

Is China Militarizing Its Oil & Gas Security Policies?



Gabriel Collins, J.D.
Baker Botts Fellow for Energy & Environmental Regulatory Affairs
Baker Institute for Public Policy, Rice University

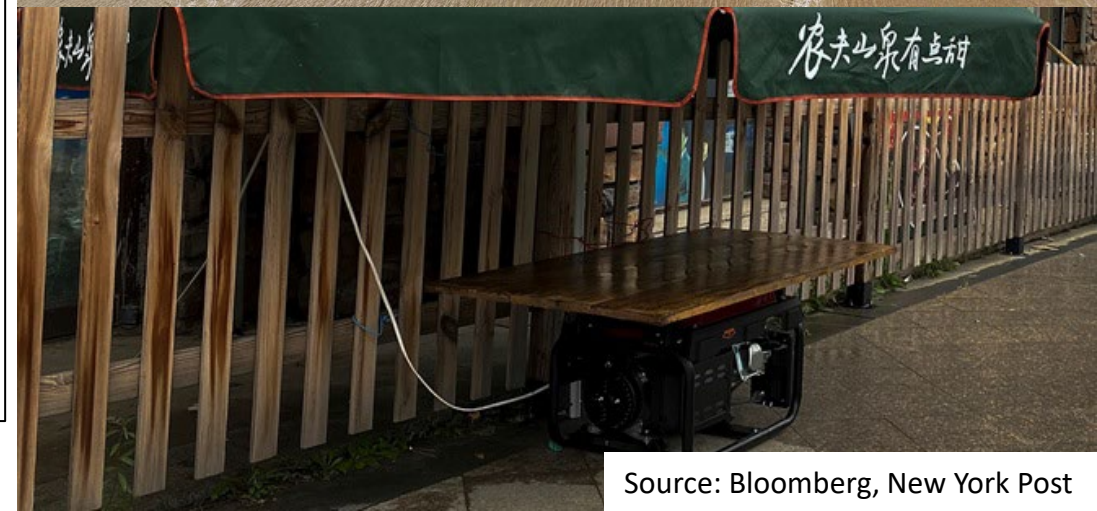
Please cite as: Gabriel B. Collins, "Is China Militarizing Its Oil & Gas Security Policies?" Research Presentation, 27 April 2022

Disclaimer & Disclosure

This analysis reflects my personal opinions and assessments only. It is designed solely to be illustrative and stimulate broader thought, with the objective of elevating the conversation in the energy and water space. It IS NOT an investment analysis or investment advice. It is also NOT offering any legal opinions or advice and does not create an attorney-client relationship with any reader or consumer of the information presented herein. Readers rely on the information in this analysis at their own risk. Neither the author nor the Baker Institute for Public Policy are liable for any loss or damage caused by a reader's reliance on information contained in any of the charts, data series, opinions, or other information presented herein. I am not a hydrologist, geologist, or engineer and am not offering advice on technical aspects of any assets which may be discussed in this analysis, including, but not limited to geological factors and engineering challenges that may arise in an oilfield water development project. The information and opinions contained in, and expressed by this analysis, are based on sources deemed reliable. However, there is no warranty, assurance, or guarantee, express or implied, about the completeness, reliability, or accuracy of this content. The views expressed herein are my interpretations as of the date the report is published and are subject to change without notice.

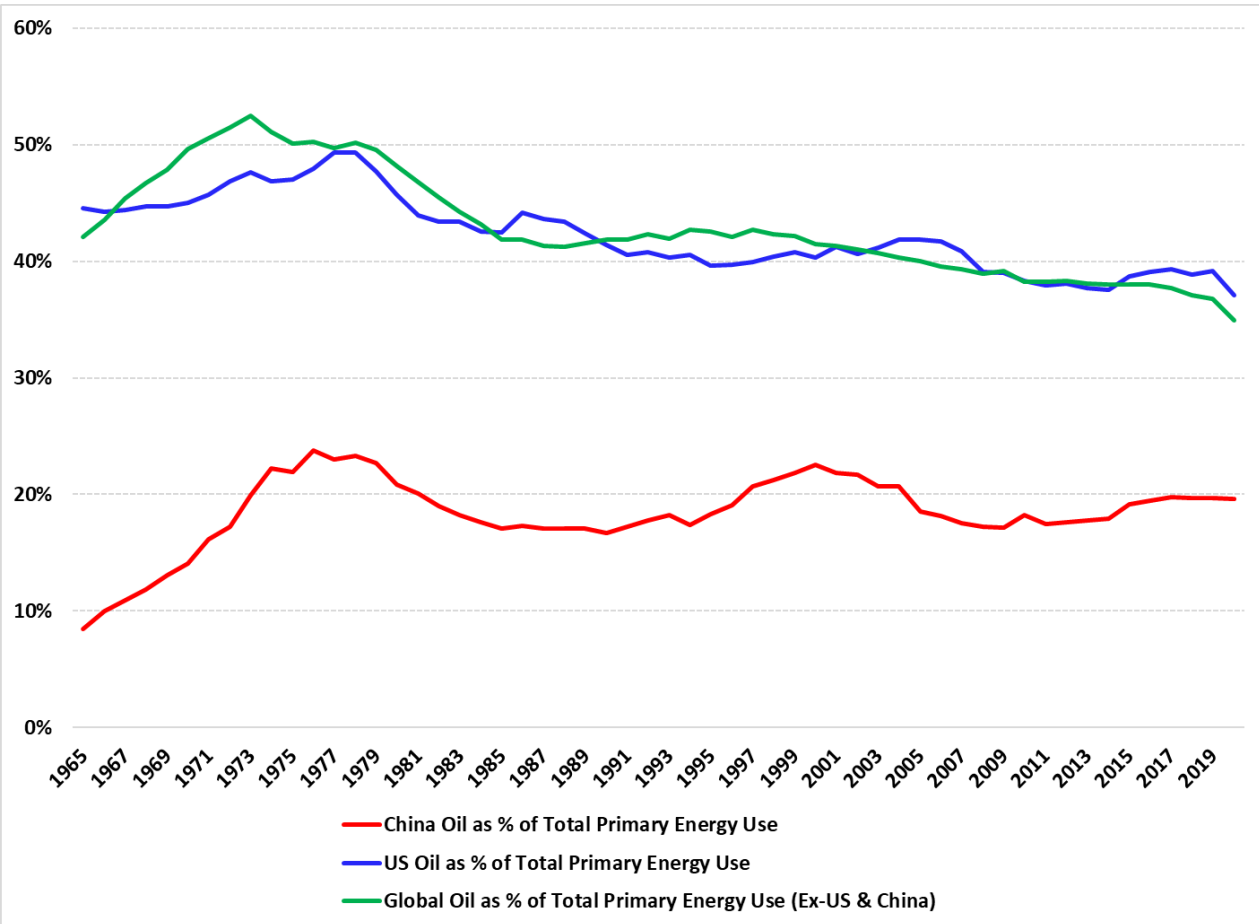
What Does “Energy Security” Mean in China’s Political System?

- Energy security incorporates three core concepts: (1) adequacy and diversity of supply, (2) stability of price, and (3) maintaining a relatively low price
- Chinese decisionmakers are more likely to consider oil disruptions national security problems (国家安全问题) and electricity supply issues as social/economic problems (社会经济问题)
- “Globalists” favor greater reliance on the market and accelerated energy transition efforts to reduce oil dependence while “nationalists” favor a more forward-leaning mercantilist posture to protect China’s energy security.
- How do parastatal entities and commercial firms interface with mercantilistic energy inclinations?

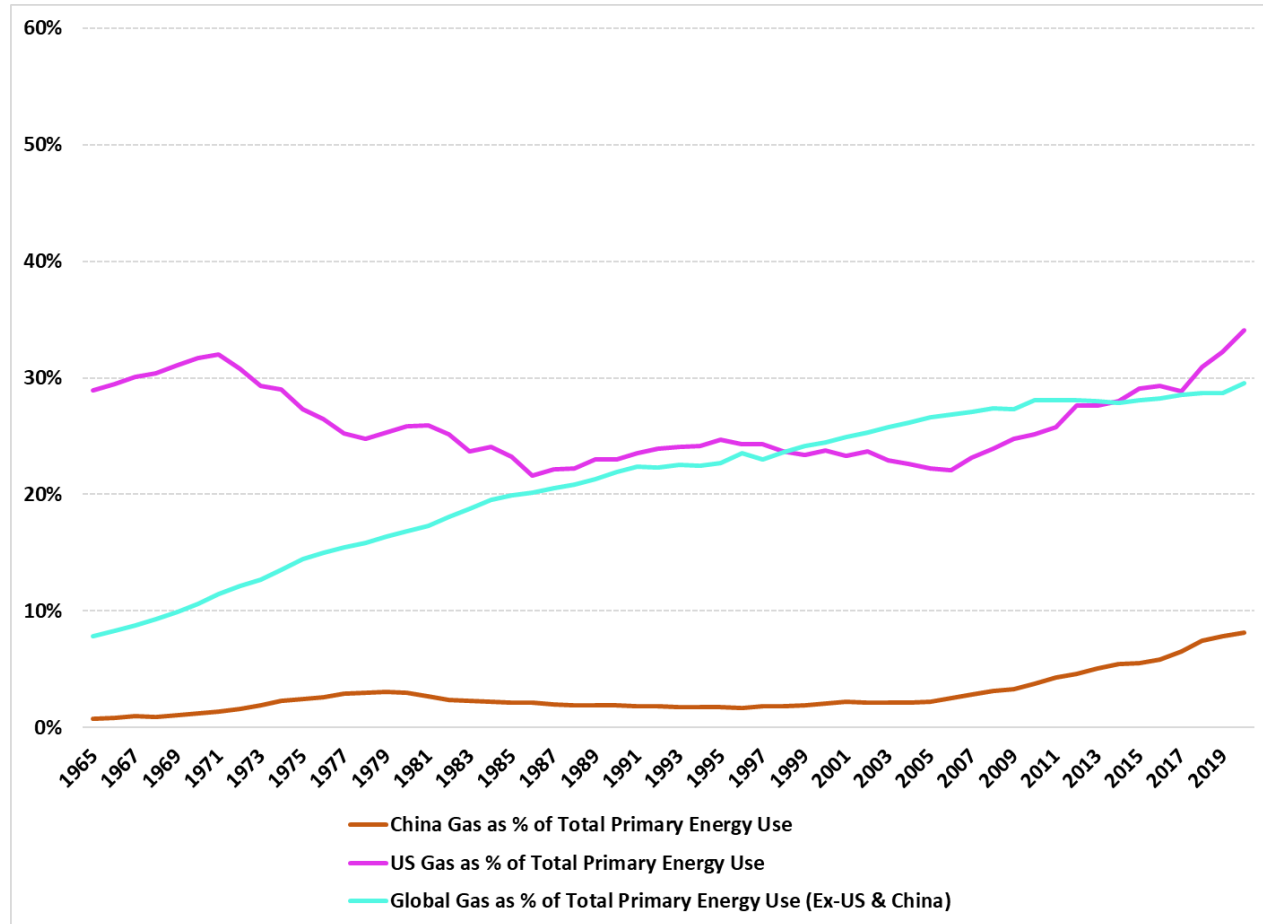


What Role Do Oil and Gas Play in China's Energy Picture?

