a positive learning environment. There is a real interest in mixing in one classroom, participants coming from different industrial environments, representing different cultures, and specialists of different technical domains. This **cross fertilization of experiences** is particularly rich and one of the key reasons to register for our public courses.



# Certifications & Diplomas

## A Global Approach to Certification

IFP Training has designed an **all-around certification** offer aiming to guarantee the competencies of oil and gas industry professionals.

We deliver Certifications to professionals, who participate in our training courses. Moreover, we offer Accreditations for training centers, training methodology, programs and documentation, as well as training instructors.

Our courses that lead to Certification of industry professionals are designed for **operators, technicians and engineers**. An IFP Training Certification formally validates the competencies acquired during our training sessions. We offer four certificate levels, ranging from **Vocational, Graduate, Advanced** to **Executive** certificates.

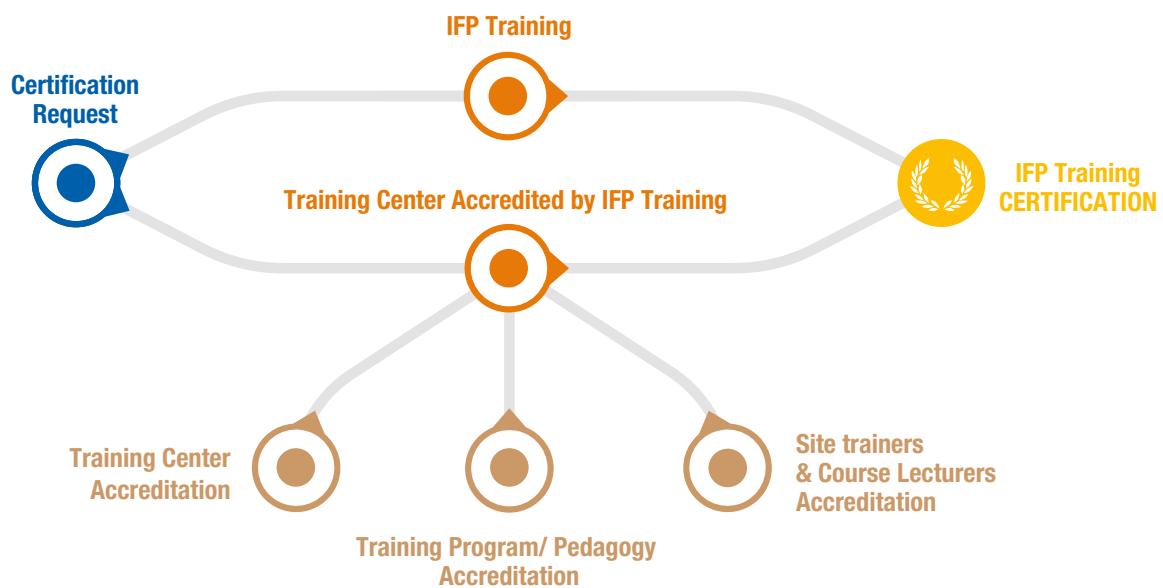
On the other hand, as an international certifying body, IFP Training offers a **5 years global and renewable accreditation**.

This accreditation concerns training centers that ambition to deliver training programs at the **IFP Training standard** and **IFP training** labeled.

This global accreditation, including a constant monitoring by IFP Training, includes three accreditation levels:

- ▶ **Training center accreditation:** compliance with design, equipment and organization criteria.
- ▶ **Programs, methodology and documentation accreditation:** compliance with training and educational engineering criteria.
- ▶ **Training instructors' accreditation:** qualification with respect to technical and educational requirements to ensure their capacity to deliver training sequences matching IFP Training criteria.

Once these three levels are granted, the training courses delivered will allow successful candidates to obtain an **IFP Training certificate**.



## Master's Degrees & Graduate Diplomas from IFP School

Regularly IFP Training and IFP School join their efforts to offer a **Master's degree program** to companies looking to enhance the skills and knowledge of their most promising employees. Our customers rely on these long programs to develop their human resources and prepare their future leaders.



## Consulting Services

Not only do we improve the skills of your workforce today, but we also plan for years ahead, helping you shape the way your organization operates, trains and recruits talents in the future.

Our Consulting services allow us to get inside your world to optimize your business processes:

- ▶ Competency Assessment
- ▶ Training Plan Auditing
- ▶ Training Plan Elaboration
- ▶ Training Program Design
- ▶ Design & Management of Training Centers
- ▶ Coaching

Throughout our experience, we have learned how to **identify and eliminate core competency gaps** within individual organizations. For HR teams, we offer the **assessment and mapping** of their workforce's competencies. We can create **tailored training plans** specific to your business and ensure the appropriate training is delivered for each job function. The training program may be extended by **a coaching period** to ease and encourage learners to efficiently apply the newly acquired skills and knowledge.

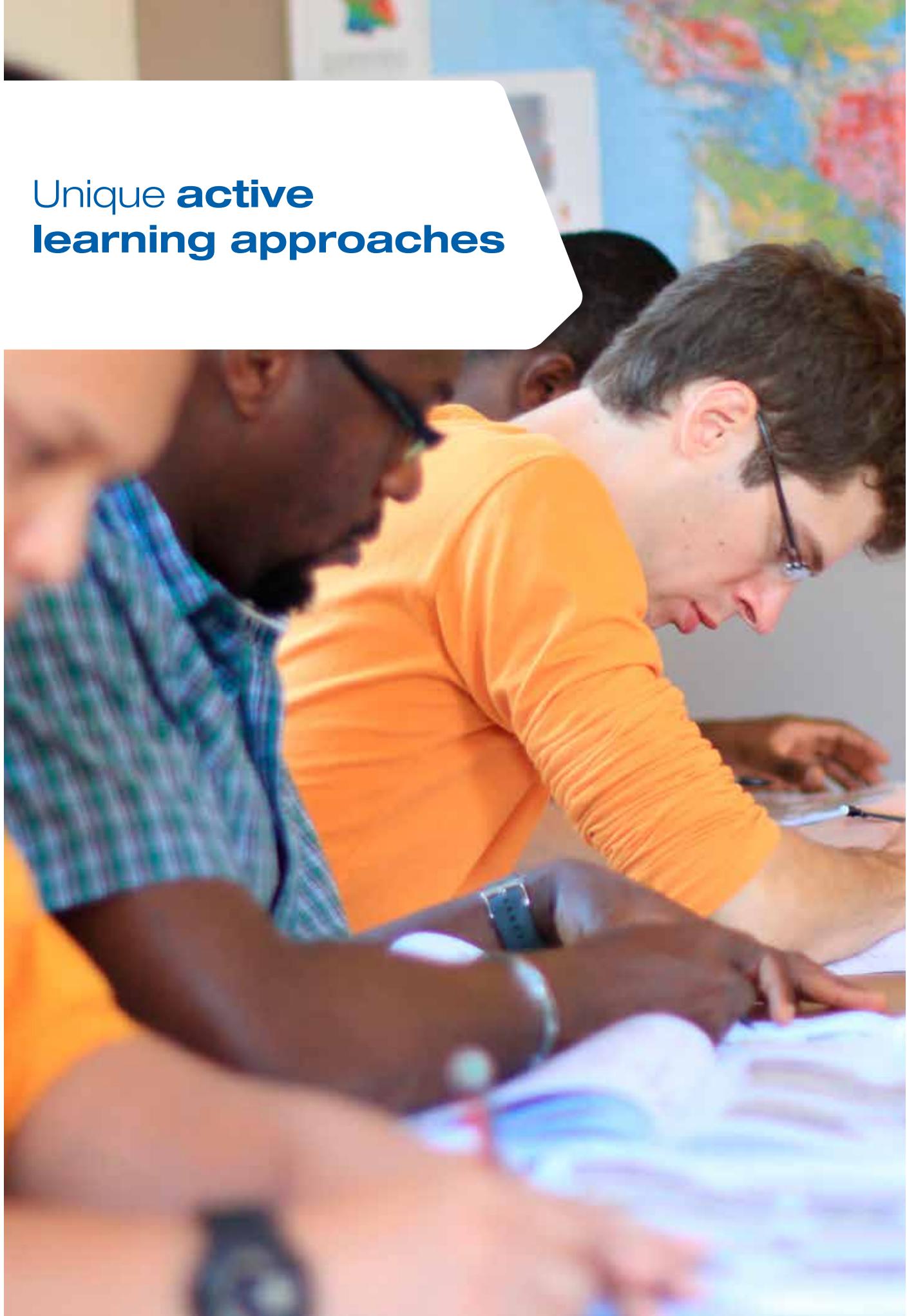
IFP Training also advises on the appropriate learning environment for your employees, with **consultation on the design, management and certification** of existing centers and the **creation of manuals**, benefitting future employees with a clear and consistent training plan.



## Setting Clear **Career Paths**

IFP Training provides you with predetermined **career development paths** to help guide HR, management, and employees on their developmental journey. Strengthening your team from inside and encouraging employee retention is highly valuable to any organization. We have solutions for professionals at any stage in their career, from Operators and Technicians right through to Junior and Senior Engineers.

A progression matrix depicts the skills and know-how needed to take the next steps towards **future leadership positions**. HR professionals can easily decide which courses would benefit their staff the most in order to prepare their leaders for tomorrow. This is not only an added value for your HR and management teams, but also for individuals who have a personal development path that leads them in the right direction to **achieve their goals**.

A classroom setting where several students are seated at their desks, focused on their work. In the foreground, a student wearing glasses and an orange long-sleeved shirt is looking down at their desk. To their left, another student in a green and blue checkered shirt is also looking down. The background shows a world map on the wall and some classroom posters.

Unique **active**  
learning approaches

# How do we do it?

We know that **motivation and commitment** lead to better learning. By combining our industry leading team of experts with our innovative training methods, we create **unique and dynamic** learning experiences of a quality that is never compromised.

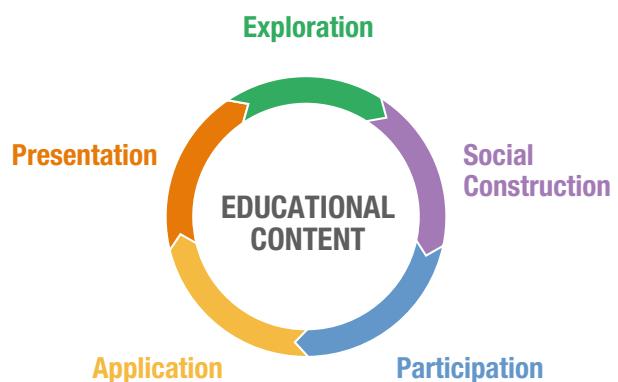
Our training methodology has been developed internally and is based on the last researches towards adult training pedagogy and innovative technologies.

Each of our courses is taught using its **specific scenario** composed of applied sequences to get participants thinking about how they would react to real life situations.

## Pedagogy for Professional Training

The training methodology applied at IFP Training is based on the following conditions:

- ▶ Motivation through meaning given to the training
- ▶ Commitment to the objectives
- ▶ Connection to trainees' daily work
- ▶ Link with what the trainees already know
- ▶ Tangible reality through activities based on industrial situations
- ▶ Learner enjoyment combines learning with fun, practical activities, site visits, etc.
- ▶ Trainees' active participation
- ▶ Immediate knowledge activation
- ▶ Regular training feedback
- ▶ Belonging to the learning group
- ▶ Individualization of the course
- ▶ Development of autonomy
- ▶ Innovative learning environment



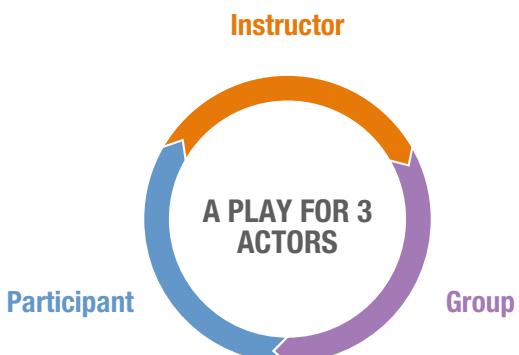
Our programs address these various approaches for improved competency enhancement, leading to effective and efficient professional development.

## Active Learning Methods

Our active learning approaches are unique as they focus less on the formal, lectured style of learning and more on **collaborative learning**, bringing everyone together to share their skills and experiences in order to create a highly compelling learning environment. We strive to provide an **active learning environment** for every training, ensuring that your employees better retain acquired information. In order to captivate participants' attention, we combine both **practical and theoretical lessons** within our courses

and constantly change and evolve the learning environment so that participants stay engaged.

The objective of active learning in IFP Training courses consists in putting the learner in an **active position**. He/she becomes an actor in the training process. This allows him/her to learn in an efficient and lasting way. In active pedagogy, the learner is not the only performer of the training course: to have a good balance in the training process, three actors successively take part during the training course, the **instructor**, the **participant** and the **group**.



# PePS<sup>®</sup>: Pedagogy Per Situation

Based upon clear training objectives, IFP Training's courses are formalized in a "**scenario**" which defines the sequence of educational steps through **situations**, **learning modes**, **activities** and **training tools**. The course design aims to obtain a **balance** between the time spent on **educational activities** and the one for **talks and lectures**.

For the best training efficiency, the learner must enjoy different ways of learning activities



SITUATIONS



LEARNING MODES



ACTIVITIES



TRAINING TOOLS



## Situations

The **SITUATIONS** correspond to the different sequences of a training day:

- ▶ Learning Conditions
- ▶ Motivation
- ▶ Application
- ▶ Evaluation
- ▶ Conclusion
- ▶ Reactivation
- ▶ Acquisition
- ▶ Appropriation
- ▶ Synthesis Anchoring
- ▶ ...

They are intentionally varied and alternate in order to accompany participants' progression.



## Learning modes

The **LEARNING MODES** aim at maintaining the trainees' focus. For his/her training experience to be complete and have long-lasting knowledge, the trainee must switch between 5 main learning modes:

- ▶ Exploration
- ▶ Presentation
- ▶ Application
- ▶ Social Construction
- ▶ Participation

These different modes consist in switching the roles of the trainer as well as the trainees between learning, discovering, exploring, teaching, collaborative or cooperative learning, peer production...

The complementary situations and learning modes come together to build a solid and deeply rooted apprenticeship where the learner is at the center of the learning process.



## Activities

The scenario offers various **ACTIVITIES** designed to achieve the learning objectives. The trainee's pleasure and motivation are maintained through the combination of interactive presentations, on-the-job training, team work, educational games...

IFP Training's method offers a wide variety of more than **30 learning activities**:

- ▶ Brainstorming
- ▶ Inquiry
- ▶ Collective quiz
- ▶ Questioning group
- ▶ Work in pairs
- ▶ Ice-breaker
- ▶ Lecture
- ▶ Exercise
- ▶ Conference game
- ▶ ...

The continuous switching between short periods contributes to maintaining attendees' focus and effective knowledge and skills building.



## Training tools

To sustain the training scenario and organize the activities, both the trainer and attendees need to have access to various and combined **TRAINING TOOLS**:

- ▶ Audiovisual technics (*videos, interactive presentations, animations*),
- ▶ Computer software (*simulators, serious games*),
- ▶ Documents (*exercises, guides*),
- ▶ Various activities (*short lectures, exercises, hands-on workshops, individual and group work, mini projects based upon real cases, information gathering on documents and papers ...*),
- ▶ Interactive teaching with dedicated instructors and tutors with extensive industry experience,
- ▶ Evaluation methods (*MCQ, short tests, reporting & presentations, etc.*).

In addition, relevant coaching and tutored sessions provide the opportunity to apply the newly acquired skills and practice them on real datasets. Learning by doing is the underlying principle of all hands-on activities.



**Certifying  
the competencies  
of industry professionals**



# A Complete Certification Solution

Backed by our experience of more than 40 years as an international training expert, IFP Training applies the international standards of the Oil & Gas Industry to its practices, methodology and pedagogy. Our **complete certification process** ensures the quality of the trainings and guarantees that the learning objectives are achieved.

IFP Training's prestigious certification programs offer Oil & Gas industry professionals the opportunity to validate their expertise in a particular field, by certifying their competency level to **an international standard**. This constitutes a milestone in a career and offers employers the chance to evaluate and improve their workforce's competencies.

## A Certification for **Every Industry Professional**



IFP Training awards certificates that formally attest the holder possesses the competencies set out in the specific requirements for each certification.

Four different certificate levels are available:

**Vocational Certificate:** for technicians or operators wishing to develop their skills and enhance their level of qualification,

**Graduate Certificate:** for engineers (*or equivalent*) looking to expand their field of competencies in the Oil & Gas industry and prove the mastery of their profession,

**Advanced Certificate:** for experts, future technical entity managers and employees with more than 10 years' experience in their field. The objective is to achieve a high level of specialization in a particular field,

**Executive Certificate:** for managers or high potentials, looking for a complete overview of the petroleum industry and the necessary competencies to fill top positions.

## Certifications as Proof of a Level of Competency

IFP Training certifications are based upon programs aiming to develop formalized competencies foundations. These programs are built on **40 years of experience** in partnering with our industry's main players and already constitute reference standards in the Oil & Gas world. They attest the certificate holder's level of competency and know-how thus providing employers with benchmarks for their employees' professional development.

## Training Solutions in **Support of Professionalization**

For each of its certifications, IFP Training provides a comprehensive solution including the training program, assessments and award of certification.

However, some of the certifications offered may be provided independently of the associated training. In this case, they are aimed at experienced professionals seeking certification to validate professional skills they have learned on the field as a more visible recognition of their qualifications.

# Training Tailored to Meet the Needs of Industry on the International Stage

IFP Training is the “[go-to organization](#)”, expert in Oil & Gas and engines. Thanks to our privileged position, we have been able to develop certifications enjoying [worldwide recognition](#). The areas of competency listed in the certification requirements have been established in partnership with major players of the industry to meet their needs on the field. Maintaining close contact with the industry and staying aware of its ever-changing needs, IFP Training keeps on updating its target learning objectives for competencies to meet world market expectations. This long-standing and trusted partnership with the industry has earned worldwide recognition for IFP Training certifications.

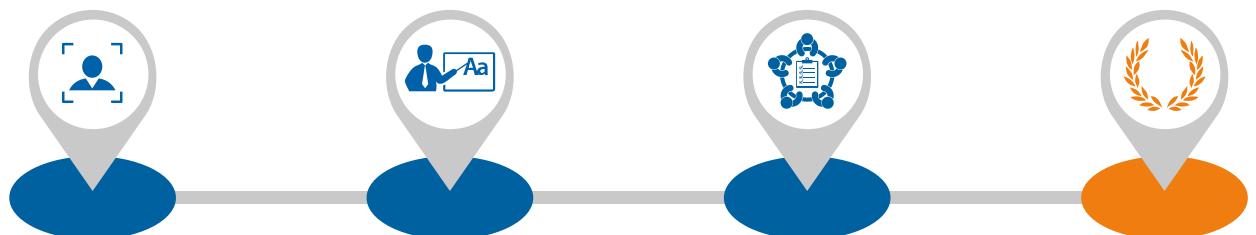
## Clear & Transparent Rules

As a recognized, [independent and impartial body](#), IFP Training fairly and equitably awards [high-level](#) professional certifications. Each one is based on a clearly established set of characteristics specified by IFP Training:

- 1 detailed target learning objectives,
- 2 clearly defined acquired competencies,
- 3 formally established assessment procedures,
- 4 plainly worded certificates tailored to the international context,
- 5 a certification process in line with internationally advocated requirements for quality management system.

The relevance and worthiness of IFP Training certifications are directly linked a combination of these elements.

## The certification process



### Selection

- Application of trainees
- Eligibility examination
- Selection of participants

### Training

- Training scenario implementation
- Including sometimes on-the-job training sequences

### Assessment

- Competencies assessment all-along the program
- Final assessment including sometimes a presentation in front of a jury

### Certification

- Examination of the full Certification files
- Collective decision
- Certificates awards

# Real Guarantees of Quality & Certification Validity

To provide candidates and companies with all the guarantees concerning the certifications, IFP Training has created a **quality management system** based on international quality standards.

These specify the general requirements for certification bodies and the steps to be taken to carry out **transparent, structured and impartial assessments** of formally defined, precise competencies before awarding individuals the relevant certificate.

The ultimate aim is to provide future certification holders and employers of the industry with trustworthy and credible assurances regarding the IFP Training certifications.

## The Benefits of IFP Training Certification

Our certifications offer the best solution to industry challenges and guarantee a return on investment regarding competencies management and a world-renowned quality. Certifications benefit both the individual participant and his company since they favor **career progression** and **competencies improvement**, thereby contributing to performance and quality.



### RETURN ON INVESTMENT

- Quick and direct enforcement of competencies
- Strong source of motivation for professionals
- More efficient teams in their daily activities



### EFFICIENT AND DYNAMIC COMPETENCIES MANAGEMENT

- Capitalizes and helps develop knowledge and know-how of workforce
- Develops new skills to favor innovation and performance
- A lever of internal mobility



### GUARANTEE OF QUALITY

- Guaranteed acquisition of skills
- Methodology ensuring transparency and equity
- Objectivity and neutrality in evaluating and granting the certification



**Your employees'  
expertise**  
at your fingertips

# Competency Assessment System

It covers all aspects of IFP Training's methodology for competency management. It consists in validating the **core strengths** of your workforce, identifying where there is lack in competencies and **improving the overall skills and knowledge** of the concerned population. Using state-of-the-art technology, we have created our **Competency Assessment System** (*or C.A.S*) that allows for planning, analysis and management of your workforce's competencies

## Our C.A.S. Methodology

IFP Training developed a comprehensive **competence assessment methodology** and can help you throughout the competence management life cycle, from its design to its implementation:



IFP Training's Competency Assessment System integrates with your internal HR structure, improving the efficiency of your HR processes.

An assessment system identifies a workforce's strengths and weaknesses. It is an efficient method to build relevant **Individual Development Plans** and maintain and **develop your teams' skills**.

It is also a way to **verify and ensure** the operating rules and installation integrity are being respected. This approach has now become an international standard and increases the third parties' trust.

## Our C.A.S. Tool

Our methodology relies on a tool that brings it to life by creating visual plans and data sets for you to interpret and analyze. This tool keeps track of your entire workforce competencies and provides detailed reports for HR and managers.



### Customizable

- ▶ User interface
- ▶ Composition of the assessment (*topics, competences, criteria, ...*)



### A continuous quality-enhancement cycle



### Comprehensive reporting

- ▶ Employees view
- ▶ Management view



### User friendly

- ▶ Tool suitable to all IT systems
- ▶ Easy-to-use interface



### Upgradeable to meet the industry

- ▶ Innovative competences
- ▶ Adaptable to any site specificities (*Onshore, Offshore, LNG, ...*)



# Course index

Paris Energy Happenings	Dura-tion	Dates	Location	Tuition fee (H.T.)	Reference	Page
International Oil Summit	1 d	27 April	Paris	€990	PEH/IOS	24
International Gas, Renewables & Electricity Summit	1 d	7 November	Paris	€990	PEH/IGS	25
Energy Economics	Dura-tion	Dates	Location	Tuition fee (H.T.)	Reference	Page
Overview of Petroleum Economics	4 d	5 - 8 December	Rueil	€2,490	ENE/OPE	28
Overview of Natural Gas Economics	4 d	27 - 30 June	Rueil	€2,690	ENE/ONE	29
Liquefied Natural Gas Economics	4 d	19 - 22 September	Rueil	€3,200	ENE/LGE	30
Unconventional Gas	3 d	16 - 18 May	Rueil	€2,540	ENE/UCG	31
Unconventional Gas Economics	4 d	In-house course			ENE/UCGI	32
Unconventional Oil	3 d	19 - 21 April	Rueil	€2,540	ENE/UCO	33
Econometrics & Forecasting	5 d	20 - 24 November	Rueil	€3,260	ENE/ECF	34
Strategic Management in International Oil & Gas Business	5 d	In-house course			ENE/SBA	35
E&P Companies in Changing Environment	1 d	In-house course			ENE/ICCE	36
<b>NEW</b> Assess Energy Efficiency & CO <sub>2</sub> Reduction	2 d	19 - 20 April	Rueil	€2,650	ENE/AECO	37
Upstream Economics	Dura-tion	Dates	Location	Tuition fee (H.T.)	Reference	Page
Upstream Economics & Management	15 d	In-house course			EAM/UEM	40
Economic Framework of Exploration-Production	5 d	10 - 14 April	Rueil	€3,590	EAM/EFEP	41
Contractual Framework of Exploration-Production	3 d	16 - 18 May	Rueil	€2,350	EAM/CFEP	42
Production Sharing & Joint Operating Agreements	3 d	In-house course			EAM/PSA	43
Economics & Risk Analysis of Upstream Projects	5 d	2 - 6 October	Rueil	€3,700	EAM/ERA	44
Upstream Module	60 d	3 January - 7 April	Rueil	€12,980	EAM/UPM	45
Negotiation of Exploration-Production Contracts	4 d	28 - 31 March	Rueil	€4,040	EAM/EPCN	46
Practice of Exploration-Production Contracts Economic Modeling	4 d	In-house course			EAM/PCM	47
<b>NEW</b> Operating under "Local Content"	3 d	18 - 20 December	Rueil	€2,980	EAM/OLC	48
<b>NEW</b> Oil Fields Unitization	3 d	6 - 8 December	Rueil	€2,980	EAM/UNITZ	49
<b>NEW</b> Upstream Auditing Certification	10 d	In-house course			EAM/ADVUA	50
<b>NEW</b> Upstream Economics & Management Certification	60 d	In-house course			EAM/UEMC	51
Exploration & Production Overview	5 d	25 - 29 September 11 - 15 December	Rueil Rueil	€3,560 €3,560	GEN/DECOUVEP	52
Introduction to Petroleum Engineering	5 d	27 February - 3 March 4 - 8 December	Rueil Rueil	€3,580 €3,580	GEN/INFPGE	53
Fundamentals of Production	2 d	In-house course			GEN/PRODCHAIN	54
Oil & Gas Field Processing	5 d	27 November - 1 December	Rueil	€3,370	PROC/OGFP	55
Natural Gas	5 d	9 - 13 October	Rueil	€3,570	PROC/NATGAS	56
Petroleum Engineering Certification	100 d	In-house course			PROC/PETROLENG	57
LNG Processing Engineer Certification	60 d	In-house course			PROC/LNGENG	58
HSE Management	5 d	30 October - 3 November	Pau	€3,400	HSE/HSEMGMT	59

# Course index

Trading & Shipping	Duration	Dates	Location	Tuition fee (H.T.)	Reference	Page
Oil Markets & Trading	3 d	30 May - 1 June	Rueil	€2,260	TRT/OMT	62
Gas Markets & Trading	2 d		In-house course		TRT/GMT	63
Contractual Framework of Gas Production & Transportation	3 d		In-house course		TRT/CGT	64
Shipping: General Features, Chartering Contracts & Operations	4 d	11 - 14 April 12 - 15 December	Rueil Rueil	€2,950 €2,950	TRT/CFS	65
Natural Gas & Electricity Trading	2 d	4 - 5 October	Rueil	€1,950	TRT/GET	66
Downstream Economics	Duration	Dates	Location	Tuition fee (H.T.)	Reference	Page
Downstream Economics & Management	15 d		In-house course		EAV/DEM	68
Planning & Economics of Refinery Operations	4 d	17 - 20 October	London	£3,300	EAV/PERO	69
Refinery Operation Management & Linear Programming	5 d		In-house course		EAV/ROM	70
Economic Framework of Refining	5 d	29 May - 2 June	Rueil	€3,140	EAV/EFR	71
Economic Optimization of Refining Operations	5 d	11 - 15 December	Rueil	€3,270	EAV/REO	72
Refining & Petrochemicals Synergies	2 d	22 - 23 November	Rueil	€1,470	EAV/SRP	73
Profitability Analysis of Downstream Investment Projects	3 d	16 - 18 May	Rueil	€2,000	EAV/PDP	74
Downstream Module	60 d	18 April - 13 July	Rueil	€12,550	EAV/DOM	75
Marketing & Sales of Lubricants	4 d		In-house course		EAV/MSL	76
<b>NEW</b> Supply Chain Management	5 d		In-house course		EAV/SCH	77
Finance & Management	Duration	Dates	Location	Tuition fee (H.T.)	Reference	Page
Financial Management of an International Oil & Gas Company	10 d	20 - 31 March	Rueil	€6,970	GIP/FMC	80
Price Risk Management in Energy Markets	3 d	17 - 19 October	Rueil	€2,450	GIP/PRM	81
Investment Profitability Studies in the Oil & Gas Industry	4 d	25 - 28 April	Rueil	€2,780	GIP/IPS	82
Upstream Contracts Audit	5 d	4 - 8 December	Rueil	€3,580	GIP/UCA	83
Governance of an E&P Company	5 d	27 November - 1 December	Rueil	€3,580	GIP/GEPC	84

Tuition fees include instruction and documentation as well as meals and beverage breaks



# Paris Energy Happenings

International Oil Summit .....	p. 24
International Gas, Renewables & Electricity Summit.....	p. 25

# International Oil Summit

Jointly organized with *IFP Énergies nouvelles & Petrostrategies*

## Purpose

The International Oil Summit, held in Paris since 1999, has been recognized as a large industry success. Each year, the summit brings together more than 200 participants, including ministers, prominent leaders from both national and international oil companies as well as journalists. The distinguished key speakers aim to open constructive discussions concerning a wide range of issues confronting the oil industry.

