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June 23, 2022

# CME Group

# Preparing for Spikes and Slumps in Oil and Gas Markets


**Tariq Dennison**
TEP, Wealth Manager
GFM Asset Management



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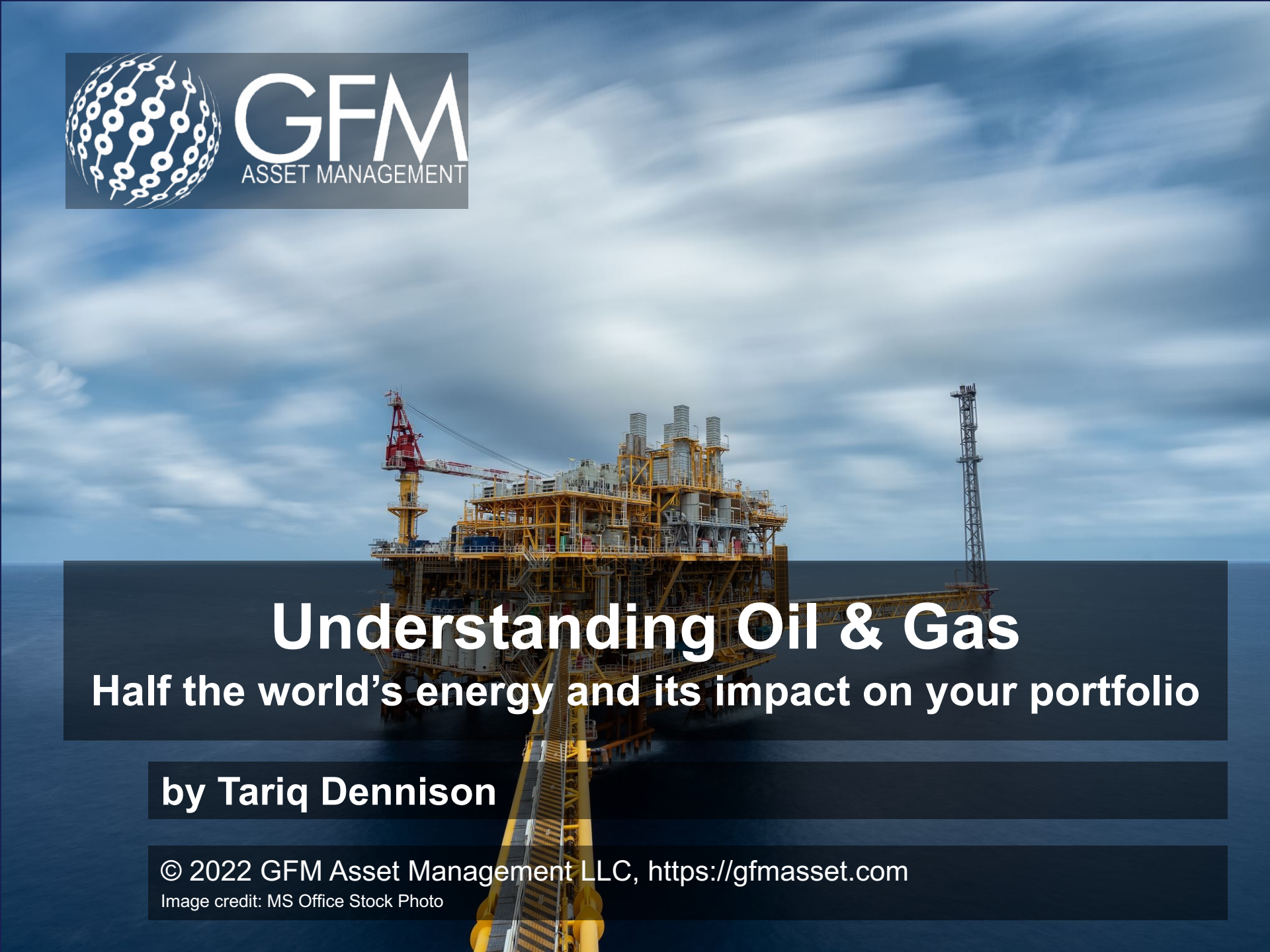

GFM ASSET MANAGEMENT

# Understanding Oil & Gas

## Half the world's energy and its impact on your portfolio

by Tariq Dennison

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Image credit: MS Office Stock Photo

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# About Tariq Dennison TEP

- Independent Advisor Managing Accounts on the IBKR platform
  - US Advisor: GFM Asset Management LLC
  - HK Advisor: GFM Group Limited
- In the market since 1998
  - Commerzbank (NY, London, Frankfurt)
  - Bear Stearns (NY)
  - J.P. Morgan (NY)
  - Canadian Imperial Bank of Commerce
  - Societe Generale (HK)
- Masters in Financial Engineering
  - University of California at Berkeley
- Lecturer at ESSEC Singapore
  - Fixed Income
  - Alternative Assets
- “Neither Standard Nor Poor”
- Author “Invest Outside the Box”

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## About Oil & Gas

- Price history
- Uses & fundamentals
- Oil and inflation
- Geographic factors
- “Peak oil”?
- What makes gas prices more volatile

## Futures & Strategies

- Micro vs classic WTI Crude
- E-mini vs classic Nat Gas
- Contango vs Backwardation
- Oil & gas options
- Sample trades


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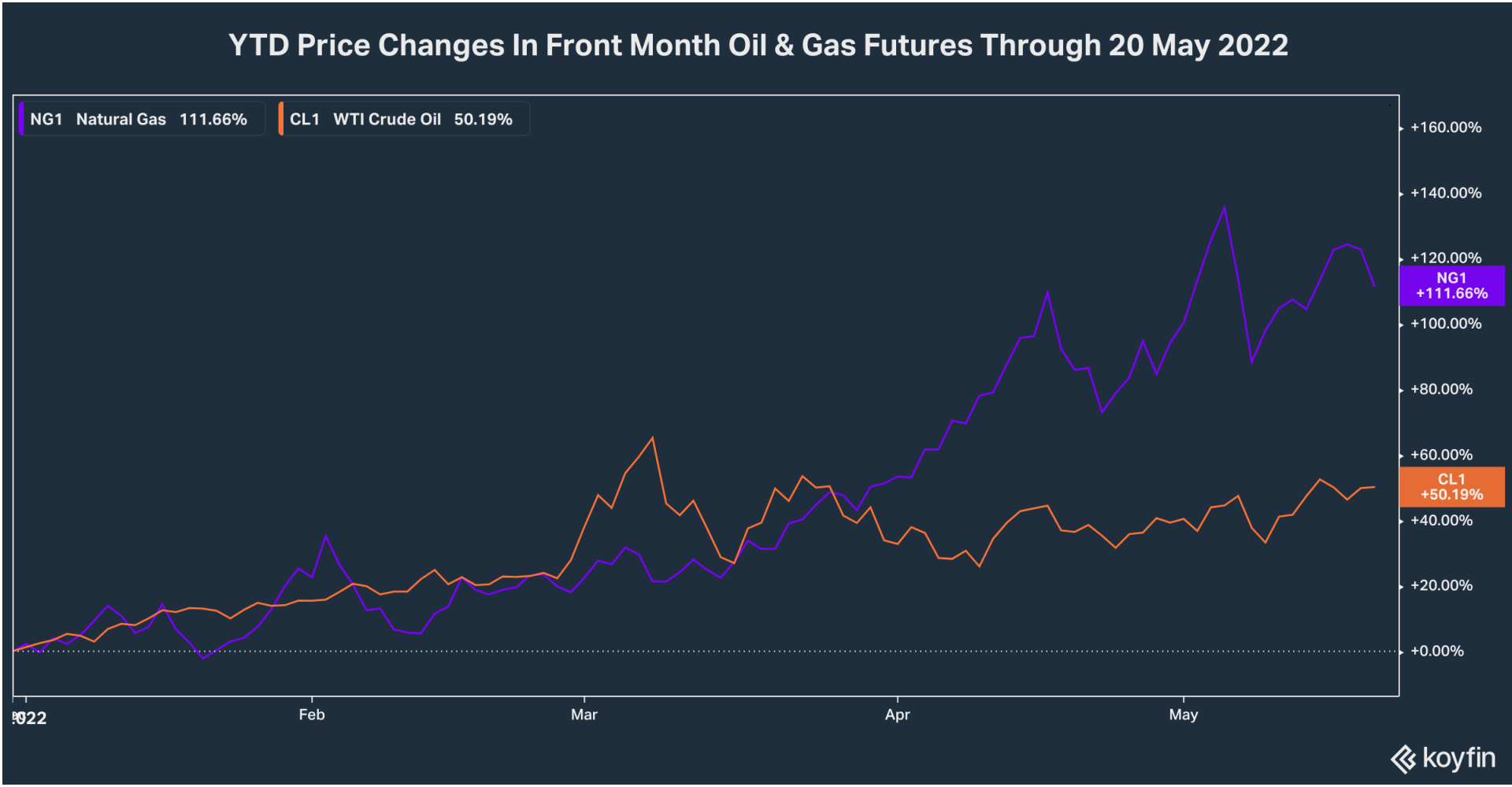
# How oil & gas prices have risen so far in 2022




Source: Koyfin, Author's calculations

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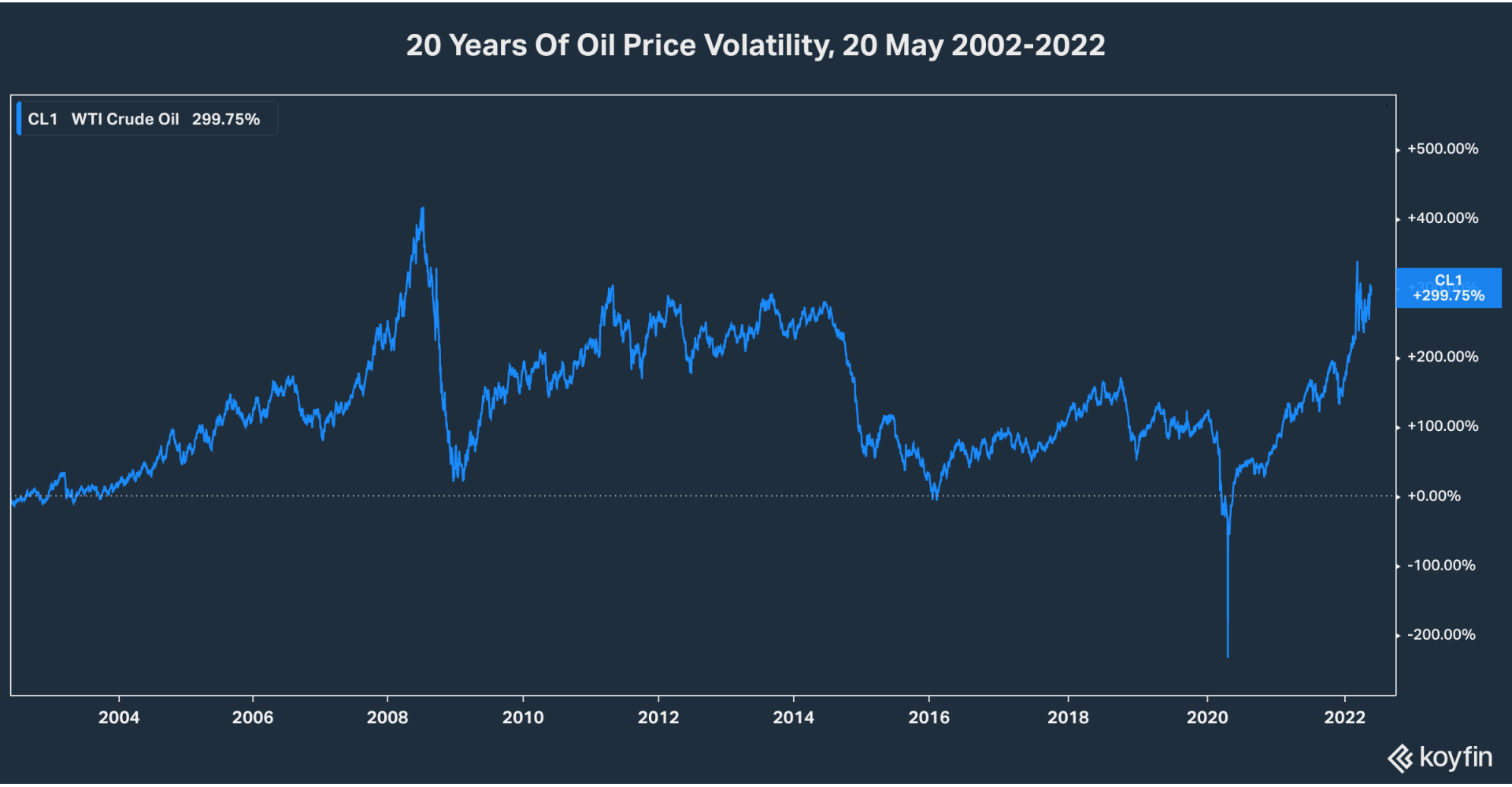
# Oil prices highly correlated with inflation