Crude Oil as Proportion of Total Primary Energy Use



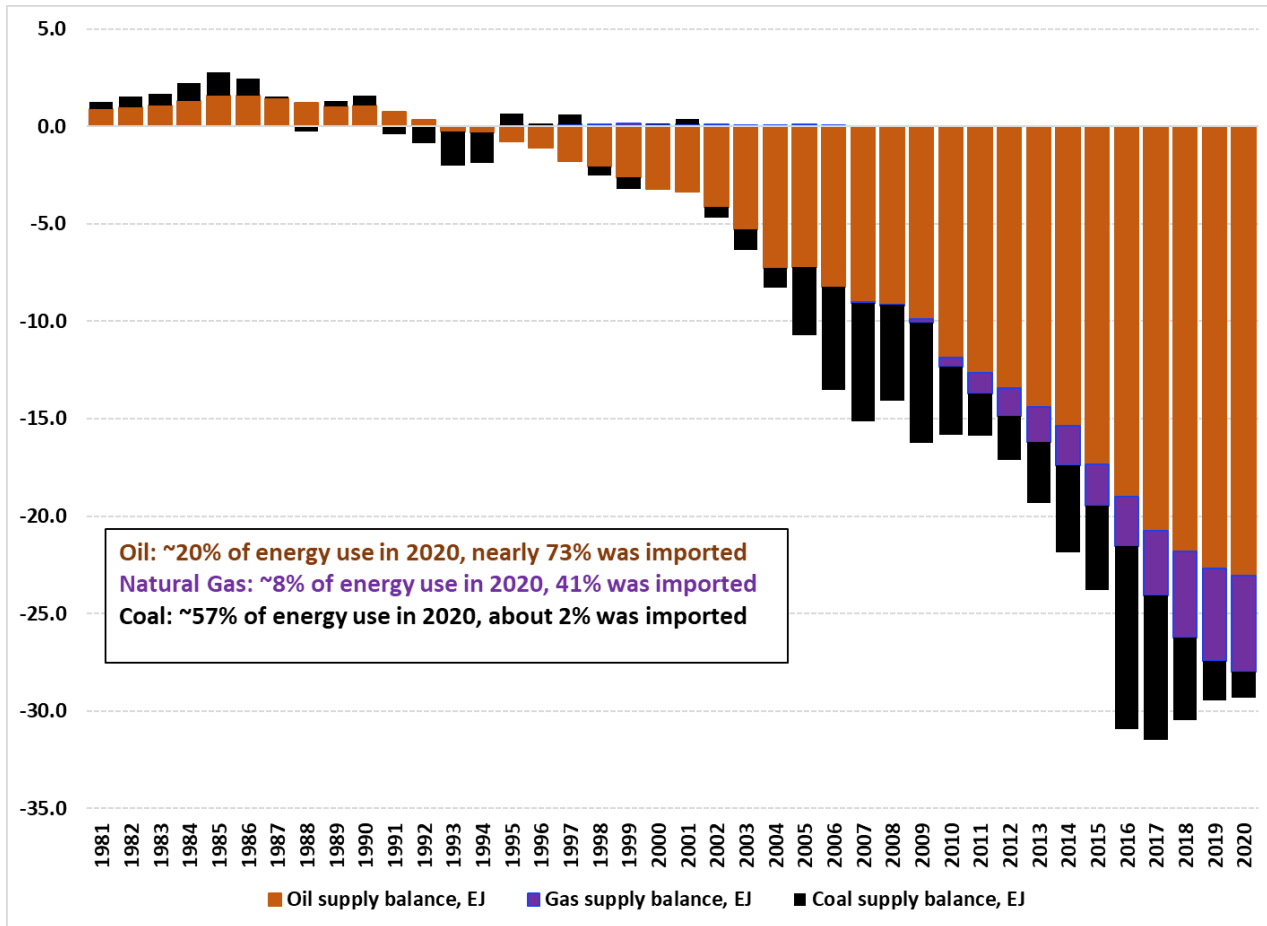
Natural Gas as Proportion of Total Primary Energy Use



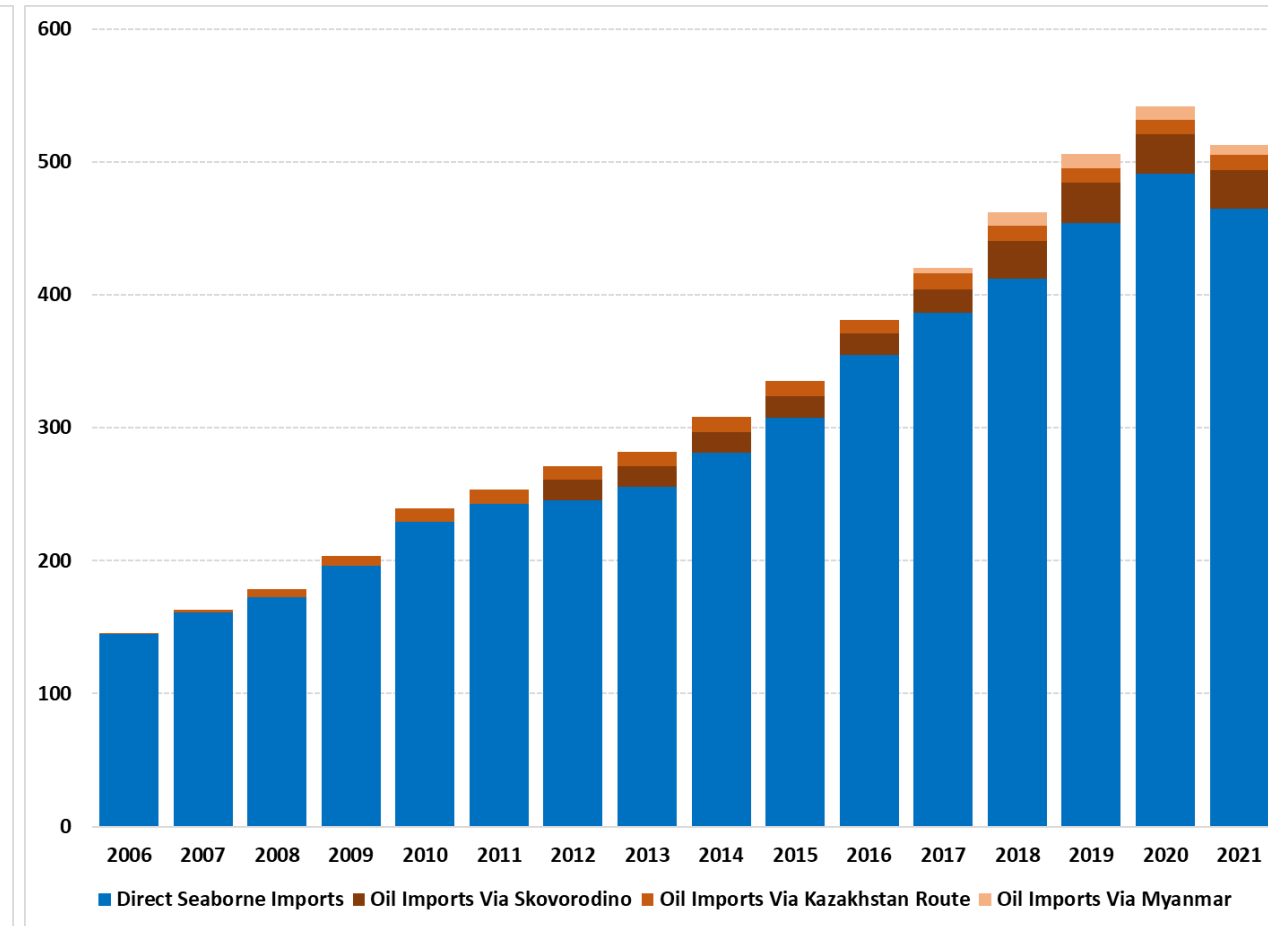
Source: BP Statistical Review of World Energy, Author's Analysis

Why is Oil a Subject of Special Concern?

China Self-Sufficiency, By Fossil Energy Source



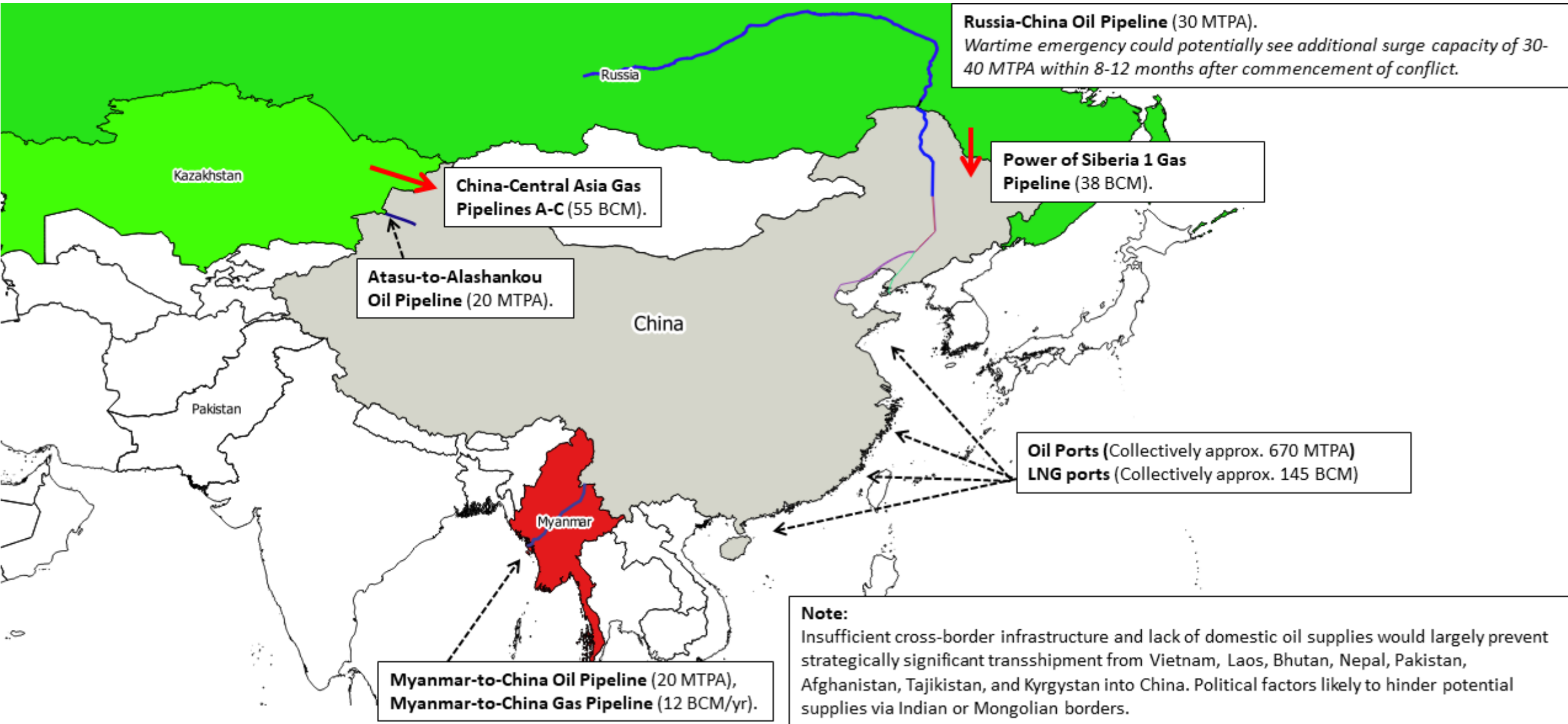
China Seaborne vs. Overland Oil Imports, 2006-2021 (Million tonnes)



Source: BP Statistical Review of World Energy, Author's Analysis

Source: China General Customs Administration

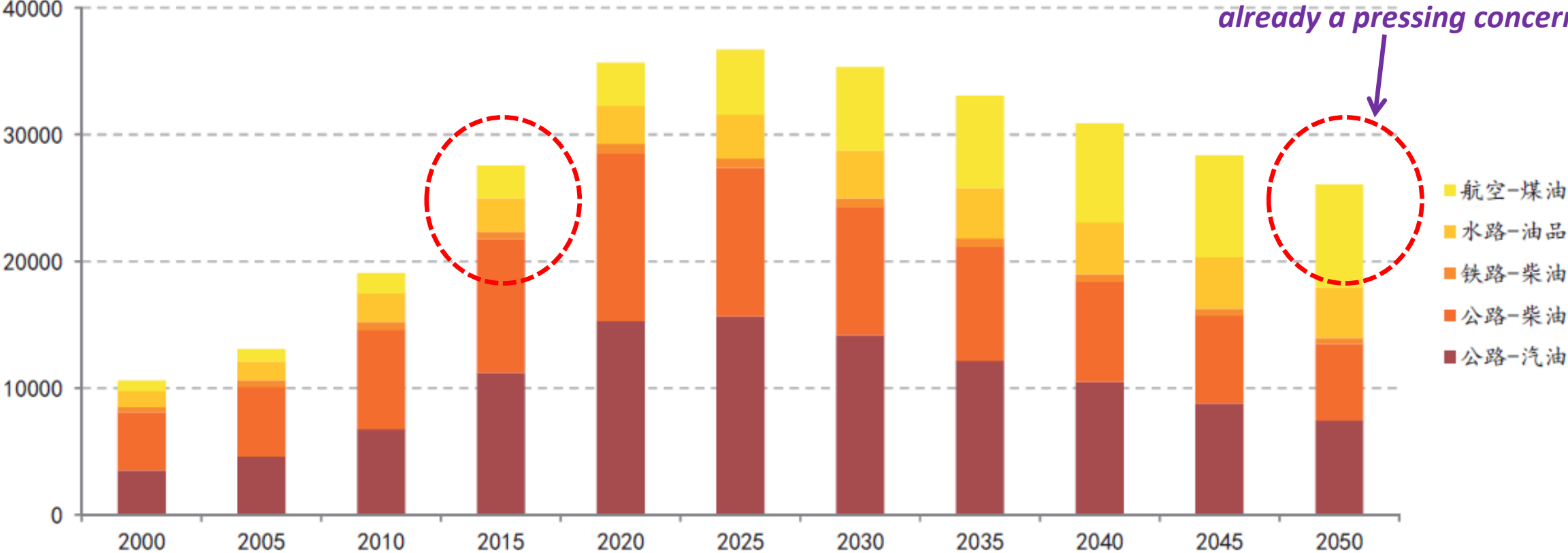
What Do China's Oil & Gas Supply Lines Look Like?



