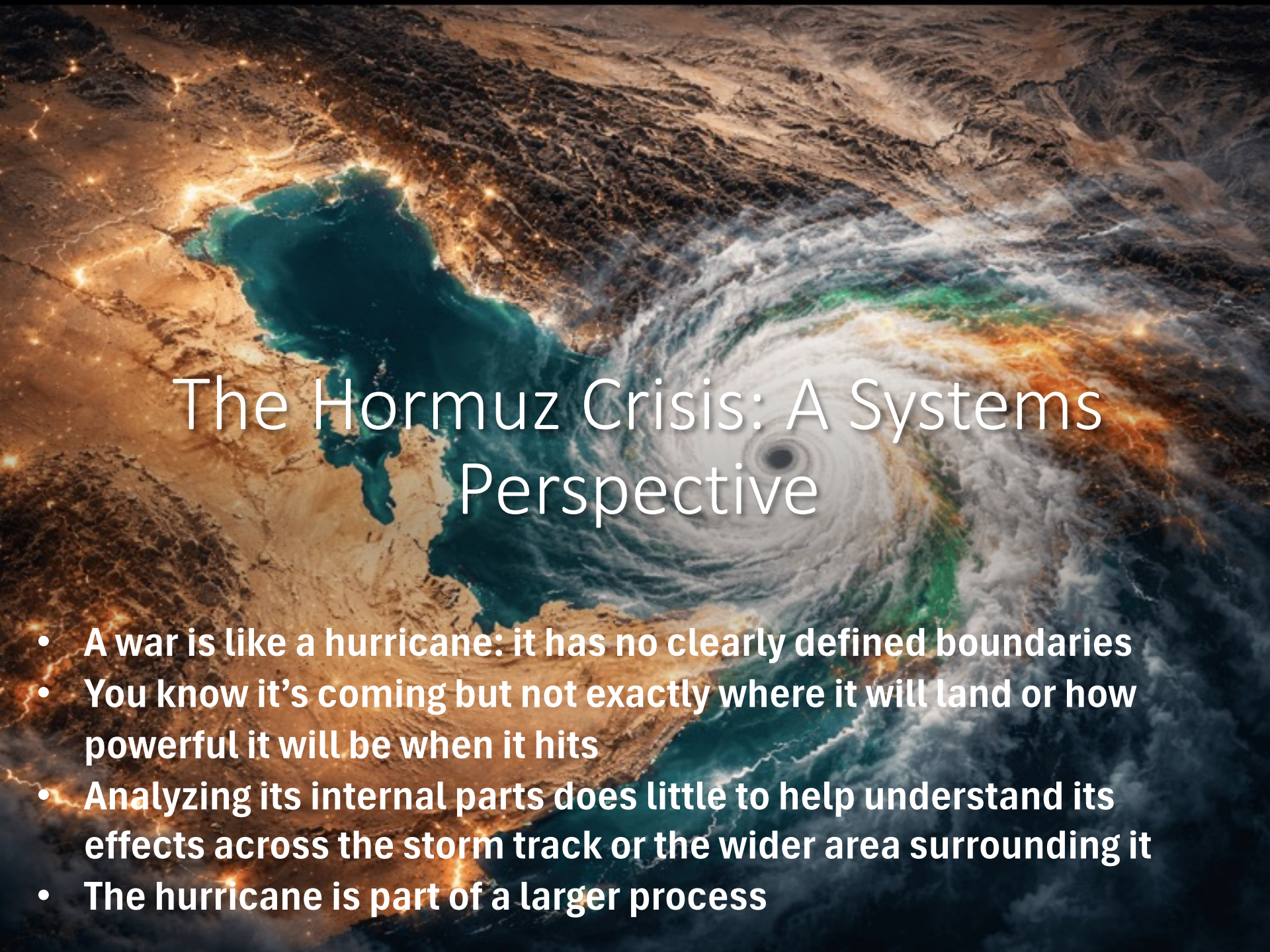


The Hormuz Crisis: A Systems Perspective

- A war is like a hurricane: it has no clearly defined boundaries
- You know it's coming but not exactly where it will land or how powerful it will be when it hits
- Analyzing its internal parts does little to help understand its effects across the storm track or the wider area surrounding it
- The hurricane is part of a larger process

The Iran War: A World-Changing Event

- ~20 mb/d (~20% of global supply) disrupted → systemic shock
- Oil = lifeblood; chokepoint risk (Hormuz) long known, now realized
- Not just military: insurance, crews, logistics → flows slow; ~2 months to normalize even if conflict ends
- Damage extends beyond barrels → loss of confidence, shifting trade flows, higher strategic stockpiles
- System unlikely to revert; diversification, electrification, efficiency accelerate
- Knock-on effects: fertilizer (gas/LNG dependent), food yields, and agriculture under pressure
- Diesel tightens quickly → impacts transport, mining, farming, supply chains
- Water risk: desalination dependence in Gulf → potential humanitarian crises
- Bottom line: not just energy disruption— **whole-system stress on the global economy**

The most consequential military, geopolitical and economic blunder in modern history

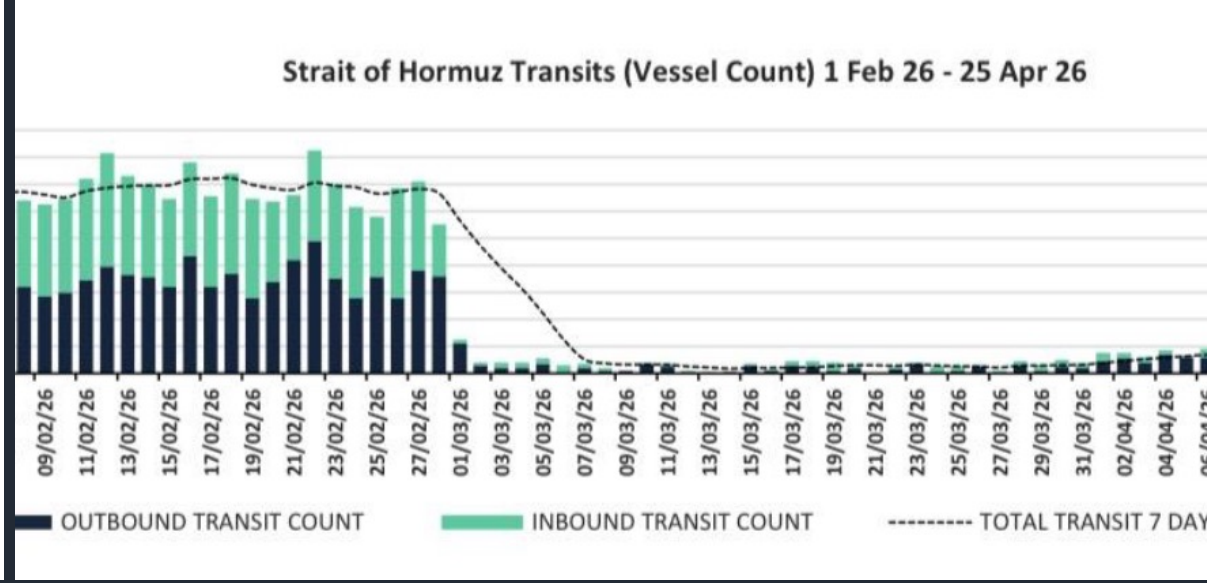
Game of Drones: The New World Disorder

- U.S. has clear objectives (missiles, navy, nuclear, proxies, oil flows)—but lacks a coherent “how”
- Industrial firepower vs. Iran’s asymmetric model: cheap drones, missiles, fast boats
- Result: war of attrition with **disproportionate costs** on the U.S. side
- Drone warfare enables **scalable disruption**—low cost, decentralized, widely accessible
- Power shifts: smaller actors can impose major costs; control and stability erode
- Iran war didn’t create this—it exposed a **structural shift**
- Disorder isn’t temporary—it’s becoming the system

“Before entering into a war you really need to understand the nature of the war. And I’ve got a strong sense that the Americans don’t understand the nature of the war.”

Steve Jermy, retired Royal Navy Commodore

Shipping Overview



- Shipping remains constrained but stable across the region.
- Hormuz traffic is reduced and re-routed with vessels favoring Omani waters over the main channel.
- No recent attacks but persistent mine risk and intermittent navigation interference.
- Naval presence and enforcement in the Gulf of Oman reinforces a cautious operating environment.
- Bab el Mandeb and Gulf of Aden steady despite ongoing rhetoric.
- This is not a shutdown—but a **managed, risk-adjusted flow system** operating below normal capacity.

The U.S. Blockade is marginally effective

- The U.S. blockade is **partially effective but far from decisive**.
- It has increased friction—raising costs, slowing flows, and deterring some shipping—but has not stopped Iranian exports.
- Workarounds via coastal routing, shadow fleets, and legal transit corridors continue to move barrels.
- The result is a **degradation of supply efficiency, not a shutdown**.
- As a pressure tool, it is incremental and slow-acting, and materially weaker than the systemic impact of broader chokepoint disruption in Hormuz itself.

Current state of the Iran–Gulf conflict

- Mainstream: flows normalize when tensions ease
- Reality: disruption is already here
- Production and shipping have been interrupted
- These are not on/off systems—they don’t restart cleanly
- Time has already been lost
- Even after shipping resumes, supply lags by ~2 months
- ~1 billion barrels of production is gone
- Lost supply does not come back
- This is cumulative, not temporary
- The system impact is large and persistent

- Flows are more important than production, for now
- The outcome of the war is uncertain; its global impact is more certain--it’s more about how bad than whether

This isn’t a price problem—it’s a physical shortage. And it’s a rate problem.