Source: Koyfin, Author's calculations

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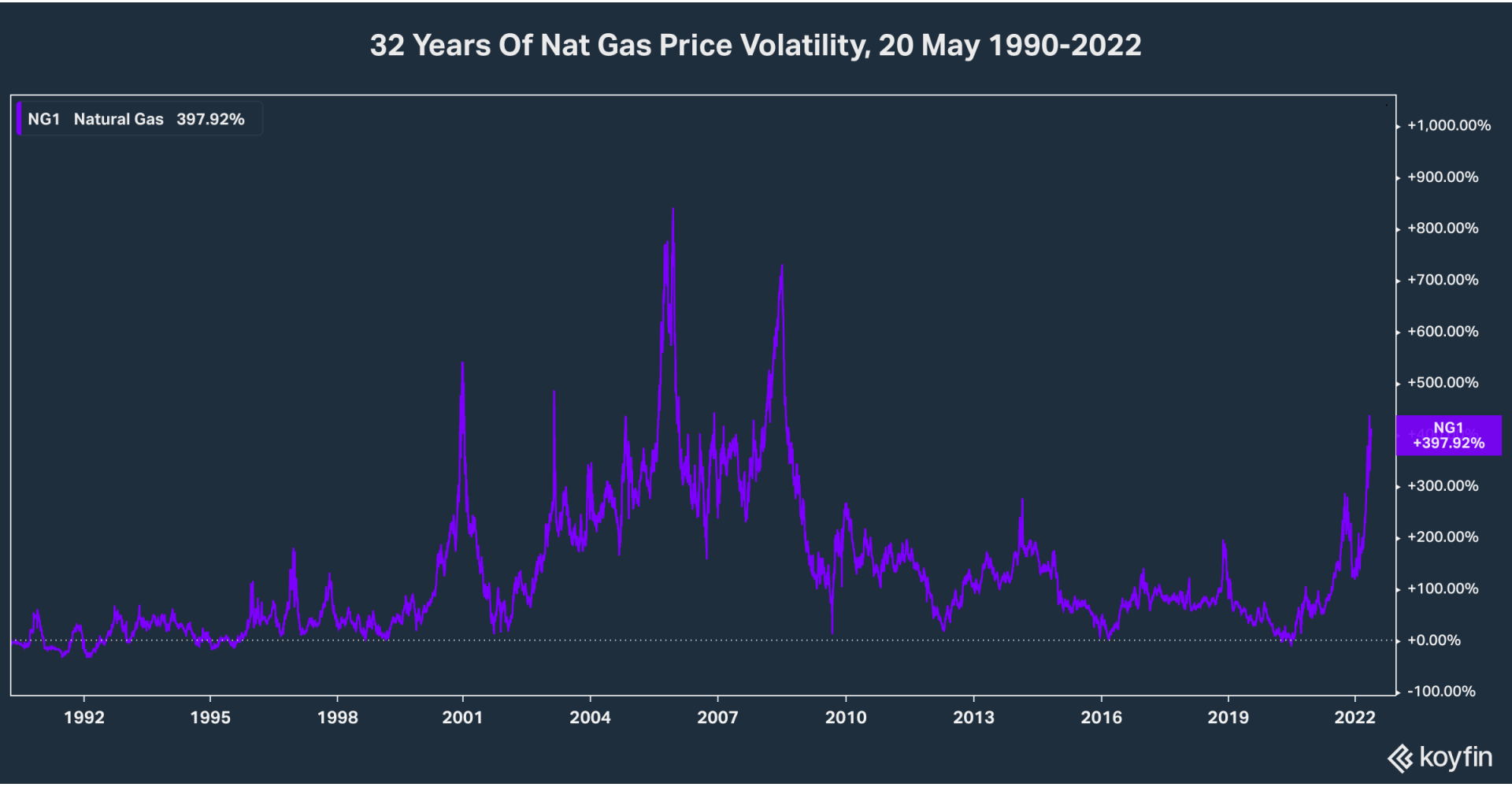
# Oil prices highly correlated with inflation




Source: Koyfin, Author's calculations

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## Crude Oil

- Mix of long and complex carbon chains, refining separates these out
- Many uses from energy to materials
- Liquid at room temperature & pressure
- Priced in dollars per barrel (42 gallons each)

## Natural Gas

- Mostly methane ($CH_4$), which naturally blows out when oil is drilled
- Mostly used for energy, but also fertilizer & chemicals
- Volatile gas requiring pipelines or LNG trains
- Priced in dollars per million British Thermal Units (mmBTU)


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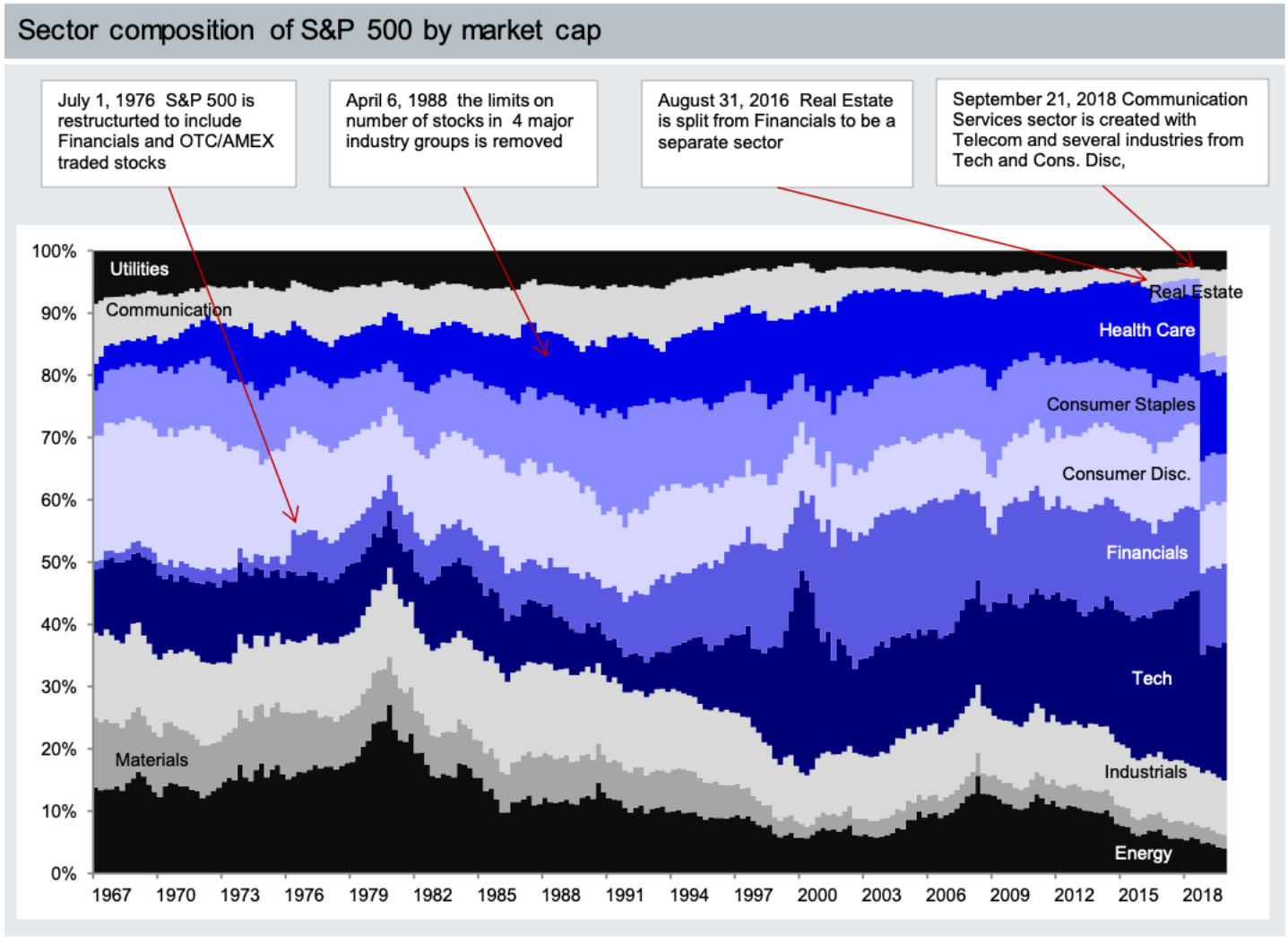
# Energy's weight in the S&P 500 at 55+ year lows…




Source: Compustat, DWS Investment GmbH as of 1/31/2020. Past performance may not be indicative of future results.

Source: https://www.dws.com/globalassets/merill-lynch/pdfs/cio_view_sp_500_sector_composition.pdf

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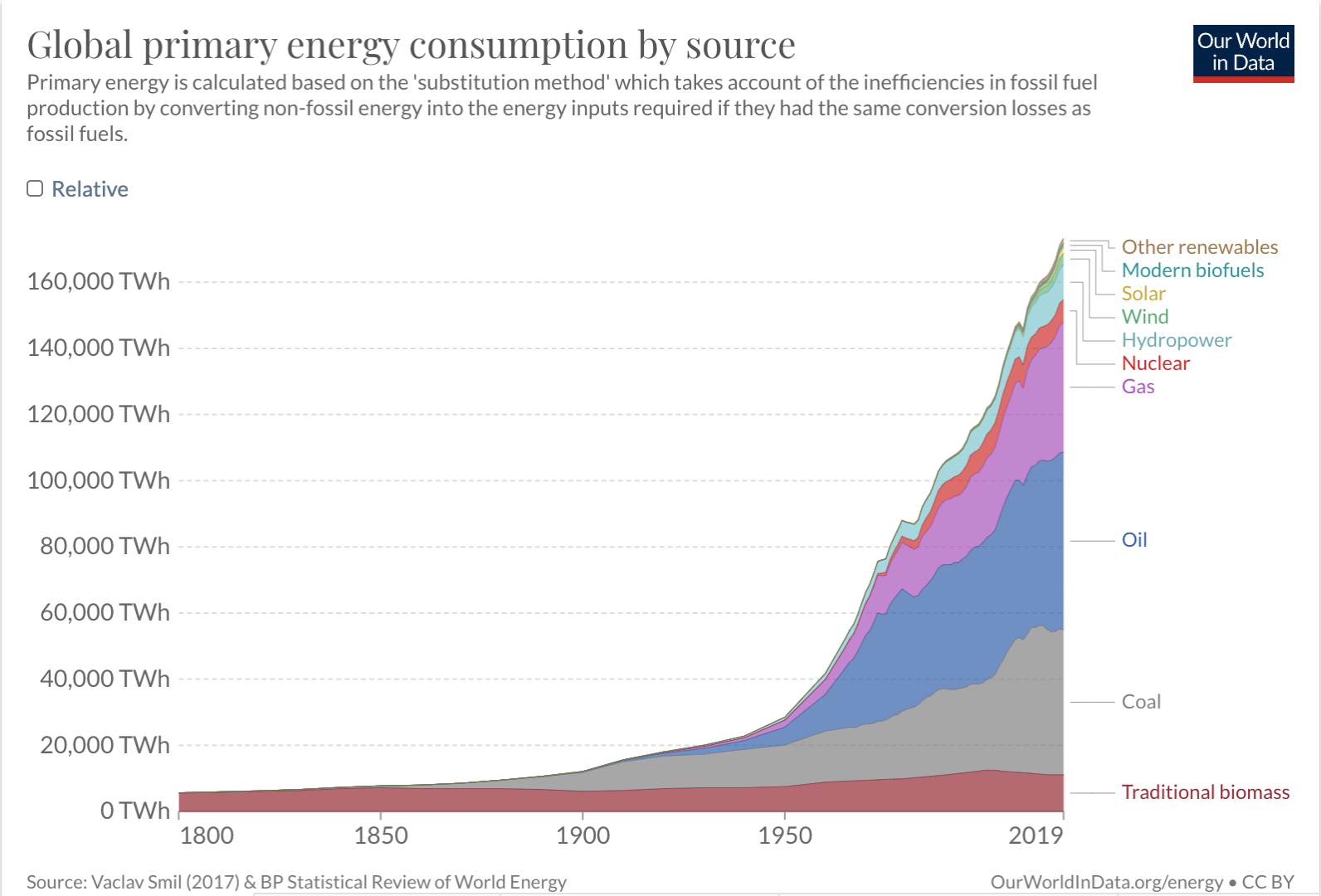
# … while oil & gas continue to provide half our energy




Source: https://ourworldindata.org/energy-production-consumption

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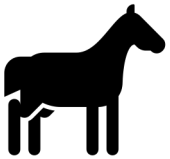
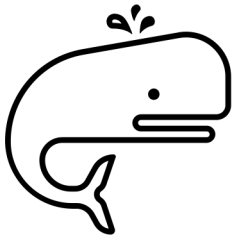
# What we did before fossil fuels

## For energy:

Wood burning

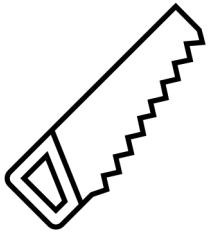


Horse power

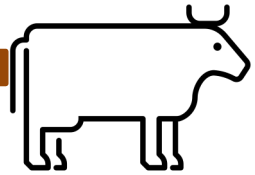


Whale oil

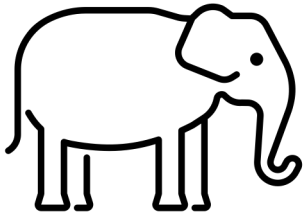
## For materials:



Wood (worked by hand)



Leather



Ivory

Fertilizer

Source: MS Office Stock Image Icons

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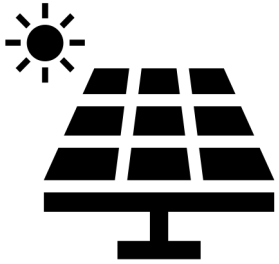
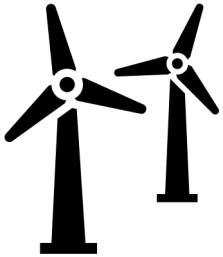
# What we might do “after fossil fuels”

## For energy:



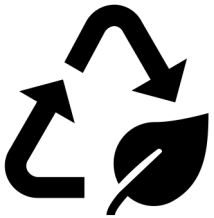
Solar



Wind

Batteries (metals)

## For materials:



Recycled petroplastics?

Bioplastics?

Asteroid mining?

Bio fertilizer?

