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# INTRODUCTION TO CRUDE OIL FUTURES

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# WHAT IS CRUDE OIL?

- 
- A naturally occurring **liquid petroleum** product
  - A non-renewable and limited resource
  - Contains **hydrocarbon** formed from dead animals and plants millions of years ago

- 
- A widely demanded commodity for **energy** production
  - First discovered during the Industrial Revolution

# WHERE IS CRUDE OIL FROM?



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The crude oil can be extracted through drilling, where it is usually found alongside natural gas and saline water.

1

Organisms like algae and zooplankton stores the energy obtained from the sun as carbon molecules within their bodies.

2

Their dead bodies sink to the bottom of the oceans and form crude oil after millions of years under high pressure and temperature.



# HOW DOES CRUDE OIL LOOK LIKE?

Usually black or dark brown, but can also be yellowish, reddish, tan, or even greenish depending on the hydrocarbon composition.

**Heavier**

**Lighter**



## Heavy Oil

- Evaporates slower
- Good for making heavy products like asphalt and feedstock for petrochemicals and plastics

## Light Oil

- Less processing is required
- Produces a higher percentage of diesel and gasoline

# GRADE OF CRUDE OIL

The two major grades of crude oil are West Texas Intermediate (WTI) and Brent Crude.

## WEST TEXAS INTERMEDIATE (WTI)

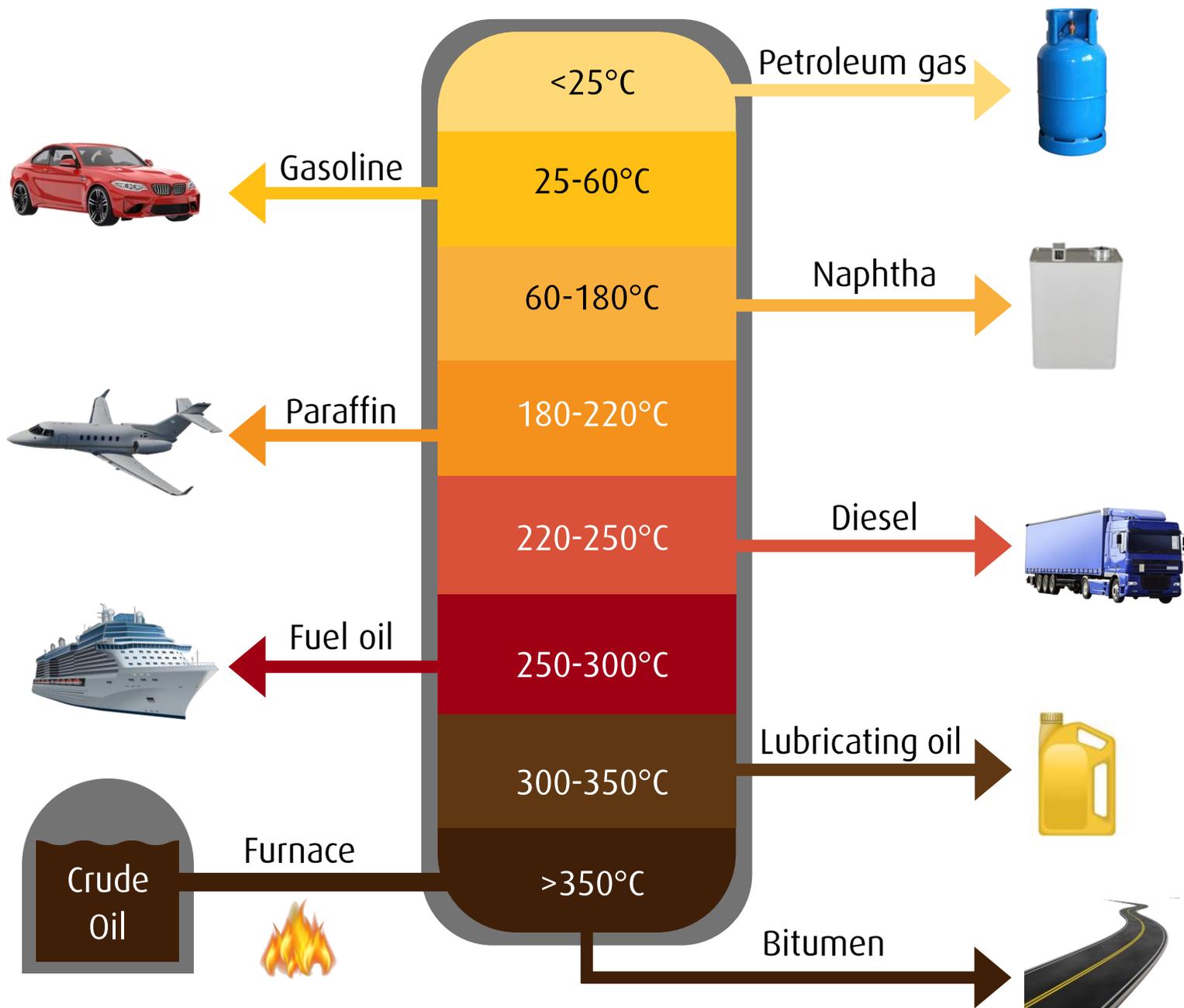
- A light sweet crude oil refined in the **United States**
- The benchmark for North America crude oil
- Requires higher cost for transportation as it is produced in landlocked areas
- WTI crude oil Futures contract is listed on **New York Mercantile Exchange (NYMEX)**

