



Allocating Capital In The Energy Transition

Federal Reserve Bank of Dallas

November 2023

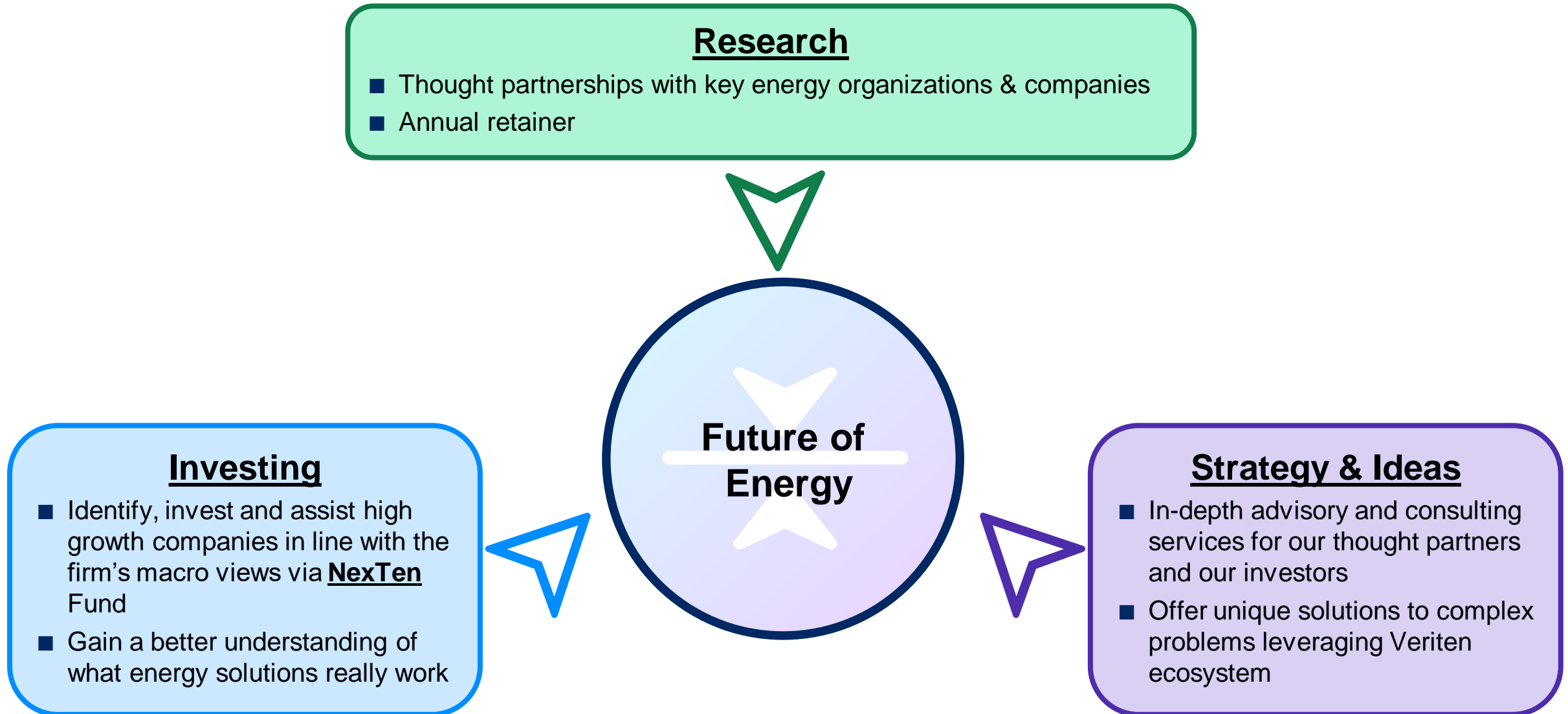


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Veriten Introduction



Our Community of Thought Partners & Investors

Thought Partners

- IOCs
- Onshore, Offshore and Diversified E&Ps
- Domestic & International Service Providers
- LNG Exporters
- Infrastructure & Downstream
- Minerals & Mining
- Electricity Providers
- Global Diversified Energy
- Private Investors