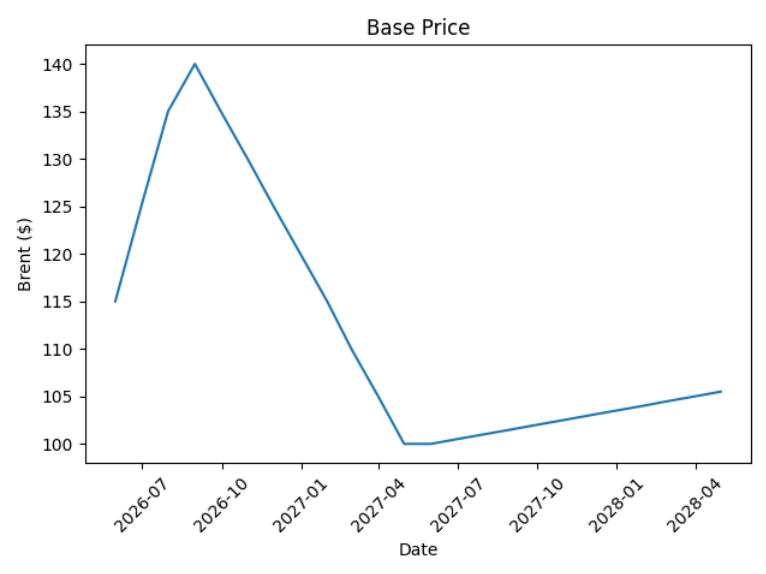
- **No historical precedent** for a sudden loss of ~11–13 million b/d of oil supply.
- Market-driven demand destruction has never approached ~12% of global demand
- Even the 2008 financial crisis saw far smaller demand declines
- The 1980–83 demand drop (~10%) unfolded over 3 years—not instantly
- If Hormuz stays disrupted, the market doesn’t clear with higher prices; it breaks.
- There’s no model for losing ~12% of global supply overnight. Rebalancing only happens through forced demand destruction.

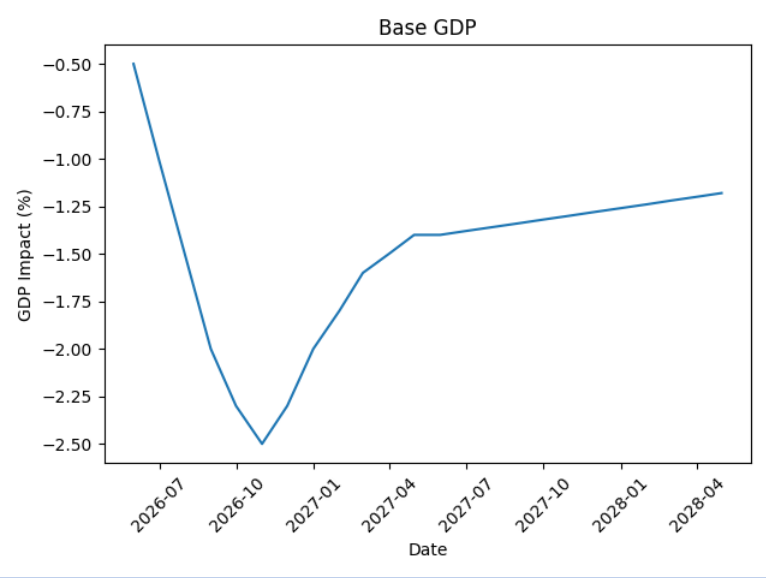
The rate of global supply loss is 99x greater than during the Iranian Revolution oil shock

	Global Supply (mmb/d)	Supply Lost (mmb/d)	Share of Global Supply	Months	Days	Daily Supply Loss (mmb/d)	Daily Supply Loss (%)
1978-79 Iranian Revolution	64	5.25	8%	6.0	182	0.03	0.04%
2026 Iran War	101	20	20%	0.2	7	2.86	2.83%
						99x	63x

Base Oil Case (50%)

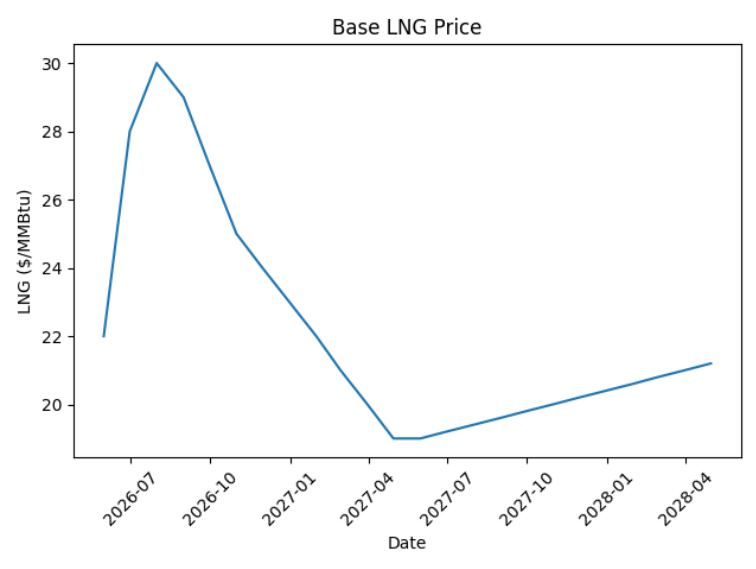
- Hormuz transit normalizes by December
- Prolonged disruption of flows, not just production
- Inventory draws accelerate thru 2026
- Brent $110-$140 with sustained volatility & structural risk premium
- Demand destruction of 1-2 mmb/d by 2027; prices fall into the low $100s
- Global GDP falls 1.5-2.5% below baseline
- Asia hit hardest & Europe industrial slowdown accelerates
- US slows materially
- Key takeaway: flows are constrained long enough that no cyclical reset occurs, : supply remains tight but the economic system balances at a lower level of energy throughput

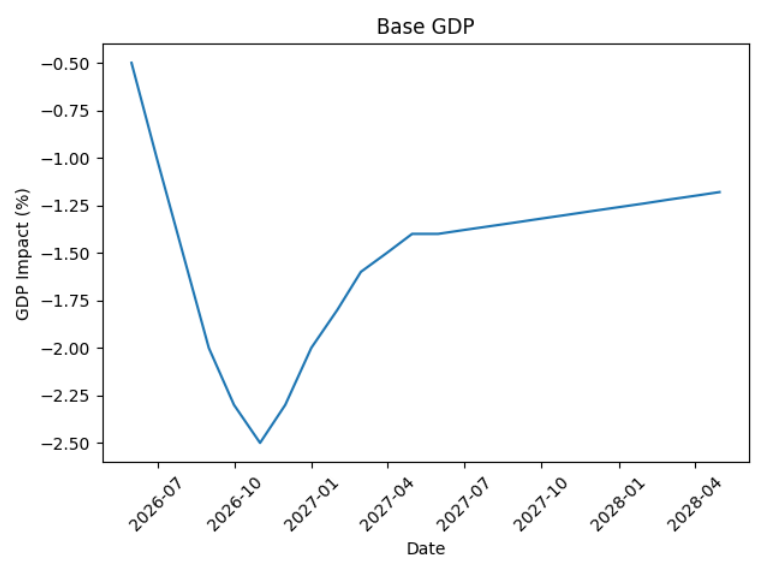




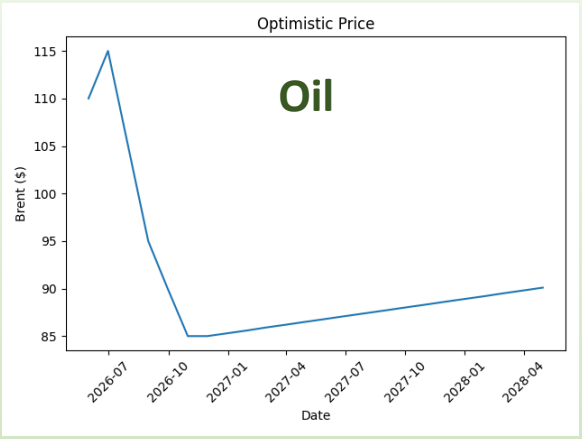
Base LNG Case (50%)

- Flows normalize by December but the system remains constrained
- Qatar exports are disrupted long enough to tighten global LNG balances
- Shipping stretched—longer routes reduce effective cargo availability
- Europe and Asia compete for marginal supply, driving regional price divergence ($18–$30/MMBtu) but falling to the $20s later
- Industrial demand destruction becomes visible: fertilizers, chemicals, and heavy industry cut output
- Coal and fuel substitution increases, but offers limited relief
- Power systems are strained in LNG-dependent regions
- Global GDP falls ~1–2% below baseline. Europe most exposed followed by Japan, Korea & India
- LNG interacts with oil to reduce GDP 2-3%