## Audience

This summit is intended for professionals in the oil business, consumers, government advisers, policy makers, academics, bankers, economists, lobbyists and consultants who seek to remain up to date with important industry information.

## Agenda

1 day

### FUTURE OF THE OIL INDUSTRY

The oil market. Competition between oil and other energy sources.  
The impact of technological advances on production and processing costs.  
Demand in the 21<sup>st</sup> century and the share of oil in the global energy market taking into consideration competition and environmental constraints.

### PRODUCING COUNTRIES: MEETING THE NEW CHALLENGES OF THE OIL SECTOR

With the participation of ministers from the main oil producing countries.

### NOC & IOC: COMPETITION OR COOPERATION?

Oil industry developments (mergers and acquisitions) and their impact on costs.  
Possible cooperation strategies between producing countries and international companies.  
OPEC/non-OPEC relations and producer/consumer dialogue.

### DEBATE: BETWEEN IOC, NOC & SERVICE COMPANIES IN THE CONTEXT OF LOW BARREL PRICES

How to improve profitability?  
Increasing the profitability of new projects and maintaining their start-up.  
Increasing the profitability of ongoing production (technical & organization aspects).



Reference: PEH/IOS

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Paris	27 April	27 April	€990

# International Gas, Renewables & Electricity Summit

Jointly organized with *IFP Énergies nouvelles & Petrostrategies*

## Purpose

The International Gas Summits, held in Paris since 1996, have recorded large successes. From 2016, the International Gas Summit becomes the International Gas, Renewables & Electricity Summit. Each conference brings together more than 200 participants, including ministers, prominent corporate leaders and journalists. Wide issues facing the natural gas, Renewables & Electricity industry around the world are open for debate following presentations from distinguished speakers. In 2017, as in the previous summits, CEOs of leading energy companies such as ENGIE (ex GDF Suez), Gazprom, Shell, Sonatrach, Statoil, Total, . . . , are invited to take part.

## Agenda

1 day

The International Gas, Renewables and Electricity Summit will discuss the challenges and issues of the gas industry, of the development of the electricity production, including the rapid surge of renewable sources, especially wind and solar.

Ministers, CEOs and executives will as usual exchange arguments in a lively debate.

## Audience

Professionals in the Gas Business, Consumers, Buyers, Power Generators, Regulators and Government Advisers/Policy Makers, Academics, Bankers, Economists, Lobbyists and Consultants.



Reference: PEH/IGS

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Paris	7 November	7 November	€990



# Energy Economics

Overview of Petroleum Economics .....	p. 28
Overview of Natural Gas Economics .....	p. 29
Liquefied Natural Gas Economics .....	p. 30
Unconventional Gas .....	p. 31
Unconventional Gas Economics .....	p. 32
Unconventional Oil .....	p. 33
Econometrics & Forecasting .....	p. 34
Strategic Management in International Oil & Gas Business .....	p. 35
E&P Companies in Changing Environment .....	p. 36
Assess Energy Efficiency & CO <sub>2</sub> Reduction .....	p. 37

# Overview of Petroleum Economics

## Purpose

This course aims to provide an overview of the petroleum sector so that participants may understand the oil operations and business, from upstream to downstream, and identify economic challenges.

## Audience

### Level: FOUNDATION

This course is geared towards people from the energy and petroleum sectors, industrial partners, business men and financiers, as well as public administration staff.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ describe the different types of energy resources (conventional, unconventional, renewable & fossil),
- ▶ interpret the evolution of the factors affecting the energy supply and demand (crude prices, technology, reserves, geopolitics, geography, environment, etc.),
- ▶ identify the actors of the energy scene and their strategic guidelines,
- ▶ describe the main steps of the upstream sector,
- ▶ distinguish the different types of oil contracts and explain the main economic criteria to evaluate a project,
- ▶ summarize the operation of the physical and financial oil markets,
- ▶ explain the evolution of the refining sector and of the petroleum product markets.

## Ways & Means

- ▶ Quiz and serious game on the fundamentals of the energy sector,
- ▶ Case study on the economic evaluation of an E&P project,
- ▶ Exercises on cargo transportation costs, hedging, and refining margins,
- ▶ Team games on factors affecting crude prices, the upstream sector, and oil trading.

## Prerequisites

No prerequisites for this course.



## Course Content

4 days

### INTERNATIONAL ENERGY SCENE

1 d

Energy resources: definition, characteristics, conversion factor.

Energy demand and supply: evolution factors (reserves, technology, etc.) and scenarios.

History of the oil industry.

Determinants impacting crude oil prices today.

Strategies of actors: producer and consumer countries, national, independent and international oil companies, international organizations (OPEC, IEA, etc.).

Financial and political stakes, geographical and environment constraints.

### UPSTREAM

1 d

Stages and technico-economic aspects of the Exploration-Production.

Reserve evaluation.

Economic criteria and evaluation method of an oil project.

Oil contracts and principle of the oil rent sharing.

### MIDSTREAM

1 d

Business practices and pricing.

Physical markets (spot, forward): operation, reporting agencies.

Introduction to incoterms.

Pricing a cargo, freight rates.

Financial markets (futures): operation, hedging.

### DOWNSTREAM

1 d

Refining processes and units.

Refining capacities, projects, strategies of actors.

Economic aspects of the refining sector: investments, costs and margins.

Environmental constraints, alternative fuels.

Petroleum product markets and marketing.

Reference: ENE/OPE Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	5 December	8 December	€2,490

This course is also available in French: ENE/EPE. Please contact us for more information.

# Overview of Natural Gas Economics

## Purpose

This training provides an overview of the economic and contractual aspects of the natural gas value chain, all the way from production and transport to marketing.

## Audience

### Level: FOUNDATION

This training is designed for professionals with experience in the oil industry who now need to broaden their understanding and knowledge of the natural gas business. Professionals from other sectors, such as banking or government, that require an understanding of the natural gas business to better assist their clients are also welcome to attend.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ evaluate the importance of natural gas in the world energy balance, and the strategies of the main industry actors,
- ▶ identify the outlets of natural gas and the new trends in gas industry,
- ▶ identify the main technical, economic and contractual features of the natural gas value chain, from the production well to the final consumer,
- ▶ explain the framework of liberalization of natural gas markets and its impact on gas contracts and prices.

## Ways & Means

- ▶ Quizzes.
- ▶ Exercises on the costs of gas infrastructures.
- ▶ Examples of contracts & calculations on quantities.
- ▶ Videos.

## Prerequisites

No prerequisites for this course.



## Course Content

4 days

### GLOBAL GAS SCENE

0.75 d

Importance of natural gas in the world energy balance.  
Outlets for natural gas.  
Reserves, production, development zones.  
International gas markets.  
Impact of unconventional gas on the world demand/supply and on gas prices.

### STRUCTURE & COSTS OF THE NATURAL GAS CHAIN

0.75 d

Description of the gas chain and associated costs.  
Gas treatment and transportation.  
Storage costs and distribution costs.  
Liquefied Natural Gas (LNG), FLNG, FSRU, small scale LNG.

### LONG-TERM NATURAL GAS & LNG CONTRACTS

1 d

Contractual framework of Exploration-Production.  
Structure and principles of a long-term contract.  
Principles of take-or-pay, netback, indexation and gas price formulas.  
Tolling agreements.

### SPOT, FORWARD & FINANCIAL MARKETS

0.5 d

Spot and forward natural gas markets.  
Why and how to access those markets?  
Prices in the different markets.  
Financial contracts, hedging strategies and examples.

### GAS MARKETING IN A LIBERALIZED MARKET

1 d

Drivers and concepts of liberalization.  
Principles of the EU gas directive, progress in various countries, take-or-pay issues.  
Role of the regulator, network development, transport, tariffs, etc.  
Contractual aspects between suppliers, transporters and distributors.

Reference: ENE/ONE Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	27 June	30 June	€2,690

This course is also available in French: ENE/EGN. Please contact us for more information.

# Liquefied Natural Gas Economics

## Purpose

This training provides an overview of the economic and contractual aspects of the LNG (Liquefied Natural Gas) value chain.

## Audience

### Level: FOUNDATION

This training is beneficial to professionals from the oil, gas or power industries or from the banking, insurance, and consulting sectors who need to understand LNG activities and their economic stakes.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ evaluate the economics of each part of the LNG value chain,
- ▶ analyze the basic structure of LNG contracts,
- ▶ identify the main LNG markets and their evolution,
- ▶ evaluate the profitability of investments in the LNG industry.

## Ways & Means

- ▶ Quizzes.
- ▶ Videos.
- ▶ Examples of contracts.
- ▶ Exercises on LNG contracts.

## Prerequisites

No prerequisites for this course.

## Course Content

4 days

### GLOBAL GAS SCENE & LNG MARKETS

1 d

Natural Gas uses, reserves, supply and demand.

New outlets for LNG (retail LNG).

International gas trades and importance of the LNG.

Evolution of the LNG trading and pricing.

Main LNG markets: America, Europe and Asia (Mature markets: Japan and South Korea & emerging markets: China, India, ...).

Risks for the different LNG actors: liquefaction, shipping, portfolio players, buyers, ...

Unconventional gas and its impact on LNG markets.

### TECHNICAL ASPECTS OF THE LNG CHAIN

1.5 d

LNG: properties and specifications.

Design of the different parts of the LNG chain.

Liquefaction plants, LNG tankers, regasification terminals.

Main projects of LNG terminals in the world and their exploitation.

Capital expenditures and operating costs.

Economic evaluation of a LNG project.

New trends in the LNG industry: FLNG, FSRU, small scale LNG.

### LNG CONTRACTS

1.5 d

Main features and important articles in LNG contracts.

LNG pricing: price formulae, indexation and net-back value.

Tolling agreements.

Impact of gas markets liberalization and third-party access to regasification terminals.

Coexistence between long-term contracts and short-term contracts.



Reference: ENE/LGE Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	19 September	22 September	€3,200

This course is also available in French: ENE/EGL. Please contact us for more information.

# Unconventional Gas

## Purpose

This course covers the risks and opportunities related to unconventional gas production.

## Audience

### Level: FOUNDATION

This program is targeted at people from the energy and industrial sectors and other professionals working in a context related to unconventional gas projects such as bankers, insurance agents and consultants.

## Learning Objectives

Upon completion of the course, the participants will be able to:

- ▶ understand the characteristics of shale, tight and coal bed methane,
- ▶ describe the steps, technologies and costs to develop an unconventional gas project,
- ▶ identify the value drivers of unconventional gas development,
- ▶ locate the unconventional gas resources and what are the situation and the challenges country per country,
- ▶ define the impact of unconventional gas on price formulae and the markets unbalance,
- ▶ identify the impact of unconventional gas on economies and industries,
- ▶ identify the main unconventional gas contractors and operators and their strategies,
- ▶ describe the environmental risks related to the production of unconventional gas,
- ▶ participate in the unconventional gas debate.

## Ways & Means

- ▶ Game on the unconventional exploration and production techniques,
- ▶ Videos,
- ▶ Unconventional gas project analysis: value drivers and cost differential,
- ▶ Debates on the industrial, environmental and economic stakes of the unconventional gas sector.

## Prerequisites

No prerequisites for this course.



## Course Content

3 days

### UNCONVENTIONAL GAS CHARACTERISTICS

0.2 d

Conventional and unconventional gas (shale gas, tight gas, coal bed methane, hydrates). Resources & reserves.

### UPSTREAM STEPS, TECHNICS & COSTS

0.8 d

Geology, Permit negotiation & Geophysics.  
Identification & site preparation.  
Directional & horizontal drilling.  
Hydraulic Fracture Stimulation & Micro-seismic Fracture Mapping.  
Production, processing & water management.  
Decommissioning.

### IDENTIFICATION OF VALUE DRIVERS

0.5 d

Production profile characteristics.  
Typical development & operational costs estimate.  
Fiscal impact.  
Impact of the learning curve on the profitability.

### SHALE, TIGHT GAS & CBM POTENTIAL DEVELOPMENTS WORLDWIDE

0.5 d

America (North and South), Europe, Africa, Middle East, Asia Pacific.

### ECONOMIC & STRATEGIC IMPACT OF UNCONVENTIONAL GAS REVOLUTION

0.5 d

Unconventional gas market (contractors and size of the market).  
Strategy of the O&G companies (small and big independents, IOC, NOC).  
Impact on the gas trades and gas prices.  
Indirect impacts on energy prices (oil price, coal price).  
Economic impact on industries and government budgets (focus on petrochemicals, refining, and exporting and importing economies).

### ENVIRONMENTAL IMPACT & ISSUES

0.5 d

Environmental issues  
Water consumption, water treatment & waste issues.  
Surface footprint & noise.  
Greenhouse gas emissions.  
Seismic events.

The protagonists of the debate & their communication strategy.

- The pro (O&G producers and contractors, organization, energy consumers).
- The cons (environmental & anti-globalization associations, renewable industry, some consumers).

Reference: ENE/UCG Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	16 May	18 May	€2,540

This course is also available in French: ENE/GNC. Please contact us for more information.

# Unconventional Gas Economics

Economics & Project Analysis

Purpose	Course Content	4 days
To make investment decision related to unconventional gas projects.	<b>UNCONVENTIONAL GAS CHARACTERISTICS</b> Conventional and unconventional gas (shale gas, tight gas, coal bed methane, hydrates). Resources & reserves.	0.2 d
<b>Audience</b>  Level: FOUNDATION People involved in unconventional gas project analysis.	<b>UPSTREAM STEPS, TECHNICS &amp; COSTS</b> Geology, permit negotiation & geophysics. Identification & site preparation. Directional & horizontal drilling. Hydraulic Fracture Stimulation & Micro-seismic Fracture Mapping. Decommissioning.	0.8 d
<b>Learning Objectives</b>  Upon completion of the course, the participants will be able to: <ul style="list-style-type: none"><li>▶ understand the characteristics of shale, tight and coal bed methane,</li><li>▶ describe the steps, technologies and costs to develop an unconventional gas project,</li><li>▶ understand the importance of the concept and calculation of net present value and internal rate of return in decision making,</li><li>▶ introduce to the economic evaluation of unconventional gas play,</li><li>▶ compare and evaluate unconventional gas developments,</li><li>▶ appreciate the impact of the learning curve on the profitability,</li><li>▶ locate the unconventional gas resources and what are the situation and the challenges country per country,</li><li>▶ define the impact of unconventional gas on price formulae and the markets unbalance,</li><li>▶ identify the impact of unconventional gas on economies and industries,</li><li>▶ identify the main unconventional gas contractors and operators and its strategy,</li><li>▶ describe the environmental risks related to the production of unconventional gas.</li></ul>	<b>ECONOMIC ANALYSIS &amp; INVESTMENT DECISION</b> Production profile characteristics (Arps Equation and EUR). Associated products value. Economic variables associated with shale gas developments (F&D, Drilling, Fracking, T&F, LOE). Fiscal impact (Concession, PSA). Economic Evaluation Criteria. Shale gas project cash flow analysis. Impact of the learning curve on the profitability. Hedging strategy (price, currency, toll fees). Financing issues & needs. Financing solutions (M&A, PE, MLP, F/FO). Introduction to risk analysis (sensitivity analysis, decision tree & Monte Carlo analysis).	2 d
<b>Ways &amp; Means</b>  <ul style="list-style-type: none"><li>▶ Game on the unconventional exploration and production techniques.</li><li>▶ Videos.</li><li>▶ Unconventional gas project analysis, sensitivity study and decision analysis.</li><li>▶ Hedging strategy.</li></ul>	<b>ECONOMIC &amp; STRATEGIC IMPACT OF UNCONVENTIONAL GAS REVOLUTION</b> Panorama of unconventional gas developments: North & Latin America, Europe, Africa & Middle East, Asia Pacific. Unconventional gas market (contractors and size of the market). Strategy of the O&G companies (small and big independents, IOC, NOC). Impact on the gas trades and gas price. Indirect impacts on energy prices (oil price, coal price). Economic impact on industries and government budgets (focus on petrochemicals, refining, and exporting and importing economies).	0.75 d
<b>Prerequisites</b>  No prerequisites for this course.	<b>ENVIRONMENTAL IMPACT &amp; ISSUES</b> Environmental issues Water consumption, water treatment & waste issues. Surface footprint & noise. Greenhouse gas emissions. Seismic events. The protagonists of the debate & their communication strategy The pro (O&G producers and contractors, organization, energy consumers). The cons (environmental & anti-globalization associations, renewable industry, some consumers).	0.25 d



# Unconventional Oil

## Purpose

To notice the different opportunities and challenges of unconventional oil production.

## Audience

### Level: FOUNDATION

Producers, refiners, contractors and other actors related to the unconventional oil projects (banks, insurance and consulting companies).

## Learning Objectives

Upon completion of the course, the participants will be able to:

- ▶ explain the exploration and production techniques of unconventional oil,
- ▶ locate the unconventional oil supply and to estimate its production costs,
- ▶ interpret the impact of unconventional oil on crude prices,
- ▶ describe the upgrading issues (location and syncrude properties) and environmental constraints,
- ▶ identify the financing specificities of an unconventional oil project.

## Ways & Means

- ▶ Game on the unconventional Exploration & Production fundamentals.
- ▶ Exercise on crude pricing and refining margin.
- ▶ Unconventional oil project analysis: cost differential and production techniques.
- ▶ Debates on the industrial, environmental and economic stakes of the unconventional oil sector.

## Prerequisites

No prerequisites for this course.

## Course Content

3 days

### EXPLORATION & PRODUCTION OF UNCONVENTIONAL OIL

1 d

Conventional and unconventional oil: definition and characteristics.

Focus on unconventional resources: shale oil/light tight oil, oil shale/kerogen oil, extra heavy oil, bitumen (tar sands).

Exploration and Production technics (geophysics, drilling, fluid injection, mining processes, etc.).

### UNCONVENTIONAL OIL SUPPLY & TREATMENT

1 d

Unconventional production at the global scale.

Oil treatment and upgrading technics.

Transportation.

Review of the projects and potential production areas: production costs and main players.

### UNCONVENTIONAL OIL PRODUCTION CHALLENGES

1 d

High production cost and continuous investment.

Fiscal terms.

Environmental risks and constraints (water treatment, landscape degradation, etc.).

Upgrading issues and impacts on the downstream sector: location (in-situ, consumption areas), syncrude quality.

Contribution of unconventional oil to the oil supply.

Strategy of the Oil & Gas companies.



Reference: ENE/UCO  Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	19 April	21 April	€2,540

# Econometrics & Forecasting

## Purpose

To be able to use econometric tools in order to determine correlations and adjustments between physical or economical series and to make forecasts and simulations.

## Audience

### Level: PROFICIENCY

Engineers, economists and financiers from all sectors.

## Learning Objectives

Upon completion of the course, the participants will be able to:

- ▶ use the main econometric techniques,
- ▶ perform an econometric estimation,
- ▶ develop models and make forecasts, in particular in the energy sector and on financial markets.

## Ways & Means

Applications performed on computer (statistical tests, development of econometric models, forecasting, simulation, highlighting cointegration and causality relationship, etc.) using Excel and Eviews.

## Prerequisites

Basic knowledge in the areas of statistics and Excel software.

## Course Content

5 days

### STATISTIC BASIS

0.5 d

Descriptive statistics (mean, median, standard-deviation, etc.), indices (Laspeyres, Paasche, Divisia).

Statistical tests (normality, student, Fisher).

*Application: energy data set (quantities, prices).*

### LINEAR REGRESSION MODELS & FORECASTING

1.5 d

Simple and multiple linear regression models, ordinary least square estimator, R2.

*Application: energy demand model.*

Statistical tests validating econometric models: autocorrelation (Durbin-Watson, Lagrangian multiplier), heteroscedasticity (White and Breusch-Pagan), multicollinearity (BKW).

Structural change on linear regression model (Chow test, Brown-Durbin & Evans test).

*Application: analysis of the substitution between oil, gas and electricity.*

Principle of forecasting with an econometric model (properties of the estimator, prediction interval).

*Application: forecasts on energy demand model.*

### TIME SERIES ANALYSIS & FORECASTING

1 d

Time series model.

Smoothing techniques for short run forecasts: extrapolation techniques (moving average, time series decomposition with trend and seasonal pattern).

*Application: monthly energy demand series (with a seasonal pattern), forecast over 12 month.*

ARIMA models (AutoRegressive Integrated Moving Average), tests assessing the stochastic processes (number of autoregressive and moving average lags, stationnarity).

*Application: ARIMA model simulations.*

### TIME SERIES RELATIONSHIP: COINTEGRATION & CAUSALITY

1 d

Introduction to cointegration techniques: unit root tests (Dickey-Fuller, Phillips-Perron, KPSS), Engle and Granger model, long term equilibrium, Error Correction Model (ECM).

Causality test.

*Application: cointegration techniques to Oil & Gas markets.*

Cointegration with multiple relationship: Johanson test (max. eigenvalue and Trace test) on a VAR (Vectorial AutoRegressive) model.

*Application: modeling the equilibrium between prices over several market places.*

Structural changes on cointegration model: long term and short term dynamic (Perron test, Gregory and Hansen test).

### CHANGES OF VOLATILITY ON ENERGY MARKET

1 d

ARCH model (AutoRegressive Conditional Heteroscedastic) and generalization.

*Application: modeling volatility changes in the short term dynamic and on the equilibrium of Oil & Gas markets.*



Reference: ENE/ECF Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	20 November	24 November	€3,260

This course is also available in French: ENE/ECP. Please contact us for more information.

# Strategic Management in International Oil & Gas Business

Essential Business Management Skills for Oil & Gas Professionals

## Purpose

The participants will participate actively as well in the various lectures they will have to cover the economics of the Oil & Gas value chain as well as the management tools used in the industry; putting everything back in perspective with their company's business.

## Audience

### Level: FOUNDATION

The course is designed for high potential executives with minimum of two years experience. It is suitable to both technical and non-technical professionals who seek to develop good business awareness and understanding of the Oil & Gas industry.

## Learning Objectives

Upon completion of the course, participants will have:

- ▶ seen the main economic, market, physical, environmental and political forces driving energy demand, supply, and prices,
- ▶ connected the key links and terms of the Oil & Gas industry, from the exploration well to the final products,
- ▶ understood the fundamental management tools and decision processes in an international Oil & Gas company,
- ▶ applied practical decisions and experienced the risk of doing business in the Oil & Gas industry on a worldwide scale through a computer "Strategic Management Game".

## Ways & Means

- ▶ This course is built on interactive presentations, exercises and team games.
- ▶ Working in competing teams, participants have to:
- ▶ Evaluate and anticipate the driving factors of oil prices through the "Oil price game".
- ▶ Rebuild the E&P chain of an offshore project.
- ▶ Take a quiz on natural gas business.
- ▶ Price a cargo of crude oil.
- ▶ Calculate refining margins and the main economic indicators.
- ▶ Evaluate the economic profitability of an oil field development, gas pipeline & LNG projects.
- ▶ Implement business decisions & evaluate its impact through the use of an Excel simulator "Strategic Management Game".

## Prerequisites

Participants need to be comfortable with the use of Microsoft excel.

## Course Content

5 days

### INTERNATIONAL OIL ENVIRONMENT

0.5 d

Energy demand and supply. Crude oil reserves and production.

History of the petroleum industry. Role of main actors: OPEC, NOCs, IOCs, INOCs, IEA.

Oil price evolution and long-term scenarios.

Present and future constraints of the Oil & Gas industry (alternative energies, investments, etc.).

### UPSTREAM ECONOMICS

0.5 d

Fundamental steps of the upstream business.

Economic aspects and costs, risks.

Understanding the E&P Value chain.

Legal and fiscal framework for exploration-production (concessions, production sharing contracts, service contracts).

### NATURAL GAS ECONOMICS

0.5 d

Natural gas reserves and production around the world.

Main gas markets; their structures and constraints.

Liquefied natural gas chain, economics and trade.

Long-term sales and purchase gas contracts. Take-or-pay provisions and gas price formulas.

### TRANSPORT & INTERNATIONAL OIL MARKETS

0.5 d

International trade and shipping of crude and products.

Various types of markets and contracts: long-term contracts, forward and spot markets.

*Case study: How to price & Hedge a cargo of crude oil?*

### REFINING ECONOMICS & PETROCHEMICALS

0.5 d

Basic technical aspects. Development in refining capacity.

Refining margins and costs.

Evolution of products specifications and structure of demand.

Inter-relationship between refining and petrochemicals.

Main petrochemical sectors; environmental and economic trends. Coping with economic cycles.

*Case study: working in teams, participants have to calculate refining margins and the main operating indicators.*

### PROJECT ECONOMICS & DECISION ANALYSIS TOOLS

1.5 d

Economic criteria for investment project evaluations (NPV, IRR, POT, etc.).

Global profitability analysis. Economic cost analysis.

Introduction to risk analysis. Risk management, financial and cost management.

*Case studies: participants have to evaluate the economic profitability of a gas pipeline project & LNG project.*

### STRATEGIC BUSINESS GAME

1 d

Introduction to strategy & financial management.

Introduction to the strategic game: participants are introduced to the use of strategic tools.

Communication & workshop

Participants analyze their respective situation (SWOT analysis) in each of the branches (upstream, refining, retail & petrochemical).

Participants have to implement their decisions & evaluate its impact through the use of an Excel simulator.

# E&P Companies in Changing Environment

## Purpose

This course provides an understanding of risks and mitigating strategies to adapt to a changing Oil & Gas environment.

