



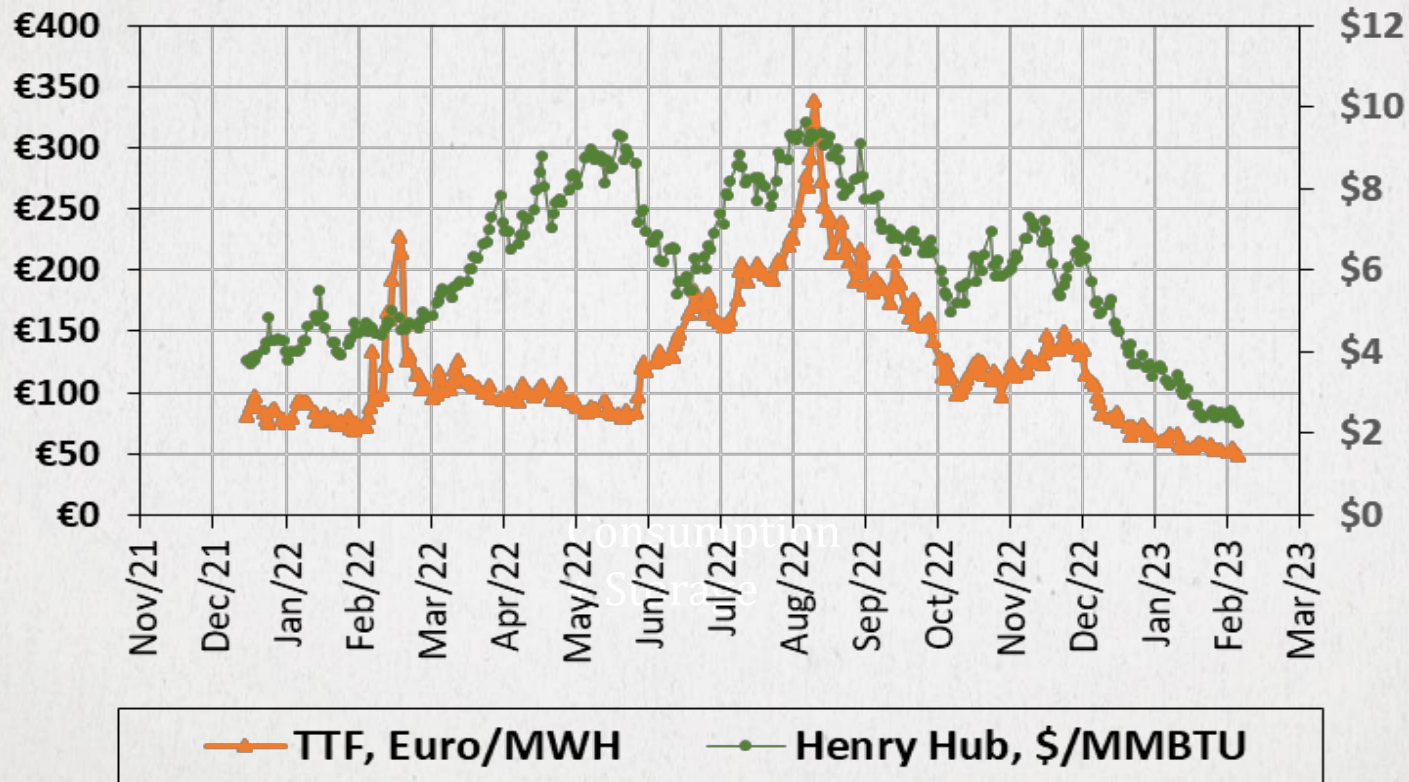
FIRST ANNIVERSARY OF RUSSIAN INVASION INVASION OF UKRAINE

ANAS ALHAJJI, PH.D
MANAGING PARTNER

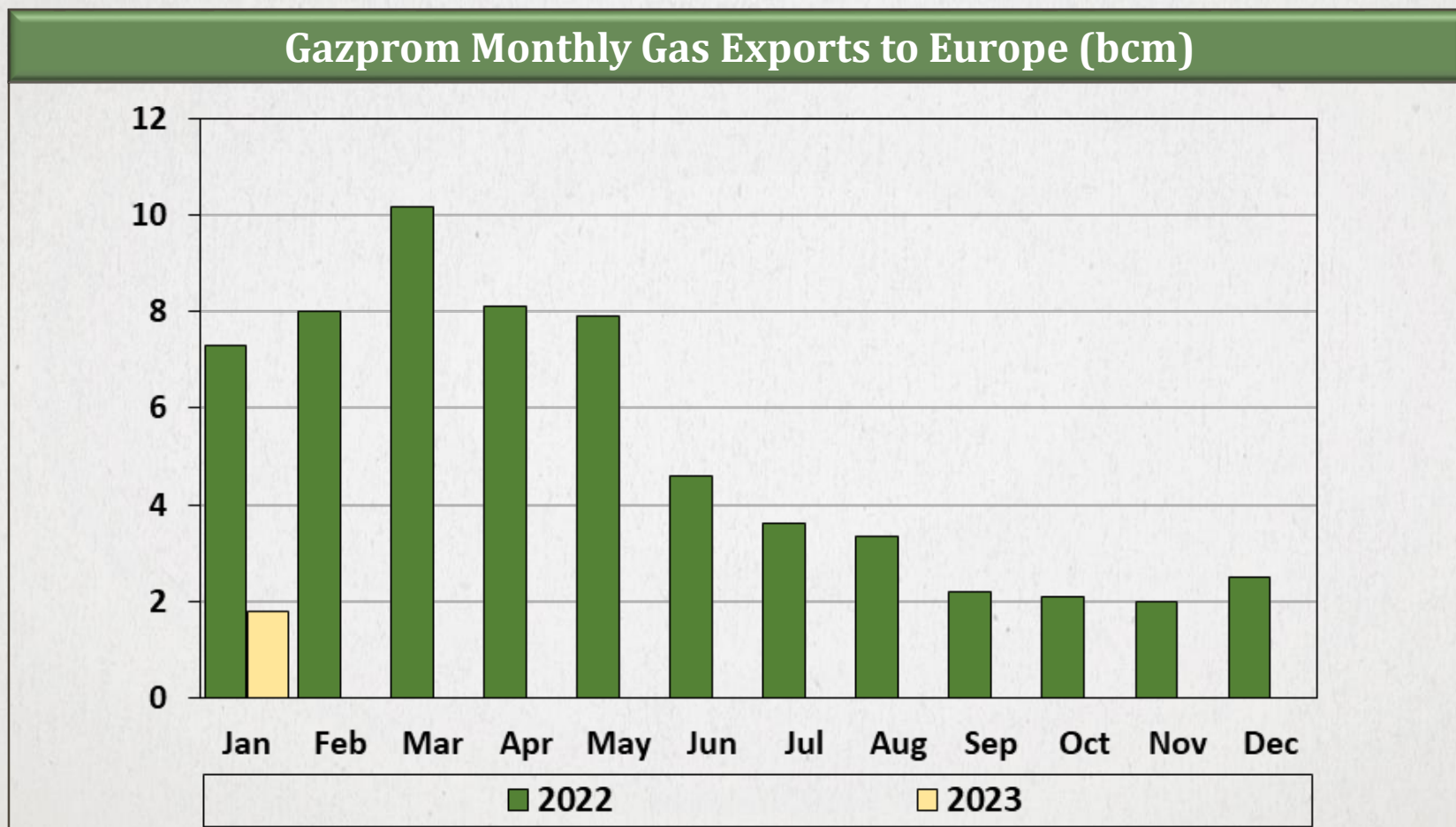
Energy **O**utlook **A**dvisors, LLC.