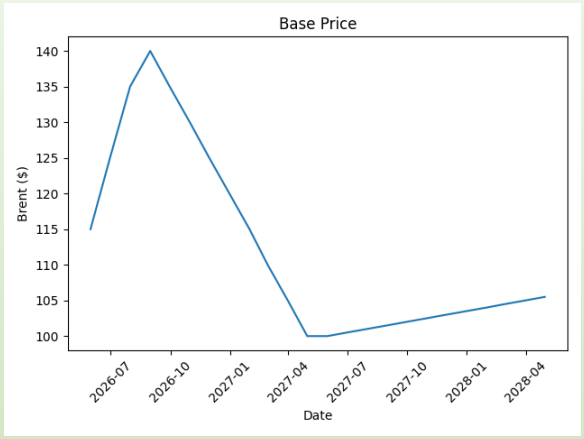




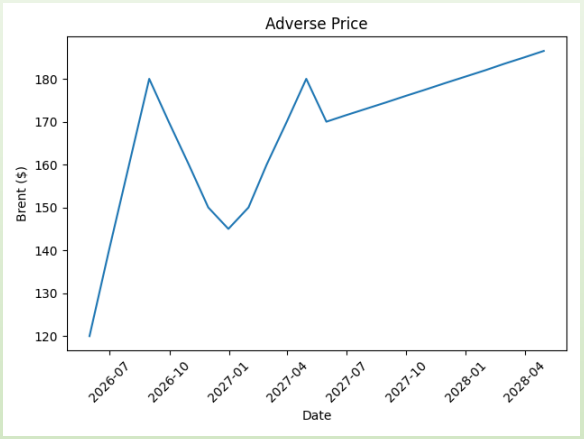
Scenario Comparisons



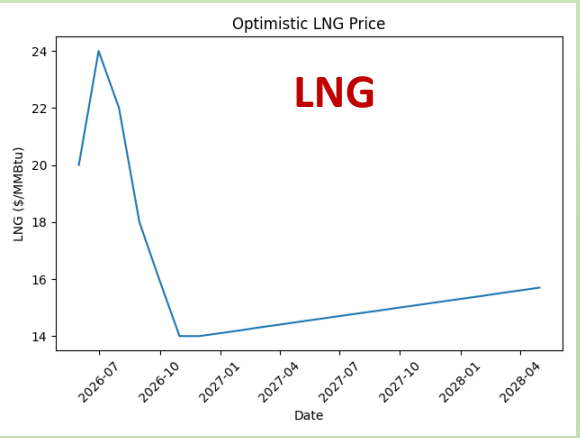
Optimistic: transient shock



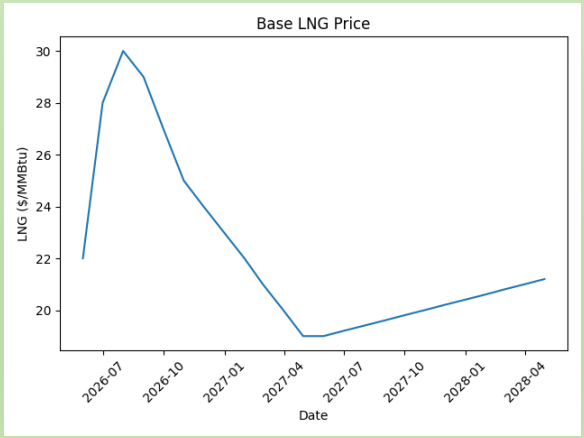
Base: structural tightening



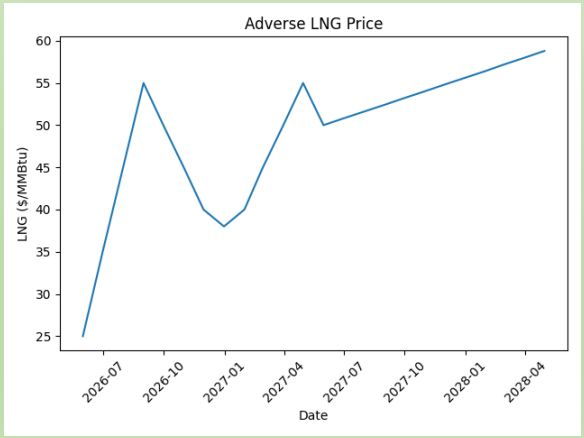
Adverse: system crisis



Optimistic: transient disruption



Base: persistent tightness



Adverse: structural scarcity

Hormuz is not an energy shock. It's a system shock.

- Losing ~20% of global oil and gas is like losing 20% of blood supply—everything is affected
- Diesel underpins global trade: shipping, trucking, rail, agriculture, construction, and infrastructure
- Jet fuel and gasoline power mobility: aviation, tourism, business travel, and daily transport
- Natural gas is foundational: electricity, heating, manufacturing, data centers, plastics, and industry
- It is also the feedstock for nitrogen fertilizers (ammonia, urea)
- Fertilizers determine food supply: crop yields, livestock feed, and rural economies
- Naphtha feeds petrochemicals: plastics, solvents, fertilizers, and agrochemicals
- Sulfuric acid is essential for mining and mineral processing—especially copper
- Helium is irreplaceable: semiconductors, AI hardware, aerospace, defense, and medical systems
- This is not just higher prices—it is stress across the entire economic system

THE HORMUZ CRISIS: A SYSTEMIC SHOCK TO THE GLOBAL ECONOMY

BEYOND PRICES. BEYOND INFLATION. EVERYTHING.

ONE CHOKEPOINT. GLOBAL IMPACT.

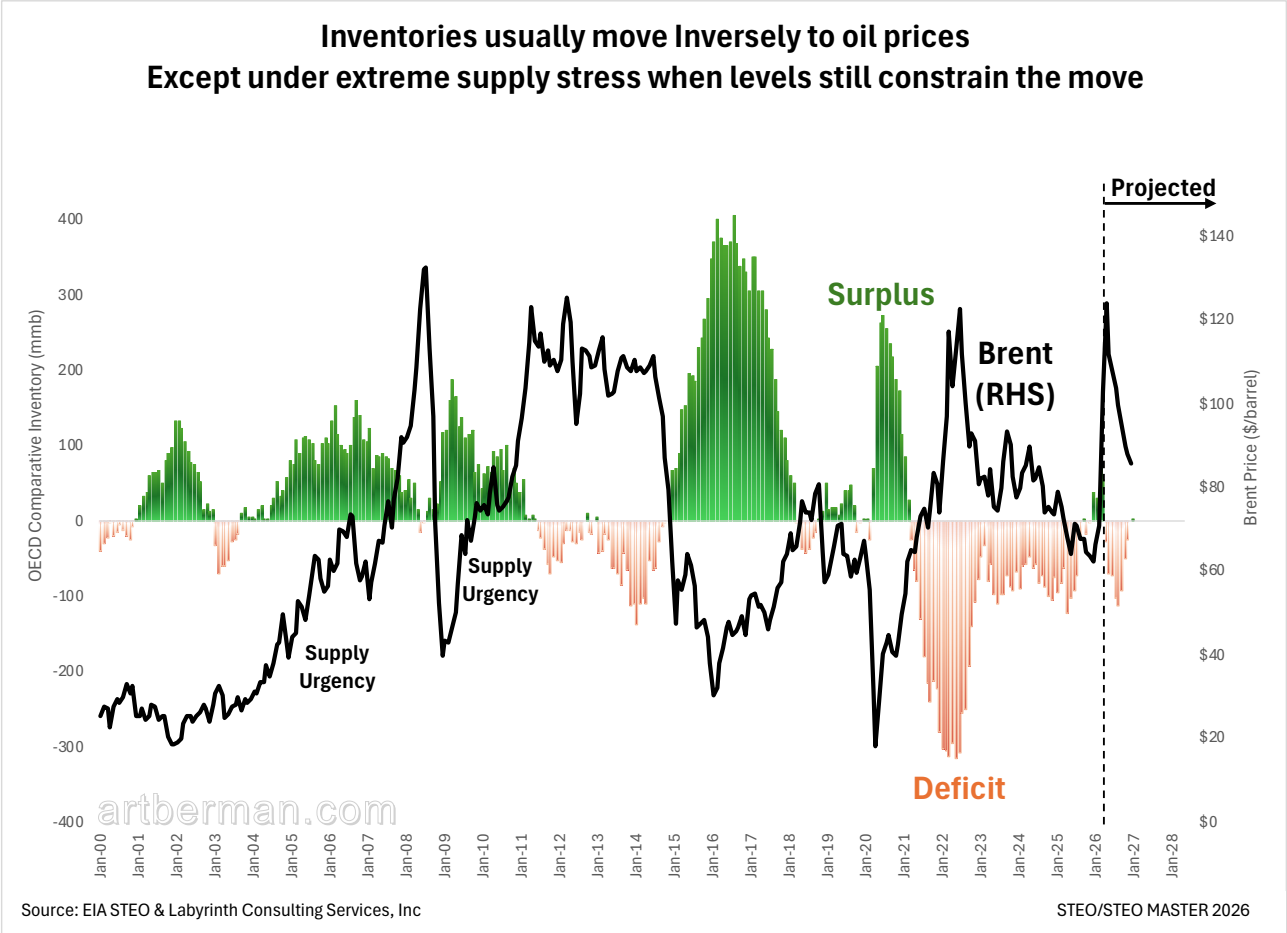
Disruption in the Strait of Hormuz doesn't just raise prices — it threatens the systems we all depend on.