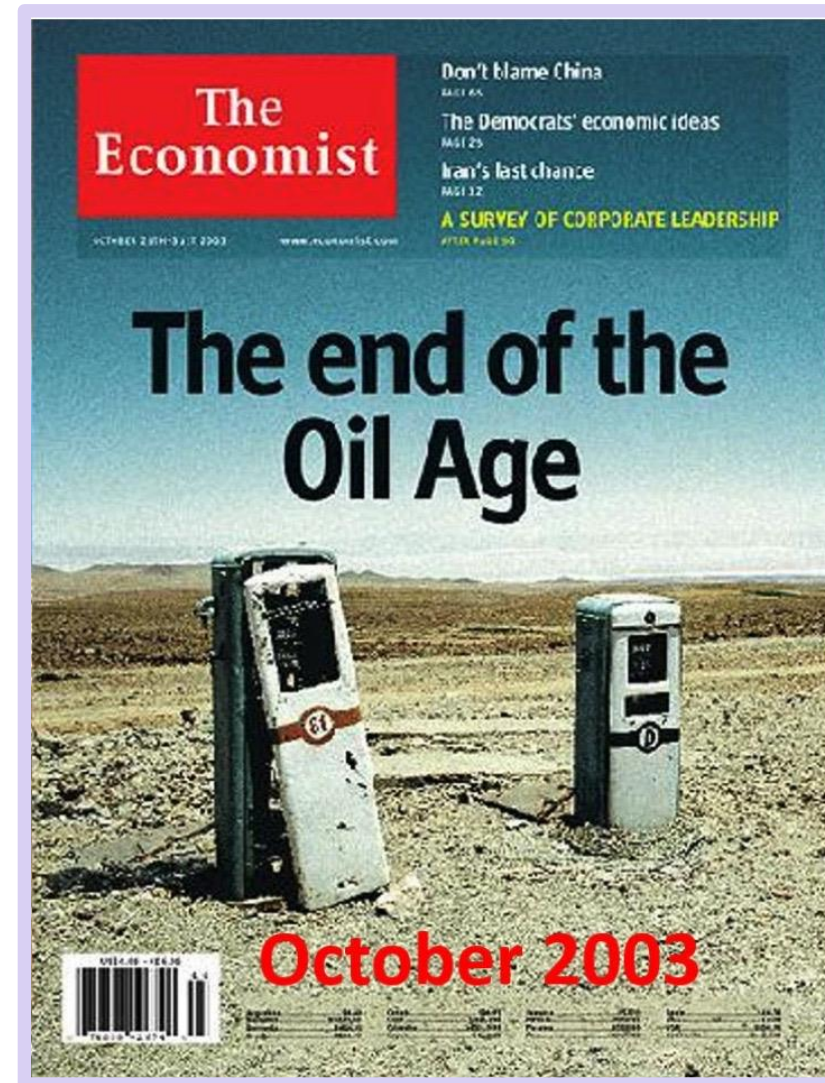
Investors

- Public Energy Corporations
- Family Offices
- Current & Former Energy Executives
- Entrepreneurs
- Financial Institution

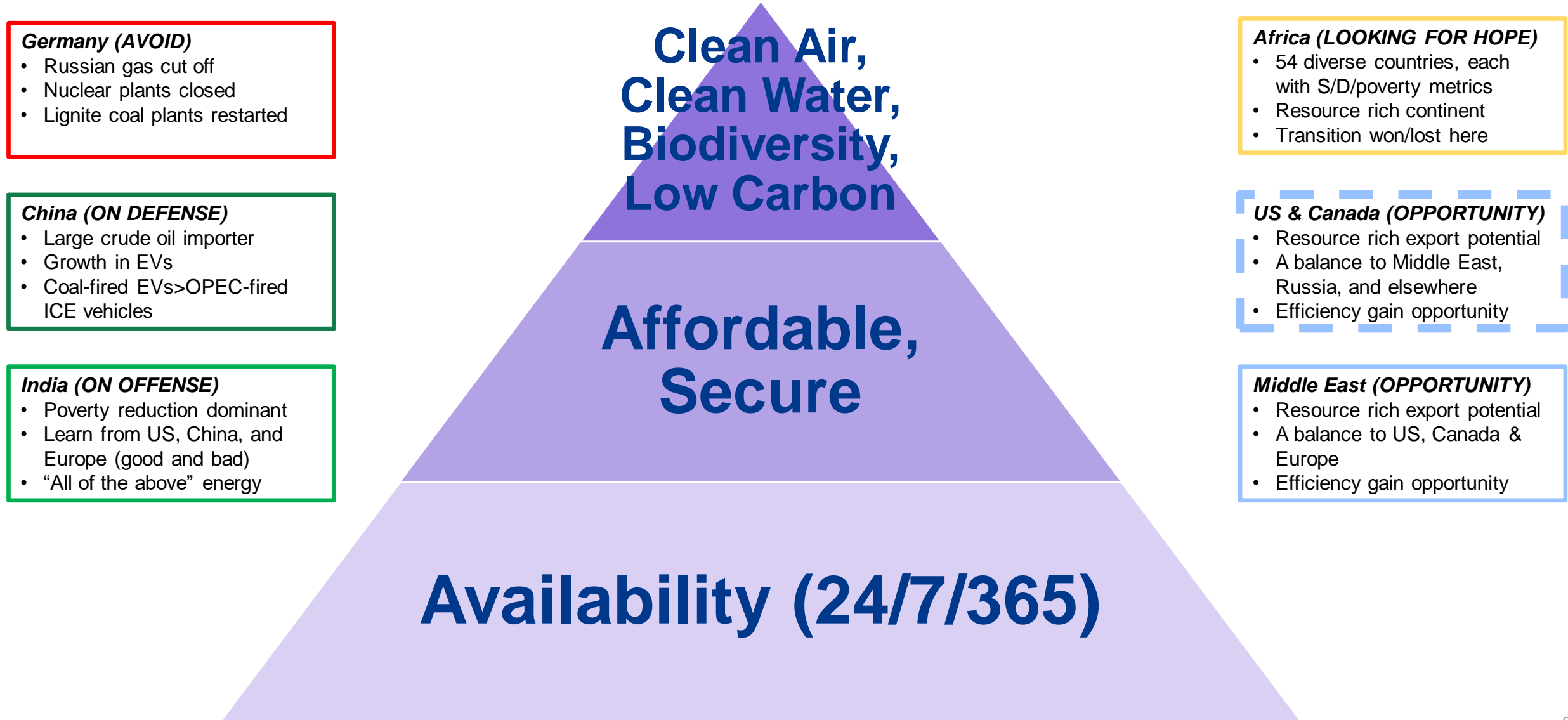
Private Content, Custom Research, Investment Ideas, Strategic Advice and Future of Energy Community

The End of the Oil Age...Again?