## Audience

### Level: PROFICIENCY

Oil & Gas professionals with already a good understanding of petroleum markets.

## Learning Objectives

Upon completion of the course, the participants will be able to:

- ▶ identify the main economic, market, environmental and political forces driving Oil & Gas demand, supply, and prices,
- ▶ understand the different Oil & Gas prices scenario (including "Black Swan" scenario),
- ▶ analyze the impact of Oil & Gas prices on projects and areas,
- ▶ apprehend the evolution of E&P companies strategies in uncertain environment.

## Ways & Means

- ▶ Unconventional LTO project analysis & cost cutting simulation.
- ▶ Discussion on E&P strategies.

## Prerequisites

Basic knowledge in the areas of oil markets.

## Course Content

1 day

### HYDROCARBONS IN THE GLOBAL ENERGY MIX

Oil & gas in energy demand.

Efficiency and consumption: any pic demand in the horizon?

Oil & gas prices impact on petroleum demand.

### OIL & GAS SUPPLY (per area & types of resources): ECONOMICAL, FISCAL, GEOPOLITICAL, TECHNICAL & SOCIAL ISSUES

Oil & gas supply present status and short term prospects.

Contribution of "new resources" (conventional, LTO, tar sands, extra heavy oil, deep and ultra-deep).

Break-even and financial specifications of projects (Pay Out time, financial exposure, etc.).

Impact of the price collapse on the financials; rent sharing between governments and companies.

Beyond the prices, what are the geopolitical, technical and environmental risks?

### FUTURE PRICES & PROJECTS: AFTER THE STORM

Oil & gas prices scenarios (BP, EIA, EM, IEA, OPEC, etc.).

Black swan scenarios.

Key issues:

- Will OPEC lose control?
- New gas price mechanism?
- Will Brent and WTI gap narrow?
- How the financial markets will impact crude oil prices?
- What is the link between USD and crude oil?

### IN THE MIND OF E&P PLAYERS

E&P companies' strategy: being aligned with shareholders (private or public) & lenders.

Value creation: Economic decisions & economic assumptions.

Oil & gas E&P strategy in evolving environment:

- Portfolio management,
- Reorganization, outsourcing, Business Unit strategy, etc.
- Defensive mergers.
- Assets mutualisation and partnership.
- Shareholders satisfaction (dividend, share buyback, split).
- Cash management.
- New strategic developments.
- Cost cutting.



# NEW Assess Energy Efficiency & CO<sub>2</sub> Reduction

## Purpose

This course provides an understanding of the methods used to measure energy efficiency, renewable penetration and CO<sub>2</sub> reduction performances.

## Audience

### Level: PROFICIENCY

Managers and staffs of governments or other relevant agencies at the national, regional and local levels that work on sustainable development, energy efficiency, climate change, and renewables. Managers of companies in the energy sector impacted by energy efficiency and CO<sub>2</sub> reduction initiatives.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ understand national objectives on energy consumption, renewable energy efficiency and CO<sub>2</sub> abatement,
- ▶ explain basic methods used in measuring and benchmarking the progress achieved regarding energy saving and CO<sub>2</sub> reduction,
- ▶ apply those methods to evaluate the success of energy efficiency/CO<sub>2</sub> abatement programs.

## Ways & Means

- ▶ Enerdata is an independent consulting company, specialized in the energy and environmental sector.
- ▶ Case studies.

## Prerequisites

No prerequisites for this course.



## Course Content

2 days

### ENERGY CONSUMPTION & CO<sub>2</sub> EMISSIONS

0.5 d

Introduction: increasing government interest regarding energy consumption and energy efficiency.

Energy consumption measurements: levels of measurement and trends.

Official national and international quantitative targets on energy consumption.

*Case studies: monitoring official targets on consumption and renewables.*

CO<sub>2</sub> emissions related to fuel combustion: definition and calculation.

*Case studies on CO<sub>2</sub>.*

### MEASUREMENT & COMPARISON OF THE OVERALL ENERGY EFFICIENCY

0.5 d

Primary and final energy intensities: definition, calculation, interpretation and examples of national targets.

*Case studies.*

Sectoral and CO<sub>2</sub> intensities: intensity with industry and tertiary, electricity, CO<sub>2</sub>, elasticity to GDP.

International comparison of energy intensity levels: objectives, intensities at purchasing power parities.

Measuring the impact of structural changes on intensities: case of industry.

*Case studies: interpretation of intensity variations and structural changes.*

### ENERGY EFFICIENCY & ENERGY SAVINGS CALCULATION

0.5 d

Energy savings and energy efficiency targets: explaining the objectives, ways to set up energy savings/efficiency targets (baseline, savings in primary or final energy, etc.), examples of international and national targets, mandatory energy savings for energy producers (white certificates) or consumers (buildings, industry).

Introduction: top-down versus bottom-up approach of evaluation.

Top-down evaluation of energy efficiency and energy savings: methods and case studies.

Industry: benchmarking, measurement of savings.

Buildings (households and services): climate corrections, interpretation of differences between countries.

*Case studies: appliances, energy substitution, solar water heaters.*

Transport: different types of savings (behavior, technological).

*Case studies for cars and modal shift.*

Power sector: case of thermal and wind power.

Bottom-up approach: methods of measurement of energy savings linked to a programme.

*Case studies.*

Summary: Bottom-up versus top-down methods for the measurement of energy savings.

Evaluation of CO<sub>2</sub> savings.

Bottom-up method: case of a project on electricity production.

Top-down method: effects of substitution and energy savings.

Link to NAMAS.

### SYNTHESIS: THE ENERGY CONSUMPTION DRIVERS

0.5 d

Decomposition of electricity consumption variation (economic growth, energy savings, substitution, structural changes, ...).

Decomposition of the final energy consumption variation: role of various factors (economic growth, energy savings, structural changes, ...).

Decomposition of the primary energy consumption variation: role of various factors (electricity mix, penetration of electricity).

Drivers of CO<sub>2</sub> emissions variations.

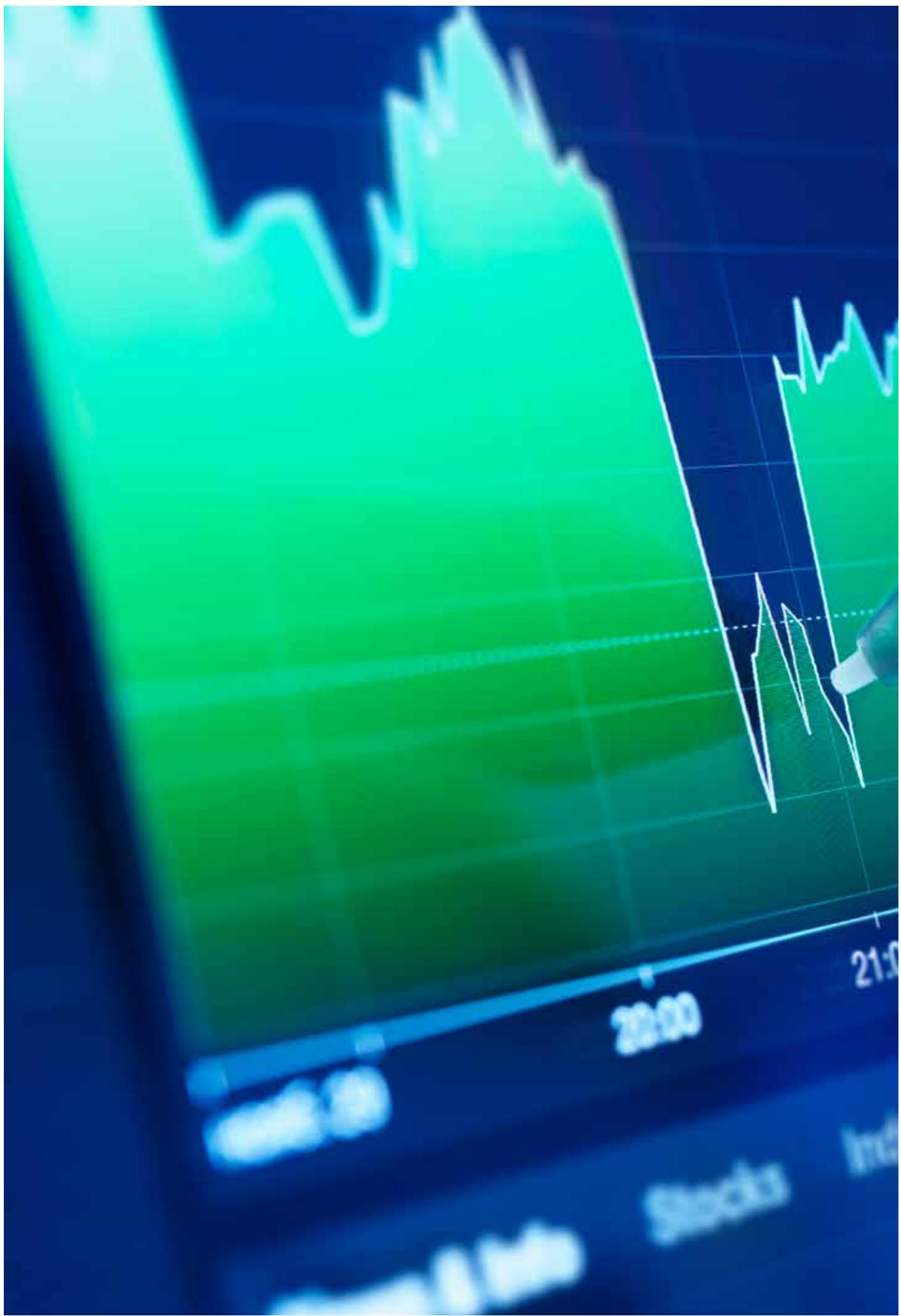
*Case studies (EU, Tunisia, France).*

Reference: ENE/AECO    Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	19 April	20 April	€2,650

This course is also available in French: ENE/EECO. Please contact us for more information.





# Upstream Economics

Upstream Economics & Management .....	p. 40
Economic Framework of Exploration-Production .....	p. 41
Contractual Framework of Exploration-Production .....	p. 42
Production Sharing & Joint Operating Agreements .....	p. 43
Economics & Risk Analysis of Upstream Projects .....	p. 44
Upstream Module .....	p. 45
Negotiation of Exploration-Production Contracts .....	p. 46
Practice of Exploration-Production Contracts Economic Modeling .....	p. 47
Operating under “Local Content” .....	p. 48
Oil Fields Unitization .....	p. 49
Upstream Auditing Certification .....	p. 50
Upstream Economics & Management Certification .....	p. 51
Exploration & Production Overview .....	p. 52
Introduction to Petroleum Engineering .....	p. 53
Fundamentals of Production .....	p. 54
Oil & Gas Field Processing .....	p. 55
Natural Gas .....	p. 56
Petroleum Engineering Certification .....	p. 57
LNG Processing Engineer Certification .....	p. 58
HSE Management .....	p. 59

# Upstream Economics & Management

## Purpose

This training aims to provide participants with a clear view of the contractual and economic framework of Exploration & Production in order to apprehend the tools for decision making, financial management and auditing.

## Audience

### Level: FOUNDATION

This course is designed for managers from the upstream sector who require a global picture of all the economic, financial and contractual aspects of exploration and production activities.

## Learning Objectives

Upon completion of this course, participants working in the upstream sector will be able to:

- ▶ evaluate all aspects of taxation and the contracts used,
- ▶ build advanced economic models for the economic evaluation of projects,
- ▶ analyze the economic results and conduct sensitivity analysis,
- ▶ incorporate the geological risks and uncertainties in the economic evaluation of projects,
- ▶ analyze the main corporate financial statements (profit/loss and balance sheets) issued by oil companies.

## Ways & Means

- ▶ Case studies simulated on computers.
- ▶ Development of an oil field (under concession and production sharing agreements).
- ▶ Acceleration of a production project with or without EOR.
- ▶ LNG plant project with specific financing.
- ▶ Gas pipeline project with specific financing.
- ▶ Impact of “ringfencing” and the state participation in the decision making process.
- ▶ Valuation of a decision to acquire information (seismic or drilling).
- ▶ Pricing of an exploration block.
- ▶ Analysis and construction of balance sheets, income statements and key financial statements of an Oil & Gas company.
- ▶ Examples of petroleum laws & fiscal regimes around the world (Northwestern Europe, North Africa, West Africa, Middle East, Asia-Pacific, etc.).

## Prerequisites

Participants need to be comfortable with Microsoft Excel.

## Course Content

15 days

### MODULE 1 – UPSTREAM ECONOMIC & CONTRACTUAL FRAMEWORK

#### Upstream economic environment

Economic development of the upstream sector.  
Various actors in Exploration-Production and their strategies. Oil markets and prices.  
Current exploration and production activities.  
Levels of investment.  
Examples of finding, development and production costs.

#### Contractual & fiscal framework of upstream projects

Concession and Production-sharing contracts: principles, examples of tax regimes and case studies.  
Risk-service contracts and technical assistance contracts.  
Objectives of a flexible and progressive tax system, flexible taxation terms.  
General structure of Exploration-Production contracts.  
Exploration phase: duration, commitments, surrender, data and information, etc.  
Appraisal phase: work program, gas provisions, commerciality, etc.  
Development phase: financing, State participation, budgets and development plans, unitization, etc.  
Production phase: work conduct and supervision, audit and accounting, financing, taxation, transportation and marketing of production, hydrocarbon price determination, etc.  
General terms & conditions: title transfer, force majeure, governing law and dispute resolution.  
Main legal provisions in a Joint Operating Agreement, and Farm in/Farm out agreement.

### MODULE 2 – UPSTREAM PROJECT ECONOMICS

#### Economic analysis of E&P projects

Cost of capital and discount rate, value creation.  
Economic criteria for project evaluation: net present value (NPV), internal rate of return (IRR), payback period, etc.  
Global profitability analysis, the impact of taxation and inflation on economic indicators.  
Specific method to Exploration & Production: shadow interest.  
Equity profitability analysis.

#### Risk analysis of E&P projects

Introduction to risk analysis and risk discount rate: sensitivity analysis, Spider and Tornado diagrams.  
Probability of success, economic risk analysis in oil exploration.  
Economic study of an exploration project using Min, Mode and Max scenarios.  
Impact of “ringfencing” and the state participation in the decision-making process.

### MODULE 3 – UPSTREAM ACCOUNTING & FINANCE

#### Upstream accounting & financial management

Statements of accounts for an Oil & Gas company, upstream specificities.  
Exploration: full cost, successful efforts, FAS 19.  
Reserves accounting: rules, FAS 69, control.  
Consolidation and Joint Venture accounting.  
Contract accounting, social accounting, group accounting.  
Accounting for concessions and PSCs: reserves, inventories, commitments, revenues.  
Norms: asset amortization, asset retirement obligations, value impairment test, etc.  
Reporting: purpose, obligations, financial communication.  
Analytical accounting. Cost management and control.  
Audit: general, fiscal, partners.  
Tax audit: recoverable costs, common costs, sole costs.

1 d

4 d

4 d

1 d

5 d

# Economic Framework of Exploration-Production

## Purpose

To allow the participants to get familiar with the use of decision-making tools in the field of E&P projects economics and financial analysis.

## Audience

### Level: FOUNDATION

Engineers and commercial staff who need to extend their understanding of the economic and financial aspects of the upstream sector.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ explain the economic, technical and fiscal aspects of E&P activities,
- ▶ evaluate the economic profitability of a simplified E&P project and assess its key sensitivity parameters,
- ▶ analyze the main corporate financial statements (Profit/Loss and Balance Sheet) issued by oil companies.

## Ways & Means

- ▶ Case studies simulated on computers.
- ▶ Development of an oil field (under concession and production sharing agreements).
- ▶ Acceleration of production project with or without EOR (Enhanced Oil Recovery).
- ▶ Valuation of a decision to acquire information (seismic or drilling).
- ▶ Pricing of an exploration block.
- ▶ Analysis and construction of balance sheets, income statements and key financial statements of an Oil & Gas company.

## Prerequisites

No prerequisites for this course.

## Course Content

5 days

### UPSTREAM ECONOMIC ENVIRONMENT

0.5 d

Economic development of the upstream sector.

Various actors in Exploration-Production and their strategies. Oil markets and prices.

Current Exploration and Production activities.

Levels of investment.

Examples of finding, development and production costs.

### CONTRACTUAL & FISCAL ENVIRONMENT

0.5 d

General principles of oil tax systems.

Legal framework: concessions agreements, production sharing contracts, service contracts.

Impact of various contractual and technical parameters.

Sharing of the economic rent between the State and Oil Companies. Economic flexibility.

Legal aspects of joint ventures.

Main legal provisions in a Joint Operating Agreement (JOA).

### ECONOMIC EVALUATION OF E&P PROJECTS

2 d

Cost of capital and discount rate, value creation.

Economic criteria for project evaluation: net present value (NPV), internal rate of return (IRR), payback period, etc.

Global profitability analysis, the impact of taxation and inflation on economic indicators.

*Case studies: development of an oil field (under concession and production sharing agreements).*

Introduction to risk analysis and risk discount rate: sensitivity analysis, Spider and Tornado diagrams.

Probability of success, economic risk analysis in oil exploration.

Economic study of an exploration project using Min, Mode and Max scenarios.

*Case studies: valuation of a decision to acquire information (seismic or drilling) and pricing of an exploration block.*

### UPSTREAM ACCOUNTING & FINANCE

2 d

Financing of Oil & Gas projects. Basic aspects of accounting and financial analysis.

Special mandatory reporting for oil companies.

Principles of consolidation.

Accounting of exploration expenditures, full cost, successful efforts.

Amortization and depreciation methods, special provisions (depletion allowance, ...).

Funds from operations, cash flows, financial equilibrium, working capital.

Financial statement, return on capital employed, return on equity, financial leverage.

Cost analysis and budgeting.

Exploration costs, finding costs, development costs, replacement costs, production costs.

Capital budgeting, authorizations for expenditure, planning and scheduling, budgeting exploration activities.

Joint venture accounting, accounting procedures, cash calls, joint venture audit.

*Case study: construction of an E&P company financial statements (simplified).*



Reference: EAM/EFEP Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	10 April	14 April	€3,590

This course is also available in French: EAM/CEEP. Please contact us for more information.

# Contractual Framework of Exploration & Production

## Purpose

To provide participants with an good understanding of the shape and dynamics of Oil & Gas Exploration-Production contracts.

## Audience

### Level: FOUNDATION

Professionals from the E&P sector and managers who need a practical understanding of all the concepts, principles and rules of Oil & Gas patrimonial contracts between host countries and international oil companies.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ identify the key issues and constraints in the contractual negotiations between host countries, NOCs and IOCs,
- ▶ categorize the different tax systems and contractual frameworks in existence,
- ▶ identify the main contractual and fiscal clauses of E&P contracts.

## Ways & Means

- ▶ Comparative reading on a HC law and a E&P contract.
- ▶ Exercises on rent sharing.
- ▶ Examples of petroleum laws & fiscal regimes around the world.

## Prerequisites

No prerequisites for this course.

## Course Content

3 days

### LEGAL FRAMEWORK

0.5 d

Objectives of actors, role of national oil companies, stakes in E&P.

Principles of rent sharing, property of hydrocarbons and State sovereignty.

Procedure for contracts awarding, different regimes and petroleum laws in the world.

Legal approach of petroleum law conception and implementation.

### CONTRACTUAL & FISCAL FRAMEWORK

1 d

Main evolutions in contractual relationships.

Concessions contracts: principles, State's revenues, examples of tax regimes and case studies.

Production-sharing contracts: principles, examples, of tax regimes and case studies.

Risk-service contracts, buy-back contracts and technical assistance contracts.

Fiscal and non-fiscal constraints.

Objectives of a flexible and progressive tax system.

*Exercise: comparison of concession and production sharing contracts.*

*Case study: comparative reading between a HC law and an E&P contract.*

### MAIN ARTICLES OF E&P CONTRACTS

1 d

General structure of patrimonial contracts.

Exploration phase: duration, commitments, surrender, data and information, etc.

Appraisal phase: work program, gas provisions, commerciality, etc.

Development phase: financing, State participation, budgets and development plans, unitization, etc.

Production phase: work conduct and supervision, audit and accounting, financing, taxation, transportation and marketing of production, hydrocarbon price determination, etc.

General terms & conditions: title transfer, sole risk, force majeure, local content, environmental protection, governing law and dispute resolution.

Conclusion: recent trends in oil taxation and patrimonial contracts.

### JOINT OPERATING AGREEMENTS

0.5 d

Main legal provisions in a Joint Operating Agreements (JOA).

Other agreements: JSBA (Joint Study & Bidding Agreement), unitization, farm-in/farm-out.



Reference: EAM/CFEP Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	16 May	18 May	€2,350

This course is also available in French: EAM/CCEP. Please contact us for more information.

# Production Sharing & Joint Operating Agreements

## Purpose

To provide participants with an in-depth understanding of the concepts, mechanisms and articles of Production Sharing and Joint Operating Agreement.

## Audience

### Level: PROFICIENCY

Exploration and production professionals, legal personnel entering the E&P scene, service companies managers and government employees.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ identify the main concepts, principles and articles of a Production Sharing Agreement which contractually binds petroleum companies with a ministry and/or a state oil company,
- ▶ evaluate the management of Petroleum Exploration and Production partnerships to successfully find and produce hydrocarbons,
- ▶ discuss the practical aspect of contracts: identifying key issues, understanding constraints and deadlines, getting familiar with the document.

## Ways & Means

- ▶ Case studies.
- ▶ Exercises on Production Sharing Contracts.
- ▶ Analysis of Joint Operating Agreements.
- ▶ Examples of petroleum laws & fiscal regimes around the world.

## Prerequisites

Basic knowledge of the contractual environment of E&P.

## Course Content

3 days

### PRODUCTION SHARING AGREEMENTS (PSA)

1 d

#### Introduction

- Origins, concept and scope of the PSA.
- Comparison of PSA to other contracts.
- Contents and structure of a typical PSA.

#### PSA mechanisms

- Cost oil, profit oil split, "Government Take".
- Bonuses, first tranche petroleum, tax holiday, cost recovery ceilings, uplifts, investment credits, government "back-in".
- Typical PSA cash flow forecast chart.

*Case study: comparative reading of a mining law and a PSC.*

### MAIN ARTICLES OF AN E&P CONTRACT

1 d

#### General structure of patrimonial contracts.

Exploration phase: duration, commitments, surrender, data and information, etc.

Appraisal phase: work program, gas provisions, commerciality, etc.

Development phase: financing, State participation, budgets and development plans, unitization, etc.

Production phase: work conduct and supervision, audit and accounting, financing, taxation, transportation and marketing of production, hydrocarbon price determination, etc.

General terms & conditions: title transfer, sole risk, force majeure, local content, environmental protection, governing law and dispute resolution.

Conclusion: Recent trends in oil taxation and patrimonial contracts.

Real-life examples from the news.

### JOINT OPERATING AGREEMENTS (JOA)

1 d

#### Introduction

- The purpose of the joint ventures and use of a JOA.

- The relationship of the JOA to other oil industry contracts.

- Structure of a JOA, definitions and terminologies.

The operator: appointment, rights and duties, liabilities, responsibilities, resignation, removal.

#### The partners

- Rights and duties, liabilities, responsibilities.

- The operating committee and sub committees.

- Establishment, powers and duties, notices, voting procedures, impact of voting, pass-mark.

*Case study: discussing the main articles of a selected Joint Operating Agreement (JOA).*



Reference: EAM/PSA Only available as an In-House course.

This course is also available in French: EAM/CPA. Please contact us for more information.

Contact: eco.rueil@ifptraining.com

# Economics & Risk Analysis of Upstream Projects

## Purpose

To provide participants with an in-depth understanding of the tools used in economic analysis and decision making tools within the upstream industry.

## Audience

### Level: PROFICIENCY

Engineers, economists and project managers who need to extend their understanding of the specific methods used to evaluate Exploration-Production projects.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ carry out investment profitability studies including all aspects of complex fiscal terms, inflation, and financing,
- ▶ analyze the economic results and carry out sensitivity analysis,
- ▶ incorporate the geological risk and uncertainty in the economic evaluation of Exploration & Production projects,
- ▶ develop advanced computer models for the study of Oil & Gas development projects.

## Ways & Means

- ▶ Case studies simulated on computers:
- ▶ Development of an oil field (under concession and production sharing agreements).
- ▶ Acceleration of production project with or without EOR (Enhanced Oil Recovery).
- ▶ Impact of "ringfencing" and the state participation in the decision-making process.
- ▶ Valuation of a decision to acquire information (seismic or drilling).
- ▶ Pricing of an exploration bloc.

## Prerequisites

Participants need to be comfortable with the use of Microsoft excel.



## Course Content

5 days

### ECONOMIC & CONTRACTUAL FRAMEWORK OF E&P

0.5 d

Various phases of Exploration-Production.  
Technical cost, evolution of the economic environment.  
Petroleum Exploration and Production contracts.  
Concessions, production sharing contracts, service contracts.  
Sharing of the economic rent, economic flexibility in petroleum contracts.  
Economic clauses.

### INVESTMENT PROFITABILITY STUDIES

2 d

Cost of capital and discount rate, value creation.  
Economic criteria for project evaluation: net present value (NPV), internal rate of return (IRR), payback period, etc.  
Global profitability analysis, the impact of taxation and inflation on economic indicators.  
Specific method to Exploration and Production: shadow interest.  
Case studies: development of an oil field (under concession and production sharing agreements).  
Introduction to risk analysis and risk discount rate: sensitivity analysis, Spider and Tornado diagrams.  
Impact of "ringfencing" and the state participation in the decision-making process.

### RISK ANALYSIS OF E&P PROJECTS

1.5 d

Probability of success, analysis of economic risk in oil exploration.  
Evaluation of exploration projects and decision trees.  
Farm in/Farm out.  
Risked and unrisked economics.  
Case study: economic study of an oil project including Min, Mode and Max scenarios.  
Evaluation of development projects.  
Economic risk associated with a marginal development.  
Decision trees and subjective probabilities, decision theory.

### PORTFOLIO MANAGEMENT

1 d

Components and determinants of asset valuation at various stages of maturity: exploration and appraisal, development, production.  
Review of methodologies and processes, probabilistic analysis.  
Asset aggregation and portfolio optimization, tools of choice for comparing expected results and budget efficiencies.  
Conclusions, what works and what doesn't.  
Contribution of risk analysis and management to successful exploration.

Reference: EAM/ERA   Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	2 October	6 October	€3,700

This course is also available in French: EAM/EAR. Please contact us for more information.

# Upstream Module

## Purpose

To gain an understanding of the upstream petroleum sector in its technical, economic and financial dimensions (main technical mechanisms, key economic data and characteristics, management tools, etc.).

## Audience

Recently hired professionals, preferably with an engineering background, about to take up a position in upstream petroleum activities.  
Staff from other petroleum sectors (refining, chemicals, etc.) taking up an upstream managerial position or from government agencies with responsibilities for petroleum matters will also benefit from this course.

## Ways & Means

- ▶ Case studies.
- ▶ Statistical data.

## Prerequisites

No prerequisites for this course.

## More info

This module is a part of a 16-month master degree program, Petroleum Economics and Management, run by IFP School

## Course Content

60 days

### PRODUCTION & RESERVOIR ENGINEERING

12 d

This part of the course covers the basic techniques used in exploration, development and production. This will enable the participants to communicate with specialists in this field, understand and estimate the validity of the technical data on which economic analyses are based.

