



# Petroleum Value Chain Decisions: Introductory Course

2019

5 – 8 March 2019

# Introduction

Petroleum Value Chain Decisions course is a thorough introduction to the decisions along the value chain.

Large important projects have a value chain that they are managed by. This applies to extractive activities such as coal, oil, gas and minerals. It also applies to renewable energy projects such as geothermal, solar, wind and hydropower projects. Anthropogenic (man-made) resource projects are emerging cardinal element of circular economies. They can also be managed along value chains as can underground storage projects.

Value chain decisions are well developed in the petroleum sector. Experiences from this sector will be used throughout the course. Many of the techniques and capabilities applied are transferrable to the other sectors mentioned making this course a natural supplement to the PETRAD Conference.

## Objectives

Participants will:

- Be aware of the major elements along a value chain in terms of technical and economic factors and understand the nature of decisions used to manage projects and assets along it. By asset we mean the legal rights to which value is attached, i.e. stakeholder interests, including government interests.
- Recognize the significance of geological and environmental conditions, technology, safety imperatives and market conditions for petroleum operations;
- Understand basic assessment of uncertainties and the management of the economic opportunities and risks that flow from them.
- Understand the role of fiscal systems in resource management and their effect on decisions.
- Learn about decisions under uncertainty focusing on the value of information for the early parts of the value chain and value of flexibility for the latter parts.

## Target Audience

Persons who see that they can enhance value by exercising state of the art decision processes along the value chains. The subject matter is directly relevant to the petroleum sector, but also relevant to a high degree to other sectors. It is an excellent preparation for the course on National Management of Petroleum Resources and the course on Application of the UN Framework Classification for Resource Management that follows. The course can be taken as a stand-alone course.

The course is intended to benefit anyone who will be engaged with extractive activities in a commercial, regulatory or civil capacity. It can benefit people who work in the energy and mineral sectors. No prior knowledge specific to these sectors is required. The course is also suitable for persons who have worked in these sectors for some time and wish to broaden their understanding of it beyond their own professional focus.

Participants should have a university degree, analytical capability and some years of professional experience. Participants must be able to understand and speak reasonable English.

# Pedagogical Approach

PETRAD believes that the best pedagogical learning approach is a combination of presentations, discussions, problem-based learning and team-based learning. For this course, a series of presentations and group discussions will take place. Participants are expected to take an active part in the discussions.

## Logistics

Participants should bring their laptop computers.

## Program Schedule

Date	Item
5 March	<b>The value of information - Exploration and design</b>
	<u>Opening new areas</u> - planning for the long term
	<u>Reconnaissance exploration</u> - preparing for licensing and license applications. Shaping partnerships
	<u>Negotiating licenses</u>
6. March	<u>Exploration</u> decisions under uncertainty
	<u>Delineation</u> , unitisation, balancing investments in information against investments in flexibility
	<u>Development Planning</u> , creating real options, shaping redundancies and maintainability
7. March	<b>The value of flexibility - Construction, production and abandonment</b>
	<u>Construction</u> . Securing HSE. Avoiding accidents and rework. Valuing risks associated with development portfolios. Exercising real options embedded in the plan.
8. March	<u>Production</u> . Achieving high HSE standards, high recoveries and decision efficiencies. Monitor values at the source of production, alignment of interests and redeterminations, infrastructure utilisation, production regularity, waste and energy efficiency
	<u>Maintenance and modification</u> . Maintain to avoid modification. Adapt to changes over the project lifetime. Design real options in modifications to reduce future adaptation costs.
8. March	<u>Abandonment</u> . Examine the uncertainty and risks associated with abandonment relative to other project risks. Discuss the appropriate discount rate to apply to abandonment costs and the consequences of initial design of lower discount rates.
	Seeing it all together - a resource management framework based on the UN Framework Classification of Resources

# Venue

PETRAD, Professor Hanssens vei 10, Stavanger

## Application details

Attendance fee: US\$ 2,600 or US\$ 2,200 (discount rate for those who will subsequently participate in the course in National Management of Petroleum Resources). The course fee includes lunch and coffee breaks but not accommodation and dinner. Application at [training@petrad.no](mailto:training@petrad.no) or [kct@petrad.no](mailto:kct@petrad.no)

**Application deadline: 15<sup>th</sup> of January 2019**

## Contact details

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# Lecturers



## **Sigurd Heiberg**

*Project Director*

Sigurd holds a BSc from the University of California and a SM degree in Geotechnology from the Massachusetts Institute of Technology. He has received formal management training at IMD, Switzerland on international management and High Performance Boards. Sigurd has spent most of his working life in Government and industry working on petroleum resources management and strategy, both as Deputy director of resource management responsible for development and production at the Norwegian Petroleum Directorate, as Petroleum exploration advisor to the Minister of Water, Energy and Minerals of Tanzania and as a member of Statoil's Corporate strategy team. He chaired the Oil and gas reserves committee of the Society of Petroleum Engineers when the SPE Resource classification that later became the SPE-PRMS was developed and the UNECE Expert group on resource classification when the UNFC-2009 classification was developed. He has also chaired the Bureau of the UNECE Intergovernmental Committee on Sustainable Energy. Sigurd has engaged in education by helping to form and build PETRAD. He has been a lecturer at the MIT Sloan Executive Education and at the University of Stavanger. He has been guest editor with MIT Professor Donald Roy Lessard of "Innovation in oil and gas through partnering", Elsevier's Volume 3 of Energy Strategy Reviews. He joined PETRAD as a Project Director in 2017.



## **Friar Aarsnes**

*Project Director*

Friar is a State Authorized Public Accountant from the Norwegian Business School of Economics. He is an internationally recognized expert within tax and extractive industries and author of several publications – invited as key speaker at various international conferences. He has been involved in compliance work in his whole career and policy work since he led the Tax Committee in the Norwegian Oil and Gas Association for two periods in 1999-2003. His compliance and policy experience covers both private and public sector. Through developing and applying economic models for tax and economic purposes, he has developed a keen understanding of economics and finance. Models have been applied globally, and through an extensive work in the taxation area he has become an international expert in most aspects of international taxation, compliance and fiscal instruments. He has developed analytical tools for benchmarking fiscal systems. Through a unique set of circumstances he has got an insight into extractive industries that few can match; transfer pricing, cross-border mark-to-market, international tax rules, global transactions, derivatives, asymmetrical capital gains and losses as well as litigation, tax appeals, tax assessments, tax returns, tax compliance, tax and contract law (on par with lawyers), global tax planning, tax implementation, tax audits and internal control.



## **Berit Tvedt**

*Managing Director*

Berit is a member of the Board of Petrad and is currently Managing Director of Petrad. She has a broad petroleum industry experience, having worked more than 30 years in Norwegian government and NOC institutions. She holds a Master's Degree in Economics from the University of Oslo. She joined the Norwegian Petroleum Directorate (NPD) in 1985 and had management positions within exploration/concession round economics and field development economics. She moved to Statoil in 1990, and had extensive experience from management positions, including 13 years abroad within exploration and business development. She returned to Norway in 2013 and joined Petoro at the end of the year.

**For further information please contact:**

**PETRAD**

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