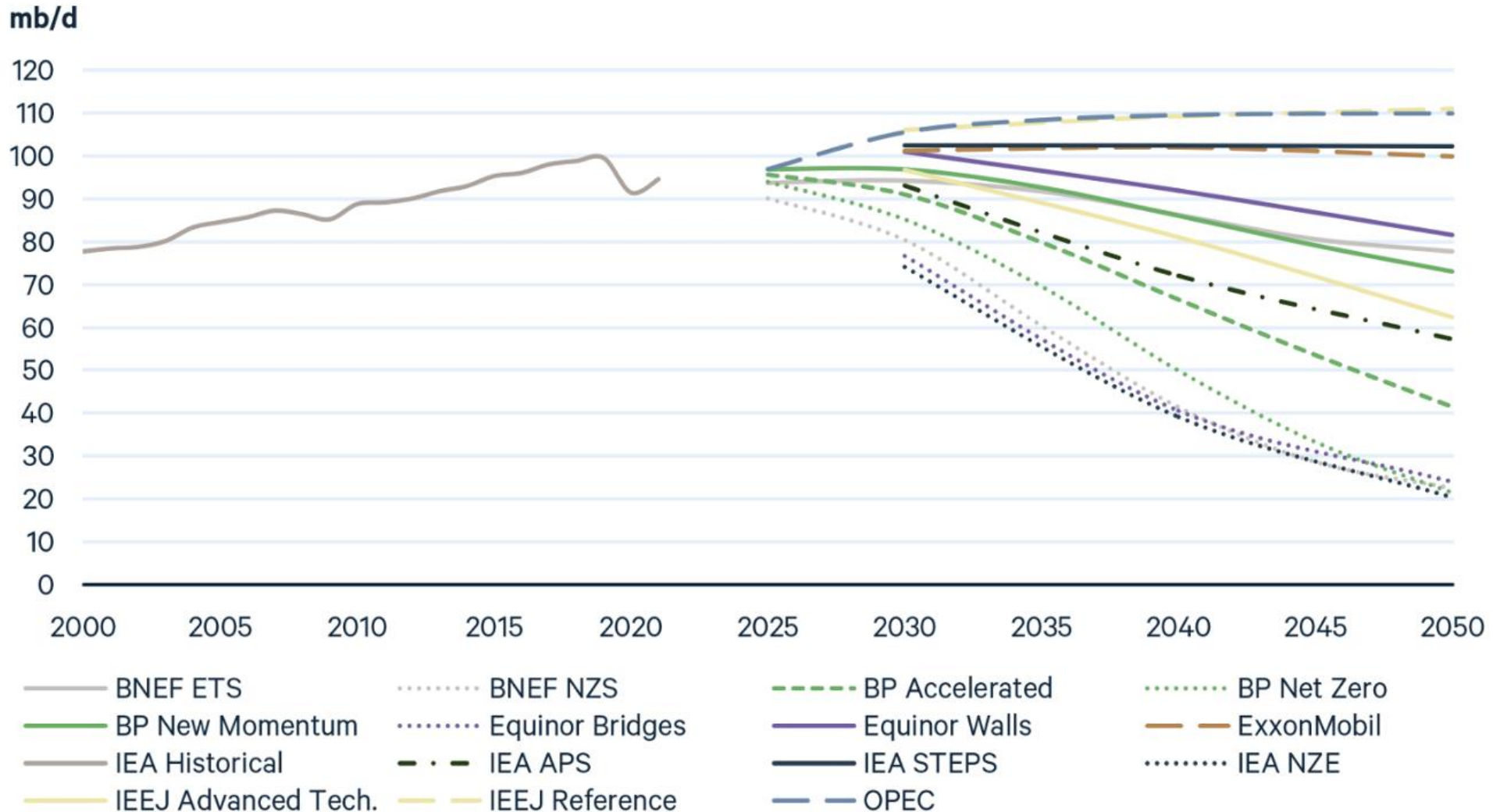
The End of
the Oil Age™
has been
forecast
many times
over many
decades