Source: MS Office Stock Image Icons

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# Oil


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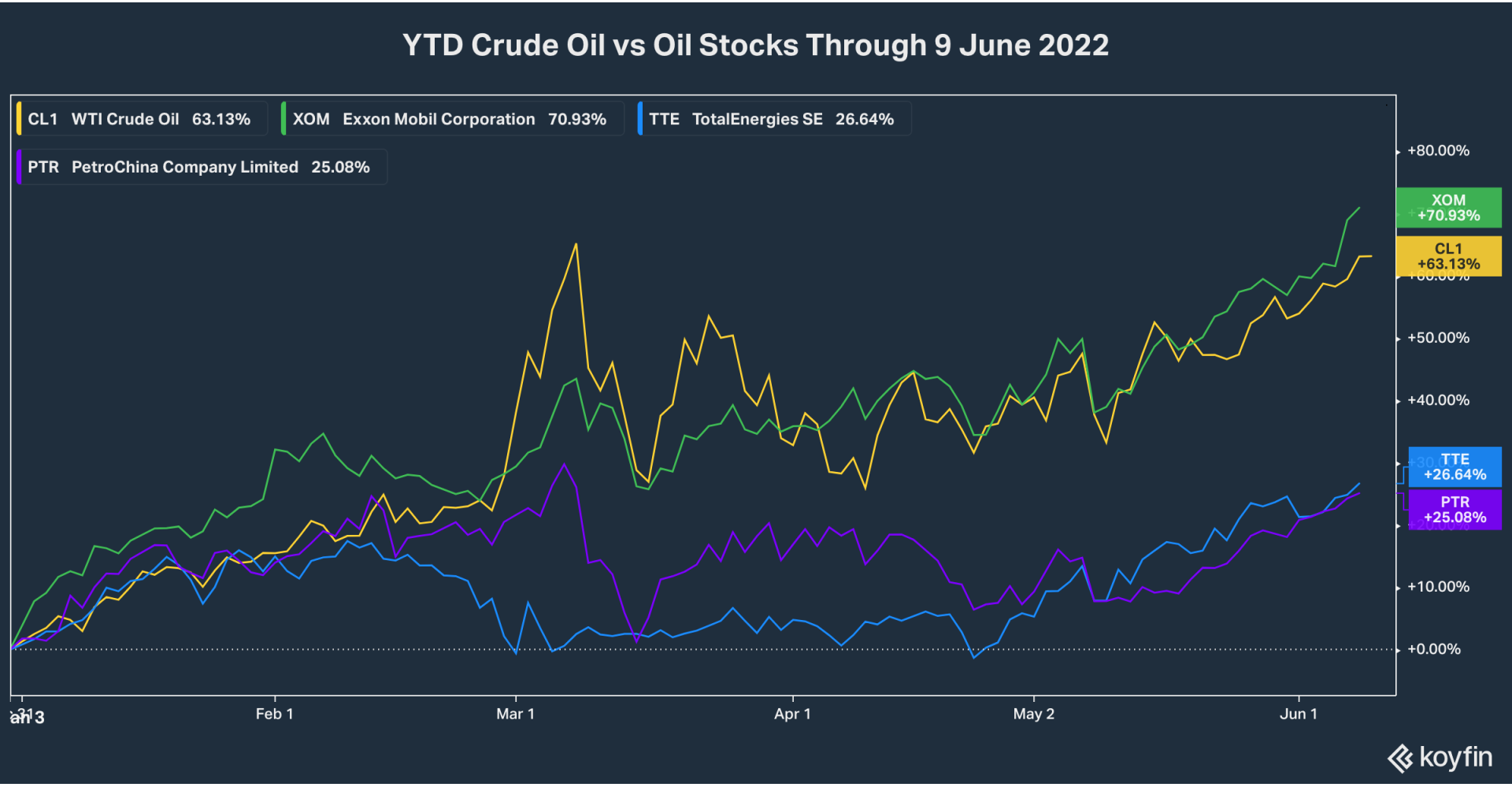
# Oil prices vs some oil stocks




Source: Koyfin, Author's calculations

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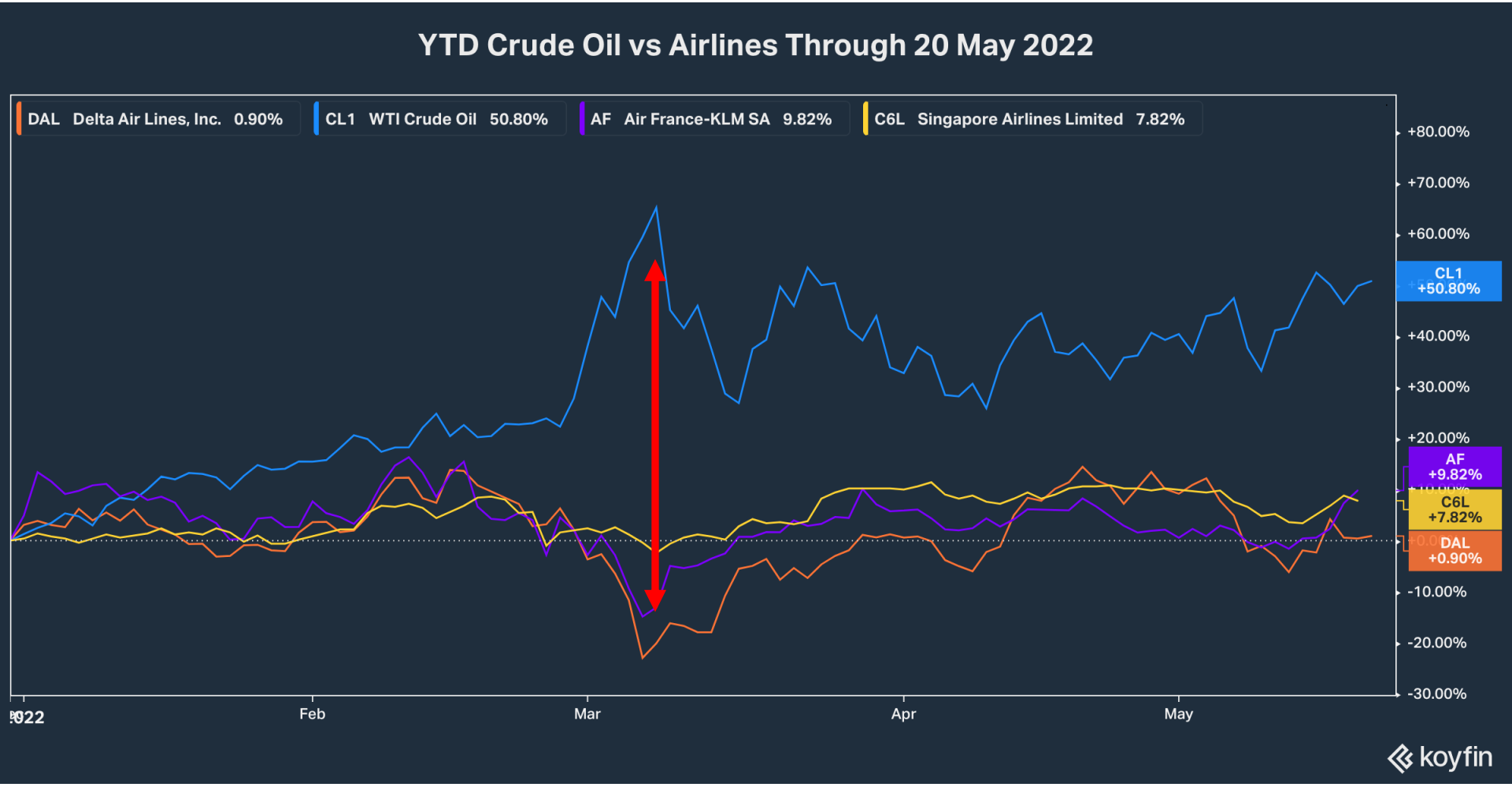
# March 2022 oil price spike vs, e.g. airline stocks




Source: Koyfin, Author's calculations

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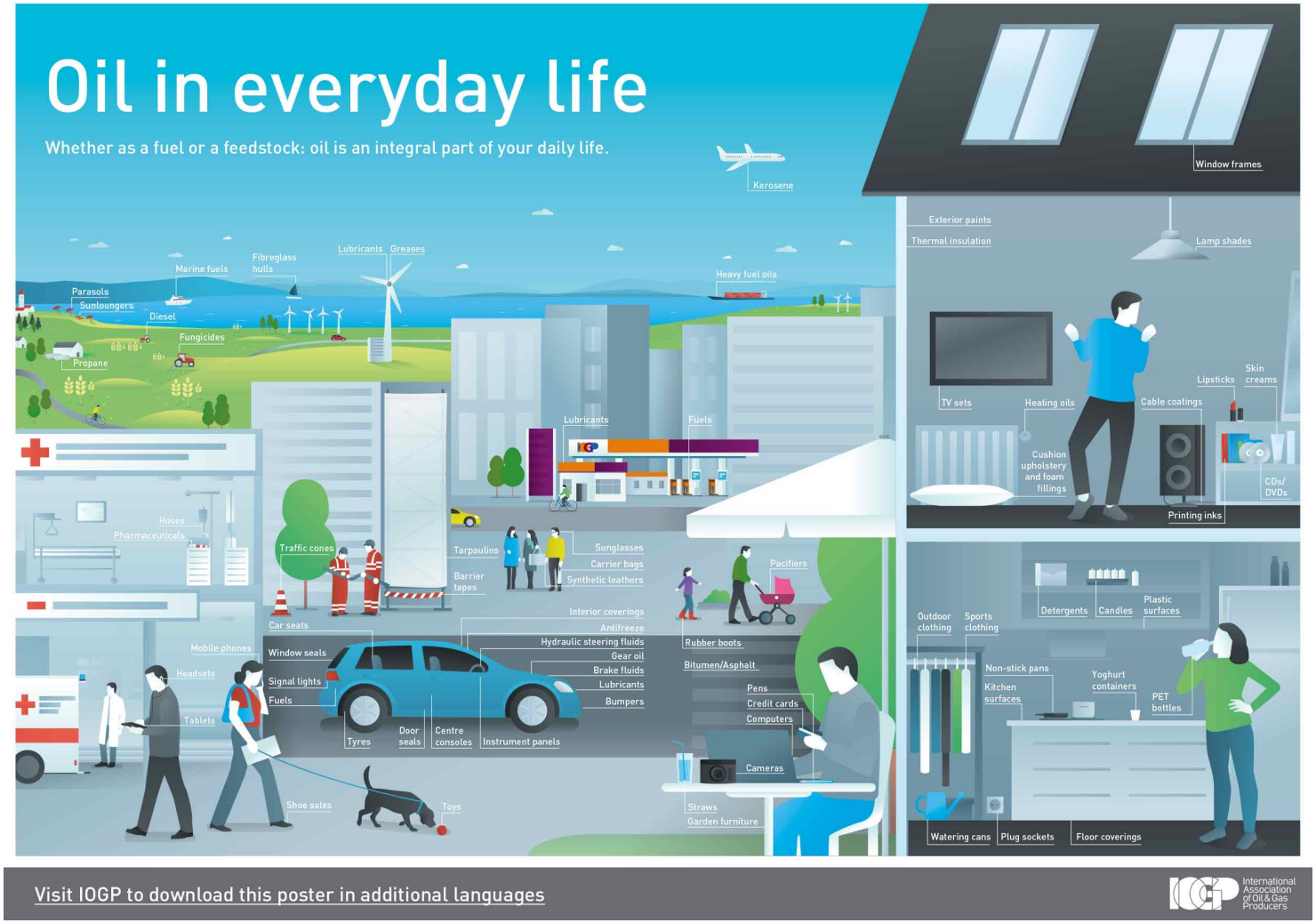
# Try going a day, even a few minutes, without using oil




Source: https://www.iogp.org/oil-in-everyday-life/

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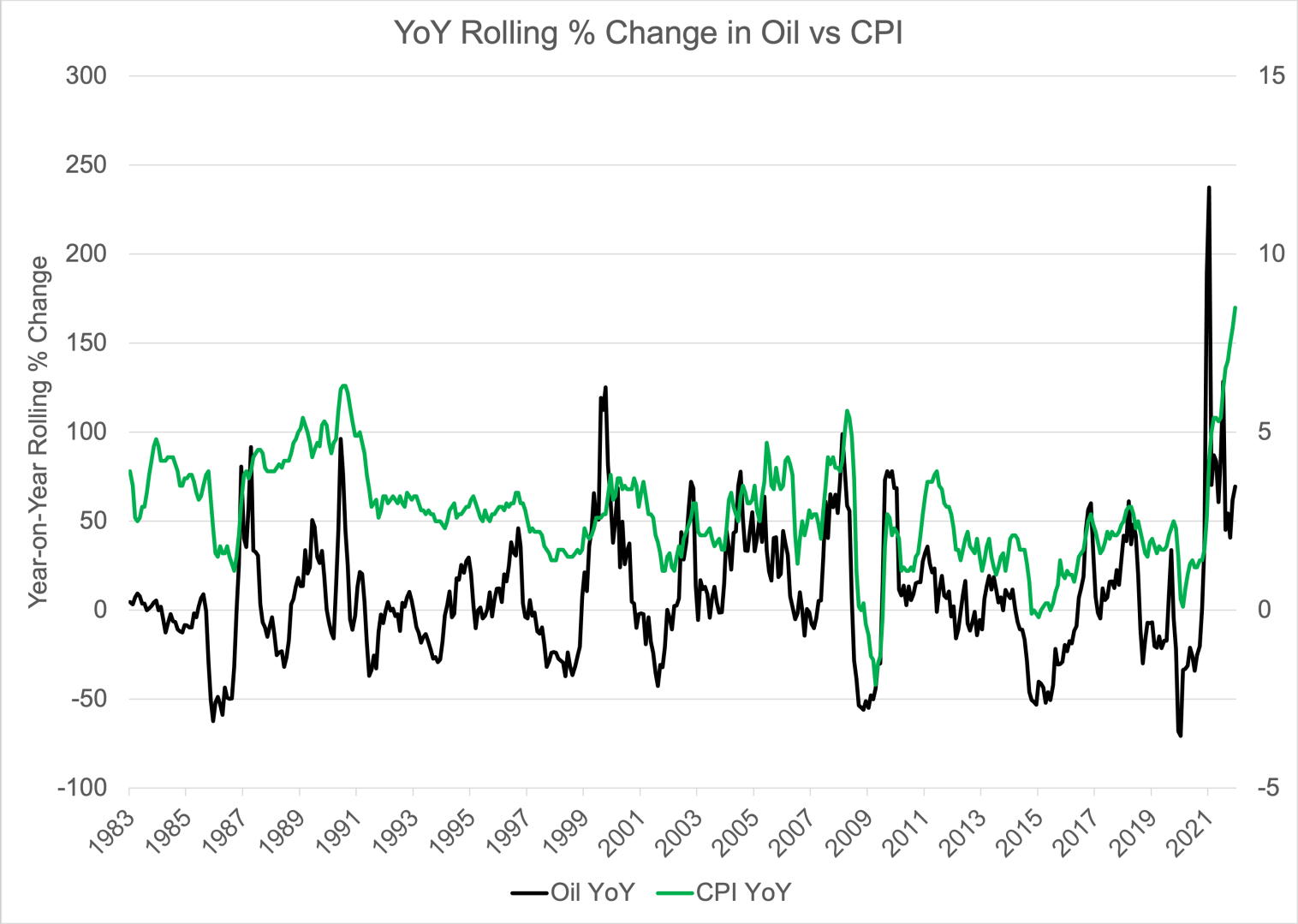
# Oil prices highly correlated with inflation