### GLOBAL ENERGY OUTLOOK

10 d

Energy geopolitics.  
Energy issues in the context of policy.  
Financial aspects of the petroleum industry.  
Evolution of the oil industry.

### UPSTREAM MANAGEMENT

11 d

Economic aspects of Oil & Gas Exploration-Production.  
Legal and fiscal aspects.  
Project financing.

### EVALUATION OF PROJECTS

12 d

Economic criteria: discounted cash flow, Internal Rate of Return, profitability index.  
Field development case study.  
Equivalent cost and long-term marginal cost.  
Portfolio management.

### FINANCE & ACCOUNTING

10 d

Principles of accounting: case of Oil & Gas companies.  
The balance sheet and the income statement and notes.  
Financial analysis.  
Market value, Price Earnings Ratio.  
Statement of cash flow.  
Introduction to cost accounting and management control.

### EFFICIENCY ANALYSIS OF INDUSTRIAL FIRMS

5 d

Production frontier and economic performances of firms.  
Deterministic, stochastic parametric and non-parametric models.



Reference: EAM/UPM Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	3 January	7 April	€12,980

# Negotiation of Exploration-Production Contracts

## Purpose

To have an overview of the EP patrimonial contract negotiation and to develop or deepen a skill in negotiating, using rigorous methodology and innovative approach.

## Audience

### Level: PROFICIENCY

People who could participate in one or more stages of an EP contract negotiation: negotiators, project managers, explorers, engineers, lawyers, economists, advisors, managers from the public sector related to the energy sector and representatives of national companies.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ describe the different ways to access acreage,
- ▶ use a rigorous methodology and innovative approach for upstream contracts negotiation,
- ▶ make an objective and comprehensive report to their management and anticipate objections.

## Ways & Means

Simulation of a negotiation (role play where each stakeholder is played by a different team) allowing real-life negotiation case.

## Prerequisites

Basic knowledge of the contractual environment of E&P.

## Course Content

4 days

### REMINDER OF CONTRACTUAL & FISCAL FRAMEWORK OF EXPLORATION-PRODUCTION

0.5 d

Concession, Production Sharing Agreement, Service Contracts.

Analysis of the contract contents' analysis.

Distribution of the different items into homogeneous "bundles": clauses related to the exploration stage, clauses conducting operations, clauses related to economic and tax calculations, to pure legal issues, to financial terms, etc.

Important clauses of a contract to prepare a negotiation.

### REMINDER OF ECONOMIC EVALUATION OF E&P PROJECTS

0.5 d

Cost of capital and discount rate, value creation.

Economic criteria for project evaluation: net present value (NPV), internal rate of return (IRR), payback period, etc. Global profitability analysis, the impact of taxation and inflation on economic indicators.

### NEGOTIATION SKILLS

0.5 d

Negotiation principles: methodology and techniques.

Preparation for negotiating: principles, economic reminders, technical reminders (reserves, etc.).

### ROLE PLAY

2.5 d

Case study preparation per team (Joint Venture: JV, State).

Preparation for the first round of negotiation (contact and consultation).

First simulation and debriefing, updating the negotiation plan.

Preparation for the second round of negotiation (confrontation and early conciliation).

Second simulation and debriefing, updating the negotiation plan.

Preparation for the third round of negotiation (construction of the agreement and conclusion).

Third simulation and debriefing.

Preparation of the report to the management and presentation.



Reference: EAM/EPCN Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	28 March	31 March	€4,040

This course is also available in French: EAM/CNEP. Please contact us for more information.

# Practice of Exploration-Production Contracts Economic Modeling

## Purpose

To provide a practical understanding of the economic modeling of Oil & Gas field development project as well as exploration projects.  
A number of computer case studies will be treated all along the course to apply the principles that are presented succinctly, which makes this course a very practical one.

## Audience

### Level: PROFICIENCY

Managers and executives involved in Exploration-Production activities who need to acquire a deep understanding of fiscal modeling for project evaluation.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ explain the critical aspects of taxation and upstream contracts,
- ▶ build advanced economic models for the economic evaluation of Exploration-Production projects,
- ▶ analyze the economic results and carry out sensitivity analysis,
- ▶ incorporate the geological risk and uncertainty in the economic evaluation of E&P projects.

## Ways & Means

Case studies simulated on computers.

## Prerequisites

Participants need to be comfortable with the use of Microsoft Excel.

## Course Content

4 days

### CONTRACTUAL & FISCAL FRAMEWORK OF EXPLORATION-PRODUCTION

0.5 d

Overview of E&P activities, exploration, development and production costs.  
General principles of oil taxation.  
Concession contracts, production sharing contracts and service contracts.  
Principles of rent sharing between States and oil companies.  
*Case studies: examples of contracts.*

### OIL CONTRACT MODELING

2.5 d

Cost of capital and discount rate, value creation.  
Economic criteria for project evaluation: net present value (NPV), internal rate of return (IRR), payback period, etc.  
Global profitability analysis, the impact of taxation and inflation on economic indicators.  
Specific method to Exploration and Production: shadow interest.  
Case studies: development of an oil field (under concession and production sharing agreements).  
Equity profitability analysis.  
*Case studies: LNG project and gas pipeline project with specific financing.*

### RISK ANALYSIS OF EXPLORATION-PRODUCTION PROJECTS

1 d

Introduction to risk analysis and risk discount rate: sensitivity analysis, Spider and Tornado diagrams.  
Probability of success, methodology of decision tree analysis.  
Analysis of economic risk in exploration.  
Typical problems with uncertainties:  
Impact of ringfencing and State participation on the exploration decision process.  
Farm in/farm out, cost and value of information.  
Portfolio management for E&P projects.

### CASE STUDIES

Development of an oil field (under concession and production sharing agreements).  
Acceleration of production project with or without EOR (Enhanced Oil Recovery).  
LNG plant project with specific financing.  
Impact of "ringfencing" and the state participation in the decision-making process.  
Valuation of a decision to acquire information (seismic or drilling).  
Pricing of an exploration bloc.



Reference: EAM/PCM Only available as an In-House course.

This course is also available in French: EAM/PMC. Please contact us for more information.

Contact: eco.rueil@ifptraining.com

# NEW Operating under “Local Content”

## Purpose

To master the implications of Local Content provisions over the execution of an oil field development project, mainly in terms of procurement and personnel management.

## Audience

### Level: PROFICIENCY

Managers from the Oil & Gas public sector (NOCs, regulation authorities, ministries) or from IOCs having to deal or operate under a “Local Content” environment and contractual provisions.

## Learning Objectives

Upon completing the course, participants will be able to:

- ▶ identify the key-factors in the Local Content provisions applicable to a given contractual context, and assess their impact over the execution of an oil field development project,
- ▶ participate in the elaboration of a Local Content Management Plan,
- ▶ take part in a procurement contract tendering, negotiation and follow-up,
- ▶ take into account the impacts of LC provisions on workforce management.

## Ways & Means

- ▶ Course delivered by experts in the field of Local Content management in the Oil & Gas business.
- ▶ Practical case-study on a procurement contract.

## Prerequisites

Bachelor degree with a 5-year experience minimum at a management level in the fields of engineering, law, finance or economics in the upstream Oil & Gas industry; a good knowledge of the various project phases of an oil field development would be a plus.



## Course Content

3 days

### WHAT IS “LOCAL CONTENT”?

0.5 d

Context and current overview.

Typology of Local Content provisions applicable in the Oil & Gas business: goods and services, workforce, know-how and technology transfer.

Challenges and opportunities.

### THE LOCAL CONTENT MANAGEMENT PLAN (LCMP)

1 d

Contractual strategy.

Key-factor and associated risks.

Setting up and management of a LCMP.

### CONSEQUENCES OF LC PROVISIONS ON THE EXECUTION OF A PROCUREMENT CONTRACT

1 d

Contractual strategy including impact on Oil & Gas contracts.

Tendering process.

Recommendation & awarding.

Execution - Control.

Links with maintenance and exploitation.

### IMPACT OF LC PROVISIONS ON WORKFORCE MANAGEMENT

0.5 d

Employment.

Training and education.

Reference: EAM/OLC Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	18 December	20 December	€2,980

This course is also available in French: EAM/CLC. Please contact us for more information.

# NEW Oil Fields Unitization

## Purpose

To provide the participants with a comprehensive overview of the various parameters at stake in an oil field unitization project using real-case examples, in order for them to be able to take part in negotiations for oil field unitization contracts.

## Audience

### Level: PROFICIENCY

Managers from the public and the private sector with a minimum 5-year experience in technical or functional positions in the upstream Oil & Gas sector, having to deal with unitization cases or projects.

## Learning Objectives

Upon completing the course, participants

will be able to:

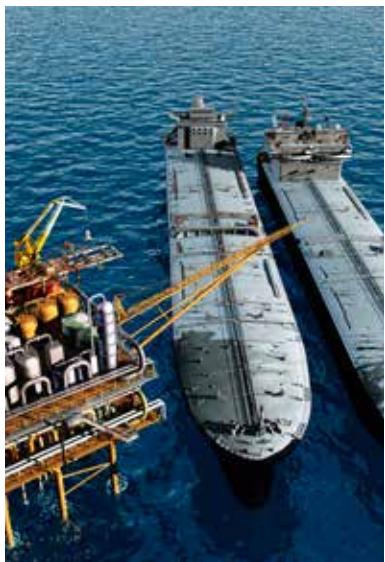
- ▶ explain the various factors at stake in the case of an unitization project, both on a national perspective (cross permit) and a transnational perspective (cross country),
- ▶ have a critical approach to the main provisions at stake in a unitization contract,
- ▶ choose the best suitable type of contract.
- ▶ take part in a negotiation team for unitization.

## Ways & Means

- ▶ Real-case studies.
- ▶ Feedbacks from experts in the field of unitization.

## Prerequisites

Basic knowledge of the contractual framework of E&P and its main provisions.



## Course Content

3 days

### INTRODUCTION

0.25 d

Context - Stakes.

Overview of current unitized oil developments.

### RESERVES DEVELOPMENT UNDER A UNITIZATION PROJECT

0.25 d

Principles.

Stakes and key factors.

Consequences in terms of development schemes.

### UNITIZATION IMPLICATIONS

0.5 d

Political aspects.

Contractual aspects.

Economic aspects.

Fiscal aspects.

### STRUCTURE OF AN UNITIZATION CONTRACT

1 d

Main provisions.

Cross country case:

The boundary question.

Various types of contracts: Unitization, Commercial agreement, Joint Development Area.

Study case based on real-case examples.

### CASE STUDIES BASED ON RECENT UNITIZED DEVELOPMENT CASES

1 d

Reference: EAM/UNITZ Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	6 December	8 December	€2,980

This course is also available in French: EAM/UNIT. Please contact us for more information.

Advanced Certificate

**NEW Upstream Auditing Certification**

This course is designed to master the framework, principles, objectives, methodology, roll-out and follow-up of various upstream audits: petroleum contract auditing, JOA auditing as well as petroleum aspects of internal auditing.

**Audience****Level: PROFICIENCY**

This course is intended for managers from the Oil and Gas public (NOCs, ministries, regulation authorities, ...) and private sectors who deal with different types of petroleum auditing missions (petroleum contract auditing, JOA auditing, petroleum aspects of internal auditing) from the preparation phase to the roll-out and follow-up phases.

**Ways & Means**

Modules are delivered by upstream auditing professionals. The evaluation process includes a mock case preparation, roll-out and follow-up of an audit.

**Learning Objectives**

Upon completion of the Upstream Auditing Certification, participants will be able to:

- ▶ identify the risk-zones and key factors to audit,
- ▶ take part in an audit, following specifications and schedules,
- ▶ write recommendations and exceptions,
- ▶ propose recommendations for strategic and/or organizational choices.

**Course Content**

10 days

<b>CONTRACTUAL &amp; ACCOUNTING FRAMEWORK OF E&amp;P OPERATIONS</b>	2.5 d	<b>SPECIFICITIES OF PETROLEUM CONTRACT AUDITING</b>	0.5 d
Petroleum Contracts Fundamentals. Accounting Principles of Upstream Operations.			
<b>UPSTREAM AUDITING CONTEXT</b>	2 d	<b>SPECIFICITIES OF JOA AUDITING</b>	0.5 d
Typology: Petroleum contracts auditing - JOAs auditing - Petroleum aspects of internal auditing. Auditor Qualifications and Professional Conduct Rules. Auditing Norms. Tools and Techniques.		Internal Control and Budgetary Procedures.	
<b>UPSTREAM COST AUDITING (recoverable or shared)</b>	2 d	<b>AUDIT MANAGEMENT</b>	1 d
Cost Items Analysis. Cost Accounting Exercises.		Preparation, Roll-Out and Follow-Up.	
		<b>GOVERNANCE &amp; FINANCIAL SECURITY</b>	0.5 d

**Prerequisites**

Participants with a Bachelor's degree in Engineering or Business with 5 years of management experience in the Oil & Gas industry are ideal candidates. In addition, fundamental knowledge of financial (general accounting, financial statements, financial accounting) and upstream petroleum contracts is required and will be assessed through a preliminary test.

**Why an IFP Training Certification?**

- ▶ An international recognition of your competencies.
- ▶ An Advanced Certificate delivered.
- ▶ An expertise confirmed in Upstream Auditing Certification.
- ▶ Ready-to-use skills.

**More info**

\* Duration includes one day of assessment.

Graduate Certificate

**NEW**

# Upstream Economics & Management Certification



This certifying training is part of a professional carrier development to managerial positions in exploration & production business, requiring specific skills in economics, contracts, taxation, finance, auditing and project management.

The assessment system is made up of two elements:

- An entry assessment, covering all topics treated during the training in order to measure the progress of the candidates and does not validate any modules.
- In order to sanction the certification, at the end of each module from 1 to 12, participants must pass written/oral exams, lasting one hour and a half.

## Ways & Means

Case studies simulated on computers:

- Development of an oil field (under concession and production sharing agreements).
- Acceleration of production project with or without EOR (Enhanced Oil Recovery).
- LNG plant project with specific financing.
- Impact of "ringfencing" and the state participation in the decision-making process.
- Valuation of a decision to acquire information (seismic or drilling).
- Pricing of an exploration bloc.
- Development of a shale gas field.
- Analyze the main corporate financial statements (Profit/Loss and Balance Sheet) issued by oil companies.
- Cost estimation of Exploration & Production projects.

## Learning Objectives

Upon completion of the course, participants will be able to:

- evaluate all aspects of taxation and contracts for upstream assets,
- develop negotiation skills in petroleum contracts,
- build advanced economic models for evaluating Exploration & Production projects,
- incorporate the geological risk and uncertainty in the economic evaluation of E&P projects,
- identify the value drivers of an unconventional gas development,
- interpret the different financial statements (income statement and balance sheet) published by oil companies,
- prepare and conduct a contractual audit,
- undertake a project cost estimation,
- effectively manage the project: engineering studies, procurement, construction & commissioning.

## Course Content

60 days

### UPSTREAM ECONOMICS

#### Module 1: Overview of Oil & Gas value chain

5 d

International energy scene.

Upstream economics.

Oil trading.

Downstream economics.

#### Module 2: Introduction to petroleum engineering

5 d

Reservoir engineering.

Well intervention.

Surface facilities.

#### Module 3: Contractual & fiscal framework of E&P activities

5 d

Legal framework.

Contractual and fiscal framework.

Main clauses of petroleum contracts.

#### Module 4: JOA & negotiation of E&P patrimonial contracts

5 d

Association agreements.

Methodology of negotiation.

Simulation: negotiating a PSC.

#### Module 5: Natural gas chain economics

5 d

Natural gas scene.

Structure and costs of natural gas chain.

Long-term gas contracts and LNG.

Different gas markets and strategies of actors.

Gas spot markets and futures.

#### Module 6: Estimation & cost control

5 d

Context of upstream projects.

Project cost estimation methodology.

Cost control.

### MANAGEMENT OF UPSTREAM ASSETS

#### Module 7: Economic evaluation of Exploration & Production projects

5 d

Economic criteria. Economic costs analysis. Equity profitability analysis and project funding. Risk analysis of Exploration-Production projects.

#### Module 8: Unconventional gas economics

5 d

Non conventional gas properties. Technical and economical aspects unconventional gas. Unconventional gas project economics. Strategic and economic impacts of unconventional gas projects.

#### Module 9: Project management

5 d

Introduction to preliminary studies. Feed or basic engineering studies. Project control and administration. HSE and quality management. Detail studies and procurement. Construction.

#### Module 10: Upstream accounting & financial management

5 d

Accounting standards. Consolidated financial statements. Reporting (board). Financial analysis. Introduction to audit and financial reporting.

#### Module 11: Upstream contracts audits

5 d

Contractual accounting. Association auditing. Government auditing. Implementing a contractual auditing.

#### Module 12: Hunting for oil (simulation game of E&P chain)

5 d

The Hunting For Oil™ (HFO™) course presents a practical overview of the mostly used techniques in of the Upstream Oil & Gas industry, from prospect exploration to field development and production.

Participants will learn to select and acquire license blocks, use seismic data, plan drilling activities, develop their field by analyzing technical aspects, and manage the time line, the budget and other critical factors related to field development.

## Prerequisites

Are allowed to take part to this certified training only applicants having:

- A Master's degree or equivalent in engineering, economics, finance or legal with minimum 2 years working experience.
  - An engineering degree with a minimum of 2 years working experience.
  - A Bachelor's degree with minimum of 5 years working experience.
- Applicants must provide proof validating these prerequisites, eg (copy of engineering degree, Master, Bachelor Degree or equivalent).

## Why an IFP Training Certification?

- An international recognition of your competencies.
- A Graduate Certificate delivered.
- An expertise confirmed in Upstream Economics & Management.
- Ready-to-use skills.

# Exploration & Production Overview

## Purpose

This course provides a complete overview of the techniques, achievements and challenges of the Exploration-Production industry: Geosciences, Reservoir Engineering, Drilling and Well Completion, Surface Facilities, Onshore and Offshore Production.

## Audience

### Level: DISCOVERY

All Professionals within the petroleum industry (commercial, legal, financial, human resources and support entities) or related sectors including Ministry of Energy professionals, who need of a general knowledge about the oil and gas upstream sector.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ understand the various phases of oil and gas exploration and production,
- ▶ understand the contribution of all experts and technologies involved in this sector,
- ▶ understand the E&P value chain from prospect to market,
- ▶ learn the vocabulary needed to attend E&P project technical meetings.

## Ways & Means

- ▶ Interactive animation by E&P senior experienced lecturers.
- ▶ Use of several illustrations: videos, rock samples, tools, effluents, ...
- ▶ Various examples.

## Prerequisites

No prerequisites for this course.

## More info

Other training duration availability on request

## Course Content

5 days

### INTRODUCTION

Welcome, introduction to exploration & production.

1 d

### GEOSCIENCES

Exploration tools: geology

Structural geology. Rocks and sedimentary basins.

From hydrocarbons to reservoir, well logging.

Exploration tools: geophysics

Principles, acquisition, interpretation.

Reservoir engineering

From physical interpretation to reservoir modeling.

Evaluation of the reserves, well test, drainage mechanisms.

Different types of effluent and their behavior.

### DRILLING & WELL COMPLETION

Drilling

Well architecture, drilling rig functions, drilling techniques and operation.

Offshore drilling rigs.

Well Completion

Reservoir/wellbore interface, artificial lift techniques.

Well equipment and well intervention.

### FIELD PROCESSING - SURFACE FACILITIES

Field processing of well effluent

Gathering network, effluent processing, metering and export.

Offshore installations

Fixed and floating production structures.

Deep offshore technology.

1 d

### FIELD DEVELOPMENT & DECISION MAKING PROCESS

Field development process. Oil & Gas project phases.

Project profitability evaluation and contracts.

Fundamentals of oil & gas Project Management.

1 d

### THE FUTURE

The new challenges for the oil & gas industry.

New energies.

Environmental aspects.

1 d



Reference: GEN/DECOUVEP Can be organized as an In-House course.

Contact: [exp.rueil@ifptraining.com](mailto:exp.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	25 September	29 September	€3,560
Rueil	11 December	15 December	€3,560

This course is also available in French: GEN/DECOUVERTE. Please contact us for more information.

# Introduction to Petroleum Engineering

## Purpose

This course provides a complete overview of petroleum engineering covering primary issues of reservoir, drilling, completion, and surface production.

## Audience

### Level: DISCOVERY

Professionals in technical, commercial, legal, financial or human resources departments, within the petroleum industry or related sectors, who need a general knowledge in petroleum engineering.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ learn about major issues in petroleum engineering,
- ▶ understand the various operations carried out during field development, from drilling to surface treatment,
- ▶ learn the vocabulary needed to communicate with E&P professionals.

## Ways & Means

- ▶ Interactive animation by E&P senior experienced lecturers.
- ▶ All efforts are made to organize, during this course, visits to a drilling site and to a production site.
- ▶ Should a scheduled site visit have to be cancelled, for reasons beyond IFP Training's control, and no alternative can be found in time, an illustration will be discussed in class using videos.

## Prerequisites

No prerequisites for this course.

## More info

Kindly refer to the following complementary courses which might be of interest:  
 "Introduction to Reservoir Engineering" (E-300); "Drilling Fundamentals" (E-410); "Well Completion and Servicing" (E-411); "Oil & Gas Field Processing" (E-540).



## Course Content

5 days

### RESERVOIR ENGINEERING

1 d

Geologic traps.  
 Rock and fluids properties.  
 Logging and well-test evaluation.  
 Drainage mechanisms.  
 Improved oil recovery.

### WELL

2.25 d

Drilling:  
 Oil and gas exploration organization.  
 Well design.  
 Drilling rig: functions hoisting, rotations, pumping, safety, ...  
 Drilling operations: casing, cement job, fishing, D.S.T.

#### Downhole production/Completion:

Completion design.  
 Global approach of flow capacity.  
 Reservoir-wellbore interface.  
 Well stimulation.  
 Well equipment and maintenance.  
 Chronology of a completion operation.

#### Offshore wells:

Selection of the rig type: jack-up, semi, ...  
 Design and specific equipment.

### OIL & GAS PROCESSING FACILITIES

1.75 d

Different objectives of processing field plants.  
 Gathering system, hydrate inhibition.  
 Crude oil treatment: oil and gas separation, crude oil dehydration and desalting processes.  
 Gas processing: dehydration, sweetening, NGL recovery processes.  
 Offshore production: metering and shipment.  
 Visit of a production site (if available).

Reference: GEN/INFPGE Can be organized as an In-House course.

Contact: [fp.pau@ifptraining.com](mailto:fp.pau@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	27 February	3 March	€3,580
Rueil	4 December	8 December	€3,580

This course is also available in French: GEN/INFPGF. Please contact us for more information.

# Fundamentals of Production

## Purpose

This course provides an introduction to oil and gas production, along with a glossary of terms, covering fundamentals of technology, chain structure from well to export terminal, skills and job positions involved in operating production facilities.

## Audience

### Level: DISCOVERY

Non-technical staff or technical professionals not directly involved in hydrocarbons production (managers, executives, technicians, staff of human resources, finance of projects departments, ...).

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ understand the different phases of the oil and gas production process,
- ▶ grasp the specific issues of offshore oil and gas production,
- ▶ understand organizations, skills and job positions involved in operating production facilities,
- ▶ acquire a complete view of the oil and gas production chain, stretching over technical, business and economic issues.

## Ways & Means

- ▶ Course delivered by industry specialists.
- ▶ Numerous illustrations and case studies.

## Prerequisites

No prerequisites for this course.

## Course Content

2 days

### THE OIL & GAS CHAIN: PRODUCTION POSITION

0.5 d

Positioning of the production in the value E&P chain.

World Primary production.

Issues and technical constraints:

Conventional resources.

Unconventional resources.

Job descriptions and skills for production activities.

### ONSHORE & OFFSHORE PRODUCTION

0.5 d

Technical specifications, operating modes.

Operating patterns and mapping fields.

Technical architectures.

Organization (remote site, extreme conditions, manning, shift, ...).

Case studies: FPSO, wet gas field (onshore), oil fields operated with reinjection, remote control room, early production facilities, ...

### FROM WELL TO EXPORT POINT

1 d

From reservoir to wellhead: hydrocarbons and well effluent behavior.

Well techniques, production techniques and well servicing.

Surface facilities & treatment operations.

Metering and expedition.

Health Safety & Environment, sustainability.

Budgets (CAPEX, OPEX) during the life cycle of a production field.

# Oil & Gas Field Processing

Field treatments of Oil & Gas well effluent

## Purpose

This course provides a comprehensive overview of Oil & Gas field processing technology.

## Audience

**Level:** FOUNDATION

Engineers and technicians interested, although not directly involved, in day-to-day Oil & Gas field processing operations: reservoir engineers, drilling and completion personnel, platform designers, petroleum architects, equipment suppliers, economists, ...

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ list main characteristics of Oil & Gas well effluents,
- ▶ assess problems induced by unwanted compounds in well effluents,
- ▶ explain gathering network design and operations,
- ▶ detail field treatment of Oil & Gas streams and processes technology,
- ▶ grasp fundamentals of Oil & Gas field processing operations and related operating conditions,
- ▶ ascertain the treatment processes necessary for production water and injection water.

## Ways & Means

- ▶ Course delivered by industry specialists.
- ▶ Numerous applications and illustrations.

## Prerequisites

No prerequisites for this course.



## Course Content

5 days

### WELL EFFLUENTS BEHAVIOR

0.5 d

Different types of well effluent. Main characterization parameters. Liquid-vapor equilibrium of pure substances and mixtures. Effluent behavior. Constituents that pose problems for storage, transport or commercialization. Main specifications to conform with and required treatments.

### FUNDAMENTALS OF RESERVOIR & DRIVE MECHANISM

0.25 d

Reservoirs: types, exploration techniques. Drive mechanisms. Enhanced Oil Recovery (EOR): aim and principle of the main techniques.

### FUNDAMENTALS OF DRILLING, COMPLETION & WELL PERFORMANCE

0.25 d

Drilling principle. Case of offshore drilling. Main completion equipment. Well performance. Needs for artificial lift. Principle of artificial lift by pumping, gas lift, ...

### WELL EFFLUENT TRANSPORTATION, FLOW-ASSURANCE & GAS HYDRATES PREVENTION

0.5 d

Gathering network design and operation:

- Multiphase flow. Flow patterns.
- Main flow assurance issues.
- Hydrates formation prevention strategies. Hydrates inhibition.

*Case studies: Gas condensate field development. Deep-offshore production.*

### CRUDE OIL PROCESSING

1 d

Crude stabilization by Multi Stage Separation (MSS): election of the number of stages, effect of operating parameters, management of foam issues. Crude dehydration and desalting. Emulsion treatment: operating parameters, internals, chemicals selection. Crude sweetening ( $H_2S$  removal).

*Examples of oil treatment and associated gas compression process schemes.*

### PRODUCTION & INJECTION WATER TREATMENT

1 d

Quality requirements for production water. Environment related constraints.

Main produced water treatments: API oil-water separators, plate separators, floatators, hydrocyclones, ...

Reasons for water injection. Quality requirements and necessary treatments:

- Chlorination, filtration, oxygen removal, sulfate removal.

*Examples of process schemes for production and injection water treatment.*

### GAS PROCESSING & CONDITIONING

1 d

Gas dehydration: TEG units, solid desiccants (molecular sieves) units.

Gas sweetening. Acid components ( $H_2S$  and  $CO_2$ ) removal: amine units, molecular sieves, membranes.