Natural Gas Prices Increased in US and Europe following Russia's Invasion, then They Began Dropping in Fall 2022

Gas Prices in the US (Henry Hub, HH, \$mtbu) and Europe TTF (Euro, mwh)



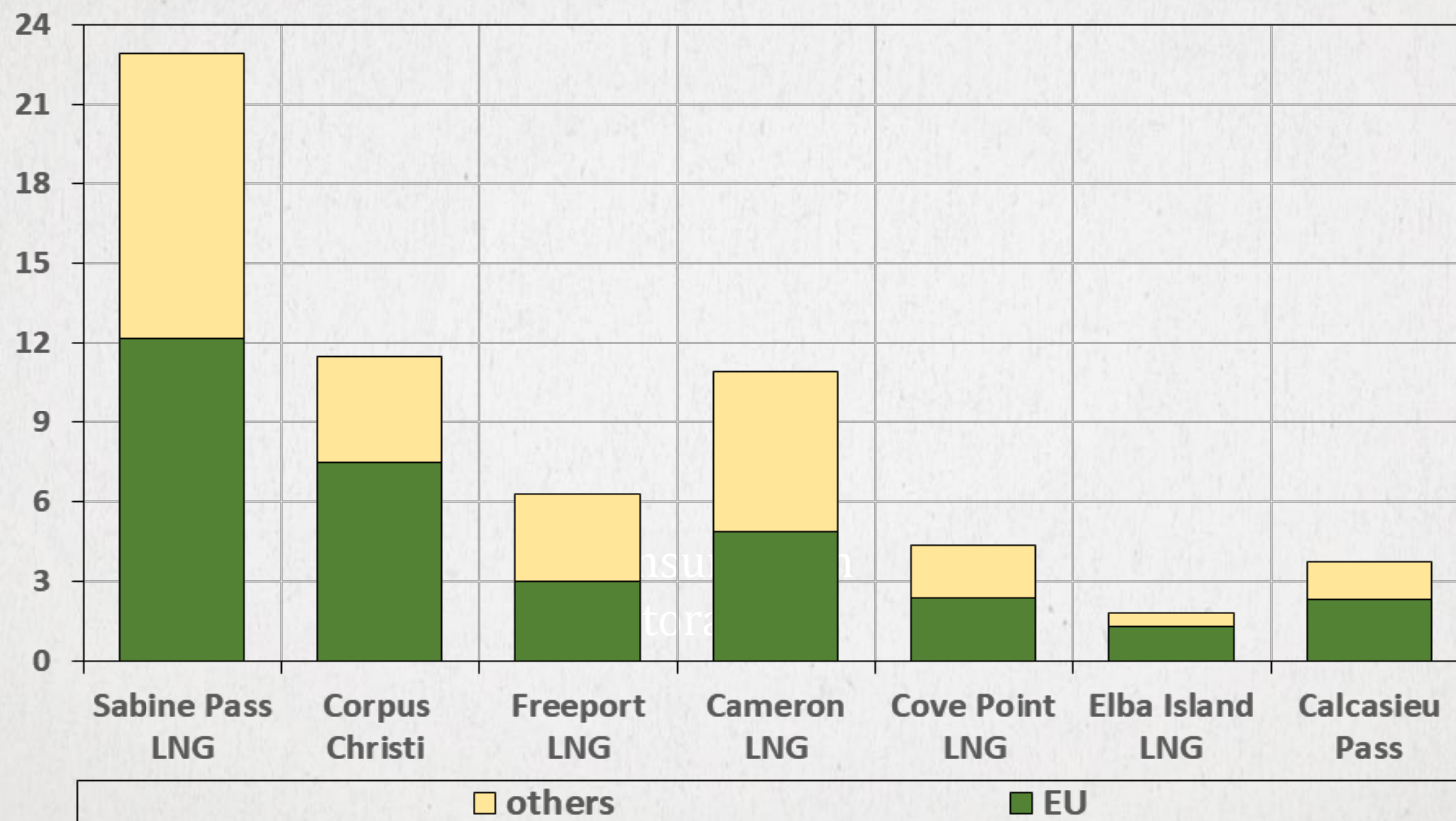
Russia's Natural Gas Exports to the EU Have Sharply Declined in the Last Eight Months



Source: Gazprom and ENTSOG, 2023 & EOA, 2023

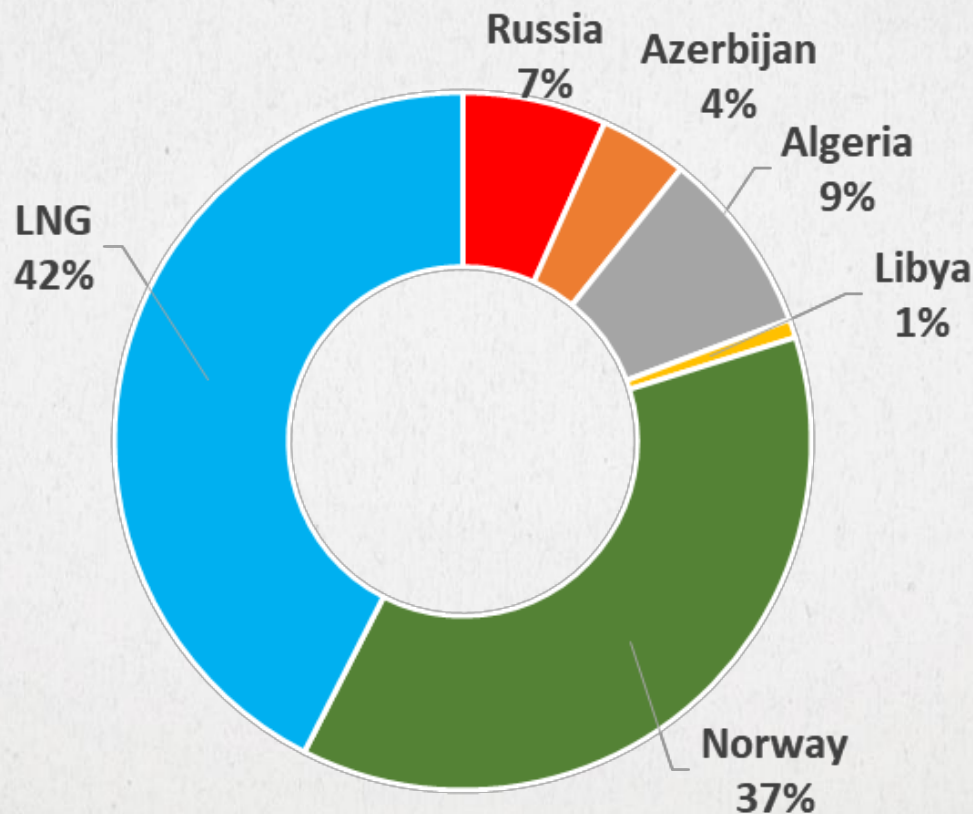
The US Exported 58.7 mt of LNG during the first Nine Months of 2022 (the EU's Share Was 33 mt)