Oil Security Pressures Unlikely to Abate Soon

Transportation Oil Use, 10,000 Tonnes
交通用油需求, 万吨

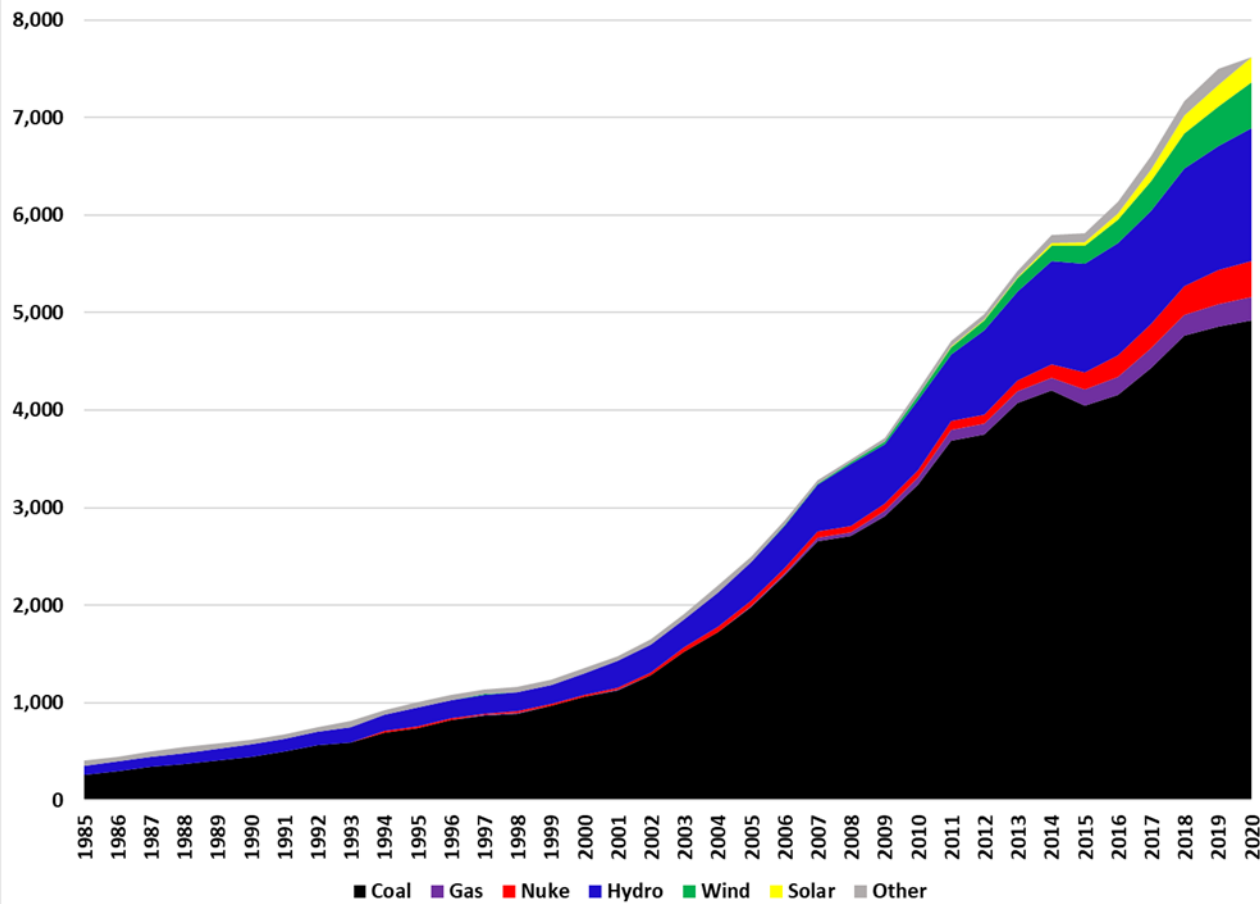
2050 forecast demand much lower than 2025 peak...but basically equivalent to 2015 levels when oil security was already a pressing concern



Source: CNPC 2050 Outlook

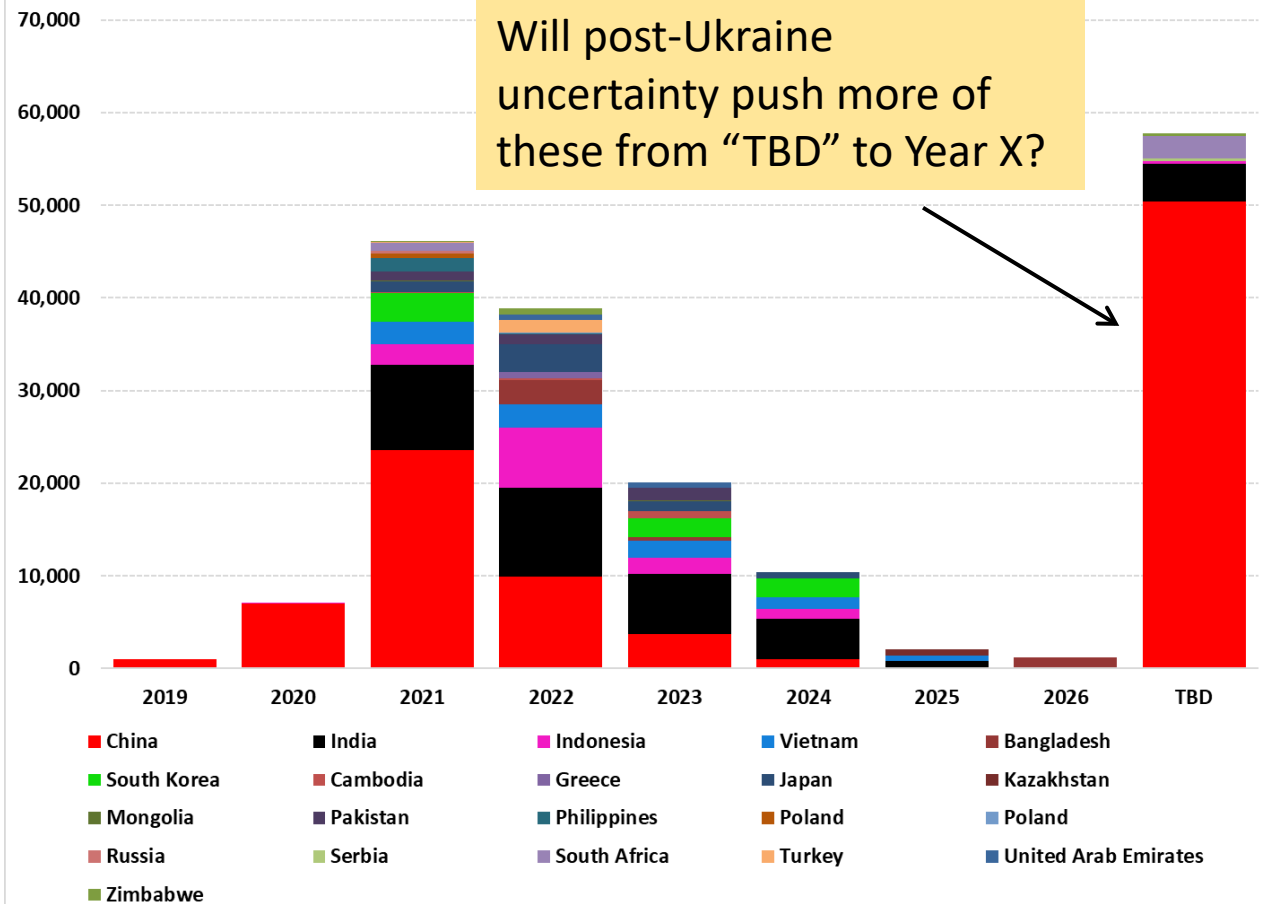
China Gas Security Will Trade Against Coal, Nuclear, Storage Technologies...And Demand Growth, Or Lack Thereof

China Electricity Production, 1985-2020 (TWh, by Fuel)