Source: Koyfin, Author's calculations

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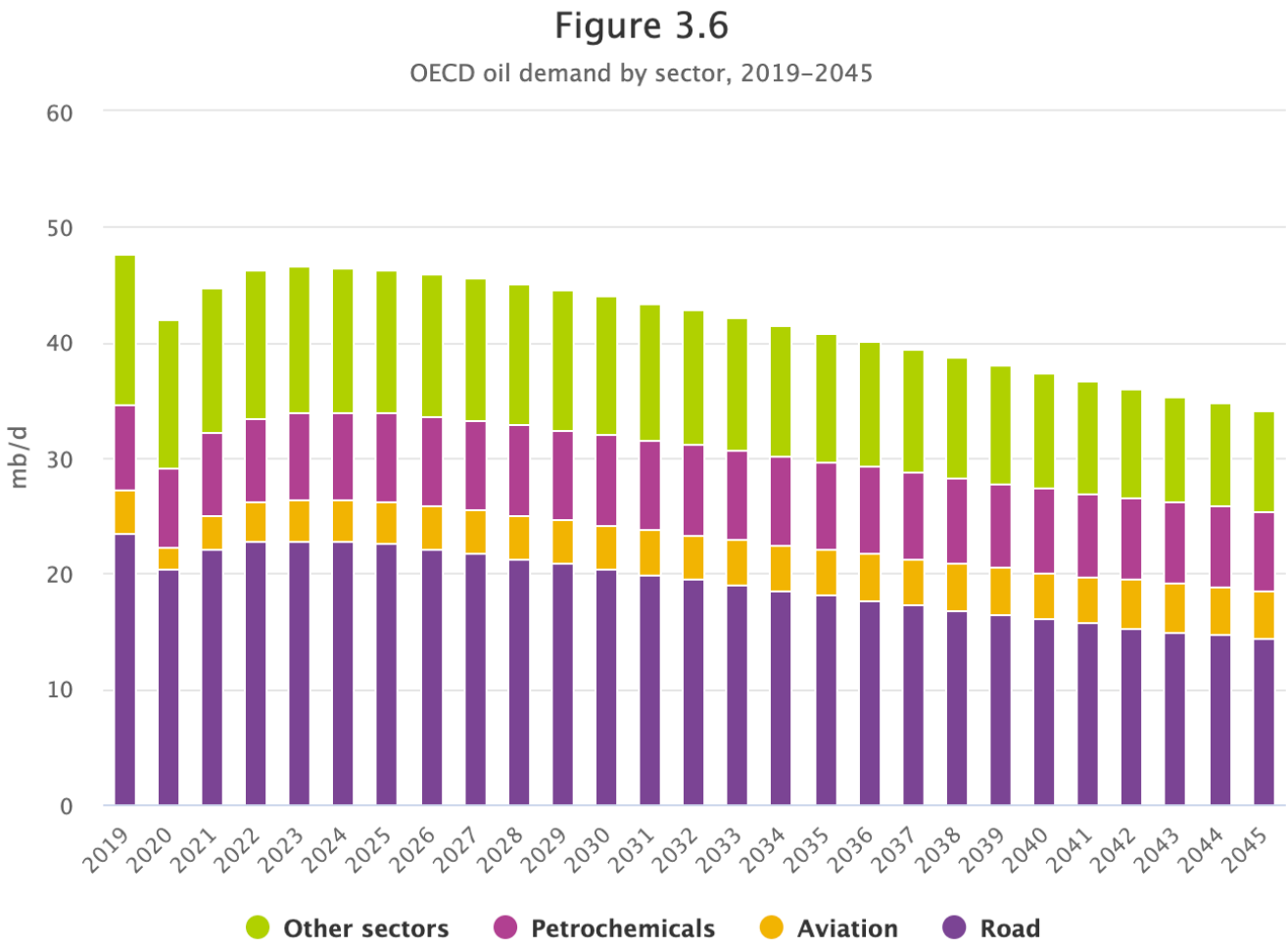
# While OECD oil demand is expected to decline…




Source: https://woo.opec.org/chapter.php?chapterNr=207&chartID=953

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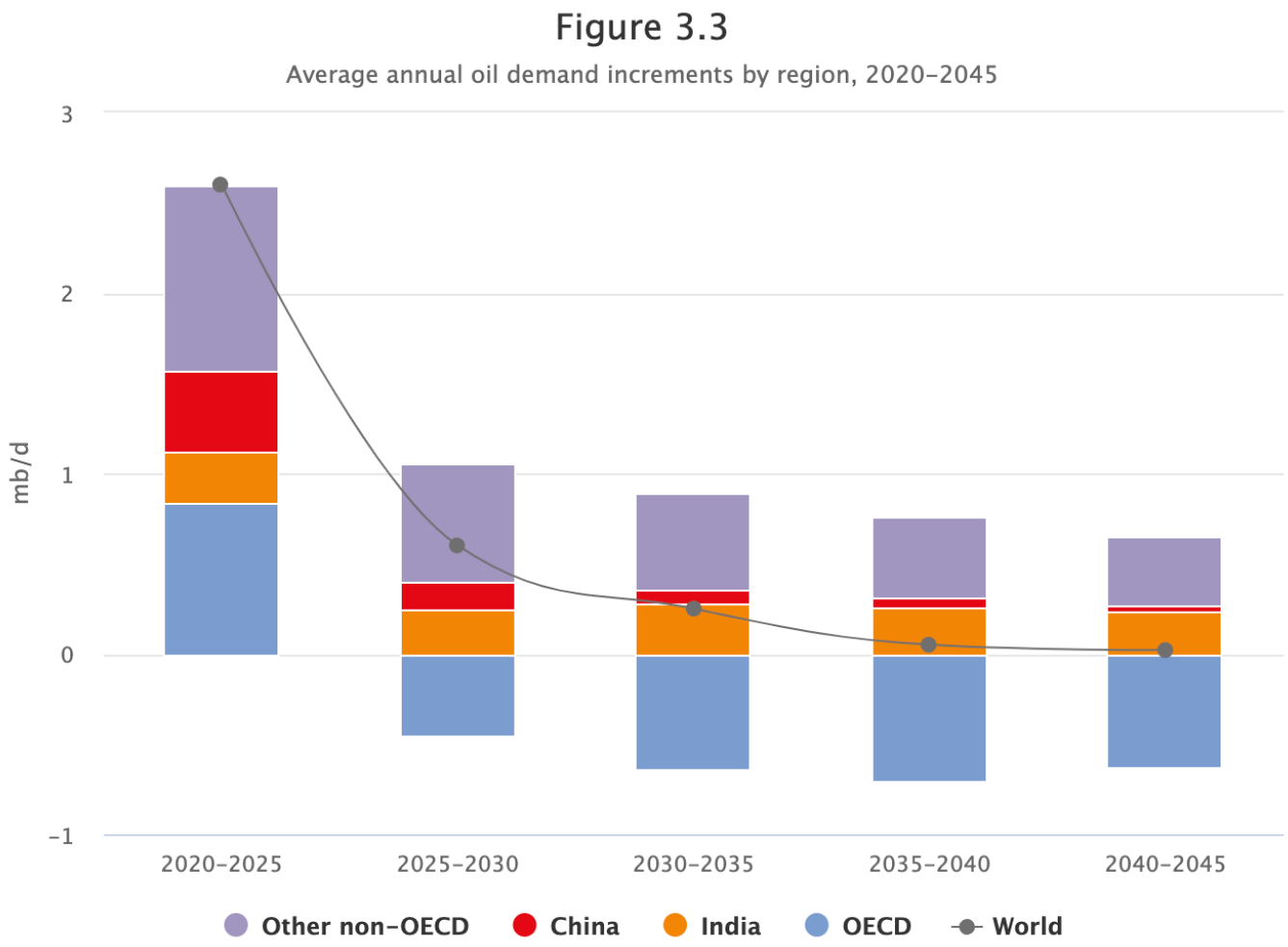
# China, India & other non-OECD expected to continue driving total oil demand up through 2045…




Source: https://woo.opec.org/chapter.php?chapterNr=207&chartID=953

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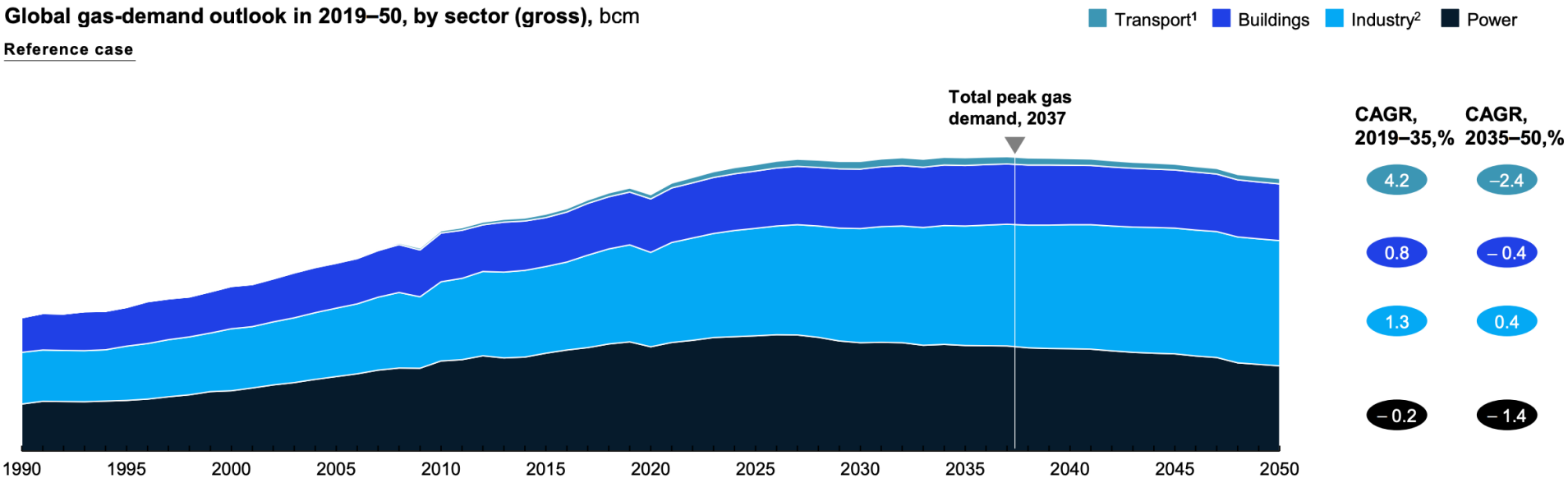


Source: https://www.mckinsey.com/industries/oil-and-gas/our-insights/global-gas-outlook-to-2050

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# Today's top importers & exporters…

* OECD members vs * OPEC

## Crude oil – imports

Crude oil - imports is the total amount of crude oil imported, in barrels per day (bbl/day).

216 Results

Clear Filters

Filter Categories

All

DOWNLOAD DATA

| Rank | Country | | bbl/day |
|---|---|---|---|
| 1 | United States | * | 7,969,000 |
| 2 | China | | 6,710,000 |
| 3 | India | | 4,057,000 |
| 4 | Japan | * | 3,208,000 |
| 5 | Korea, South | * | 3,057,000 |
| 6 | Germany | * | 1,836,000 |
| 7 | Italy | * | 1,341,000 |
| 8 | Spain | * | 1,325,000 |

## Crude oil – exports

Crude oil - exports is the total amount of crude oil exported, in barrels per day (bbl/day).

