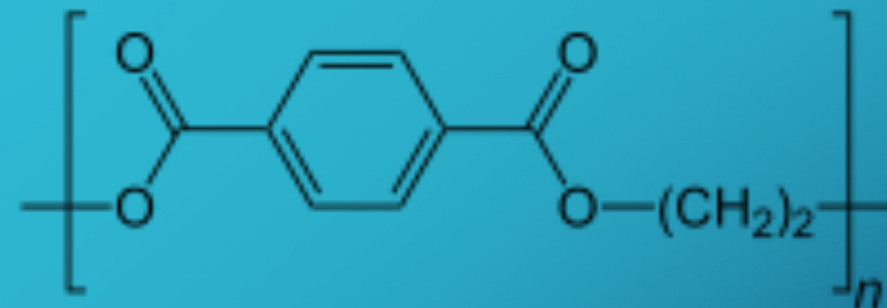


Petcore Europe Annual Conference 2023 - 30 Years Anniversary

1 - 2 February 2023 | Hybrid Event | DoubleTree by Hilton Brussels City



# Energy and Geopolitics the never-ending crisis

Samuel Furfari

Geopolitics and Energy Professor

Senior official of the European Commission retired



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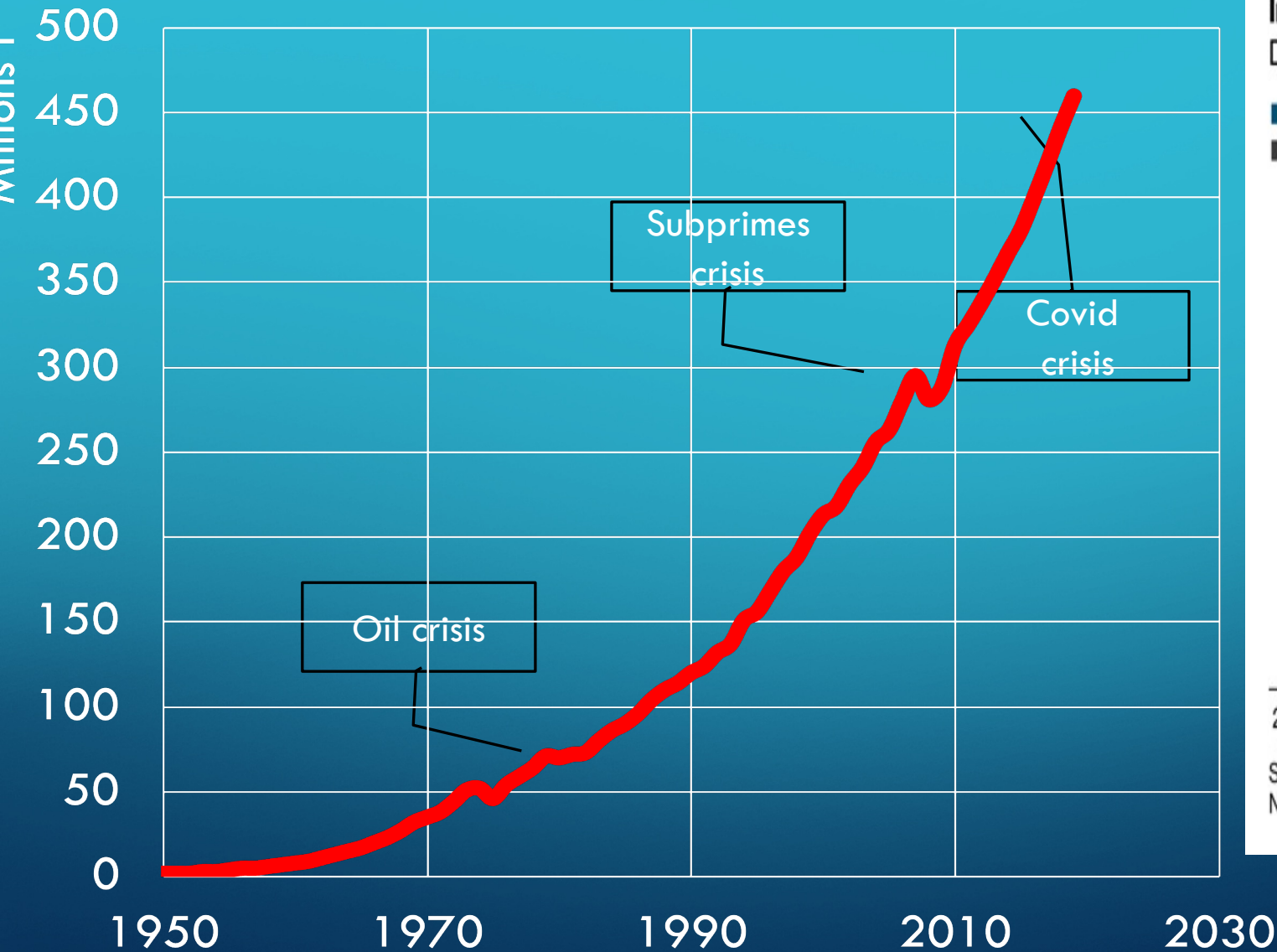
# Mention légale

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# How to prepare for your future ?

## Global plastics production

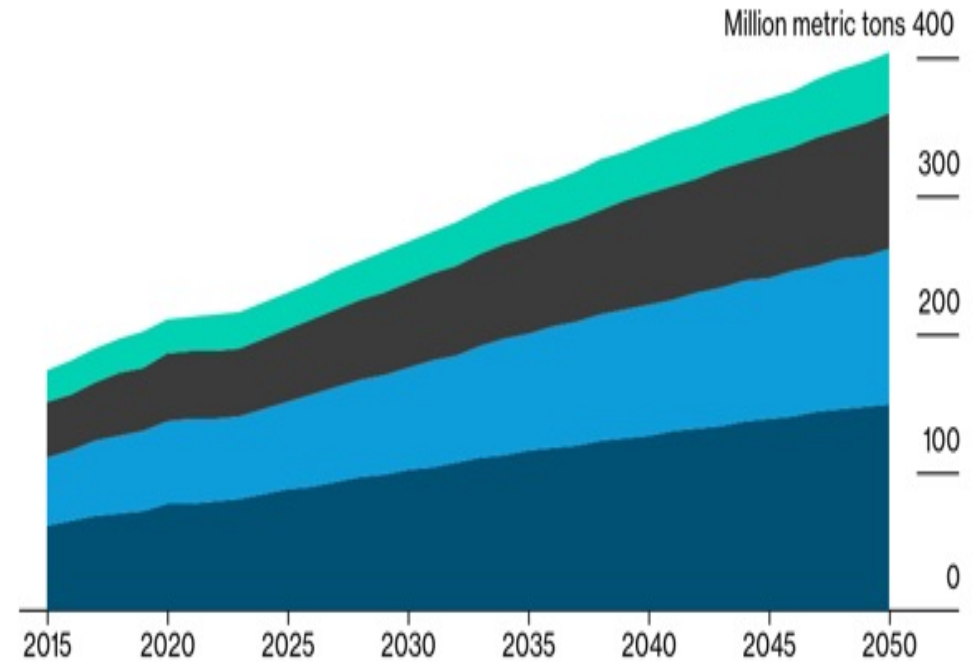


<https://ourworldindata.org/grapher/global-plastics-production>

### Insatiable Appetite

Demand for plastic could almost double by 2050

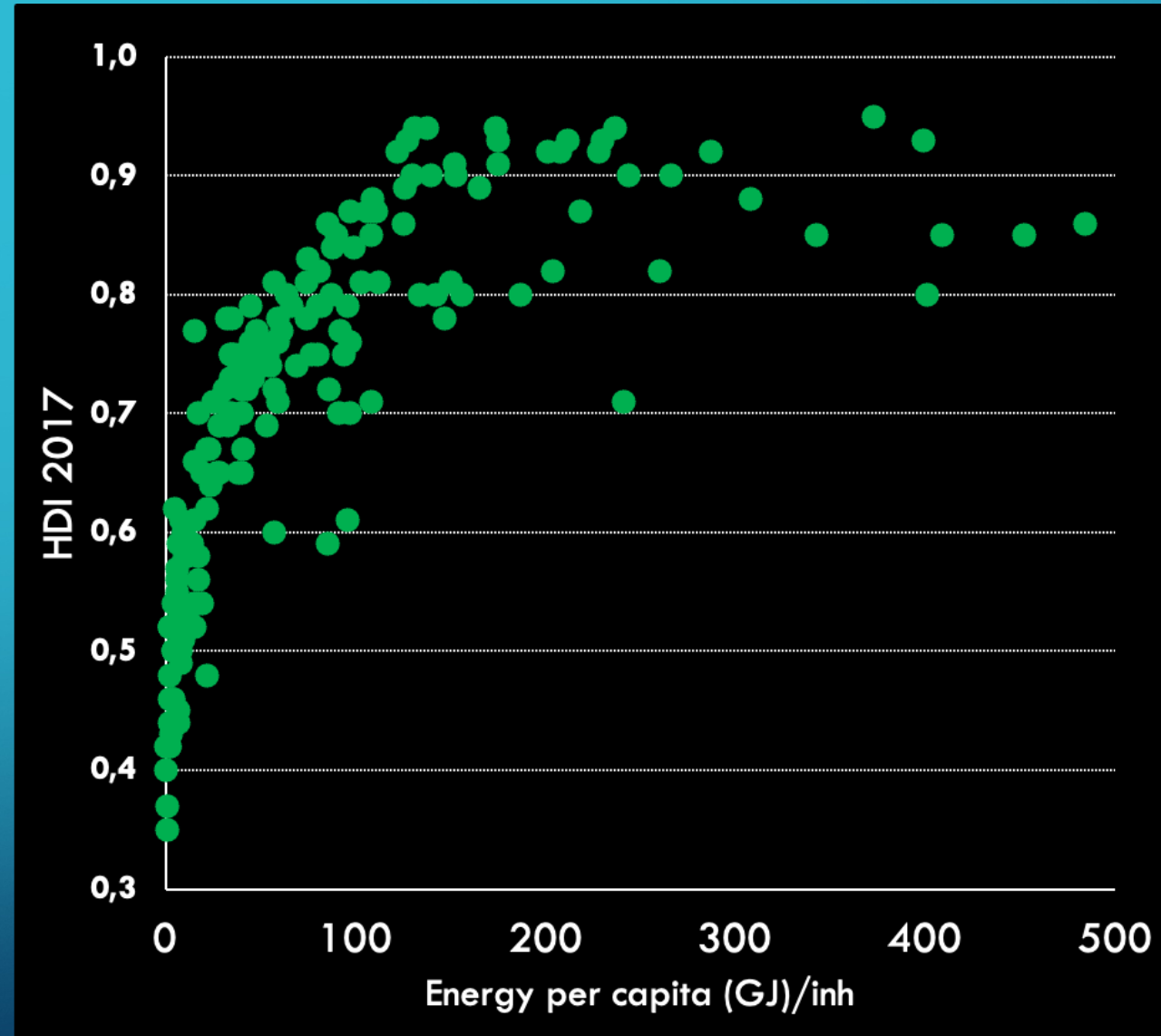
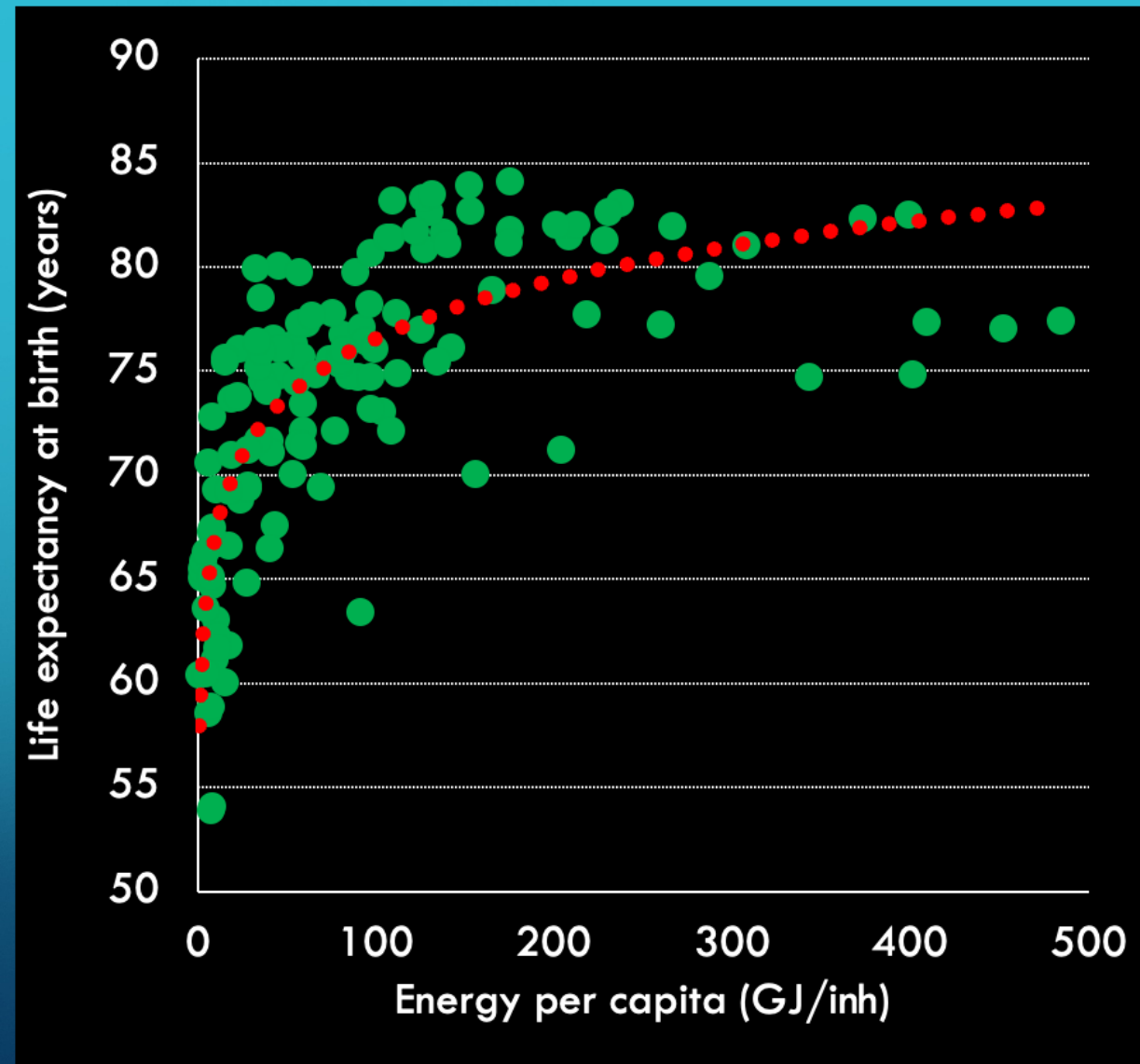
- Polypropylene (PP)
- Low-density polyethylene (LDPE)
- High-density polyethylene (HDPE)
- Polyethylene terephthalate (PET)



Source: BloombergNEF, Nexant.