Source: BP Statistical Review of World Energy 2021, Author's Analysis

Planned Coal Plant Additions, MW

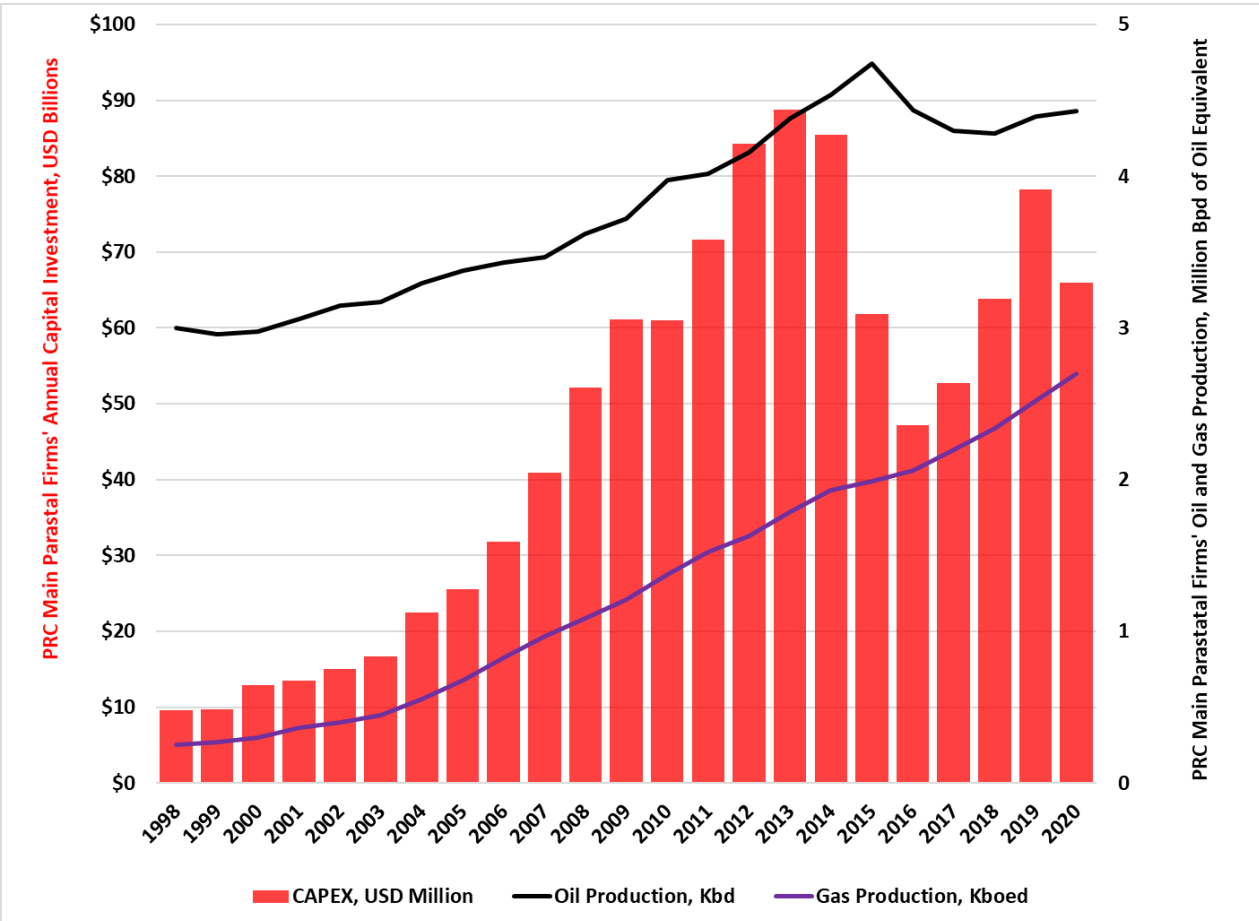


Source: Global Energy Monitor, Authors' Analysis

China Domestic Oil & Gas Supply Challenges Also Likely to Persist

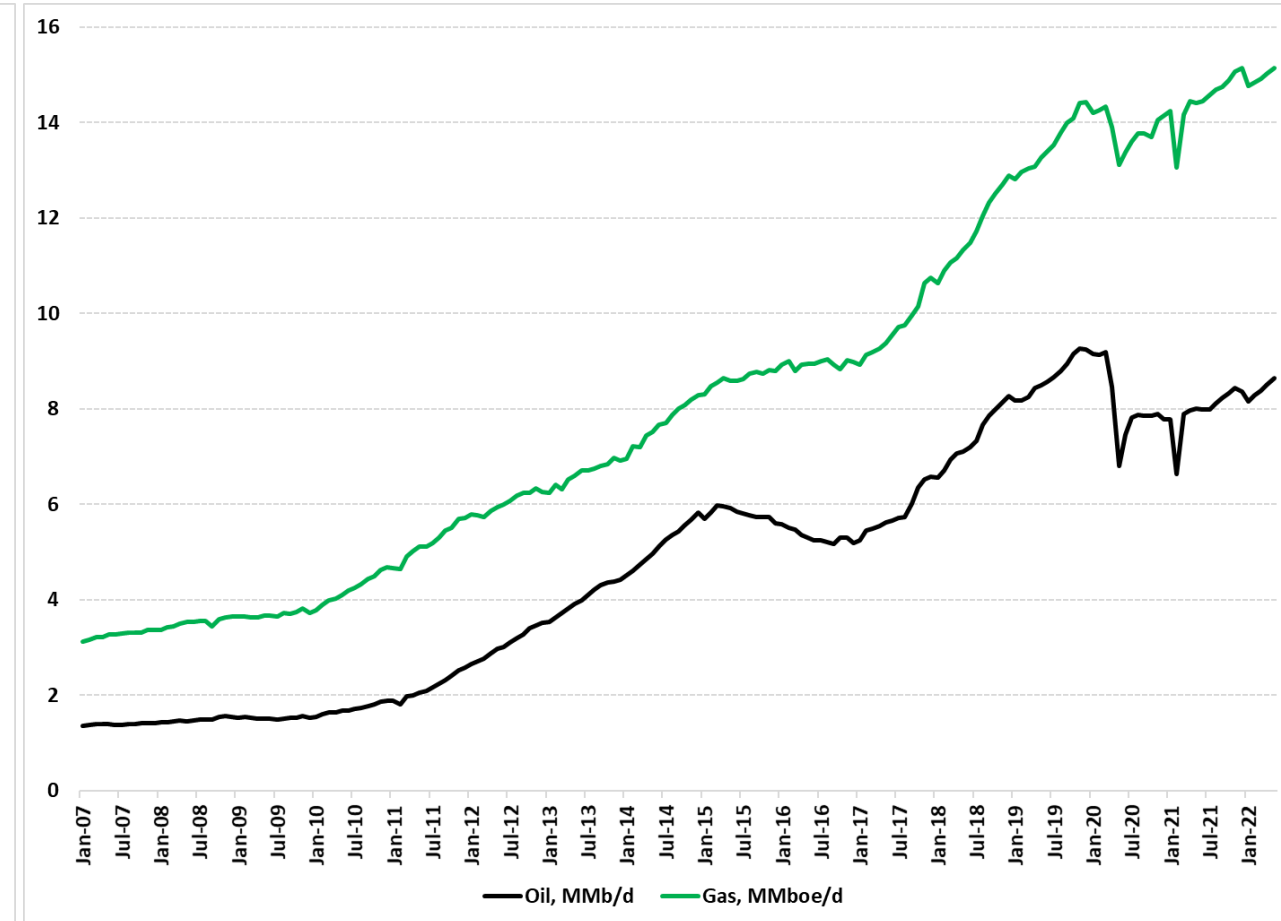
What is the molecular dividend yielded by approximately \$1 trillion in nominal upstream CAPEX?

PetroChina, Sinopec, and CNOOC Combined Investment and Production, 1998-2020



Source: Bloomberg, Author's analysis

U.S. Est. Unconventional Oil & Gas Production, 2007-May 2022



Source: EIA, Author's analysis

**Ukraine Impacts on China's
Energy Sourcing Orientation:
It's Complicated**

Ukraine War Impacts on PRC Energy Security Views: 1.0

- Vociferous Western response telegraphs to Beijing that when push comes to shove, economic issues can become national security issues with lightning speed
- The world changed irrevocably on February 24, 2022
- Is the world headed toward de-dollarization and commodity-backed currencies?
- What is the most relevant “collateral” in the 21st Century? Oil, gold, nickel—or perhaps other polar power organizing points such as technological dominance and protective institutions?

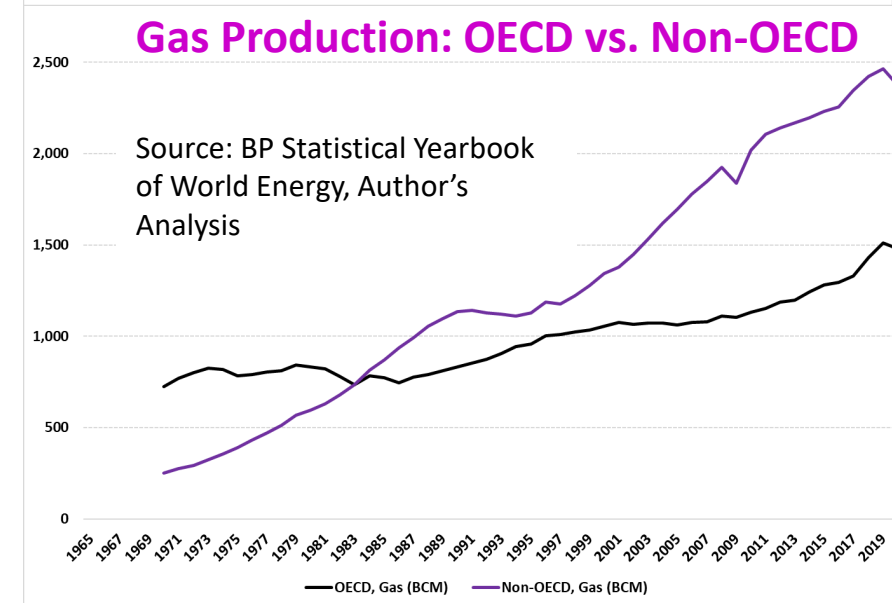
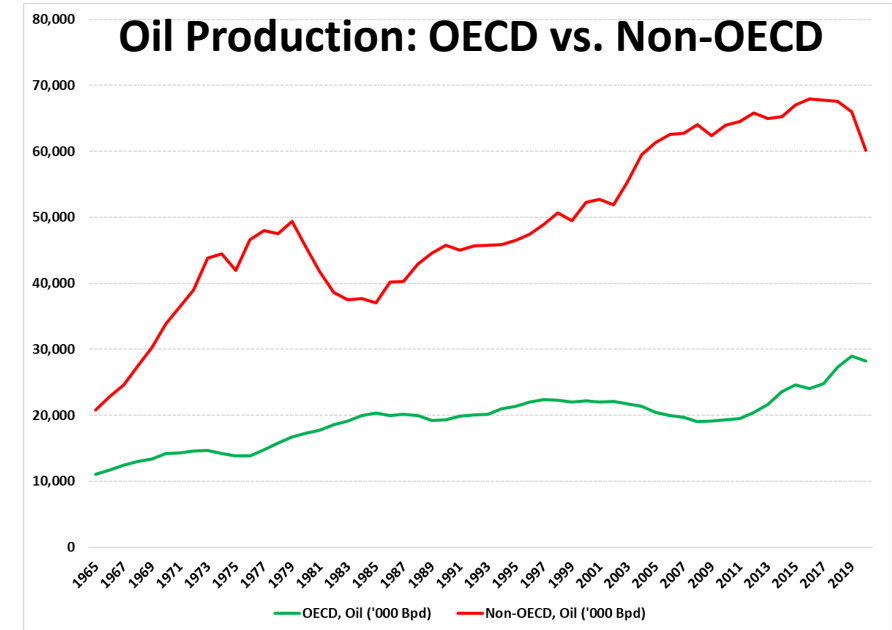
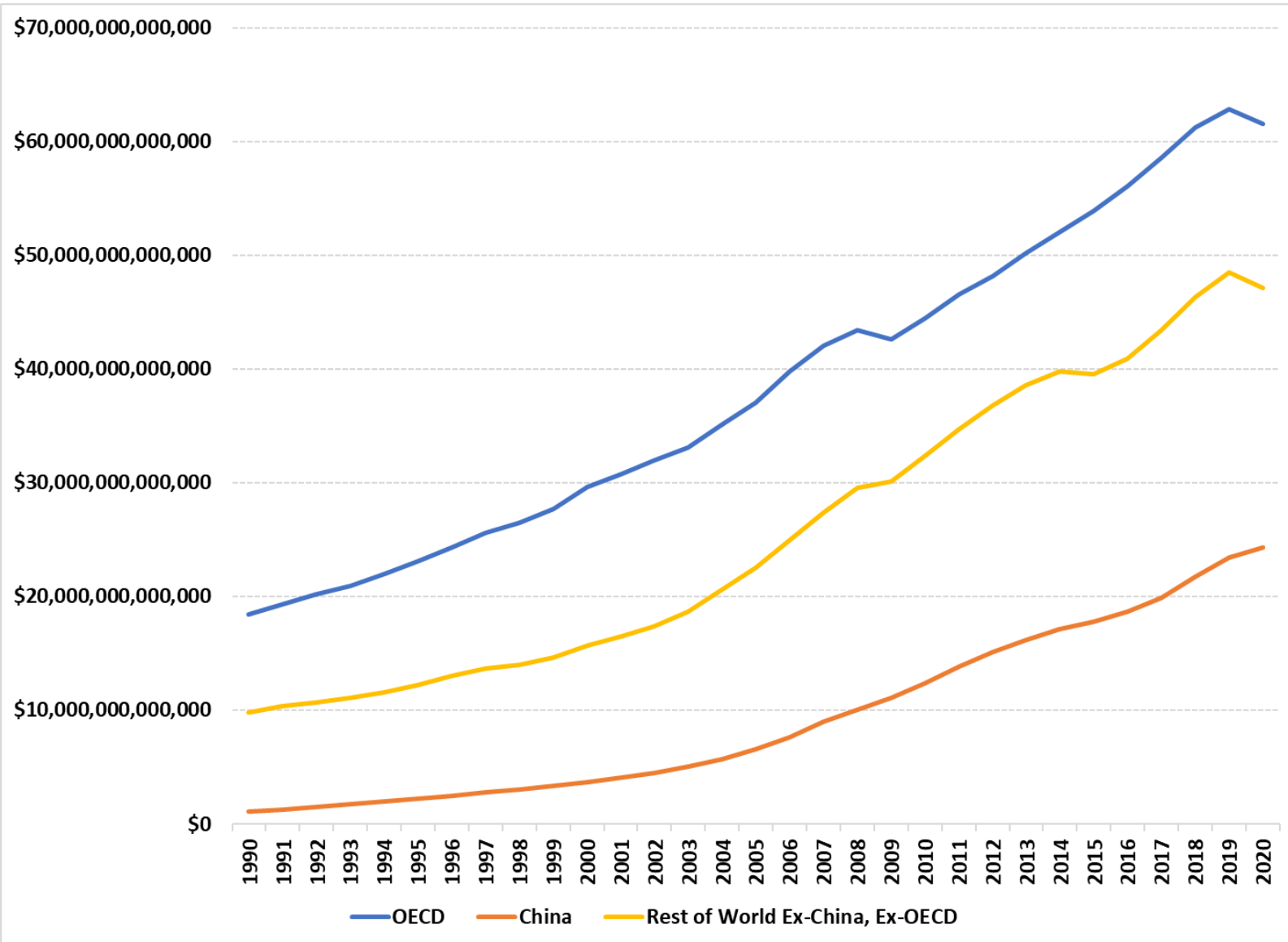
Currency Transitions A Bit Like Energy Transitions



These seven “reserve” or “quasi-reserve) currencies cover about 2,500 years of history

Ukraine War Impacts on PRC Energy Security Views: 2.0

West vs. The Rest: PPP GDP, \$2017, World Bank



Source: BP Statistical Yearbook of World Energy, Author's Analysis

Ukraine War Impacts on PRC Energy Security Views: 3.0

Does China Want To Stake A Larger Proportion of Its Future Energy Security on Russia?

Which Has Weaponized Energy Supplies Against Smaller Neighbors For 30+ Years...