216 Results

Clear Filters

Filter Categories

All

DOWNLOAD DATA

| Rank | Country | | bbl/day |
|---|---|---|---|
| 1 | Saudi Arabia | * | 7,341,000 |
| 2 | Russia | | 4,921,000 |
| 3 | Iraq | * | 3,092,000 |
| 4 | Canada | * | 2,818,000 |
| 5 | United Arab Emirates | * | 2,552,000 |
| 6 | Nigeria | * | 2,096,000 |
| 7 | Angola | * | 1,782,000 |
| 8 | Venezuela | * | 1,656,000 |

Source: https://www.cia.gov/the-world-factbook/countries/ https://www.eia.gov/tools/faqs/faq.php?id=709&t=6

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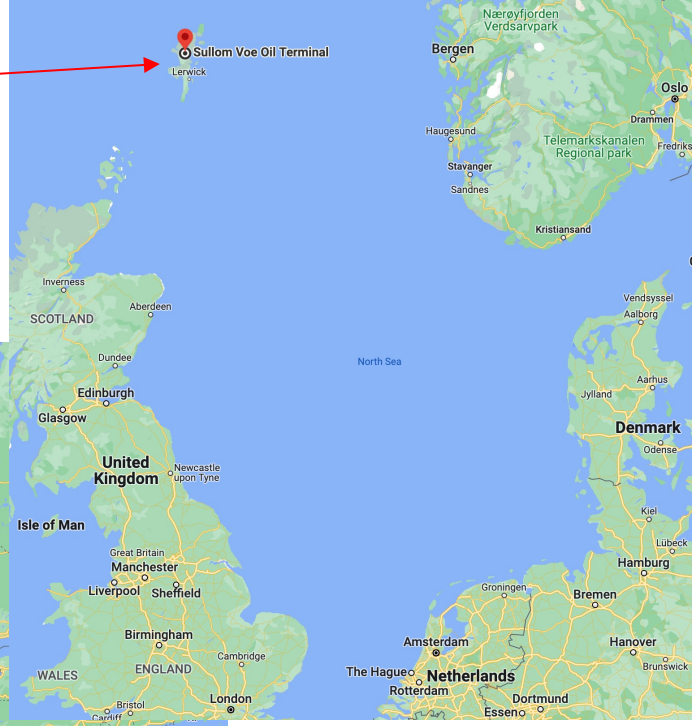
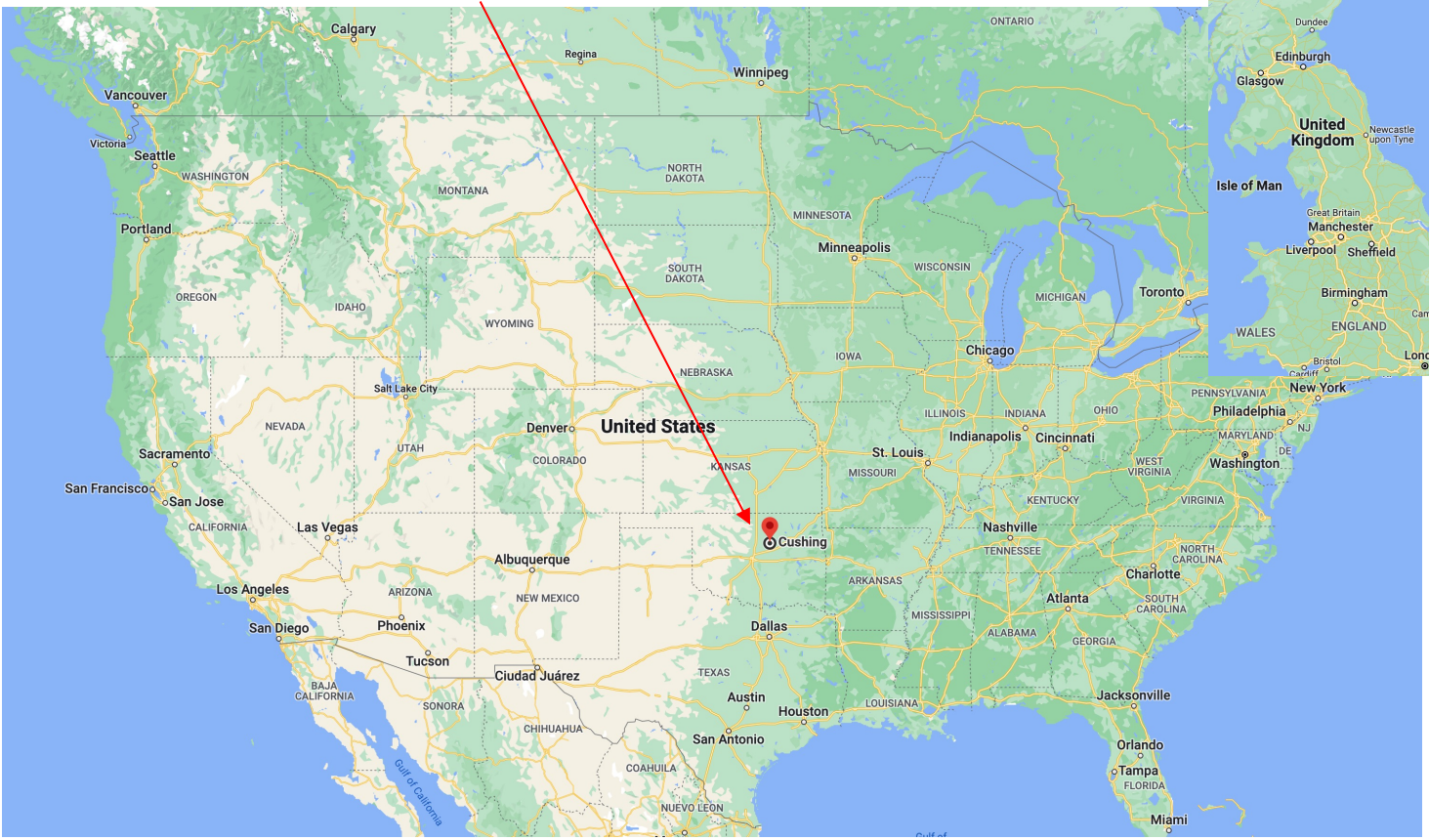
# Brent @Sullum Voe




# WTI @Cushing, OK, USA




Source: https://www.businessinsider.com/cushing-oklahoma-is-the-center-of-the-oil-universe-2016-3?r=US&IR=T

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# Gas


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# Gas is often easier wasted than transported (flaring)

Source: https://moderndiplomacy.eu/2022/05/06/a-decade-of-stalled-progress-on-reducing-global-gas-flaring/

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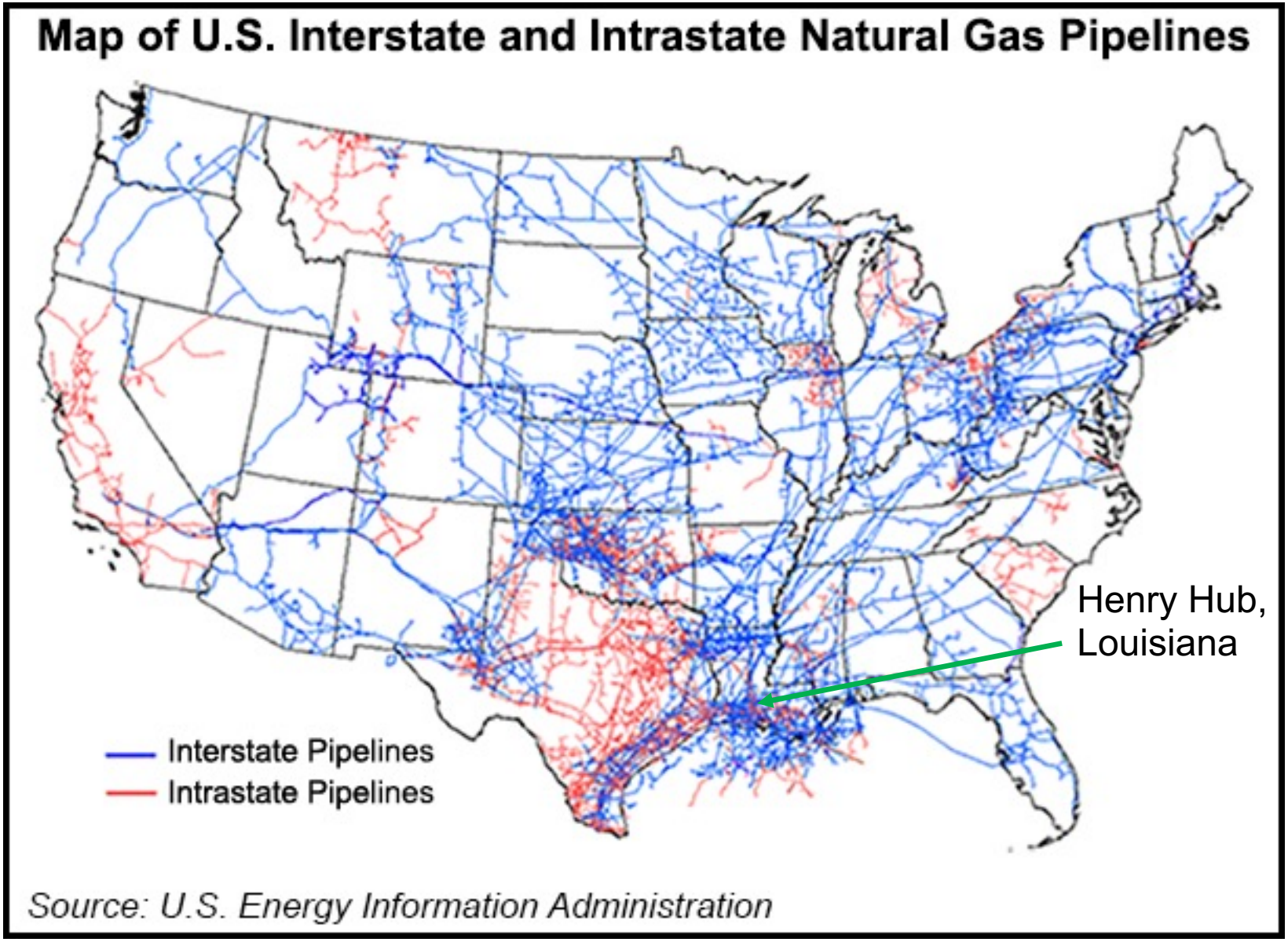


Source: https://www.naturalgasintel.com/ingaa-touts-more-efforts-to-slash-natural-gas-pipeline-storage-emissions/

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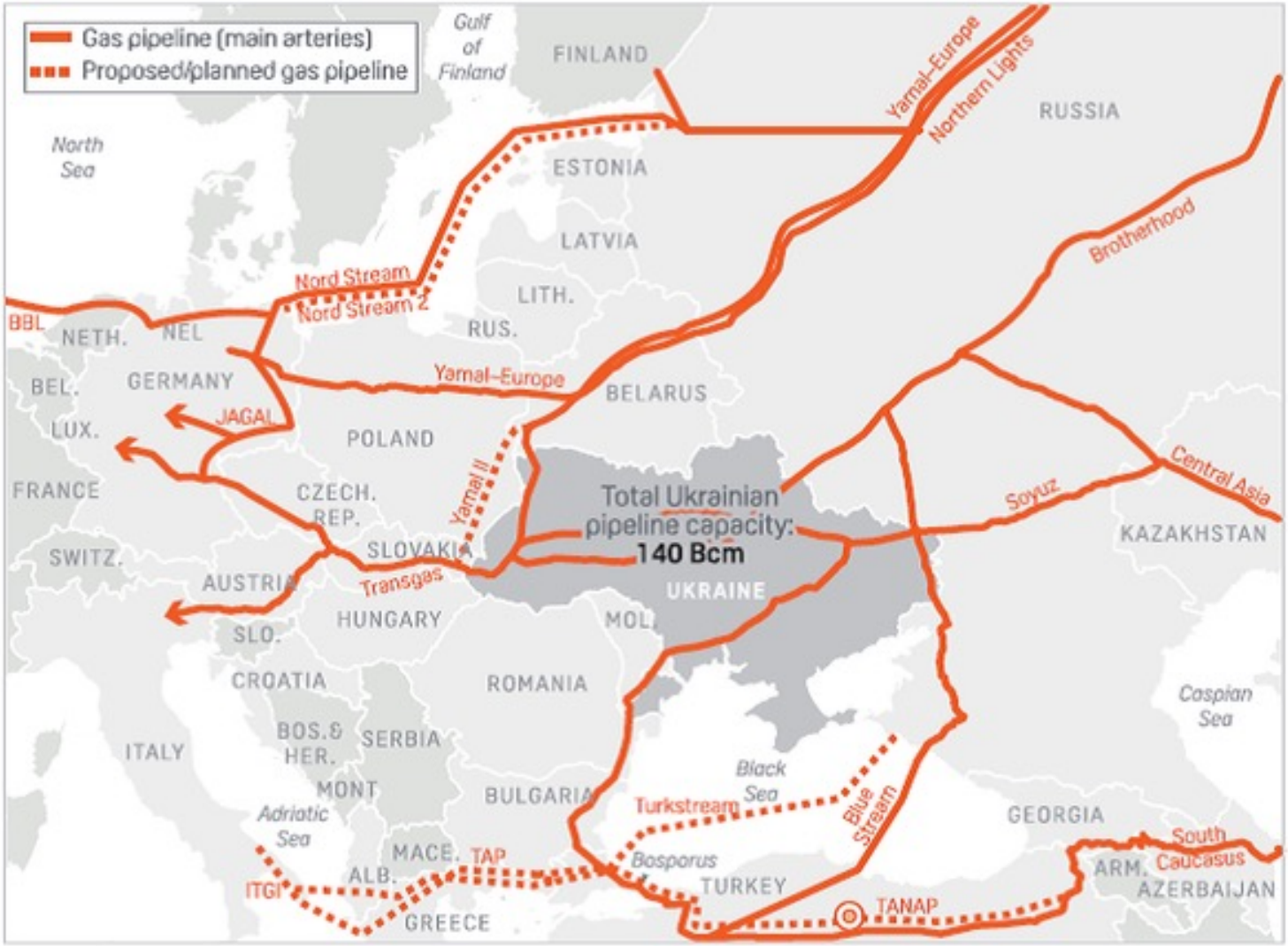
# EUROPE'S GAS PIPELINE TIES TO RUSSIA




Source: https://www.quora.com/Why-would-you-think-that-U-S-opposition-to-the-natural-gas-pipeline-from-Russia-to-Germany-is-justified

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# LNG: Cooling gas to -162C for easier transport