US LNG Exports by Plant in 2022 (mt)



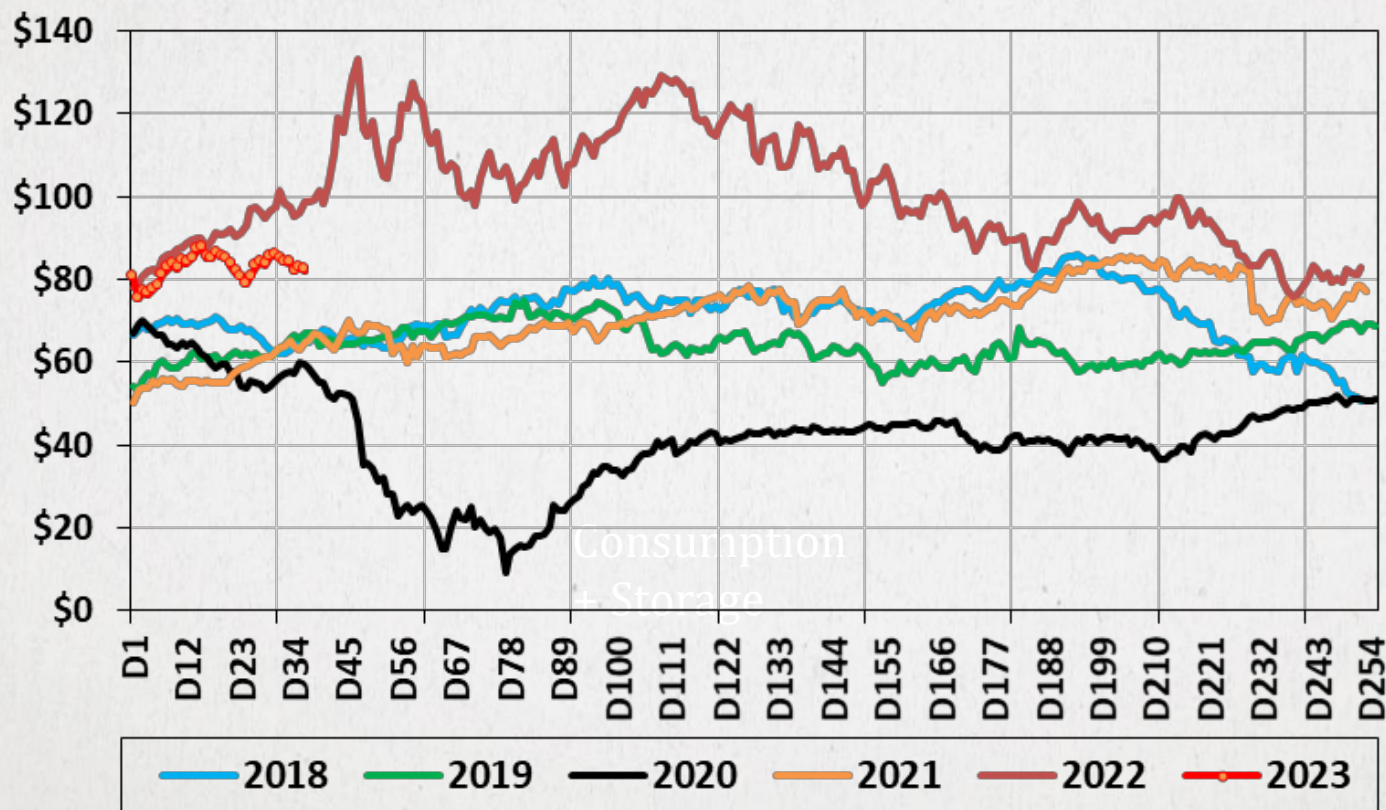
The EU Is Heavily Dependent on the US and Norway for Gas Supplies