Note: Shows outlook in BNEF's Economic Transition Scenario.

BloombergNEF

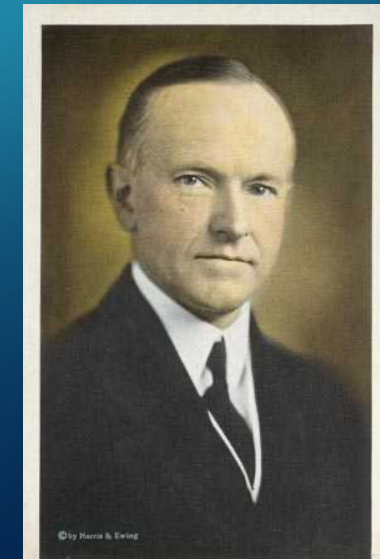




# Non-renewables resources are limited ?

“The energy crisis has not yet overwhelmed us, but it will if we do not act quickly. [...] The most important thing about these proposals is that the alternative may be a national catastrophe. Further delay can affect our strength and our power as a nation. [...] The citizens who insist on driving large, unnecessarily powerful cars must expect to pay more for that luxury”.

Jimmy Carter, "The President's Proposed Energy Policy." 18 April 1977. *Vital Speeches of the Day*, Vol. XXXIII, No. 14, May 1, 1977, pp. 418-420.



# Same fears, same crisis, same methods to solve them...

## Federal Oil Conservation Board –FOCB (Dec 1924)

Secretaries for...

Hearings  
with stakeholders

War

Navy

Interior

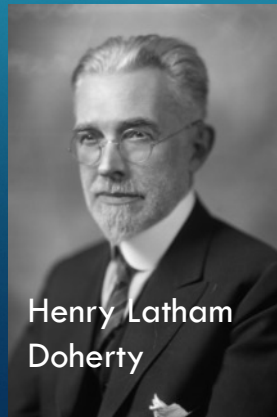
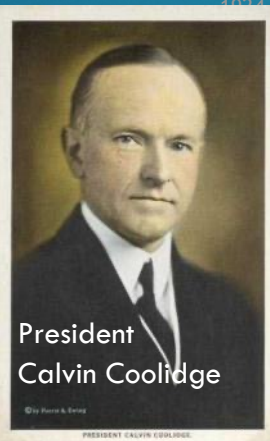
Commerce

Reports  
1926-1933

State  
regulation

Domestic  
production  
quotas

State-federal  
agency to forecast  
demand and  
allocate production  
quotas



# ... same solutions

1924-1930

2000-2023

Economy  
Great depression  
of 1929

Technology  
Discovery of "East  
Texas Oil Field" by  
"Dad" Joiner  
(5 Sep 1930)

Economy  
Subprimes crisis  
Chinese crisis  
Covid crisis  
UA war

Technology  
Shale oil &  
conventional field  
productivity



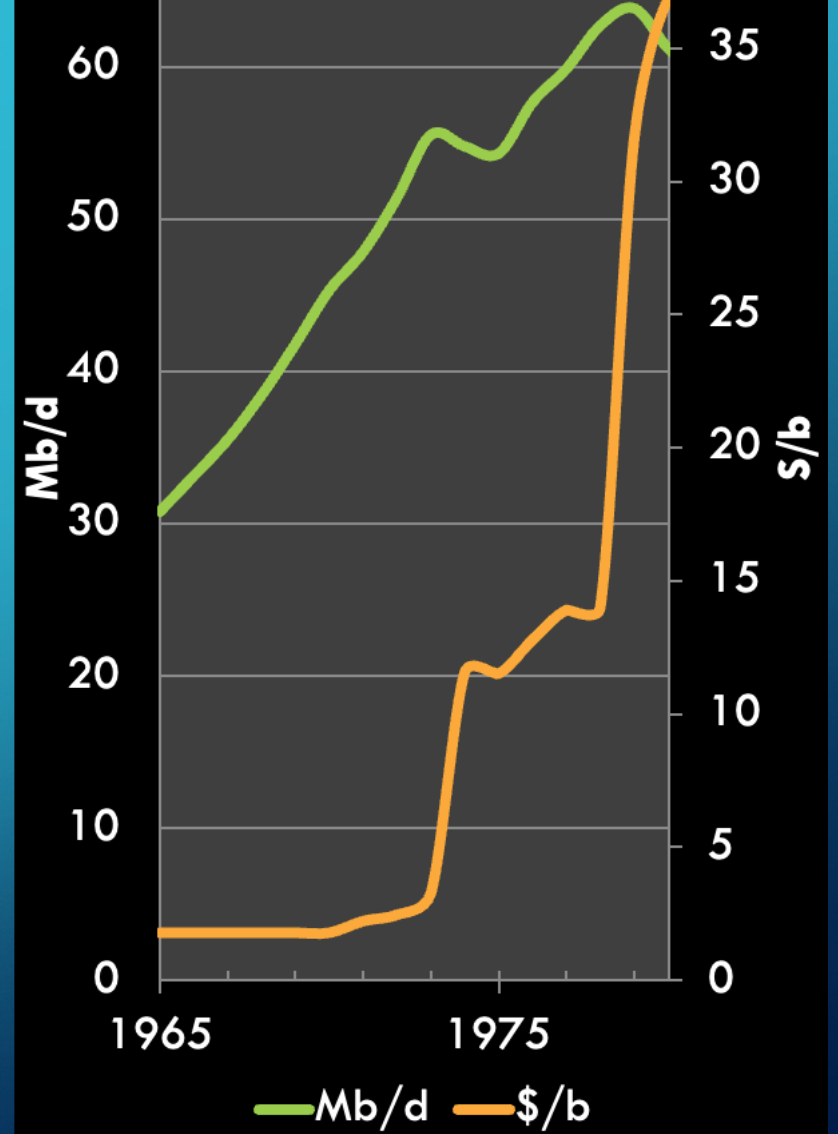
"Dad" Joiner (third from left) shakes the hand of Dr. A.D. Lloyd, his geologist, in front of the No. 3 Daisy Bradford, discovery well of the East Texas oil field. H.L. Hunt is third from right. Credit: Hunt Oil Company

<https://scholarworks.sfasu.edu/cgi/viewcontent.cgi?article=1144&context=ethi>

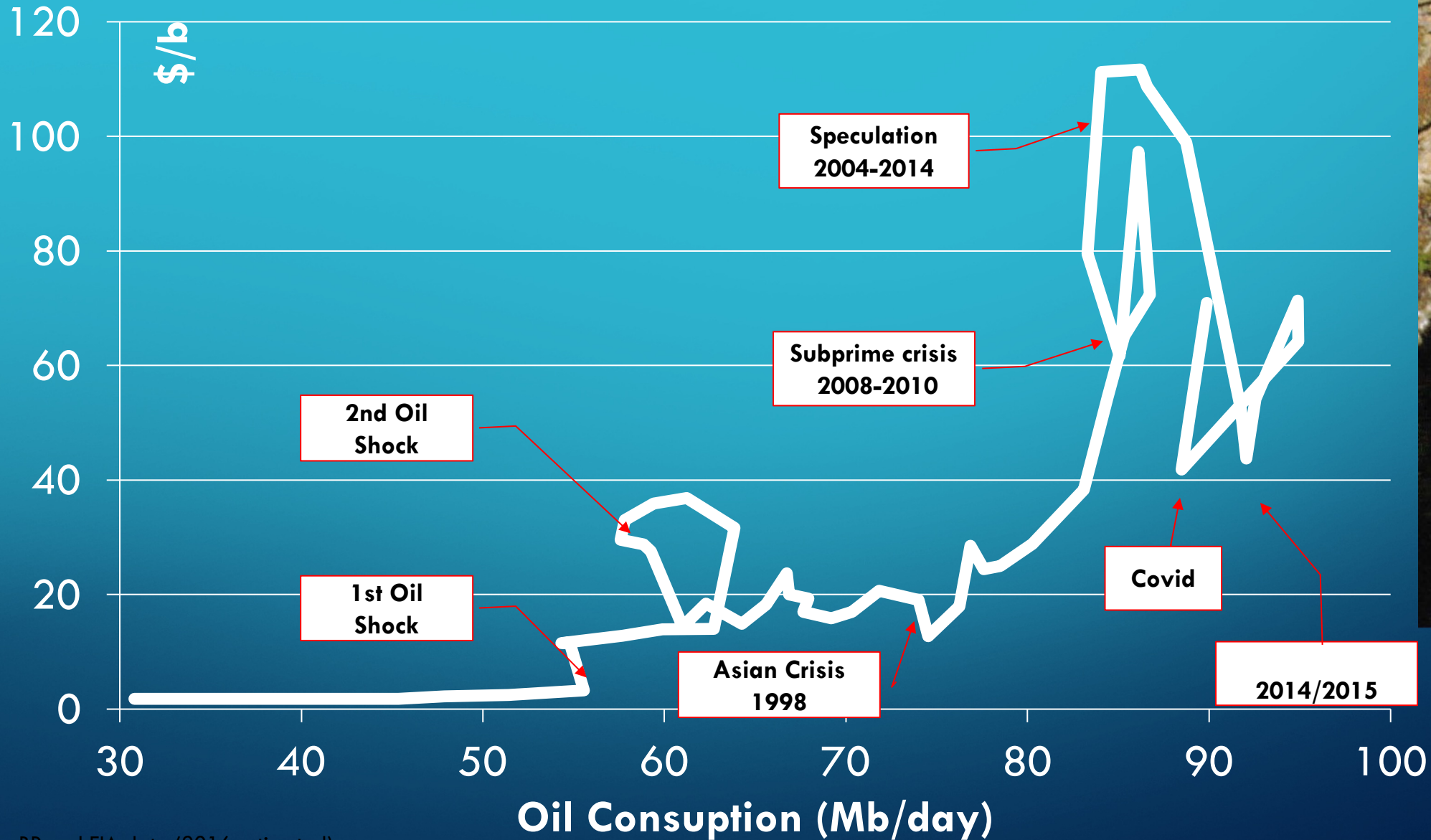




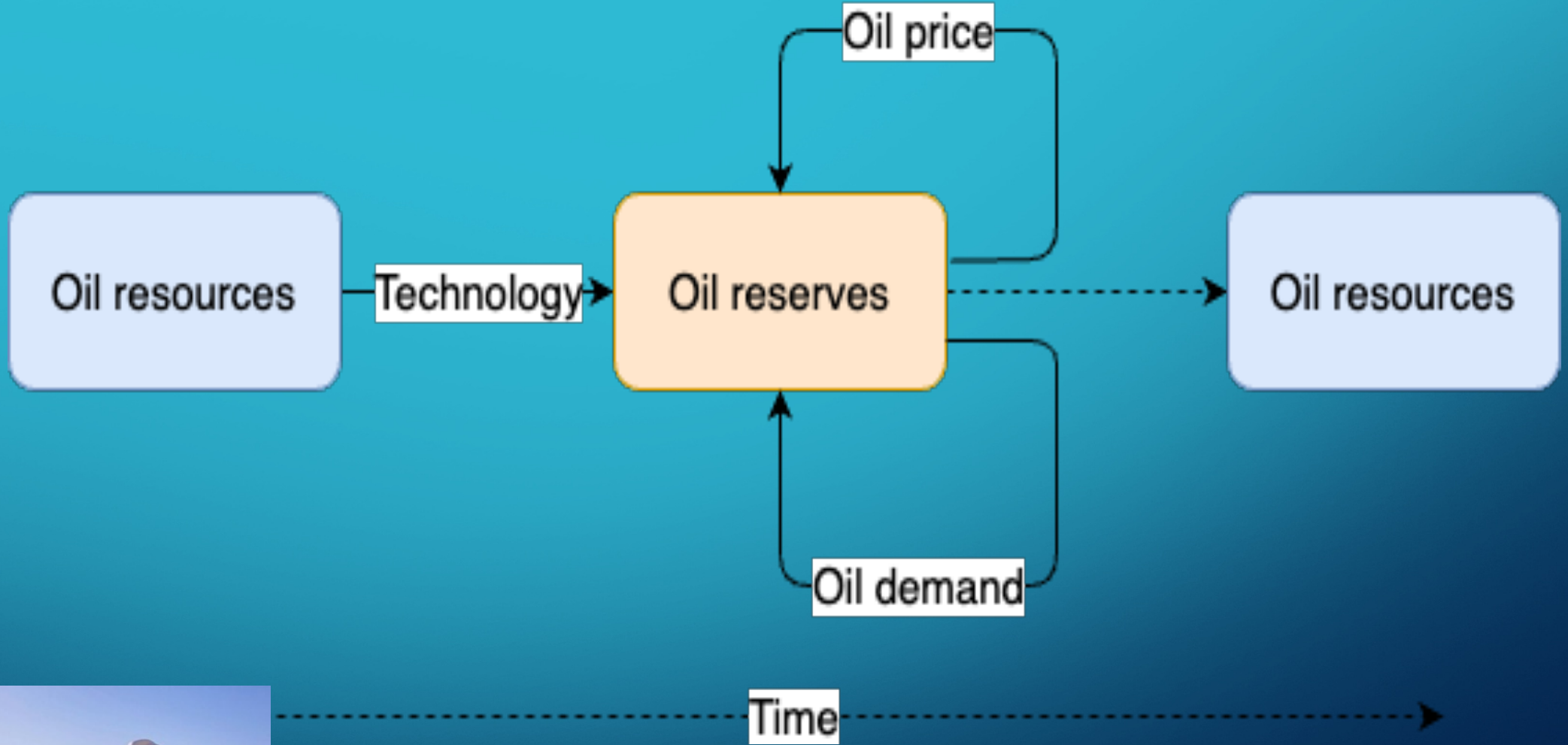
70 World oil production and 40 oil price



