Professional Certificate in Oil and Gas Trading

Fundamentals of Oil and Gas Markets

API Gravity:
API gravity is a measure of how heavy or light a petroleum liquid is compared to water. The American Petroleum Institute (API) developed this scale to indicate the density of crude oil or other petroleum products. The higher the API gravity, the lighter the oil. For example, an API gravity of 40 indicates a lighter oil than one with an API gravity of 20. Lighter oils typically yield more valuable products like gasoline and diesel.

Arbitrage:
Arbitrage in oil and gas trading refers to the simultaneous purchase and sale of the same commodity in different markets to profit from price differences. Traders take advantage of price differentials between regions or markets by buying low and selling high. For example, if crude oil prices are lower in one market and higher in another, a trader can buy in the cheaper market and sell in the more expensive one to make a profit.

Backwardation:
Backwardation is a situation in the futures market where the future price of a commodity is lower than the spot price. This typically occurs when the current supply of the commodity is scarce, leading to higher spot prices. Traders may take advantage of backwardation by selling futures contracts at a higher price and buying the physical commodity at a lower spot price.

Benchmark:
A benchmark in oil and gas trading is a reference point used to compare the prices of different grades of crude oil. Common benchmarks include Brent Crude, West Texas Intermediate (WTI), and Dubai Crude. These benchmarks help traders assess the value of a particular grade of crude oil in the global market.

Brent Crude:
Brent Crude is a major trading classification of sweet light crude oil that serves as a major benchmark price for purchases worldwide. It is sourced from the North Sea and is used to price two-thirds of the world's internationally traded crude oil supplies.

Contango:
Contango is the opposite of backwardation, where the future price of a commodity is higher than the spot price. This situation typically occurs when there is an oversupply of the commodity in the market, leading to lower spot prices. Traders may take advantage of contango by buying the physical commodity at a lower spot price and selling futures contracts at a higher price.

Crack Spread:
A crack spread is the difference between the price of crude oil and the prices of refined products derived from it, such as gasoline and diesel. It represents the profit margin for refining crude oil into these products.

A positive crack spread indicates profitability for refiners, while a negative spread signifies potential losses.

Derivatives:
Derivatives in oil and gas trading are financial contracts whose value is derived from the performance of an underlying asset, such as crude oil or natural gas. Common derivatives include futures, options, and swaps, which allow traders to hedge against price fluctuations or speculate on future price movements.

Downstream:
The downstream sector in the oil and gas industry refers to the refining, processing, and distribution of petroleum products. This includes activities such as refining crude oil into gasoline, diesel, and other products, as well as marketing and selling these products to consumers.

Extraction:
Extraction in the oil and gas industry refers to the process of removing crude oil or natural gas from the ground. This can involve drilling wells, using hydraulic fracturing techniques, or other methods to access underground reserves of hydrocarbons.

Floating Production Storage and Offloading (FPSO):
An FPSO is a floating vessel used in the offshore oil and gas industry to extract, process, store, and offload oil and gas. FPSOs are equipped with production facilities, storage tanks, and offloading systems, allowing them to operate in remote locations where traditional fixed platforms are not feasible.

Futures Contract:
A futures contract is a standardized agreement to buy or sell a specified quantity of a commodity at a predetermined price on a future date. In oil and gas trading, futures contracts are commonly used to hedge against price fluctuations or speculate on future price movements.

Geopolitical Risk:
Geopolitical risk in oil and gas markets refers to the potential impact of political events, conflicts, or policies on supply, demand, and prices of petroleum products. Events such as wars, sanctions, or trade disputes can disrupt the flow of oil and gas, leading to price volatility in the markets.

Hedging:
Hedging is a risk management strategy used by oil and gas traders to protect against price fluctuations. Traders can hedge their positions by taking offsetting positions in futures contracts or options, ensuring that they can lock in a price for their products regardless of market movements.

Midstream:
The midstream sector in the oil and gas industry refers to the transportation and storage of petroleum products. This includes pipelines, tankers, terminals, and other infrastructure used to move crude oil and natural gas from production sites to refineries and distribution centers.

