N604: Introduction to Energy Trading and Hedging

Instructor(s): Detlef Hallermann

Format and Duration

Classroom - 2 Days
Virtual - 4 Sessions

Summary

This course is designed for professionals wishing to obtain a practical understanding of the basic energy derivative structures that are used in trading, marketing and risk management today. An emphasis is placed on understanding how financial tools are added to physical market components to manage the risk faced by both energy users and suppliers.

Learning Outcomes

Participants will learn to:

1. Understand the difference between risk and uncertainty.
2. Differentiate market and non-market risks.
3. Analyze the factors that impact crude oil, natural gas and natural gas liquids supply and demand.
4. Describe and contrast auction, physical and financial markets.
5. Differentiate spot and forward prices.
6. Understand how risk is described and reported.
7. Analyze the various hedge instruments and how they differ.
8. Employ strategies for hedging risk.

Training Method

This is a classroom or virtual classroom course that comprises lectures illustrated with numerous real-world examples, class discussion, and exercises.

Who Should Attend

The course is designed for three categories of professionals:

1. Analysts / Back Office professionals in the Energy Markets: This class is well suited for young professionals that are learning the fundamental skills required on the trade floor or acting as an analyst in the front-office, mid-office and back-office functions of the trade floor.

2. Petroleum Professionals interested in understanding the energy markets: This class fills in the gaps for the petroleum (exploitation) engineer or geologist that has an understanding of the mechanics of producing oil and natural gas, but would like to understand the mechanics of the markets that transport and sell the crude/natural gas to the refineries and consumers.

3. Accounting and finance professionals that use information from the trade floor: This class provides the accounting and finance professional that works with planning and budgets an understanding of what happens on the trade floor, how the numbers in the risk reports are derived and an understanding of how a proper hedging strategy complements the corporate goals.

Prerequisites and Linking Courses

There are no prerequites for this course. Related courses include N014 (Petroleum Economics and Risk Analysis) and N603 (Fundamentals of Oil and Gas Property Acquisition and Finance),

Course Content

Part One is designed to be a starting point for all participants. We focus on the market mechanics and general behavior of the physical and financial commodity markets.

Topics covered include:

- An explanation of the types of risk addressed on a trade floor versus the risks not addressed on the trade floor.
- We review the differences of technical versus fundamental analysis. We consider the physical drivers that affect an individual market. We discuss what is required to create a fundamental analysis and from there how the trader converts that into a market opinion.
- We address and analyze the differences between the physical, OTC and exchange based markets. We consider the characteristics of all players in each market and discuss how individual players act and behave in the market.
- We present the drivers that influence the forward curve, its shape of the forward curve and forward curves characteristics. We address a mathematic approach based on the convenience yield as well as a more pragmatic approach addressing fear in the market place. We consider seasonality, cyclicality and mean reversion.

Part Two is designed to get into greater detail regarding the various hedge instruments and reporting these instruments's effectiveness.

- We begin with a breakdown of the primary risk reports. We delve into the position, mark-to-market and profit/loss reports so that a person reviewing the reports can understand how they are calculated and what is required to create the reports.
- We break hedge instruments into two categories. They are index based hedges and basis based hedges. We dive into detail regarding how to hedge the physical molecules, the physical price and the financial price. We consider how the index and basis hedges are interchangeable across the three types of hedges. We address options, options pricing and option strategies as part of this analysis. We complete the segment with a simulation.
- We complete the course with a top-down view of what is required in a hedge program. We consider how to develop corporate goals and how to convey the corporate strategy to the trade floor.