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- A primary oil type in **Europe and Africa**
  - Used as a benchmark by **two third** of all oil pricing
  - The benchmark for European, Middle Eastern and African crude oil
  - Produced near the sea which requires lower transportation cost
  - Brent crude oil Futures can be traded on **Intercontinental Exchange (ICE)**

## BRENT CRUDE

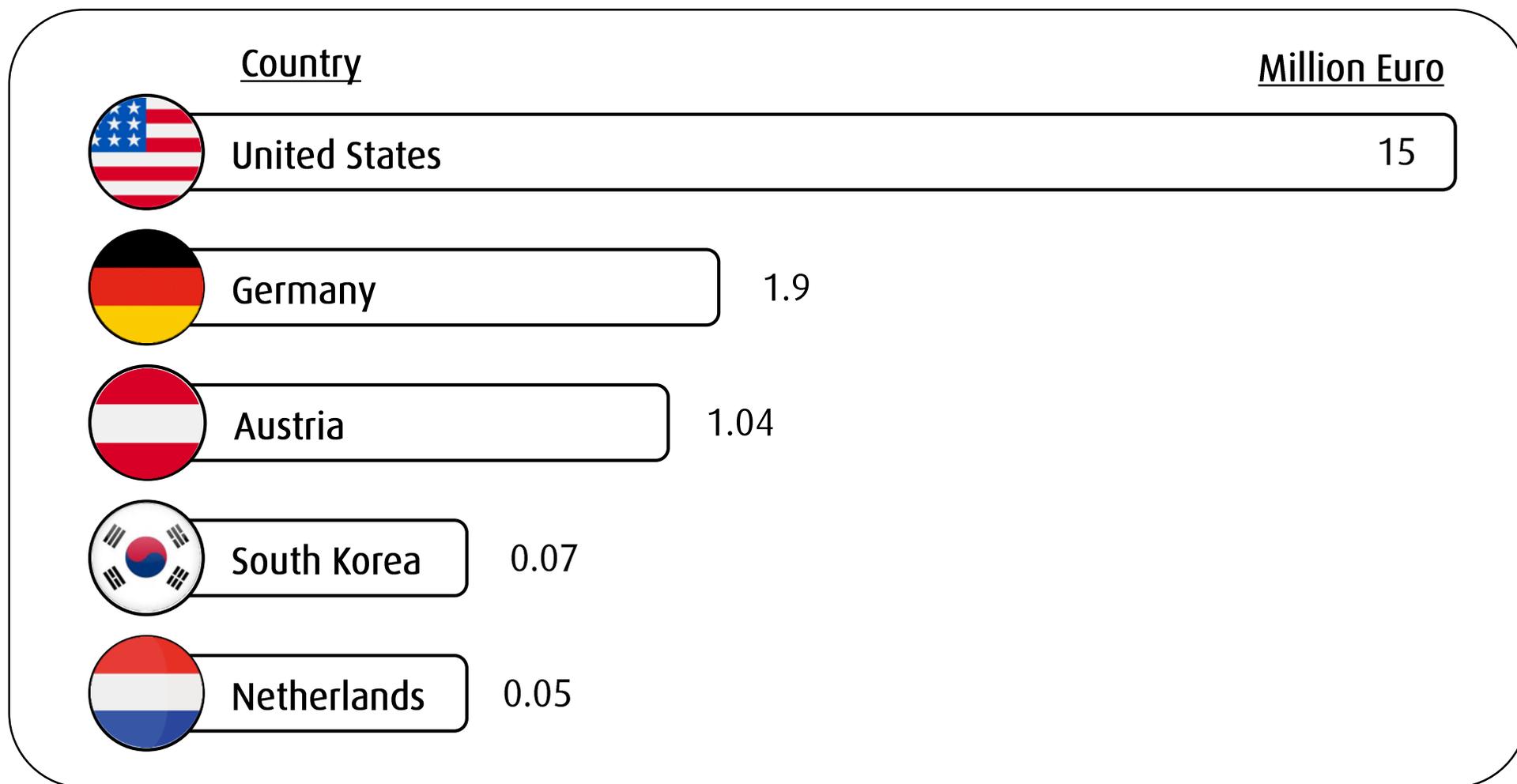
# USAGE OF CRUDE OIL

Crude oil is further refined into hydrocarbon products through fractional distillation.



# DEMAND FOR CRUDE OIL

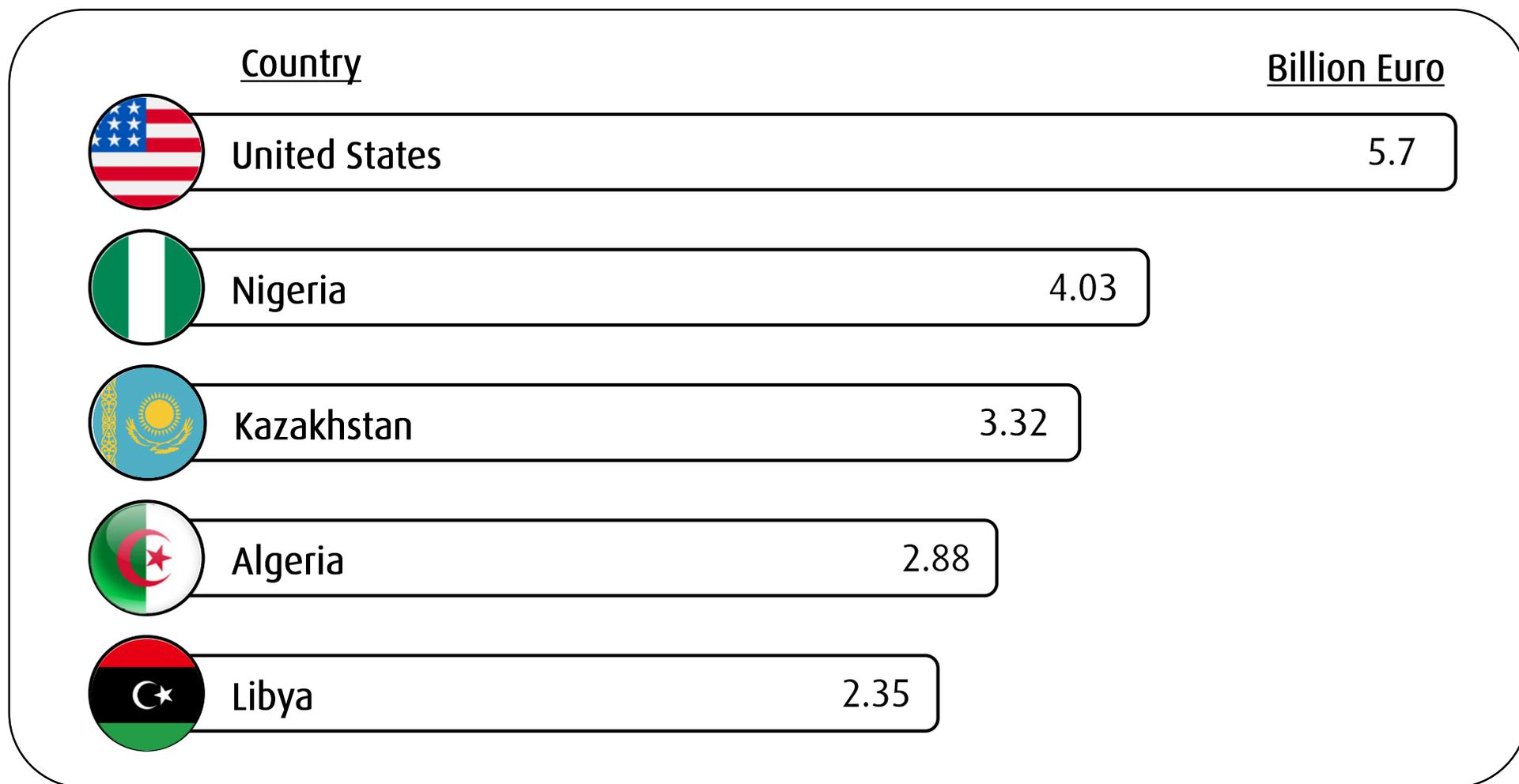
The top 5 crude oil importers worldwide in 2023 are shown below:



Only a small quantity of crude oil is directly consumed in the **United States**. Most of the crude oil is refined into **petroleum products**: gasoline, jet fuel, diesel fuel and heating oil.

# SUPPLY OF CRUDE OIL

The top 5 crude oil exporters worldwide in 2023 are shown below:



In 2023, the **United States** reached a record-high **12.9 million barrels per day** in crude oil production, a 9% increase from the previous year. The data has proven the country is the biggest player in crude oil exports.



## ORGANISATION OF THE PETROLEUM EXPORTING COUNTRIES

A cartel comprises of 12 countries:



Algeria



Congo



Equatorial  
Guinea



Gabon



Iran



Iraq



Kuwait



Libya



Nigeria



Saudi  
Arabia



United Arab  
Emirates



Venezuela

which account for

**80%** World's Proven Oil Reserves

**30%** Global Oil Production

Functions:

- Maintain oil market stability and regulate oil prices
- Coordinate petroleum policies among member countries

# FACTORS AFFECTING DEMAND AND SUPPLY

## OPEC

A cartel made up of 12 countries who export crude oil and together regulate the its price by controlling supply.



## WORLD PANDEMIC

During a pandemic like COVID-19, both supply and demand of crude oil reduce due to lockdowns and movement restrictions.

## **NATURAL DISASTER**

Natural disasters like hurricanes can heavily impact crude oil production and supply due to the damage of oil pipelines.



## **TURMOIL**

The demand for crude oil increases when there is an unexpected event like a war that utilizes crude oil as a raw material in weapons.



## **GLOBAL ECONOMY**

The economic strength and global economic performance of the U.S., Europe and China will affect crude oil price.



## **ALTERNATIVE ENERGY**

The emergence of renewable energy sources like solar and wind could reduce the demand for crude oil.

## WEATHER

Cold weather can disrupt oil production, storage and transportation which reduces supply.



However, the demand for crude oil increases when more heaters are used during colder days.



## BIOFUELS

The presence of biofuels like biodiesel and ethanol will reduce the demand for crude oil used to make gasoline and diesel.

# WHAT ARE WTI CRUDE OIL FUTURES



WTI (West Texas Intermediate): one of the major crude oil grades

A fully electronic, exchange-traded contract listed on New York Mercantile Exchange (NYMEX) under CME Group.

The most commonly traded crude oil contract

The most liquid oil contract in the world with more than 1 million contracts traded daily