# Which correlation?









# Joe Biden: "We Are Going To Get Rid of Fossil Fuels"

John Kartch • 02/08/2020



IRS WATCH, TAX REFORM

GOP Leader McCarthy: First Bill Next Congress Will Cut IRS Budget

Jack Baum • 09/23/2022

## EURACTIV

The Capitals

The Brief

Ukraine

Intelligence

## Fossil gas 'has no viable future', EU's Timmermans says

By Frédéric Simon | EURACTIV.com 📅 26 mars 2021 (updated: 📅 19 avr. 2021)

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**MITSUBISHI  
HEAVY  
INDUSTRIES  
GROUP**



## EC President Von der Leyen tells Davos countries of future 'don't need oil and gas'



No future

Less investment

Scarcity foreseen

Price increase

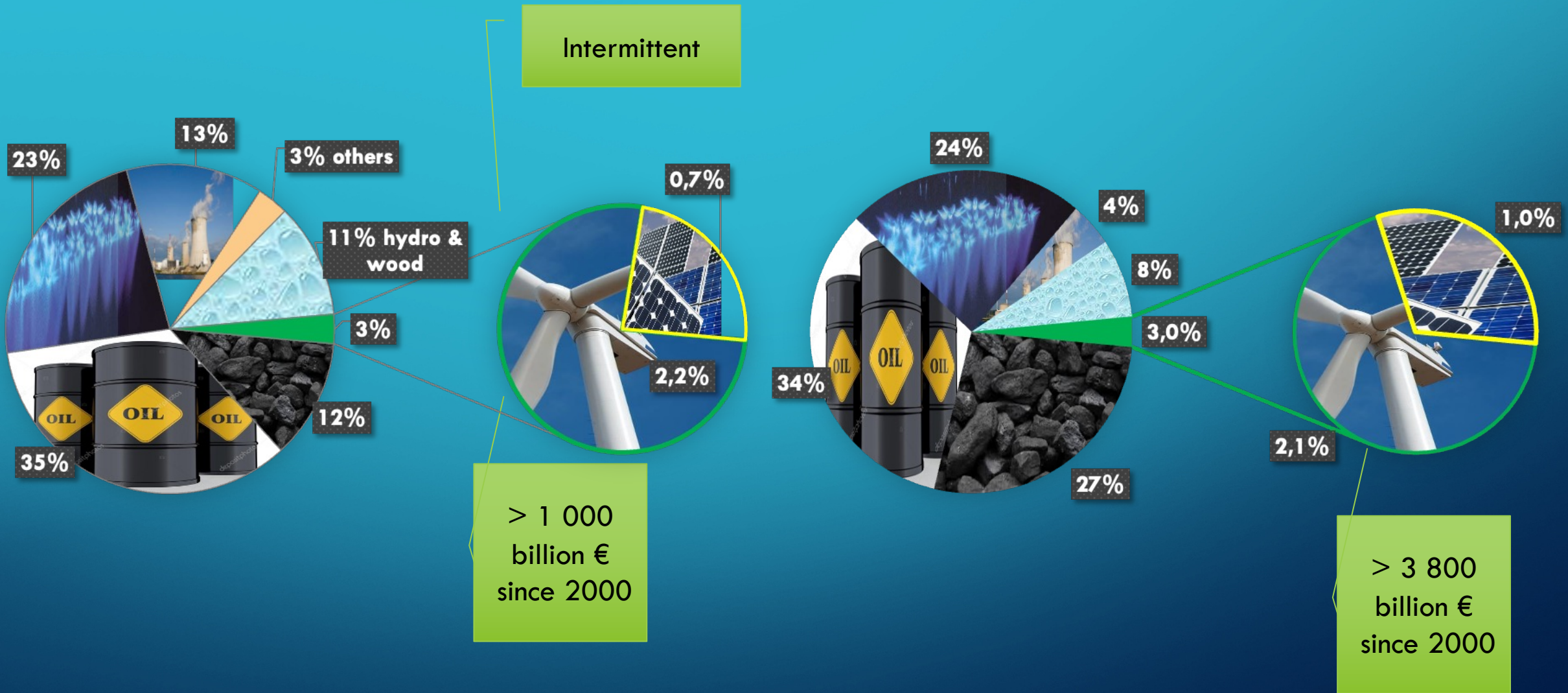


# Sharm El Sheikh, 7 Nov 2022





# EU and world primary energy



Data: Eurostat, 2021 for 2019



# Is the European green deal achievable?

Samuel Furfari & Ernest Mund

*The European Physical Journal Plus* 136, Article number: 1101 (2021) |

108 Accesses | 5 Altmetric | Metrics

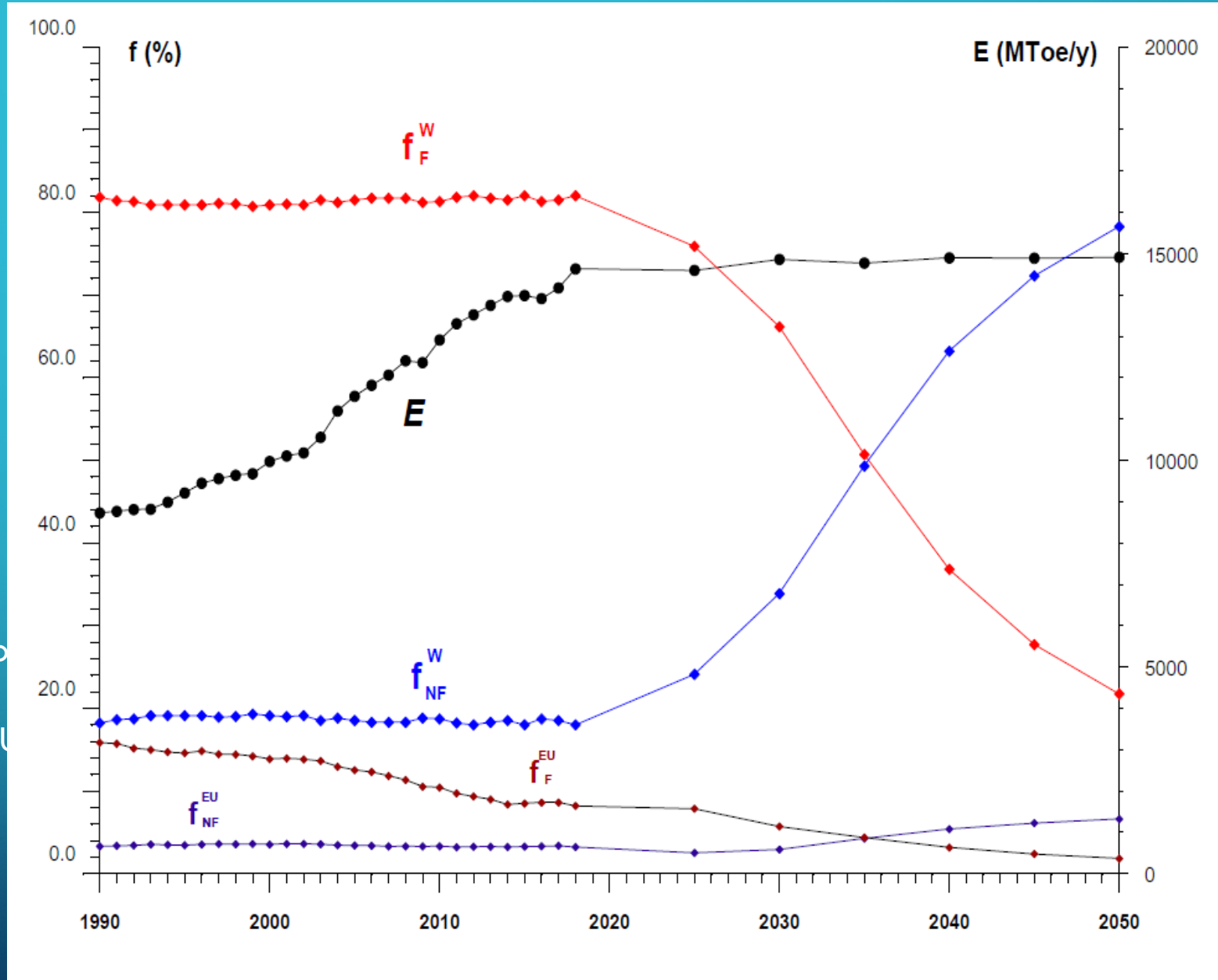
$E$  = energy demand

$f_F^W$  = share of fossil fuels in the world

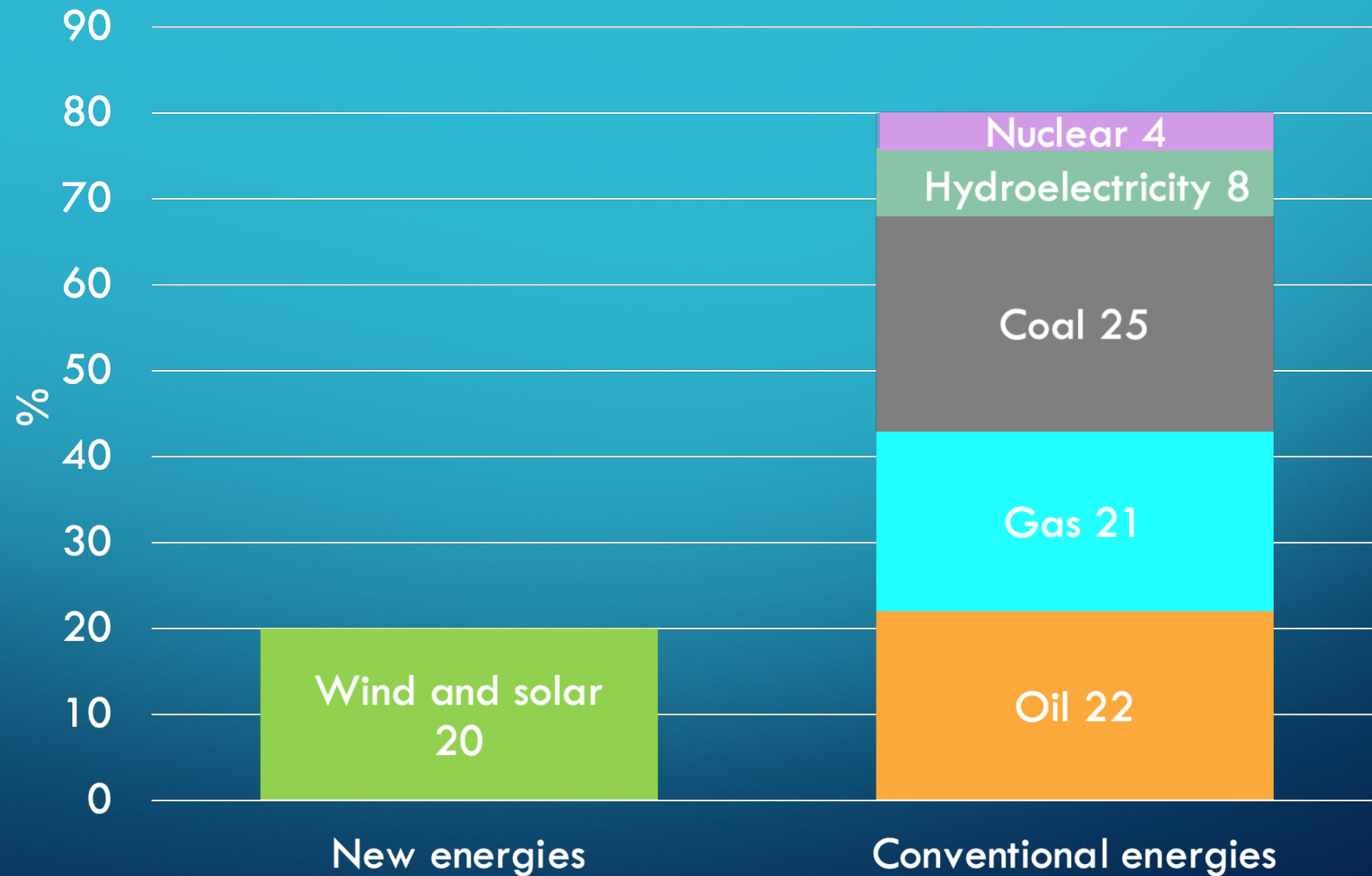
$f_{NF}^W$  = share of non fossil fuels in the world