Natural Gas Liquids (NGL) extraction: use of cryogenic refrigeration, Joule-Thompson expansion, Turbo-expander.

### LIQUEFIED NATURAL GAS

0.5 d

Fundamentals of Liquefied Natural Gas (LNG) chain.

Reference: PROC/OGFP Can be organized as an In-House course.

Contact: [exp.rueil@ifptraining.com](mailto:exp.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	27 November	1 December	€3,370

This course is also available in French: PROC/IPS. Please contact us for more information.

# Natural Gas

Production - Treatments - Transport - End Uses

## Purpose

This course provides a comprehensive review of the techniques involved in natural gas production, processing and transport, complemented with an overview of natural gas valorization channels.

## Audience

### Level: FOUNDATION

Professionals from all sectors, involved or interested in the natural gas industry.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ explain fundamentals of natural gas composition, characteristics, production and field processing,
- ▶ understand technical issues and specific constraints of natural gas transport and storage,
- ▶ review the various end-user markets available for valorizing natural gas,
- ▶ grasp key natural gas chain economic issues.

## Ways & Means

- ▶ Highly interactive training by industry-specialist lectures.
- ▶ Numerous applications and illustrations.

## Prerequisites

No prerequisites for this course.

## Course Content

5 days

### NATURAL GAS: TYPES & PRODUCTION TECHNIQUES

0.75 d

Types and characteristics of natural gas fields. Production techniques. Different types of natural gases (condensate, wet or dry gas) and characterization parameters. Constitution of natural gas well effluent, properties and specific hazards. Case of associated gases: recovery techniques, characteristics, composition, etc.

### END USES OF NATURAL GAS - MAIN QUALITY REQUIREMENTS

0.25 d

End uses of natural gases: fuel (domestic and industrial uses), conversion into other energy types (electricity production and cogeneration), automotive fuel (Natural Gas for Vehicles - NGV and conversion into liquid automotive fuels GTL), chemical valorization, etc. Quality requirements for commercial natural gases and associated products (ethane, LPG, condensates) - Examples of quality standards.

### NATURAL GAS PROCESSING

2 d

Gas dehydration (drying) and Hydrate formation inhibition:

System behavior. Moisture content of a saturated gas.

Applications: moisture content of different gases having various compositions.

Hydrate formation inhibition by injection of inhibitors: MeOH, MEG, DEG, LDHI, etc.

Gas dehydration: TEG units, Molecular Sieves, etc.

*Application: summary design of TEG unit.*

Gas sweetening: removal of acid components ( $H_2S$  and/or  $CO_2$ ):

Different techniques applicable for gas sweetening:

- ▶ Chemical solvent processes. Amine units (MEA, DEA, DGA, MDEA, etc.).
- ▶ Physical solvent processes.
- ▶ Hybrid (physico-chemical) solvent processes.
- ▶ Overview of other techniques.

Conversion of  $H_2S$ : sulfur production (CLAUSS process) and tail gas processing.

*Application: summary design of an amine unit.*

Natural Gas Liquids (NGL) extraction (removal of heavy components):

External refrigeration loop.

Joule-Thomson expansion.

Turbo-Expander.

*Application: calculation of cryogenic loop used for NGL extraction.*

Examples of gas field development schemes:

Gas fields development options: onshore or offshore processing, single-phase or multiphase export pipelines, "Wet" or "Dry" development.

*Other treatments: mercury removal, conversion or adsorption of mercaptans (RSH), etc.*

### TRANSPORT OF NATURAL GAS IN LIQUID PHASE - LNG OPTION

1 d

Liquefaction processes: principle, typical operating conditions, technology.

LNG tanks: Single or Double or Full Containment (self-standing, membrane). Hazards.

LNG transport: LNG carriers (MOSS spheres, Membrane, ...), export and receiving terminals.

LNG regasification at the receiving terminals, options for refrigeration duty recovery.

### TRANSPORT & STORAGE OF NATURAL GAS IN GAS PHASE

0.5 d

Gas pipes: technology, capacities, equipment, recompression units, operating conditions, etc.

Underground storage (old reservoirs, aquifers, salt domes, etc.). Required treatments at outlet.

### NATURAL GAS ECONOMICS

0.5 d

Resources, production and markets.

Natural gas marketing: competition of other energy sources and consequences on gas contracts (prices and duration), cost of transport and its impact on the structure of the gas chain.

Future of the natural gas.



Reference: PROD/NATGAS Can be organized as an In-House course.

Contact: [exp.rueil@ifptraining.com](mailto:exp.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	9 October	13 October	€3,570

This course is also available in French: PROD/GAZNAT. Please contact us for more information.

Graduate Certificate

# Petroleum Engineering Certification



This course provides in-depth technical knowledge of Oil & Gas production in order to hold rapidly, and very effectively, the position of field engineer, design engineer, or project engineer.

## Audience

### Level: FOUNDATION

Engineers (particularly recently graduated engineers or engineers in conversion) looking to acquire in-depth knowledge and best practices of Oil & Gas production.

## Ways & Means

- ▶ Highly interactive training with industry specialist lecturers.
- ▶ Multiple teamwork sessions and industrial case studies.
- ▶ Numerous process simulation exercises using PRO/II™ software.

## Learning Objectives

Upon completion of this course the participants will be able to:

- ▶ grasp fundamentals of reservoir engineering and drilling,
- ▶ explain well completion and servicing, well performance and artificial lift,
- ▶ understand fundamental concepts underlying Oil & Gas processing,
- ▶ understand in detail operating conditions and basic design of oil, water and gas treatment,
- ▶ describe technology of static equipment and rotating machinery used in production facilities,
- ▶ explain offshore development techniques and flow assurance issues,
- ▶ identify main risks related to Oil & Gas production operations and review safety engineering best practices,
- ▶ contribute to the dynamics of field development projects studies.

## Course Content

100 days

### INTRODUCTION TO PETROLEUM GEOPHYSICS 5 d

Elements & processes of reservoirs. Diagraphy analysis. Seismic acquisition, processing, imaging and interpretation. Prospects evaluation.

### RESERVOIRS CHARACTERIZATION 5 d

Architecture of the reservoirs. Petrophysic/properties of the rocks. Reservoirs' heterogeneities.

### DRIVE MECHANISM - ENHANCED OIL RECOVERY 5 d

Reservoir engineering workflow. Drive mechanism. Enhanced oil recovery.

### DRILLING FUNDAMENTALS 5 d

Drilling operations. Architecture of the well & completion.

### WELL PRODUCTIVITY & RESERVOIR - WELLBORE INTERFACE 5 d

Well productivity. Reservoir wellbore interface implementation.

### ARTIFICIAL LIFT & WELL INTERVENTION FUNDAMENTALS 5 d

Artificial lift: gas lift, ESP. Types and means of intervention on producing wells. General procedure of a workover. Case study.

### WELL CONTROL 5 d

Introduction to well control methods. Equipment. Wireline, coiled tubing, snubbing. IWCF Certification: Well Intervention Pressure Control.

### THERMODYNAMICS APPLIED TO WELL EFFLUENT PROCESSING 5 d

Well effluent. Gas compression and expansion. Liquid-vapor equilibrium of pure components and mixtures. Mixture separation.

### OIL & WATER TREATMENT 5 d

Crude oil treatment: stabilization, dehydration, sweetening. Reject and injection water treatment.

### GAS PROCESSING & CONDITIONING 5 d

Gas processing: dehydration, sweetening, NGL recovery. Fundamentals of Liquefied Natural Gas (LNG) Chain.

### STATIC EQUIPMENT & SCHEMATIZATION 5 d

Piping & valves. Storage equipment. Thermal equipment. Flow assurance. Schematization.

### ELECTRICITY & INSTRUMENTATION 5 d

Electrical power generation and distribution network. Instrumentation and process control. Safety instrumented systems.

### METERING - MATERIAL BALANCE - ALLOCATION 5 d

Data treatment. Transactional metering of liquids and gases. Multi-phase metering. Liquid & gas material balances. Production reporting.

### ROTATING MACHINERY 5 d

Centrifugal and positive displacement pumps. Centrifugal and Reciprocating Compressors. Turbo-expanders. Gas turbines.

### OFFSHORE FIELD DEVELOPMENT - FLOW ASSURANCE 5 d

Offshore development architecture. Technology & deep offshore specificities. Pipelines. Flow assurance issues.

### SAFETY & ENVIRONMENT IN SURFACE PROCESSING FACILITIES 5 d

Hazards and risks in production operations. Safety in production operations and during construction or maintenance works. HSE management.

### SAFETY ENGINEERING 5 d

HAZID application, HAZOP exercise, plant layout exercise. QRA and Consequence analysis methodology. SIS and relief systems design.

### PETROLEUM ECONOMICS & PROJECT MANAGEMENT 5 d

Fundamentals of contracts. Project profitability evaluation. Risk analysis of Exploration & Production projects. Project cost estimation and cost control.

### FIELD DEVELOPMENT PROJECT - JURY 10 d

## Prerequisites

Engineering degree or equivalent professional experience within the petroleum industry.

## Why an IFP Training Certification?

- ▶ An international recognition of your competencies.
- ▶ A Graduate Certificate delivered.
- ▶ An expertise confirmed in Petroleum Engineering.
- ▶ Ready-to-use skills.

Graduate Certificate

# LNG Processing Engineer Certification



This course provides in-depth technical knowledge of natural gas treatment and liquefaction facilities design and operation necessary to hold rapidly, and very effectively, the position of Process Engineer, Field Engineer or Technical Service Engineer.

## Audience

### Level: FOUNDATION

Engineers (particularly recently graduated engineers or engineers in conversion) interested in specialization in gas treatment and liquefied natural gas processing.

## Ways & Means

- ▶ Highly interactive training with industry-specialist lecturers.
- ▶ Multiple teamwork sessions and industrial case studies.
- ▶ Practice on dynamic simulator.
- ▶ Numerous process simulation exercises using HYSYST<sup>TM</sup> or PRO/II<sup>TM</sup> software\*.

## Course Content

60 days

### THERMODYNAMICS APPLIED TO WELL EFFLUENT PROCESSING

5 d

Well effluent. Ideal gas and real fluid behavior. Gas compression and expansion. Liquid vapor equilibrium of pure components and mixtures. Mixture separation. HYSYST<sup>TM</sup> or PRO/II<sup>TM</sup> simulation: Phase envelope of well effluents, sales gas, LNG. Fundamentals of distillation. HYSYST<sup>TM</sup> or PRO/II<sup>TM</sup> simulation: propane cryogenic loop.

### GAS PROCESSING & CONDITIONING

5 d

Commercial specifications for natural gas. Need for gas field processing. Gas hydrates & moisture content of natural gas. Dehydration process: TEG units and molecular sieves. Sweetening: amines, membranes. NGL recovery and fractionation. HYSYST<sup>TM</sup> or PRO/II<sup>TM</sup> simulation: associated gas and gas condensate sweetening, dehydration, NGL recovery and compression.

### DYNAMIC SIMULATION OF GAS PROCESSING FACILITIES

5 d

During this week, case study and exercises are performed using a DCS replica in order to allow the participants to understand process dynamics. Hydrates detection & inhibition in gathering network. Gas processing. Gas dehydration: impact of operating conditions. Multistage gas compression and export: study of operating parameters.

### LIQUEFIED NATURAL GAS

5 d

The LNG chain. Specific properties of LNG. Liquefaction processes. Regazification processes. LNG storage, loading/offloading and transport. Technology of LNG-specific equipment.

### LNG PROCESS SIMULATION

5 d

During this week, case study and exercises are performed using HYSYST<sup>TM</sup> or PRO/II<sup>TM</sup> software in order to allow the participants to design and optimize liquefaction processes: gas field treatment (separators, dehydration, compression); NGL fractionation and stabilization; simulation of a cascade liquefaction process, of a C3-MR liquefaction process, of a turbo-expander based liquefaction process; integration of the liquefaction processes with the NGL recovery/fractionation; comparison of the efficiency of the processes versus load and conditions.

### PIPING SYSTEMS & PROCESS EQUIPMENT: TECHNOLOGY & SIZING

5 d

Piping & valves. Metallurgy. Corrosion. Cathodic protection. Pressure relief systems. PSV's and flare network. Storage equipment. Thermal equipment & cryogenic equipment. Pressure vessels: technology and selection criteria, internals, elements of calculation.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ explain the thermodynamics involved in natural gas treatment and liquefaction, especially cryogenic loops,
- ▶ explain natural gas processing & liquefaction process,
- ▶ analyze operating conditions and basic design of gas treatment and liquefaction plant,
- ▶ describe the technology of static equipment and rotating machinery used in LNG plants,
- ▶ identify the main risks related to gas treatment and liquefaction and efficiently contribute to safety engineering studies.

### INSTRUMENTATION, PROCESS CONTROL & SCHEMATIZATION

5 d

Field instrumentation: sensors, transmitters, control valves, ON/OFF valves. Controllers; control loop structures. *Study of controller parameters and control loop structures on dynamic simulator.* Distributed Control System (DCS). Safety Instrumented Systems (SIS): ESD, HIPS, Fire & Gas System. Process schematization: reading and drawing of Block Flow Diagrams (BFD), Process Flow Diagrams (PFD) and Piping & Instrumentation Diagrams (P&ID).

### PUMPS & COMPRESSORS

5 d

Fundamentals of hydraulic circuits and gas compression. Operating principles, technology, selection criteria, performances and operating conditions of centrifugal and volumetric pumps and centrifugal and reciprocating compressors.

### GAS TURBINES – ELECTRICAL GENERATION\*

5 d

*Upon customer request, this module can be tuned to steam generation & steam turbines operations.*

Gas turbines: equipment technology, operating conditions, performances, operation.

Turbo-expander: technology, operation. Electrical power generation.

Electrical power distribution network and equipment.

### LNG - SPECIFIC SAFETY ENGINEERING

5 d

LNG specific hazards: stratification/roll-over, sloshing, LNG clouds ignition, asphyxiation risks, cryogenic liquids jets, piping behavior. LNG spillage control at design stage and in operation. LNG clouds control in operation. LNG fires control at design stage and in operation. Main safety engineering studies: HAZID and HAZOP workflow and application; plant layout case study; QRA - Consequence analysis methodology.

### HSE IN OPERATIONS & MAINTENANCE WORKS

5 d

LNG plant operations. Risk in normal process operations. Risk assessment tools. Job safety analysis. Safe isolation of plant and equipment. HSE in maintenance & construction works. Permit to work system. Organizational framework. Human factors.

### CASE STUDY BASED ON LNG PLANT P&IDS & JURY

5 d

During this week, participants will work in team to analyze LNG plant P&ID's and present the results of their analysis to a jury: this 5-day teamwork project is a real case study based on actual data. Participants are coached throughout the project to produce the required deliverables, which are to be presented on the last day (jury): process operating parameters, process control loops and of safety loops; operating philosophy; materials and equipment selection.

## Prerequisites

Engineering degree or equivalent professional experience within the petroleum industry.

## Why an IFP Training Certification?

- ▶ An international recognition of your competencies.
- ▶ A Graduate Certificate delivered.
- ▶ An expertise confirmed in LNG processing.
- ▶ Ready-to-use skills.

# HSE Management

## Purpose

This course provides the knowledge required to implement and follow-up a HSE management system, in order to ensure a higher level of safety and more environmentally-friendly business activities.

## Audience

### Level: FOUNDATION

Engineers expected to assume a HSE Engineer position, Business Managers seeking to acquire comprehensive HSE management knowledge.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ suggest a relevant HSE organization in order to fulfil local needs,
- ▶ identify and explain the different elements of a general HSE management system based on a risk management approach,
- ▶ follow adequately local HSE rules and regulations and contribute to their improvement,
- ▶ contribute to building an HSE culture within their organization, which will allow avoiding incidents and accidents,
- ▶ prepare HSE audits and be familiar with continuous improvement processes,
- ▶ participate efficiently to a crisis organization.

## Ways & Means

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

## Prerequisites

No prerequisites for this course.



## Course Content

5 days

### OVERVIEW OF HSE MANAGEMENT SYSTEMS

0.25 d

Historical approach. Initial development and current standards. Introduction to Integrated Management System. Certification. Industry approach. Operating Management System.

### FUNDAMENTALS OF MANAGEMENT SYSTEM

0.5 d

Leadership. HSE Leadership characteristics. Roles of safety leaders. Communication and motivation. Introduction to risk management. Risk assessment process. Continuous improvement. PDCA cycle.

### MANAGEMENT COMMITMENT & LEADERSHIP

0.5 d

Commitment and accountability. Establishment of a HSE Culture throughout the organization. Importance of communication. Management commitment. HSE policy. Strategies for establishment of HSE objectives. Main Key Performance Indicators in the industry. Establishment of compliance with legal requirements and industry standards. Personnel management. HSE competence assurance. Training matrix.

### RISK MANAGEMENT

1 d

Establishment of risk assessment and control – Concepts, strategies and objectives. Risk Management tools, hazard identification and risk register. Risk map of activities. Establishment of a corporate risk matrix. Environmental and Social impact assessment process. Human factors and human error. Management of Change procedure. Downgraded situations and simultaneous operations. Safety design and asset integrity assurance – Main concepts. Identification and management of Safety Critical Elements.

### STAKEHOLDERS MANAGEMENT

0.5 d

Main concepts – Stakeholders map. Social engagement planning. Contractor management – Interface between contractors and partners management systems.

### HSE PLANNING & CRISIS MANAGEMENT

0.75 d

Fundamentals of HSE management in projects. Structure and elements of HSE plans. Environmental management plans. Structure for emergency response planning. Establishment of tiers and development from risk assessment information. Crisis management organization and management of information and resources during emergencies.

### ELEMENTS FOR EXECUTION & CONTROL

0.75 d

Tools for risk assessment of execution activities:  
Permit To Work System.  
Job Safety Analysis.  
Observation and HSE awareness programs.  
Pre-start up review.  
Health and ergonomics management.  
Logistics HSE management.

### AUDITS & CONTINUOUS IMPROVEMENT

0.75 d

Elements for monitoring and reporting.  
Undesired events reporting and investigation procedure.  
Environmental and social monitoring.  
Public reporting, sustainability reporting.  
Audit planning.  
Management of improving actions.  
Management system review.

Reference: HSE/HSEMGT Can be organized as an In-House course.

Contact: [ep.rueil@ifptraining.com](mailto:ep.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Pau	30 October	3 November	€3,400





# Trading & Shipping

Oil Markets & Trading .....	p. 62
Gas Markets & Trading .....	p. 63
Contractual Framework of Gas Production & Transportation .....	p. 64
Shipping: General Features, Chartering Contracts & Operations .....	p. 65
Natural Gas & Electricity Trading .....	p. 66

# Oil Markets & Trading

## Purpose

This training provides a better understanding of the structure of the markets, the uses and the impacts of physical and financial markets for crude oil and petroleum products.

## Audience

### Level: PROFICIENCY

All personnel in the petroleum or associated industries needing to improve their knowledge and understanding of crude oil and petroleum products trading and pricing mechanisms.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ analyze the parameters which influence prices of crude oil and petroleum products,
- ▶ review the different oil trading markets by type of transaction,
- ▶ understand the importance of maritime transport costs in oil supply economics,
- ▶ comprehend the hedging techniques available for protection against fluctuations in prices.

## Ways & Means

- ▶ Syndicate works on case studies.
- ▶ Case studies.

## Prerequisites

Bachelor's degree +3 and/or a minimum 3 years of working experience in Downstream.

## Course Content

3 days

### OIL SUPPLY & DEMAND FUNDAMENTALS

0.25 d

Energy resources.  
Energy demand and supply.  
Oil producing countries, OPEC, consuming countries, international oil companies: constraints and strategies.

### SHIPPING

0.25 d

General features.  
The Market and its players-Fixing of the freight rate (Worldscale).  
Chartering contracts.  
Risk control and environmental protection.

### CRUDE & PETROLEUM PRODUCTS PHYSICAL TRADING

1 d

"What is the value of a crude oil?": the refiner's point of view.  
Different types of contracts: long term, spot and forward.  
Main oil markets and their features.  
Key benchmark crudes.  
The role of the PRAs (price reporting agencies).  
Links between Trading and Shipping.  
Products trading.  
Main provisions of a sale/purchase contract.

### EXCHANGES & FUTURES TRADING

1 d

The concept of volatility.  
Definition of a contract: the cases of WTI and Brent.  
Exchanges and their organization: the cases of NYMEX and ICE.  
Main Futures Markets.  
Hedging principles.  
Hedging imperfections. Basis risk.  
Market structure (contango, backwardation).  
*Case study.*

### DERIVATIVES

0.25 d

Options: principles, basics and characteristics.  
Interests and limits of options.  
Swaps: principles, basics and characteristics.  
Interests and limits of swaps.

### HEDGING STRATEGIES - VARIOUS CASE STUDIES ON HEDGING

0.25 d

For a refiner.  
For a crude oil producer.  
For a marketer.  
For an industrial consumer.



Reference: TRT/OMT Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	30 May	1 June	€2,260

This course is also available in French: TRT/MTP. Please contact us for more information.

# Gas Markets & Trading

Purpose	Course Content	2 days
This training provides a better understanding of the structure, the methods of operation, the uses and the impacts of gas physical, financial and paper trading.	<b>GAS SUPPLY &amp; DEMAND</b> Evolution of gas demand. Projections. Gas reserves and production. Gas producing countries. International supply projects. Regional gas demands. International trade. LNG trading.	0.25 d
<b>Audience</b> <b>Level: PROFICIENCY</b> All personnel in the gas or associated industries needing to improve their knowledge and understanding of gas trading and pricing mechanisms.	<b>LONG TERM CONTRACTS</b> Types of contracts. Features of long term contracts. Contractual quantities, nominations and Take-or-Pay. Gas pricing: indexation principle. Concepts of market value and cost plus.	0.5 d
<b>Learning Objectives</b> Upon completion of the course, participants will be able to: <ul style="list-style-type: none"> <li>▶ analyze the fundamentals of gas supply and regional demands,</li> <li>▶ review the different gas trading markets and types of transactions,</li> <li>▶ understand the basic structure of long term contracts,</li> <li>▶ comprehend the hedging techniques available for protection against fluctuations in prices.</li> </ul>	<b>SPOT &amp; FORWARD MARKETS</b> Spot markets. Forward contracts. North American Hubs. Spot markets in UK and continental Europe. Price References and the role of reporting agencies.	0.5 d
<b>Ways &amp; Means</b> <ul style="list-style-type: none"> <li>▶ Examples of contracts.</li> <li>▶ Statistical data.</li> </ul>	<b>FUTURES MARKETS</b> Features of gas Future contracts. Exchanges and their organization: NYMEX, ICE. Hedging using Future contracts. Basis risk and hedging imperfections.	0.5 d
<b>Prerequisites</b> Basic knowledge of natural gas and LNG chain.	<b>RISK MANAGEMENT</b> Swaps: principles, basics and characteristics. Options (call, puts): principles, basics and characteristics. OTC derivatives: caps, floors, collars.	0.25 d



Reference: TRT/GMT    Only available as an In-House course.  
 This course is also available in French: TRT/MGN. Please contact us for more information.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

# Contractual Framework of Gas Production & Transportation

## Purpose

This training provides participants with the fundamental features and structures of natural gas long-term sales contracts and transportation agreements.

## Audience

### Level: PROFICIENCY

Professionals, involved in natural gas trading, who need to negotiate or implement natural gas contracts.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ identify the main articles of long-term natural gas agreements,
- ▶ explain the key points of the commercial clauses,
- ▶ evaluate the principles of natural gas pricing and transportation.

## Ways & Means

- ▶ Examples of contracts.
- ▶ Case studies on contracts.
- ▶ Simulation of negotiation.

## Prerequisites

Basic knowledge of natural gas and LNG chain.

## Course Content

3 days

### LONG-TERM NATURAL GAS SALES CONTRACTS

2 d

Primary issues about long-term gas agreements.

Main natural gas agreements.

Analysis of the main articles of long-term agreements:

Commercial:

- ▶ duration: depletion contract, supply contract, peak shaving, seller's nomination and interruption,
- ▶ quantity: ACQ, DCQ, MDQ, swing factor, excess gas and take-or-pay,
- ▶ quality: technical specifications, acceptable limits and non-conformity penalties,
- ▶ price: indexation, market value and net-back value,
- ▶ delivery point: place, measure, frequency, precision and flexibility,

Responsibility: force majeure, transfer of rights, expert, arbitration and applicable law.

Operational:

- ▶ installation, counting system and analysis, obligation of information, confidentiality, invoicing and payment,
- ▶ entitlement, risk and general disposals.

Recent evolution of natural gas long-term contracts: short-term contracts and tolling agreements.

### NATURAL GAS TRANSPORTATION AGREEMENTS

1 d

Main principles of natural gas transportation agreements.

Analysis of the main articles:

- ▶ delivery point/redelivery, specifications,
- ▶ quantity and capacity booking (delivery commitment, booked capacities profile and transportation obligation),
- ▶ tariff structure (ship-or-pay, fix or variable pricing),
- ▶ quantities allocation and procedure, gas delivery procedures, quality settlement and removal schedule,
- ▶ duration, force majeure, tie-in deposit and general dispositions.

Recent evolution of gas transportation agreements.



Reference: TRT/CGT Only available as an In-House course.

■ This course is also available in French: TRT/CTG. Please contact us for more information.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

# Shipping: General Features, Chartering Contracts & Operations

## Purpose

This training provides participants a thorough knowledge of the technical, operational and commercial conditions concerning the transport of hydrocarbons by sea as well as an introduction to the legal and financial aspects of the shipping.

## Audience

### Level: PROFICIENCY

Professionals in the oil industry, involved in the supply, shipping, distribution activities and who need to improve their knowledge in operational and contractual aspects of shipping.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ assess nautical capacity and technical criteria of a ship in particular for the transport of hydrocarbons,
- ▶ understand the risks associated with maritime activities (boating, environmental, policy, ...), as well as the regulations and related procedures,
- ▶ integrate into their reflection operational and strategic constraints that apply to the ship-owner or the carrier,
- ▶ negotiate in the best possible conditions contract litigations deriving from oil products marine operations,
- ▶ understand the tanker chartering market better.

## Ways & Means

Illustration of actual cases.

## Prerequisites

Minimum of 3 years of working experience in oil business and/or seagoing shipments of oil products.



## Course Content

4 days

### VESSEL SPECIFICATIONS

0.5 d

Maritime vocabulary: position, distance, speed, ...  
Ship measurements: tonnage, displacement, dimensions, ...  
Anatomy of a ship: main features.  
Nature of cargoes: dry, wet, specialties.  
Ships offering: various types, age profile, specific focus on oil tankers and gas carriers.

### SHIPPING FINANCIAL & LEGAL ASPECTS - BASICS OF INTERNATIONAL MARITIME LAWS

0.25 d

Elements of financing and profitability: type of fund raise, appreciation on current financial situation.  
Current state of the shipbuilding industry.  
The link between states and ship-owners: notions on the registration of ships, the world fleet by flag, by investing countries.  
General notions of maritime legislation: territorial waters, EEZ, traffic separation, arctic waters, ...  
Seaways: main maritime routes, Panama and Suez Canal, port network.  
Piracy: legal, operational and financial consequences.