ENERGY Security | ECONOMIC Stability | FOOD Supply | INDUSTRIAL Production | TECHNOLOGICAL Innovation | NATIONAL Security | HUMAN Welfare

HORMUZ ISN'T JUST AN OIL ROUTE. IT'S A LIFELINE.

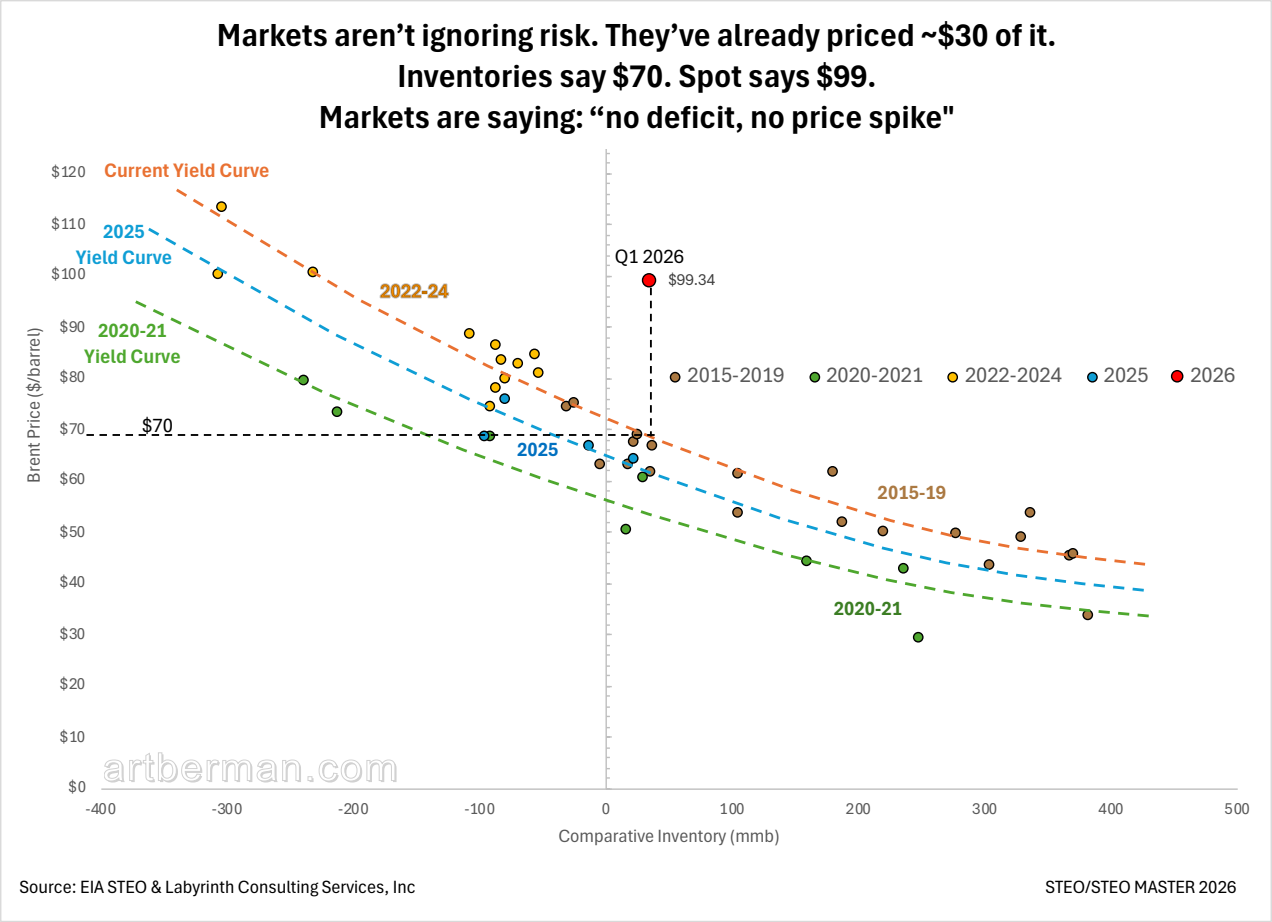
SECURE THE STRAIT. SECURE OUR FUTURE.

Comparative inventory is a key calibration for oil price movements



Financial markets and physical markets are telling us different aspects of the same thing--it's not that one is right and the other is wrong.

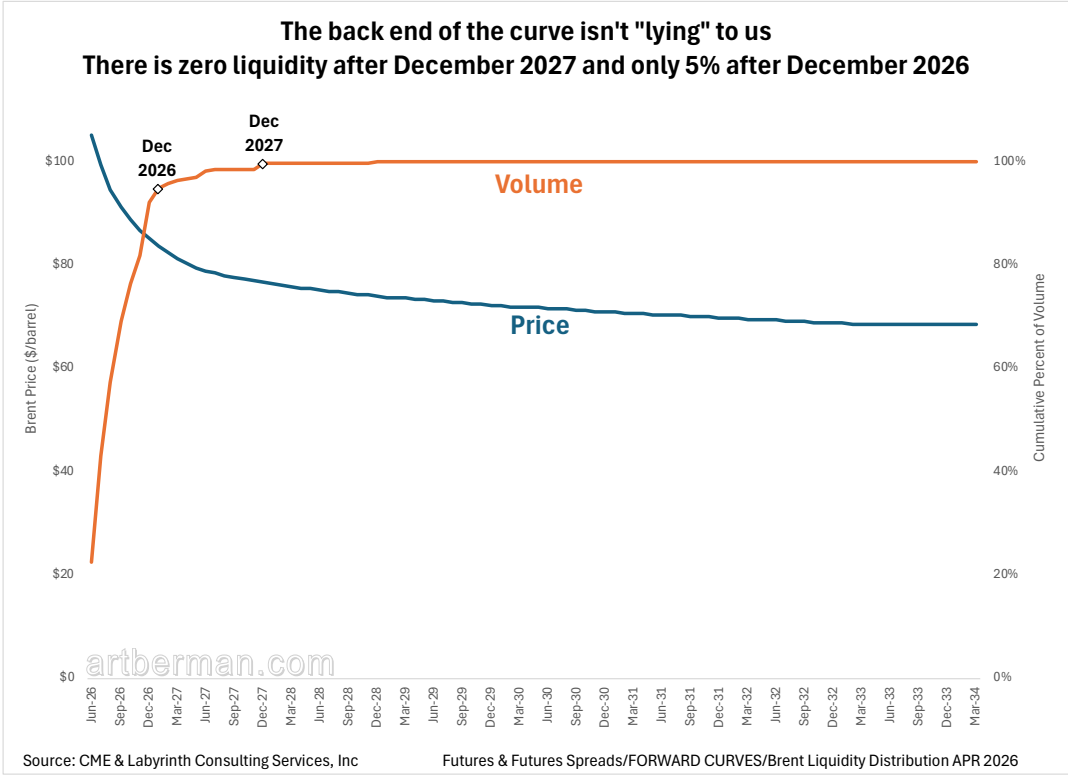
Markets aren't ignoring risk: they're pricing it within comparative inventory constraints



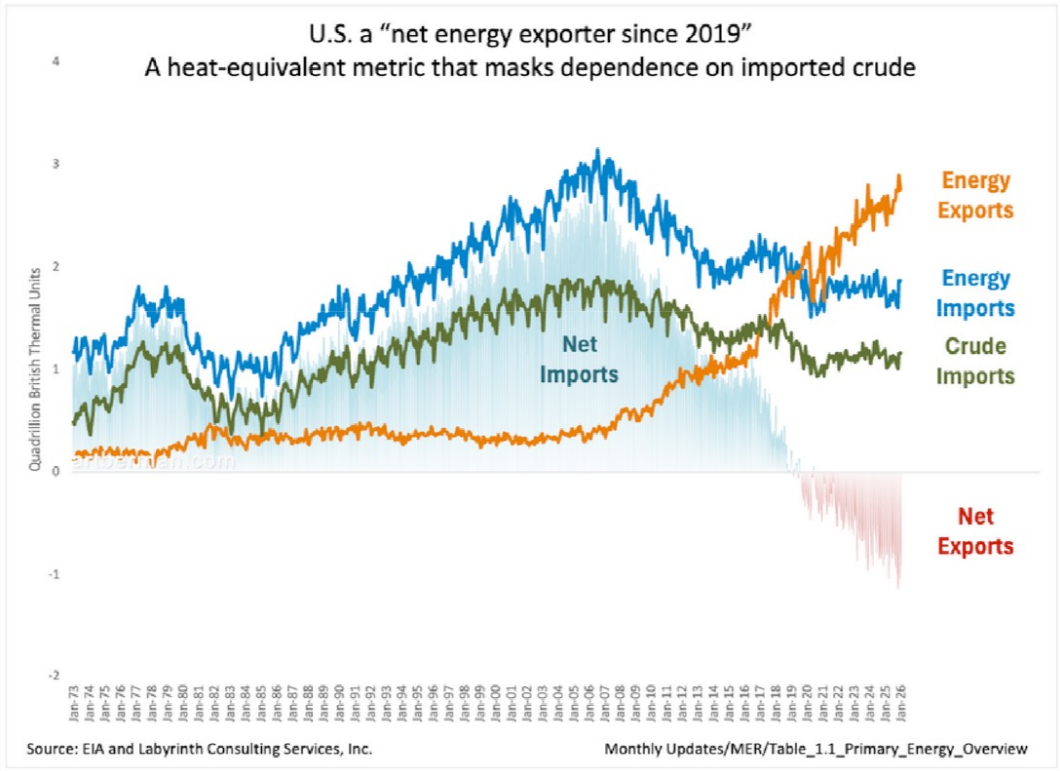
Just because we may feel the risk is greater than financial markets reflect doesn't mean that the markets are wrong. We have to understand what they measure.