$f_F^{EU}$  = share of fossil fuels in the EU

$f_{NF}^{EU}$  = share of non fossil fuels in the EU

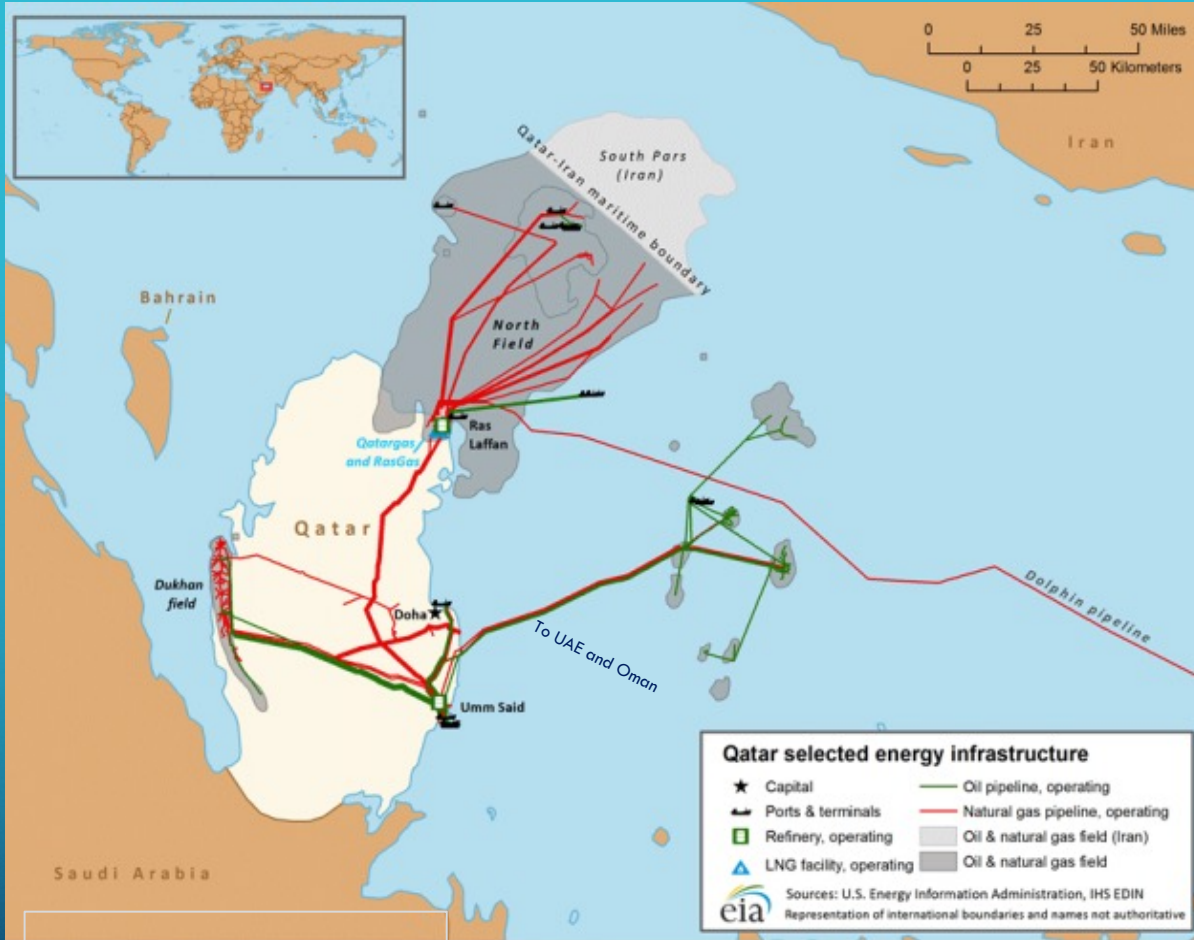


# Energy demand growth outside OECD (%) between 2011-2021

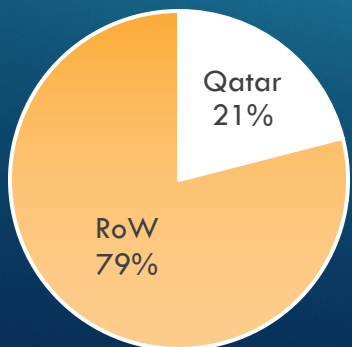




# Qatar: Saudi Arabia of gas



[1/6] QatarEnergy CEO and Qatar's Minister of Energy Saad al-Kaabi attends a signing ceremony with Sinopec, in Doha, Qatar, November 21, 2022. REUTERS/Imad Creidl



REUTERS World Business Legal Markets Breakingviews Technology Investigations More

Exploration & Production Refining LNG Fuel Oil Gas

4 minute read · November 21, 2022 8:08 PM GMT+1 · Last Updated 14 hours ago

## Qatar seals 27-year LNG deal with China as competition heats up

By Andrew Mills and Maha El Dahan



# TotalEnergies invests in Qatar and Iraq

24 septembre 2022

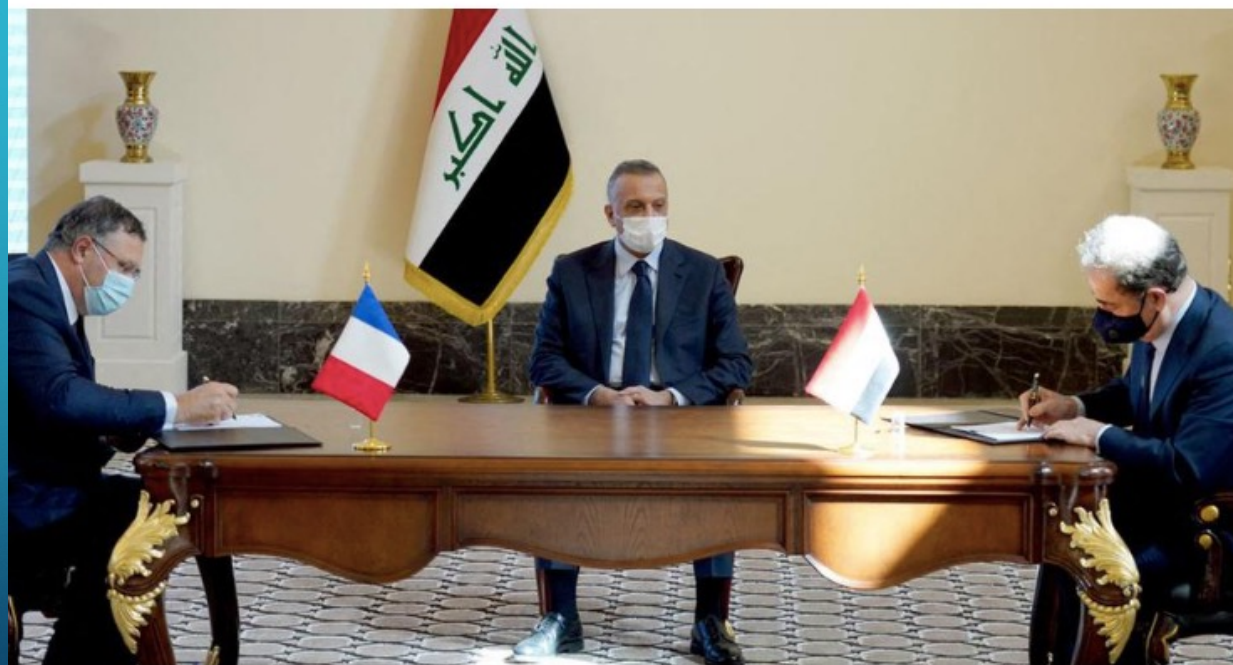
## Le Qatar et TotalEnergies signent un contrat pour le développement d'un champ de gaz naturel



## 27 milliards pour un siècle de Total en Irak

12 septembre 2021 par Jean-Pierre Filiu

*C'est en Irak qu'a été lancée en 1924 la Compagnie française des pétroles, ancêtre de TotalEnergies, qui vient de signer avec Bagdad des contrats d'une valeur cumulée de 27 milliards de dollars.*



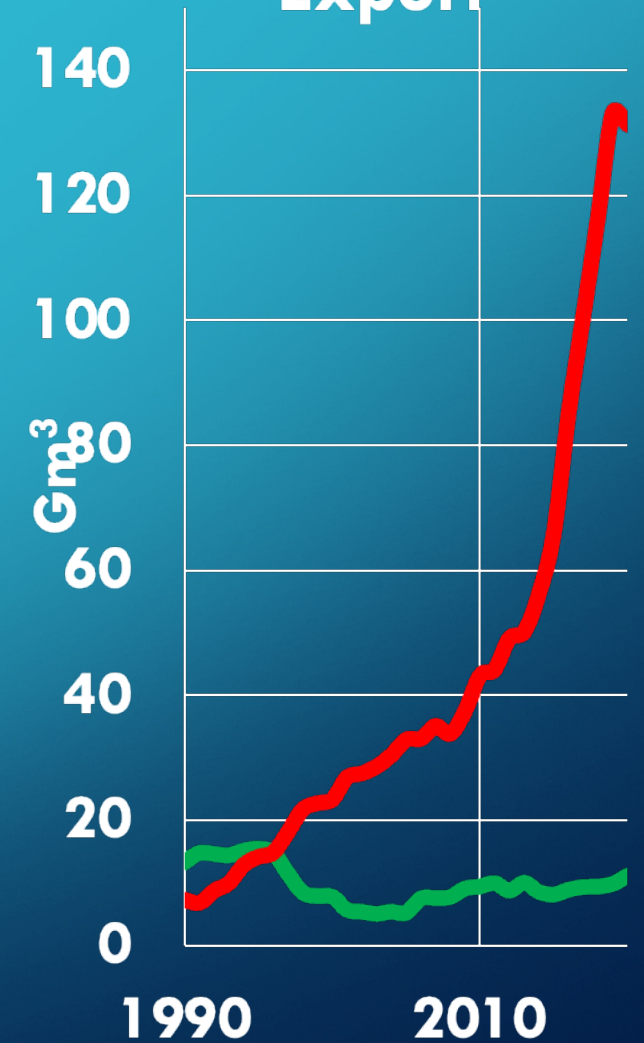
Le PDG de TotalEnergies (à gauche) et le ministre irakien du Pétrole (à droite)



# Australia, first LNG exporter



## Australia's Gas Export

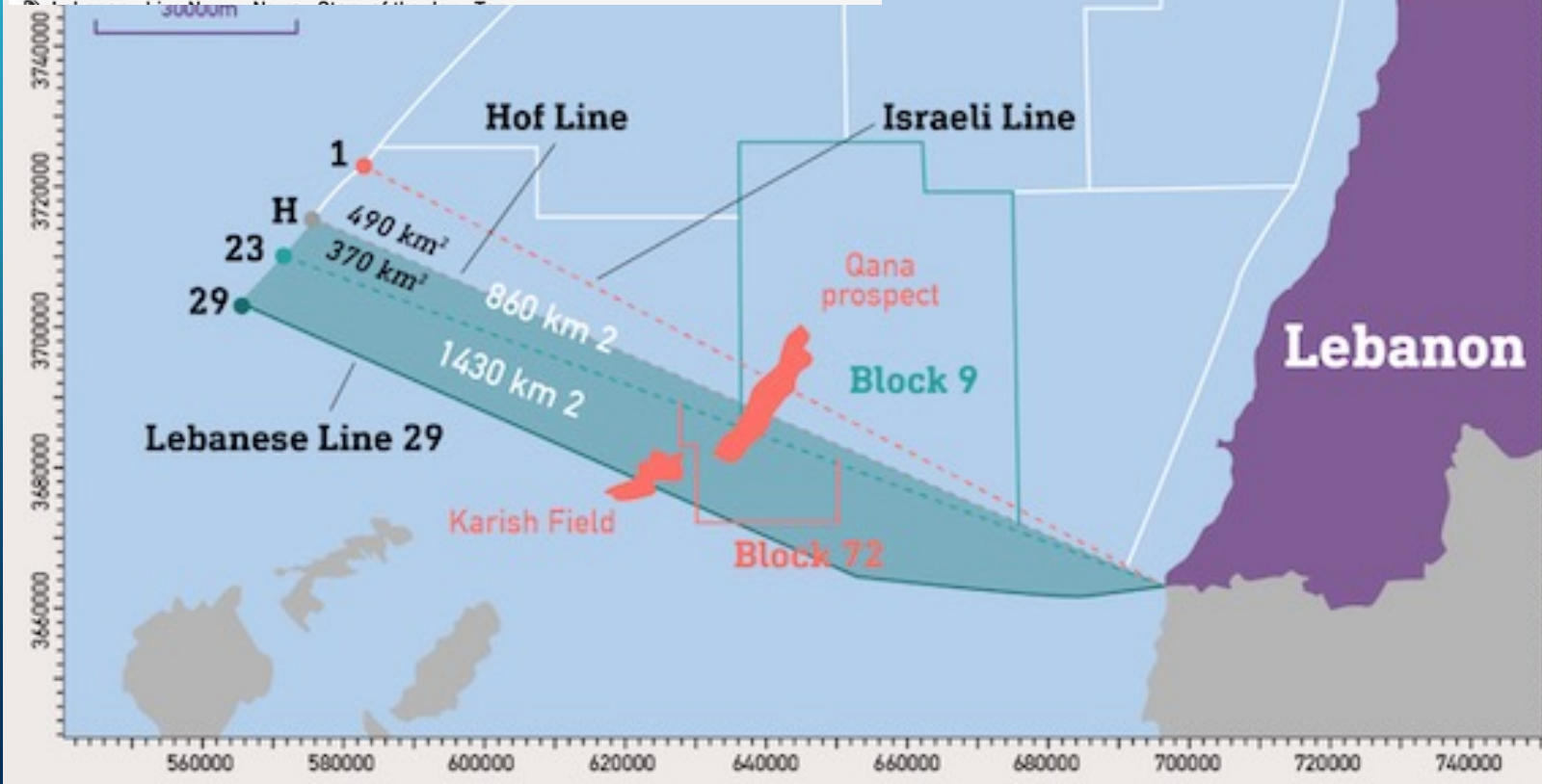


Wheatstone LNG (Imagen: Chevron Australia),  
8.9 Mt/a – 12 Gm<sup>3</sup>

Consumption Export







- 29 janvier 2023 13h40 / Mis à jour à 20h56

### Hydrocarbures au Liban: le Qatar devient partenaire de TotalEnergies et ENI

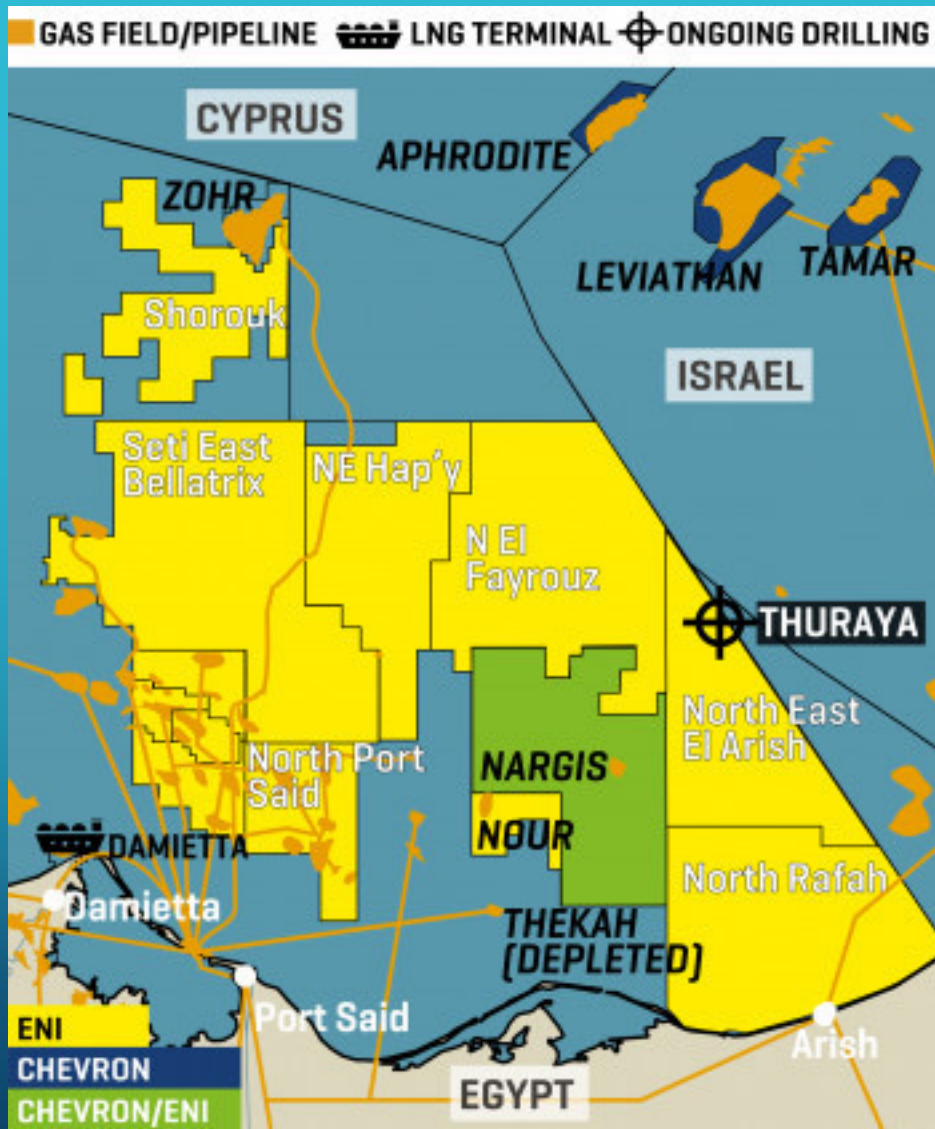
Partage

ACIL TABBARA Agence France-Presse

<b>TotalEnergies</b>	<b>35 %</b>
<b>ENI</b>	<b>35 %</b>
<b>QatarEnergy</b>	<b>30 %</b>
<b>Novatek</b>	