Known or Probable Politically-Driven Energy Supply or Price Manipulations By Russia

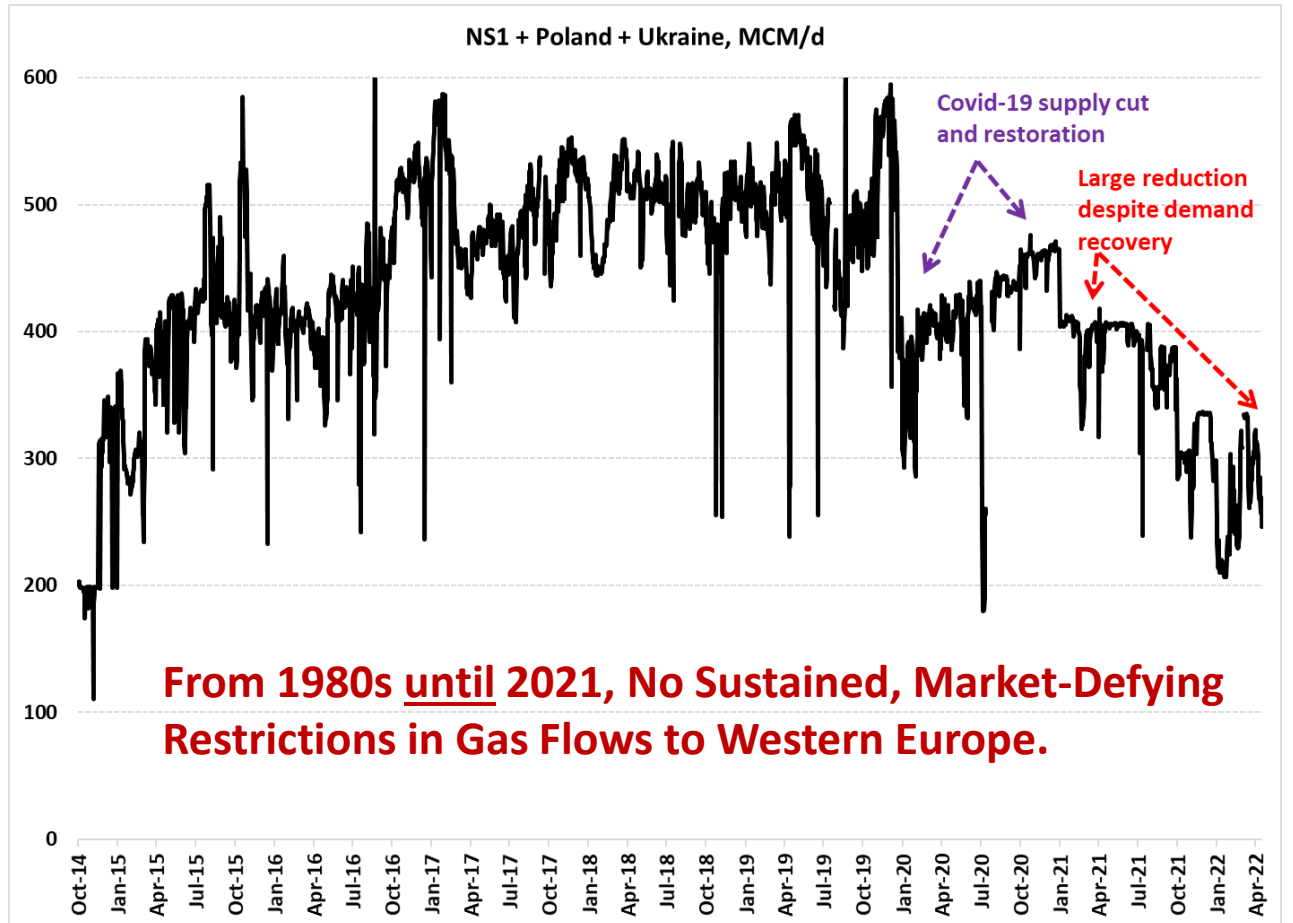
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Belarus																										
Georgia																										
Estonia																										
Lithuania																										
Latvia																										
Moldova																										
Poland																										
Slovakia																										
Turkmenistan																										
Ukraine																										

Instances involving crude oil are shaded gray; those involving natural gas are shaded blue. Interruptions that caused systemic effects on oil or gas supplies in Europe occurred during the years highlighted in orange.

Source: BBC, FOI, Keith Smith, Reuters, The New York Times

Gabriel Collins, "Russia's Use of the 'Energy Strategic Response Options if Russia Cuts Gas Supplies to Europe Weapon' in Europe," Issue brief no. 07.18.17, Baker Institute for Public Policy, Houston, Texas, 2017, <https://www.bakerinstitute.org/research/russias-use-energy-weapon-Europe/>

...And Which Now Also Uses Energy Supplies to Politically Coerce Its Prime Customers



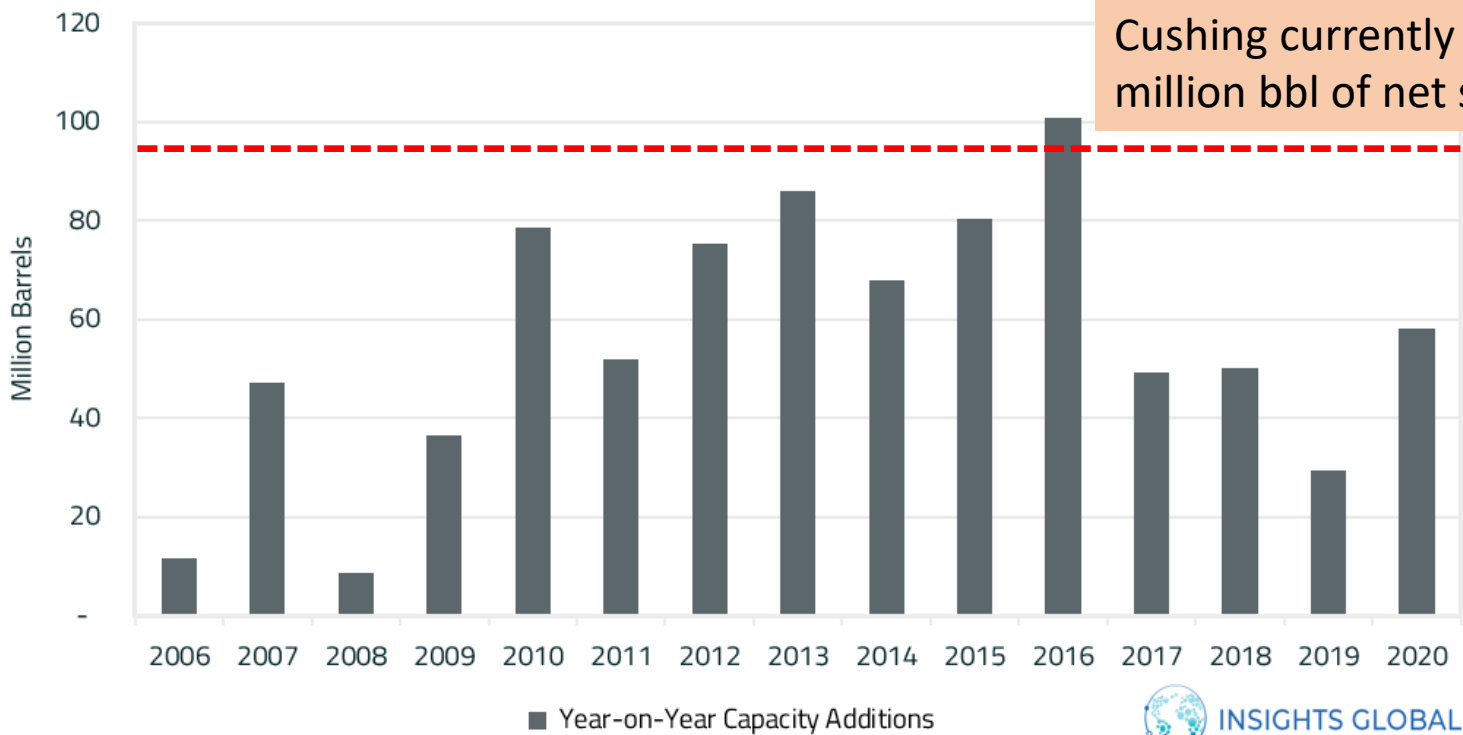
From 1980s until 2021, No Sustained, Market-Defying Restrictions in Gas Flows to Western Europe.

Source: ENTSOG, Author's Analysis

What Is China Doing About Oil & Gas Dependency?

Expanding Crude Oil Storage

China Oil Storage Capacity Growth



Cushing currently has about 95 million bbl of net storage capacity



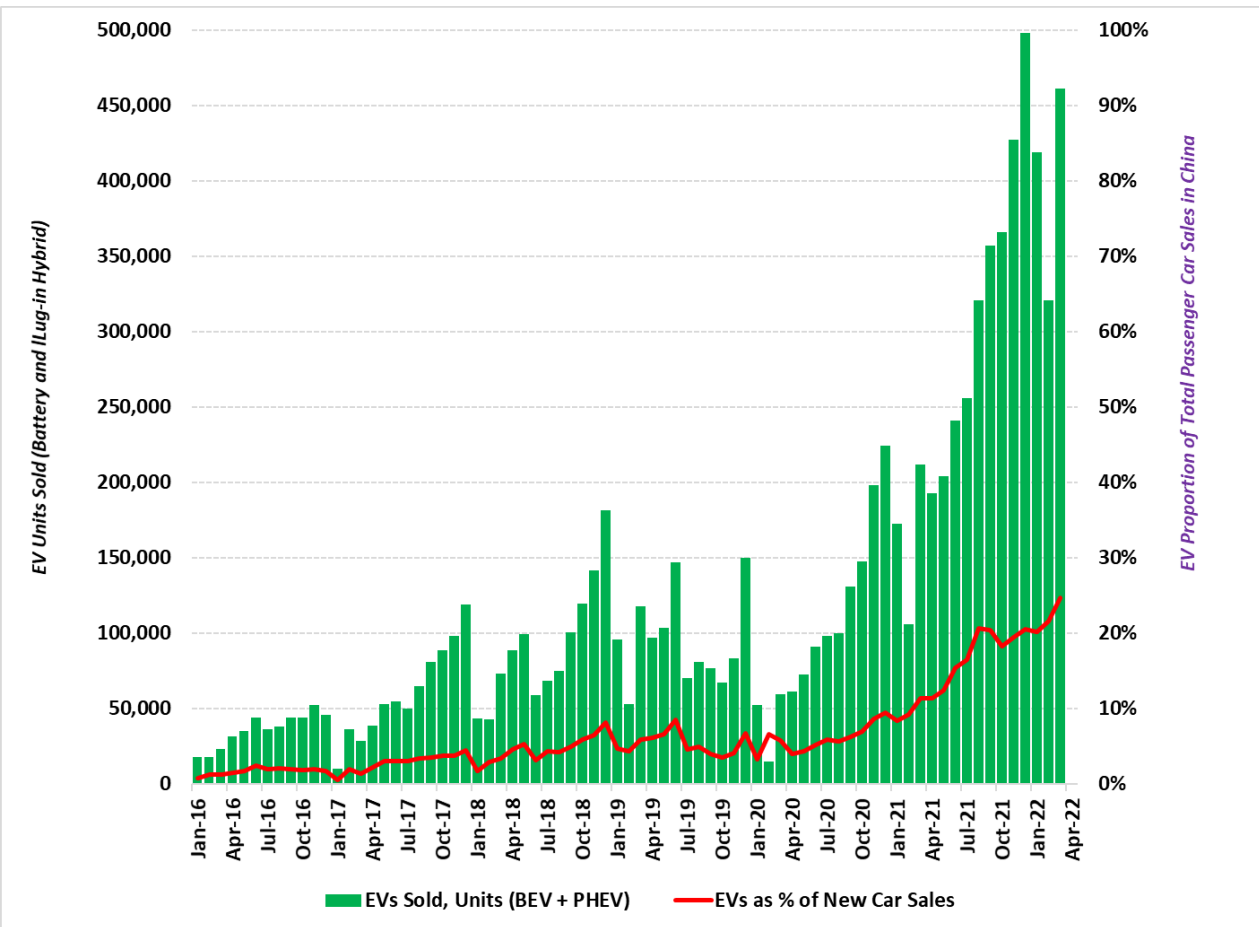
Coastal sites DOMINATE China's new oil storage project landscape.