# WHY TRADE WTI CRUDE OIL FUTURES

Added portfolio diversification beyond traditional stocks and bonds

**DIVERSIFY**

High liquidity that allows easy market entry and exit

**LIQUIDITY**

Provide greater leverage through margin trading

**LEVERAGE**

Used as a benchmark to trade the underlying in physical market

**PRICING**



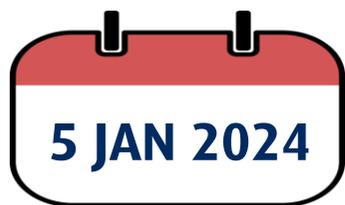
# COMPARISON OF WTI CRUDE OIL FUTURES

	<b>WTI Crude Oil Futures</b>	<b>E-Mini WTI Crude Oil Futures</b>	<b>Micro WTI Crude Oil Futures</b>
<b>PRODUCT SYMBOL</b>	CL	QM	MCL
<b>CONTRACT SIZE</b>	1,000 barrels	500 barrels	100 barrels
<b>MINIMUM FLUCTUATION</b>	0.01 pt = USD 10 (1 pt = USD 1000)	0.025 pt = USD 12.50 (1 pt = USD 500)	0.01 pt = USD 1 (1 pt = USD 100)
<b>SETTLEMENT</b>	Deliverable	Financially Settled	Financially Settled
<b>CONTRACT MONTHS</b>	Monthly contracts listed for the current year and the next 10 calendar years and 2 additional contract months.	Monthly contracts listed for the current year and the next 5 calendar years.	Monthly contracts listed for 12 consecutive months and additional Jun and Dec contract months
<b>TRADING HOURS</b>	01:00 - 02:30 06:00 - 05:00 (Globex)	01:00 - 02:30 06:00 - 05:00 (Globex)	01:00 - 02:30 06:00 - 05:00 (Globex)

# CRUDE OIL FUTURES (CL)

## Trading Examples

### Bullish Market



You think the price of CL will go up and BUY 1 lot @87.67



You close your position and SELL 1 lot @92.67

Gross Profit  
= Price Difference x Contract Size  
= (92.67 - 87.67) x USD 1000  
= USD 5,000

### Bearish Market



You think the price of CL will go down and SELL 1 lot @87.67



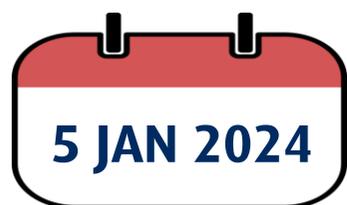
You close your position and BUY 1 lot @82.67

Gross Profit  
= Price Difference x Contract Size  
= (87.67 - 82.67) x USD 1000  
= USD 5000

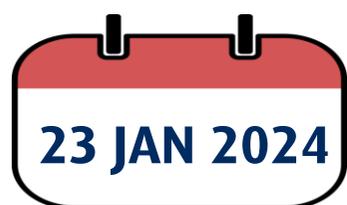
# E-MINI CRUDE OIL FUTURES (QM)

## Trading Examples

### Bullish Market



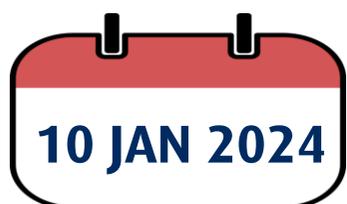
You think the price of QM will go up and BUY 1 lot @87.67



You close your position and SELL 1 lot @92.67

Gross Profit  
= Price Difference x Contract Size  
= (92.67 - 87.67) x USD 500  
= USD 2,500

### Bearish Market



You think the price of QM will go down and SELL 1 lot @87.67



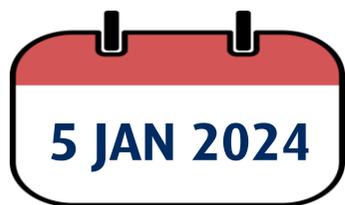
You close your position and BUY 1 lot @82.67

Gross Profit  
= Price Difference x Contract Size  
= (87.67 - 82.67) x USD 500  
= USD 2,500

# MICRO CRUDE OIL FUTURES (MCL)

## Trading Examples

### Bullish Market



You think the price of MCL will go up and BUY 1 lot @87.67



You close your position and SELL 1 lot @92.67

Gross Profit  
= Price Difference x Contract Size  
= (92.67 - 87.67) x USD 100  
= USD 500

### Bearish Market



You think the price of MCL will go down and SELL 1 lot @87.67



You close your position and BUY 1 lot @82.67

Gross Profit  
= Price Difference x Contract Size  
= (87.67 - 82.67) x USD 100  
= USD 500



Mezzanine Floor, Block B, Plaza Zurich, No. 12, Jalan Gelenggang, Bukit Damansara, 50490 Kuala Lumpur



+603-2080 8678



[helpdeskfutures@hlib.hongleong.com.my](mailto:helpdeskfutures@hlib.hongleong.com.my)



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