ESCP EUROPE





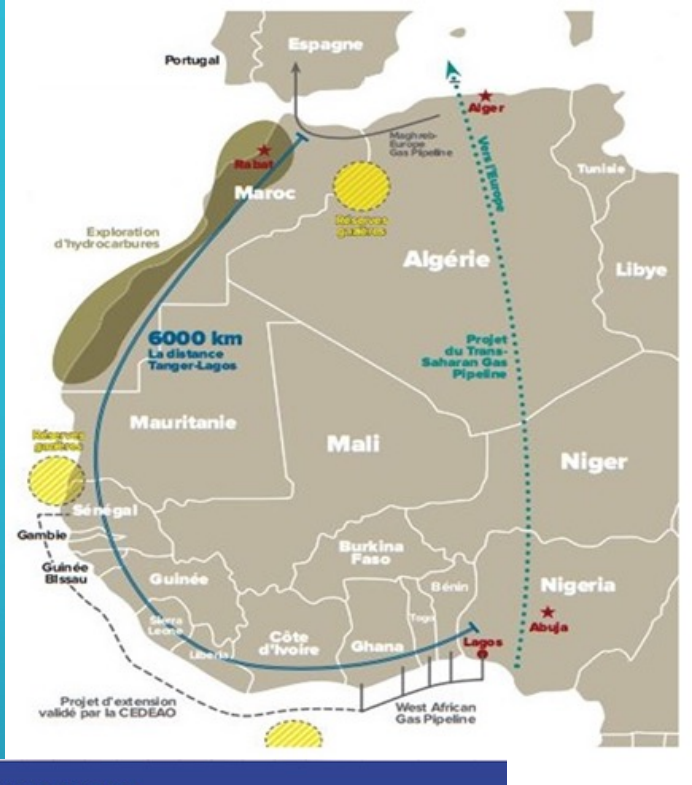
The Nargis-1 well has encountered approximately 200 net ft. (61 m) of Miocene and Oligocene gas-bearing sandstones and was drilled in 1,014 ft. (309 m) of water by the Stena Forth drillship. The discovery can be developed leveraging the proximity to Eni's existing facilities. Nargis-1 confirms the validity of Eni's focus on Egypt Offshore, which the company will further develop thanks to the recent award of exploration blocks North Rafah, North El Fayrouz, North East El Arish, Tiba and Bellatrix-Seti East. Egypt's Nargis Offshore Area concession is approximately 445,000 acres (1,800 km<sup>2</sup>). Chevron Holdings C Pte. Ltd. is the operator with a 45% interest, while Eni's wholly owned Affiliate IEOC Production BV holds a 45% and Tharwa Petroleum



SAMUEL FURFARI








23/1/2023

Home / News and insights / Press releases / FPSO vessel for the bp-operated Greater Tortue Ahmeyim project successfully sets sail for project site

## FPSO vessel for the bp-operated Greater Tortue Ahmeyim project successfully sets sail for project site

Release date: 23 January 2023

### King Mohammed VI: Nigeria-Morocco Pipeline is Project for Present and Future Generations

The gas pipeline aims to ensure energy independence on the continent amid a context marked by serious challenges due to regional crises.

Safaa Kasraoui Nov. 06, 2022 8:59 p.m.

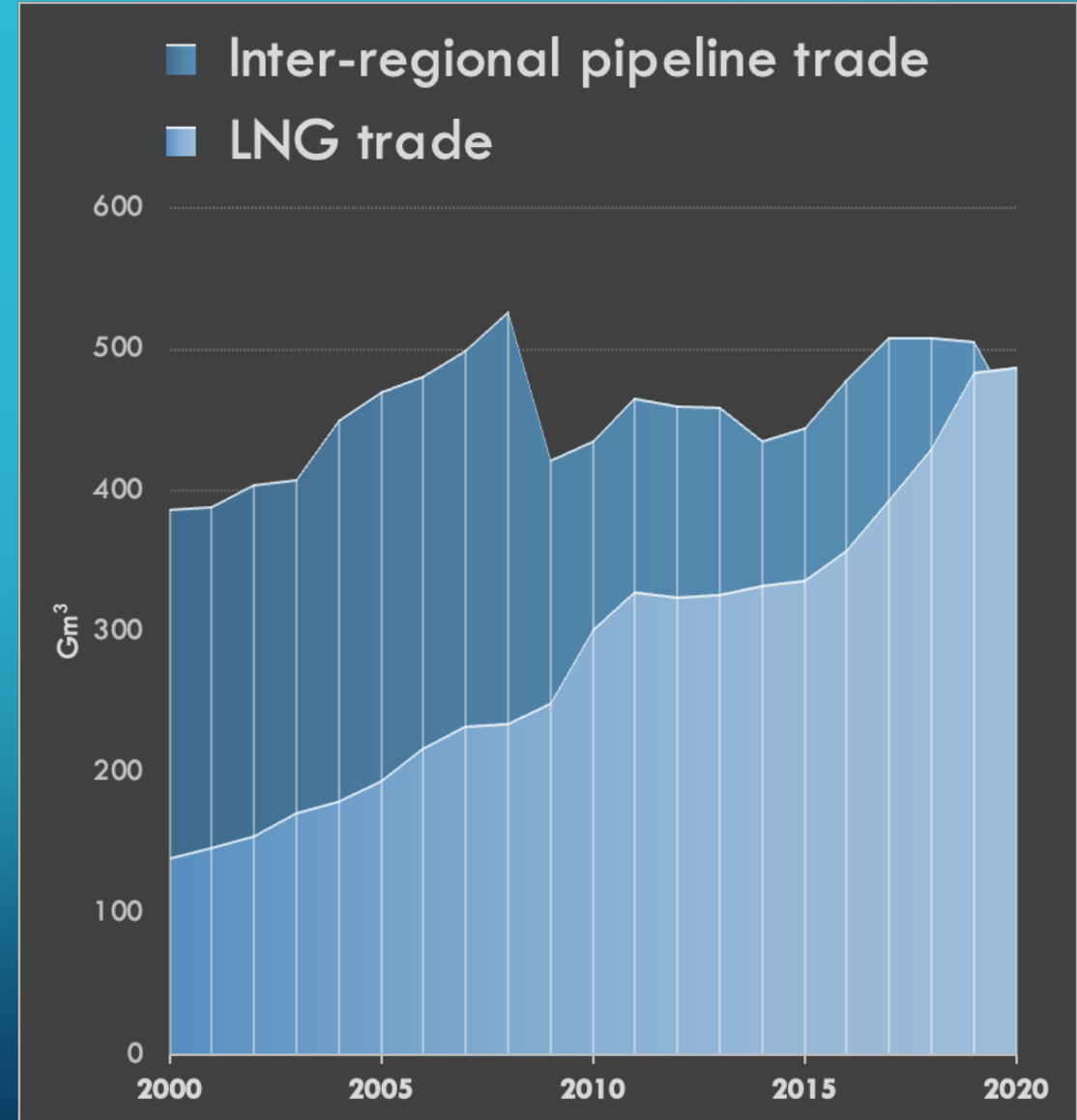


King Mohammed VI: Nigeria-Morocco Pipeline is Project for Present and Future Generations





# LNG trade has surpassed pipeline trade





Source: Maritime Datas



# Yamal LNG Project – 27 G\$ -27.3 Mt/y

Patrick  
Pouyanné  
TotalEnergy  
CEO

Leonid  
Mikhelson  
Novatek  
CEO



First LNG load on  
December 8, 2017,  
at the port of Sabetta



FINANCIAL TIMES

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Opinion **Inside Business**

## Russia's LNG ambitions no longer a pipe dream

Novatek's Yamal project a watershed moment for the country's hydrocarbon industry

HENRY FOY

+ Add to myFT



Henry Foy in Moscow DECEMBER 27 2017

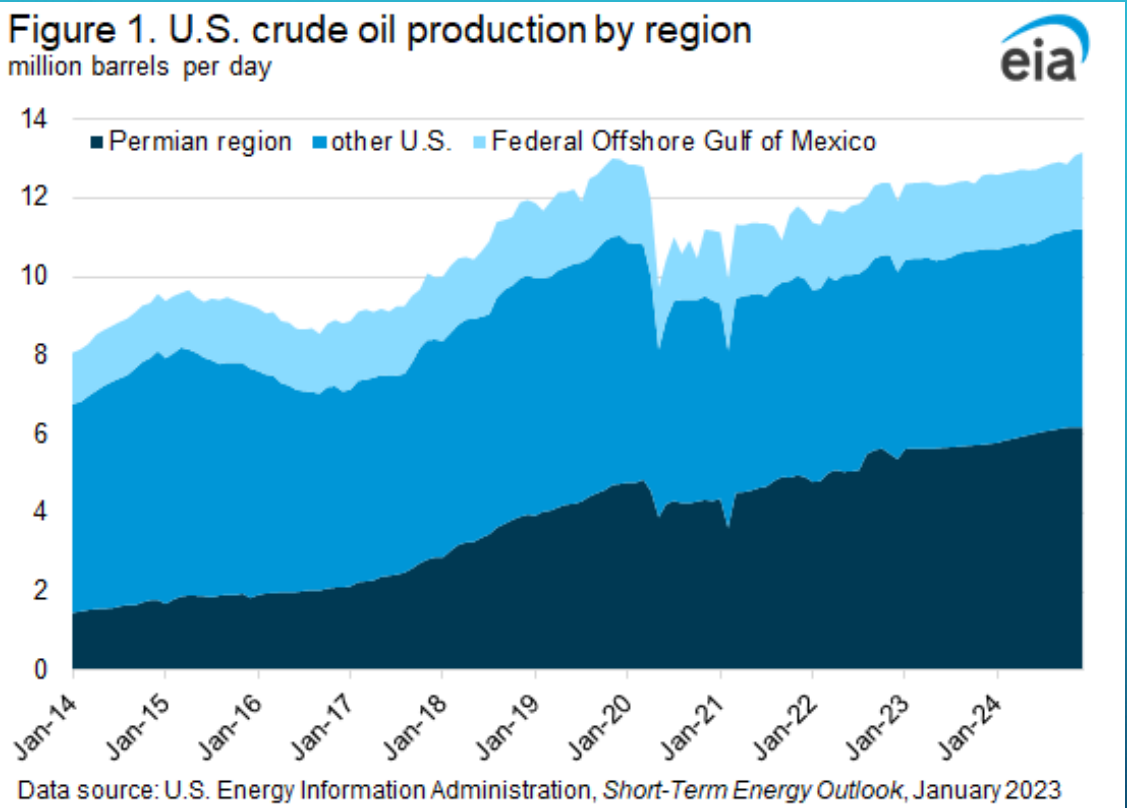
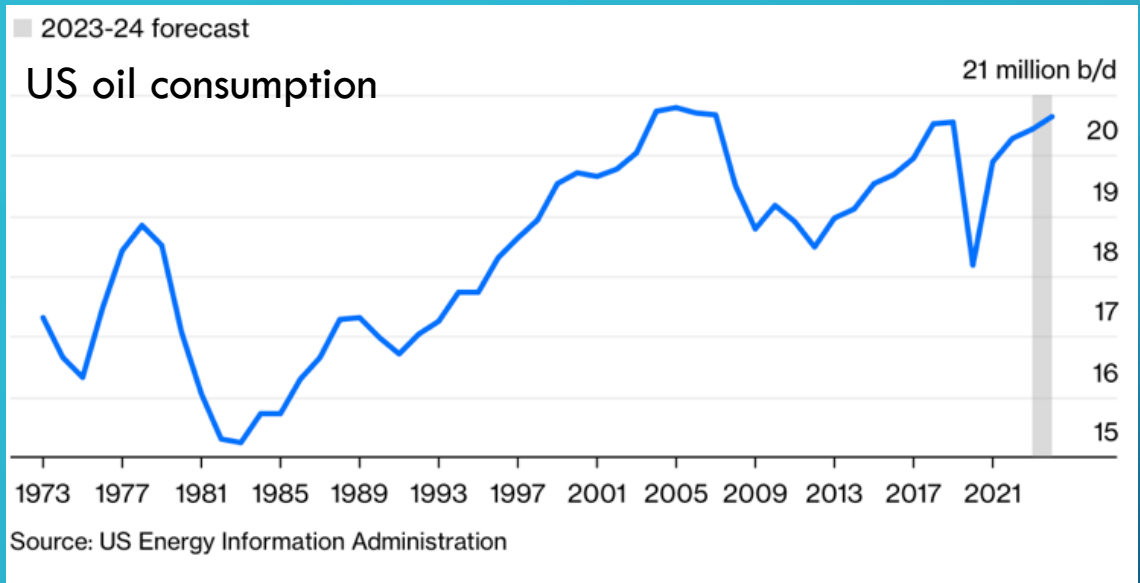
10