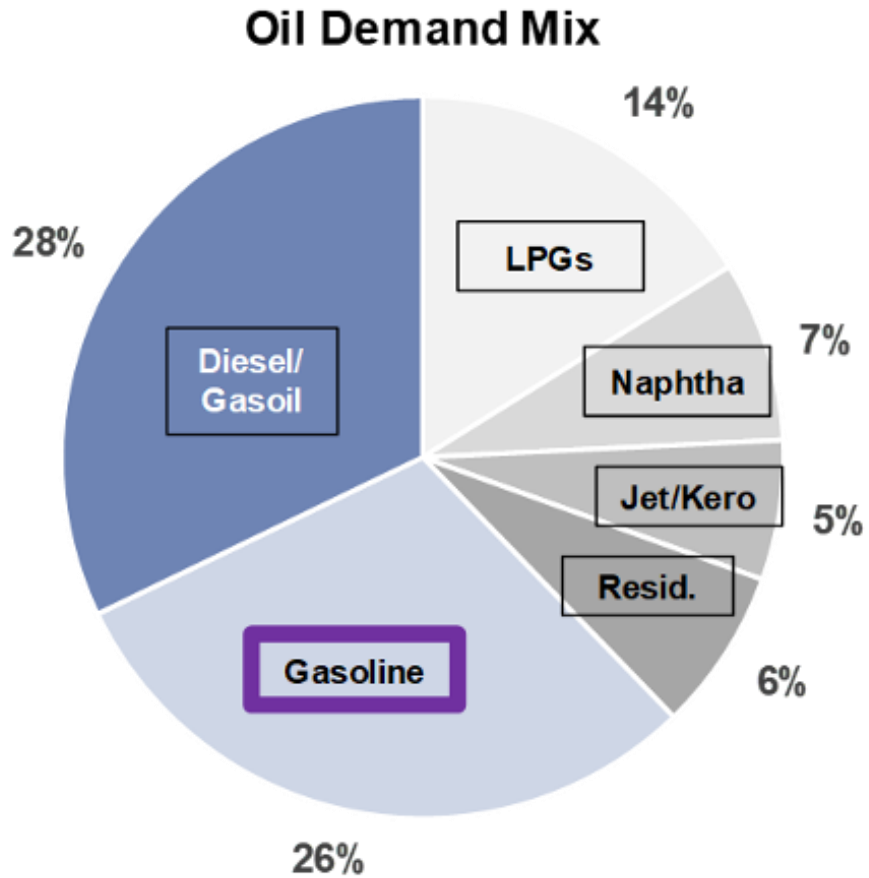
Energy: A Hierarchy of Needs



Consensus View: Flat-to-Falling Oil Demand

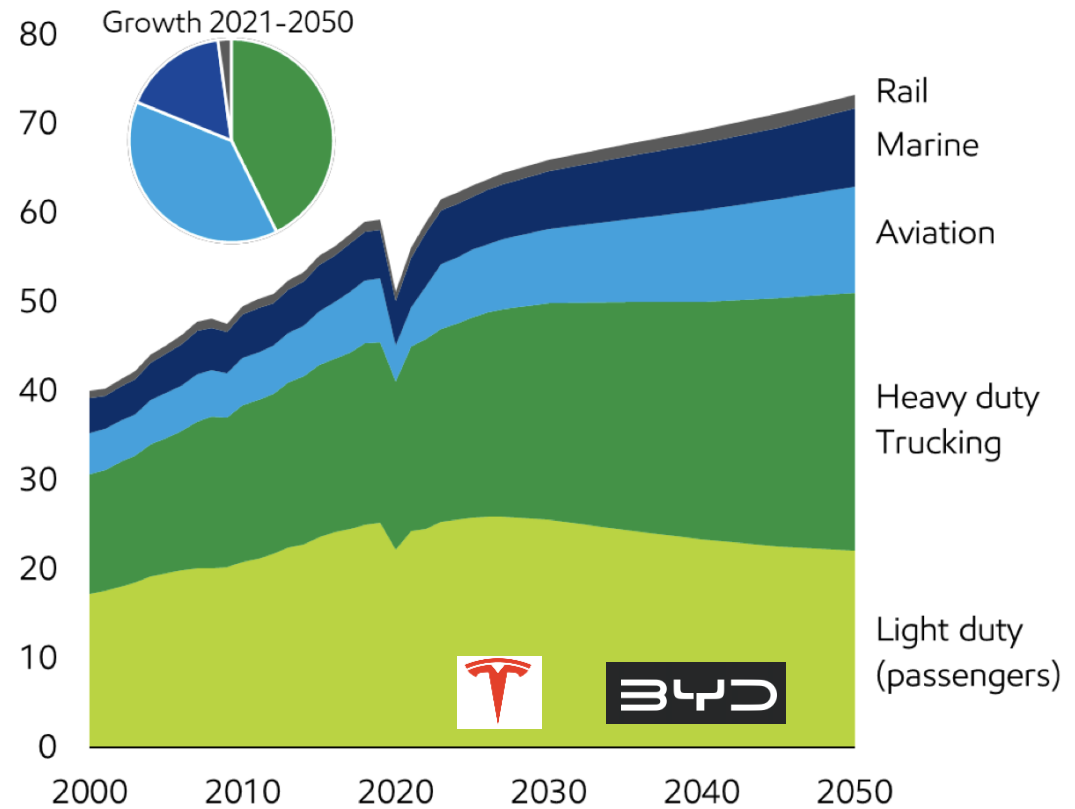


Demand For Oil Is Not Limited To Consumer EVs



Global transportation energy demand

Million barrels per day of oil equivalent



Moving Up The Income And Oil Demand S-Curve

The Lucky 1 Billion People

(United States, Western Europe, Canada, Japan, Australia, New Zealand)

Oil Demand
(mn b/d)

41

Oil Demand
per Capita

13.3

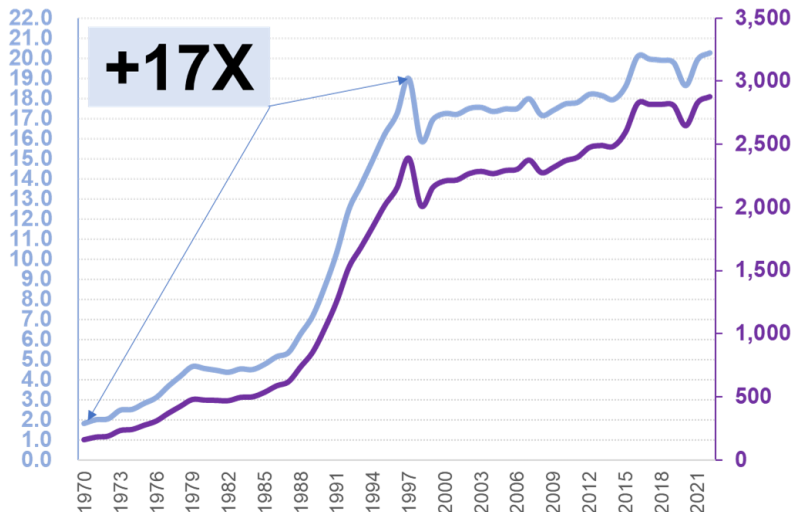
The Other 7 Billion People

59

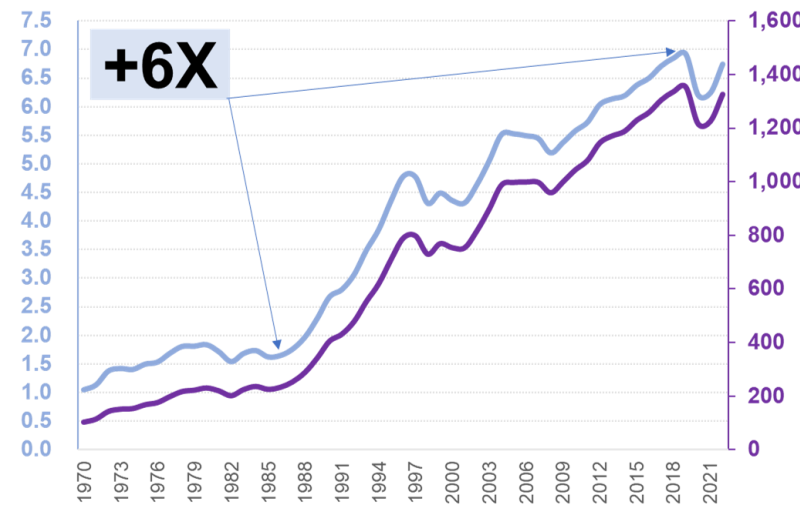
3.2

per capita (lhs), absolute, thousands b/d (rhs)