Financial markets evaluate the very near term. It’s not right or wrong. That’s what they do. There’s no money in the forward curve out more than 6 months---that’s what people miss.

60% of forward curve liquidity is in the first 3 months



The U.S. is a net exporter of energy: statistically true and deeply misleading



This lumps oil, refined products, gas, coal, & electricity into a single heat-equivalent metric

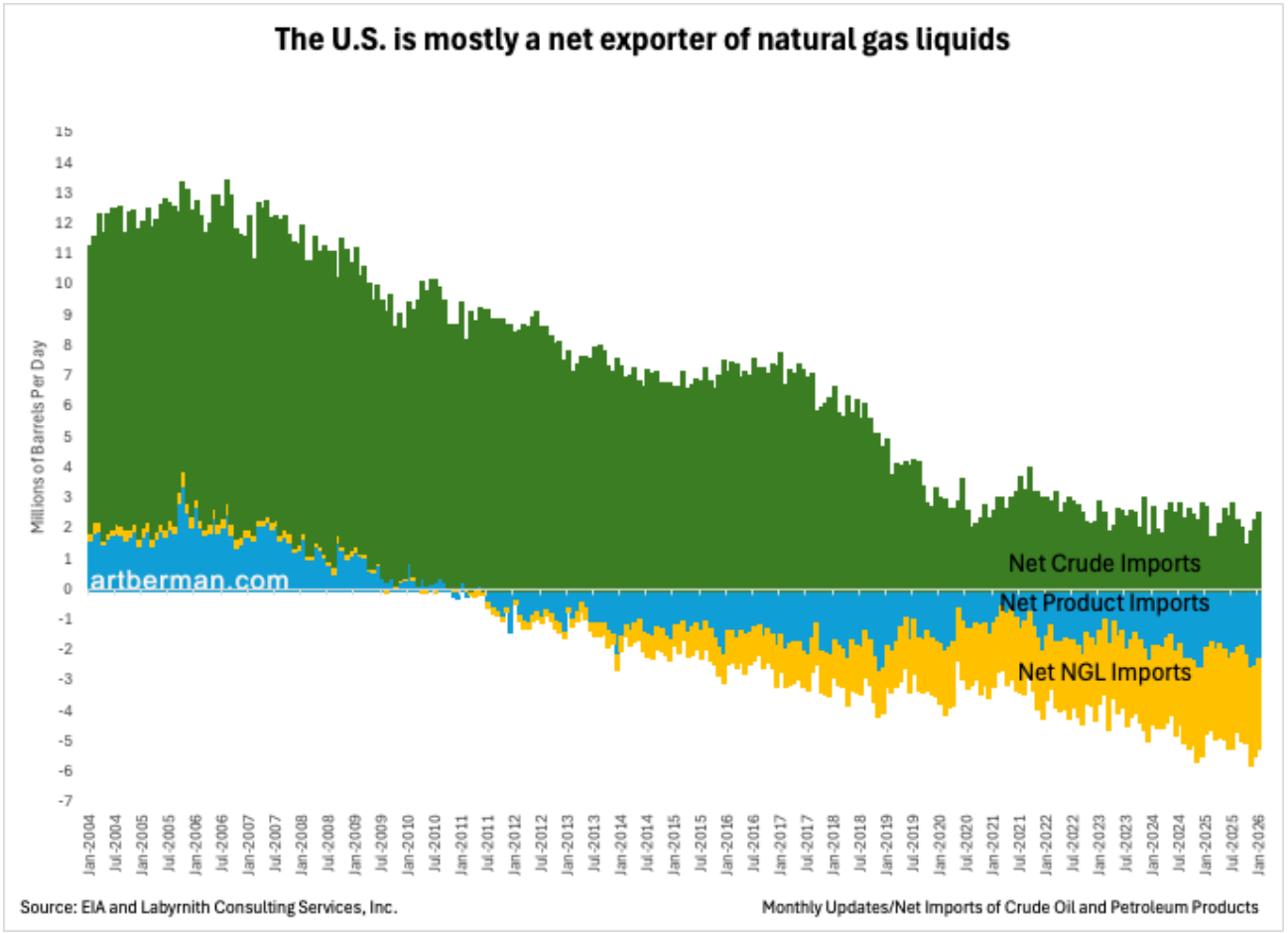
It ignores varying importance & end uses

It ignores the reality that the U.S. is heavily dependent on crude oil imports

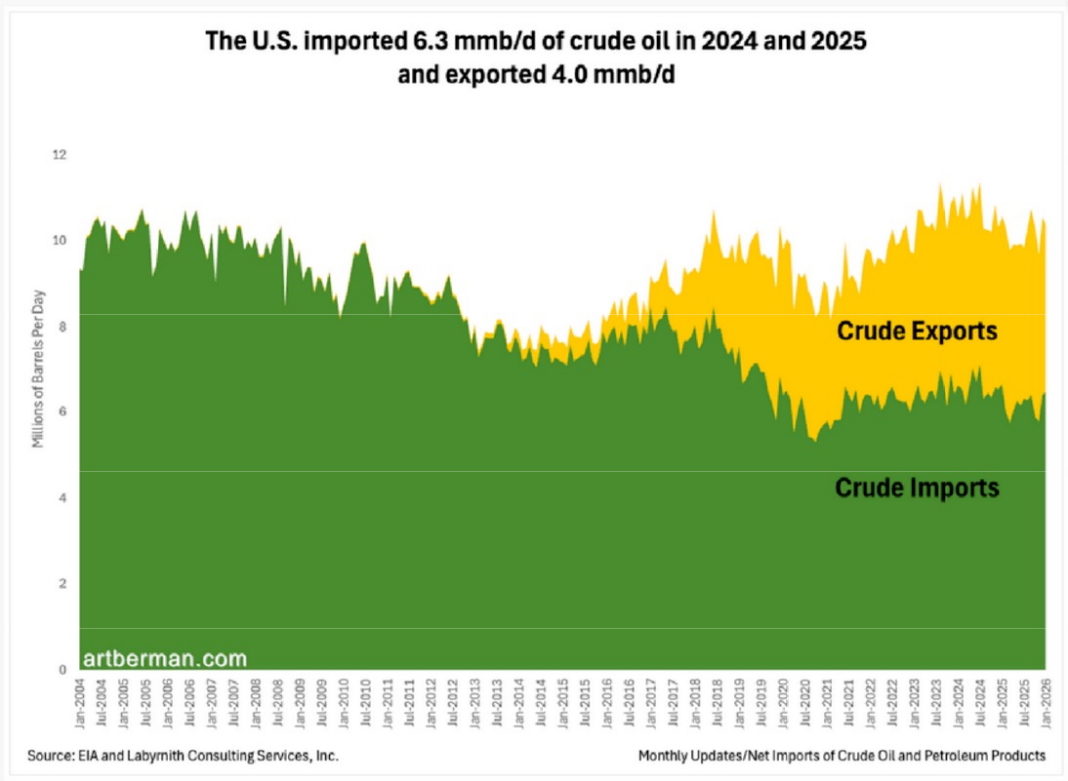
It ignores that oil is not just another energy source: it is the economy in many ways.

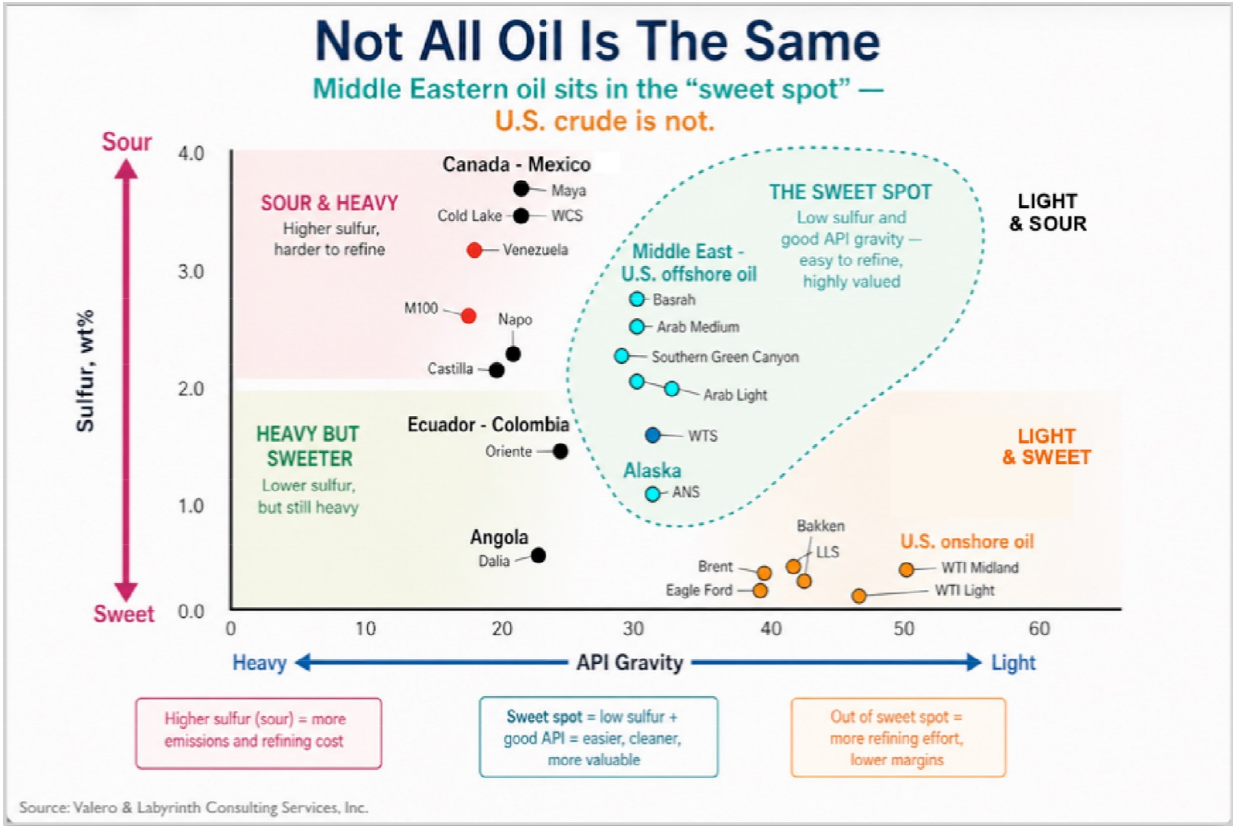
When it slows, everything slows, bends or breaks depending on rate & magnitude