EU Gas Imports by Source in January, 2023

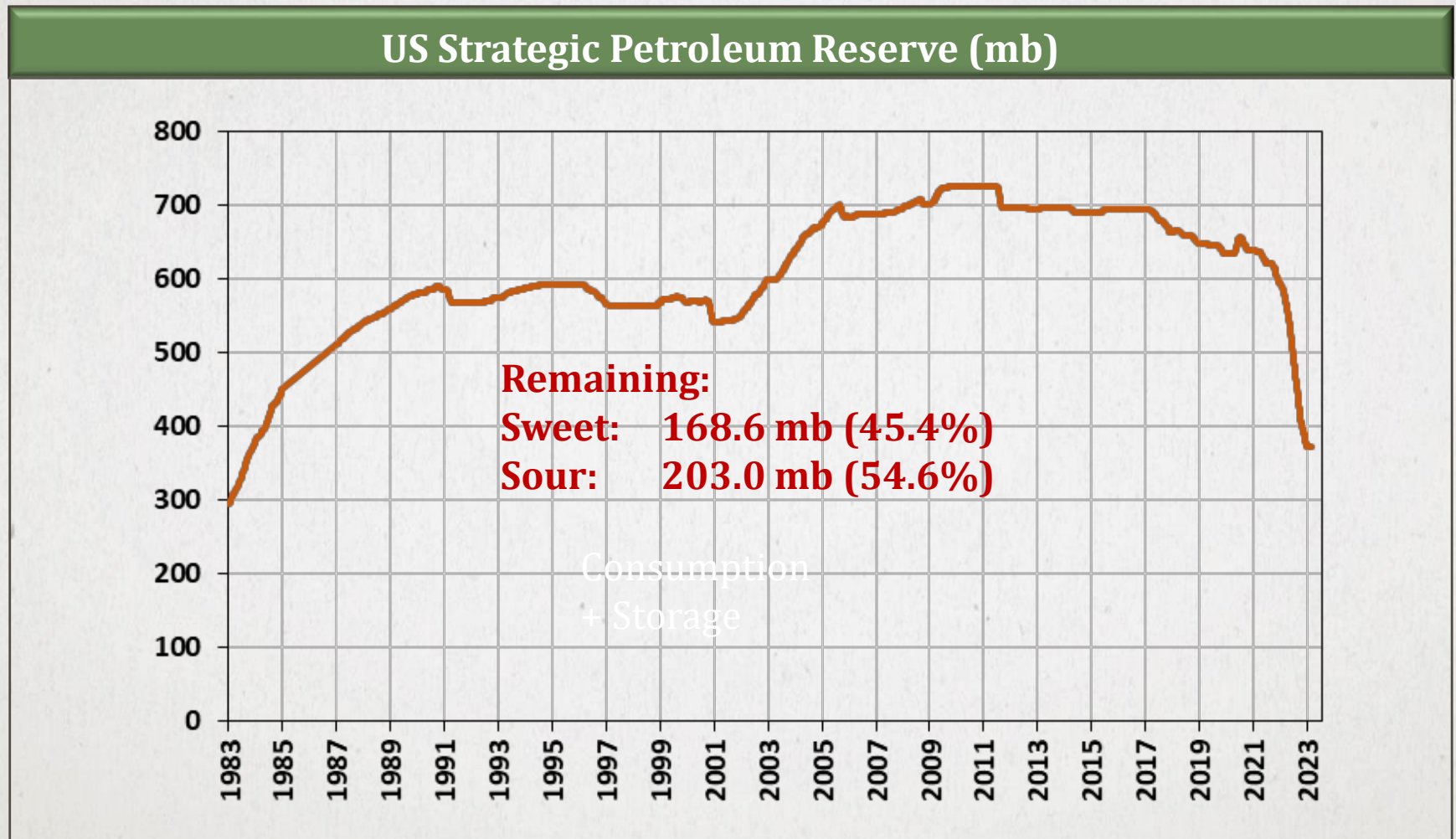


Brent Prices Briefly Increased following Russia's Invasion of Ukraine before Falling Again

Brent Prices (\$/b)