Source: <https://storymaps.arcgis.com/stories/f330fd6ec064476585d654c348c7f0f7>

Detailed **Baker Institute China Energy Map** updated bi-annually can be accessed at: <https://www.bakerinstitute.org/chinas-energy-infrastructure/>

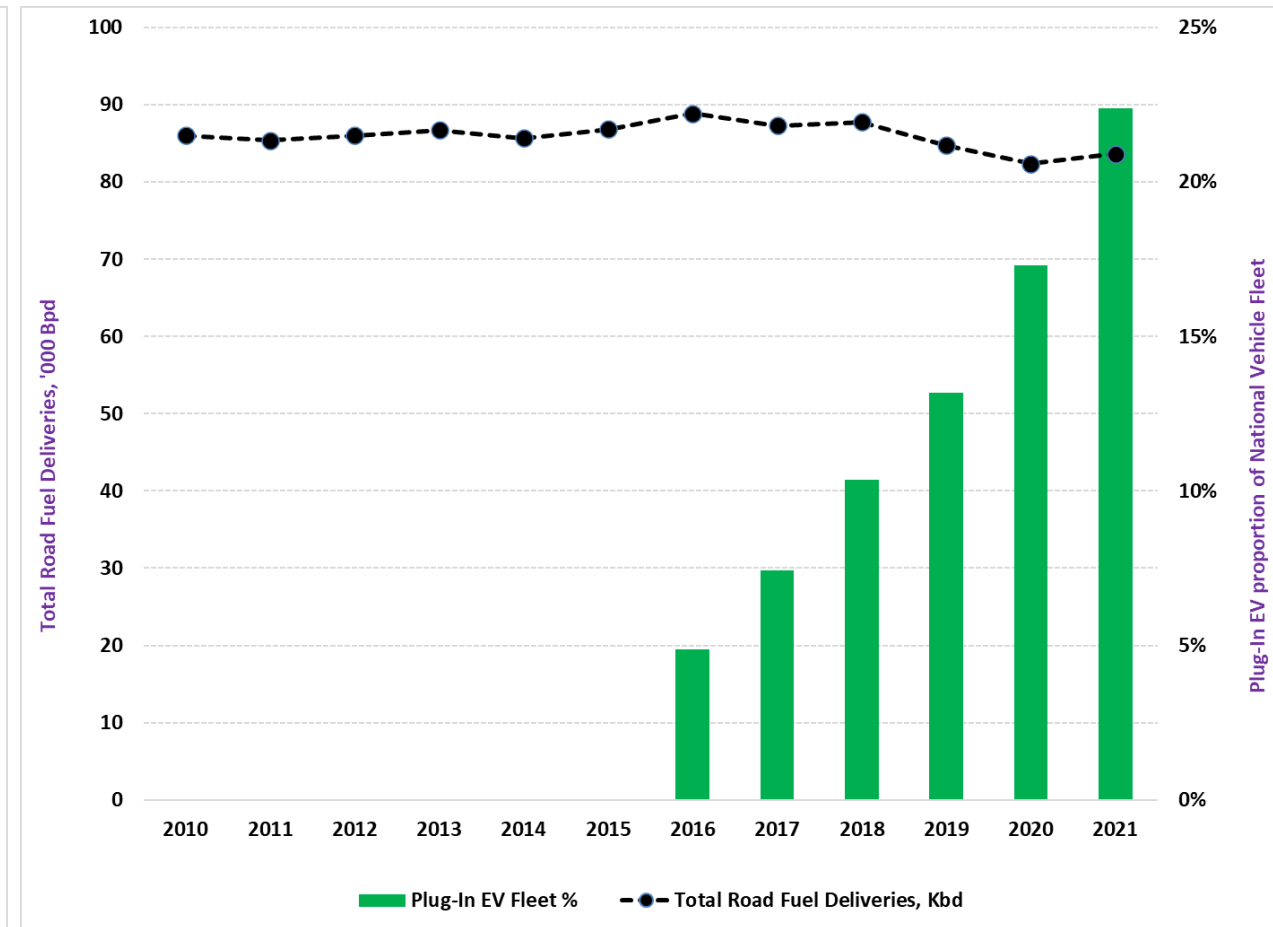
Electrifying the Vehicle Fleet

China Has Rapidly Scaled Up Sales and Production of EVs...



Source: CAAM China, Author's Analysis

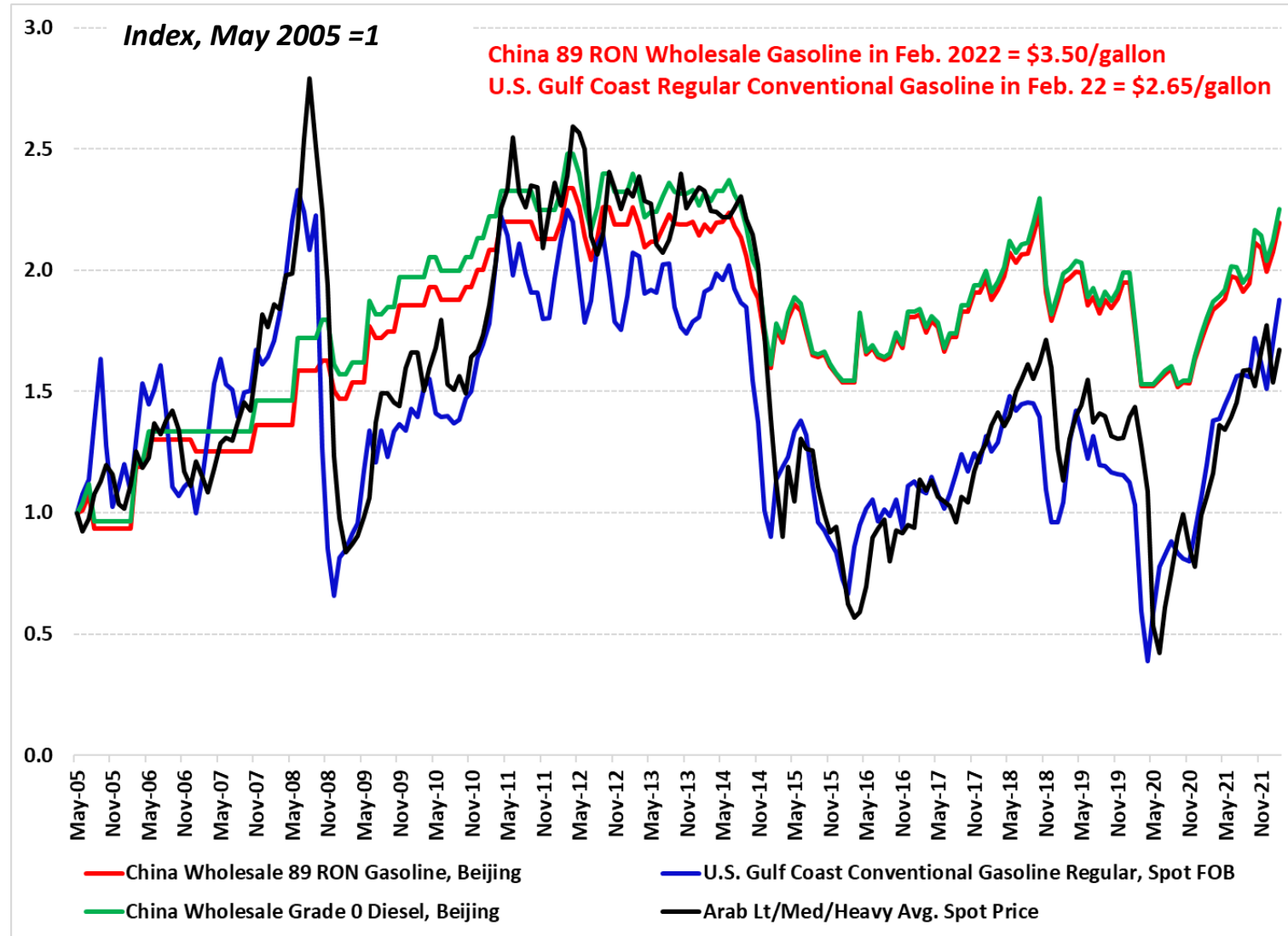
...But Norway's Example Shows That Displacing Material Volumes of Diesel and Gasoline Is A Monumental Task



Source: Statistics Norway, Author's Analysis

Price Incentives For Fuel Conservation

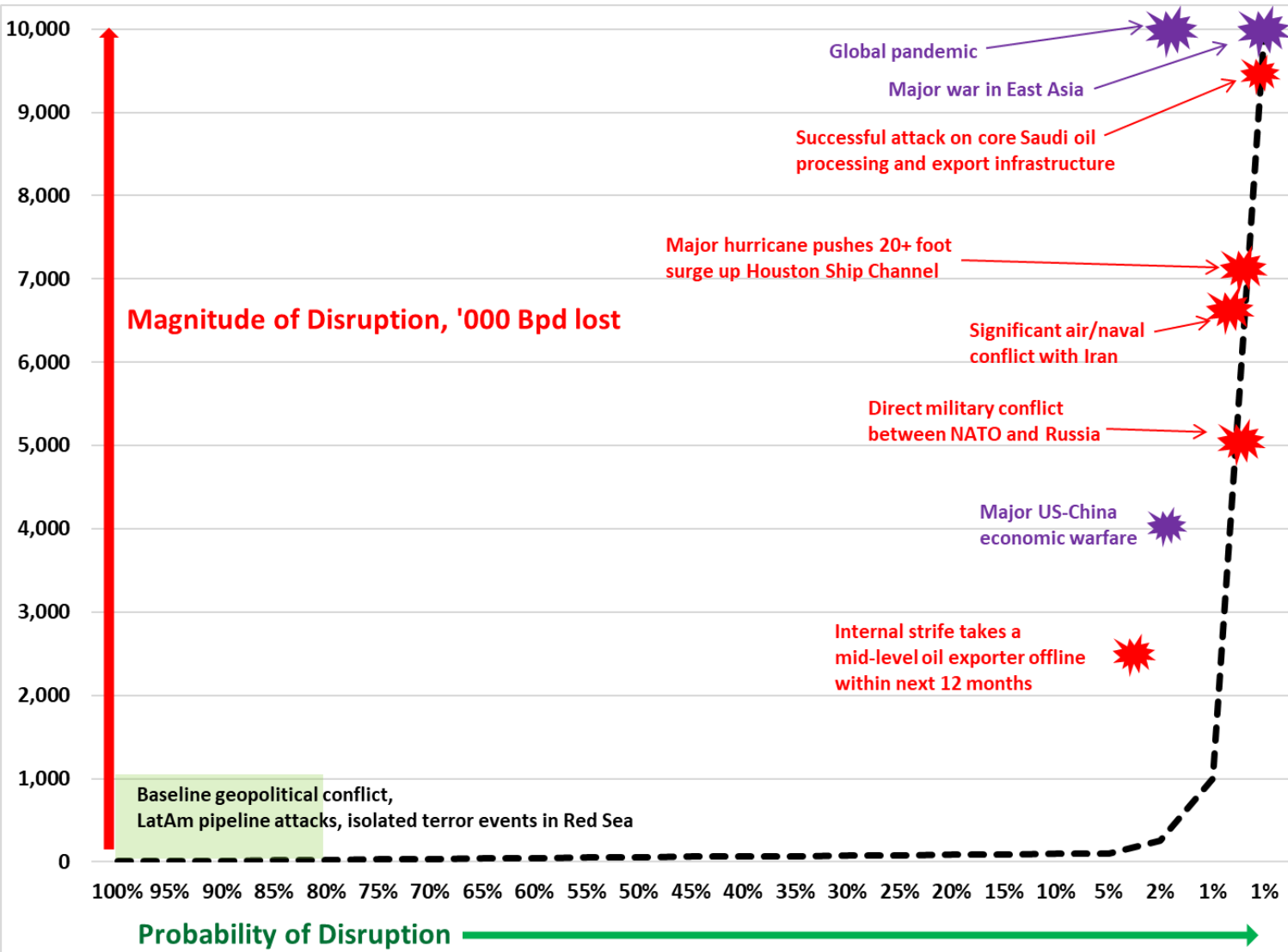
Wholesale Gasoline and Diesel Fuel Prices in China vs. Crude Oil Prices



- Chinese policymakers have already repeatedly demonstrated a willingness to robustly intervene in local vehicle markets through license plate auctions, quotas, and EV subsidies.
- Will this be translated into more aggressive fuel pricing policies, especially for gasoline?
- Diesel a less likely target given its criticality to goods transport and resultant risk of consumer inflation
- Could dis-incentive pricing of gasoline be intensified as EV proportion of passenger car fleet rises?

Will China Militarize Its Oil & Gas Security Policies?