Source: https://cameronlng.com/lng-facility/lng-and-liquefaction/

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# Now to TWS…


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# MCL vs CL on IBKR TWS

| FIN INSTRUMENT | LAST | FUT OI | VLM | | LAST | FUT OI | VLM |
|---|---|---|---|---|---|---|---|
| MCL Jun'22 @NYMEX | c112.21 | 8.24K | | CL Jun'22 @NYMEX | 112.25 | 13.8K | 2.66K |
| MCL Jul'22 @NYMEX | 109.98 | 8.09K | 57.4K | CL Jul'22 @NYMEX | 109.97 | 287K | 110K |
| MCL Aug01'22 @NYMEX | 106.80 | 688 | 2.42K | CL Aug'22 @NYMEX | 106.81 | 131K | 22.8K |
| MCL Sep01'22 @NYMEX | 103.51 | 202 | 48 | CL Sep'22 @NYMEX | 103.49 | 124K | 13.1K |
| MCL Oct01'22 @NYMEX | c100.89 | 16 | | CL Oct'22 @NYMEX | 100.63 | 80.3K | 4.61K |
| MCL Nov01'22 @NYMEX | c98.61 | 8 | | CL Nov'22 @NYMEX | 98.32 | 55.5K | 3.37K |
| MCL Dec01'22 @NYMEX | 95.60 | 253 | 1 | CL Dec'22 @NYMEX | 96.38 | 241K | 16.5K |
| MCL Jan01'23 @NYMEX | c95.00 | 29 | | CL Jan'23 @NYMEX | 95.31 | 38.2K | 1.15K |
| MCL Feb01'23 @NYMEX | c93.47 | 11 | | CL Feb'23 @NYMEX | 93.04 | 39.6K | 807 |
| MCL Mar01'23 @NYMEX | 91.92 | 26 | 1 | CL Mar'23 @NYMEX | 91.55 | 55.8K | 1.57K |
| MCL Apr01'23 @NYMEX | c90.94 | 14 | | CL Apr'23 @NYMEX | 90.50 | 34.2K | 296 |
| MCL May01'23 @NYMEX | c89.88 | | | CL May'23 @NYMEX | 89.42 | 26.7K | 448 |
| MCL Jun01'23 @NYMEX | c88.90 | | | CL Jun'23 @NYMEX | 88.34 | 135K | 8.00K |

DESCRIPTION File Configure

Stock Description

**Micro WTI Crude Oil**

| | |
|---|---|
| Security Type | **FUT** |
| Underlying | **MCL IND** |
| Contract Month | **DEC22** |
| Expiration Date | **NOV 18 '22** |
| Last Trading Date | **DEC 01 '22 14:30 EST** |
| Currency | **USD** |
| Multiplier | **100** |
| Exchange | **NYMEX** |
| Trading Class | **MCL** |
| Symbol | **MCLZ2** |
| Product Type | **Energy** |
| Settlement Method | **Cash** |

**Trading Schedule**: April 14, 2022 Calendar

| | |
|---|---|
| Regular Trading Session | 09:30 - 17:00 (21:30 - 05:00 your time) |
| Total Available Hours | *18:00** - 17:00 (06:00 - 05:00 your time) |
| Exchange Time Zone | (UTC-05:00) US/Eastern |

*Note: Trader Workstation follows timezone adjustments for daylight savings time*

** Times in italics are on the calendar date preceding trade date*

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Source: Interactive Brokers, 20 May 2022

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DESCRIPTION File Configure

Stock Description

**Light Sweet Crude Oil**

| | |
|---|---|
| Security Type | **FUT** |
| Underlying | **CL IND** |
| Contract Month | **DEC22** |
| Expiration Date | **NOV 21 '22** |
| Last Trading Date | **NOV 21 '22 14:30 EST** |
| Currency | **USD** |
| Multiplier | **1000** |
| Exchange | **NYMEX** |
| Trading Class | **CL** |
| Symbol | **CLZ2** |
| Product Type | **Energy** |
| Settlement Method | **Physical Delivery** |
| Physical Delivery | **Not permitted at Interactive Brokers** |

**Trading Schedule**: April 14, 2022 Calendar

| | |
|---|---|
| Regular Trading Session | 09:30 - 17:00 (21:30 - 05:00 your time) |
| Total Available Hours | *18:00** - 17:00 (06:00 - 05:00 your time) |
| Exchange Time Zone | (UTC-05:00) US/Eastern |

*Note: Trader Workstation follows timezone adjustments for daylight savings time*

** Times in italics are on the calendar date preceding trade date*

## “Big” Oil Futures

- 1,000 barrels/contract
- Physically deliverable
- Deliverable any time in delivery month, so financial traders get out the month before contract expiry

## Micro Crude Oil Futures

- 100 barrels/contract
- Financially settled, based on prices of the big contract
- Settlement price automatically calculated “4 business days prior to the 25th calendar day of the month prior to the contract month“


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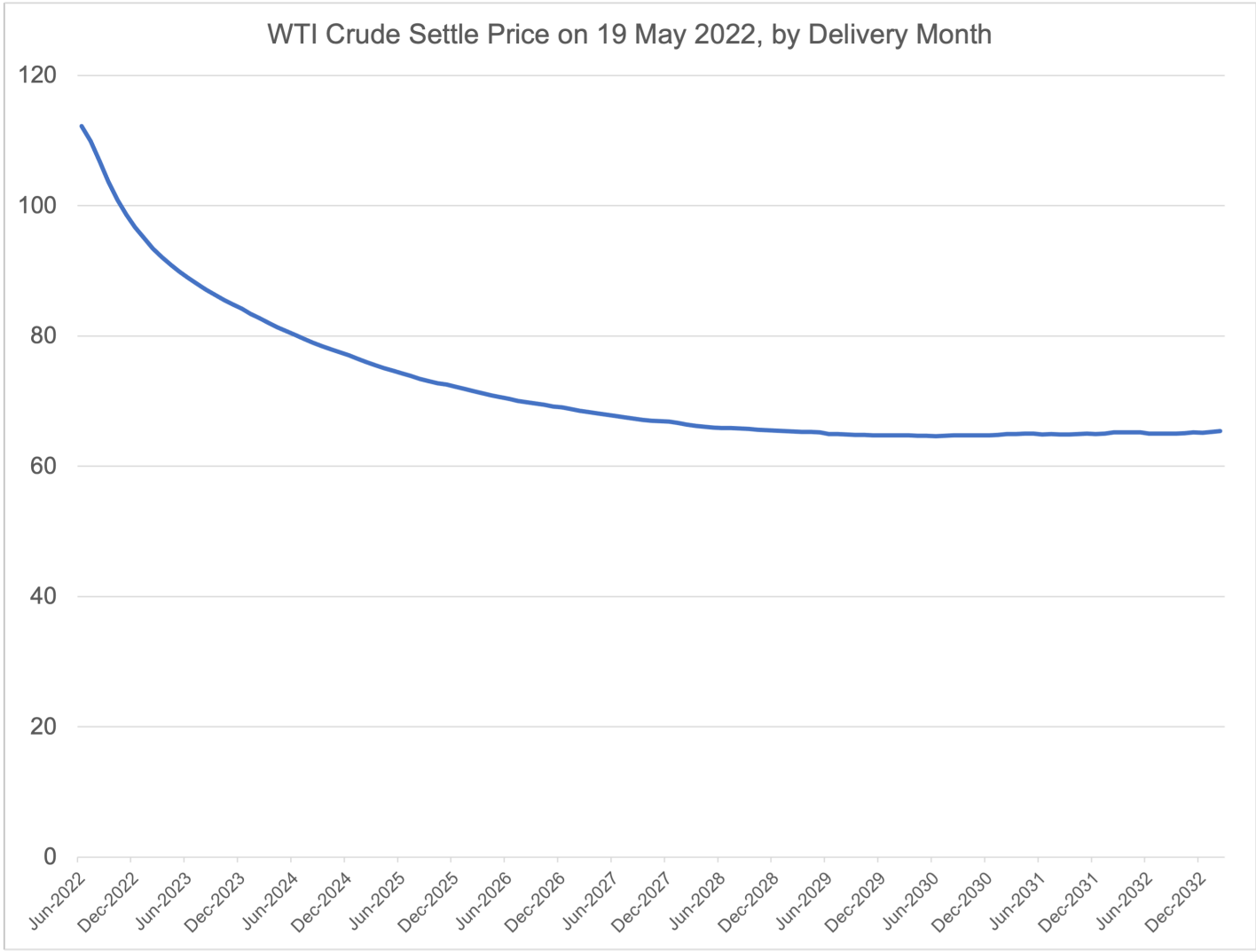
# Oil now in “backwardation” (vs in “contango”)




Source: CME

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# Sample Micro WTI Trade

Order Confirmation

Micro WTI Crude Oil

| Financial Instrument | Bid | Ask | Last |
|---|---|---|---|
| MCL Dec01'22 @NYMEX | 95.20 | 98.50 | 96.28 |

**Order Description**

BUY 1

Order Type LMT  Routing NYMEX  Time in Force DAY

Limit Price 95.00  Clearing IB

**Messages**

**Amount**

| | |
|---|---|
| Amount | 9,500 USD |
| Commission (est.) | 0.77 USD |
| Total | 9,500.77 USD |

**Balances (in USD)**

| | Current | Change | Post-trade* |
|---|---|---|---|
| Equity with Loan | 49,852 | -0.77 | 49,851 |
| Initial Margin | 8,223 | 2,172 | 10,394 |
| Maintenance Margin | 6,752 | 1,714 | 8,466 |
| Position | 0 | 1 | 1 |

*This is a current projection and is subject to change.

Margin Requirements Per Contract

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Override and Transmit  Cancel

DATA POWERED BY GFIS

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Source: Interactive Brokers, 14 April 2022


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# NG vs QG on IBKR TWS

DESCRIPTION File Configure

Stock Description

**Henry Hub Natural Gas**

| | |
|---|---|
| Security Type | **FUT** |
| Underlying | **NG IND** |
| Contract Month | **DEC34** |
| Expiration Date | **NOV 28 '34** |
| Last Trading Date | **DEC 01 '34 14:30 EST** |
| Currency | **USD** |
| Multiplier | **10000** |
| Exchange | **NYMEX** |
| Trading Class | **NG** |
| Symbol | **NGZ34** |
| Product Type | **Energy** |
| Settlement Method | **Physical Delivery** |
| Physical Delivery | **Not permitted at Interactive Brokers** |

**Trading Schedule**: May 20, 2022 Calendar

| | |
|---|---|
| Regular Trading Session | 09:30 - 17:00 (21:30 - 05:00 your time) |
| Total Available Hours | *18:00** - 17:00 (06:00 - 05:00 your time) |
| Exchange Time Zone | (UTC-05:00) US/Eastern |

*Note: Trader Workstation follows timezone adjustments for daylight savings time*

** Times in italics are on the calendar date preceding trade date*

Margin Information

**Margin Requirements Per Contract** More

| | |
|---|---|
| Initial | **8154.25 USD** |
| Maintenance | **3302.37 USD** |

| | LAST | FUT OI | VLM |
|---|---|---|---|
| NG Jun'22 @NYMEX | 8.085 | 41.9K | 35.5K |
| NG Jul'22 @NYMEX | 8.177 | 201K | 17.9K |
| NG Aug'22 @NYMEX | 8.168 | 62.3K | 4.89K |
| NG Sep'22 @NYMEX | 8.119 | 89.5K | 2.71K |
| NG Oct'22 @NYMEX | 8.087 | 97.7K | 5.14K |
| NG Nov'22 @NYMEX | 8.153 | 51.1K | 2.71K |
| NG Dec'22 @NYMEX | 8.262 | 50.9K | 2.39K |
| NG Jan'23 @NYMEX | 8.390 | 63.0K | 3.88K |
| NG Feb'23 @NYMEX | 8.051 | 27.9K | 2.09K |
| NG Mar'23 @NYMEX | 6.802 | 39.0K | 1.50K |
| NG Apr'23 @NYMEX | 4.952 | 58.9K | 2.17K |
| NG May'23 @NYMEX | 4.765 | 61.7K | 1.18K |
| NG Jun'23 @NYMEX | 4.819 | 25.5K | 746 |
| NG Jul'23 @NYMEX | 4.843 | 21.7K | 329 |
| NG Aug'23 @NYMEX | 4.856 | 13.6K | 268 |
| NG Sep'23 @NYMEX | 4.783 | 17.5K | 312 |
| NG Oct'23 @NYMEX | 4.857 | 34.6K | 382 |
| NG Nov'23 @NYMEX | 5.005 | 12.8K | 141 |
| NG Dec'23 @NYMEX | 5.271 | 15.0K | 99 |
| NG Jan'24 @NYMEX | 5.407 | 20.2K | 35 |
| NG Feb'24 @NYMEX | c5.211 | 6.00K | 27 |
| NG Mar'24 @NYMEX | c4.764 | 14.3K | 27 |
| NG Apr'24 @NYMEX | c4.024 | 12.1K | 1 |
| NG May'24 @NYMEX | c3.950 | 6.45K | |
| NG Jun'24 @NYMEX | c4.004 | 1.80K | |
| NG Jul'24 @NYMEX | c4.060 | 1.99K | |
| NG Aug'24 @NYMEX | c4.074 | 2.97K | |
| NG Sep'24 @NYMEX | c4.063 | 1.37K | |
| NG Oct'24 @NYMEX | c4.123 | 6.74K | |
| NG Nov'24 @NYMEX | c4.303 | 4.68K | |
| NG Dec'24 @NYMEX | c4.676 | 7.30K | |
| NG Jan'25 @NYMEX | c4.843 | 13.5K | |
| NG Feb'25 @NYMEX | c4.712 | 615 | |
| NG Mar'25 @NYMEX | c4.388 | 4.49K | |
| NG Apr'25 @NYMEX | c3.796 | 4.16K | |
| NG May'25 @NYMEX | c3.786 | 871 | |
| NG Jun'25 @NYMEX | c3.846 | 2.36K | |
| NG Jul'25 @NYMEX | c3.900 | 2.70K | |
| NG Aug'25 @NYMEX | c3.926 | 892 | |