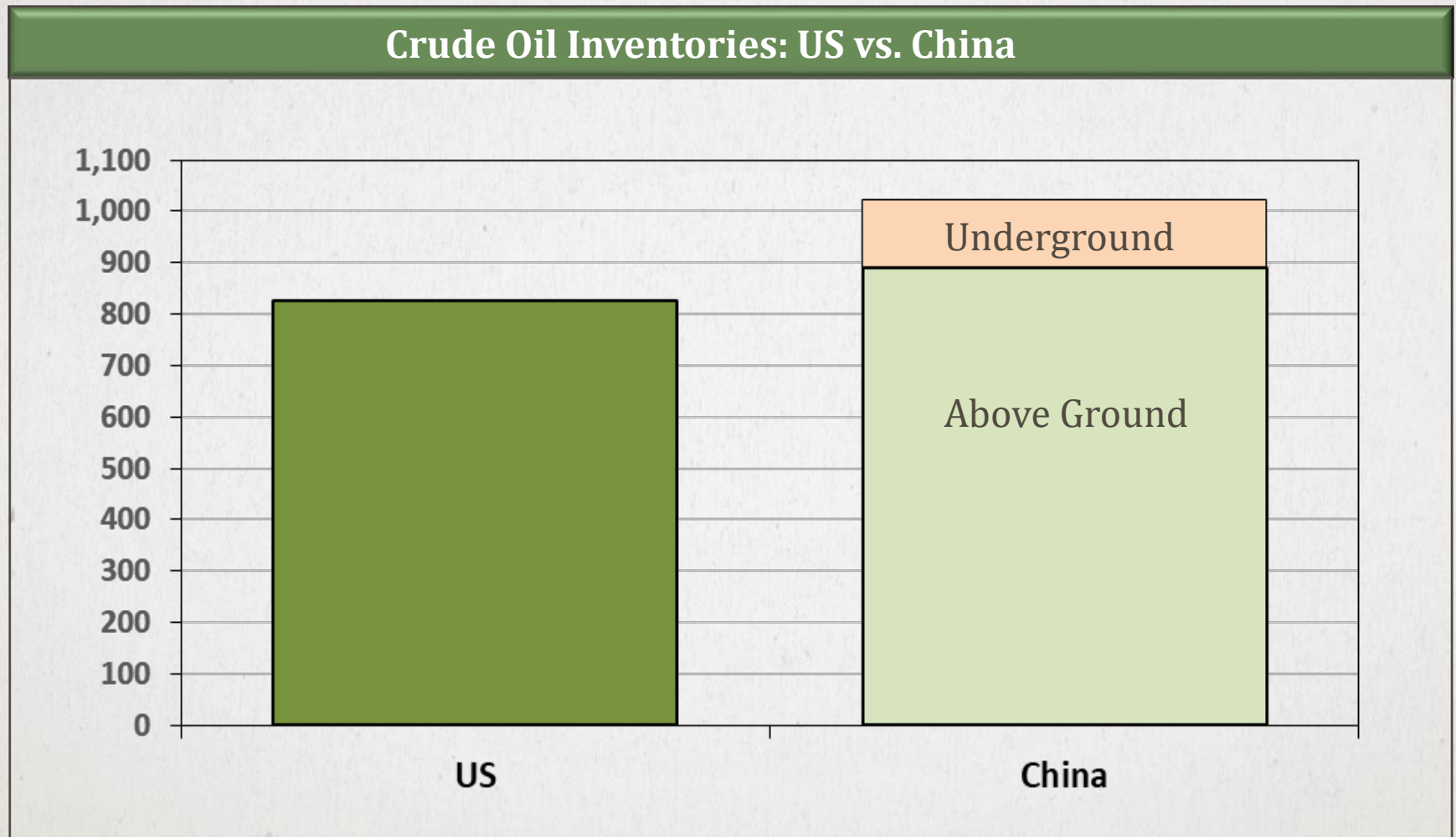


The US SPR Declined by more than 220 mb/d in 2022



Source: EIA, 2023 & EOA, 2023

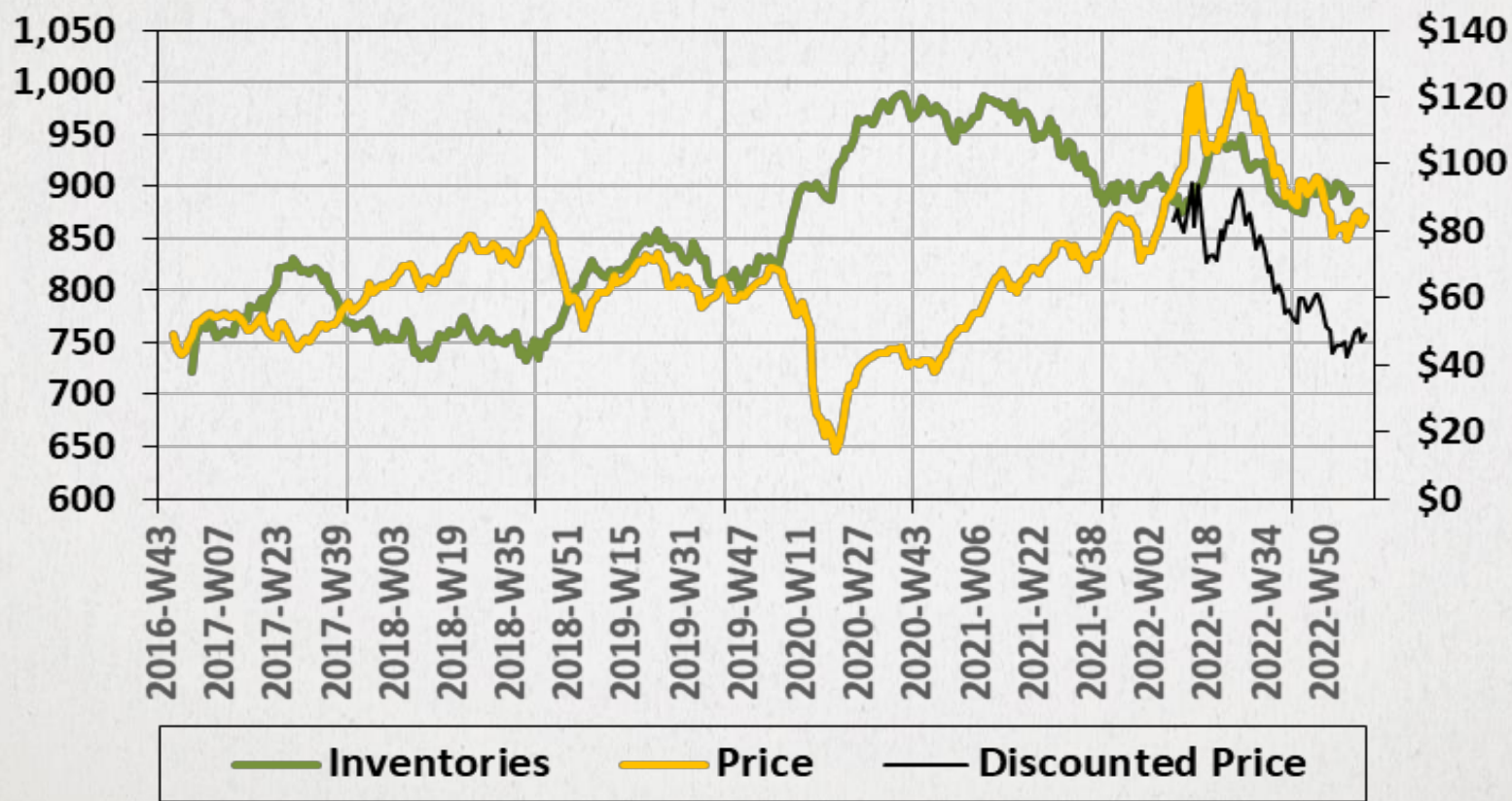
China's Crude Oil Inventories (Commercial and SPR) Are Higher than US Inventories



Source: Kpler, 2023 & EOA, 2023

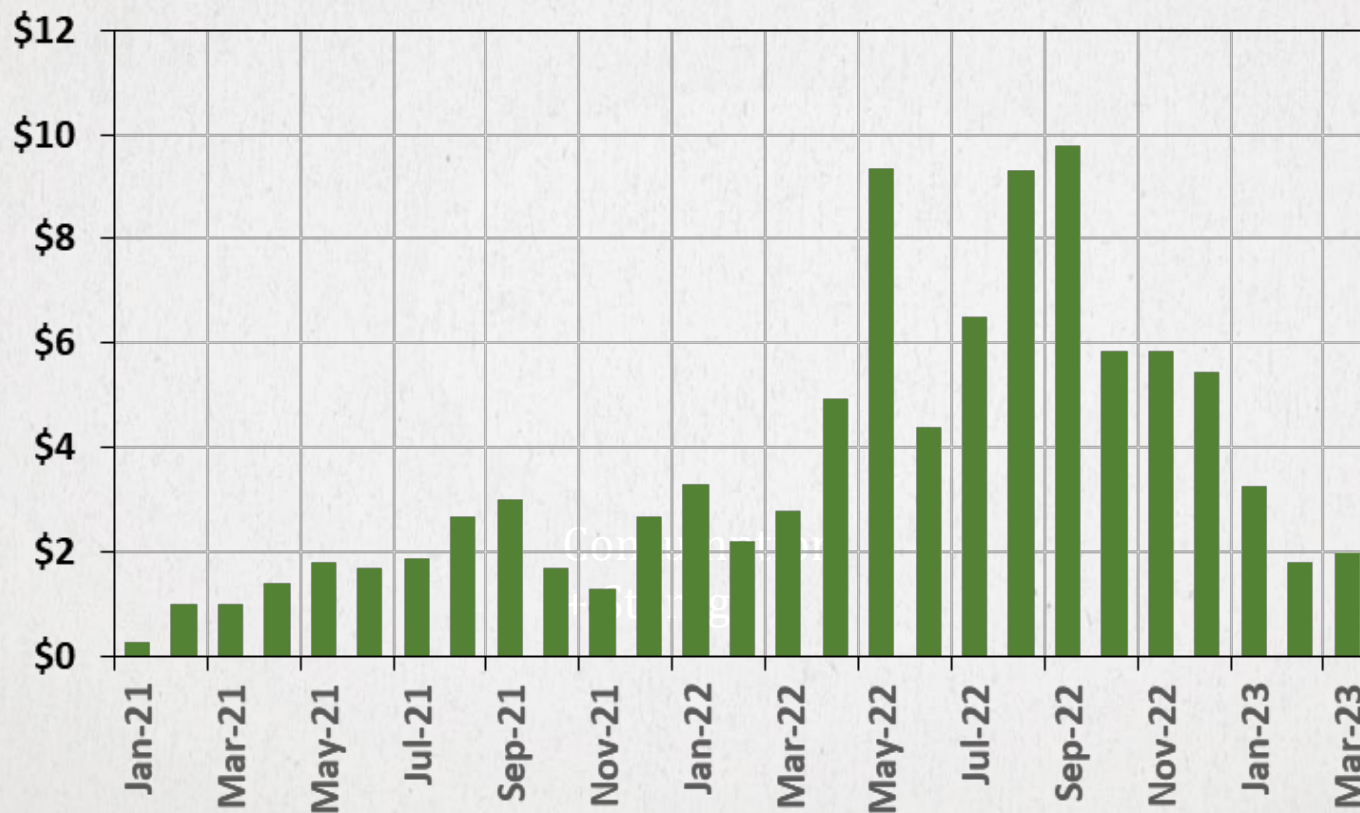
China Refills Inventories (Commercial and SPR) when Oil Prices Are Low, and Releases Oil when Prices Are High