The U.S. is not a net exporter of oil: Net exports are NGLs and refined products



This is the reality that the “net exporter” narrative conceals

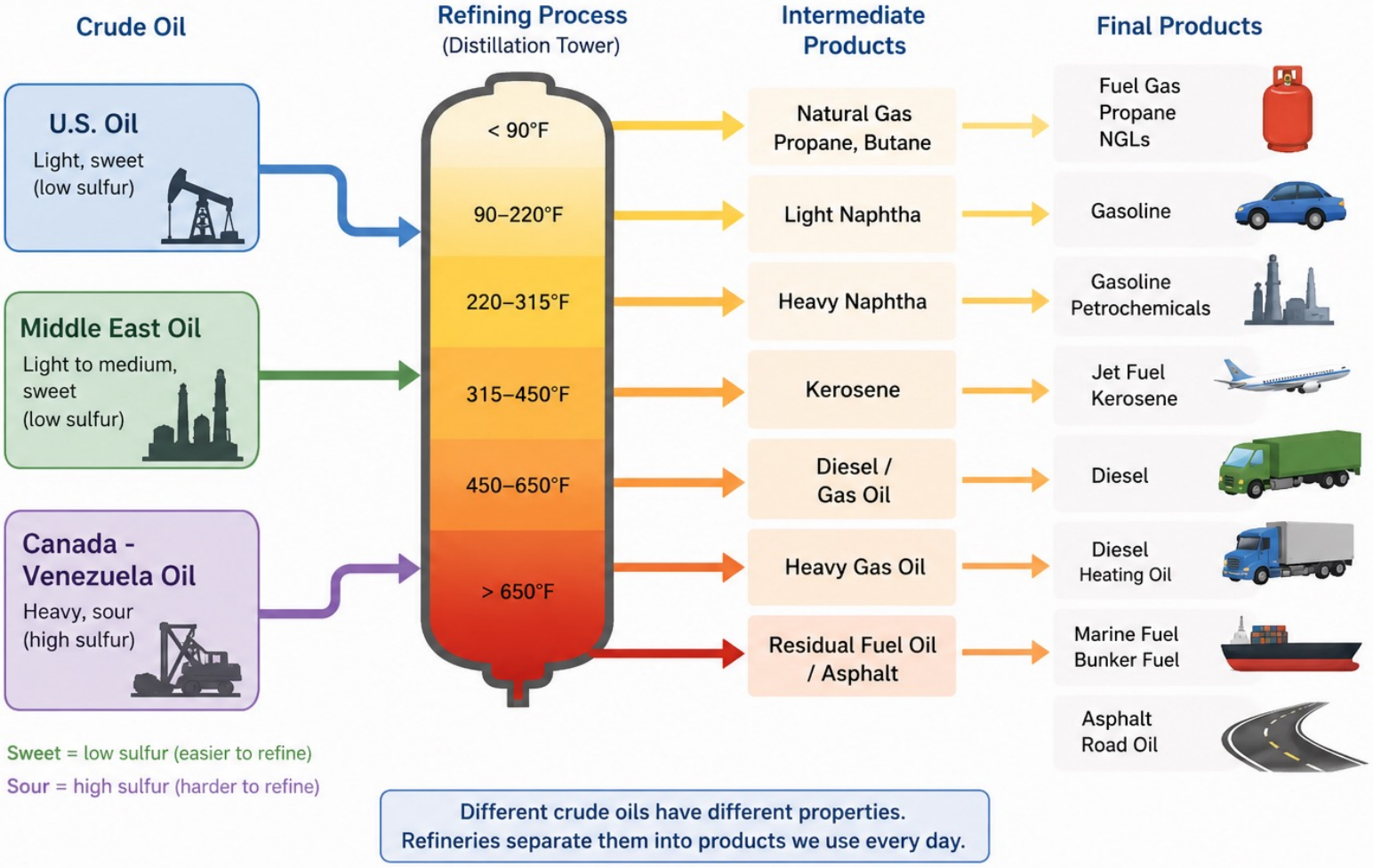




Not All Oil Is the Same

- Crude oil varies by weight (API gravity)
- Refineries are designed for specific crude slates
- Most refineries need medium–heavy crude
- U.S. oil is mostly too light
- Venezuela-Mexico oil is too heavy
- Persian Gulf oil is "just right" meaning it's refinery-ready

How Different Crude Oils Become Fuels



Sweet = low sulfur (easier to refine)

Sour = high sulfur (harder to refine)

Different crude oils have different properties.
Refineries separate them into products we use every day.

Source: Valero

2 The U.S. Produces Oil—But Not the Right Kind

U.S. SHALE OIL (LIGHT, SWEET)

High API Gravity
Low Sulfur

YIELDS MORE GASOLINE & LIGHT PRODUCTS

Less diesel per barrel

- U.S. production is dominated by light shale oil
- Refineries are optimized for heavier crude
- Light oil yields too much gasoline, not enough diesel
- Blending and upgrading add cost and complexity
- Imports fill the gap in crude quality

IMPORTED CRUDE (HEAVIER)

Lower API Gravity
Higher Sulfur

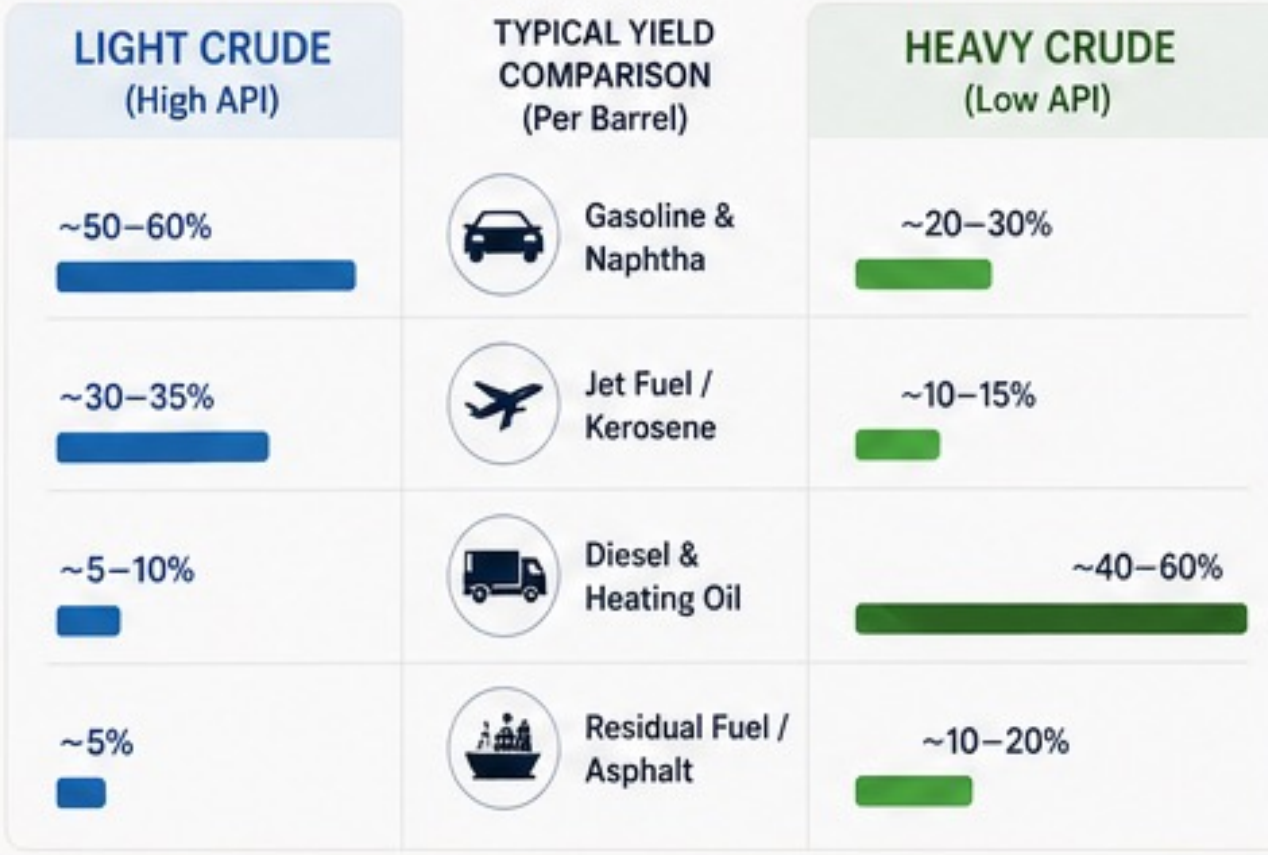
YIELDS MORE DIESEL & DISTILLATES

More diesel per barrel

The constraint isn't volume. It's quality.