| | LAST | FUT OI | VLM |
|---|---|---|---|
| QG Jun'22 @NYMEX | 8.085 | 3.70K | 8.52K |
| QG Jul'22 @NYMEX | 8.175 | 1.66K | 2.32K |
| QG Aug'22 @NYMEX | 8.165 | 186 | 65 |
| QG Sep'22 @NYMEX | 8.175 | 442 | 6 |
| QG Oct'22 @NYMEX | 8.060 | 128 | 3 |
| QG Nov'22 @NYMEX | 8.130 | 55 | 5 |
| QG Dec'22 @NYMEX | 8.160 | 71 | 7 |
| QG Jan'23 @NYMEX | 8.285 | 89 | 5 |
| QG Feb'23 @NYMEX | c8.270 | 67 | 2 |
| QG Mar'23 @NYMEX | 6.735 | 60 | 2 |
| QG Apr'23 @NYMEX | c4.955 | 225 | 1 |
| QG May'23 @NYMEX | 4.705 | 110 | 3 |
| QG Jun'23 @NYMEX | c4.815 | 164 | |
| QG Jul'23 @NYMEX | 4.750 | 96 | 2 |
| QG Aug'23 @NYMEX | c4.840 | 22 | |
| QG Sep'23 @NYMEX | c4.810 | 5 | |
| QG Oct'23 @NYMEX | c4.850 | 86 | |
| QG Nov'23 @NYMEX | c5.000 | 43 | |
| QG Dec'23 @NYMEX | c5.270 | 5 | |
| QG Jan'24 @NYMEX | c5.400 | 63 | |
| QG Feb'24 @NYMEX | c5.210 | 5 | |
| QG Mar'24 @NYMEX | c4.765 | 4 | |
| QG Apr'24 @NYMEX | c4.025 | 13 | |
| QG May'24 @NYMEX | c3.950 | 7 | |
| QG Jun'24 @NYMEX | c4.005 | 3 | |
| QG Jul'24 @NYMEX | c4.060 | 2 | |
| QG Aug'24 @NYMEX | c4.075 | 5 | |
| QG Sep'24 @NYMEX | c4.065 | 4 | |
| QG Oct'24 @NYMEX | c4.125 | 50 | |
| QG Nov'24 @NYMEX | c4.305 | 8 | |
| QG Dec'24 @NYMEX | c4.675 | 11 | |
| QG Jan'25 @NYMEX | c4.845 | 2 | |
| QG Feb'25 @NYMEX | c4.710 | | |
| QG Mar'25 @NYMEX | c4.390 | | |
| QG Apr'25 @NYMEX | c3.795 | 3 | |
| QG May'25 @NYMEX | c3.785 | 4 | |
| QG Jun'25 @NYMEX | c3.845 | | |
| QG Jul'25 @NYMEX | c3.900 | 2 | |
| QG Aug'25 @NYMEX | c3.925 | 3 | |

DESCRIPTION File Configure

Stock Description

**NYMEX MINY Natural Gas Index**

| | |
|---|---|
| Security Type | **FUT** |
| Underlying | **QG IND** |
| Contract Month | **DEC27** |
| Expiration Date | **NOV 24 '27** |
| Last Trading Date | **NOV 24 '27 14:30 EST** |
| Currency | **USD** |
| Multiplier | **2500** |
| Exchange | **NYMEX** |
| Trading Class | **QG** |
| Symbol | **QGZ7** |
| Product Type | **Energy** |
| Settlement Method | **Cash** |

**Trading Schedule**: May 20, 2022 Calendar

| | |
|---|---|
| Regular Trading Session | 09:30 - 17:00 (21:30 - 05:00 your time) |
| Total Available Hours | *18:00** - 17:00 (06:00 - 05:00 your time) |
| Exchange Time Zone | (UTC-05:00) US/Eastern |

*Note: Trader Workstation follows timezone adjustments for daylight savings time*

** Times in italics are on the calendar date preceding trade date*

Margin Information

**Margin Requirements Per Contract** More

| | |
|---|---|
| Initial | **2038.56 USD** |
| Maintenance | **825.59 USD** |

Source: Interactive Brokers, 20 May 2022

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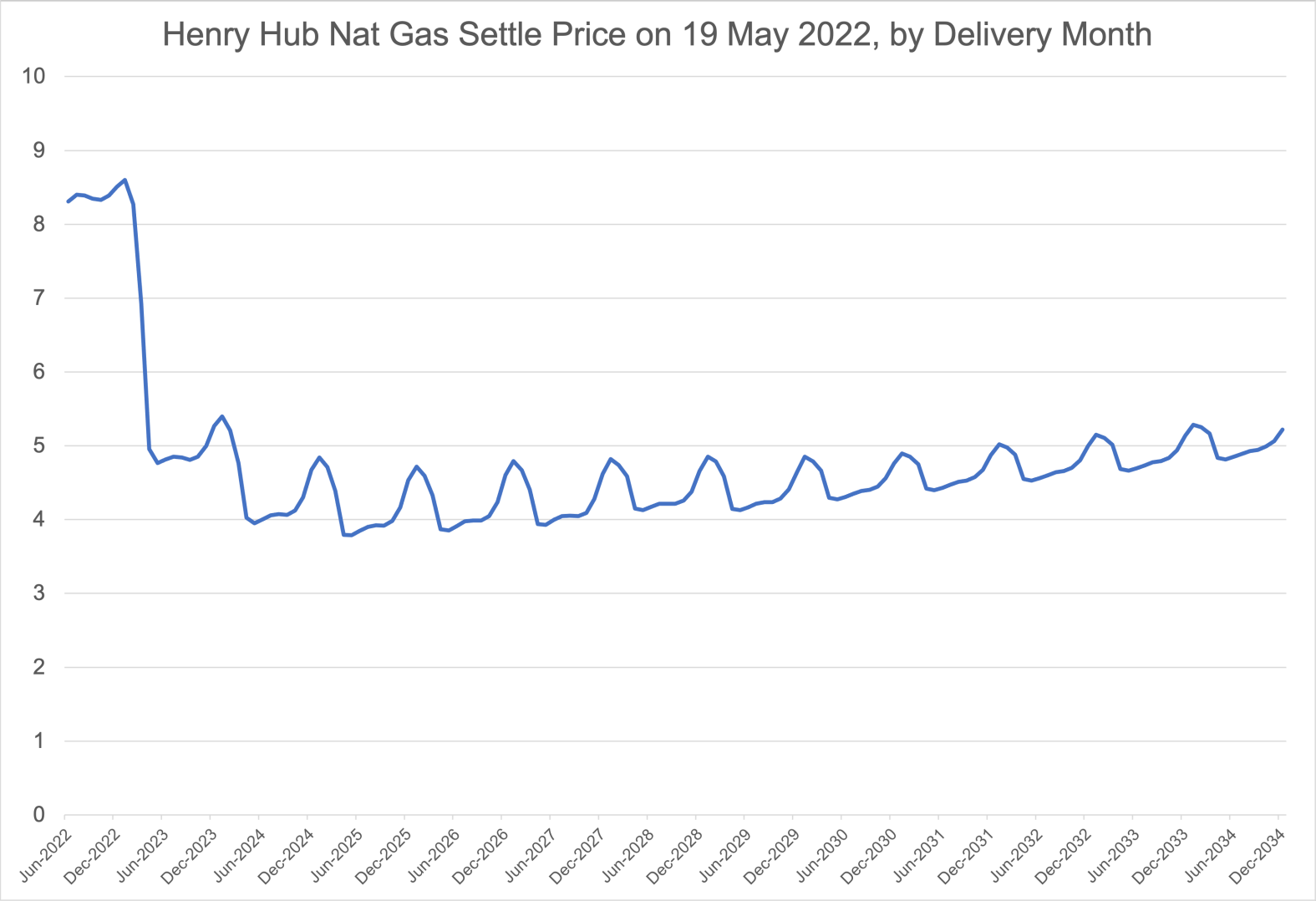
# The gas curve is MUCH more seasonal




Source: CME

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# Sample Mini Nat Gas Trade

Order Confirmation

NYMEX MINY Natural Gas Index

| Financial Instrument | Bid | Bid Yield | Ask | Ask Yield | Last | Last Yield |
|---|---|---|---|---|---|---|
| QG Dec'24 @NYMEX | | | | | c4.675 | |

**Order Description**

BUY 1

Order Type LMT  Routing NYMEX  Time in Force DAY

Limit Price 4.000  Clearing IB

**Messages**

**Amount**

| | |
|---|---|
| Amount | 10,000 USD |
| Commission (est.) | 1.37 USD |
| Total | 10,001.37 USD |

**Balances (in USD)**

| | Current | Change | Post-trade* |
|---|---|---|---|
| Equity with Loan | 525,106 | -1 | 525,105 |
| Initial Margin | 155,354 | 2,309 | 157,663 |
| Maintenance Margin | 145,587 | 924 | 146,510 |
| Position | 0 | 1 | 1 |

*This is a current projection and is subject to change.
Margin Requirements Per Contract

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Source: Interactive Brokers, 14 April 2022

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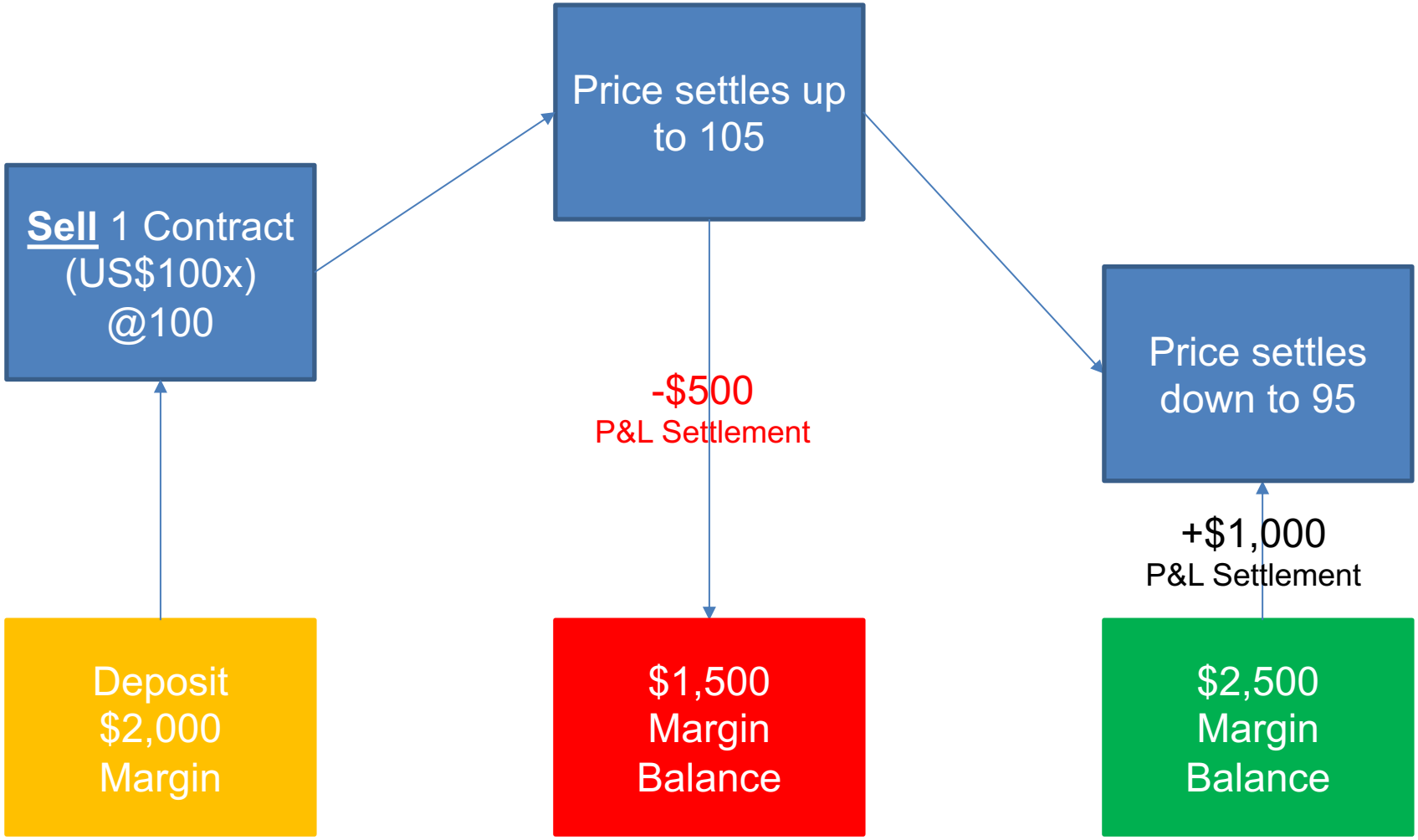
# How This Cash-Settled Futures Trade Works





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# What about crude oil options?