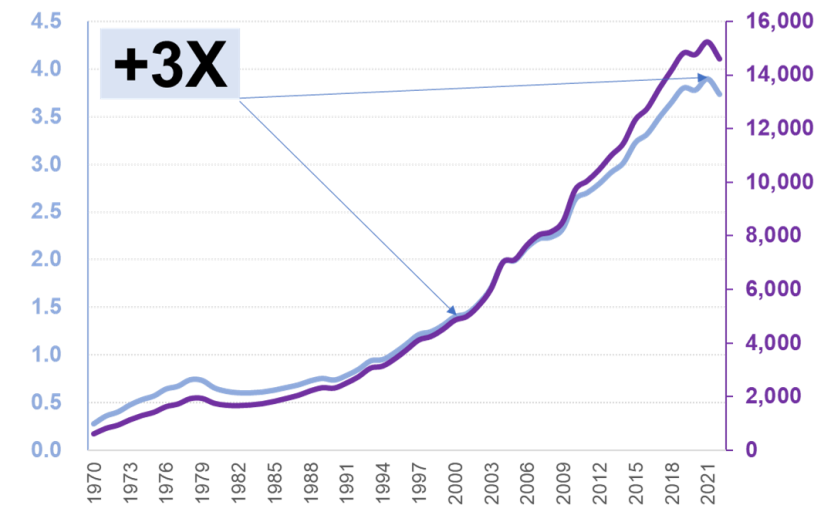
SOUTH KOREA



THAILAND



CHINA



Total Addressable Market For Oil (Energy) Is Massive

FUTURE GROWTH IN OIL DEMAND UNDER VARIOUS PER CAPITA SCENARIOS



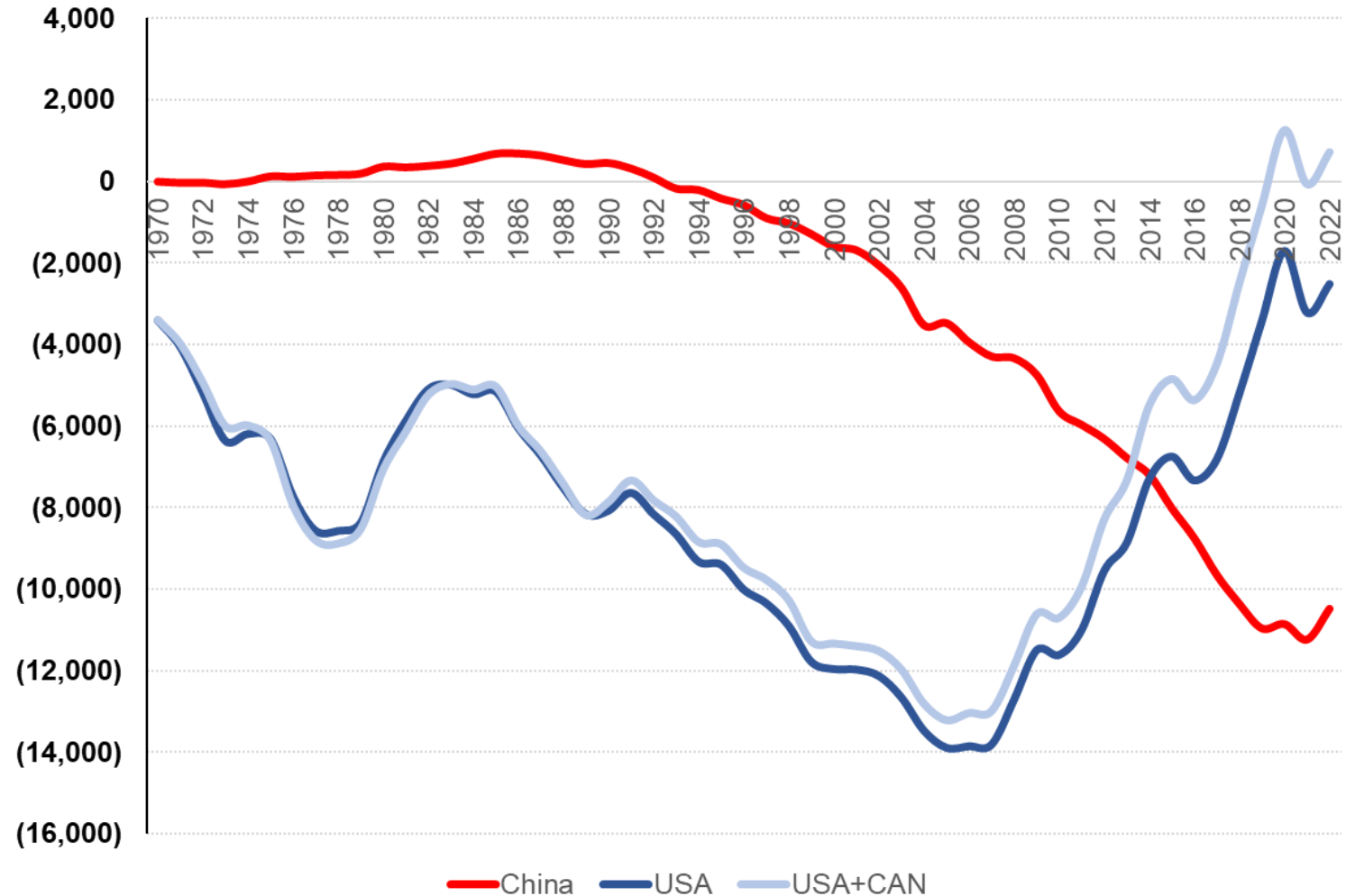
Geopolitics: Avoiding China's Oil Import Path