ENERGY

# Why Can't Tesla Drive US Oil Demand Lower? Plastics

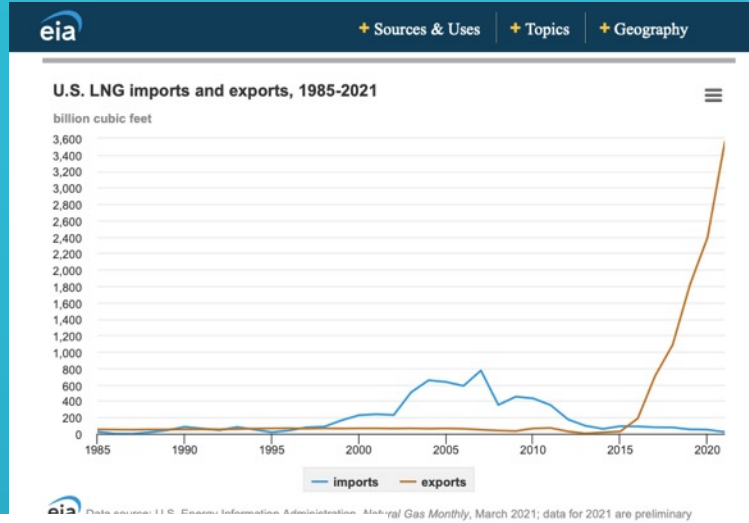
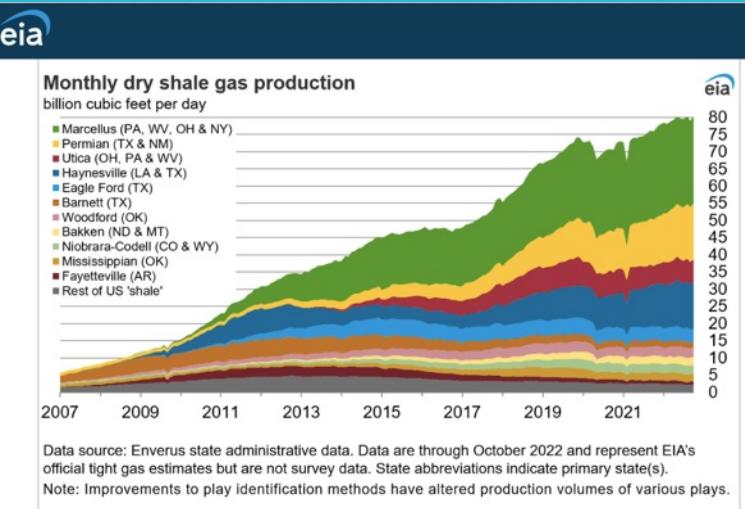
Analysis by Javier Blas | Bloomberg  
January 11, 2023 at 9:19 p.m. EST



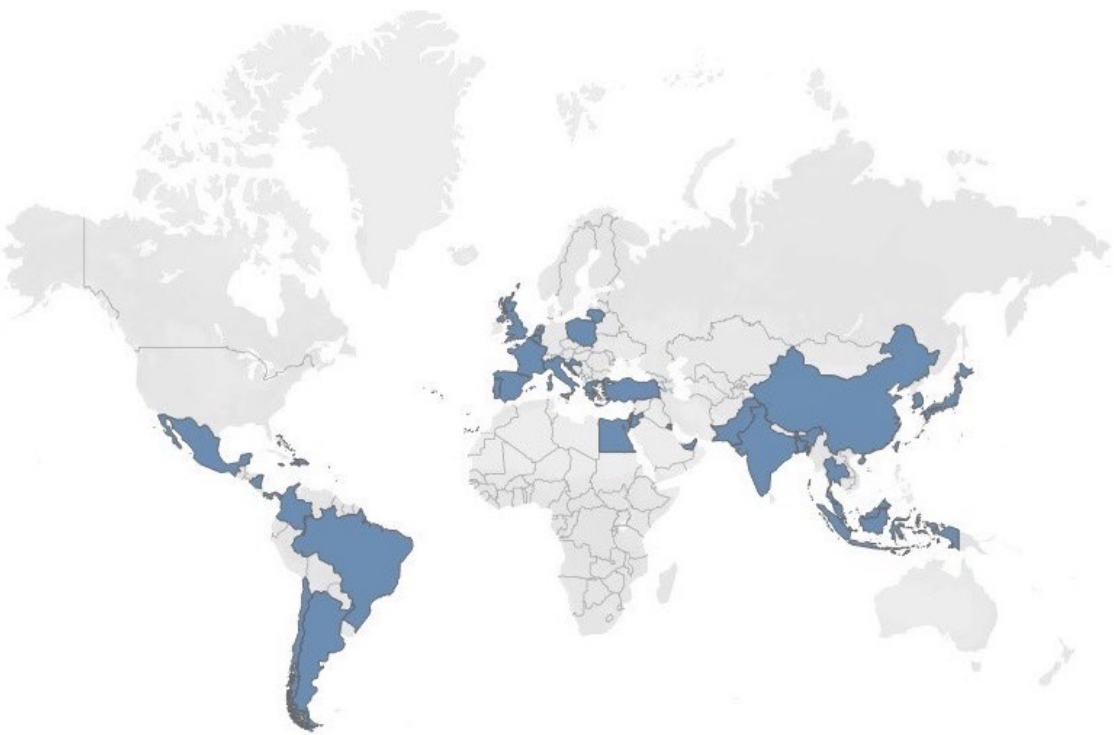
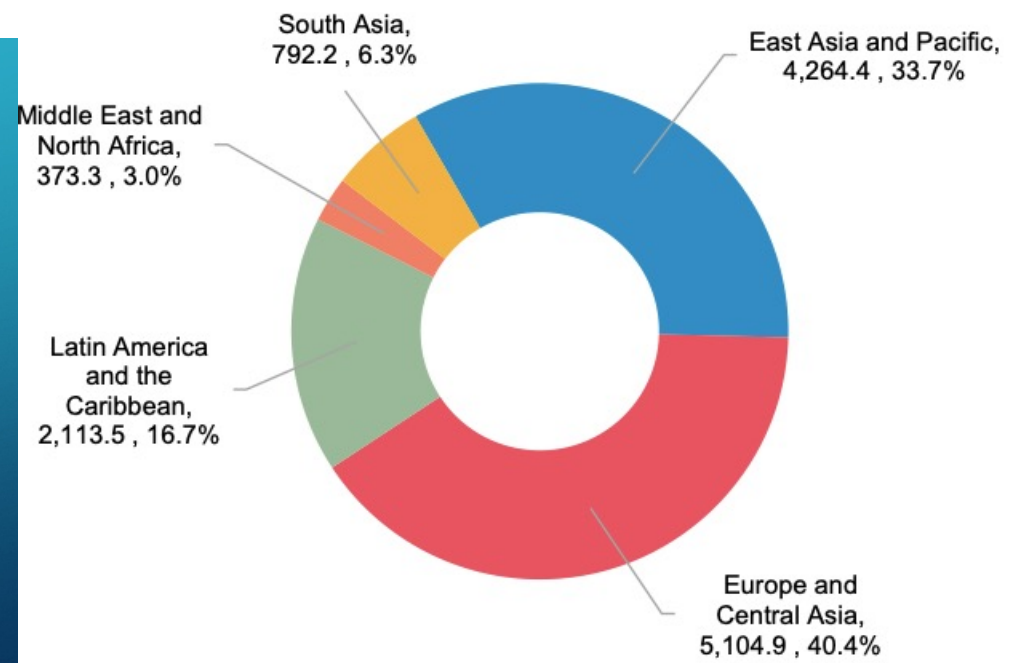
Growing demand for petrochemicals will offset lower consumption for gasoline, driving US oil demand in 2024 above the 2019 most recent peak | 2018: 3.3 Mb/d → 2024: 4 Mb/d



# Shale gas, a bubble?



## 1d. Domestically-Produced LNG Exported by Region (Cumulative from February 2016 through September 2022) (Bcf, %)



[https://www.energy.gov/sites/default/files/2022-10/2022-10-10-LNG%20Monthly%20September%202022\\_1.pdf](https://www.energy.gov/sites/default/files/2022-10/2022-10-10-LNG%20Monthly%20September%202022_1.pdf)

# QatarGas invests \$ 10 billion in Texas shale gas

## Becoming the PREMIE LNG exporter in North America

QatarEnergy (70%) ExxonMobil (30%).

Golden Pass LNG

15.6 Mt LNG/a

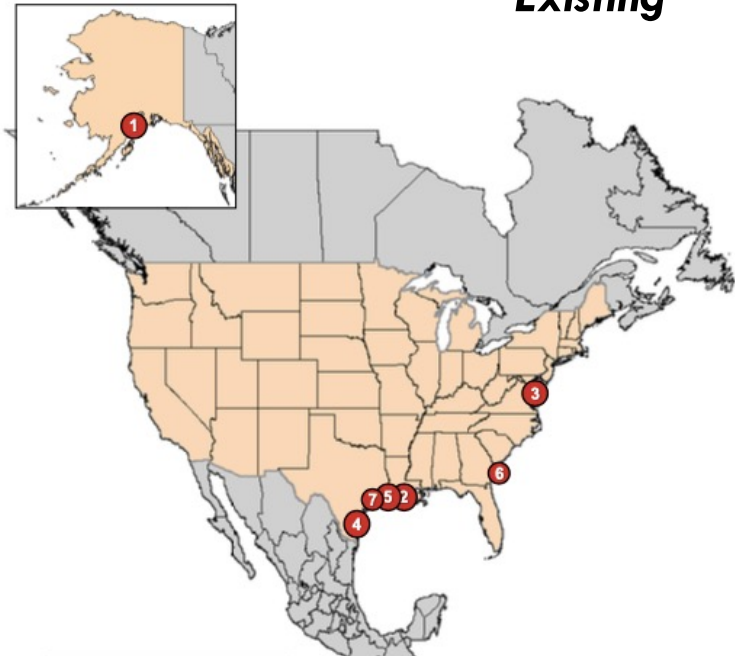
24 Gm<sup>3</sup> /a

should be operational by 2024

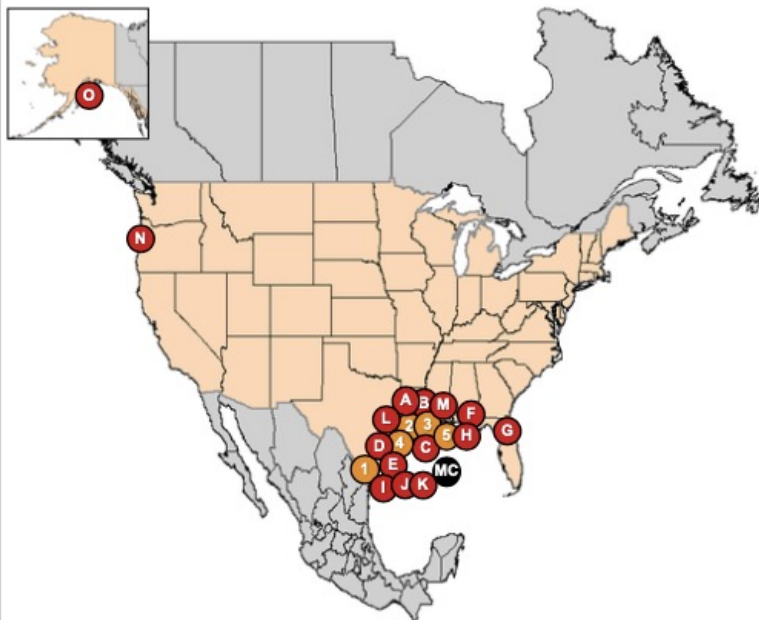




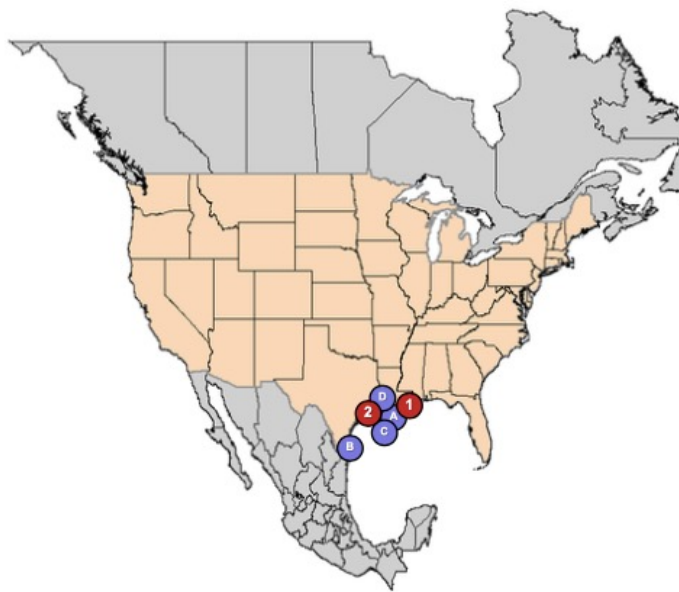
**Existing**



**Approved, not yet build**



**Proposed**



U.S.