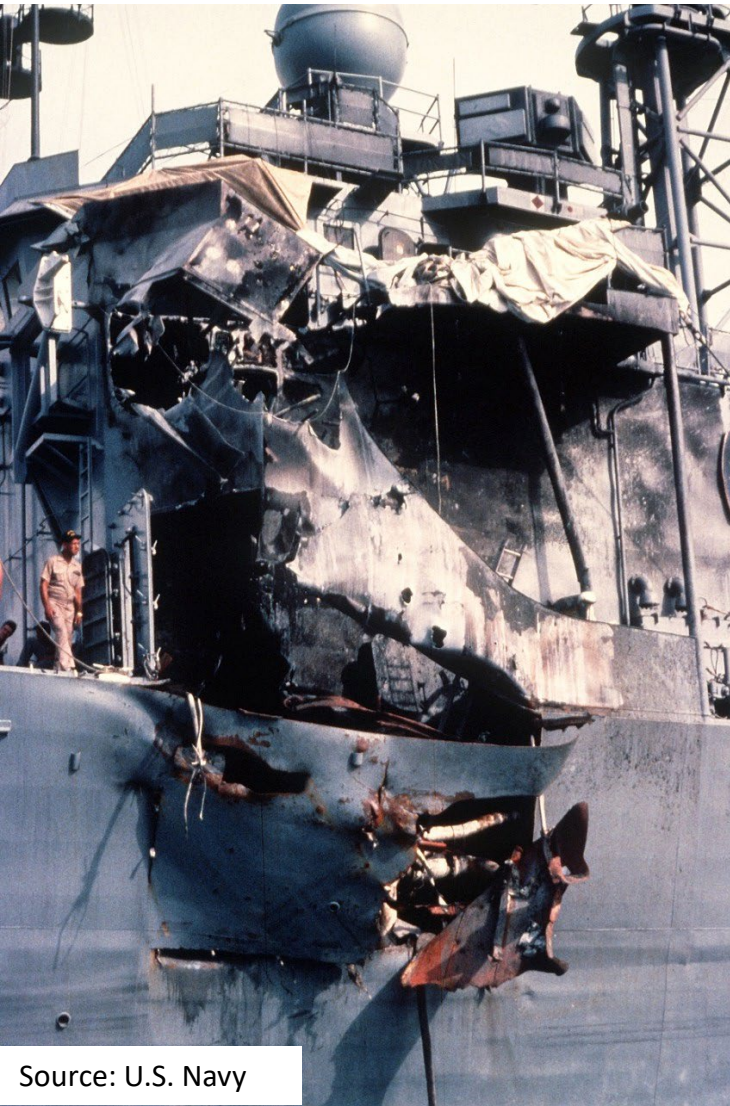
Oil Supply and Demand Disruptors: Probability vs. Magnitude



- The term “energy security” first appeared in the 2004 China Defense White Paper, the same year China’s oil imports ballooned.
- The 2006 White Paper noted that concerns about energy resource security (along with multiple other non-traditional security threats) were mounting. The 2008 and 2010 White Papers used similar language.
- The 2019 White Paper offers more nuanced views that likely more accurately reflect leadership thinking about the intersection between naval power and commerce protection, noting that with respect to China’s overseas interests “The PLA conducts vessel protection operations, maintains the security of strategic SLOCs, and carries out overseas evacuation and maritime rights protection operations.”

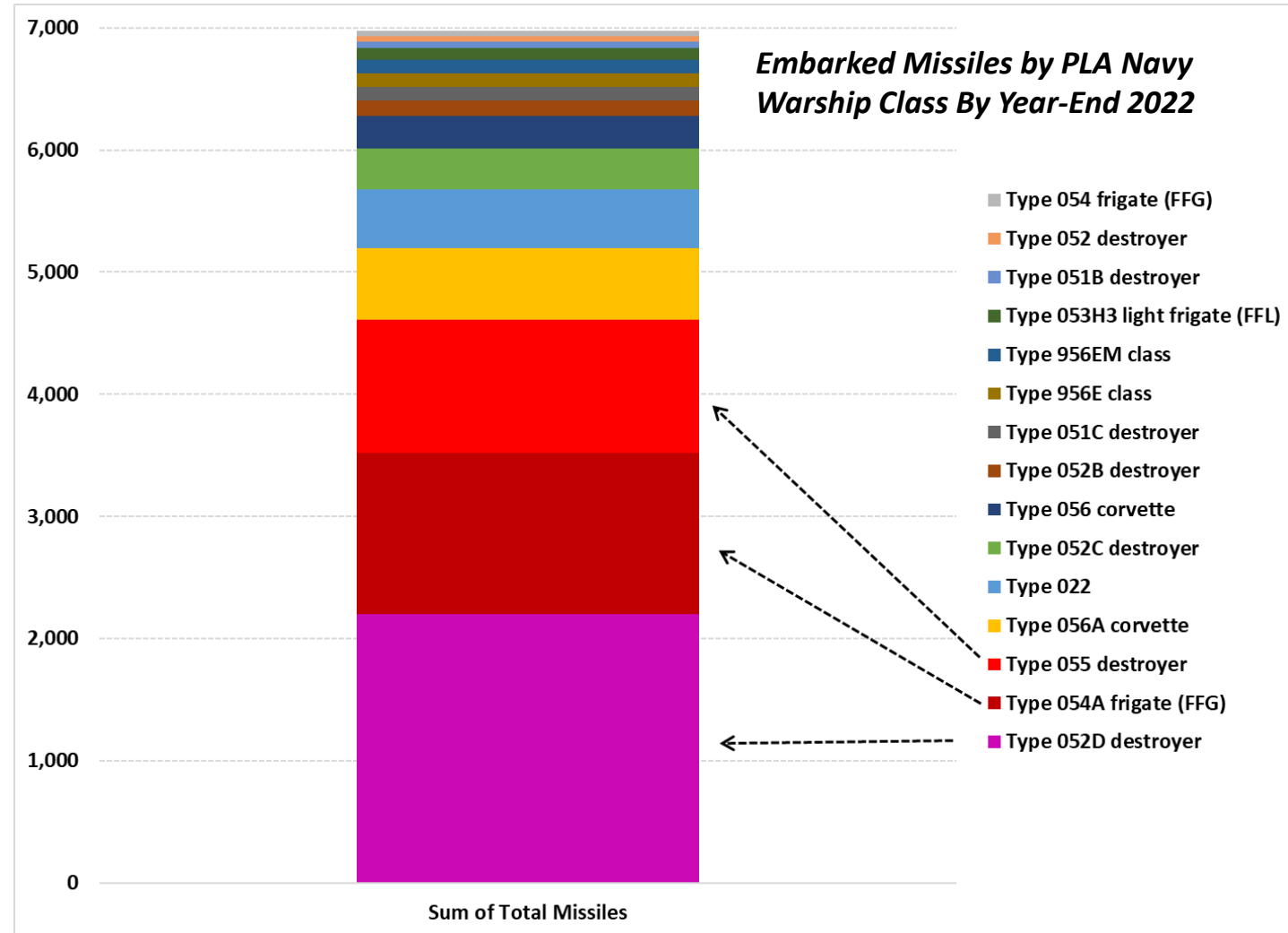
Potential Downsides of Militarized Oil & Gas Security Approach

Damage & Casualties



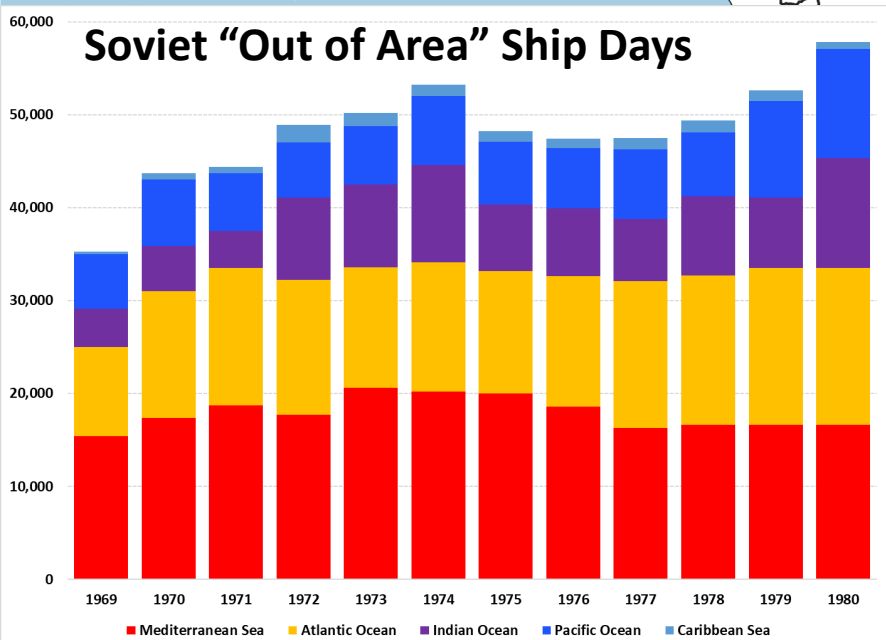
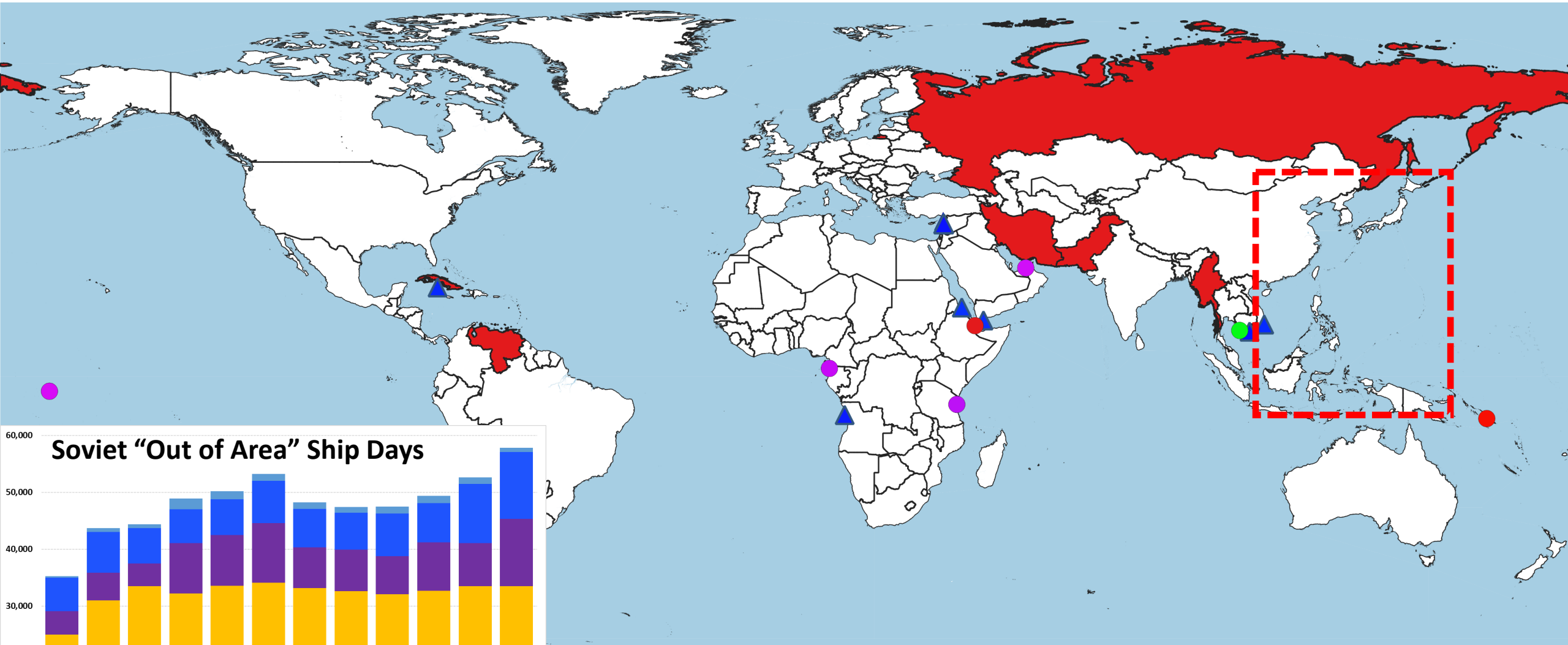
Source: U.S. Navy

Opportunity Cost of Moving Combat Power Out of Priority Theatre



Source: The Diplomat, NavalTechnology.com, Wikipedia, Author's Analysis

Will China Contest Control of the Global Maritime Commons?