Availability + geopolitics drive energy choices

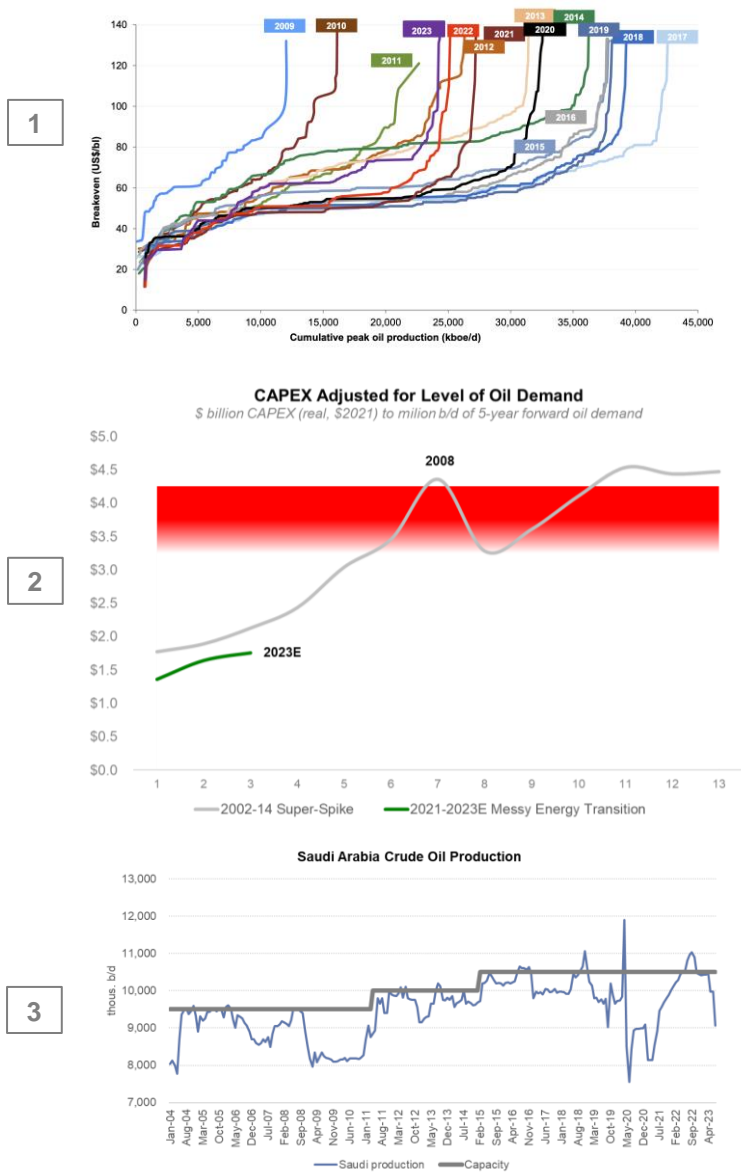
Key goal: Avoid energy import dependence

New energies are inevitably domestic

Net Oil Imports, China vs USA+CAN: 1970-2022
thousands b/d



Super Vol Now...Super-Cycle Coming



(1) Oil cost curve steepening; (2) CAPEX remains close to trough levels; (3) Deliverable OPEC spare capacity is limited. **HOWEVER**, long-dated oil range-bound thus far.



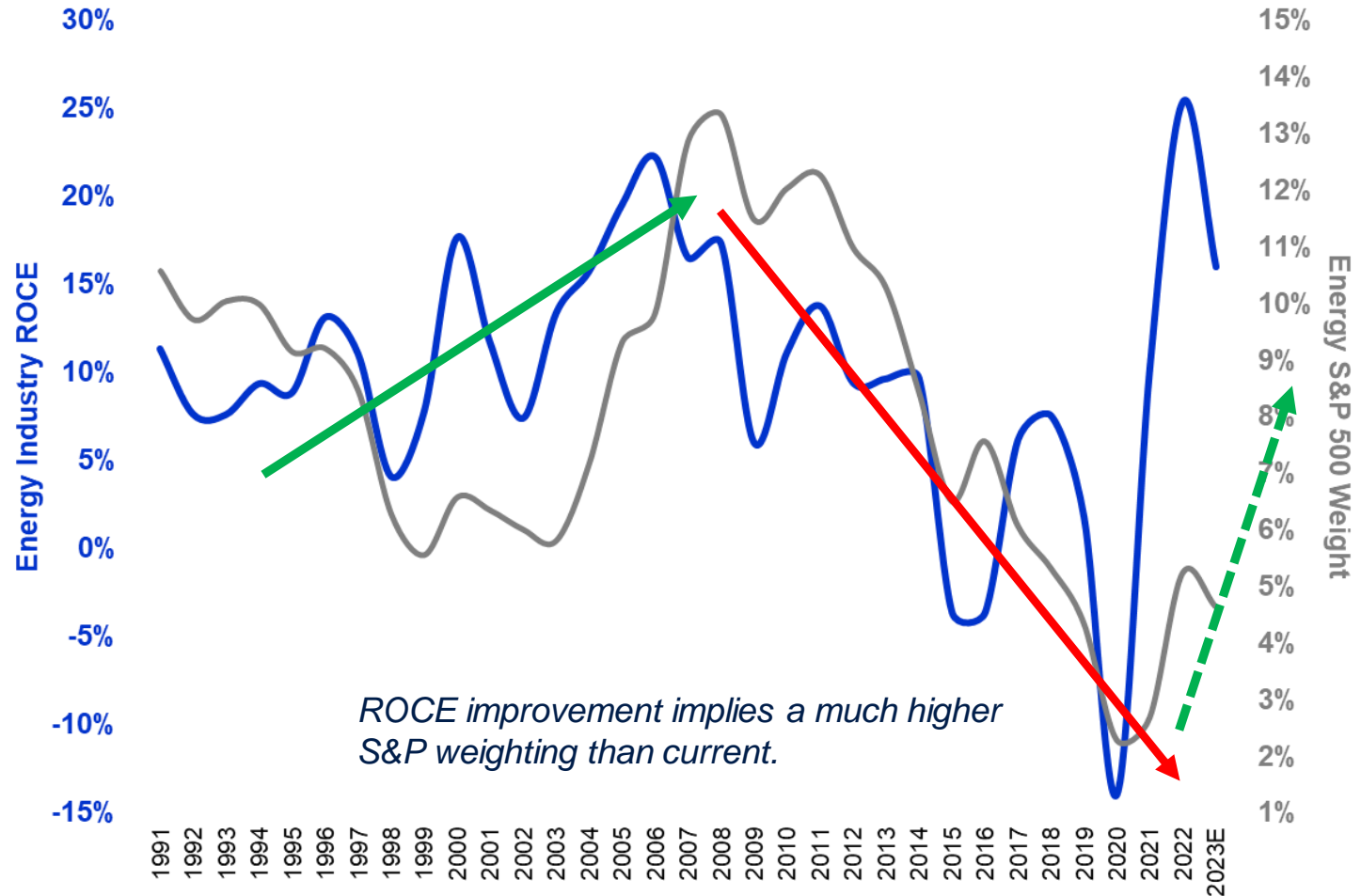
Long-Term ROCE Cycle Drives Capital Flows