3 This Is Really About Diesel

- Diesel powers freight, agriculture, mining, and industry
- Heavy crude yields more diesel and distillates
- Light crude yields more gasoline and light products
- You can't scale diesel output without heavier crude



No diesel, no economy.

4 The Global System Runs on the Right Oil—Not Just More Oil

Different crudes. Different results. One economy that depends on diesel.

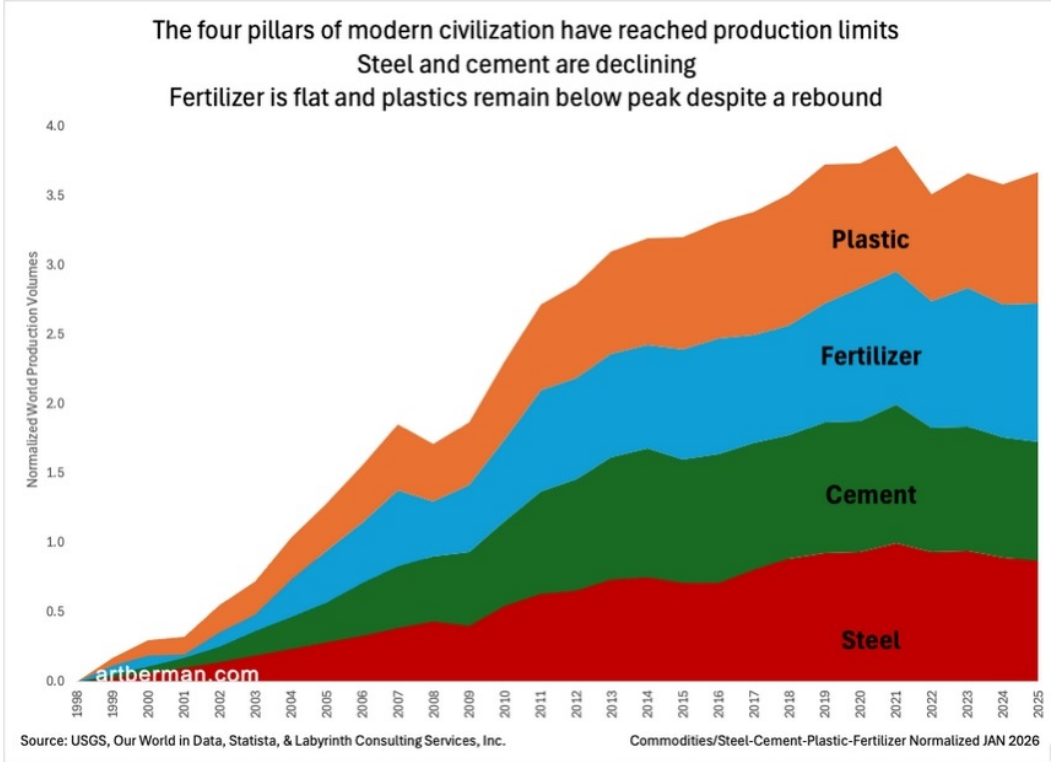
THE REALITY

- Too much light oil means too much gasoline, not enough diesel.
- The sweet spot delivers balanced, efficient yields.
- Heavy crude delivers diesel – but needs more complex refining.

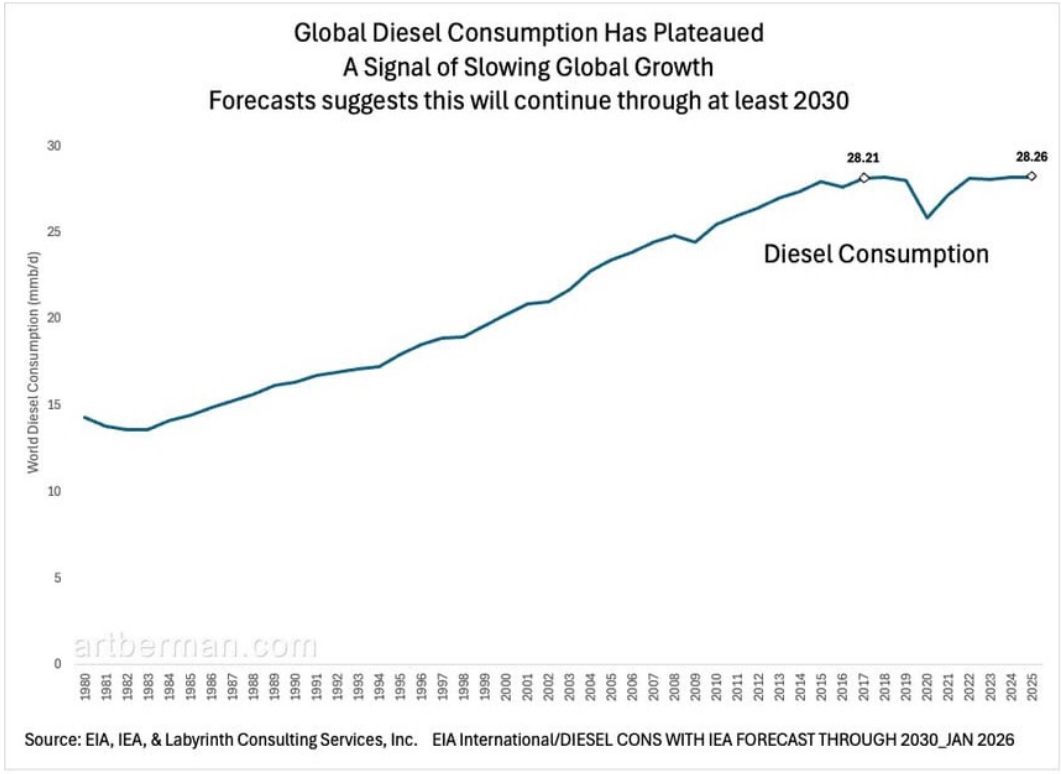
ENERGY MARKETS DON'T RUN ON BARRELS.
THEY RUN ON THE RIGHT BARRELS.

The Race to the Bottom

- Signals of industrial twilight: deindustrialization, grid stress, financial strain, rising conflict
- Growth tied to energy/material throughput—if extraction slows, growth stalls → decline
- Civilization rests on four pillars: cement, steel, plastics, ammonia (food system)
- Steel & cement depend on coal; no scalable substitute at current industrial intensity
- Coal still rising but growth slowing → inconsistent with strong global growth
- Key pillars weakening: steel & cement down, fertilizer flat, plastics below peak → rising systemic risk