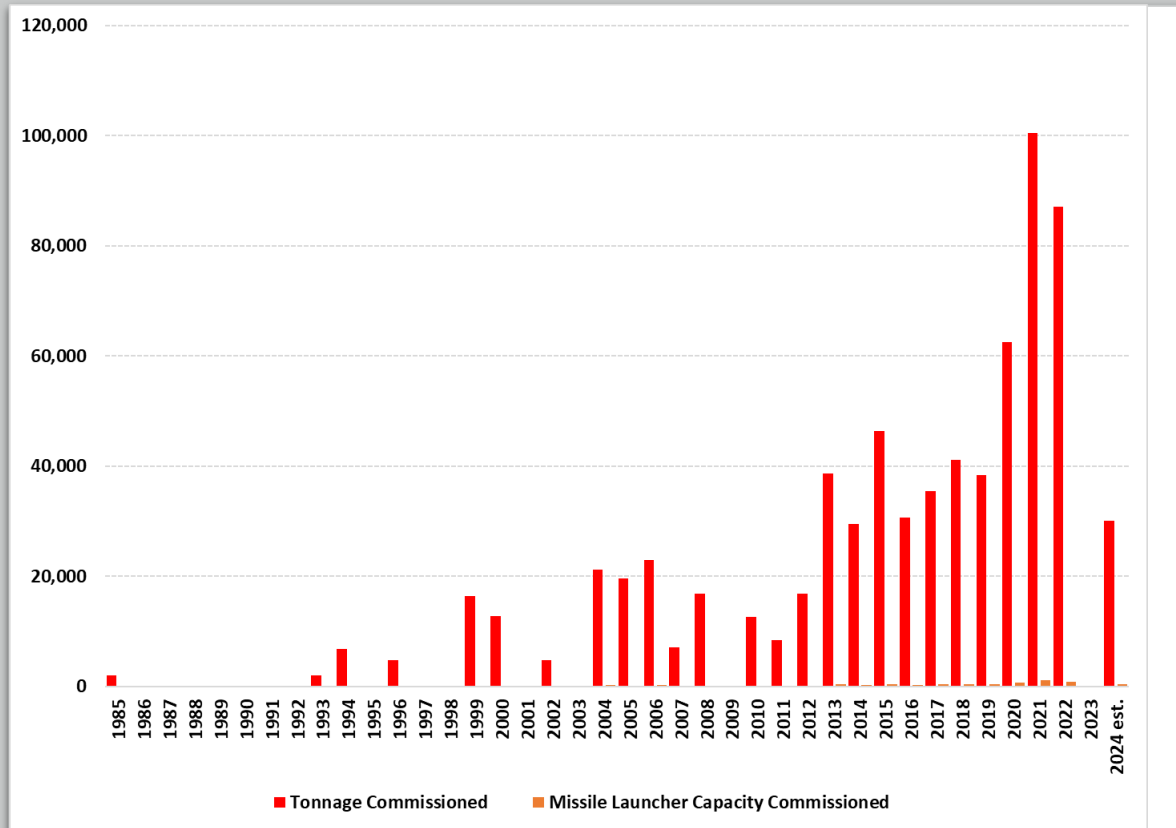


Perspective: China's continual Horn of Africa counterpiracy deployment since 2008 accumulates a bit north of 1,100 "out of area" ship days annually

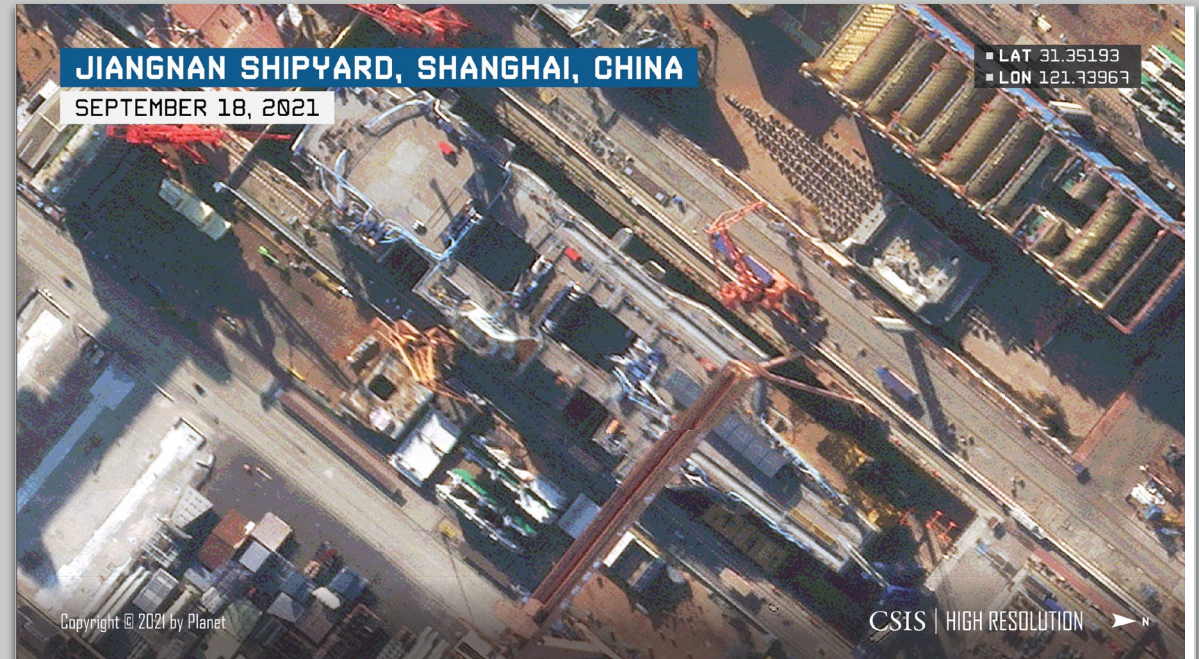
Source: B.W. Watson, "Red Navy At Sea: Soviet Naval Operations on the High Seas, 1956-1980," Westview: Boulder, Colo., 1982, table 2, p. 183

Will Appetite For Presence Abroad Grow With Naval Capacity?

PLA Navy Major Surface Combatant Fleet Growing Rapidly

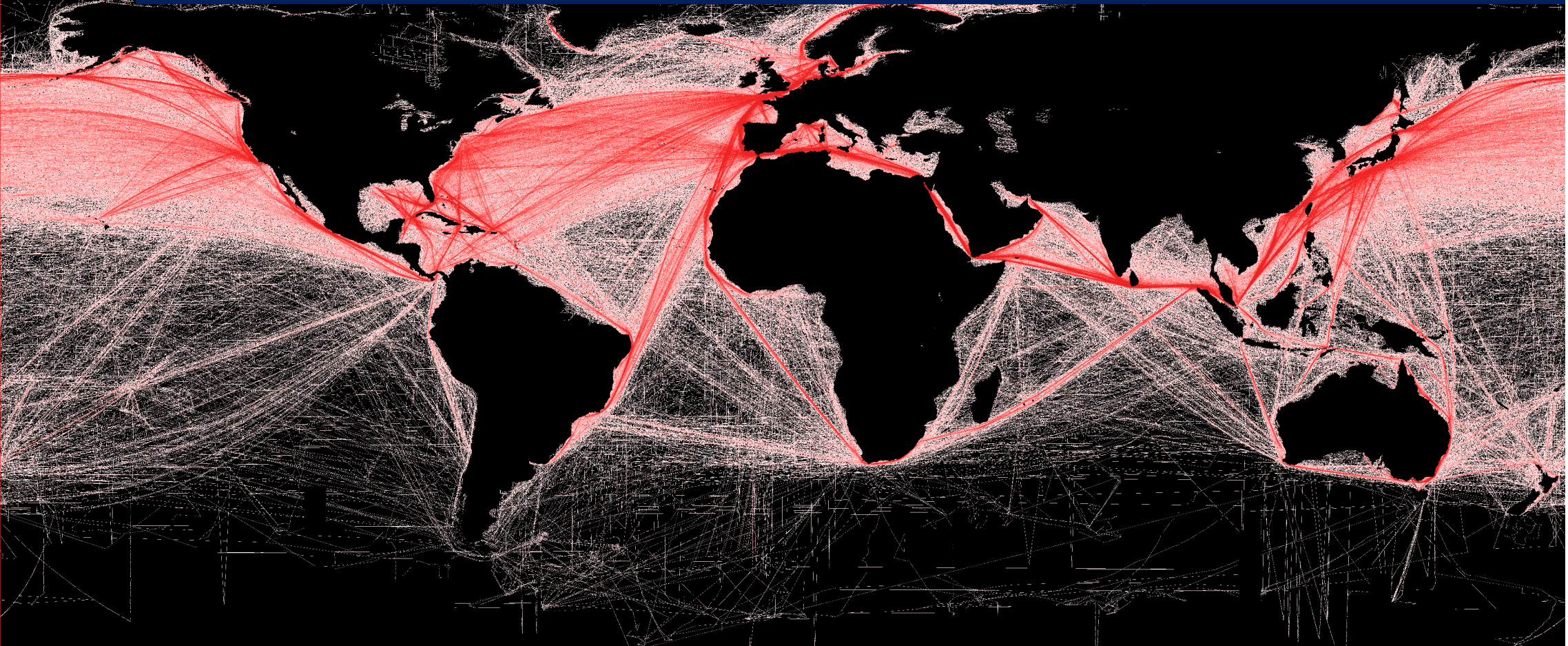


...And More—and More Capable—Aircraft Carriers Loom



Two large openings are visible in imagery of the Type 003 from September 2021.

Present Outlook



Source:

https://news.agu.org/files/2014/11/Shipping_routes_red_black.png

- China is likely to continue its accelerated naval modernization program, including both quantitative and qualitative improvements to its naval and air assets, as well as special operations forces. Oil and gas import security do not appear to be a core driver of these efforts, but **naval, air, and special operations capabilities are fungible across theatres on relatively short notice.**
- A key warning indicator of strategic intent: pursuit of access to facilities with deep draft ports and airfields plus access agreements that permit placement of munitions and execution of combat operations.

Where Could I Be Wrong?

- Dual Circulation Drives Beijing to Seek Overmatch in Indian Ocean To Protect Resource Supply Lines
- Domestic Endeavors—Such as Transport Electrification—Fail to Meaningfully Reduce Oil Demand
- Economic Reforms Fail and the PRC Economy Remains Disproportionately Energy Intensive
- China's Economic Growth Does Not Slow In the Manner We Believe It Is Now
- China Achieves Breakthroughs in Unmanned Ships and Other Technology That Enable More Cost-Effective Global Power Projection
- China Dramatically Scales Up Its Nuclear Sub Fleet—Perhaps Leveraging Russian Defense Industry's Coming Desperation

Thank You!

Questions, Comments, Praise, and Hate Mail Alike May Be Directed To:
gabe.collins@rice.edu

Further Reading

- Gabriel B. Collins, “**China’s Energy Import Dependency: Potential Impacts on Sourcing Practices, Infrastructure Decisions, and Military Posture,**” testimony at hearing on “China’s Energy Plans and Practices,” U.S.-China Economic and Security Review Commission, 17 March 2022. https://www.uscc.gov/sites/default/files/2022-03/Gabriel_Collins_Testimony.pdf
- Andrew S. Erickson and Gabriel Collins, “**Competition with China Can Save the Planet: Pressure, Not Partnership, Will Spur Progress on Climate Change,**” Foreign Affairs 100.3 (May/June 2021): 136–49. <https://www.foreignaffairs.com/articles/united-states/2021-04-13/competition-china-can-save-planet>
- Gabriel B. Collins and Andrew S. Erickson, “**China’s Climate Cooperation Smokescreen: A Roadmap for Seeing Through the Trap and Countering with Competition,**” (Houston, TX: Baker Institute for Public Policy, Rice University, 31 August 2021). <https://www.bakerinstitute.org/media/files/files/0f95cafa/ces-pub-china-climate-083121.pdf>
- Collins, Gabriel (2018) “**A Maritime Oil Blockade Against China—Tactically Tempting but Strategically Flawed,**” Naval War College Review: Vol. 71: No. 2, Article 6. <https://digital-commons.usnwc.edu/nwc-review/vol71/iss2/6>
- Andrew S. Erickson and Gabriel B. Collins, “**China’s Oil Security Pipe Dream: The Reality, and Strategic Consequences, of Seaborne Imports,**” Naval War College Review 63.2 (Spring 2010): 88-111. <https://digital-commons.usnwc.edu/nwc-review/vol63/iss2/8>
- Collins, Gabriel B. and Murray, William S. (2008) “**No Oil for the Lamps of China?,**” Naval War College Review: Vol. 61: No. 2, Article 10. <https://digital-commons.usnwc.edu/nwc-review/vol61/iss2/10>