China's Crude Oil Inventories Vs. Oil Prices

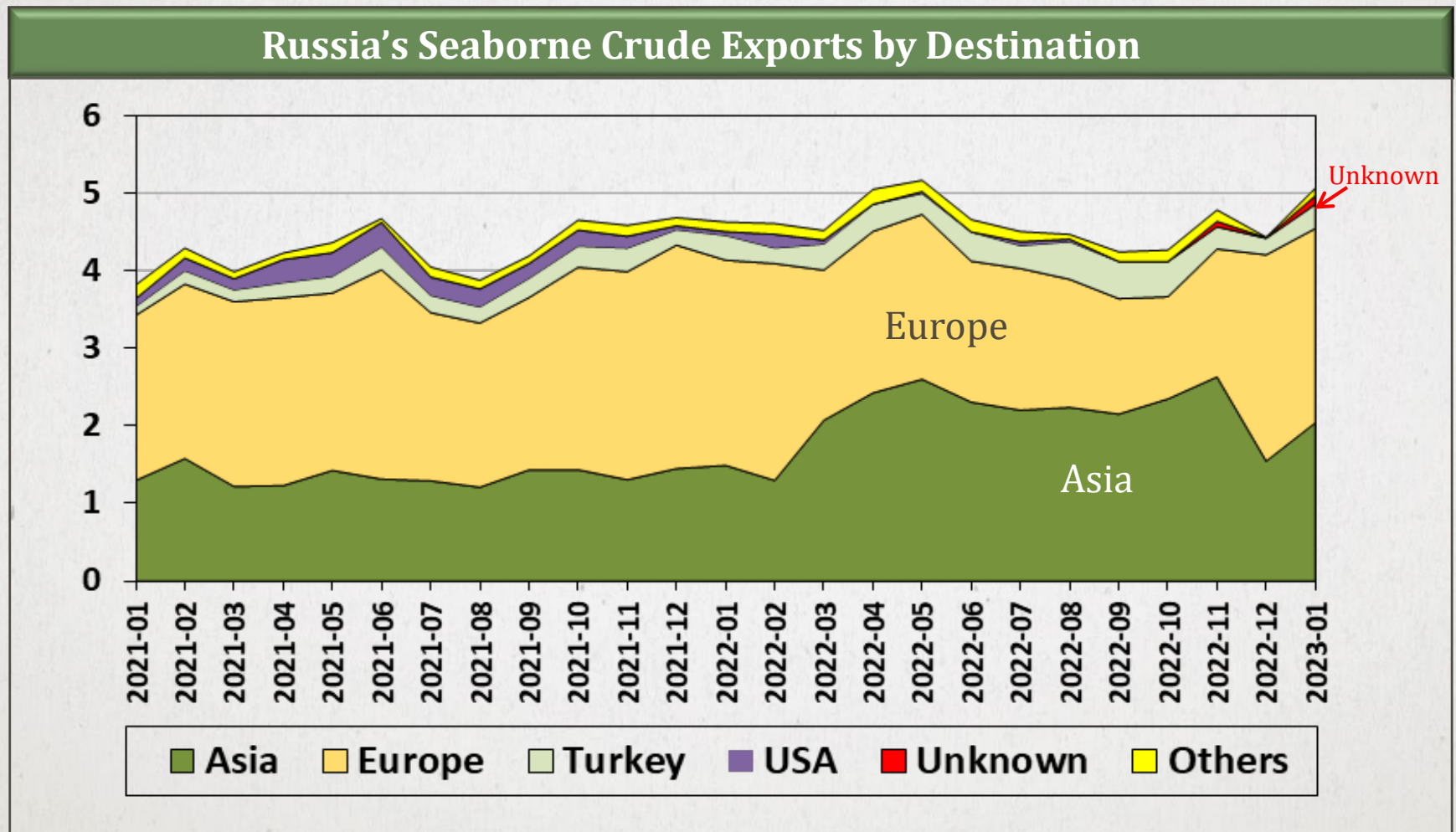


Saudi Aramco OSPs Played an Important Role in the Oil Market in 2022

Aramco OSPs Premium Above Oman/Dubai Average For Arab Light in Asia



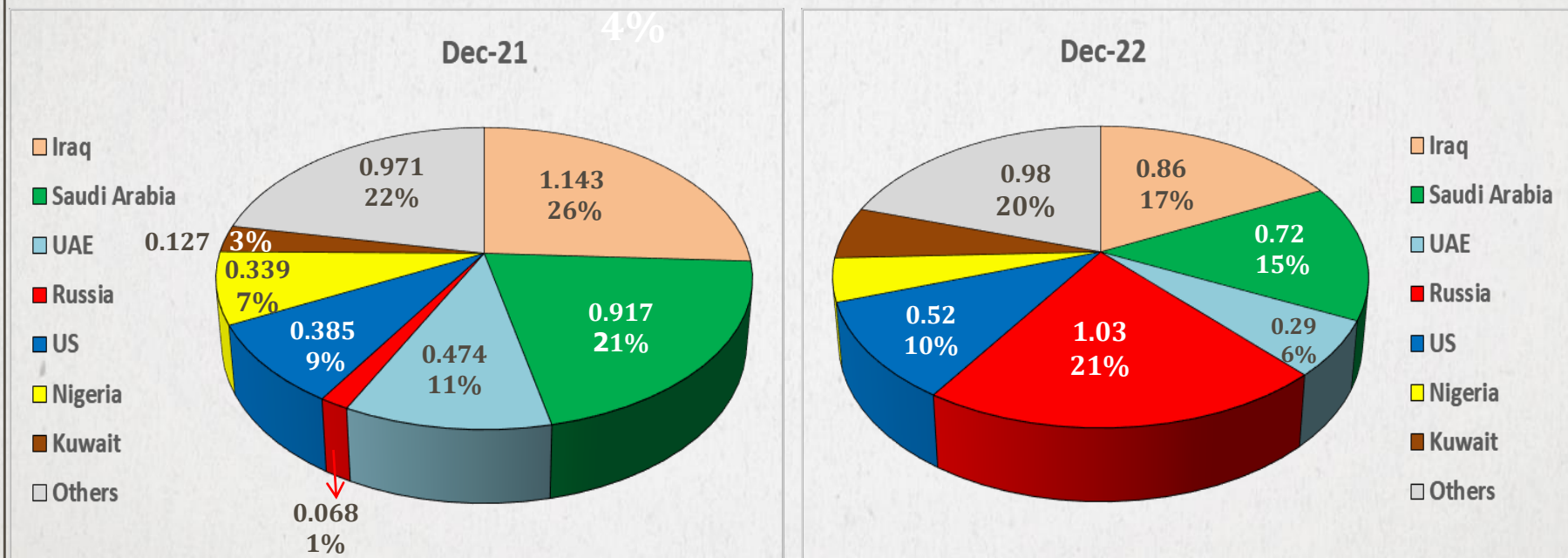
Russian Crude Cargoes Have Been Flowing to “Unknown Destinations” since Sanctions Went into Effect in Dec. So Far this Month, They’ve Increased Sevenfold*