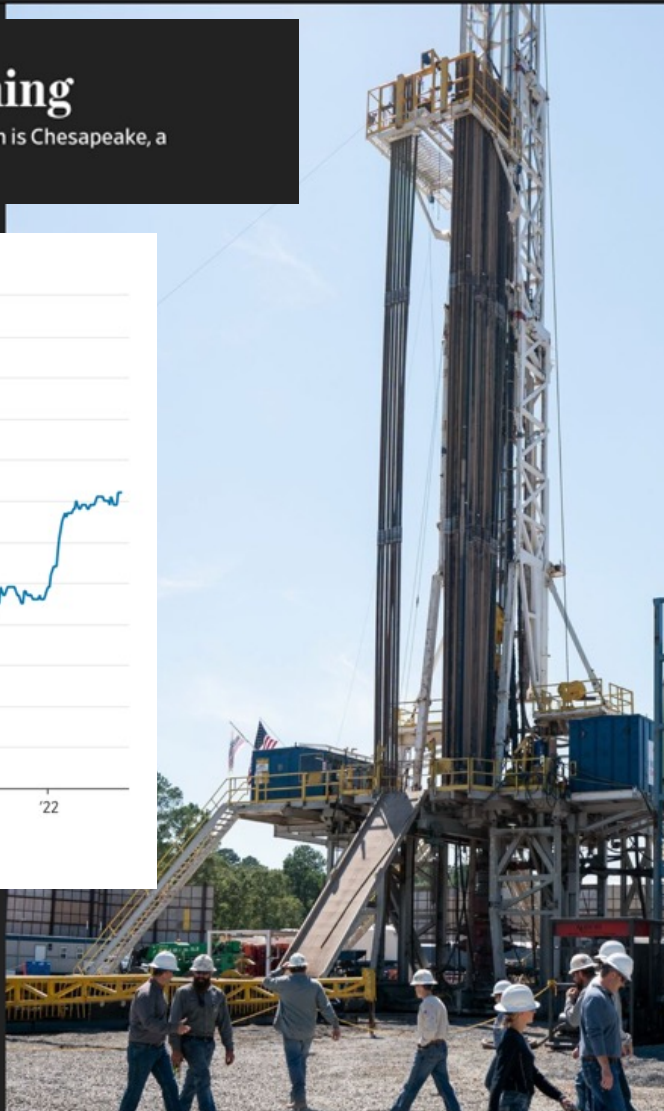
## Oil and Gas Are Back and Booming

Haynesville basin in Louisiana and Texas is humming with drillers. Among them is Chesapeake, a fracking pioneer that was in bankruptcy just two years ago.

Rig count in the Haynesville basin



Source: Baker Hughes



**“What’s really happened is the world has realized there is a need for hydrocarbons in energy policy,”** said Domenic Dell’Oso, Chesapeake’s chief executive.

While domestic and international events continue to demonstrate the critical need for energy and the infrastructure required to transport it to market, we stand ready to deliver reliable, affordable, lower carbon energy desperately needed today.”

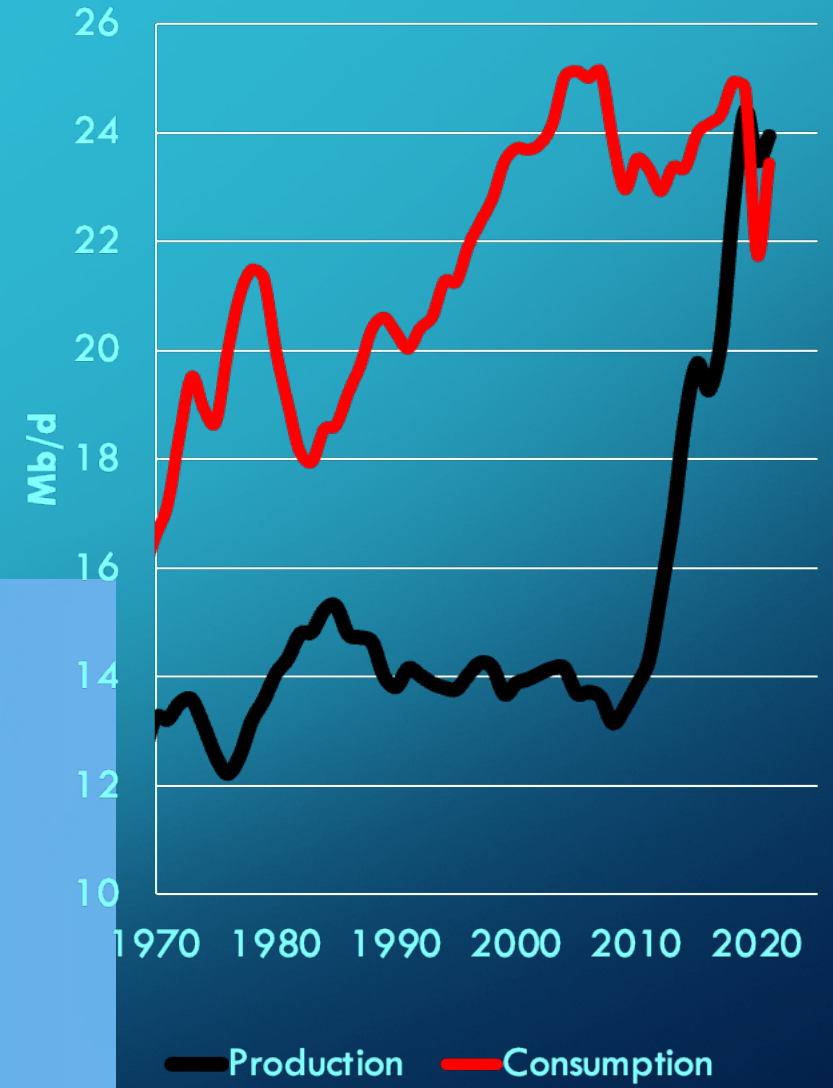
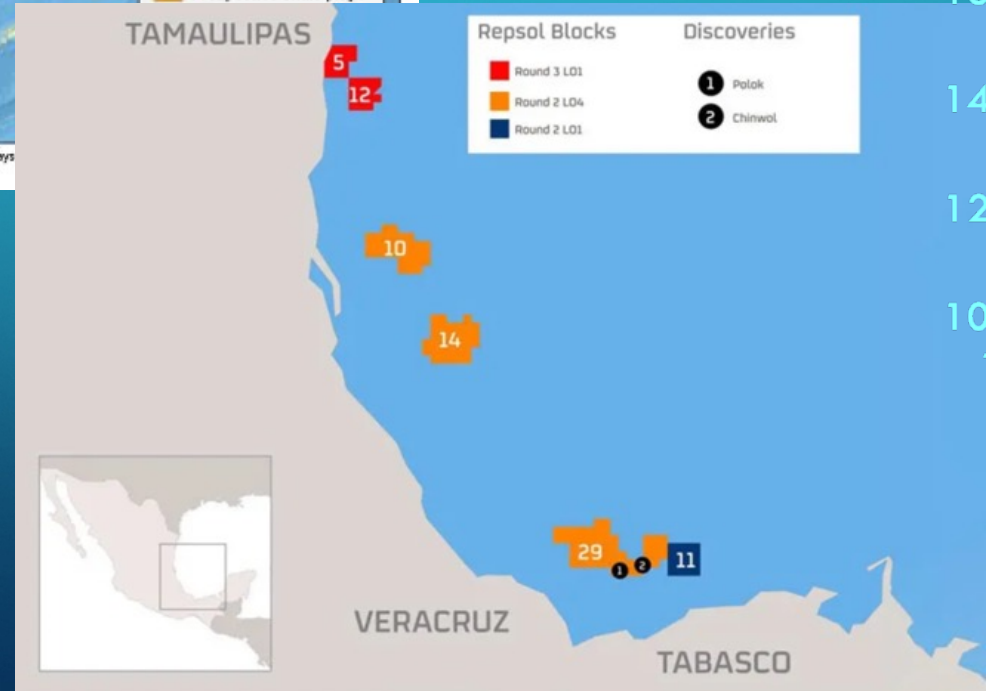




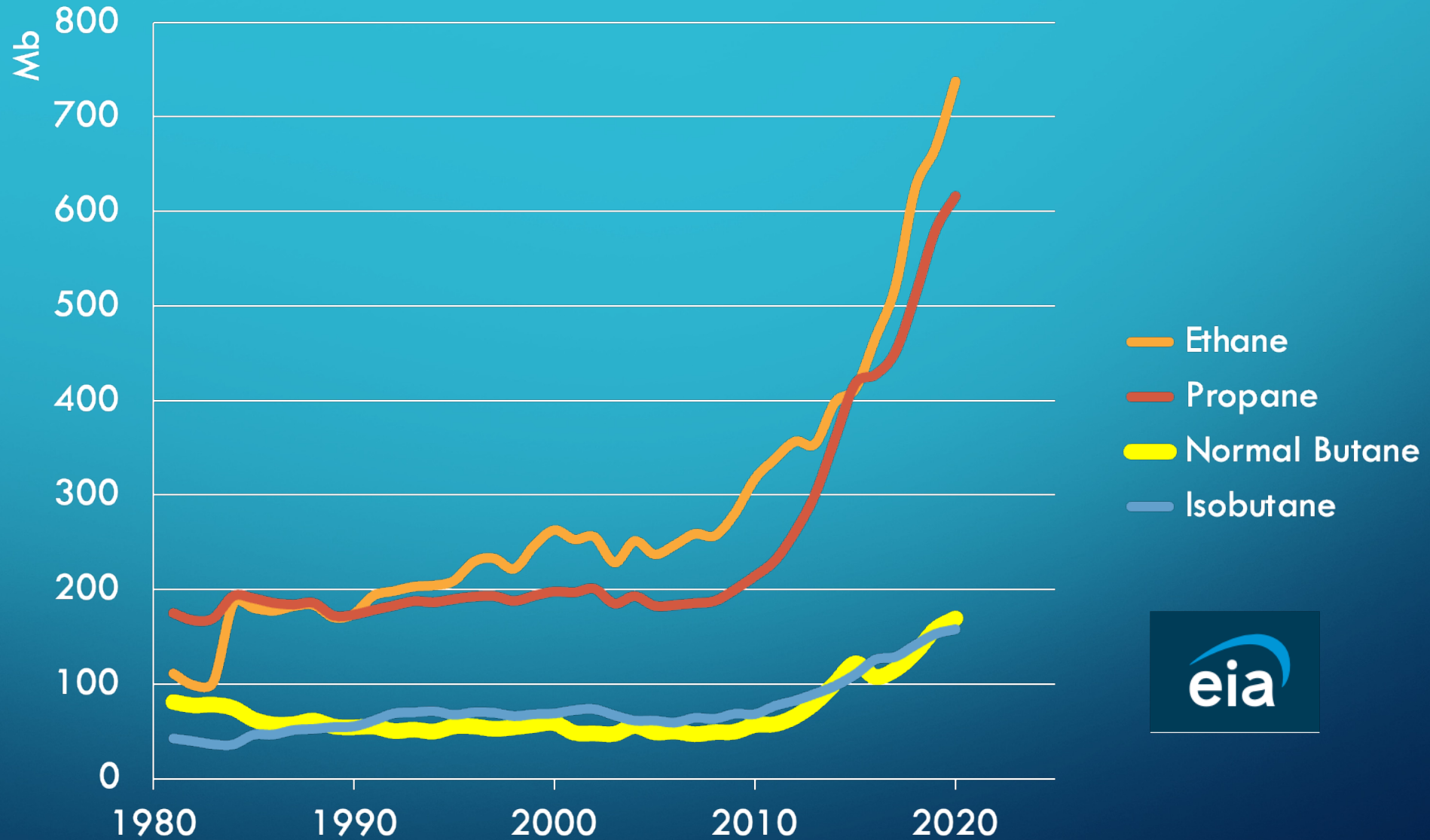
# North America oil production and consumption



Source: U.S. Energy Information Administration based on data from various published studies. Canada and Mexico plays Updated: May 9, 2011

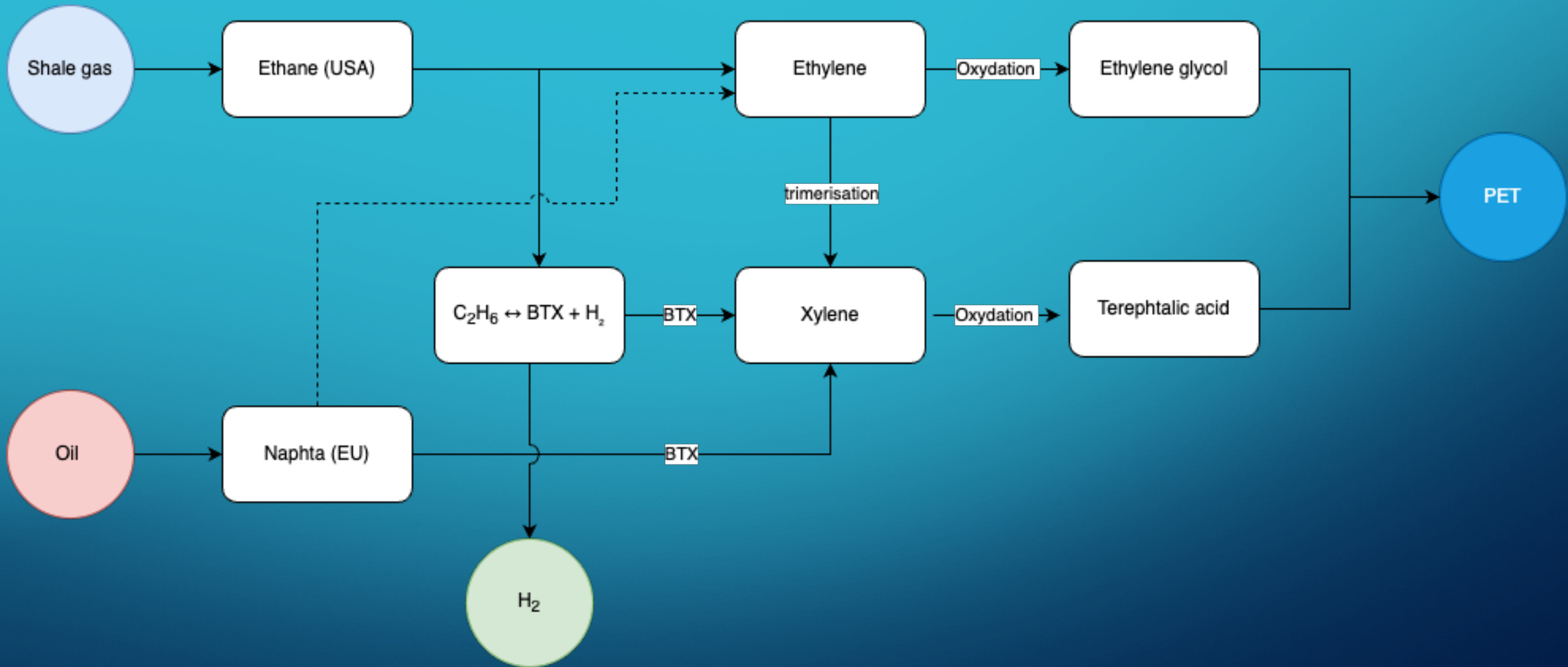


# U.S. Natural Gas Plant Field Production





# Advantage of shale gas for PET production



# Plastics production ? 49 % in Asia !

## Regional capacities for bulk material production, 2021

	Steel (Mt)	Cement (Mt)	Plastics (Mt)	Aluminium (Mt)
<b>World</b>	<b>2 000</b>	<b>4 300</b>	<b>310</b>	<b>810</b>
China	52%	55%	25%	9%
Europe	11%	7%	9%	2%
North America	6%	4%	18%	2%
Other Asia Pacific	19%	19%	24%	85%
Central & South America	2%	3%	2%	1%
Africa	1%	5%	1%	0%
Eurasia	4%	2%	3%	1%
Middle East	2%	4%	17%	1%

Source: IEA (2022a).