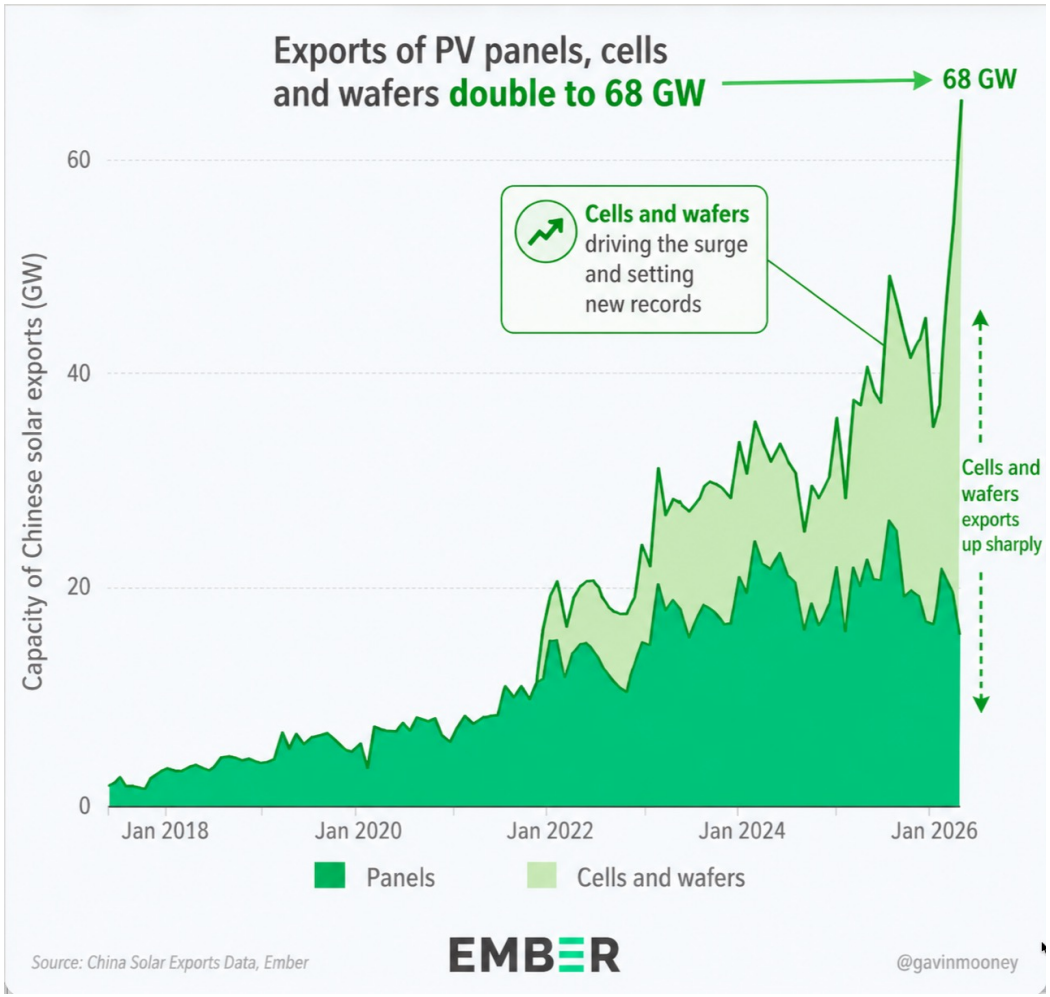
Diesel powers the material economy



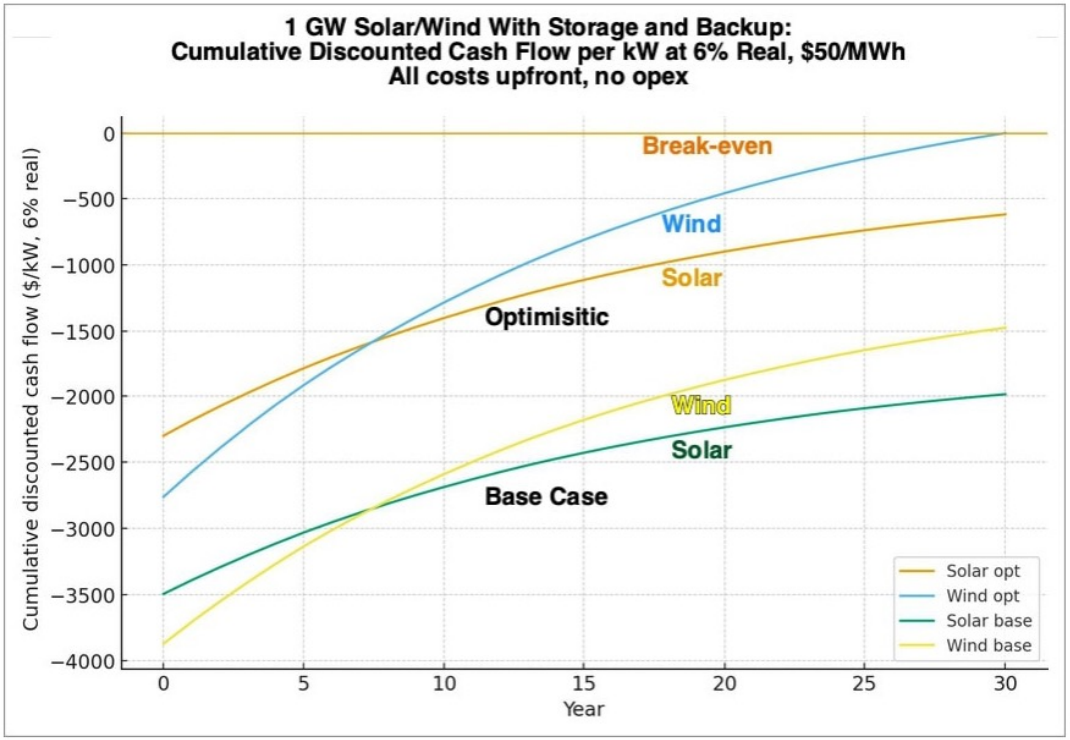
- Energy underpins everything; diesel powers the material economy
- Fuels extraction, agriculture, and global transport (ships, rail, trucks)
- Global diesel demand ~flat since 2017 → key signal of slowing growth
- Forecasts show little change through decade
- Takeaway: material expansion is stalling/end of growth phase

Renewables in The New World Disorder

- Renewables scaled in a unique era of surplus: cheap energy, globalized supply chains, abundant capital
- That surplus is eroding—Covid, Ukraine, and rising costs exposed fragility and weak returns
- Net Zero added complexity and timelines often detached from industrial reality
- Renewables depend on the fossil system (diesel, gas, petrochemicals, shipping) to exist
- Hormuz-type shocks hit both fuel supply and the ability to build alternatives
- System priority shifts from transition to survival: energy security, food, infrastructure
- Renewables persist—but the "golden era" conditions that enabled rapid scaling are fading

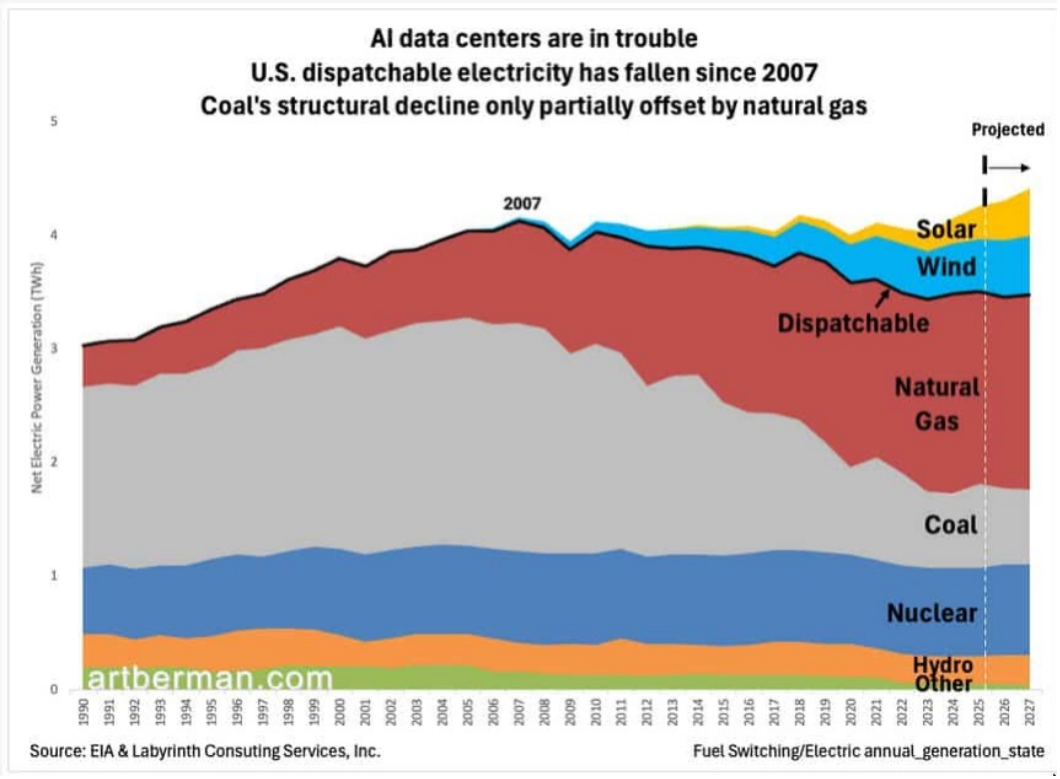


Renewables Were Not Commercial at Scale Before the Iran War



- When wind and solar must carry full system costs, their economics unravel.
- At ~$50/MWh wholesale, wind & solar struggle to achieve positive discounted returns
- Solar fails to reach payout even under optimistic assumptions
- Wind only breakevens on a discounted basis after ~35 years
- Economics deteriorate once they must carry full system costs (storage, backup, grid)
- Long payback + high upfront capex = poor fit for capital-constrained environments
- In fragmented systems, financing and scaling become even harder

Complexity's Revenge: Electric Power and AI



- U.S. has less dispatchable power than mid-2000s → problem for 24/7 AI loads
- Since 2022: only gas + solar up; coal declining, nuclear/hydro flat, wind stalled
- Natural gas = default (dispatchable, scalable, existing infrastructure)
- Alternatives don't fit timeline: nuclear too slow/expensive; renewables need major backup; coal no comeback path
- Gas supply growth likely to slow through 2027 (EIA) → limited near-term relief
- Result: tightening power supply vs surging AI demand = structural constraint
- The interconnection queue is the grid's choke point.

Observations

- This is already a flow disruption, not a headline risk event—shipping, insurance, and behavior are constraining supply now
- Production is secondary; logistics, chokepoints, and risk aversion are the real bottlenecks
- Inventory buffers are finite—once drawn down, they are slow and costly to rebuild
- This is not a price spike but a structurally tighter system with a persistent risk premium
- LNG is not fully flexible—chokepoints and infrastructure limits turn regional shocks into global ones
- Both financial & physical markets are vital indicators. Spreads & differentials tell an important story.
- The framework has shifted—from supply vs demand to flows vs stocks and comparative inventory
- Expect higher volatility, longer adjustment cycles, and less reliable energy flows—not a quick normalization