Natural Gas Liquids (NGLs):
Natural gas liquids are liquid hydrocarbons that are extracted from natural gas during processing. NGLs include ethane, propane, butane, and pentane, which are used as feedstocks for petrochemical plants, fuel

for heating and cooking, and blending components for gasoline.

Offshore Drilling:
Offshore drilling is the process of extracting oil and gas reserves from beneath the seabed. This involves drilling wells in deepwater or shallow water locations using specialized drilling rigs and equipment to access offshore reserves of hydrocarbons.

Oilfield Services:
Oilfield services are companies that provide specialized services and equipment to the oil and gas industry. These services include drilling, well completion, production enhancement, and reservoir management, among others. Oilfield services companies play a crucial role in the exploration and production of oil and gas reserves.

OPEC:
The Organization of the Petroleum Exporting Countries (OPEC) is a group of 13 oil-producing countries that coordinate oil production policies to stabilize prices and ensure a steady income for member countries. OPEC is a major influence on global oil markets and plays a key role in setting production quotas and pricing strategies.

Petrochemicals:
Petrochemicals are chemical compounds derived from petroleum or natural gas that are used to manufacture a wide range of products, including plastics, fertilizers, and pharmaceuticals. Petrochemicals play a vital role in various industries and are essential for the production of everyday consumer goods.

Pipeline Transportation:
Pipeline transportation is a method of moving crude oil and natural gas from production sites to refineries and distribution centers through a network of pipelines. Pipelines are the most cost-effective and efficient way to transport large volumes of oil and gas over long distances.

Production Sharing Agreement (PSA):
A production sharing agreement is a contract between a government and an oil company for the exploration and production of oil and gas reserves. Under a PSA, the company bears the exploration and development costs in exchange for a share of the production from the project. PSAs are common in countries with significant oil and gas reserves.

Refining:
Refining is the process of converting crude oil into refined petroleum products such as gasoline, diesel, and jet fuel. This involves distillation, cracking, and other chemical processes to separate and upgrade the various components of crude oil into valuable products.

Reserves:
Reserves in the oil and gas industry refer to the amount of recoverable oil and gas that can be technically and economically extracted from underground reservoirs. Reserves are classified into proved, probable, and possible categories based on the level of certainty of their existence and recoverability.

Shale Oil:
Shale oil is a type of unconventional oil extracted from shale rock formations through hydraulic fracturing techniques. Shale oil production has increased significantly in recent years, particularly in the United States, leading to changes in global oil markets and energy dynamics.

Spot Market:
The spot market is where commodities like crude oil are bought and sold for immediate delivery and payment. Spot prices are determined by supply and demand dynamics in real-time and can fluctuate based on market conditions. Traders in the spot market take advantage of short-term price movements to profit from buying low and selling high.

Storage:
Storage in the oil and gas industry refers to facilities used to store crude oil, natural gas, and refined petroleum products. Storage tanks, terminals, and underground caverns are used to hold excess inventory, manage supply-demand imbalances, and ensure the availability of products for future use.

Upstream:
The upstream sector in the oil and gas industry refers to the exploration and production of crude oil and natural gas. This includes activities such as drilling wells, extracting hydrocarbons, and managing production facilities to bring oil and gas to the surface for further processing.

Unconventional Resources:
Unconventional resources in the oil and gas industry refer to reserves that require advanced extraction techniques, such as hydraulic fracturing or steam injection, to access. Examples of unconventional resources include shale oil, tight gas, and oil sands, which have become significant sources of energy production in recent years.

Volatility:
Volatility in oil and gas markets refers to the degree of price fluctuations in response to changes in supply, demand, geopolitical events, and other factors. High volatility can create opportunities for traders to profit from price movements but also poses risks due to uncertainty and rapid market changes.

Wellhead Price:
The wellhead price is the price of crude oil or natural gas at the point of production, typically at the wellhead where it is extracted from the ground. This price does not include transportation, processing, or other costs associated with bringing the product to market and is a key factor in determining the profitability of oil and gas production.