### RISKS CONTROL & ENVIRONMENTAL PROTECTION

0.75 d

Impact on the environment: ITOFP statistics, Oil spills, GHG emissions, ...  
International regulations: IMO conventions, MARPOL, SOLAS, STCW, ILO, ISPS, ...  
Green regulations: air pollution, EEDI, ECA zone, BWM, ship recycling.  
Impact on international shipping: SEEMP, engine technology, scrubbers, bunkering alternatives, financial impact.  
Procedures for the transport of oil products: SIRE, TMSA, Vetting process.

### THE SHIPPING CHAIN & THE PORT COMMUNITY

0.25 d

The Seaport: main features.  
The maritime transportation occupations: agents, forwarders, stevedore's, customs, ...  
The handling of the ship in the port: port authority, pilot and tugs, peers main features, ...  
Operating expenses of ships: fixed and variable costs, disbursement account, ...  
The maritime transportation "contract": Hague Visby, Rotterdam Rules, B/L, ...

### SHIPPING EXPLOITATION & OPERATIONS

0.75 d

The bunkering market: products, players, contracts, market organization, PLATTS, BUNKERWIRE.  
Risk management: basis of Hedging, Futures, Swaps, Options.  
The marine lubricants market: products, players, contractual aspect.  
Quantity measurements: industry commonly agreed procedures ROB, OBO, VEF, VAR, ISGOTT, specific focus on Gas.  
Cargo loading procedure: interface ship/shore, planning, sampling, pumping rates, topping off.  
Ship To Ship (STS) operations: planning and notice, POAC role, ...  
Claim handling: quantity, quality.

### THE FREIGHT MARKET - PRICING MECHANISMS

0.5 d

Organization and operating evolutions in ship management.  
Freight market organization: players and segmentation.  
Freight rates structure: WORLDSCALE, BALTIC.  
Risk management: FFA.  
Market insights: appreciation of the market situation for various classes of oil tankers and gas carriers.

### LPG & LNG SHIPPING MARKETS

0.25 d

Introduction.  
LPG shipping market.  
LNG shipping market: contract conditions, current and evolutions, ...  
LNG Liquefaction Regasification plants.  
LNG market insights: appreciation of current situation.

### CHARTERING AGREEMENT & CHARTER PARTY

0.75 d

Chartering agreement principles: different types, main terms, standard clauses, rider clauses.  
Chartering agreement main definitions: Laycan, NOR, Laytime, example of calculation, Demurrage, Detention, Retention, ...  
Main litigation causes.  
Role and responsibilities: split between charterer and ship-owner depending on charter type.  
Coming to a chartering agreement: various steps and procedures, role of the broker.  
Charter party specific clauses: force majeure, war risk, slow steaming, virtual arrival, ...  
Some litigation cases: practical examples.

Reference: TRT/CFS Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	11 April	14 April	€2,950
Rueil	12 December	15 December	€2,950

This course is also available in French: TRT/CES. Please contact us for more information.

# Natural Gas & Electricity Trading

Market Risks & Their Operational Management

## Purpose

This training provides participants a global and synthetic view on the risk management of the various trading activities of gas and electricity.

## Audience

### Level: PROFICIENCY

All managers who need to learn the ways of managing risk in the market of natural gas and electricity.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ assess the risks associated with each phase of the gas trading and electricity,
- ▶ understand the different hedging tools of the financial markets and assess their efficiency and limits,
- ▶ put in place means of detecting, measuring and controlling the risks through a proper trading organization (procedures, segregation of duties),
- ▶ implement control measures, including market risk and credit risk.

## Ways & Means

Case studies and examples.

## Prerequisites

Basic notions of Microsoft Excel.

## Course Content

2 days

### MARKETS

Main features of gas and electricity markets.

0.5 d

### RISK MANAGEMENT

Basic statistics.

Risk typologies

- Credit risk.
- Market risk.
- Operational risk.

Value at risk.

0.5 d

### HEDGING & MODELING

Nature.

Products

- Futures, forwards, swaps, options.

0.5 d

### CASE STUDIES

Compute sensitivities on a gas procurement contract.

Compute the V@R of the contract using Monte Carlo and parametric methods.

0.5 d



Reference: TRT/GET Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	4 October	5 October	€1,950

# Downstream Economics

Downstream Economics & Management .....	p. 68
Planning & Economics of Refinery Operations .....	p. 69
Refinery Operation Management & Linear Programming .....	p. 70
Economic Framework of Refining .....	p. 71
Economic Optimization of Refining Operations .....	p. 72
<b>Refining &amp; Petrochemicals Synergies</b> .....	p. 73
<b>Profitability Analysis of Downstream Investment Projects</b> .....	p. 74
Downstream Module .....	p. 75
Marketing & Sales of Lubricants .....	p. 76
Supply Chain Management .....	p. 77

# Downstream Economics & Management

## Purpose

This course provides participants a complete view of the economic principles of the downstream sector as well as the methods necessary for the decision-making processes.

## Audience

### Level: FOUNDATION

Professionals from the refining, the petrochemicals and the distribution sectors in a management position where they need to deepen their understanding of all the essential economic aspects as well as the management tools used in the oil downstream sector.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ analyze the economic fundamentals of the energy scene, with a particular attention to the importance of markets dynamics and its impact on the economics of refining, petrochemicals and distribution,
- ▶ evaluate the economic values of various intermediate or semi-finished products,
- ▶ use linear programming models and management tools in order to optimize refining and petrochemical operations,
- ▶ evaluate project profitability,
- ▶ take part in the development of a marketing strategy,
- ▶ analyze the supply chain of an industry.

## Prerequisites

Basic notions of Microsoft Excel.

## Course Content

15 days

### TRADING

Oil supply and demand fundamentals.  
Petroleum physical trading.  
Financial trading (futures), markets place, derivatives.  
Hedging and strategies.

2 d

### REFINING & PETROCHEMICALS ECONOMICS

Brief technical overview of the main refining and petrochemical processes.  
World refining and petrochemicals demand.  
Evolution of the downstream supply: refining overcapacities, production nature and quantity.  
Main challenges for the refining sector: deep conversion, new product specifications, petrochemical integration, environment, etc.  
Refining margins and costs.  
*Case study: valuation of intermediate products of a FCC (Fluid Catalytic Cracking) unit.*  
*Case study: refinery blending simulation.*  
Main characteristics of the petrochemical business: economic drivers, cyclic behavior, etc.  
*Case study: steam cracker economics.*

3 d

### OPTIMIZATION OF REFINING OPERATION - LINEAR PROGRAMMING

Linear programming (LP) principles: linear equation, objective function, profit maximization or cost minimization, Simplex method, graphic interpretation, etc.  
Analysis of the LP results: optimum properties, marginal costs, domain of validity of the results, etc.  
*Case study on Excel: introduction to the preparation of a refinery model matrix (material balances, products specifications, utilities consumption, objective function, etc.); team work on the optimization of a cracking refinery.*

2.5 d

### REFINING OPERATIONS PLANNING - SCHEDULING

Principles of refining management: constraints, operations organization.  
Monthly program to daily operations.  
Optimization of margins from different process units.  
*Case study: management of typical sequential constraints (delays, processing problems, etc.).*

1.5 d

### INVESTMENT PROFITABILITY STUDIES

Value creation and capital cost, cash flows, discounting principle and inflation impact.  
Standard global profitability analysis: cash flow schedule, economic criteria.  
Introduction to risk analysis.  
*Exercises on various investment profitability studies for refineries and petrochemical plants.*

1 d

### STRATEGIC MARKETING

Marketing role in a firm and in the economy, marketing organization.  
Measuring the firm's competitiveness.  
Designing a development strategy.

2 d

### SUPPLY CHAIN MANAGEMENT

Supply chain principles: definitions, review of activities, interactions with consumers.  
Storage management: "pull" and "push" modes, basic tools for stock management, technical and economic aspects.  
Supply chain design and methodological approaches: analysis of the industry (organization, process, location).  
Benchmarking context.

3 d



# Planning & Economics of Refinery Operations

In collaboration with the Energy Institute, London

## Purpose

This course provides a better understanding of the essential elements of refinery operations and investment economics, to review the various parameters which affect refinery profitability and to develop a working knowledge of the management tools used in the refining industry.

## Audience

### Level: PROFICIENCY

Technical, operating and engineering personnel working in the refining industry, trading and commercial specialists, independent consultants, process licensors, catalyst manufacturers and refining subcontractors.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ assess the latest trends in product specifications, and refining schemes,
- ▶ calculate product value, refinery margins and process unit margins,
- ▶ simulate and to optimize refinery operations, crude oil selection and product manufacturing,
- ▶ analyze the results of an linear programming model optimization,
- ▶ evaluate the profitability of a new process unit.

## Ways & Means

- ▶ Case studies and exercises derived from present refinery situations.
- ▶ Economic optimization using Excel.
- ▶ Quiz.

## Prerequisites

Basic notions of Microsoft Excel.



## Course Content

4 days

### TECHNICAL OVERVIEW

0.25 d

Brief technical presentation of the main refining units: distillation, conversion, etc.  
Refinery scheme evolution.

### REFINING INDUSTRY

0.5 d

World petroleum product demand and evolution of the crude oil supply.  
Refining supply: overcapacity, types and quantity.  
Main challenges: deep conversion, new product specifications, petrochemical integration, environment, etc.  
Projects and perspectives.

### REFINERY MARGINS & COSTS

0.75 d

Refinery margins and costs: definitions and evolution worldwide.  
Unit margins and intermediate product valuation.  
*Case studies: crude oil arbitrage, Fluid Catalytic Cracking (FCC) unit margin.*

### REFINERY BLENDING SIMULATION

0.5 d

*Case study: managing the blending operation of a refinery taking into account the economic and technical (product specifications, capacities, etc.) constraints.*

### OPTIMIZATION OF REFINING OPERATIONS – LINEAR PROGRAMMING

1 d

Linear programming (LP) principles: linear equation, objective function, profit maximization or cost minimization, Simplex method, graphic interpretation, etc.  
Analysis of the LP results: optimum properties, marginal costs, domain of validity of the results, etc.  
*Case study on Excel: explanation of a refinery model matrix (material balances, product specifications, utilities consumption, objective function, etc.); team work on the optimization of a cracking refinery and on the result analysis.*

### INVESTMENT PROFITABILITY STUDIES

1 d

Value creation and capital cost, cash flows, discounting principle and inflation impact.  
Standard global profitability analysis: cash flow schedule, economic criteria (net present value, internal rate of return, etc.).  
Introduction to risk analysis.  
*Exercises on various investment profitability studies for refineries and petrochemical plants.*

Reference: EAV/PERO

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
London	17 October	20 October	£3,300

# Refinery Operation Management & Linear Programming

Purpose	Course Content	5 days
<p><b>Audience</b></p> <p><b>Level: PROFICIENCY</b></p> <p>Managerial staff, supply planners, oil economists and personnel in charge of supply, planning, programs and product blending.</p>	<p><b>OIL MARKETS &amp; TRADING</b></p> <p>Oil supply and demand fundamentals and evolution. Petroleum physical trading (spot, forward). Crude oil and petroleum product pricing: benchmark, quality differential, etc. Financial trading (futures) and hedging strategies for a refiner.</p>	0.25 d
<p><b>Learning Objectives</b></p> <p>Upon completion of the course, participants will be able to:</p> <ul style="list-style-type: none"> <li>▶ optimize refinery operations, crude oil selection and crude oil selection,</li> <li>▶ analyze the results of a linear programming model optimization,</li> <li>▶ help optimizing a planning, from preparation of optimal monthly programs up to daily operation scheduling.</li> </ul>	<p><b>REFINING CONTEXT</b></p> <p>World petroleum product demand. Refining supply: overcapacity, types and quantity. Main challenges: deep conversion, new product specifications, petrochemical integration, environment, etc. Projects and perspectives.</p>	0.5 d
<p><b>Ways &amp; Means</b></p> <ul style="list-style-type: none"> <li>▶ Case studies and exercises derived from present refinery situations.</li> <li>▶ Economic optimization using Excel software and the solver.</li> <li>▶ Quiz.</li> </ul>	<p><b>REFINING MARGINS &amp; COSTS</b></p> <p>Refinery margins and costs: definitions and evolution worldwide. Unit margins and intermediate product valuation. <i>Case studies: crude oil arbitrage, Fluid Catalytic Cracking (FCC) unit margin.</i></p>	0.75 d
<p><b>Prerequisites</b></p> <p>Knowledge of refining unit operations.</p>	<p><b>OPTIMIZATION OF REFINING OPERATIONS – LINEAR PROGRAMMING</b></p> <p>Linear programming (LP) principles: linear equation, objective function, profit maximization or cost minimization, Simplex method, graphic interpretation, etc. Analysis of the LP results: optimum properties, marginal costs, domain of validity of the results, etc. <i>Case study on Excel: parametrization and preparation of a refinery model matrix (material balances, product specifications, utilities consumption, objective function, etc.); team work on the optimization of a cracking refinery and on the result analysis.</i></p>	2.5 d
	<p><b>OPTIMIZATION OF REFINERY OPERATIONS – SCHEDULING</b></p> <p>Principles of refining management: constraints, operations organization. Monthly program to daily operations. Optimization of margins from different process units. <i>Case study: management of typical sequential constraints (delays, processing problems, etc.).</i></p>	1 d



# Economic Framework of Refining

## Purpose

This course provides a complete view of all the fundamental aspects and challenges of the economic framework in which the refining industry is evolving.

## Audience

### Level: FOUNDATION

Technical, operating and engineering personnel working in the refining industry, trading and commercial specialists, independent consultants, process licensors, catalyst manufacturers and refining subcontractors.

## Learning Objectives

Upon completion of the course, participants will be able to:

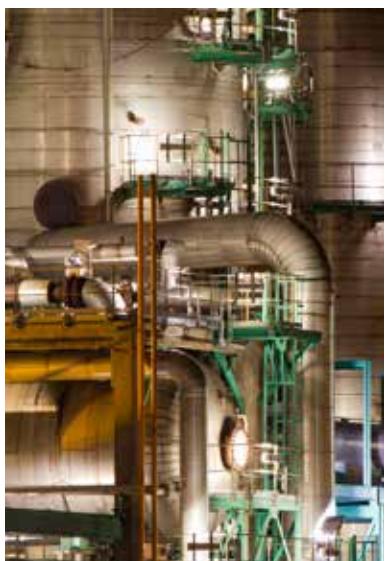
- ▶ calculate product marginal value, refinery margins and process unit margins,
- ▶ identify cost savings in order to improve margins,
- ▶ simulate refinery operations and product blending,
- ▶ simulate and optimize refinery operations, crude oil selection and product manufacturing,
- ▶ analyze the result of a linear programming model optimization,
- ▶ evaluate project profitability.

## Ways & Means

- ▶ Case studies and exercises derived from present refinery situations.
- ▶ Economic optimization using Excel.
- ▶ Quiz.

## Prerequisites

Basic notions of Microsoft Excel.



## Course Content

5 days

### TECHNICAL OVERVIEW

0.25 d

Brief technical presentation of the main refining units: distillation, conversion, blending, etc. Refinery scheme evolution.

### OIL MARKETS & TRADING

0.25 d

Oil supply and demand fundamentals and evolution.

Petroleum physical trading (spot, forward).

Crude oil and petroleum product pricing: benchmark, quality differential, etc.

Financial trading (futures) and hedging strategies for a refiner.

### REFINING CONTEXT

0.5 d

World petroleum product demand.

Refining supply: overcapacity, types and quantity.

Main challenges: deep conversion, new product specifications, petrochemical integration, environment, etc.

Projects and perspectives.

### REFINING MARGINS & COSTS

1 d

Refinery margins and costs: definitions and evolution worldwide.

Unit margins and intermediate product valuation.

*Case studies: crude oil arbitrage, Fluid Catalytic Cracking (FCC) unit margin.*

### REFINERY BLENDING SIMULATION

0.5 d

*Case study: managing the blending operation of a refinery taking into account the economic and technical (product specifications, capacities, etc.) constraints.*

### OPTIMIZATION OF REFINING OPERATIONS – LINEAR PROGRAMMING

1 d

Linear programming (LP) principles: linear equation, objective function, profit maximization or cost minimization, Simplex method, graphic interpretation, etc.

Analysis of the LP results: optimum properties, marginal costs, domain of validity of the results, etc.

*Case study on Excel: explanation of a refinery model matrix (material balances, product specifications, utilities consumption, objective function, etc.); team work on the optimization of a cracking refinery and on the result analysis.*

### OPTIMIZATION OF REFINERY OPERATIONS – SCHEDULING

0.5 d

Principles of refining management: constraints, operational organization.

Monthly program to daily operations.

Optimization of margins from different process units.

*Case study: management of typical sequential constraints (delays, processing problems, etc.).*

### INVESTMENT PROFITABILITY STUDIES

1 d

Value creation and capital cost, cash flows, discounting principle and inflation impact.

Standard global profitability analysis: cash flow schedule, economic criteria (net present value, internal rate of return, etc.).

Introduction to risk analysis.

*Exercises on various investment profitability studies for refineries and petrochemical plants.*

Reference: EAV/EFR Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	29 May	2 June	€3,140

■ This course is also available in French: EAV/CER. Please contact us for more information.

# Economic Optimization of Refining Operations

## Purpose

This course allows the participants to acquire the main economic challenges of running a refinery and a better understanding of the oil markets (crude oil and petroleum products) in order to optimize refining operations.

## Audience

### Level: PROFICIENCY

Engineers, independent consultants, subcontractors or managers from refining who need a better understanding of operation optimization.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ understand the economic issues and the main parameters influencing refining profitability,
- ▶ develop a working knowledge of management tools and models used in the industry,
- ▶ get a grasp of the input/output balances of the refining industry,
- ▶ calculate product value (intermediate, semi-finished or finished products), refinery margins and process unit margins; how cost and margins compare; how to simulate refinery operations and product blending,
- ▶ understand and analyze the refining margin from an operational point of view, considering the contribution of each unit operation,
- ▶ understand the notion of break-even point (as an evaluation tool for assessing the resilience of a refinery to economic changes),
- ▶ comprehend ways to optimize refinery operations, crude oil selection and product manufacturing, in order to improve profitability,
- ▶ gain a working knowledge in decision-making regarding future investments,
- ▶ better understand and use the various elements that contribute to refining margin improvement, such that: blending optimization, energy optimization, maintenance management, inventory management, analysis, performance monitoring,...

## Ways & Means

- ▶ Case studies.
- ▶ Example cost of give-away.
- ▶ Calculation of a working inventory.

## Prerequisites

Basic notions of Microsoft Excel.

## Course Content

5 days

### TECHNICAL OVERVIEW

0.25 d

Petroleum demand.  
Crude oils - Qualities and characteristics.  
Petroleum products - Characteristics and specifications.  
Refining schemes and processes.

### PRICE CONSTITUTION OF CRUDE OILS & PETROLEUM PRODUCTS

1 d

The different types of crude oils and their interactions.  
Notions of incoterms (FOB, CIF...).  
Price determination from reporting agencies (e.g.: Platt's and Argus).

### REFINING MARGINS & COSTS

1 d

Definitions.  
Different types of margins and indicators.  
Principle of estimation of the real margin in a refinery from the reference indicator.  
Refining variable and fixed costs.  
Definitions and principle of a refinery break-even point.

### REFINING MANAGEMENT ITEMS

1 d

Economic impact of unit yields.  
Product valorization challenges.  
Notion of constraint cost.  
The use value of intermediate, semi-finished and finished products.  
Examples.

### VALUE & SIMULATION OF INTERMEDIATE & SEMI-FINISHED PRODUCTS

0.75 d

Value of a product depending on its use and the economic context.  
Notion of marginal cost, netback value.  
Capital gain or loss of separation, product blending or transformation operations; examples.  
*Case study of the premium "straight-run" for atmospheric residues.*

### HOW TO IMPROVE THE REFINING MARGIN DAILY?

0.5 d

Blending optimization.  
Energy integration, maintenance management.  
Monitoring and control of consumption (energy, chemicals, catalysts) and losses.  
Inventory management, working inventory.  
Organization, reactivity, employees training.  
Implementation analysis and performance monitoring tools (KPI: Key Performance Indicators),...

### OPTIMIZATION OF THE FEEDSTOCKS – KEY CRITERIA

0.5 d

*Crude oil case study: tools and models used, basic knowledge of linear programming.*  
*Case study.*

Reference: EAV/REO  Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	11 December	15 December	€3,270

 This course is also available in French: EAV/OER. Please contact us for more information.

# Refining & Petrochemicals Synergies

## Purpose

This course provides a complete review of the main refining and petrochemical specificities, as well as the identification of the possible synergies. It highlights the economic gains achievable from refining-petrochemicals integration.

## Audience

### Level: PROFICIENCY

Staff from refining and petrochemistry involved in production, planning, procurement, marketing, management control and investment.

## Learning Objectives

Upon completion of the course, the participants will be able to:

- ▶ describe the main specificities of the refining and petrochemical sectors,
- ▶ identify the possible synergies between refining and petrochemistry,
- ▶ explain the economic challenges and the main factors of these sectors' profitability,
- ▶ analyze the effects of these synergies.

## Ways & Means

- ▶ Quiz, examples.
- ▶ Case studies and exercises in team work.

## Prerequisites

- ▶ Basic knowledge of refining and petrochemical unit operations.
- ▶ Basic notions of Microsoft Excel.

## Course Content

2 days

### TECHNICAL REVIEW OF REFINING & PETROCHEMISTRY

0.5 d

Main petroleum and petrochemical products: key product specifications review.

Refining and petrochemical schemes.

HSE specifications: refining ( $\text{H}_2\text{S}$ , etc.), petrochemicals (product instability, etc.).

### SYNERGIES BETWEEN REFINING & PETROCHEMISTRY

1 d

Utility exchanges:  $\text{H}_2$ , gas, fuel.

Supply: ethane, LPG, naphtha, atmospheric gasoil, vacuum distillate.

Product exchanges: pyrolysis gasoline, olefins.

Common treatment of the C4 cuts: BTX (Benzene-Toluene-Xylene) extraction.

Pooling services.

### REFINING & PETROCHEMICALS ECONOMICS

0.5 d

Refining and petrochemical margins and costs.

Location and unit severities effects.

Gains due to synergies.

*Case study: economics of a refinery, of a steam cracker and of the integration of both (with some synergies).*



Reference: EAV/SRP  Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	22 November	23 November	€1,470

 This course is also available in French: EAV/IRP. Please contact us for more information.

# Profitability Analysis of Downstream Investment Projects

## Purpose

This course provides an in-depth understanding of the concepts behind the theory of capital budgeting, leading to an improvement of the analysis in investment profitability studies.

## Audience

### Level: PROFICIENCY

Managers and staff concerned with decision affecting medium and long term cash flows (such as investment, disinvestment and acquisitions); people who need to improve their understanding of the theory and the practice of investment analysis.

## Learning Objectives

On completion of the course, the participants will be able to:

- ▶ use tools related to an investment profitability analysis,
- ▶ incorporate terms of financing plans in equity profitability analysis,
- ▶ build complex computer models for cash flow analysis,
- ▶ carry out risk analysis of investment projects.

## Ways & Means

Case studies and exercises derived from actual refinery situations.

## Prerequisites

Basic notions of Microsoft Excel.

## Course Content

3 days

### ECONOMIC CRITERIA

0.75 d

Value creation, capital cost and discount rate of a company.  
Equity and debt, Corporate finance and return on capital, ROCE and ROE.  
Cash flows and discounting principle.

Net Present Value (NPV), Internal Rate of Return (IRR), Pay-Out Time (POT), financial exposure, profitability index.

### GLOBAL PROFITABILITY ANALYSIS

0.75 d

Analysis of operating cash flows and economic criteria.  
Return on capital employed.  
Profit and Loss accounts and associated project income taxes.  
Impact of taxation and inflation in profitability investment studies.  
Choice of an investment program with a limited budget, scarcity cost of capital.

### RISK ANALYSIS

0.5 d

Risk analysis methodology.  
Sensitivity analysis in investment decision, Spider and Tornado charts.  
Limits of sensitivity analysis.

### CASE STUDIES ON INVESTMENT PROFITABILITY

1 d

Octane improvement: implementation of isomerization and/or alkylation process units.  
Hydrocracker project.  
Refinery project.  
Steam cracker project.



Reference: EAV/PDP Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	16 May	18 May	€2,000

This course is also available in French: EAV/PPA. Please contact us for more information.

# Downstream Module

## Purpose

This course provides a better understanding of the downstream petroleum sector in its technical, economic, commercial and environmental dimensions (main refining units, key economic data and characteristics, management tools...).

## Audience

Recently hired professionals, preferably with an engineering background, about to take up a position in downstream petroleum activities.  
Staff from other petroleum sectors (upstream, chemicals, etc.) taking up a downstream managerial position or from government agencies with responsibilities for petroleum matters will also benefit from this course.

## Prerequisites

No prerequisites for this course.

## More info

This module is a part of a 16-month master degree program, Petroleum Economics and Management, run by IFP School

## Course Content

60 days

### REFINING

Crude oils and finished products.  
Refining processes.  
Deep upgrading.  
Environmental constraints.  
Consequences of the reduction of heavy fuel oil outlets.  
Short-term refinery management.  
Unit margins.

6 d

### DECISION SCIENCES

Linear programming: simplex, duality, economic interpretation, etc.  
Refining supply and demand.  
Refinery investments, costs and margins.  
Dynamic programming, non-linear programming, MCP problems in their applications in Energy industries (Gas and Electricity).

4 d

### DOWNTREAM MANAGEMENT & SUSTAINABLE DEVELOPMENT (refining, gas & power)

Mid and downstream business: oil refining, petrochemicals and products.  
Utility management: coal, gas and power.  
Renewables and Environmental Management.

22 d

### COMMODITIES MARKETS & TRADING

Introduction to commodities markets (energy, soft, tropical & non-ferrous).  
Physical oil markets.  
OTC products.  
Future markets. Options.  
Risk management and hedging.

5 d

### STRATEGIC MARKETING & MANAGEMENT

Role of marketing in the firm and in the economy.  
Marketing organization.  
Measuring the firm's competitiveness.  
Designing a development strategy.

8 d

### ADVANCED ECONOMETRICS

Applied probability and statistics.  
Applications of statistical and probabilistic concepts.

5 d

### INDEPENDENT STUDY

Personal research work.