# John Haldane

4 fév. 1923, Cambridge Univ.

End of  
coal



Wind  
turbines



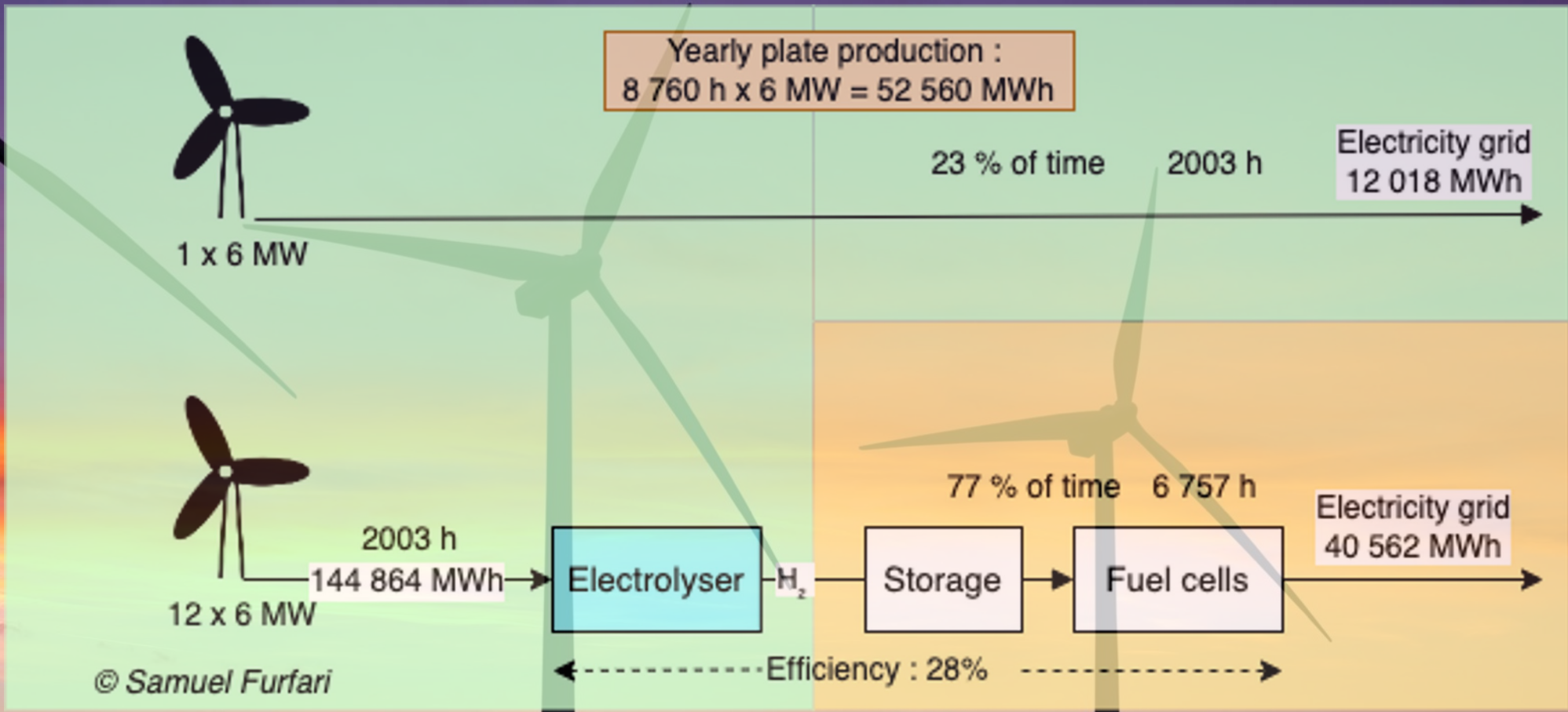
H<sub>2</sub>

**J.B.S. Haldane**, in full **John Burdon Sanderson Haldane**, (born Nov. 5, 1892, [Oxford](#), Oxfordshire, Eng.—died Dec. 1, 1964, Bhubaneswar, India), British geneticist, biometrician, physiologist, and popularizer of [science](#) who opened new paths of research in population [genetics](#) and [evolution](#)





# The hydrogen illusion





<https://youtu.be/VI9hTNw-yto>



#ChamberNews #AEW2021

A Message from Nigerian Petroleum Minister on the future of the Oil and Gas Industry

1 443 vues • 17 sept. 2021

👍 2    💬 0    ➦ PARTAGER    ⚙️ ENREGISTRER    ⋮

# Newsweek

Mon, Nov 14, 2022

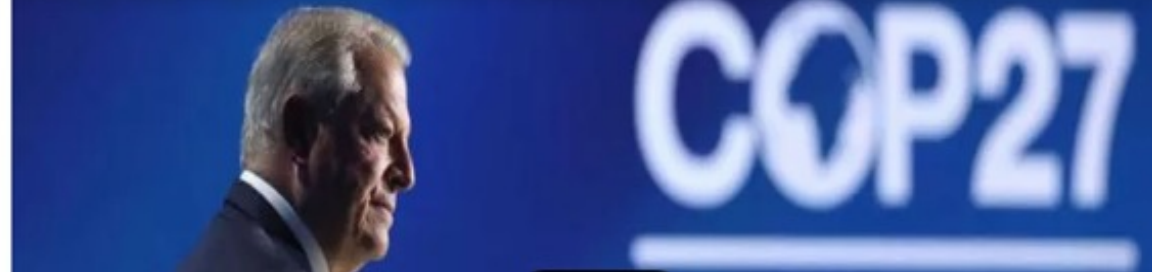
## Europe's Failure to Meet Its Climate Goals Should Not Be Africa's Problem | Opinion

**YOWERI K. MUSEVENI**, PRESIDENT OF UGANDA

ON 11/8/22 AT 7:00 AM EST



Russia-Ukraine War Not An 'Excuse' For 'Addiction' On Fossil Fuel: Al Gore



<https://www.newsweek.com/europes-failure-meet-its-climate-goals-should-not-africas-problem-opinion-1757502>





CFA Poland,  
23/9/2022



THE WALL STREET JOURNAL  
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MARKETS | FINANCE  
**Calpers' Investment Chief Highlights Lagging Return 'Lost Decade' for Private Equity**  
Nation's biggest pension fund has trailed peers' returns in almost every asset class



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Opinion World China Hong Kong Health Business & Markets Bright Arts Prem



West Virginia Treasurer Riley Moore at the National Conservatism Conference in Miami on Sep. 13, 2022. (York Du/The Epoch Times)  
**PREMIUM INVESTMENT**  
**Americans Must Fight Against ESG Agenda to Save Economy, Way of Life: West Virginia Treasurer**  
By Masooma Haq and Jan Jekielek | September 22, 2022 Updated: September 22, 2022 Print

GREEN ECONOMY LAW  
PERSONNEL ABOUT WORK PRIC

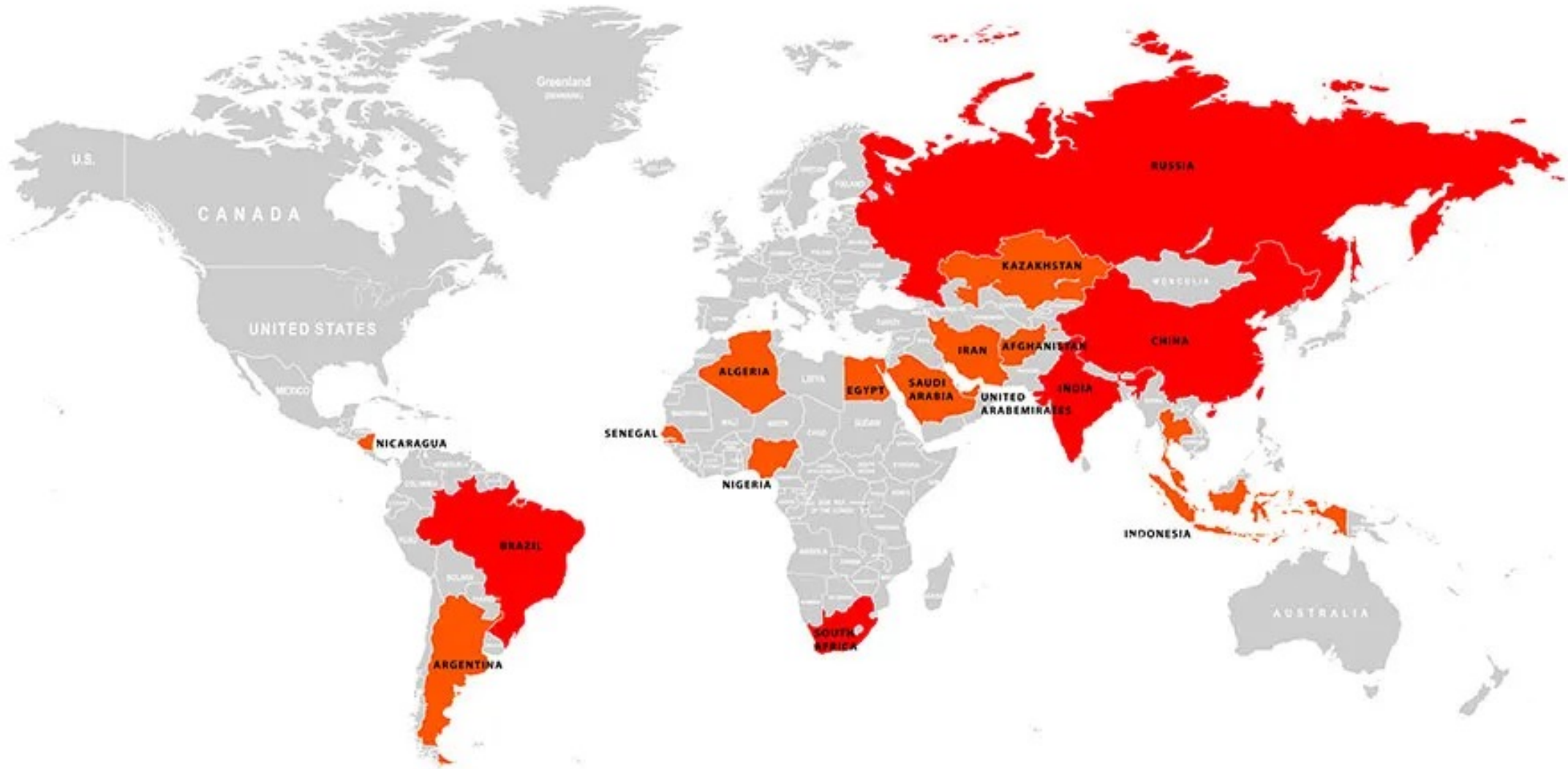


**TEXAS PASSES ANTI-ESG LAW IN SIGN OF CHANGING TIMES**



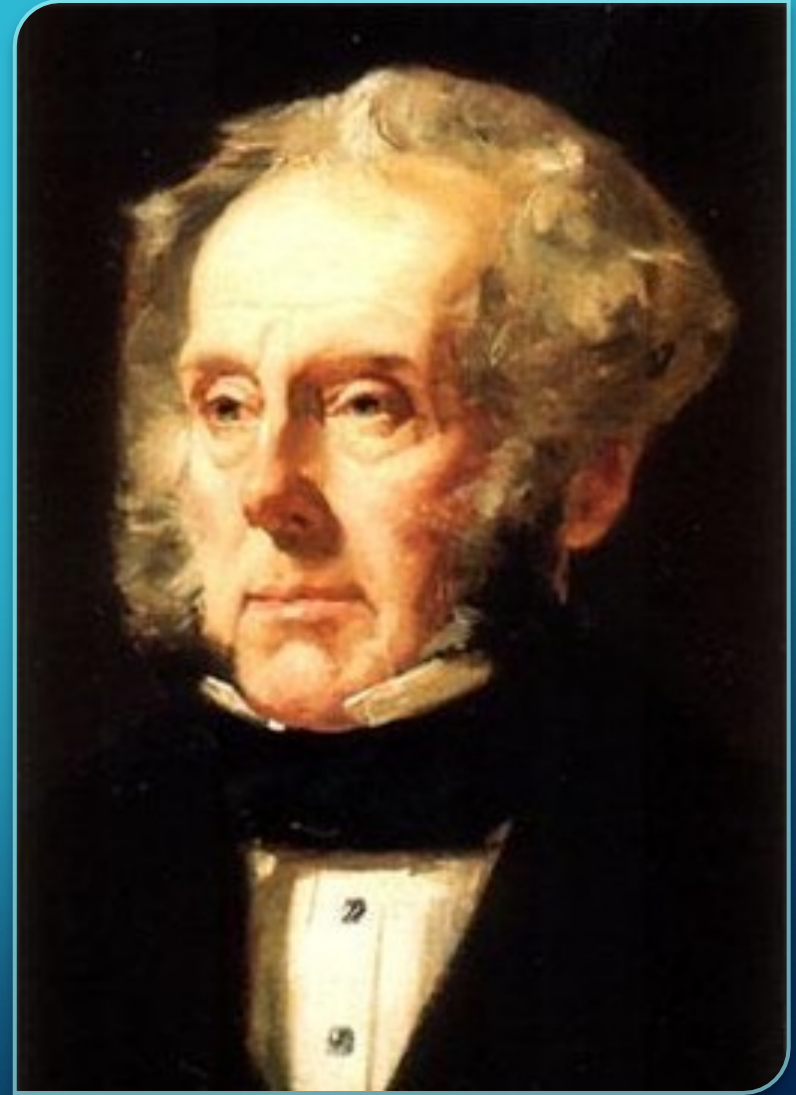
# Proposed BRICS Expansion

- Current BRICS members
- Proposed BRICS members



*We have no eternal allies, and we have no perpetual enemies. Our interests are eternal and perpetual, and it is our duty to follow those interests.*

**Lord Palmerston,** Foreign Secretary of Great Britain and then Prime Minister (1784-1839)





Q & A

[sfurfari@escp.eu](mailto:sfurfari@escp.eu)