Source: Kpler, 2023 and EOA, 2023. The February figures are not shown in this Chart

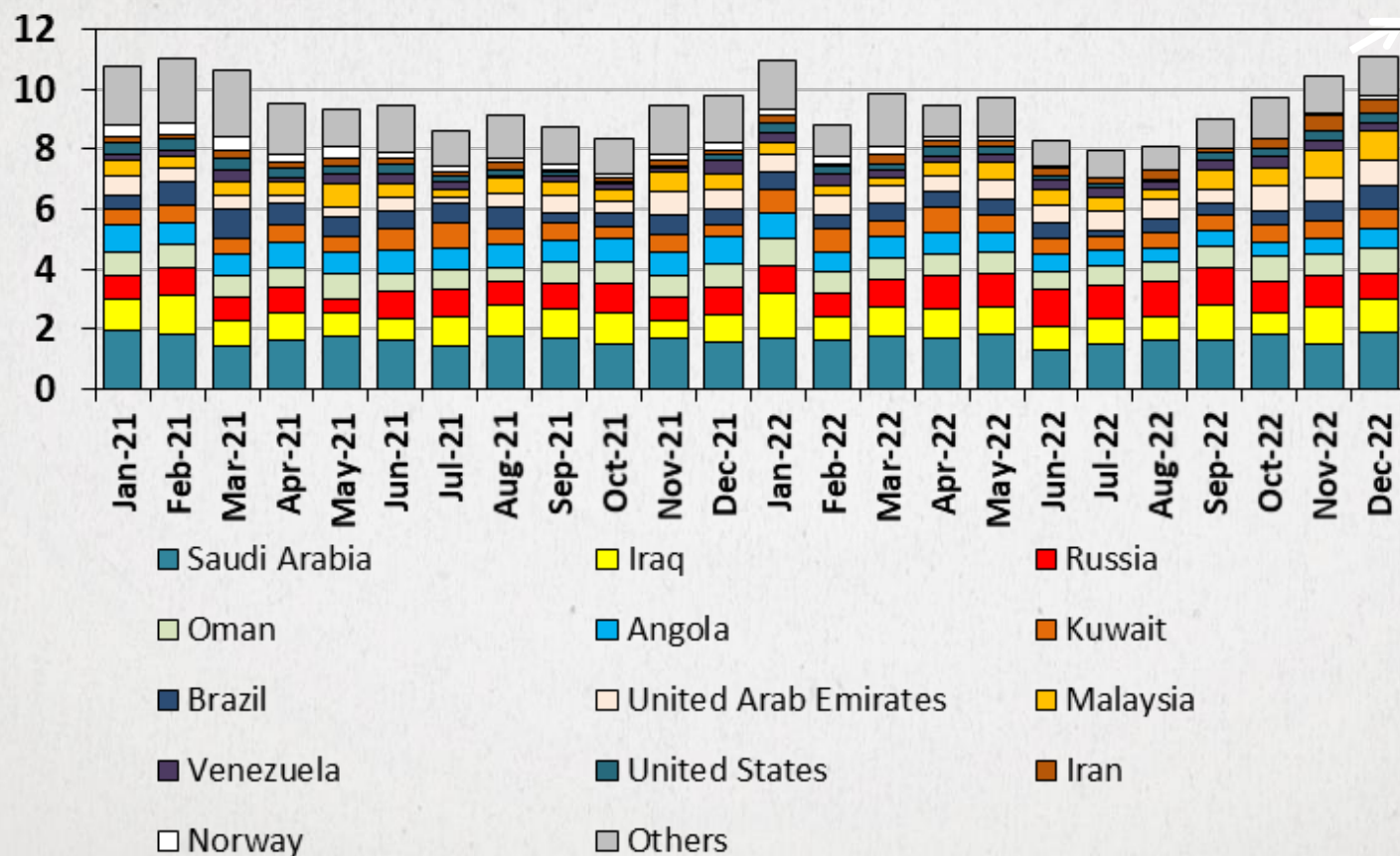
India Increased Oil Imports from Russia at the Expense of other Exporters' Market Share

India Oil Imports by Source In December, 2022 (mb/d)



China's High Direct Imports of Russian Crude Declined as It Started Importing Russian Oil Via Third Countries and Ghost Ships