10 d



Reference: EAV/DOM Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	18 April	13 July	€12,550

# Marketing & Sales of Lubricants

Purpose	Course Content	4 days
<p><b>Audience</b></p> <p><b>Level: PROFICIENCY</b></p> <p>Managers in a new position in lubricants business. Commercial staff moving into the lubricants area or with responsibilities, e.g. in refining, research, planning, ..., related to lubricants. Staff who already have lubricants experience but who require to extend their general, marketing and strategic knowledge.</p>	<p><b>LUBRICANTS MARKET</b></p> <p>Overview of the lubricants market. Evolution of demand and general characteristics. Oil industry and the lubricants. Added value chain. Business models.</p> <p><b>LUBRICANTS PERFORMANCE</b></p> <p>Performance standard. Environmental issues. Automotive lubricants. Transmission oils. Industrial lubricants. Metal working fluids. Greases.</p> <p><b>BASE OILS</b></p> <p>Group classification and technical aspects. Worldwide capacity breakdown by quality: mineral, synthetic. Worldwide capacity breakdown by operator. Base oils re-refining. Capacity and demand trend outlook: 5 years' time horizon. Financial structure: profitability, pricing, contract terms.</p> <p><b>ADDITIVES</b></p> <p>Role and functions of the additives. Respective role and responsibilities in technology developments and ownership: OEMs, additives vendors, lubricants marketers. Market structure and players. Future trends outlook.</p> <p><b>OPERATIONS</b></p> <p>Lubricants manufacturing and distributions: main steps, strategic options. Manufacturing optimization: procurement, blending, filling. Typical cost structure. Managing performance.</p> <p><b>LUBRICANTS MARKETING</b></p> <p>General consumer marketing. General lubricants market segmentation: factors of impact. Implementing appropriate marketing tools. Developing a strategic marketing plan. Added value opportunities: total fluid management. <i>Practical case exercise.</i></p> <p><b>MARINE LUBRICANTS</b></p> <p>Marine lubricants market specific requirements. Operational constraints and consequences on products technologies and logistics. Market organization and players. Financial structure and contractual terms.</p>	<p><b>0.5 d</b></p> <p><b>0.5 d</b></p> <p><b>0.5 d</b></p> <p><b>0.25 d</b></p> <p><b>0.25 d</b></p> <p><b>1.5 d</b></p> <p><b>0.5 d</b></p>
<p><b>Learning Objectives</b></p> <p>Upon completion of the course, participants will be able to:</p> <ul style="list-style-type: none"> <li>▶ understand the commercial and marketing environment, covering base oils, additives, blending plants, automotive and industrial sectors, and consumer requirements,</li> <li>▶ know the marketing and strategic options available.</li> </ul> <p><b>Ways &amp; Means</b></p> <ul style="list-style-type: none"> <li>▶ Industrial experience of the lecturer.</li> <li>▶ Interactive lecture.</li> <li>▶ Real case studies.</li> </ul> <p><b>Prerequisites</b></p> <p>No prerequisites for this course.</p>		
		

# NEW Supply Chain Management

## Purpose

This training provides a deeper knowledge of all technical, economic, administrative and environmental constraints of the petroleum logistics from the refinery to the gas station to optimize it more effectively.

## Audience

### Level: PROFICIENCY

All personnel in the petroleum industries, distributors, large consumers concerned with supply logistics issues, transportation and storage.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ set up a logistics plan and establish different modes of supply,
- ▶ establish the characteristics between the various tools of storage and transportation,
- ▶ analyze the economic aspects of a supply chain.

## Ways & Means

Case studies.

## Prerequisites

Minimum 3 years of working experience in Oil Supply chain.

## Course Content

5 days

### INTRODUCTION & PRINCIPLES

0.5 d

Definition: what is logistics? What is a supply chain?  
Principles of the distribution of petroleum products.  
Review of activities, supply chain link production to consumers.  
Definition of actual tools.  
Implementation of supply chain schema.

### STORAGE MANAGEMENT

0.5 d

Factors of entry points (refineries and import terminals).  
Factor of exit points (to consumers).  
"Pull" and "push" modes.  
Basic tool for stock management.

### TECHNICAL ASPECTS OF STORAGE

1 d

Review of the different storages (above ground and underground).  
Operation equipment and control.  
Stocks measurements.  
Losses (tank breathing, product movement, loss control).  
Flow measurements. Safety equipment.

### ECONOMICS OF STORAGE & TRANSPORT OPERATIONS

1 d

Cost notion. Storage size. Investments. Maintenance.  
Cost breakdown for mixed products and petroleum products.  
Maintenance policy and costs. Distribution cost pricing policy.

### SECURITY STORAGES

0.25 d

Why security storages?  
IEA mission. Example in different countries in the world.  
Review of technical problems due to long term storage.

### SHIPPING

0.5 d

General features.  
The Market and its players-Fixing of the freight rate (Worldscale).  
Chartering contracts (Voyage charter, COA, Time charter...).  
Risk control and environmental protection.

### SUPPLY CHAIN DESIGN & METHODOLOGICAL APPROACH

0.5 d

Analysis of the Industry. Organization analysis. Process analysis. Location analysis.  
Operational optimization. Status and alternatives' analysis.  
Key Performance Indicators.  
Benchmarking context.

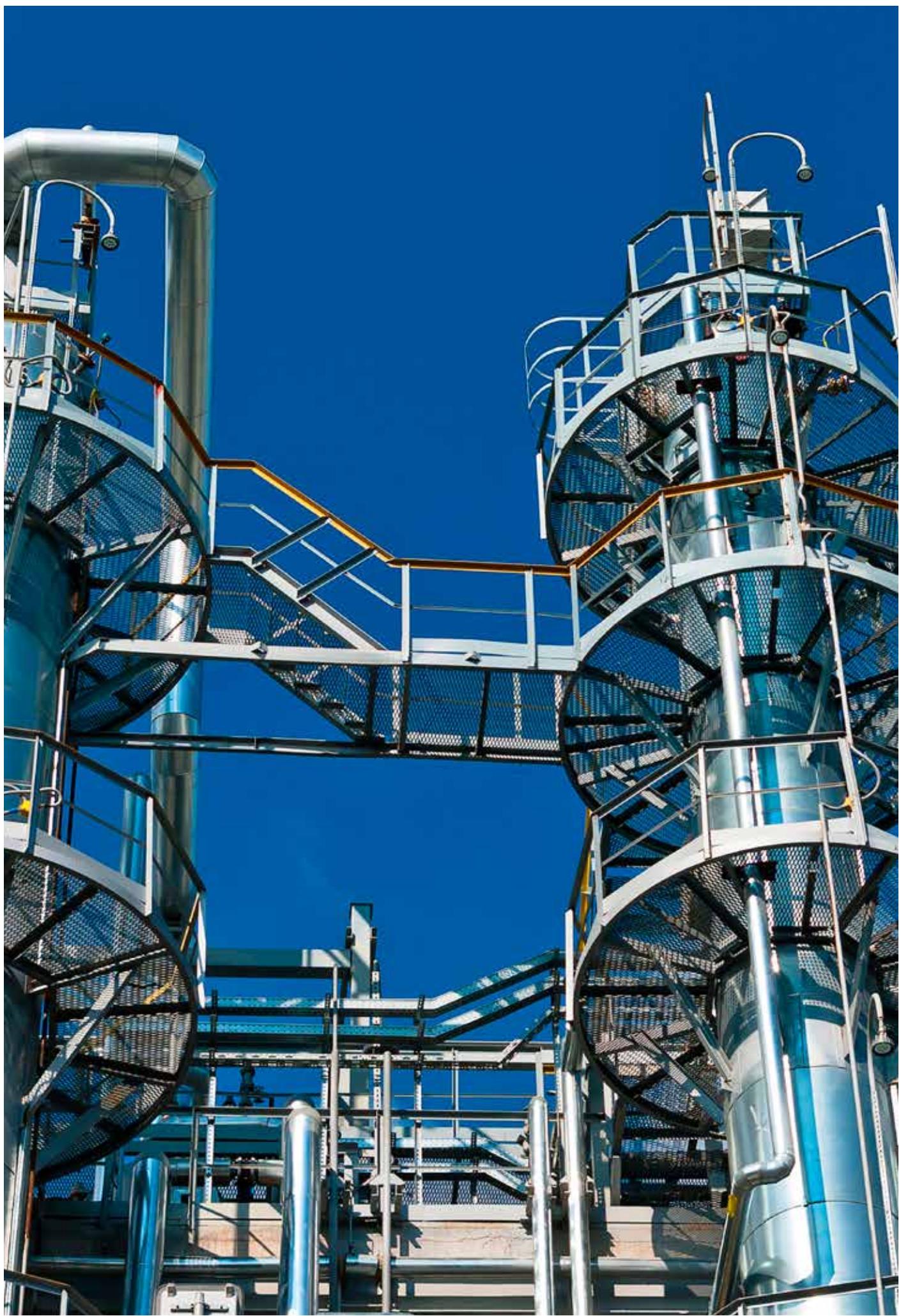
### CASE STUDY

0.75 d

*Case study based on an actual situation and containing applications of most of the main principles explained.*

### CASE STUDIES (treated all along the course)





# Finance & Management

Financial Management of an International Oil & Gas Company .....	p. 80
Price Risk Management in Energy Markets .....	p. 81
Investment Profitability Studies in the Oil & Gas Industry .....	p. 82
Upstream Contracts Audit .....	p. 83
Governance of an E&P Company .....	p. 84

# Financial Management of an International Oil & Gas Company

## Purpose

This course provides a deeper knowledge on accounting in the oil industry and to introduce the tools of financial analysis and management.

## Audience

### Level: PROFICIENCY

Upstream professionals who would like to understand the bases of financial analysis in the upstream Oil & Gas activities.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ appreciate the specificities of the international petroleum accounting standards,
- ▶ define fundamentals of cost analysis and control,
- ▶ analyze the financial situation of a company,
- ▶ use the methodology and techniques of audit.

## Ways & Means

Case studies and exercises.

## Prerequisites

Basic knowledge in the areas of financial accounting, management accounting or corporate finance.

## Course Content

10 days

### MODULE 1 - FUNDAMENTALS OF OIL & GAS ACCOUNTING & COSTS CONTROL METHODOLOGY

#### E&P fundamentals

Overview.

0.5 d

#### Accounting standards

Accounting principles

2.5 d

Accounting system and principles, accounting plan, financial statements, valuation of assets.

Depreciation and provision, income statement, balance sheet, cash flow statement and cash flow table.

International accounting standards: IFRS and FAS, US GAAP, SEC requirements.

Specific cases: relinquishment and site restoration, deferred taxes, potential badwill of fixed assets, etc.

#### Cost analysis & cost control

Fundamentals of cost analysis:

Direct and indirect costs, fixed and variable costs, total cost, etc.

Methodology of cost allocation.

Standard costs: purpose, identification and implementation.

Budget and cost control:

Cost accounting definition and implementation.

Labor costs, inventories, etc.

2 d

### MODULE 2 - FUNDAMENTALS OF FINANCIAL MANAGEMENT & AUDIT METHODOLOGY

#### External & internal financial audit

Methodology and techniques of financial audit.

Define an audit program.

Evaluate the quality of internal control.

Audit of the main business lines (inventories, procurement, fixed assets, payroll).

Conduct of the audit.

Audit report.

2 d

#### Financial management & financial analysis

3 d

Fundamentals of financial analysis:

Value creation and management, earnings and cash flow, free cash flow.

Working capital, capital expenditures, return on assets, cost of capital.

Short term financial management: cash and cash equivalents, short term debts, cash management.

Financial management:

Long term financial resources, risk and return.

Financial securities: bonds and other debt, shares, other tools of corporate financing.

Project financing:

Definition, pros and cons, criteria of choice.

Examples of success and analysis of failures, debt restructuring.



Reference: GIP/FMC Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	20 March	31 March	€6,970

This course is also available in French: GIP/MFP. Please contact us for more information.

# Price Risk Management in Energy Markets

## Purpose

This training provides a better understanding of the principles and techniques for Oil & Gas price risk management.

## Audience

### Level: PROFICIENCY

Professionals in the Oil & Gas industries impacted by the volatility of oil or gas prices: producers, marketers, refiners. Purchasing, planning and finance departments of energy consumers. Professionals from the bank sector who need to understand the specificities of Oil & Gas price risk management.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ review the ways of evaluating price risk,
- ▶ analyze and manipulate the exchange traded products used for hedging,
- ▶ understand the different over the counter products used in hedging strategies for different Oil & Gas activities.

## Ways & Means

- ▶ Selected teaching methods: case studies.
- ▶ Hedging exercises.

## Prerequisites

Bachelor's degree +3 and/or a minimum 3 years of working experience in oil Supply chain or oil Markets.

## Course Content

3 days

### OIL & GAS MARKETS

0.25 d

Physical Oil & Gas markets.  
Markets structures and types of transactions.  
Price references and pricing mechanisms.

### PRICE EXPOSURE & RISK MANAGEMENT

0.75 d

Price risk: what is at risk?  
How to monitor it?  
How to mitigate the risk: definition of hedging.  
How to account for the risk: Mark to Market and Value-At-Risk.

### EXCHANGE TRADED PRODUCTS: FUTURES

0.75 d

Exchanges and their organization: NYMEX, ICE.  
Main Futures contracts.  
Electronic trading.  
Hedging using Futures.  
Basis risk and hedging imperfections.  
Taking advantage of the market structure (contango, backwardation).

### OTHER DERIVATIVE INSTRUMENTS: FORWARDS, SWAPS & OPTIONS

0.75 d

Forward contracts.  
Swaps.  
Clearing OTC Transactions.  
Options: pricing and sensitivities.  
Options strategies: caps, floors, collars.

### HEDGING STRATEGIES

0.5 d

Various examples.  
*Case study.*



Reference: GIP/PRM Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	17 October	19 October	€2,450

# Investment Profitability Studies in the Oil & Gas Industry

## Purpose

This course provides a better understanding of the concepts behind the theory of capital budgeting, thus helps improving the analysis in investment profitability studies. A number of computer case studies will be treated all along the course to apply the principles that are presented succinctly, which makes this course a very practical one.

## Audience

### Level: FOUNDATION

Managers and staff concerned with decisions affecting medium and long term cash flows, such as investment, disinvestment, acquisitions or leasing, who need to improve their understanding of the theory and practice of investment analysis.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ develop advanced computer models for the economic evaluation of Oil & Gas projects,
- ▶ incorporate specific financing plan through equity profitability analysis,
- ▶ analyze the economic results and carry out sensitivity analysis,
- ▶ incorporate the risk and uncertainty in the economic evaluation of Oil & Gas projects.

## Ways & Means

Case studies simulated on computers.

## Prerequisites

Participants need to be comfortable with the use of Microsoft Excel.



## Course Content

4 days

### FINANCIAL ENVIRONMENT

0.5 d

Value creation and management.  
Basic principles of corporate finance and accounting.  
Projects and sources of financing.  
Risks and cost of financing.

### ECONOMIC EVALUATION CRITERIA

0.5 d

Corporate finance, capital costs and discount rate of the company.  
Construction of project cash flows schedule.  
Economic criteria for project evaluation: net present value (NPV), internal rate of return (IRR), payback period, etc.  
*Case studies: development of an oil field under concession.*

### GLOBAL PROFITABILITY ANALYSIS

1 d

Methodology for assessing the global profitability of capital invested.  
Impact of taxation and inflation in profitability investment studies.  
Choosing an investment program with a limited budget, Scarcity cost of capital.  
*Case studies: accelerating production project (EOR) project of upgrading a refinery (Hydrocracking unit).*

### ECONOMIC COST ANALYSIS

0.5 d

Accounting cost vs economic cost, after-tax cash outflows.  
Total discounted cost, annual economic cost.  
Economic depreciation, Unit economic cost, optimal economic lifetime.  
*Cases studies: issues related to purchasing of equipment and definition of an optimal economic lifetime.*

### EQUITY PROFITABILITY ANALYSIS

0.5 d

Financing Oil & Gas projects, project finance and B.O.T. structures.  
Various financing plans and debt repayment.  
Analysis of equity cash flows, return on equity capital, financial leverage.  
*Case studies: construction of LNG plant and gas pipeline projects with specific financing.*

### RISK ANALYSIS

1 d

Introduction to risk analysis and risk discount rate: sensitivity analysis, Spider and Tornado diagrams.  
Probability of success, economic risk analysis in oil exploration.  
Economic study of an exploration project using Min, Mode and Max scenarios.  
*Case studies: valuation of a decision to acquire information (seismic or drilling) and pricing of an exploration bloc.*

### CASE STUDIES

Oil field development project.  
Acceleration of production project with or without EOR (Enhanced Oil Recovery).  
Isomerization vs alkylation project.  
FCC project (Fluid Catalytic Cracking).  
Project of upgrading a refinery.  
Hydrocracking unit project.  
Polypropylene Plant Project.  
LNG plant project with specific financing.  
Gas pipeline project with specific financing.  
Service station modernization project.  
Gas-fired power plant project.  
Valuation of a decision to acquire information (seismic or drilling).  
Pricing of an exploration bloc.

Reference: GIP/IPS Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	25 April	28 April	€2,780

This course is also available in French: GIP/ERP. Please contact us for more information.

# Upstream Contracts Audit

## Purpose

This course provides participants a detailed understanding of principles and methods of upstream contracts audit.

## Audience

### Level: PROFICIENCY

For upstream personnel who will conduct joint-venture audits, or will be audited by partners in a joint-venture, for State auditors in charge of auditing Oil & Gas contracts, for executives who look for a comprehensive understanding of issues linked to contractual audit.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ prepare and lead a contractual audit,
- ▶ identify the risks related to accounting in Oil & Gas industry,
- ▶ set up an audit structure.

## Ways & Means

Case studies and exercises based on recent industrial cases.

## Prerequisites

Basic knowledge of the contractual and financial framework of E&P and/or a minimum 5 to 10 years' experience in financial functions in the E&P sector.

## Course Content

5 days

### CONTRACTUAL ACCOUNTING

1 d

Joint Operating Agreements and accounting appendix.  
Upstream tax issues.

Production Sharing Contracts (PSC) and accounting procedures.  
Joint costs and recoverable costs.  
At cost principle and implementation.  
Bases of operator's cost accounting.

### SPECIFICITIES OF JOINT VENTURE AUDIT

1.5 d

Audit rights.  
Organization of the audit: partners, operator.  
Auditing respect of at cost principle.  
*Exercises.*

### SPECIFICITIES OF STATE AUDIT

1.5 d

Audit rights.  
Organization of the State audit, auditors qualification.  
Articulation between joint-venture audit and State audit.  
Key elements of contract and accounting procedure.  
*Case study.*

### CONDUCTING A CONTRACT AUDIT

1 d

Audit preparation.  
During the audit.  
Conclusion of the audit.  
Audit supervisor role.  
Audit report and follow-up.



Reference: GIP/UCA Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	4 December	8 December	€3,580

This course is also available in French: GIP/ACEP. Please contact us for more information.

# Governance of an E&P Company

## Purpose

This course provides the most recent elements and reflections on companies governance and key issues specific to the Oil & Gas upstream companies, except for contracts audit which is treated in a separate course (upstream contracts audit).

## Audience

### Level: PROFICIENCY

Professionals in charge of implementing internal control and procedures, managers and independent board members wanting to know the best practices, to technical staff called to move to the internal audit of their company.

## Learning Objectives

Upon completion of the course, participants will be able to:

- ▶ obtain a global understanding of the problems attached to company's governance,
- ▶ know the most recent solutions developed and implemented in internal control of companies,
- ▶ analyze the human and financial resources needed to ensure the financial safety of the company,
- ▶ lead or supervise the creation of an internal audit.

## Ways & Means

Discussions on key issues and examples from the news.

## Prerequisites

5 to 10 years of experience in the international Oil & Gas industry environment.

## Course Content

5 days

### GOVERNANCE OF COMPANIES

Internal control: where and when.  
Principles of financial security.  
Definition of audit, norms and standards.  
Internal control: definition, modalities.  
Internal audit, external audit.  
Audit committee, Certified Public Accountants (CPAs) and external auditors.

1.5 d

### AUDIT & INTERNAL CONTROL

Definition.  
Code of conduct and internal audit.  
International standards of internal audit.  
Internal control and the COSO referential.  
Risk definition and management.  
Fraud definition, types and prevention.  
Introduction to internal audit methods.

2 d

### OIL & GAS SPECIFIC ISSUES

FCPA compliance.  
New reporting requirements for listed companies.  
Reserves, payments to States, emission certificates.

0.5 d

### BEST PRACTICES STUDY

Errors, creative accounting and aggressive accounting: assessment of the risks.  
Institutional answers in the USA and in the European Union.  
Company's organization.  
Developing an internal culture of financial safety.

1 d



Reference: GIP/GEPC Can be organized as an In-House course.

Contact: [eco.rueil@ifptraining.com](mailto:eco.rueil@ifptraining.com)

Location	Start Date	End Date	Tuition Fees
Rueil	27 November	1 December	€3,580

This course is also available in French: GIP/GCEP. Please contact us for more information.



# Keywords List

## A

Accounting: 40, 41, 42, 45, 50, 80, 82, 83, 84  
Acid gas: 56  
Actor: 28  
Additive: 76  
Agency: 28, 80  
Agreement: 83  
Alberta: 33  
Allocation: 80  
Amine: 56  
Amortization: 40, 41  
Analysis: 34, 35, 80, 82  
Analyst: 80  
Appraisal: 40  
Aquifer: 31  
Artificial lift: 55  
Assessment: 34  
Asset: 80  
Asset management: 44  
Audit: 40, 42, 50, 59, 80, 83, 84  
Auditing: 51  
Auditor: 84  
Auditor qualifications: 50  
Autocorrelation: 34  
Automotive: 76

## B

Backwardation: 62  
Base oil: 76  
Basis risk: 62  
Biogas: 29  
BKW: 34  
Blending: 69, 76  
Board: 84  
Bond: 80  
Bonuses: 43  
BOT: 82  
Breusch-Pagan: 34  
Brown-Durbin: 34  
Budget(s): 42, 43, 80, 82  
Budgeting: 41  
Business: 35, 76

## C

Cap: 81  
Capital budgeting: 45  
Capital expenditures: 30, 80  
Cargo: 28  
Case study: 58  
Cash flow: 74, 80, 82  
Causality: 34  
Certified training: 51  
Chain: 76  
Characteristic: 55, 76  
Chemical: 31  
Chow: 34  
Clause: 46  
Climate change: 37  
Climate correction: 37  
CO<sub>2</sub>: 56  
CO<sub>2</sub> abatement program: 37  
CO<sub>2</sub> reduction: 37  
Coal: 31  
Coal bed methane: 31  
Coal seam gas: 31  
Cointegration: 34  
Collar: 81

Commercial: 76  
Commitment: 42, 80  
Committee: 84  
Commodities market: 75  
Communication: 35  
Company(ies): 28, 84  
Completion: 52  
Concession: 40, 46  
Consolidation: 40  
Constraint cost: 72  
Consumer: 28, 76  
Contango: 62  
Contract(s): 28, 31, 35, 41, 44, 46, 47, 51, 80, 83  
Contractual: 83  
Contractual framework: 40, 42, 44, 64  
Control: 80, 84  
Corporate: 80, 82  
Correlation: 34  
Cost: 35, 69, 72, 70, 80, 82, 83  
Cost accounting: 50  
Cost analysis: 41, 68  
Cost control: 41, 70  
Cost management: 40  
Cost of capital: 40, 47  
Cost oil: 43  
Cost plus: 63  
Cost recovery: 43  
CPA: 84  
Crude: 28, 33, 35  
Crude oil: 72  
Cryogenic loops: 58

## D

DEA: 56  
Debt: 80, 82  
Decision: 35  
Decision making process: 45  
Decision tree: 44, 47  
Deep conversion: 33  
Dehydration: 55, 56  
Demand: 28  
Depreciation: 41, 82  
Derivatives: 62  
Desalting: 55  
Design: 55, 58  
Development: 82  
Development project: 47  
Discount: 82  
Discount rate: 40, 41, 44, 47, 74  
Distribution: 29, 76  
Distribution of petroleum products: 68  
Divisia: 34  
Downstream: 28, 35, 74  
Drilling: 52, 55, 57  
DRIZO: 56  
Duration: 42  
Durbin-Watson: 34  
Dynamic simulation: 58

## E

Earning: 80  
ECM: 34  
Econometric: 34, 75  
Economic aspects: 77  
Economic environment: 45, 65, 71  
Economic(s): 28, 33, 35  
Economy: 28, 46  
Eigenvalue: 34

Electricity: 37, 57  
Emulsion: 55  
Energy: 28, 34  
Energy consumption: 37  
Energy efficiency: 37  
Energy saving: 37  
Engle: 34  
Environment: 28, 31, 33  
Environmental: 37  
EOR: 55  
EOR: enhanced oil recovery: 82  
Equilibrium: 28  
Equity: 47, 82  
Error: 34  
Evaluation: 34, 35, 81  
Evans: 34  
Exception: 50  
Exchange: 81  
Exploitation: 30  
Exploration: 35, 40, 41, 52  
Exploration & Production contracts: 42  
Extension: 43  
External: 84  
Extra heavy: 33

## F

Farm-in: 42, 44, 46, 47  
Farm-out: 42, 44, 46, 47  
FAS: 80  
Feedstocks: 72  
Field development projects studies: 57  
Field treatment: 55  
Filling: 76  
Finance: 45, 51, 84, 82, 81  
Financial analysis: 80, 82  
Financial management: 80, 82  
Financial markets: 29  
Financing: 41, 80  
Finding cost: 41  
Fiscal: 35  
Fiscal environment: 40  
Fisher: 34  
Fixed: 80  
Floor: 81  
Flow assurance: 55, 57  
Fluid: 76  
Forecast: 34  
Forward: 29, 35, 62, 63, 81  
Freight: 28  
Fuel combustion: 37  
Fundamental concepts underlying: 57  
Future contracts: 63

## G

Game: 35  
Gas: 31, 35, 82, 83, 56  
Gas & power integration: 29  
Gas chain: 56  
Gas conditioning: 56  
Gas economics: 56  
Gas end-uses: 56  
Gas pipe: 56  
Gas processing: 56  
Gas production: 56  
Gathering network: 55  
General Terms & Conditions: 42  
Geologic traps: 53  
Geology: 52

Geophysics: 52  
Geopolitics: 45  
Governance: 84  
Government take: 43  
Granger: 34  
Grease: 76  
Groundwater: 31  
GTL: 29

## H

$H_2S$ : 55, 56  
Hansen: 34  
Hedge: 28  
Hedging: 28, 29, 62, 63, 81  
Heteroscedasticity: 34  
History: 28  
Host country: 46  
HSE management: 59  
HSE management systems: 59  
Hubs: 63  
Hydrates: 31, 56  
Hydraulic fracturing: 31  
Hydrocarbon: 52  
Hydrocracker: 74  
HYSYS™: 56

## I

ICE: 81  
IEA: 28, 35  
IFRS: 80  
Incoterms: 28, 72  
Indexation: 29, 30, 31, 63  
Industrial: 76  
Industry: 35, 76  
Instrumentation: 57  
Insurances: 43  
Internal: 84  
Internal auditing: 50  
Internal control: 50  
Internal rate of return: 71  
International: 80  
Inventories: 80  
Investment profitability: 82  
Investment projects: 74  
Investment(s): 35, 40, 41, 44, 68, 75  
Investor: 80  
IOC: 35

## J

JOA: 46  
JOA auditing: 50  
Johanson: 34  
Joint: 46, 83  
Joint operating agreement: 41, 42, 43  
Joint venture: 41, 80, 43  
JSBA: 46  
JV: 46

## K

KPSS: 34

## L

Landscape: 31, 33  
Laspeyres: 34  
Least square: 34  
Legal: 35  
Legal framework: 42, 65  
Leverage: 82  
Liabilities: 43  
Liberalization: 29, 30, 31  
Linear: 34  
Linear programming: 68, 69, 70, 71, 75  
Liquefaction: 58  
Liquefaction plants: 30  
LNG: 29, 30, 55, 56, 58, 63  
LNG carrier: 56  
LNG process simulation: 58  
LNG processing: 58  
LNG tanker(s): 30, 56  
Local content: 48  
Logging: 52  
Logistics: 76  
Logistics plan: 77  
Long term contracts: 29, 30, 62, 63  
Lubricants: 76

## M

Management: 35, 40, 74, 75, 81  
Manufacturing: 76  
Margin(s): 28, 35, 69, 70, 71  
Marginal costs: 72  
Market value: 63  
Market(s): 28, 30, 31, 35, 62, 63, 76, 81  
Marketing: 28, 29, 31, 68, 75, 76  
MDEA: 56  
Metering: 57  
Methodology: 84  
Midstream: 28  
Mineral: 76  
Mining: 33  
Model: 34, 76  
Modeling: 47, 82  
Modes of supply: 77  
Multicollinearity: 34