CL Dec'22 @NYMEX PUT/CALLs (Side by Side) 96.64 -0.07 (-0.07%)

SEP / OCT LO 1000 118 DAYS | OCT / NOV LO 1000 150 DAYS | NOV / DEC LO 1000 180 DAYS | DEC / JAN'23 LO 1000 209 DAYS | MORE

TABBED VIEW PUT/CALL STRIKES NYMEX TRADING CLASS 1000

IV: 48.4%

| CALLS | | | | | | | STRIKE | PUTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPTN O... | VOLUME | BID SIZE | BID x ASK | DELTA | IMPLD V... | ASK SIZE | | OPTN O... | VOLUME | BID SIZE | BID x ASK | DELTA | IMPLD V... | ASK SIZE |
| 488 | | 3 | 17.70 x 17.87 | 0.681 | 48.8% | 7 | 87 | 475 | | 73 | 8.19 x 8.28 | -0.320 | 49% | 57 |
| 6.54K | 16 | 3 | 17.13 x 17.29 | 0.670 | 48.6% | 7 | 88 | 3.76K | | 57 | 8.61 x 8.70 | -0.331 | 48.8% | 57 |
| 1.39K | | 3 | 16.57 x 16.73 | 0.658 | 48.7% | 7 | 89 | 304 | | 69 | 9.04 x 9.14 | -0.343 | 48.7% | 76 |
| 21.7K | 197 | 3 | 16.03 x 16.19 | 0.646 | 48.3% | 7 | 90 | 7.42K | 16 | 49 | 9.49 x 9.59 | -0.355 | 48.6% | 68 |
| 280 | | 52 | 15.52 x 15.65 | 0.634 | 48.2% | 48 | 91 | 119 | | 63 | 9.95 x 10.05 | -0.368 | 48.5% | 60 |
| 1.30K | | 52 | 15.01 x 15.13 | 0.621 | 48.2% | 33 | 92 | 469 | | 50 | 10.43 x 10.53 | -0.380 | 48.4% | 57 |
| 573 | | 41 | 14.51 x 14.64 | 0.609 | 48.1% | 50 | 93 | 161 | | 60 | 10.92 x 11.02 | -0.392 | 48.3% | 13 |
| 506 | | 52 | 14.03 x 14.15 | 0.597 | 48% | 33 | 94 | 171 | | 48 | 11.43 x 11.53 | -0.404 | 48.2% | 55 |
| 7.90K | 18 | 45 | 13.56 x 13.68 | 0.585 | 48% | 33 | 95 | 4.89K | | 60 | 11.95 x 12.05 | -0.417 | 48.2% | 13 |
| 681 | | 57 | 13.11 x 13.23 | 0.573 | 48% | 52 | 96 | 276 | | 41 | 12.49 x 12.60 | -0.429 | 48.2% | 54 |
| 1.40K | | 57 | 12.67 x 12.78 | 0.561 | 48% | 33 | 97 | 164 | | 41 | 13.04 x 13.15 | -0.441 | 48.1% | 48 |
| 25.8K | 16 | 46 | 12.24 x 12.36 | 0.549 | 47.9% | 38 | 98 | 221 | | 41 | 13.61 x 13.71 | -0.453 | 48% | 12 |
| 16.2K | | 46 | 11.83 x 11.94 | 0.537 | 47.9% | 7 | 99 | 12 | | 26 | 14.19 x 14.29 | -0.465 | 48% | 64 |
| 51.2K | 32 | 57 | 11.43 x 11.55 | 0.525 | 47.9% | 53 | 100 | 798 | 1 | 41 | 14.78 x 14.89 | -0.477 | 48% | 53 |
| 69 | | 47 | 11.05 x 11.16 | 0.513 | 48% | 33 | 101 | 2 | | 27 | 15.39 x 15.49 | -0.489 | 48.1% | 12 |
| 1.42K | | 48 | 10.68 x 10.79 | 0.501 | 47.9% | 55 | 102 | 1 | | 42 | 16.00 x 16.11 | -0.501 | 48% | 7 |
| 304 | | 48 | 10.32 x 10.43 | 0.489 | 47.9% | 55 | 103 | 9 | | 27 | 16.64 x 16.75 | -0.513 | 48% | 54 |
| 1.55K | | 60 | 9.97 x 10.08 | 0.478 | 47.9% | 49 | 104 | 1 | | 26 | 17.28 x 17.39 | -0.524 | 48% | 59 |
| 9.61K | 53 | 48 | 9.64 x 9.74 | 0.467 | 48% | 34 | 105 | 18 | | 26 | 17.94 x 18.06 | -0.535 | 48% | 53 |
| 10 | | 48 | 9.31 x 9.42 | 0.457 | 48% | 49 | 106 | | | 41 | 18.60 x 18.72 | -0.546 | 48.1% | 48 |
| 845 | | 49 | 9.00 x 9.10 | 0.446 | 48.2% | 34 | 107 | | | 26 | 19.28 x 19.40 | -0.556 | 48.4% | 48 |

OFF Strategy Builder

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GFM ASSET MANAGEMENT

Source: Interactive Brokers, 20 May 2022

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# Description of the Oct 90 put on the Nov CL Futures

DESCRIPTION File Configure

Stock Description

## Light Sweet Crude Oil

| | |
|---|---|
| Product | **CL** |
| Security Type | **FOP** |
| Underlying | **CLX2 OCT 20 '22 FUT** |
| Contract Month | **NOV22** |
| Expiration Date | **OCT 17 '22** |
| Last Trading Date | **OCT 17 '22 14:30 EST** |
| Strike | **90** |
| Right | **Put** |
| Currency | **USD** |
| Multiplier | **1000** |
| Exchange | **NYMEX** |
| Symbol | **LOX2 P9000** |
| Trading Class | **LO** |
| Product Type | **Energy** |
| Settlement Method | **Physical Delivery** |
| Exercise Style | **American** |

**Trading Schedule**: April 14, 2022 Calendar

Total Available Hours *18:00** - 17:00 (06:00 - 05:00 your time)

Exchange Time Zone (UTC-05:00) US/Eastern

*Note: Trader Workstation follows timezone adjustments for daylight savings time*

** Times in italics are on the calendar date preceding trade date*

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Source: Interactive Brokers, 14 April 2022

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# Sample Micro WTI Option Trade (Put Buy)

Order Confirmation

Light Sweet Crude Oil

| Financial Instrument | Bid | Ask | Last |
|---|---|---|---|
| CL FOP (LO) Nov'22 90 PUT @NYMEX | 8.40 | 8.52 | c7.86 |

**Order Description**

BUY 1

Order Type LMT  Routing NYMEX  Time in Force DAY

Limit Price 7.50  Clearing IB

**Messages**

**Amount**

| | |
|---|---|
| Amount | 7,500 USD |
| Commission (est.) | 2.37 USD |
| Total | 7,502.37 USD |

☐ Performance Profile

**Balances (in USD)**

| | Current | Change | Post-trade* |
|---|---|---|---|
| Equity with Loan | 49,846 | 105 | 49,951 |
| Initial Margin | 8,223 | 7,608 | 15,830 |
| Maintenance Margin | 6,753 | 5,656 | 12,409 |
| Position | 0 | 1 | 1 |

*This is a current projection and is subject to change.
Margin Requirements Per Contract

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GFM ASSET MANAGEMENT

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Source: Interactive Brokers, 14 April 2022

# What about Gas Options?

NG Dec'22 @NYMEX PUT/CALLs (Side by Side) 8.368 -0.140 (-1.65%)

AUG / SEP LNE 10000 98 DAYS | AUG ON / SEP ON 10000 98 DAYS | SEP / OCT LNE 10000 130 DAYS | SEP ON / OCT ON 10000 130 DAYS | MORE

TABBED VIEW | PUT/CALL | STRIKES | NYMEX | TRADING CLASS | 10000

IV: 86.9%

| CALLS | | | | | | | STRIKE | PUTS | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| OPTN O... | VOLUME | BID SIZE | BID x ASK | DELTA | IMPLD V... | ASK SIZE | | OPTN O... | VOLUME | BID SIZE | BID x ASK | DELTA | IMPLD V... | ASK SIZE |
| 28.9K | | 5 | 2.660 x 2.707 | 0.811 | 79.5% | 5 | 6 | 16.1K | | 79 | 0.499 x 0.519 | -0.189 | 79.3% | 20 |
| 700 | | 5 | 2.510 x 2.556 | 0.786 | 80.2% | 5 | 6.25 | 505 | | 32 | 0.596 x 0.617 | -0.214 | 80.3% | 20 |
| 1.69K | | 5 | 2.370 x 2.415 | 0.761 | 80.9% | 5 | 6.5 | 1.85K | | 44 | 0.704 x 0.725 | -0.239 | 81% | 20 |
| 133 | | 33 | 2.239 x 2.285 | 0.736 | 81.8% | 5 | 6.75 | | | 44 | 0.820 x 0.844 | -0.264 | 81.8% | 48 |
| 6.72K | | 28 | 2.119 x 2.164 | 0.711 | 82.7% | 5 | 7 | 741 | | 46 | 0.946 x 0.970 | -0.289 | 82.6% | 19 |
| 870 | | 33 | 2.007 x 2.048 | 0.686 | 83.4% | 5 | 7.25 | 487 | | 42 | 1.082 x 1.107 | -0.314 | 83.5% | 17 |
| 1.12K | | 33 | 1.904 x 1.934 | 0.662 | 84.3% | 7 | 7.5 | 642 | | 98 | 1.226 x 1.253 | -0.338 | 84.4% | 46 |
| 101 | | 37 | 1.808 x 1.837 | 0.639 | 85.2% | 6 | 7.75 | 17 | | 70 | 1.378 x 1.405 | -0.361 | 85.3% | 46 |
| 8.37K | | 39 | 1.719 x 1.747 | 0.616 | 86.1% | 9 | 8 | 373 | | 66 | 1.537 x 1.564 | -0.384 | 86.2% | 47 |
| 380 | | 43 | 1.635 x 1.662 | 0.594 | 87% | 13 | 8.25 | 185 | | 66 | 1.701 x 1.728 | -0.406 | 87.1% | 42 |
| 2.24K | | 46 | 1.557 x 1.583 | 0.573 | 87.8% | 27 | 8.5 | 151 | | 61 | 1.871 x 1.898 | -0.427 | 87.9% | 42 |
| 2 | | 46 | 1.483 x 1.508 | 0.553 | 88.7% | 30 | 8.75 | | | 50 | 2.045 x 2.072 | -0.447 | 88.7% | 38 |
| 3.30K | | 72 | 1.413 x 1.438 | 0.533 | 89.4% | 34 | 9 | 41 | | 50 | 2.224 x 2.251 | -0.467 | 89.4% | 40 |
| 160 | | 50 | 1.348 x 1.372 | 0.514 | 90.1% | 35 | 9.25 | | | 50 | 2.407 x 2.434 | -0.486 | 90.1% | 39 |
| 759 | | 50 | 1.286 x 1.310 | 0.496 | 90.7% | 39 | 9.5 | 48 | | 50 | 2.593 x 2.619 | -0.504 | 90.7% | 44 |
| 7 | | 50 | 1.227 x 1.251 | 0.479 | 91.4% | 12 | 9.75 | | | 50 | 2.783 x 2.809 | -0.521 | 91.3% | 13 |
| 5.36K | | 50 | 1.171 x 1.196 | 0.462 | 92% | 12 | 10 | 134 | | 50 | 2.975 x 3.003 | -0.538 | 91.9% | 14 |
| 10 | | 50 | 1.119 x 1.144 | 0.446 | 92.5% | 39 | 10.25 | | | 46 | 3.170 x 3.199 | -0.554 | 92.5% | 40 |
| 1.76K | | 50 | 1.069 x 1.094 | 0.430 | 93% | 39 | 10.5 | | | 46 | 3.368 x 3.398 | -0.570 | 92.9% | 38 |
| 2 | | 54 | 1.021 x 1.045 | 0.416 | 93.5% | 11 | 10.75 | | | 43 | 3.569 x 3.600 | -0.585 | 93.4% | 38 |
| 2.57K | | 54 | 0.976 x 1.000 | 0.401 | 93.9% | 12 | 11 | 79 | | 43 | 3.772 x 3.804 | -0.599 | 93.9% | 36 |

OFF Strategy Builder

Any stock, options or futures symbols displayed are for illustrative purposes only and are not intended to portray recommendations. There is a substantial risk of loss in trading futures and options. Past performance is not indicative of future results.

GFM ASSET MANAGEMENT

Source: Interactive Brokers, 20 May 2022

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# Description of a Nat Gas Option

DESCRIPTION File Configure

Stock Description

**Henry Hub Natural Gas**

| | |
|---|---|
| Product | **NG** |
| Security Type | **FOP** |
| Underlying | **NGZ25 NOV 25 '25 FUT** |
| Contract Month | **DEC25** |
| Expiration Date | **NOV 24 '25** |
| Last Trading Date | **NOV 24 '25 14:30 EST** |
| Strike | **4** |
| Right | **Put** |
| Currency | **USD** |
| Multiplier | **10000** |
| Exchange | **NYMEX** |
| Symbol | **LNEZ5 P4000** |
| Trading Class | **LNE** |
| Product Type | **Energy** |
| Settlement Method | **Cash** |
| Exercise Style | **European** |

**Trading Schedule**: May 20, 2022 Calendar

Total Available Hours *18:00** - 17:00 (06:00 - 05:00 your time)

Exchange Time Zone (UTC-05:00) US/Eastern

*Note: Trader Workstation follows timezone adjustments for daylight savings time*

** Times in italics are on the calendar date preceding trade date*

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Source: Interactive Brokers, 14 April 2022

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# Sample Nat Gas Option Trade

Order Confirmation

Henry Hub Natural Gas

| Financial Instrument | Bid | Bid Yield | Ask | Ask Yield | Last | Last Yield |
|---|---|---|---|---|---|---|
| NG FOP (LNE) Dec'25 4... | | | | | c0.630 | |

**Order Description**

SELL 1

Order Type LMT  Routing NYMEX  Time in Force DAY

Limit Price 1.000  Clearing IB

**Messages**

**Amount**

| | |
|---|---|
| Amount | 10,000 USD |
| Commission (est.) | 2.37 USD |
| Total | 9,997.63 USD |

☐ Performance Profile

**Balances (in USD)**

| | Current | Change | Post-trade* |
|---|---|---|---|
| Equity with Loan | 523,007 | 0.00 | 523,007 |
| Initial Margin | 156,438 | 4,610 | 161,047 |
| Maintenance Margin | 146,694 | 1,849 | 148,543 |
| Position | 0 | -1 | -1 |

*This is a current projection and is subject to change.

Margin Requirements Per Contract

☐ Don't display this message again.

Override and Transmit  Cancel

DATA POWERED BY GFIS

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# How to lose a lot of money in natural gas quickly

thehedgefundjournal.com/amaranth-advisors/

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thehfj

On 21 September 2006, Amaranth Advisors, the $9.5 billion hedge fund, announced that it had lost almost 65% of its assets on a bet on the natural gas market. The biggest energy trading disaster happened through what some have called a series of classic rogue trading mistakes and a complete breakdown in risk control. After an intense period trying to salvage what they could for investors, on Friday 6th October, news started filtering out that Amaranth Advisors was going to shut down leading to hundreds of job losses. According to reports, Amaranth has been forced to sell, at a loss, its energy book to JP Morgan Chase and Citadel.

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# Questions?

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