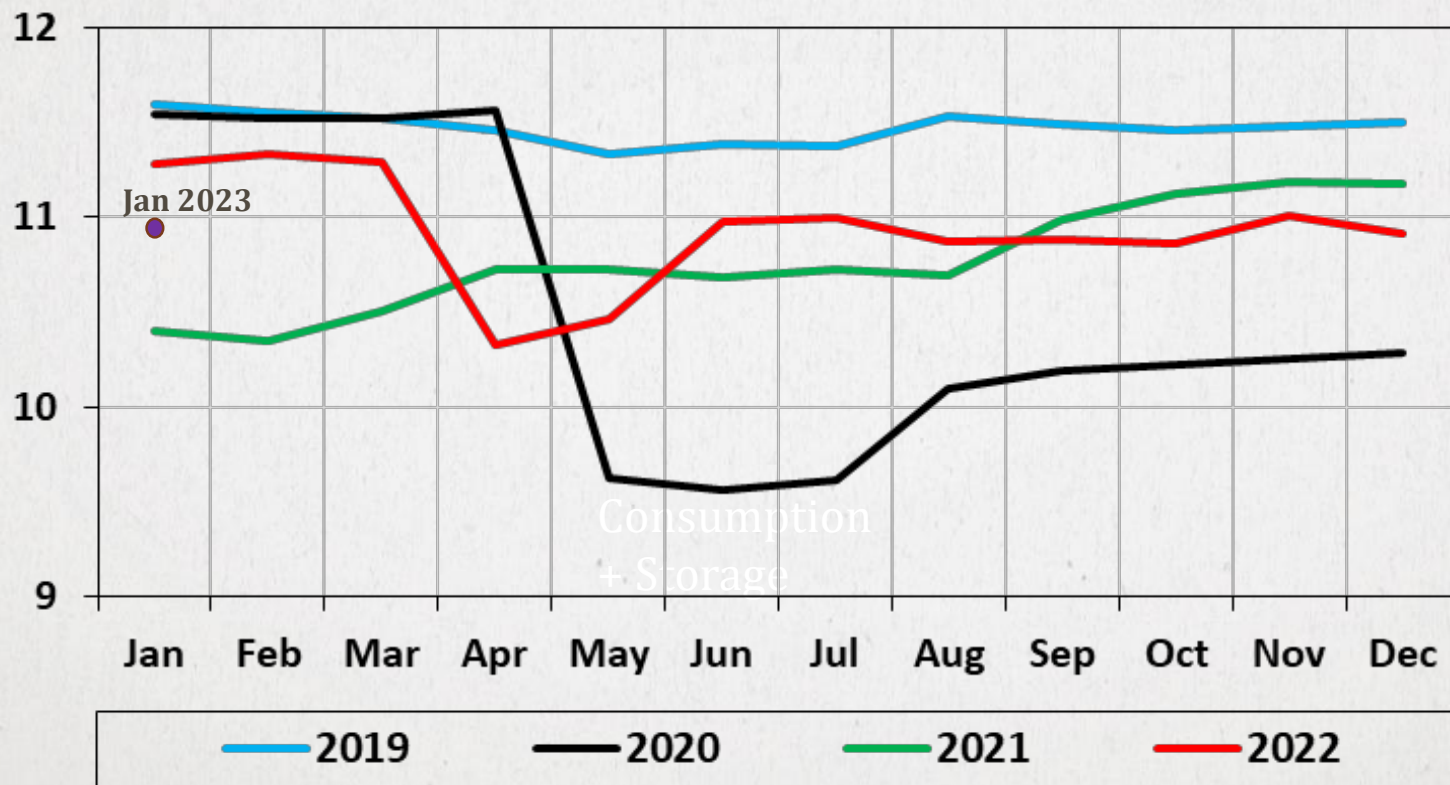
China's Crude Oil Imports (mb/d)



Source: Oman LNG, 2022 & EOA, 2023 * Estimated by EOA based on Vessel tracking data.

Russia's Oil Output Failed to Return to Pre-COVID Levels in 2022. Since the War, Russia Has Lost about 420 kb/d

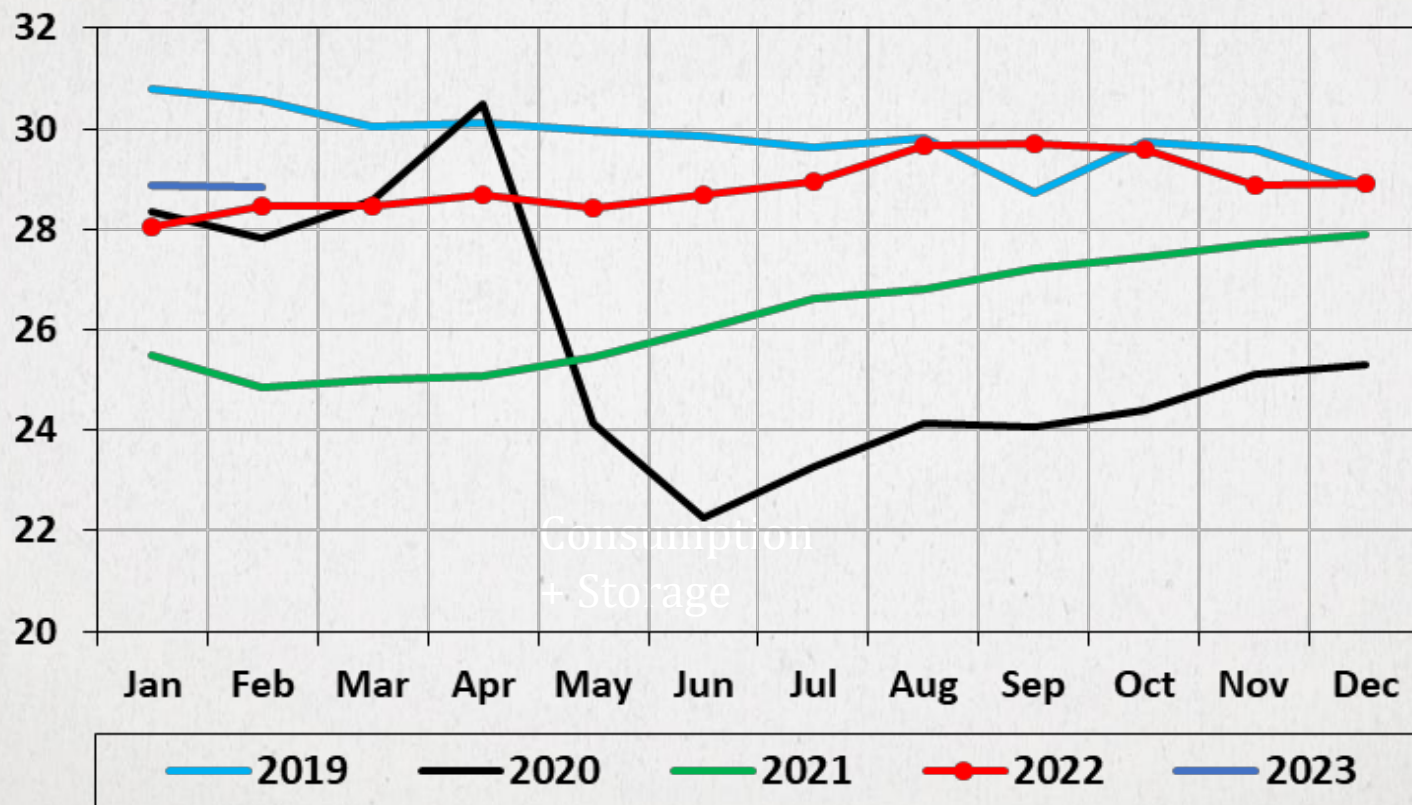
Russia Crude Oil Production (mb/d)



Source: EIA, 2022 & EOA, 2022. December number is an estimate.

Will Future OPEC Cuts Return Output to Pre-Invasion Levels? They Are Currently Higher by about 500 kb/d

OPEC Crude Oil Production



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