(1) ROCE recovery well in excess of S&P weight

(2) Investors question sustainability of upcycle

(3) Super Vol backdrop drives uncertainty

Energy ROCE correlated with its S&P 500 weight
latest S&P weight as of 9/15/23

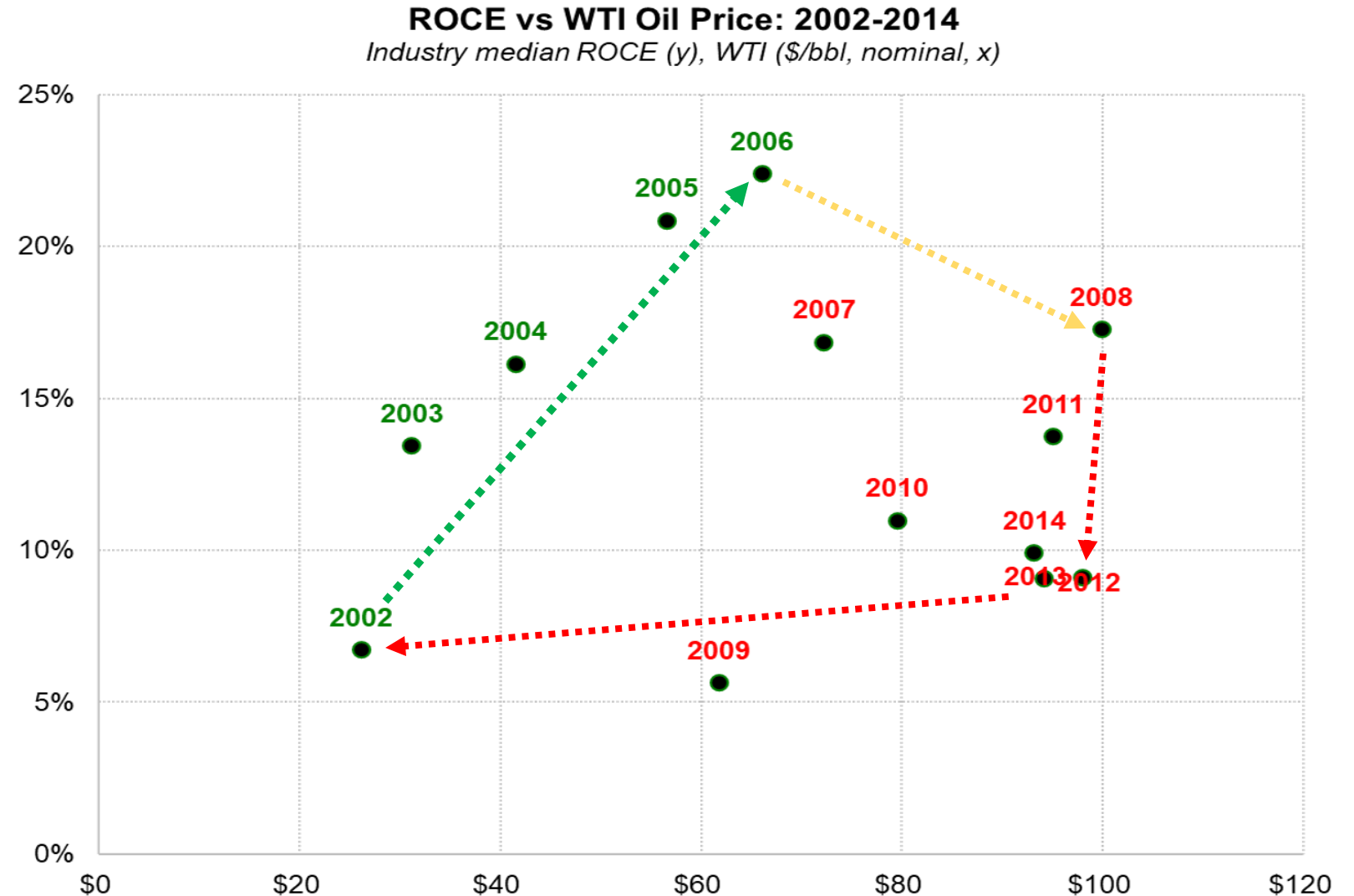


“Quadrilateral of Death”: To Be Avoided

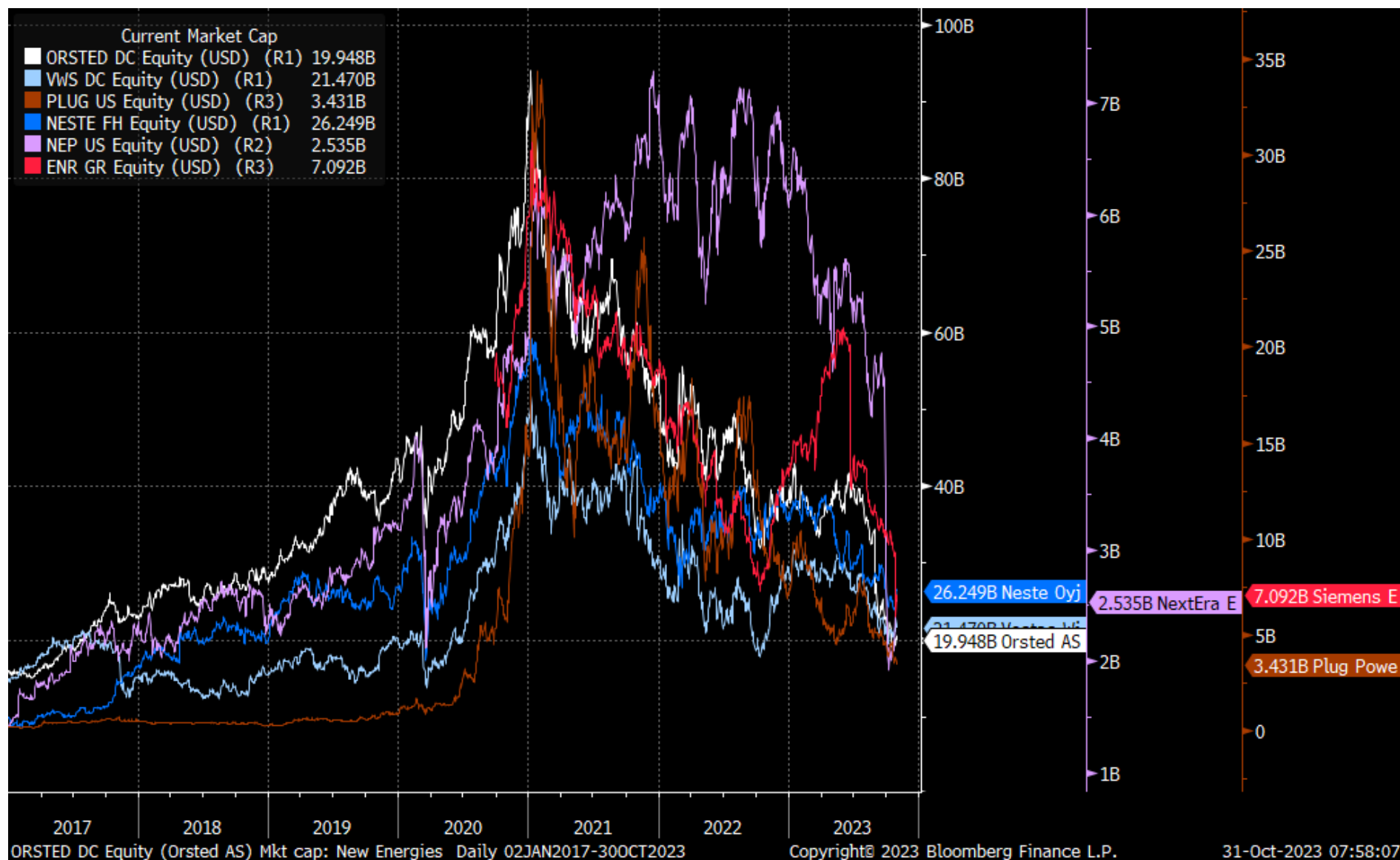
(1) 2002-2006: Oil price and ROCE both up sharply

(2) 2008 vs 2006:
Oil +\$35, ROCE -5%

(3) 2012 vs 2002:
Oil up 4X, ROCE flat!!!



Leading New Energies Equities Collapsing



US Super Majors Outperforming Europeans



Capital Allocation Uncertainty

- **TRANSITION:** Long-term oil demand uncertainty
- **RECESSION:** Near-term GDP concerns in China, EU, USA
- **COMMODITY:** Super Vol vs super-cycle
- **CAPITAL MARKETS:** “Don’t waste my money, this time!”
leading to no growth, dividends/stock buyback focus
- **ESG:** Glasgow Financial Alliance for Net Zero is ***biggest threat***
to healthy energy markets and funding access
- **M&A:** Survive via size, scale, and extending asset duration

Let's Fast Forward 10 Years

1 Hydrocarbon demand has grown (including coal!) as developing countries place a premium on energy security and economic growth

2 Oil and natural gas are sold on a certified, methane-free basis. **Scope 1 oil and natural gas emissions** are on-track to be eliminated

3 Reduced U.S. oil and gas growth opportunities but increased non-North American activity / investment

4 Energy always surprises in new directions and the intensity with which the world is pursuing new alternatives almost **ensures hard to predict technological breakthroughs**

5 Transition mineral extraction gets cleaner but is a bottleneck and costs matter to consumers (EVs showing signs of market share plateau)

6 Power demand growth and changing mix drive **resilience and cost issues**. New solar & wind construction required to have a storage solution



Energy companies with flexibility, scale & strong leadership will thrive

7 New nuclear technologies make first deployments (including in industrial applications), setting up future meaningful increased nuclear contribution to the energy mix

8 Hydrogen (and derivatives) as a super-fuel is still many years away

9 Significant improvements are made in **circular economy applications** - we get much better at using waste streams to generate energy while decarbonizing

10 The IRA and European subsidy programs spawn new technologies but create unintended consequences, leading to overproduction of unnecessary assets

11 Structurally higher energy costs for consumers is a drag on developed world economic growth

12 Countries and regions with good economic and energy policy choices will thrive, namely India and the Middle East