## N

Naphtha: 33  
National oil companies: 42  
Natural gas: 29, 63, 64, 58  
Negotiation: 46  
Net present value: 74  
Netback: 29  
Netback value: 30  
NGL: 55, 56  
NOC: 35  
Non consent: 43  
Norm: 84  
NYMEX: 81

## O

OEM: 76  
Offshore: 52, 57  
Oil: 28, 33, 35, 82, 83  
Oil & Gas: 55  
Oil & Gas processing: 57  
Oil companies: 24, 80  
Oil markets: 24, 71  
Oil products: 76  
Oil treatment: 53  
Oil, water & gas treatment: 57  
OPEC: 28, 35  
Operating: 83  
Operating conditions: 55  
Operating costs: 30  
Operation: 55, 58  
Operator: 76, 83  
Optimization: 69, 70, 71, 72  
Options: 62, 81  
Ordinary least square: 34  
Orinoco: 33  
OTC: 81  
Overview: 35

## P

Paasche: 34  
Partner: 83  
Patrimonial: 46  
Patrimonial contracts: 42  
Payback: 82  
Payroll: 80  
Performance: 76  
Perron: 34  
Petrochemicals: 31, 35, 68  
Petroleum: 28  
Petroleum contract auditing: 50  
Petroleum engineering: 53  
Petroleum law: 42  
Petroleum products: 28, 70, 72  
Physical trading: 62  
Pipeline: 56  
Planning: 81  
Plant: 76  
Platts: 28  
Politic: 28  
Pollution: 31, 33  
Portfolio optimization: 44  
Practice: 84  
Price: 28, 31, 33, 35  
Price formulae: 30  
Pricing: 30, 33, 63, 76, 70  
PRO/II™: 56  
Procedure: 84  
Process units: 71  
Procurement: 80  
Producer: 28  
Product: 35  
Product valorization: 72  
Production: 31, 35, 40, 41, 52, 80  
Production sharing contract: 40, 43  
Professional conduct: 50  
Profit & loss accounts: 69, 70, 71  
Profit maximization: 74  
Profit oil: 43  
Profitability: 35, 40, 44, 68, 69, 74  
Profitability analysis: 47  
Profitability of success: 41  
Project finance: 33  
Project management: 40, 44, 51

# Keywords List

Project(s): 28, 31, 35, 82  
PSA: 46  
PSC: 46, 83  
Purchase: 81

## R

R2: 34  
Rate: 82  
Rating: 80  
Recoverable: 83  
Refinery: 28, 33  
Refinery steam cracker: 74  
Refining: 28, 35, 68, 69, 70, 71, 72, 75  
Refining margins: 72  
Regasification terminals: 30  
Regimes: 42  
Regression: 34  
Regulation: 29  
Reindustrialization: 31  
Renewable: 25, 37  
Rent: 28, 41  
Rent sharing: 42  
Repayment: 82  
Report: 83  
Reporting: 28, 80  
Reporting agencies: 62  
Requirement: 76  
Reserves: 28, 35, 40, 80  
Reservoir characterization: 52  
Reservoir engineering: 45, 52, 57  
Responsibilities: 43  
Ressources: 80  
Return: 80, 82  
Revenue: 80  
Rights & duties: 43  
Ringfencing: 47  
Risk analysis: 40, 41, 44, 47, 74, 82  
Risk management: 59, 63  
Risk service contract: 40  
Risk zones: 50  
Risk(s): 35, 40, 80, 81, 82, 83  
Round: 46  
Rule: 84

## S

Safety engineering: 57, 58  
Sale: 35, 76  
Sales agreements: 30  
Sand: 31  
Scenario: 28, 35  
Scheduling: 68, 70, 71  
SEC: 80  
Sector: 76  
Securities: 80  
Sedimentary basin: 52  
Semi-finished products: 72  
Sensitivity: 82  
Sensitivity analysis: 70, 74  
Service: 46, 83  
Service contracts: 43  
Shale: 31, 33  
Share: 80  
Shareholder: 80  
Sharing: 28, 80  
Shipping: 35, 62, 65  
Simplex: 69, 70, 71  
Simulation: 34, 46  
Sole risk: 43

Specification: 35  
Spider: 82  
Spot: 35, 62, 63  
Spot markets: 29, 30  
Stabilization: 55  
Standard: 76, 80, 84  
Standard deviation: 34  
State: 46, 83  
State participation: 42  
Statistic: 34  
Steering committee: 43  
Storage: 29, 77  
Strategic: 28  
Strategy(ies): 28, 35, 81  
Student: 34  
Supervisor: 83  
Supply: 28  
Supply chain: 68, 77  
Supply chain management: 77  
Surrender: 42, 43  
Sustainable development: 37  
Swaps: 62, 81  
Sweetening: 55, 56  
Syncrude: 33  
Synthetic: 76

## T

Take or pay: 29, 35, 63  
Tar sands: 33  
Tariffs: 29  
Tax: 83  
Tax holiday: 43  
Tax regime: 40, 42  
Tax system: 41  
Taxation: 40, 41, 47, 51, 74, 82  
Technical assistance contract: 40  
Technical costs: 44  
Technology: 58  
TEG (TriEthylene Glycol): 56  
Test: 34  
Tight: 31  
Tornado: 82  
Trace: 34  
Trade: 81  
Trading: 28, 62, 64, 68, 75, 71, 81  
Transaction: 81  
Transfer of rights: 43  
Transmission: 76  
Transport: 56  
Transportation: 77

## U

Unconventional: 31, 33  
Unconventional gas: 29, 30  
Unit yields: 72  
Unitization: 49  
Upgrader: 33  
Upgrading: 33, 82  
Uplift: 43  
Upstream: 28, 35, 40, 41, 44, 47, 83  
Upstream petroleum contract: 50  
US GAAP: 80  
Utilities: 75

## V

Value: 76, 80, 82, 81  
Value creation: 74  
VAR: 34  
Variable: 80  
Venture: 83, 46  
Volatility: 81

## W

Water: 31, 33, 55  
Well effluents: 55  
Well performance: 55  
White: 34  
White certificate: 37  
Wind: 37  
Work program: 43  
Working: 76, 80  
Workshop: 35



# Economics & Management Division

## Expertise: Petroleum Economics

Each year, the Economics & Management Division of IFP Training offers more than 2,000 professionals the opportunity to acquire or develop an expertise in petroleum economics and financial management. The division is equipped with a large selection of short and long courses covering all parts of the Oil and Gas chain.

This division presents the industry with complete training solutions through:

- ▶ public courses for technical staff and managers from Oil & Gas companies, banks and administrations,
- ▶ In-house, short as well as long courses, tailor-made to meet specific needs,
- ▶ international conferences which gather managers and leaders of the oil industry.

## Our Team, Our Expertise

A number of faculty members and associate professors (former managers in the industry) are lecturers for the Economics & Management Division, with the help of three administrative assistants. Furthermore, many industry professionals are called upon to contribute their expertise to specific topics covered in our course programs.

Details of the team's professional background and expertise are found below.

- ▶ **Frédéric BAULE** is an Associate Professor. He is a crude oil and product market specialist

**Areas of expertise:** Risk management for trading, supply, and marketing activities

- ▶ **Pierre BOUILLON** is an Associate Professor with a more than 25- year career at Elf Exploration & Production, Sanofi and Total. He has held senior positions, notably in finance and audit

**Areas of expertise:** Internal audit, joint-ventures audit, and petroleum accounting

- ▶ **Ezékiel BOYER** is an Associate Professor currently working for the department in charge of international business development at Engie (GDF Suez)

**Area of expertise:** Natural gas market liberalization

- ▶ **Nadine BRET-ROZAUT** is the Director of the Center for Economics and Management of IFP School

**Areas of expertise:** Strategy and upstream economics

- ▶ **Guillaume CHARON** started his career as a financial analyst on the primary and secondary markets for European oil and energy actors. He has had several missions on behalf of Oil & Gas companies and Governments in the sectors of finance and strategy

**Areas of expertise:** Energy markets, strategies of oil & gas actors, and unconventional gas

- ▶ **Sylvie CHEMINEAU** holds a Master of International Economic and Financial Risk Management. Her professional experience includes Economic Analysis and Regulation of Gas Markets at Engie (GDF Suez)

**Areas of expertise:** Oil & Gas geopolitics, Gas & LNG economics, and gas markets

- ▶ **Jean-Philippe CUEILLE** is in charge of the apprenticeship program at IFP School and is the former President of the International Association of Energy Economist (IAEE)

**Area of expertise:** Energy economics

- ▶ **Gilles DARMOIS** is an Associate Professor and has held senior positions at Total, notably as vice-chairman in charge of financial activities in the Exploration & Production division

**Areas of expertise:** Finance in O&G industry, accounting and audit

- ▶ **Bruno DE CORBIÈRE** is an Associate Professor with a 20-year international experience in petroleum product marketing at Texaco

**Area of expertise:** Shipping

- ▶ **Mohamed Lyes DJENAOUI** holds a Master of Energy Economics and is a Senior Petroleum Economist at IFP Training

**Areas of expertise:** Upstream economics and investment project analysis

- ▶ **Bernard DUVAL** is an Associate Professor since 1995 after 35 years with Total. He has held senior positions in France and abroad, notably as Vice-Chairman in charge of Exploration

**Areas of expertise:** Upstream economics and risk analysis

- ▶ **Karim FAÏD** has 25 years of experience in teaching and economic studies

**Areas of expertise:** Upstream economics and investment projects analysis

- ▶ **Mustapha FAÏD** has held many positions throughout his 35-year career, notably as Gas Export Director then Vice President of Marketing and Development at Sonatrach. He was the General Director of the Observatoire Méditerranéen de l'Energie (OME) and President of SPTEC Advisory, a consulting firm

**Areas of expertise:** Commercial negotiations and gas contracts



► **Jean-Pierre FAVENNEC** is an expert and professor from IFP School with a long experience in the economics and management of energy and especially oil

**Areas of expertise:** Oil geopolitics, petroleum economics, refining economics

► **Thierry FERRER** has 25 years of industry experience at Shell and has served as President of Infineum France (JV Shell & Exxon)

**Areas of expertise:** Economics and management of the refining and petrochemicals industries

► **Marc GRANIER** has a long standing experience of the petroleum industry at ExxonMobil. He was the Refining Director at the Notre Dame de Gravenchon ExxonMobil refinery in France, Executive Vice President at the Yanbu refinery and Vice President of Chemicals in Riyadh in Saudi Arabia. He has also served as Deputy General Director and International Director at IFP Training

**Areas of expertise:** Refining and petrochemical economics

► **Lucien GUEZ** has 28 years of experience at ExxonMobil in refining, supply and international trading

**Areas of expertise:** Petroleum economics, supply, and oil markets

► **Paul JOATHON** has more than 35 years of experience with Total where he held senior positions in upstream and in business development

**Areas of expertise:** Negotiation, economical evaluation of projects, Joint Operating Agreements, petroleum contracts, boundaries issues, Joint Development Areas, unitization and certification

► **Véronique JUNQUA-SALANNE** spent more than 20 years working for the Total Group, in France and as an expatriate in various countries (India, South Africa and Venezuela)

**Areas of expertise:** E&P contracts and project economics, strategy, and human resources management.

► **Daniel Koskas** is an Associate Professor, currently working as a legal auditor and a certified public accountant for international companies in the Oil & Gas sector

**Areas of expertise:** Internal control and focused audits as well as legal audits for the certification of financial statements

► **Frédéric LANTZ** has supervised applied research projects related to linear programming and econometrics, first for Ifremer and then for IFP School

**Area of expertise:** Quantitative methods

► **Philippe ROCHOUX** has spent most of his career at Total. He joined the company in 1980 and occupied various positions mainly in the Exploration & Production Division in Finance in Europe & West Africa, and has held executive positions in Kazakhstan and Iran

**Areas of expertise:** Finance and audit

► **Michel ROMIEU** has more than 30 years of international experience at Total/Elf in the Exploration & Production sector and was the Director of Gas of the French Energy Regulation Commission

**Areas of expertise:** Upstream contracts and negotiations, development of natural gas projects as well as natural gas marketing and regulation.

► **Sylvie SAULNIER** is the Director of the Economics & Management Division at IFP Training. In her 15-year career at Shell, she has held different positions in R&D, International Development and Finance & Strategy

**Area of expertise:** Downstream economics

► **Silvio SPARANO** has 15 years of experience at Total with positions in refining (process & scheduling) and finance as the Finance Manager for the Total subsidiaries in Romania & Russia. He was the Finance Manager at Puma Energy in South Africa

**Areas of expertise:** Refining economics and trading

► **Gilles THERY** is an Associate Professor with a 38-year international career at ExxonMobil. He held senior positions such as Supply & Distribution Manager for Esso in France, Middle-East Refining Vice-President and European Logistics Business Development Manager for ExxonMobil

**Areas of expertise:** Supply and transport

► **Dominique VENET** is an Associate Professor with a 30-year career at Total and EDF. He has held senior positions in the upstream sector and business development in gas and LNG

**Areas of expertise:** Business development, financial engineering, and gas contracts negotiations

# Registration

Identify on the course program the course reference, the price, the location and the dates you are interested in; as well as the contact name for registration.

So that your registration is done in the best conditions, please follow the procedure below:

**3 weeks minimum** before the beginning of the course → Please send the completed **registration form**

**2 weeks minimum** before the beginning of the course → Please make the full payment

- By check payable to IFP Training, 232 avenue Napoléon Bonaparte – 92852 RUEIL MALMAISON CEDEX
- By bank transfer to IFP Training

**NATIXIS n° 30007 99999 04165583000 12**

**IBAN: FR76 3000 7999 9904 1655 8300 012 – NATXFRPPXXX**

- Should a sponsoring organization (like OPCA in France) pay for the course, please specify this on the registration form.

Do not hesitate to contact us for a late registration.

**Tuition fee includes instruction, documentation; as well as meals and beverage breaks.**

**IFP Training will send to the authorized person indicated on the registration form:**

- a written confirmation by mail
- one or several invitations for the participants
- useful information about the training course (access to the training center, training hours, etc.).

## To whom should you send your registration form?

You can find the registration form on page 97. It can be sent:

- by mail
- by email
- by fax

You must send it to the entity that will organize the course you have chosen. This entity appears at the bottom of the course program.

You need then to turn to the next page to find the corresponding address and phone number.

Any registration means the acknowledgement and the acceptance of IFP Training General Sales Conditions (page 94).

# Your Contacts

## Exploration & Production

### Geosciences & Reservoir Engineering

232 avenue Napoléon Bonaparte  
92852 Rueil-Malmaison Cedex - France  
**Valérie BERNARD-ESTÉVÈS**  
Nadia FERTANI  
Tel. + 33 (0)1 41 39 11 70  
Fax + 33 (0)1 47 08 92 83  
gre.rueil@ifptraining.com

### Projects & Logistics

232 avenue Napoléon Bonaparte  
92852 Rueil-Malmaison Cedex - France  
**Manuela JOYAUX**  
Tel. + 33 (0)1 41 39 11 80  
Fax + 33 (0)1 47 08 92 83  
pl.rueil@ifptraining.com

### Drilling & Well

Rue Paul et Henri Courteault  
64000 Pau - France  
**Rachel DAUGAS**  
Sandie LASSEURRE  
Tel. + 33 (0)5 59 30 82 48  
Fax + 33 (0)5 59 30 68 76  
fp.pau@ifptraining.com

### Production & HSE

232 avenue Napoléon Bonaparte  
92852 Rueil-Malmaison Cedex - France  
**Nadia BAGGAR**  
Henriette MENDY  
Laurent RENAULD  
Tel. + 33 (0)1 41 39 11 60  
Fax + 33 (0)1 47 08 92 83  
exp.rueil@ifptraining.com

### Production & HSE Pau

Rue Paul et Henri Courteault  
64000 Pau - France  
**Marie-Élise MIQUEU**  
Tel. + 33 (0)5 59 30 82 47  
Fax + 33 (0)5 59 30 68 76  
exp.pau@ifptraining.com

## Refining & Chemicals

### RC Lillebonne

Immeuble Futura 1  
Rue A. Desgenetais  
76170 Lillebonne - France  
**Anne BUCH**  
Angèle SAINT-LÉGER  
Tel. + 33 (0)2 35 39 60 77  
Fax + 33 (0)2 35 38 62 03  
rc.lillebonne@ifptraining.com

### RC Martigues

Le Bâteau Blanc – Bât. C  
Chemin de Paradis  
13500 Martigues - France  
**Véronique COUTURIER**  
Christine GRUNER  
Tel. + 33 (0)4 42 44 43 00  
Fax + 33 (0)4 42 80 61 20  
rc.martigues@ifptraining.com

### RC Rueil

232 avenue Napoléon Bonaparte  
92852 Rueil-Malmaison Cedex - France  
**Éliane CHU**  
Claudine SAMSON  
Tel. + 33 (0)1 41 39 11 00  
Fax + 33 (0)1 47 08 92 83  
rc.rueil@ifptraining.com

### RC Solaize

Rond-point de l'échangeur de Solaize – BP  
369360 Solaize - France  
**Françoise ANTON**  
Tel. + 33 (0)4 37 37 68 20  
rc.solaize@ifptraining.com

### CFA Lillebonne

Immeuble Futura 1  
Rue A. Desgenetais  
76170 Lillebonne - France  
**Angèle SAINT-LÉGER**  
Tel. + 33 (0)2 35 39 60 70  
Fax + 33 (0)2 35 38 62 03  
op.certif@ifptraining.com

## IC Engines & Lubricants

232 avenue Napoléon Bonaparte  
92852 Rueil-Malmaison Cedex - France  
**Yamina RIGHI**  
Tel. + 33 (0)1 41 39 12 00  
Fax + 33 (0)1 47 08 92 83  
ml.rueil@ifptraining.com

## Economics & Management

232 avenue Napoléon Bonaparte  
92852 Rueil-Malmaison Cedex - France  
**Karine STROCK**  
Coralie BOULANGER  
Fana DIOUF  
Tel. + 33 (0)1 41 39 10 80  
Fax + 33 (0)1 47 08 92 83  
eco.rueil@ifptraining.com

# Terms & Conditions

## 1/ Enrollment

All enrollments are considered as accepted orders as soon as the enrollment confirmation issued by IFP Training has been received and implies the client's full commitment to these Terms & Conditions which prevail over all other Customer documents, including general purchasing conditions.

All inscriptions to training sessions shall be carried out 3 weeks prior to the session start date. IFP Training reserves itself the right to accept late enrollment.

The number of participants per session is limited.

Enrollment will be confirmed once the organization center receives a fully complete enrollment form via email, fax or mail. Incomplete enrollment forms will not be accepted.

Enrollment will be final once payment has been received in full, or once an acceptance certificate from a sponsoring organization has been received.

If the entire cost of the session is not paid 2 weeks before the training session begins, IFP Training reserves itself the right to reopen to registration the places booked by the customer, after having informed them. If full payment is received IFP Training will, at least 2 weeks prior to the start of the session, send a letter to the customer designated on the form to confirm their enrollment. A personal invitation will be attached to the letter and which provides all practical information about the session (schedule, directions, etc.).

## 2/ Payment

Enrollment fees cover training (teaching, practical activities, simulators and other IT tools, documentation, supplies) as well as break-time related costs (refreshments). And do not cover transport and accommodation. The price on the order form is indicated in Euros, tax not included. VAT at the current rate will be added to the indicated price plus any other withholding taxes. All training sessions, once started, have to be paid in full. Upon request, IFP Training may decide to apply reduced enrollment fees for job seekers.

The training session will only be accessible to the customer once that IFP Training has been paid in full.

By check to the order of: IFP Training - 232, Avenue Napoléon Bonaparte F-92852 Rueil-Malmaison Cedex.

Via bank transfer to IFP Training beneficiary:

NATIXIS account no. 30007 99999 04165583000 12

IBAN: FR76 3000 7999 9904 1655 8300 012 – BIC: NATXFRPPXXX

Late fees: if IFP Training exceptionally agrees to a payment after the session begins, any amount not paid on time will result in increased late fees set at three (3) times the legal interest rate. These late fees can be requested by right until full payment has been made.

The paid invoice is sent to the Customer at the end of the training session. A duplicate is available provided that the customer requested it on the enrollment form.

## 3/ Payment by a sponsoring organization

If the customer wishes to pay using a sponsoring organization, the following procedures should be followed:

- before the start of the session, a request for direct billing should be issued and accepted;
- this shall be indicated explicitly on the enrollment form;
- the customer ensures the completion of payment by the designated organization.

IFP Training will provide the customer with all documents needed to make a sponsoring request.

If the sponsoring organization only bears part of the training cost, the remaining amount will be charged to the customer. Only payments by sponsoring organizations before the first day of training will ensure enrollment and access to the training.

If, for whatever reason, the sponsoring organization doesn't pay, the Customer will be charged the full training amount. At the end of the session IFP Training will send the sponsoring organization an invoice along with a copy of the certificate of attendance signed by the participant.

## 4/ Cancellation

By the Customer:

Cancellation by the customer shall be sent in writing to IFP Training. In the eventuality of a cancellation, even due to force majeure, less than 14 calendar days before the beginning of the session, 50% of the enrollment fee will be charged by IFP Training, except if a participant from the same company takes the participant's place. Such a replacement must be communicated to IFP Training and confirmed by sending a new enrollment form.

In case of non-cancelled enrollments (including absenteeism or dropout), 100% of the enrollment fee will be charged by IFP Training.

In case of an unforeseen departure, justified by the Customer, the participant may be authorized to take part in a later session with the prior consent of IFP Training.

By IFP Training:

IFP Training reserves itself the right to cancel or postpone a session, especially if there are an insufficient number of participants. The customer will be notified by telephone at least 2 weeks before the session was due to begin. The cancellation will be confirmed in writing.

The payments received will be fully refunded. No compensation on behalf of IFP Training will be given to the Customer due to cancellation or postponement of a session.

## 5/ Concealed work - Subcontracting

According to law No. 91-1406 of December 31, 1991 supplemented by the June 11, 1992 Decree, IFP Training guarantees that all workers are employed legally in terms of the provisions stated in the French Labor Code. IFP Training guarantees compliance with all fiscal and social obligations in terms of its training staff as well as legal and regulatory obligations in terms of concealed work and employment of foreign labor. IFP Training may consult qualified partners to carry out part of the service, who will be subjected to the same obligations mentioned in this section, as well as confidentiality obligations. In no cases does subcontracting relieve IFP Training of its obligations and responsibilities in regards to these Terms and Conditions.

## 6/ Force Majeure

The party prevented from carrying out its obligations due to force majeure, as defined by the French Civil Code, shall inform the other party in writing via registered mail with acknowledgement of receipt, providing all relevant justifications, and will do its utmost to reduce any damage caused to the other party as a result of this situation. This excludes a party's internal strikes, methods of payment and payment capacities of each party.

The obligations of a party affected by a Force Majeure are suspended,

without penalties, until the effects of this cause disappear. Each party will bear the cost of all fees incumbent upon them, as a result of the Force Majeure.

In case of a Force Majeure lasting over thirty (30) days in a row, the party which the force majeure is opposed to may terminate the order immediately, by right and without compensation.

## **7/ Termination**

In case the customer does not comply with the aforementioned obligations, IFP Training will send a letter of formal notice via registered mail with acknowledgment of receipt, demanding compliance within thirty (30) days of the date of dispatch. Past this deadline, if the customer has not met the requests of the formal notice, IFP Training may terminate the order and request compensation.

## **8/ Insurance - Responsibility**

The customer will take out and maintain all insurance policies at his own cost and for the entire duration of the session, covering risks, responsibilities, direct or indirect damage and any illness contracted by the participant(s), with reputedly solvent insurance companies. The customer will compensate IFP Training for any loss, damage or harm caused by its participants to IFP Training, its instructors or partners.

IFP Training will take out and maintain insurance required, covering risks which may arise during training sessions.

Each party remains liable for damages made to its property and for personal injuries suffered by its employees, regardless of the cause or reason of that damage, during the undertaking of the training session, except gross negligence or willful misconduct by this aforementioned party, or one of its employees.

In any case, IFP Training shall not be liable for any indirect or consequential loss as a result of financial, commercial or any type of prejudice caused directly or indirectly by the use of the information transmitted within the framework of its training sessions.

## **9/Elements of identification**

The Client undertakes IFP Training to use, for promotional purposes, without time limit, the elements of identification of its legal entity such as its name or logo on any support such as its website, brochure or sign. On specific and written request of the Client, IFP Training will delete this reference on the said support as soon as possible.

## **10/ Confidentiality and property rights of training documents**

The customer is subjected to confidentiality obligations concerning all documents and information communicated during the session, regardless of their medium, which are indicated as confidential. The customer shall ensure that all their staff and more generally speaking all people in contact with IFP Training comply with this obligation.

More specifically, IFP Training may provide participants with documents on various formats (e.g. paper, audio, audiovisual, IT or multimedia). Any direct or indirect reproduction, adaptation, alteration, representation or distribution by the customer, regardless of the format, of all or part of the training documents created by IFP Training and/or the information contained in them, for staff not taking part in training sessions or third parties, will require IFP Training's prior written agreement. Under no circumstances shall the customer make any copies, in any shape or form, with the aim to sell, organize or conduct training sessions.

## **11/ Data Protection**

Personal information sent by the customer to IFP Training for the purpose of a session can be transferred to IFP Training's contractual partners to fulfill the needs of the aforementioned session. In accordance with the provisions of the law n° 78-17 of January 6, 1978 on data protection, the customer may at any time exercise their right to access, correct and object to personal IFP Training file content.

## **12/ Miscellaneous provisions - Disputes**

The customer is aware of all documents which constitute the order, including these Terms & Conditions.

After the training session and/or in case of termination, the provisions of articles 6, 7, 8, 9 and 10 will remain valid.

These Terms & Conditions are subjected to French law. Any dispute which is not solved amicably within one (1) month and which concerns the validity, the execution or the interpretation of these Terms & Conditions will be subjected to the jurisdiction of the Commercial Court of Nanterre.

## Notes:

# Registration Form

**Course Title:** .....

Course Reference: ..... / .....

Session Date: ..... / ..... / ..... / ..... / ..... Location: .....

## Purchaser Information

Mr.  Ms.  First Name: ..... Last Name: .....

Company: ..... Job Title: .....

Address: .....

City: ..... State/Region/Province: ..... Country: .....

Postal: ..... Email: ..... Phone: .....

VAT Registration Number: .....

PO / Reference Number: .....

Siret (French Company): .....

## Participant Details

Mr.  Ms.  First Name: ..... Last Name: .....

Company: ..... Job Title: .....

Address: .....

City: ..... State/Region/Province: ..... Country: .....

Postal: ..... Email: ..... Phone: .....

## Invoicing Details (to be sent: Company Other)

Mr.  Ms.  First Name: ..... Last Name: .....

Company: ..... Job Title: .....

Address: .....

City: ..... State/Region/Province: ..... Country: .....

Postal: ..... Email: ..... Phone: .....

PO / Reference Number: .....

Additional documents to be sent with invoice:

- Attendance Sheet
- Course Assessment by the Participant
- Duplicate Invoice
- Others (please specify): .....

Company Stamp & Signature

I have read and agree to the Terms & Conditions.



## Notes: