BULLETIN

Corpus Christi Geological Society

and

Coastal Bend Geophysical Society

January
2024
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CORPUS CHRISTI GEOLOGICAL SOCIETY
P.O. BOX 1068* C.C.TX. 78403
2023-2024
www.ccgeo.org

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CCGS/CBGS JOINT MEETING SCHEDULE 2023-2024

September 2023

S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

October 2023

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

November 2023

S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

2023-24 Membership Kickoff—Nueces Brewing Co. Downtown, Thursday Sept. 14 5:00p.m.-til 8:00p.m.

Meeting at Joe's Crab Shack Downtown. 11:00 Bar, 11:45 lunch, 12:00 speaker. Speaker: William DeMis—Rochelle Court LLC, "Commodity Super Cycle of Oil & Gas."

Meeting at Joe's Crab Shack Downtown. 11:00 Bar, 11:45 lunch, 12:00 Speaker: Mohamed Ahmed/Grad Student

December 2023

S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

January 2024

S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

February 2024

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29		

Meeting at Joe's Crab Shack Downtown. 11:00 Bar, 11:45 lunch, 12:00 speaker
Speaker: Mark Thompson, Volcanoes role in opening of Gulf of Mexico

Meeting at Joe's Crab Shack Downtown. 11:00 Bar, 11:45 lunch, 12:00 speaker
Speaker: Robin Dommisse/BEG

Honorary Lifetime Membership

Dawn Bissell, Dennis Moore (President of the CCGS), and Randy Bissell

Honorary Lifetime Membership was bestowed upon Dawn and Randy Bissell at the CCGS/CBGS November, 2023 meeting for their outstanding service to the success and welfare of this organization. Thank you Dawn and Randy for all that you do for the Corpus Christi Geological Society.

CBGS President's Letter

CBGS Board 2023-2024

- President- Dr. Mohammed Ahmed
- Vice President- Dr. Subbarao Yelisetti
- Secretary/Treasurer-Charles Benson

CBGS Scholarships

The CBGS scholarship recipient, Ramadan Abdelrehim, presented his recent research titled 'Factors Controlling Barrier Island Geomorphology: Insights from Geophysical Surveys' at the November CBGS/CCGS professional luncheon.

CBGS Business

- CBGS currently has 43 active members, 4 honorary members, and 40 student members.
- Raised $1,450 towards student scholarships through membership revenue this past year.

Academic Programs and Research Activities at TAMU-CC and TAMUK

- TAMU-CC faculty R. Coffin and I. Pecher are leading researcher on a project composed of a 4-university team conducting Earth carbon cycling with a focus on polar warming in the Ross Sea, Antarctica. This research combines geophysical, geochemical, oceanography, geology and microbial ecology data to study gas hydrate and petroleum loading in deep sediment, migration to shallow sediment and water column and predict future release with future changes in the Earth temperature. Collaborative universities include University of Texas, Dauphin Island, and University of West Florida. February 2024 the first expedition will depart from Christchurch New Zealand for a 10-day transit to offshore McMurdo Station in the Ross Sea. After 10 days of seismic data collection our team will offload in McMurdo Station and travel by a C130 back to Christchurch. This expedition will provide focus points for several weeks of coring a year later. For additional info, contact Dr. Richard Coffin: Richard.Coffin@tamucc.edu at TAMU-CC.
- TAMU-CC's geology curriculum is constantly being refreshed with new courses but this academic year we are looking to add additional tracks such as Marine and Climate Geosciences, Planetary Geosciences and Biogeosciences. For additional information contact Dr. Valeriu Murgulet (Valeriu.Murgulet@tamucc.edu) at TAMU-CC.
- Five graduate students from the TAMU-CC Geophysics Lab will be presenting their recent research at the 2023 AGU meeting. For details, contact Dr. Mohamed Ahmed at Mohamed.ahmed@tamucc.edu.

Meetings & Events

- The 2023 Fall AGU annual meeting will be held in San Francisco, CA from December 11-15th, 2023. See https://www.agu.org/Fall-Meeting

Mohamed Ahmed
President, CBGS
Mohamed.ahmed@tamucc.edu

CORPUS CHRISTI GEOLOGICAL SOCIETY
COASTAL BEND GEOPHYSICAL SOCIETY

LUNCHEON MEETING ANNOUNCEMENT

January 17th, 2024

Location:	**Joe's Crab Shack, 444 North Shoreline Dr., Corpus Christi, TX 78401**
Student Sponsors:	**Viper Exploration, Imagine Resources and Mary Nelis.. Thanks!**
Time:	**11:30 AM Social, Lunch follows at 11:45 AM, Speaker at 12:00 PM**
Cost:	**$35.00 (additional $10.00 surcharge without reservation: NO SHOW may be billed.)**
Reservations:	**Please RSVP by 11:00 AM on Monday, January 15th before the meeting!**
	Email: arrangements@ccgeo.org

Please note that luncheon RSVPs are a commitment to Joe's Crab Shack (Shoreline Drive) and must be paid even if you can't attend the luncheon.

SPONSORSHIP OPPORTUNITIES ARE AVAILABLE! IF YOU WOULD LIKE TO SPONSOR, PLEASE CONTACT US AT:

arrangements@ccgeo.org

SPONSORS

The Texas Permian Superbasin Geomodel: Examples from regional and field-level outcrop-to-subsurface reservoir characterization studies.

Robin Dommisse

Geologist

Petroleum Engineer

Austin, Texas

PRESENTATION ABSTRACT

Many multi-disciplinary workflows need to be brought together to build a world-class 3D geological model of the Permian Basin. Advanced techniques such as geomorphology-based modeling (stratalslicing) are critical to properly capturing precise chrono- and lithostratigraphy in 3D seismic surveys. Detailed shelf-to-basin sequence stratigraphic interpretations based on high-resolution well log correlations are critical for guiding the distribution of reservoir parameters.

Advanced fault interpretation and automated fault extraction techniques from seismic are essential for building structural frameworks. Following time-depth conversion, facies interpretations obtained from core and seismic attribute analysis are combined with insights into the depositional environments to build an accurate 3D facies architecture. Next, petrophysical results derived from well logs and cores are distributed to obtain 3D facies-conditioned distributions of rock and fluid parameters. Finally, all historical well production and injection data are integrated into the model to enable the testing of a wide range of research hypotheses related to sediment routing, well productivity, enhanced oil recovery, and seismicity analysis.

The resulting 3D model integrates the BEG's understanding of regional geology with detailed reservoir-scale interpretations and are applicable to a wide variety of research areas critical to the decision-making processes of our industry sponsors and the oil & gas industry at large.

BIOGRAPHY

Robin Dommisse is a Senior Geomodeling Advisor at the UT Bureau of Economic Geology. He received a Propaedeuse in Geology from the Free University of Amsterdam and a B.Sc. In Petroleum Engineering from the University of Texas at Austin. Robin spent 25 years in the private oil and gas industry, working in exploration and production. For 20 of those years, he was the Founder and CEO of Austin GeoModeling, a consulting and software company that he sold to a larger competitor before joining the University of Texas BEG in 2016.

He has performed over 50 integrated 3D reservoir characterization projects - including the Ghawar field in Saudi Arabia and eight major Shale and Tight Oil basins in the US for many super-major, independent, and national oil & gas corporations. His research interests include conventional and unconventional reservoirs, enhanced oil recovery, reservoir simulation, and carbon capture, utilization, and storage (CCUS). His current research focuses on integrating outcrop, core, seismic, production data, and stratigraphic correlations into a high-resolution 3D reservoir model of the Permian Basin. Robin has served in various technical society capacities and is currently an Associate Editor for the AAPG Bulletin.

JOIN!

The Desk & Derrick Club of Corpus Christi is a dynamic organization that promotes the education of the petroleum, energy and allied industries and advances the professional

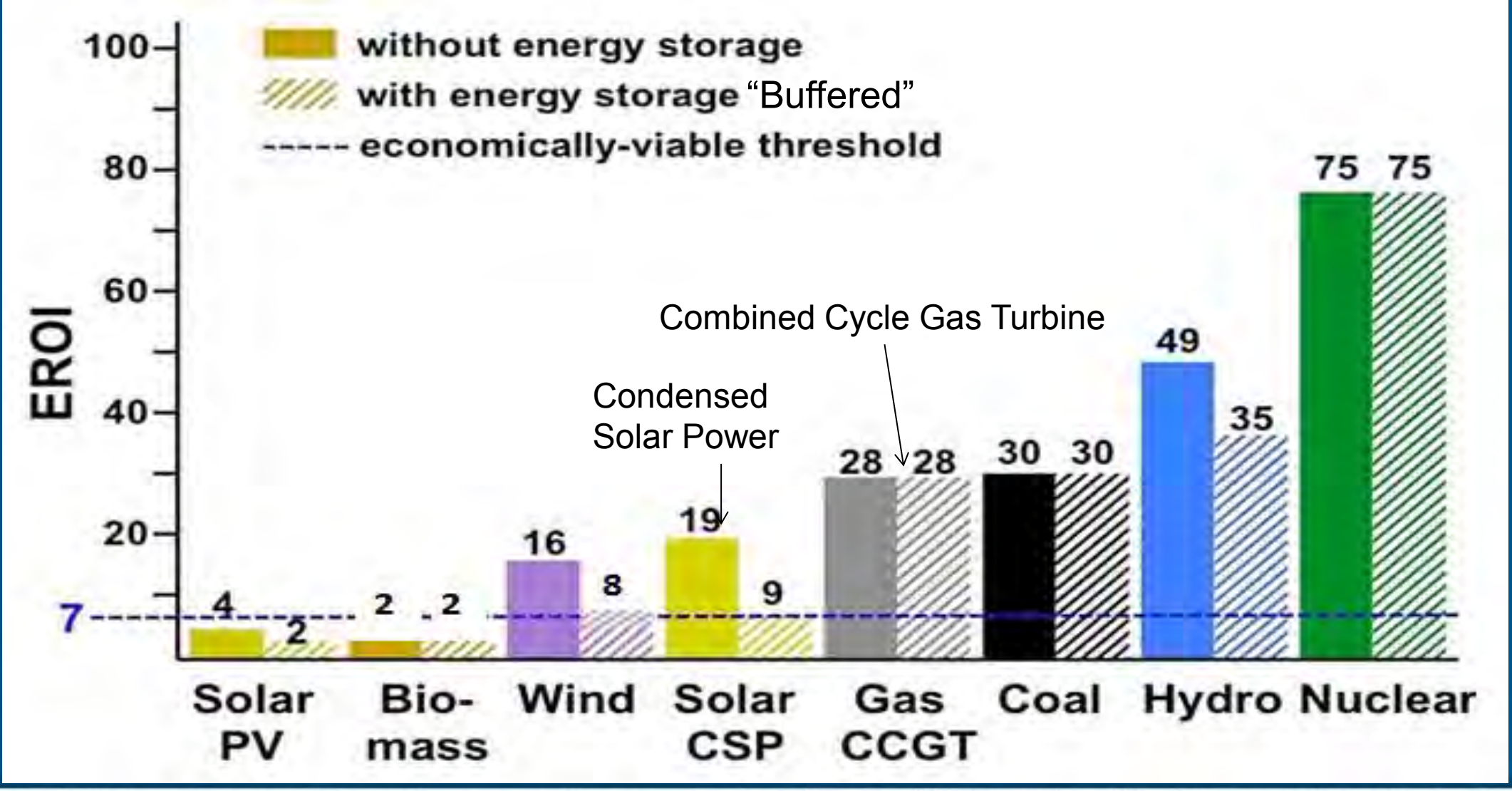
Member Benefits:

- Learn from energy industry experts.
- Network with energy industry leaders and colleagues.
- Attend regional and national meetings.
- Receive critical updates and information about the energy industry.
- Enhance communication and leadership skills.
- Make friends for life!

For more information about the Desk & Derrick Club of Corpus Christi and to learn about member eligibility, go to www.addc.org or contact Jena Nelson at 361-844-6726 or email at jena@amshore.com

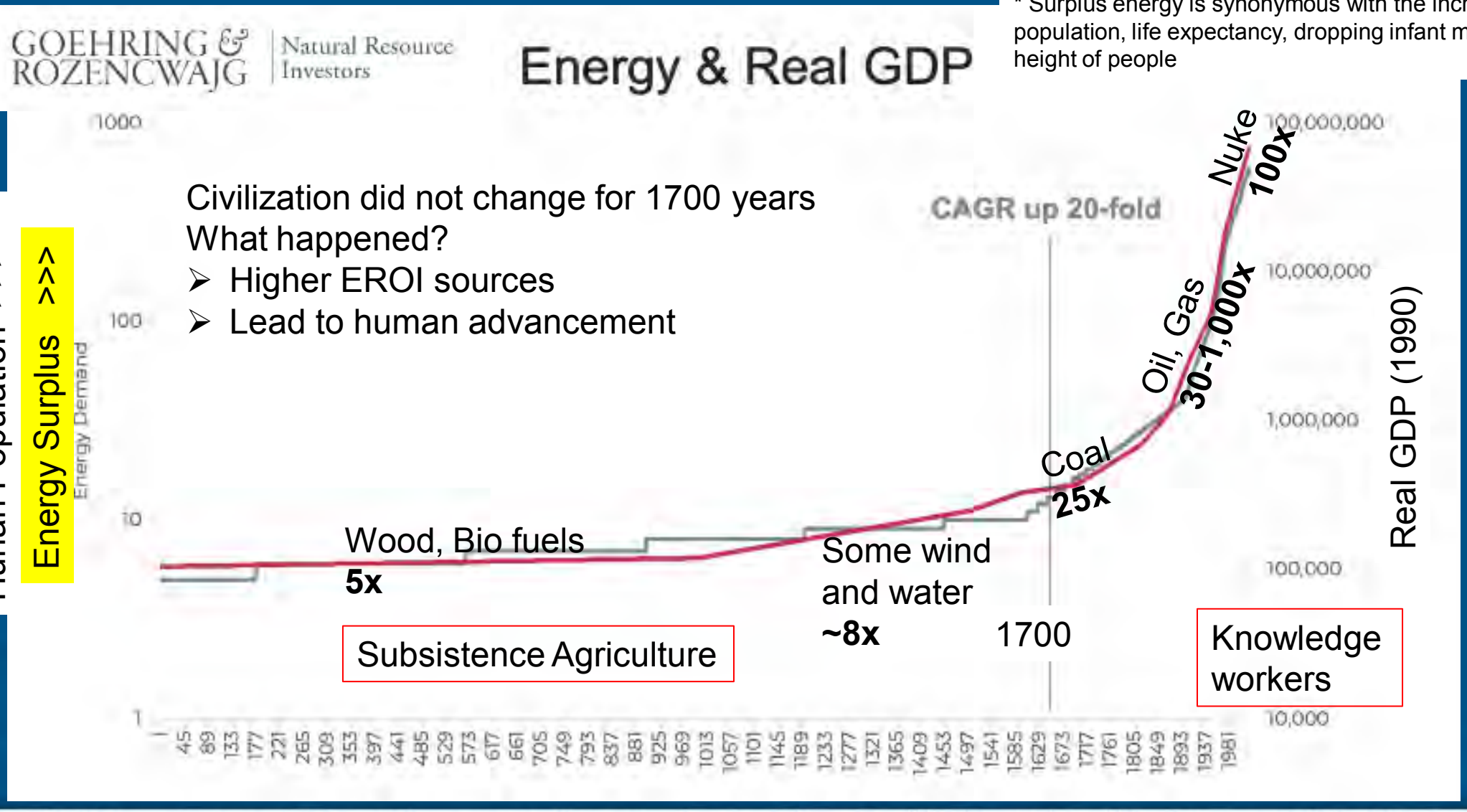
The Desk & Derrick Club of Corpus Christi is a proud affiliate of the Association of Desk And Derrick Clubs, www.addc.org

EROI For Power Generation



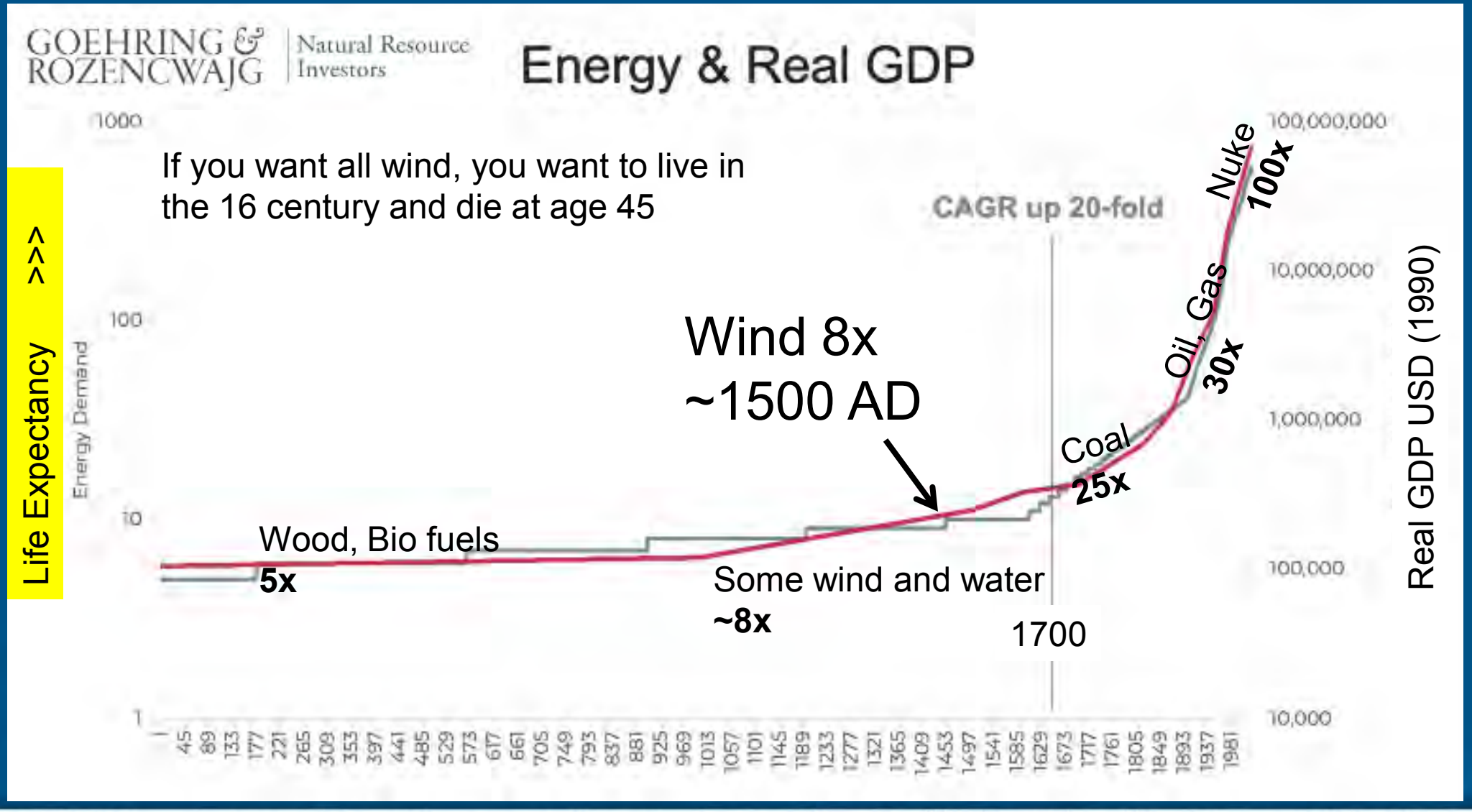
Human History: Civilization is Surplus Energy*

* Surplus energy is synonymous with the increase in human population, life expectancy, dropping infant mortality, even the height of people



Modified from: Michael Rozenscwajg, Nov. 3, 2022, Cold and in the Dark; The Problems with Renewables

Human History: Civilization is Surplus Energy



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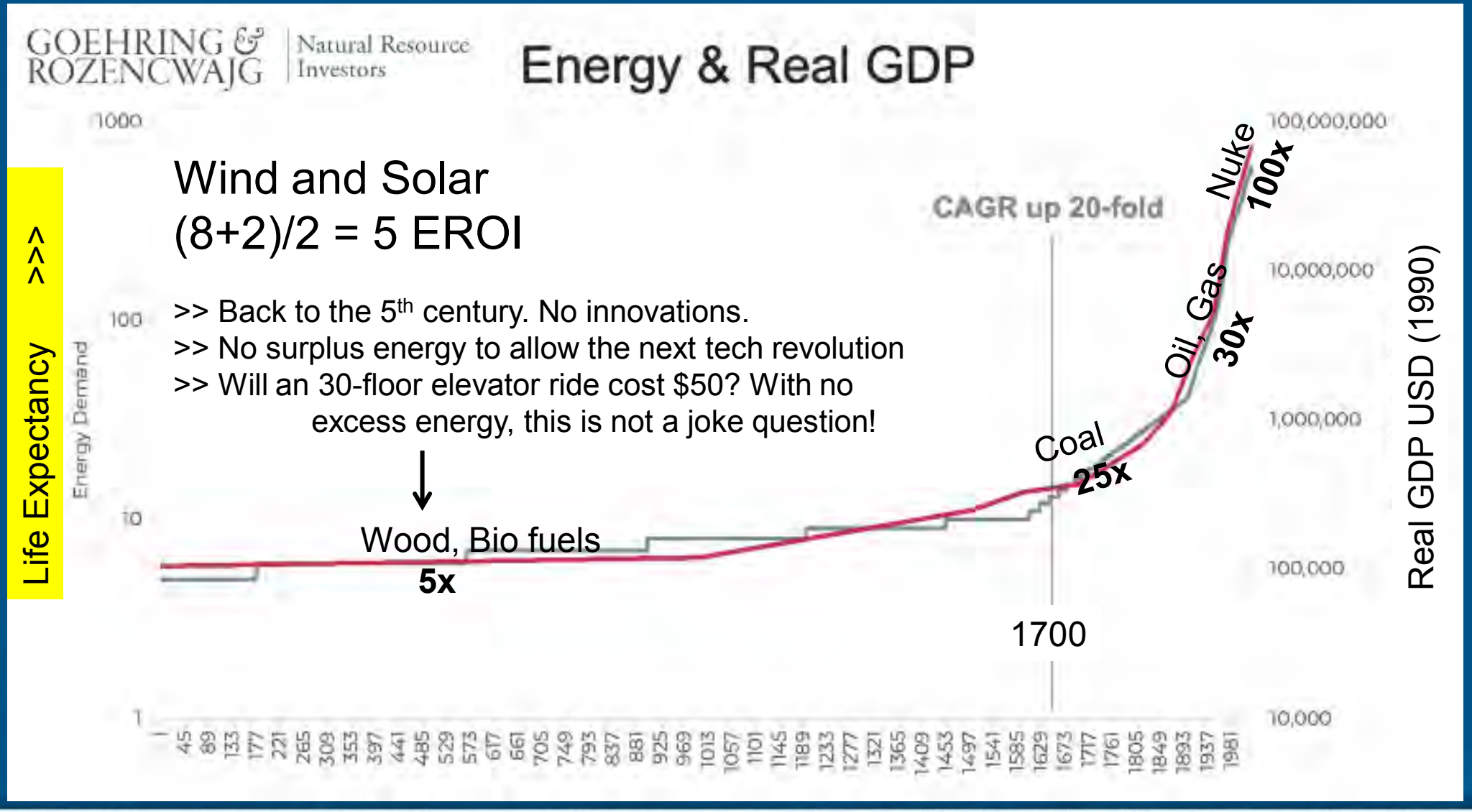
Human History: Civilization is Surplus Energy



Modified from: Michael Rozenscwajg, 2022, Cold and in the Dark; The Problems with Renewables

Commodity Super Cycle

Definition: all commodity prices rise and commodity scarcity limits economic activity.

Super Cycle will last 7-10 years and peak in this decade. Resolution will be slow.

Three Causes

Outline of Talk

1 - Monetary and Fiscal policy, deficits, inflation (DeMis, 2021)

2 – Demand and Supply, underinvesting in all commodities

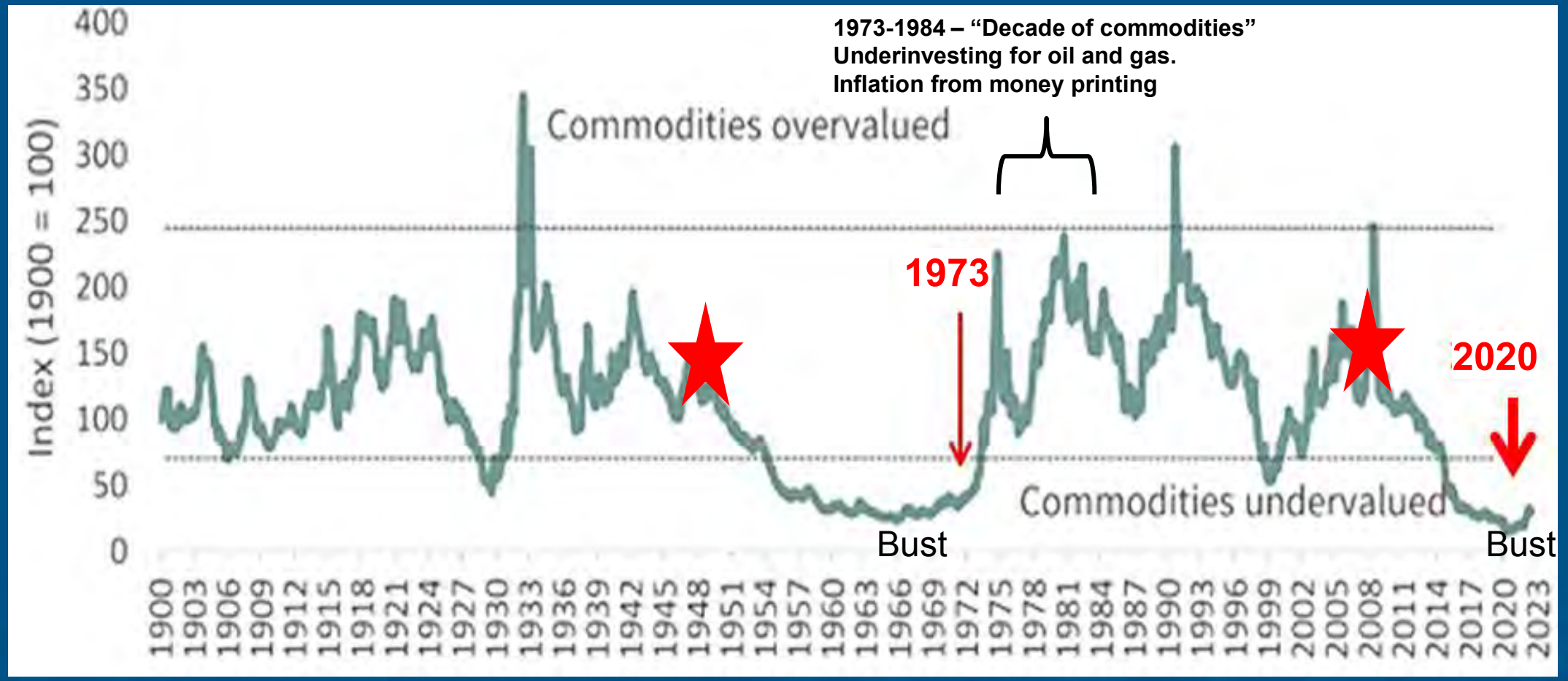
3 – “Great Energy Detour”, Inflation Reduction Act and Green Holy Trinity

Wind and solar cannot provide baseload power for grid.

Must go to nuclear

Commodities at historic lows – early 1970s analogue

Commodities relative to Dow Jones Industrial Average, 1900 to present, 1900 = 100



Graph from Goehring and Rozencwajg (2022a). Reprinted by permission.

Monetary and Fiscal Policy

Unstainable Federal debt and deficits will create more inflation

- Federal debt is 120% of GDP
- Annual Deficits ~ $1.5 Trillion
- Interest payments on national debt = $1 trillion today
  - ~30% of government income going to interest payments;
  - > Defense Spending
  - Print more money ("federal spending = virtue")
  - Money printing creates inflation and dollar devaluations
  - Leads higher commodity prices
  - Inflation and tight supply drove all commodity prices higher in 1970s
  - UPDATE: Fitch Down-graded US AAA Bonds
  - "United States of Argentina"

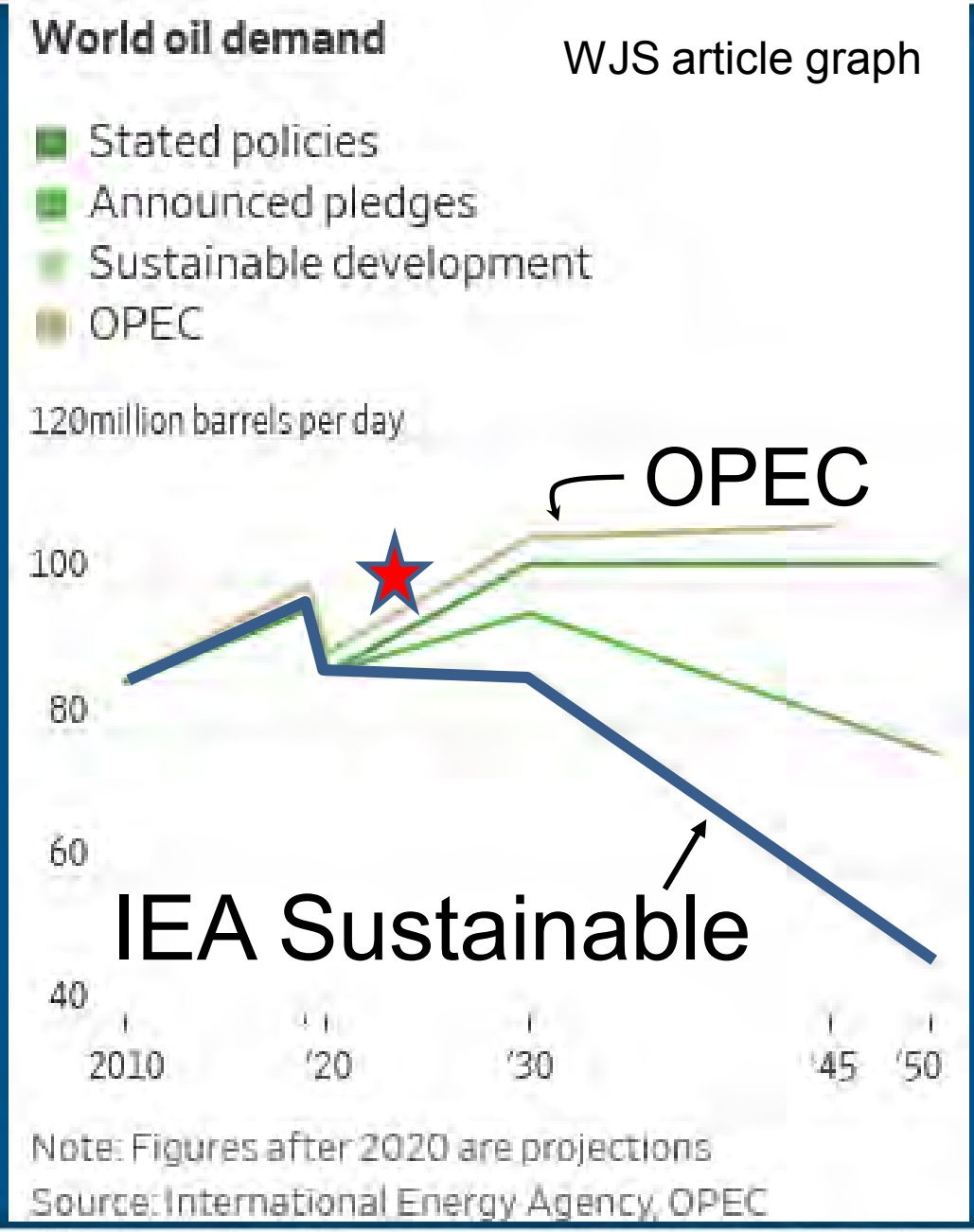
Demand

IEA "Sustainable Prediction"

May, 2021

- Oil demand would never recover after Covid
- IEA - no need to find new oil and fields or new providences.
- 44 mmbo per day by 2050.

- OPEC's predictions never showed anything like that decline

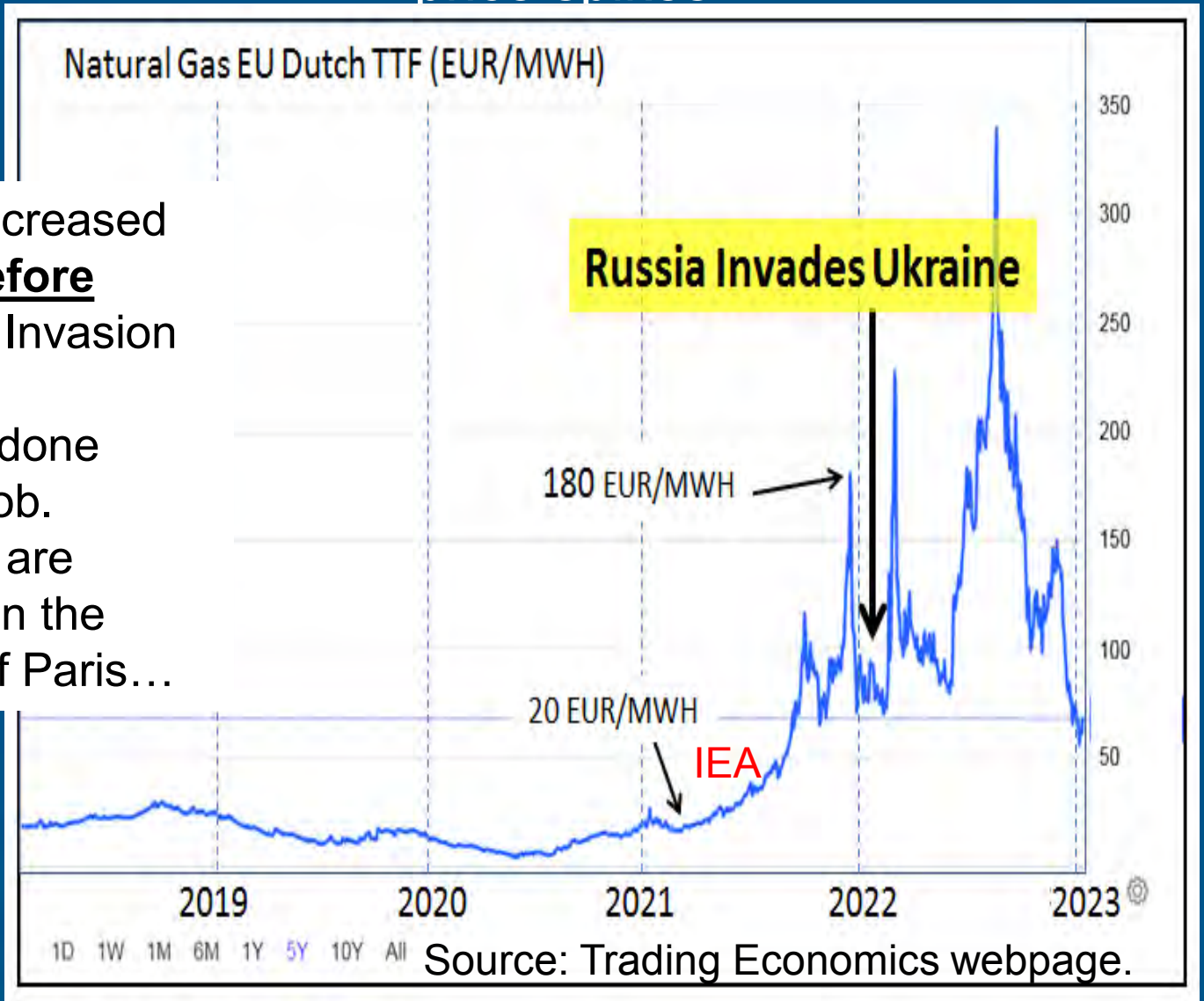


* Wall Street Journal, "The Oil and Gas Road Map Could Lead Planners Astray, Jinjoo Lee, October 14, 2021, pg. B20 THIS IS NOT AN EDITORIAL. https://www.wsj.com/articles/this-oil-and-gas-road-map-could-lead-planners-astray-11634119380?mod=Searchresults_pos1&page=1

Since inception after 1973 oil embargo, IEA has had one 1 job: prevent energy price spikes

Prices increased 9-fold **before** Russian Invasion

IEA has done terrible job. But they are popular in the salons of Paris…

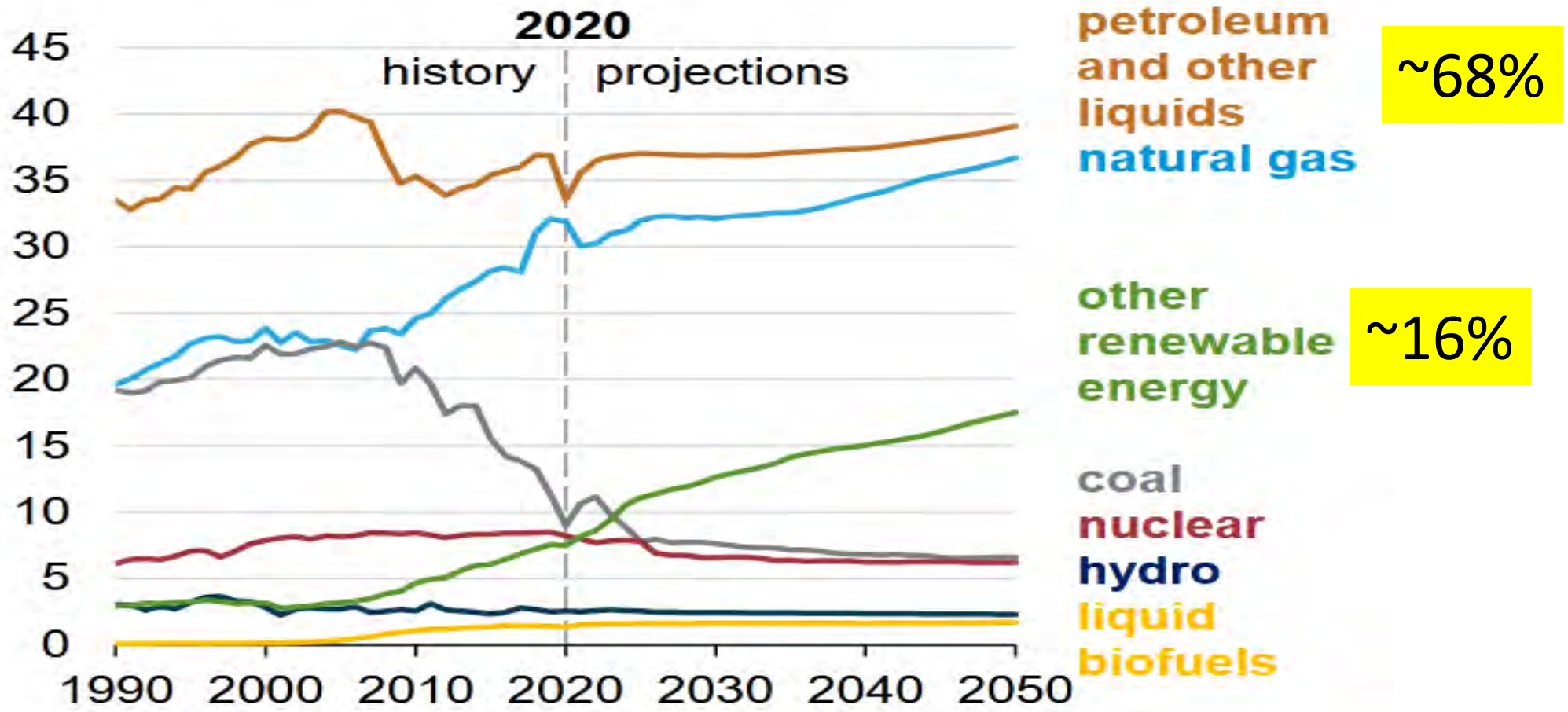


Source: Trading Economics webpage.

Not just electricity

U.S. energy consumption by fuel
AEO2021 Reference case
quadrillion British thermal units

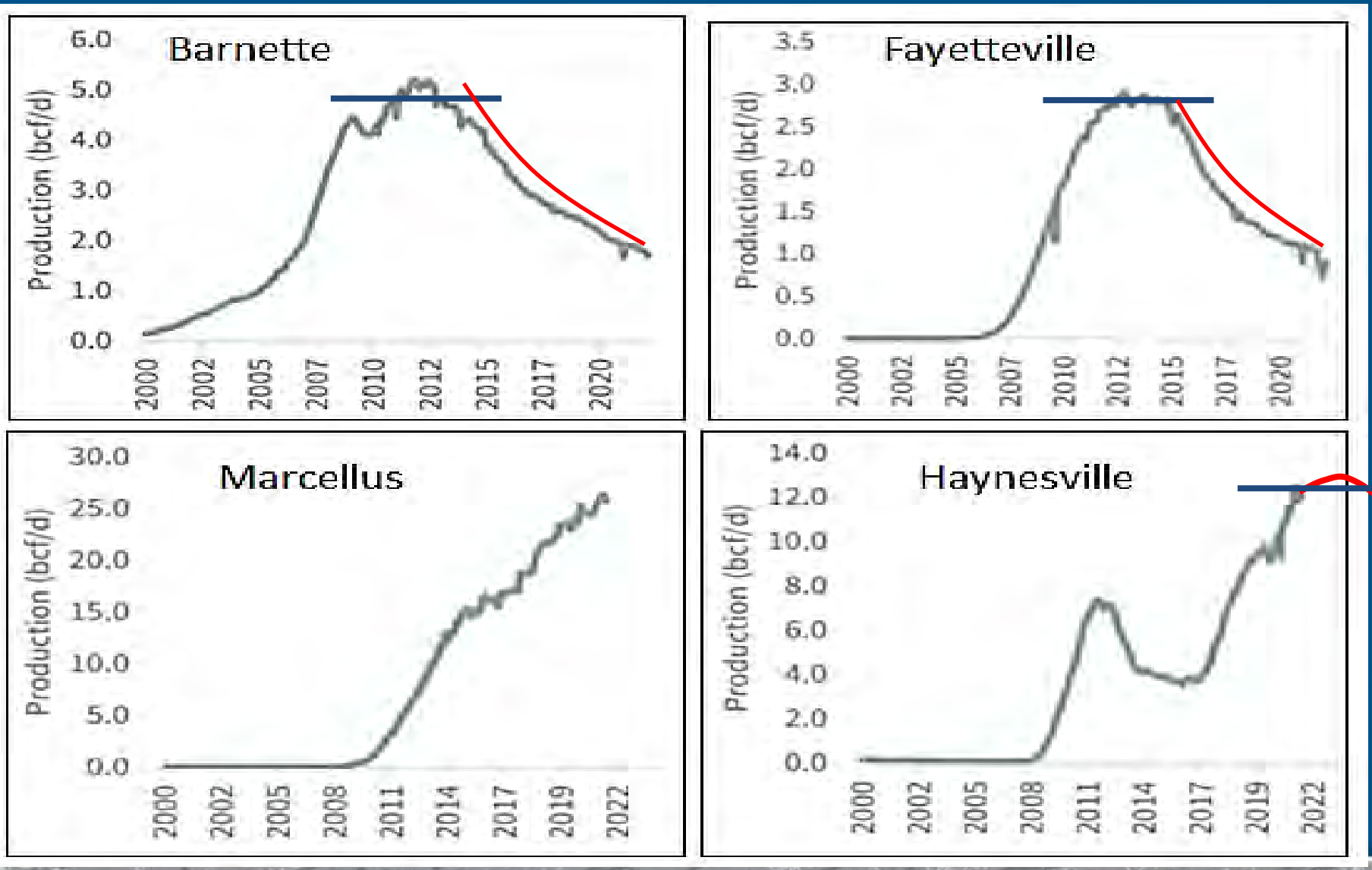
Total ~ 110 Q_BTUs



~68%

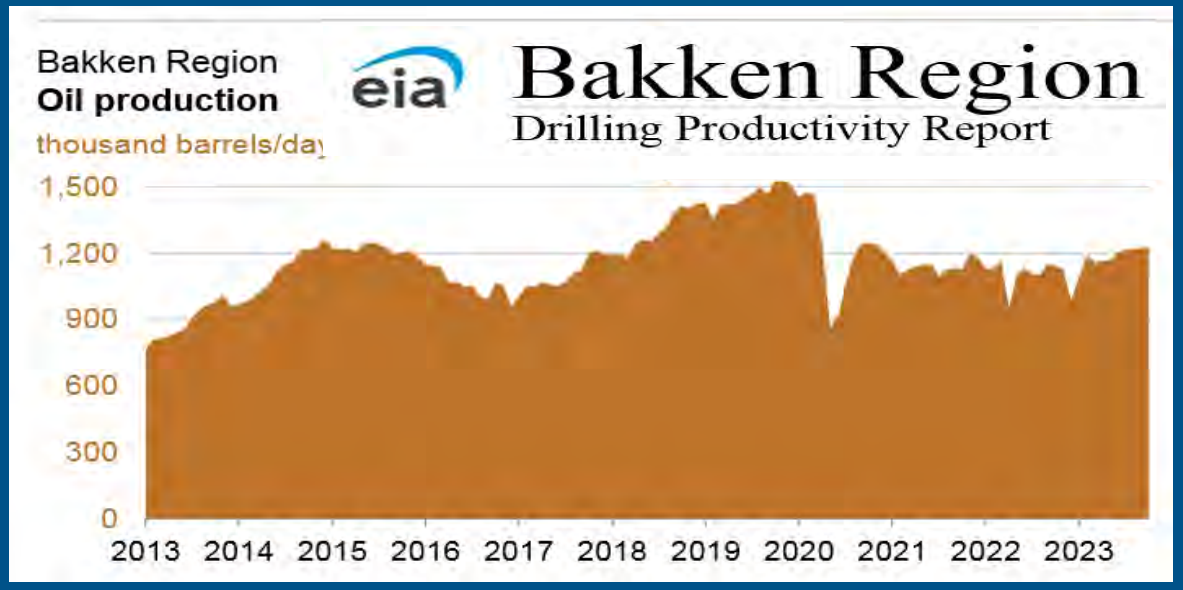
~16%

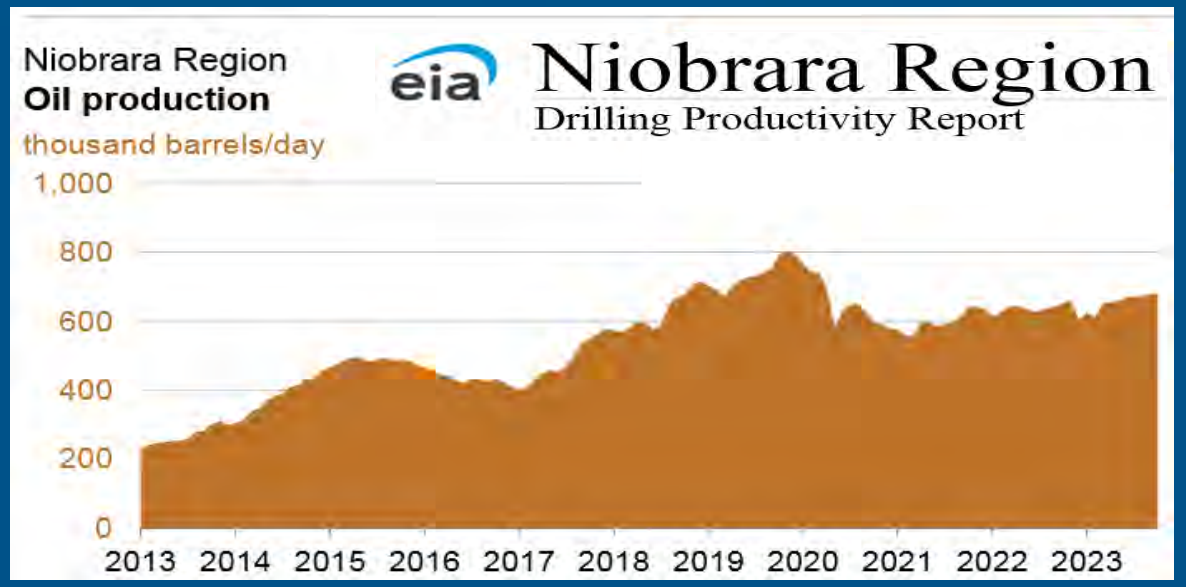
Supply: Gas Resource Plays Will Decline Rapidly

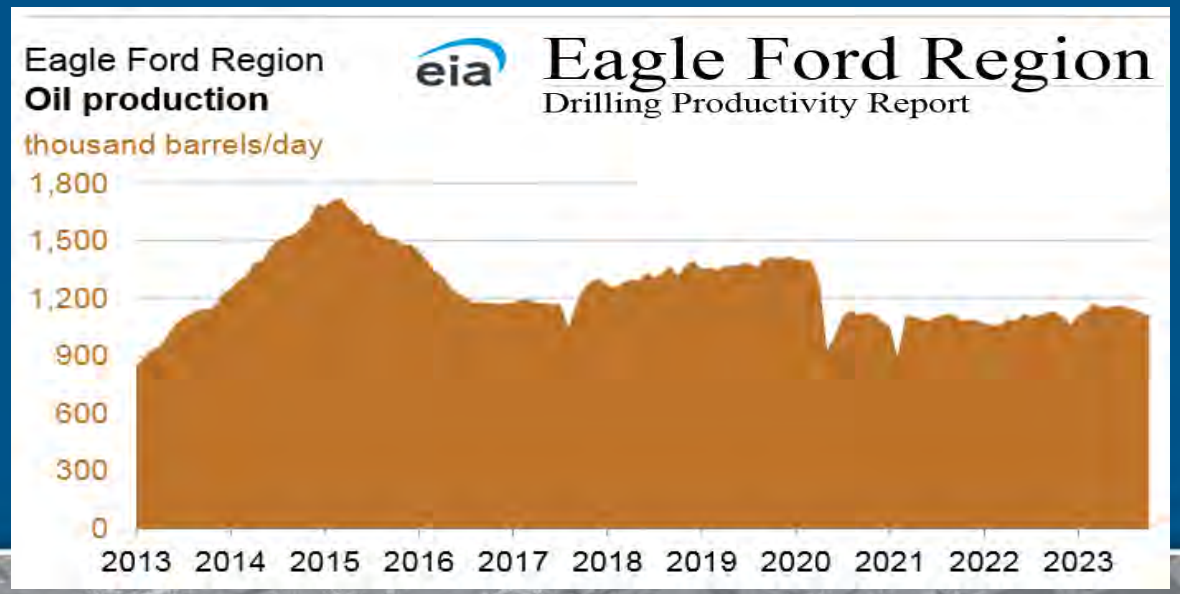


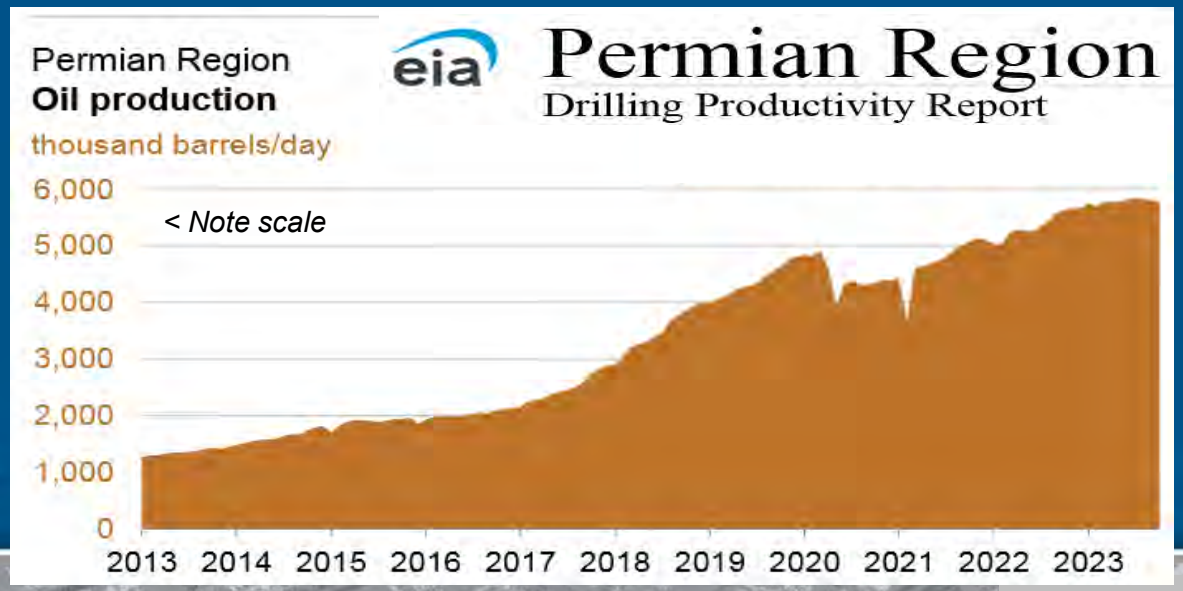
This will be the big one

Supply: 4 Big Oil Shales are “Topping Out”









Underinvestment – Nuclear

US nuclear-sourced electricity down 5% since 2017. (EIA, 2022)

Six nuclear power plants totaling 4,736 megawatts have been retired.

New York State prematurely shut down the Indian Point nuclear power plant, losing 2,051 megawatts (ibid).

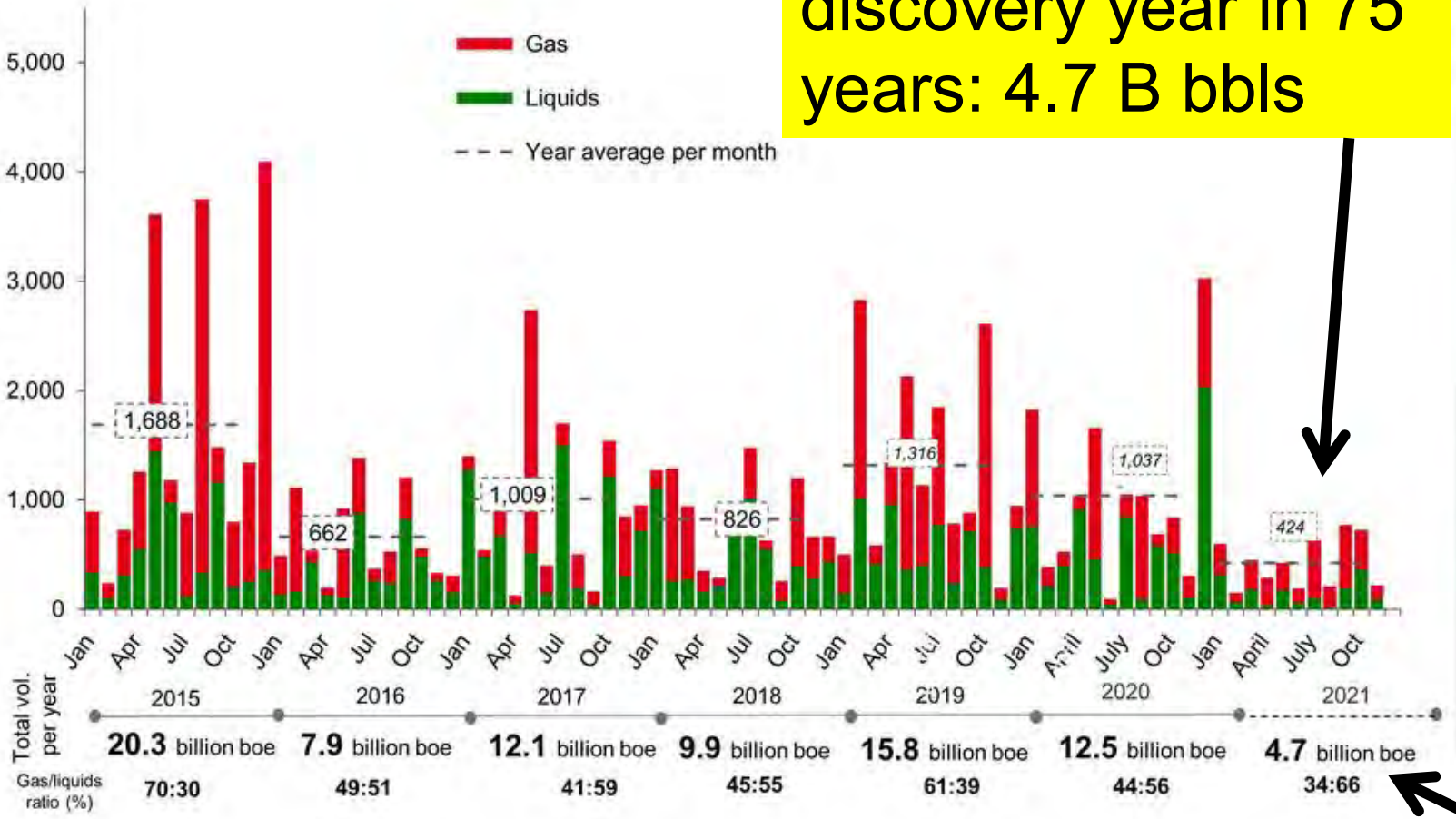
Three natural gas power plants have been introduced to replace New York's lost power (EIA, ibid). New York does not allow fracking.

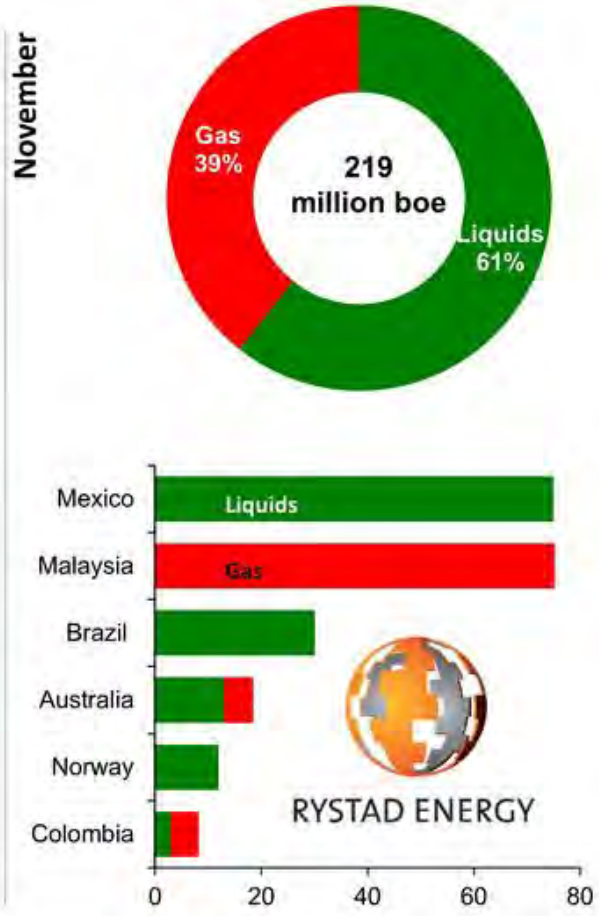
CO2 emissions in New York have gone up.
Emissions increased in Germany, California, and France when they went solar and wind (refs in paper)

Global discoveries for 2021 on course to lowest in decades /November volumes

Million barrels of oil equivalent

2021 Lowest discovery year in 75 years: 4.7 B bbls



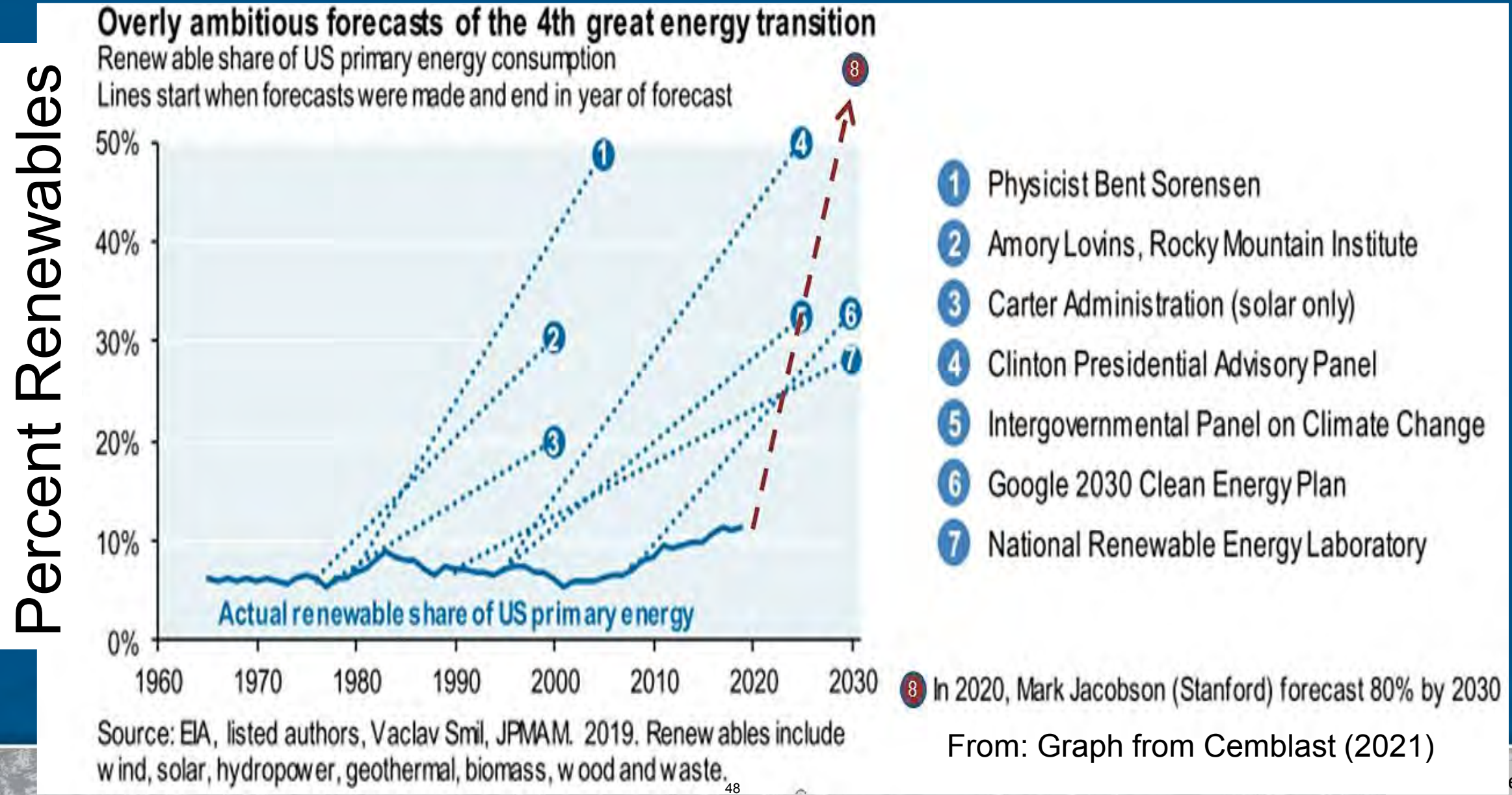


Source: Rystad Energy ECube, UCube, research and analysis

https://www.rystadenergy.com/newsevents/news/press-releases/2021-global-oil-and-gas-discoveries-projected-to-sink-to-lowest-level-in-75-years2/

am DeMis

Seven Energy Transitions Predicted Before



From: Graph from Cemblast (2021)

Transitioning back to lower density energy is un-natural

Less Efficient

Energy *naturally* organizes everything: biology to economics

More Efficient

Low EROI Improving Energy Systems **High EROI**

Never go backward to low density, less efficient forms of energy. -V. Smil, 2010, 2017

"Good energy crowds out bad energy" – W. DeMis

Low Density

EVs

Life Cycle Emissions comparison

Intensive "electrification" does not mean zero GHG emissions.

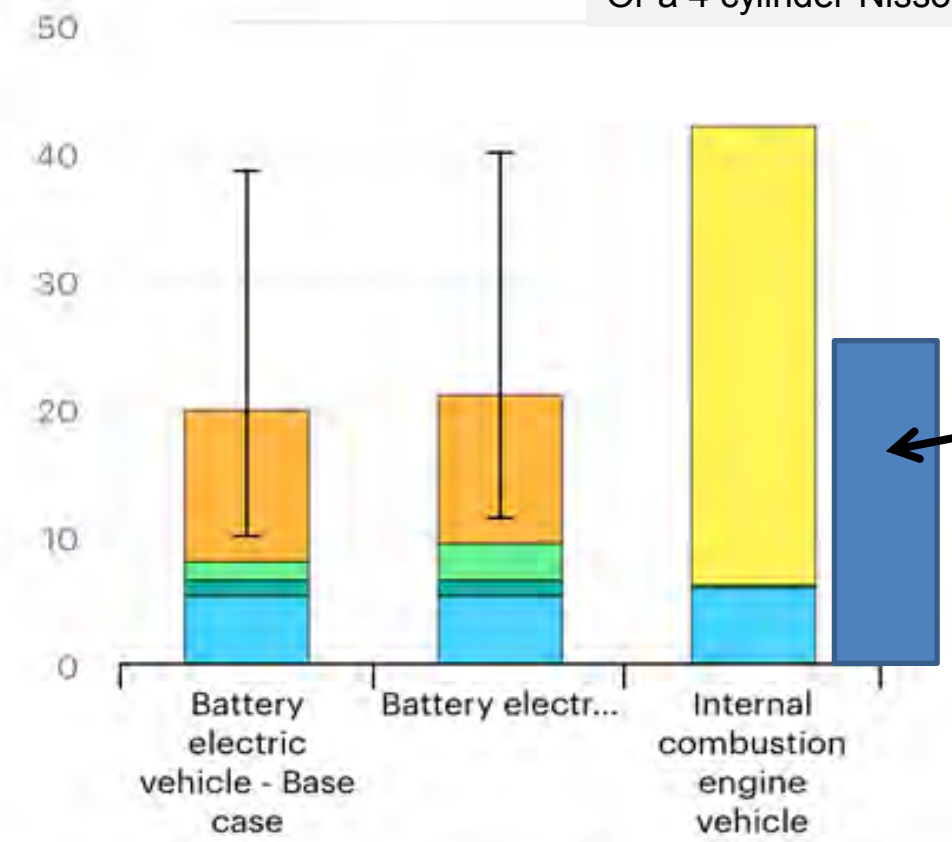
EVs have ½ the emissions of ICE cars … and half is NOT ZERO!

IEA Report

Comparative life-cycle greenhouse gas emissions of a mid-size BEV and ICE vehicle

Open

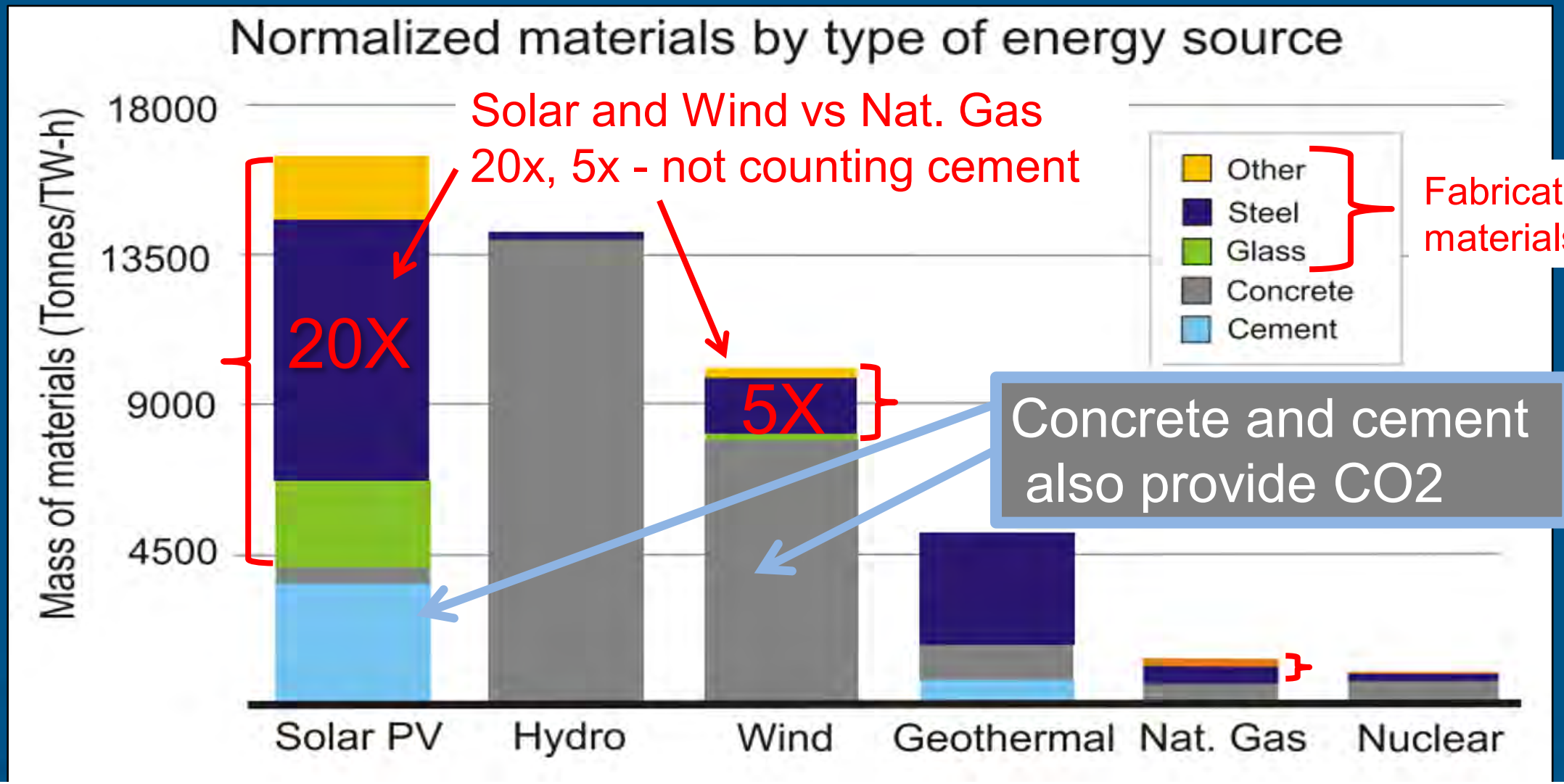
Which ICE car is this?
An 8 cylinder Suburban?
Or a 4 cylinder Nisson?



Hybrid Car Gasoline-electric car is about here. Why should perfect be the enemy of good enough?

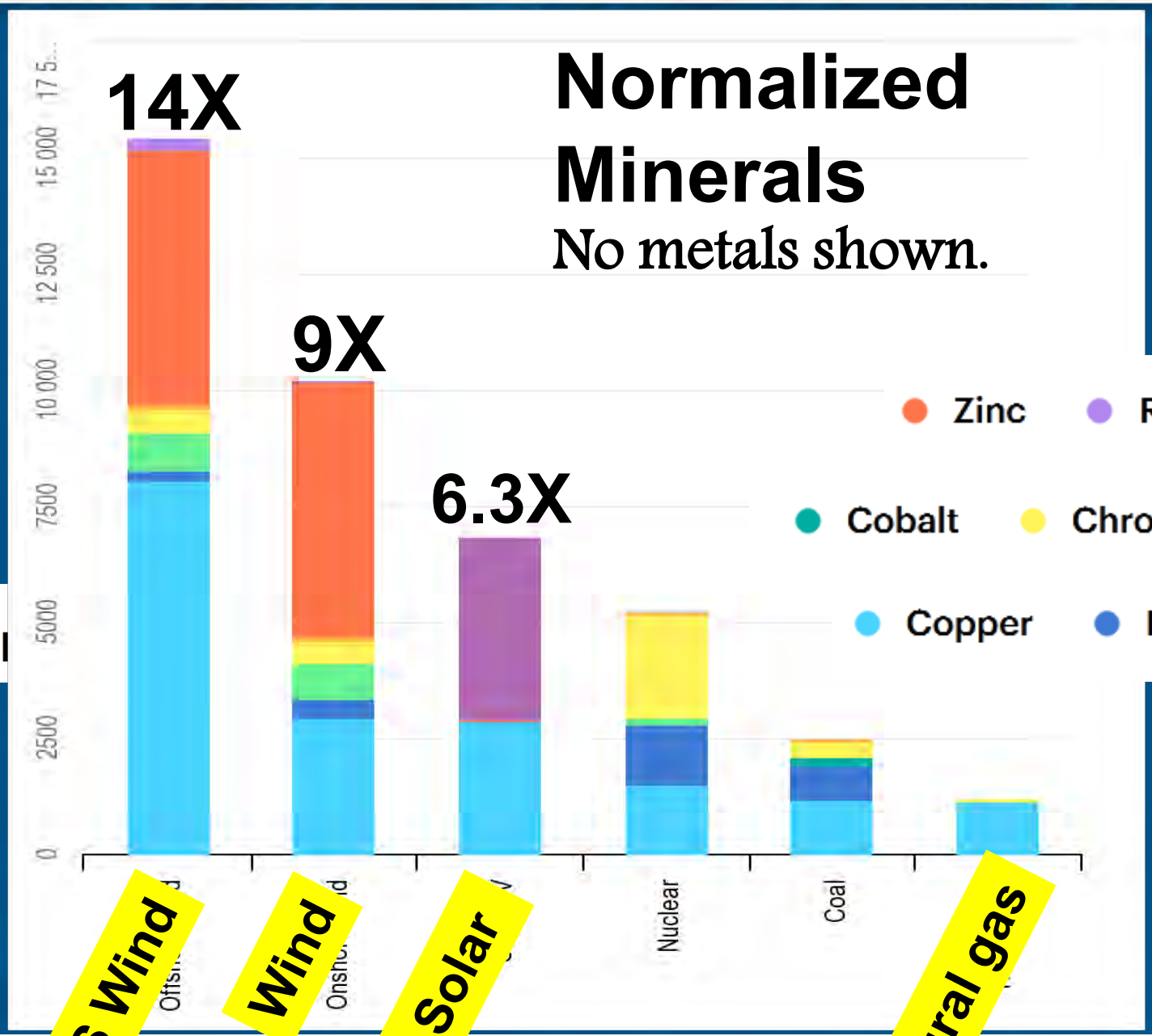
https://www.iea.org/reports/the-role-of-critical-minerals-in-clean-energy-transitions

Solar and Wind machines are *Material Monsters*



DOE, 2015, Quadrennial technology review, chapter 10: Concepts in integrated analysis: U.S. Department of Energy, <https://www.energy.gov/quadrennial-technology-review-2015>. Table 10.4, page 390

Material monsters



The Role of Critical Minerals in Clean Energy Transitions

Executive summar

https://www.iea.org/rep the-role-of-critic -minerals-in-clean-ene transitions/executive-summary

When NRDC and Serra Club say “Green Power and no nukes”

What are they really advocating for?

Mine, Baby Mine!

New Face of NRDC

Solar and Wind machines are *Material Monsters*

Copper is the critical mineral for an electrified economy

Twin Metals deposit in Minnesota canceled. Cu, Cobalt, Nickel

Sec. of Interior Haaland ban on mining *and geothermal energy* in SNF of Minnesota.

Chilean copper mine expansions delayed 12 years – and counting – because of (drum roll, here) …

….ESG! People in Chile want a clean environment too.

In Econo-speak: "Supply curve for copper is inelastic"

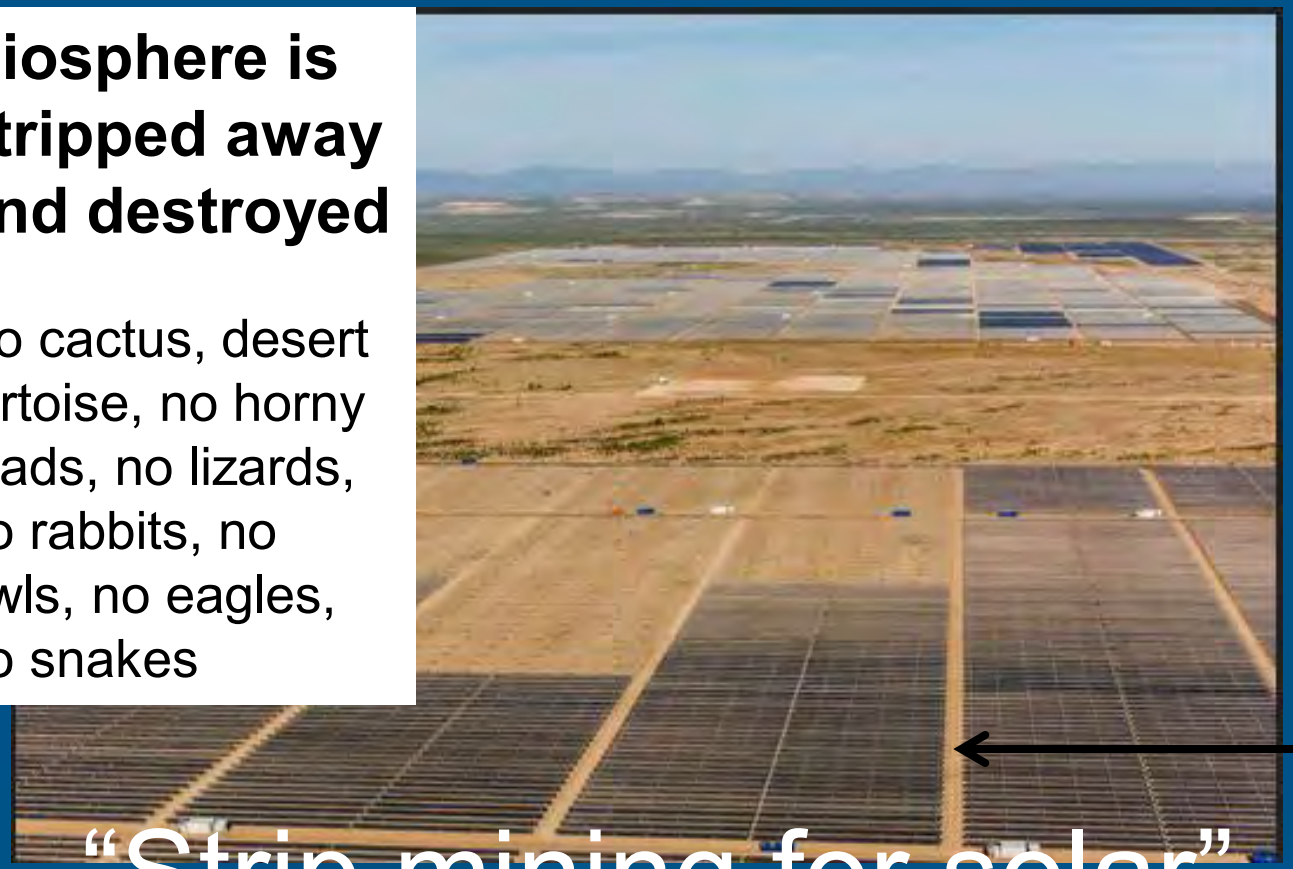
Northey, S, S. Mohr, G. M. Mudd, Z. Weng, and D. Giurco, 2014, Modelling future copper ore grade decline based on a detailed assessment of copper resources and mining: **Resources, Conservation and Recycling**, v. 83, pg. 190–201.

Roserock Solar

Pecos County, Texas Cost $405.3 Million

Biosphere is stripped away and destroyed

No cactus, desert tortoise, no horny toads, no lizards, no rabbits, no owls, no eagles, no snakes



Area: 1,300 acres
Annual net Output: 362 Gw-h*
700,000 Canadian Solar SC6X photovoltaic panels
Single axes tilt array panels

Power output: 220 MBoe/year

Ground scraped
Clean

"Strip mining for solar"

Releases CO2 from soil

Material & Energy - Roserock vs Haynesville Well

Only include the weight of the 700,000 PV cells

Canadian Solar CS6X-315P Max Power Solar Panel

MAX POWER	
CSI Model Number	CS6X-315P
STC Rating	315.0 Watts
PTC Rating	289.7
Open Circuit Voltage (Voc)	45.1 V
Short Circuit Current (Isc)	9.18 A
Frame Color	Silver
Origin	China
Power Tolerance	0 / +5 Watts
Weight (lbs)	48.5
Length (in)	76.93
Width (in)	38.7
Height (in)	1.57

Roserock Solar Power Plant vs. Haynesville Gas

Analysis favors Solar

- No Op Ex for solar

	Roserock Solar	Base Case
Land used, Acres	185x 1,300	6
C	15.6x	
Ma		

Sun sets > no electricity

Spent $405 million, but still need more money for Back-up power: batteries or **hydrogen power storage system.**

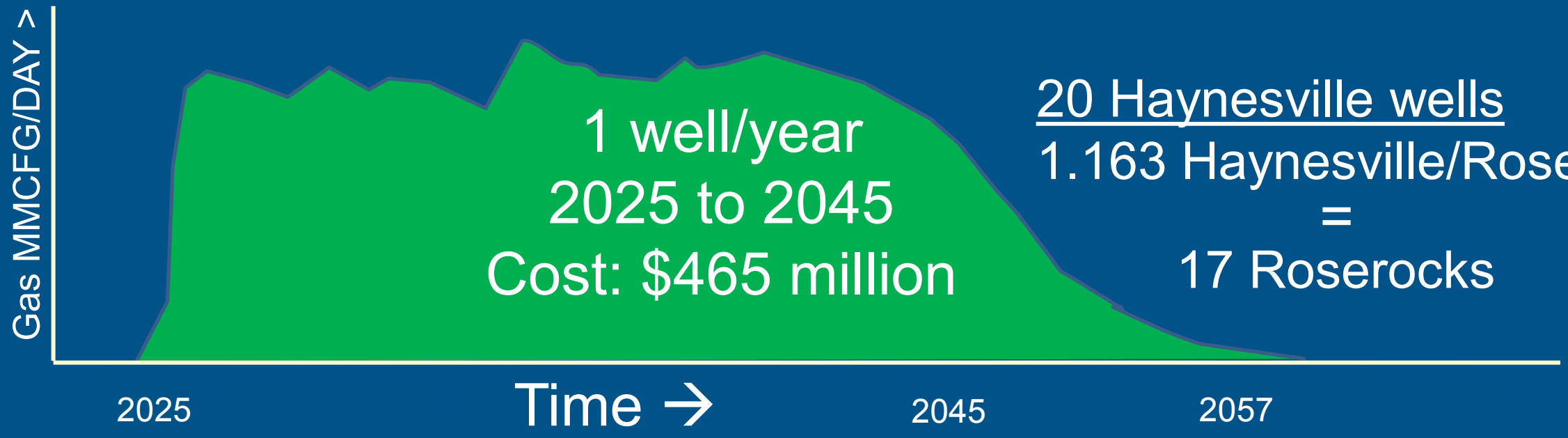
This is why solar and wind are so expensive (e.g., Germany, California, etc.)

Solar panels get thrown away in 20 years

Footnotes:	*No operating cost included for 20 year contract life of Roserock	**Well cost $18 million D&C, surface facilities, plus 12 year of op ex at $30K/mo totaling $4.32 million. Enegy is net of fuel used in drilling.
1 - one Gft^3 NG = 302380 MWh; 2 - one Gft3 NG = 1,088,568 GJ; 3 - each PV cell weights 45 lbs		

Comparison of equal energy - malinvestment

Twenty Haynesville Gas wells drilled over 20 years



17 Roserocks → Cost: $6.9 billion (same energy as 20 H wells)
Does not include cost back-up energy (i.e., battery, hydrogen)
Solar: $12 -14 Billion →1 GW nuclear reactor, 100 years, noCO2

NREL Table 30 data.

Table 30. Condensed Bill of Materials for Wind Turbines Used in Analysis

	OEM						
Turbine make	Micon	Nordex	Micon	Vestas	Vestas	Vestas	Vestas
Turbine model	NM52	N-62	NM72	V82 1.65	V90 2.0	V100 2.0	V110 2.0
Nameplate capacity	0.9 MW	1.3 MW	1.5 MW	1.65 MW	2.0 MW	2.0 MW	2.0 MW
Hub height	60.7 m*	69 m	80 m	78 m	80 m	80 m	80 m
Rotor diameter	52.2 m	62 m	72 m	82 m	90 m	100 m	110 m
	Mass (kg per kW)						
Steel	111.2	104.5	110.1	96.3	82.2	83.9	92.2
Fiberglass/resin/plastic	18.8	23.8	20.9	18.2	16.0	14.1	14.2
Iron/cast iron	7.2	17.3	8.7	17.8	20.5	13.3	13.3
Copper	1.6	1.5	1.2	1.8	0.9	0.6	0.7
Aluminum	N/A	N/A	N/A	1.9	2.1	1.7	1.9
Total	**139.9**	**148.2**	**141.7**	**138.9**	**124.0**	**115.0**	**124.0**
	% of Total Turbine Mass						
Steel	79%	71%	78%	69%	66%	73%	74%
Fiberglass/resin/plastic	13%	16%	15%	13%	13%	12%	11%
Iron/cast iron	5%	12%	6%	13%	17%	12%	11%
Copper	1%	1%	1%	1%	1%	1%	1%
Aluminum	N/A	N/A	N/A	1%	2%	1%	2%
Total	**99.2%**	**99.4%**	**99.4%**	**97.8%**	**98.0%**	**98.7%**	**98.5%**

Sources: Liberman (2003); Vestas (2006); Garrett and Ronde (2011); Razdan and Garrett (2015a, 2015b)

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

3 MW wind turbines
~404 Tons total

~ 1,000 tons cement & 20 tons of rebar steel for pad it sits on

(American house: 20 – 40 tons)

Source: Mone, et al, 2015, Cost of Wind Energy: NREL Technical Report NREL/TP-6A20-66861 Revised May, 2017

2021 Cost of Wind Energy Review

Tyler Stehly and Patrick Duffy
National Renewable Energy Laboratory
December 2022

		Land-Based	
Parameter	Unit	Utility-Scale Land-Based	Uti (Fi
Wind turbine rating	MW	3	8
Capital expenditures (CapEx)	$/kW	1,501	3,8
Fixed charge rate (FCR) [real]	%	5.88	5.8
Operational expenditures (OpEx)	$/kW/yr	40	
Net annual energy production	MWh/MW/yr	3,775	4,2
Levelized Cost of Energy (LCOE)	$/MWh	34	78

Note: Unless specifically stated, all cost data are reported in 2

$120K/yr

43% conversion efficiency, which no one at NREL has ever proposed. Either this is a typo, or it is eco-gaslighting.

Wind power 3 MW turbines Vs. Haynesville

Analysis favors wind

- Wind Turbine conversion used is

All this gets thrown away, or re-fabricated, in 20 years;
Meaning a thermal process consuming more energy and cost.

	3 MW Wind	Base Case
Land used, Acres	1	6

Still need a 100% redundant **back-up** power or **battery** or **hydrogen power storage.**
This is why solar and wind are so expensive (e.g., Germany, California, etc.)

1 - one Gft3 NG = 302380 MWH 2 - one Gft3 NG = 1,088,568 GJ 3 - material from Mone et al, 2015 (Vestas V82 weight for 3 MW)

life of Wind Turbine.

totaling $4.32 million. Enegy is net of fuel used in drilling.

Energy Analysis of Spraberry well

Analysis favors wind

- Wind Turbine conversion used is 33%. NREL standard is 28%.
- No Op Ex for wind.
- No energy deduct for fuel to build.
- Concrete not included

Wind Turbine 3 MW vs Spraberry Trend Wells

Energy, Land, Cost, Material Analysis

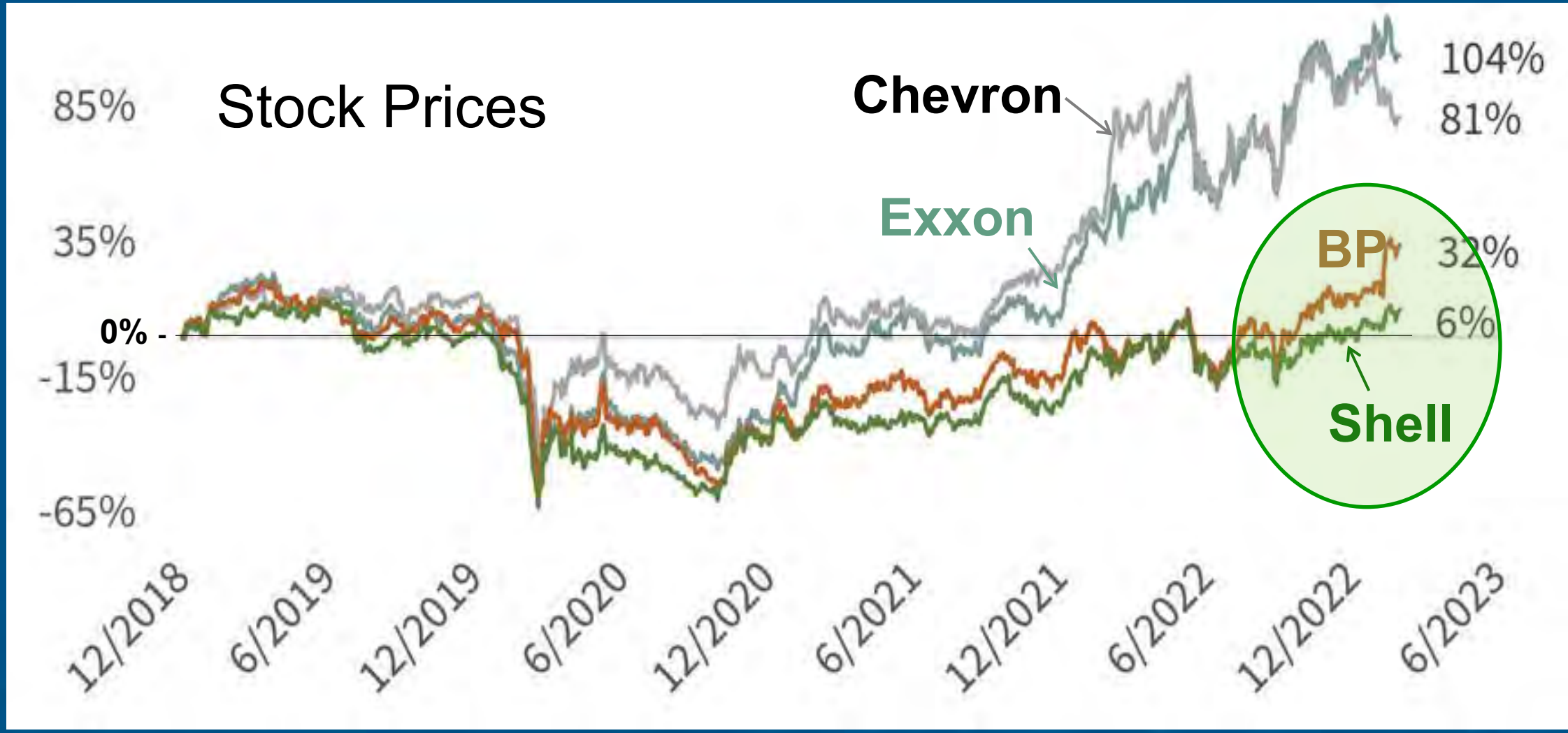
	3 MW Wind Tubrine	Spraberry Trend	Wind Equlivent	
	20-year life metrics	One 7,500' lateral metrics	4.5 Wind Turbines to equal 1 Spraberry well	
MegaWatt-Hours	216,810	976,920		976,920
Thousand BOE	132	600		595
GigaJoules	780,503	3,516,912		3,516,853
Land (Acres)	1	6		4.51
Cost Millions*	$4.5	$16.3	1.25X	$20.28
Material (Tons) -1	404	334	5.4 X	1,820

-1 78% Steel, no cement

315 tons Steel

*$12 million D&C, plus facilities, plus $30K/mo for 12 years, fuel subtracted. EUR 600,000 BOE is far below average, per operator. [78]

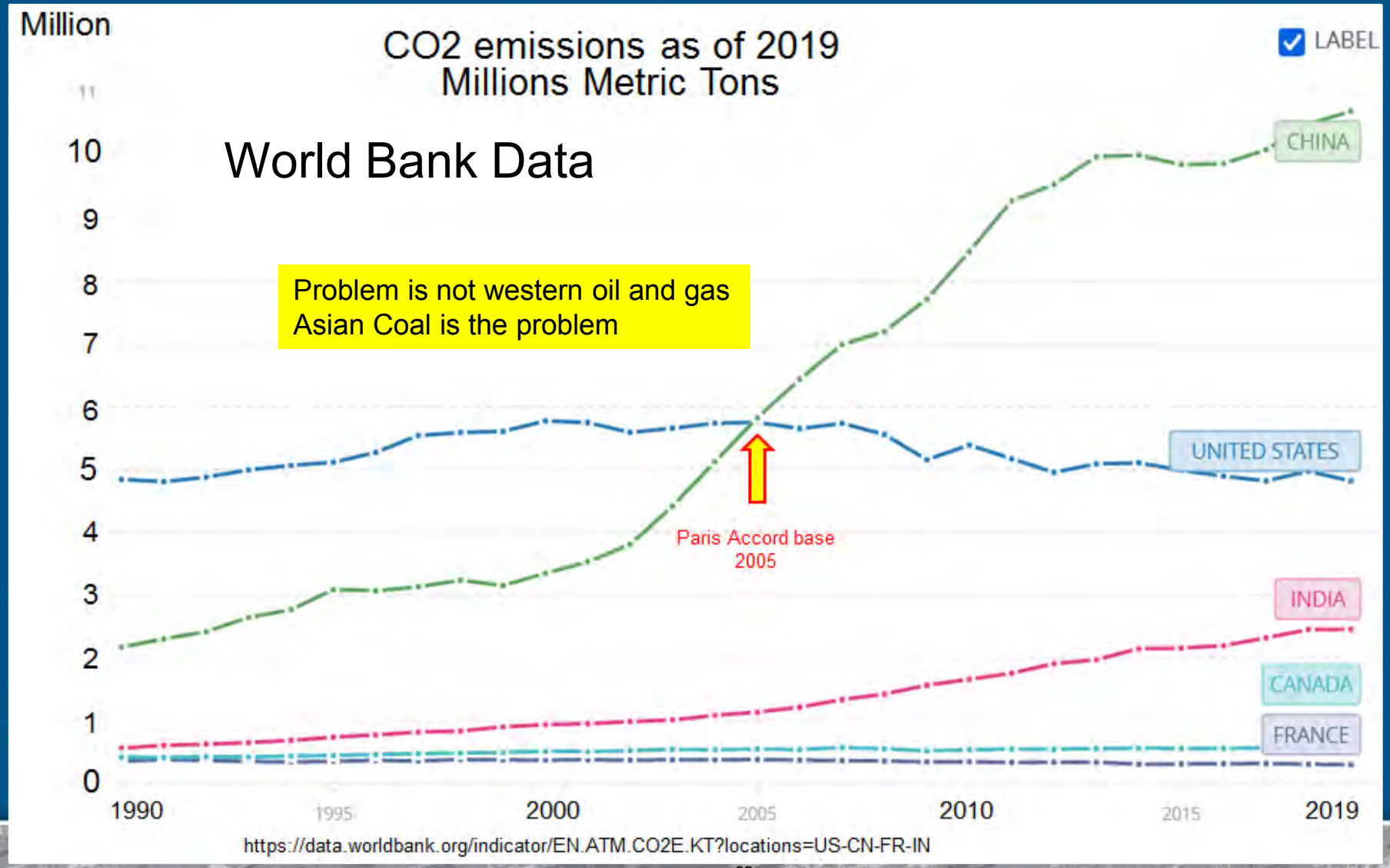
Companies went ESG, got bad stock performance



From: Goehring and Rozenscwajg, 2022, The coming energy shortage

Stop Oil and Gas Now! "We need to save the planet!"

Data from the world bank



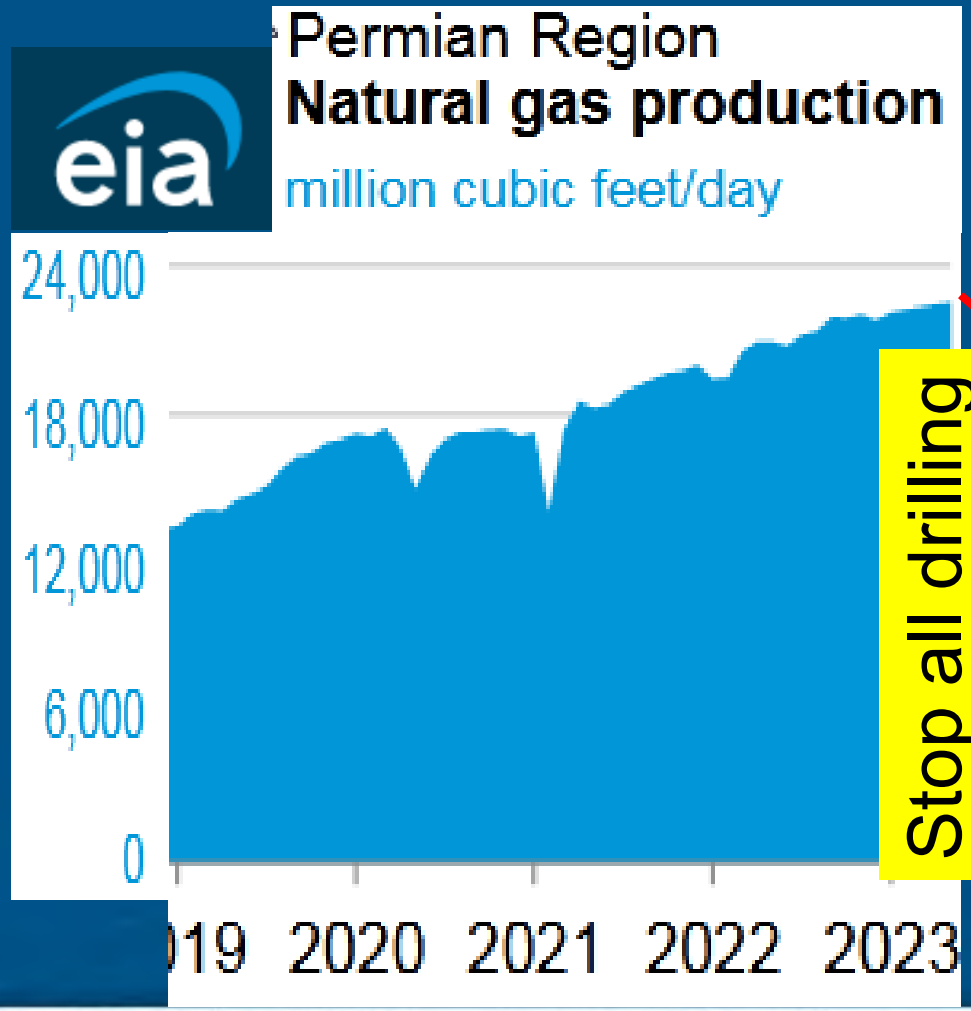
+200% CH

-20% US

+200% IN

India's population just exceeded China

Stop Oil Now! "Great! Let's try it!"

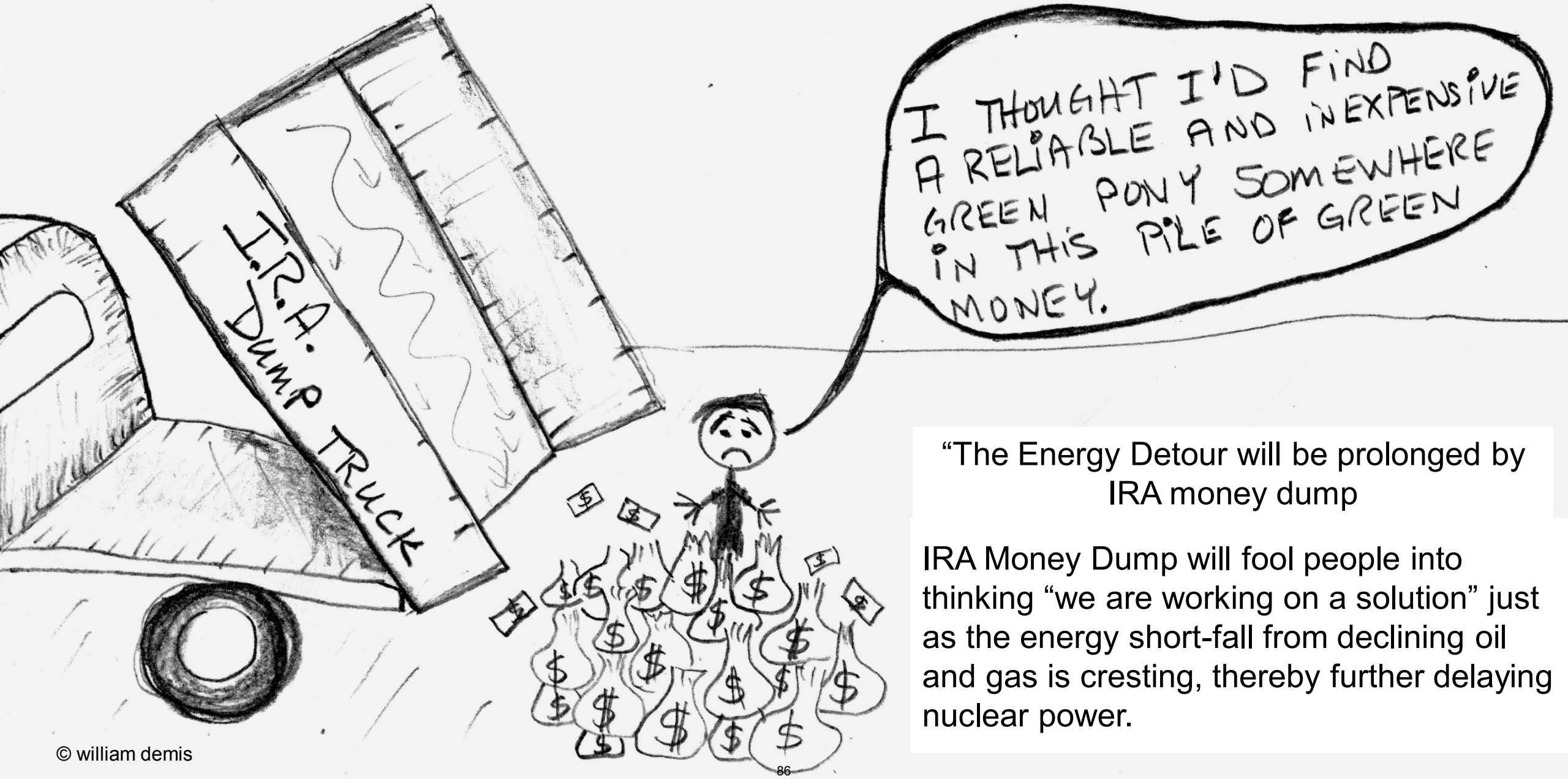


But it gets worse!!
In 2020: 5,200 Wind turbines stood up, which was the best year every.
USGS reports 70,800 Wind Turbines in the last ~20 years.
So how do you build 100K wind turbines in 4 years

Stop all drilling

2024 2025 2027 2028

DOWN from 23 to 15 mm/d
8 BCFG/day
2.42 million mW-H/day
8.7 million GJ/day

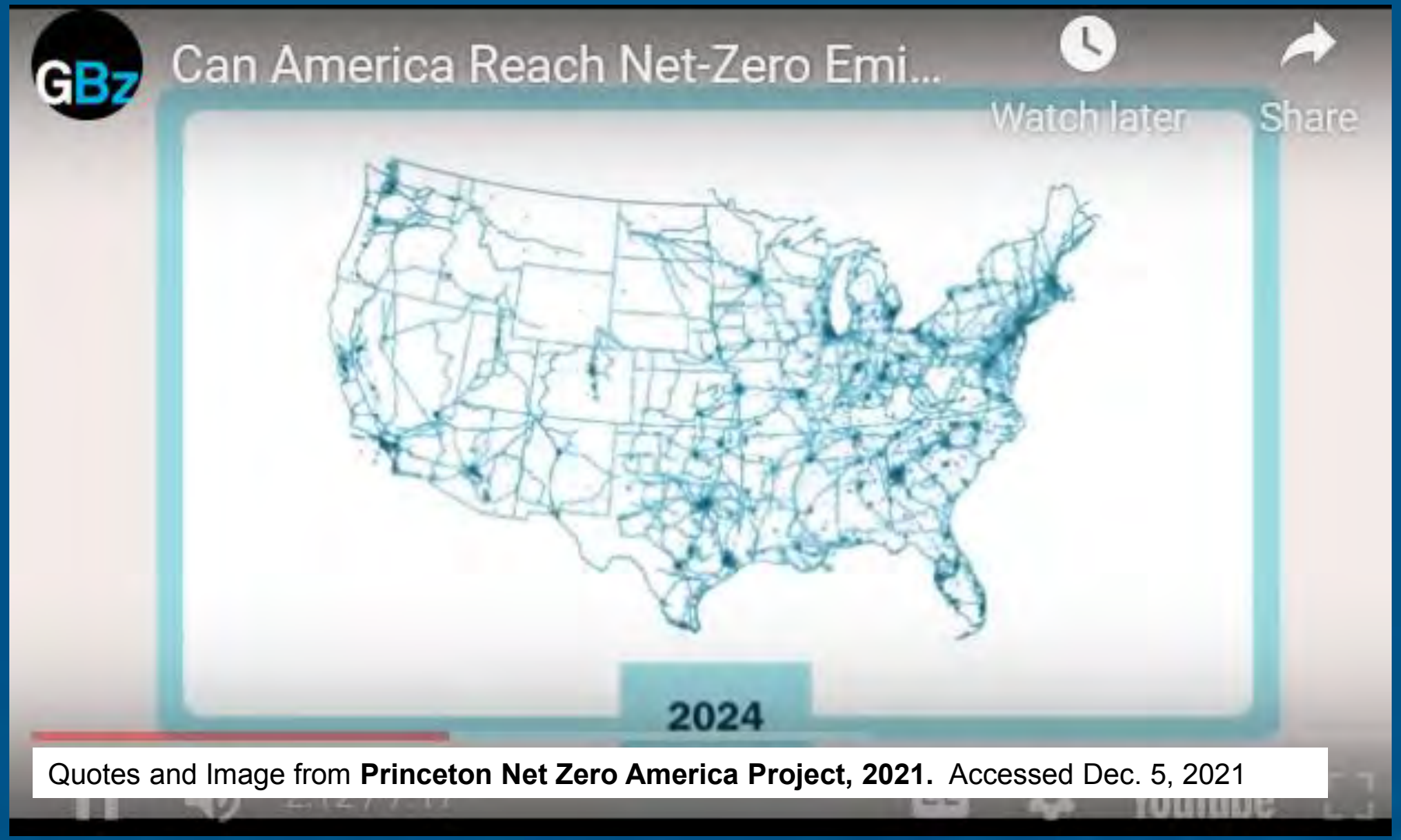


"The Energy Detour will be prolonged by IRA money dump

IRA Money Dump will fool people into thinking "we are working on a solution" just as the energy short-fall from declining oil and gas is cresting, thereby further delaying nuclear power.

Power Transmission Lines

Princeton University Net Zero Project, 2021



Quotes and Image from **Princeton Net Zero America Project, 2021.** Accessed Dec. 5, 2021

<u>For net zero 2050</u>

"Double power grid in 15 years"

"Double power grid again in 15 years"

5.2x Build out in transmission lines

People do not want power lines

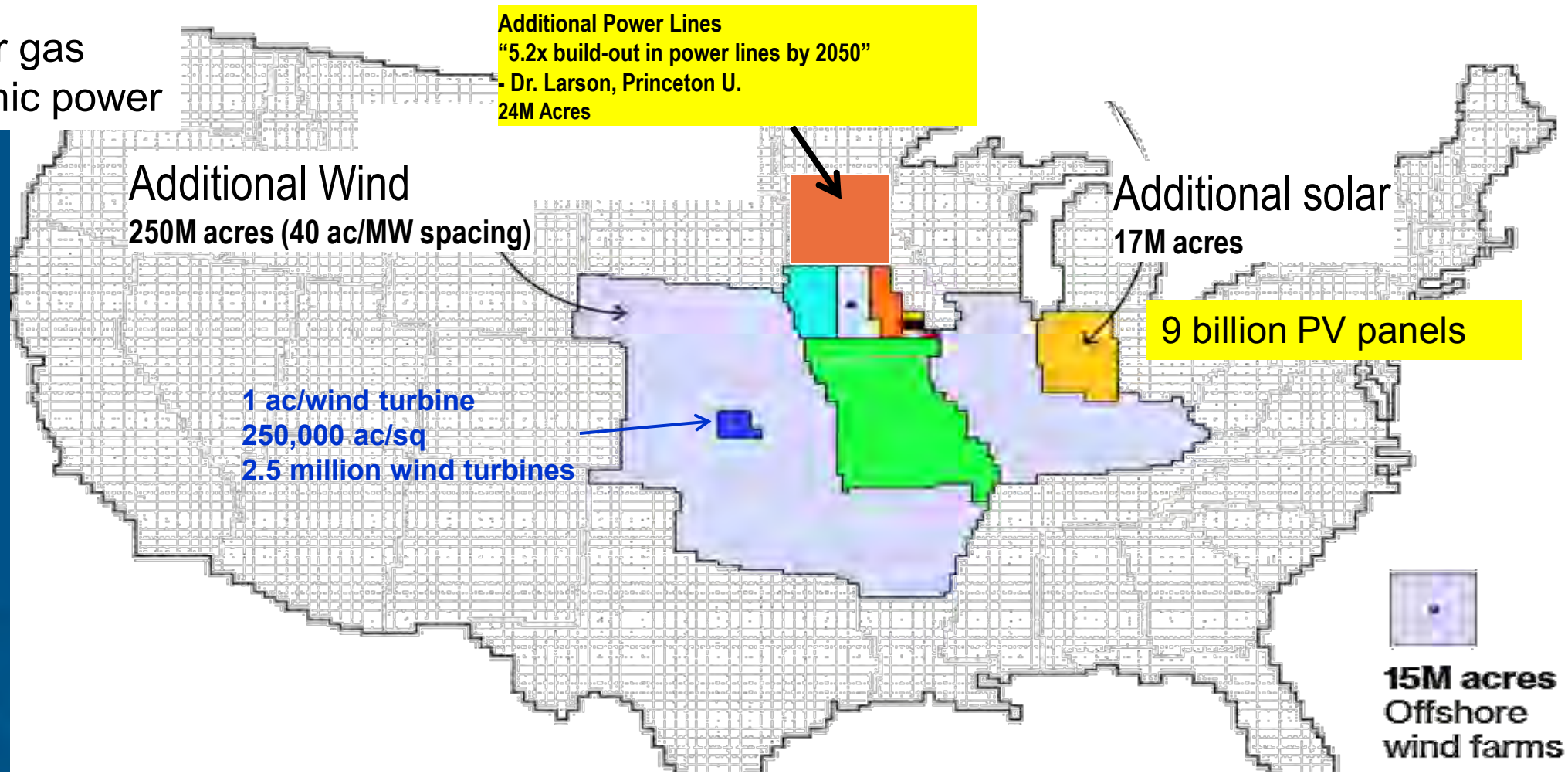
Projected Power Footprint 2050 – all wind and solar

Data from Princeton University's Net-Zero America Study, 2021

2050

No oil or gas

No atomic power



The U.S. Will Need a Lot of Land for a Zero-Carbon Economy https://www.bloomberg.com/graphics/2021-energy-land-use-economy/

By Dave Merrill Bloomberg News Published: April 29, 2021 | Updated: June 3, 2021

Summary data from **Princeton University's Net Zero America Project (we can get there by 2050). 5 Scenarios: High land use to Low Land use**

Green Realities – "No more" say locals around US

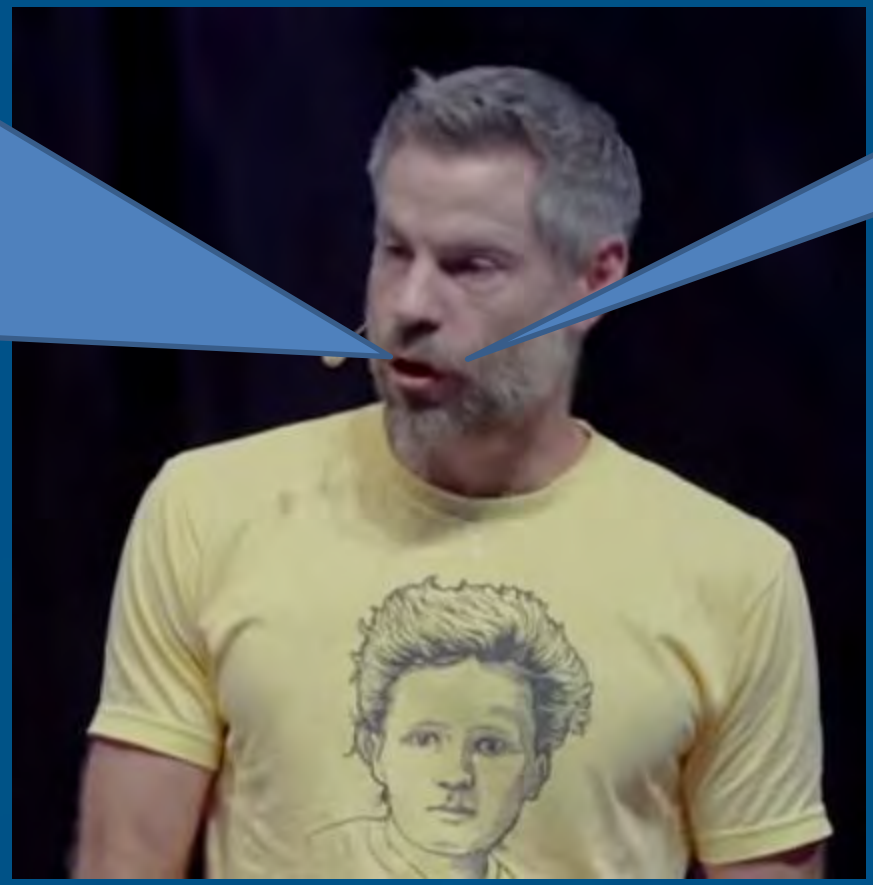
- **Gemini Solar Power Plant: $1 Billion** Power Plant, Mojave Desert, **Nevada** opposed by **Sierra Club** and Native American Indian Tribe* CANCELED
- **Mormon Butte Solar Power Plant**, Mojave Desert, **Nevada** opposed by **Friends of Mojave*** CANCELED
- Rich, white billionaires opposed **Wind Farm offshore, The Hamptons, Long Island, NY** opposed by and moved by Federal Govt ++ RISING COST OF MONEY; STOPPED
- **Wind Farms offshore Nantucket** took 14 years to get approved* STOPPED
- **Solar Power**, Georgetown University, Maryland: **cut down 210 acres** of primitive forest for Solar power. **Environmentalists stopped it**. Found 17 trees that were "exemplary of their species" *** STOPPED

*Source: Wall Street Journal, June, 2021 Solar Power's Land Grab hits a snag: Environmentalists
++ Newsday, April 15, 2021, "Feds' decision removes 2nd largest potential NY wind farm from consideration"
***Source: Washington Post, Feb. , 2019, Georgetown wants to raze 210 acres of trees to meet green-energy goals. Environmentalist are crying fowl, Rachel Chason

Mike Shellenberger, Time Magazine: 2008 “Hero of Environment”

“Solar and Wind Power have very large land impact.”

“Over the years, I realized the environment problems with solar and wind were becoming *worst*, and *technology was not helping (*overcome the environmental impact problem.)”



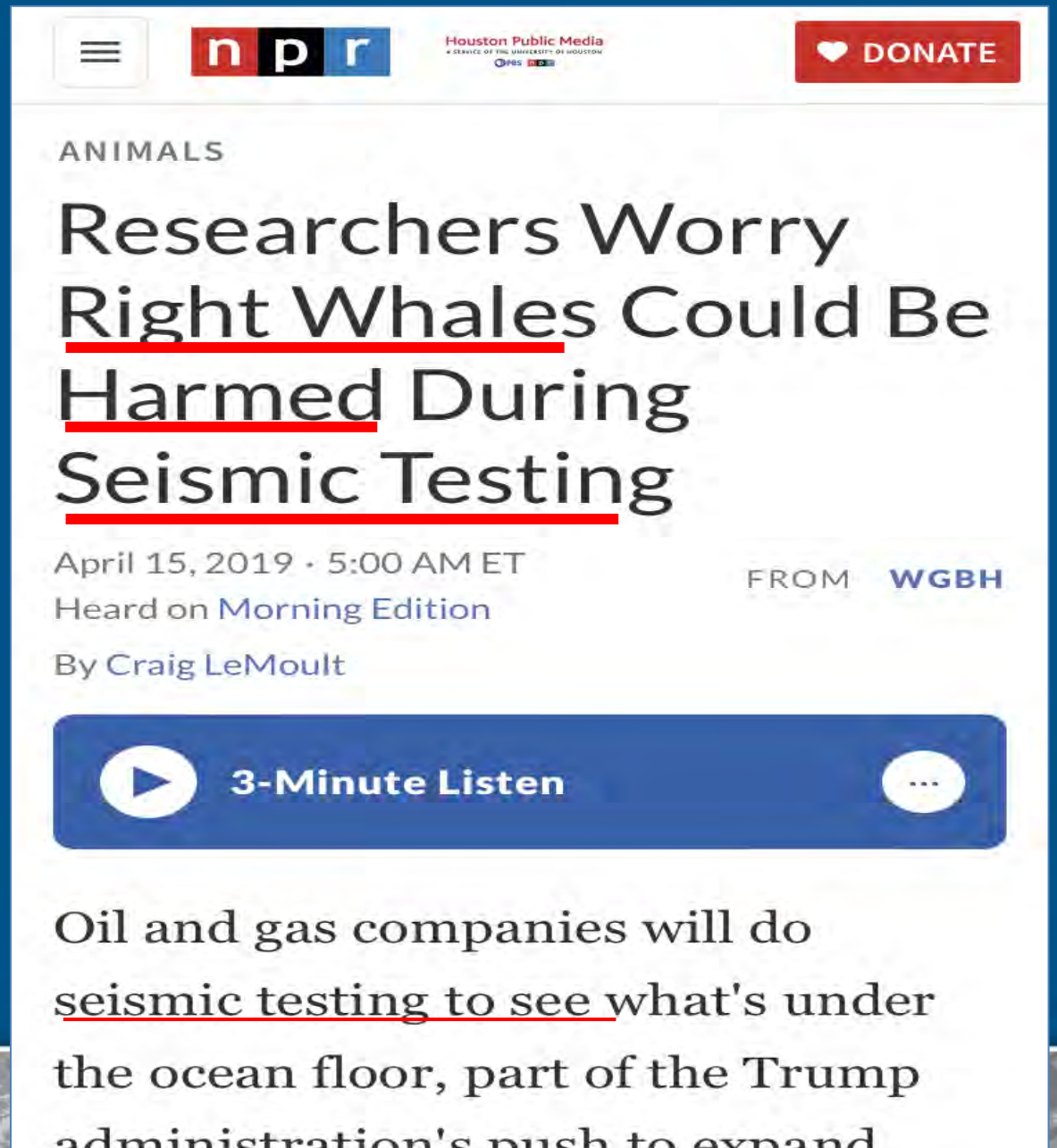
“You have to go to nuclear power.”

Shellenbeger says same as uber-left Michael Moore and they both say the same as Mark Mills at Manhattan Institute: Solar and wind are impractical for grid-level energy.

(Watch “Planet of the Humans” on YouTube. It was produced by Moore and it “pans” solar and wind.)

“Why renewables can’t save the planet” Michael Shellenberger , TEDx Talk, Jan 4, 2019

Two Realities being pushed - you can't make this stuff up



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April 15, 2019 · 5:00 AM ET

FROM WGBH

Heard on Morning Edition

By Craig LeMoult

3-Minute Listen

Oil and gas companies will do seismic testing to see what's under the ocean floor, part of the Trump administration's push to expand

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CLIMATE

Dead whales on the east coast fuel misinformation about offshore wind development

February 25, 2023 · 5:30 AM ET

By Jaclyn Jeffrey-Wilensky (WNYC-FM), Kaitlyn Radde

4-Minute Listen

HOUSTON PUBLIC MEDIA NEWS 88.7

On Air Now

OPEN

Commodity Super Cycle

US deficits > Inflation > higher commodity prices
> Commodity Super Cycle

Underinvestment > Oil and gas to rise
> Commodity Super Cycle

IRA > inefficient material monsters > metals prices surge
> Commodity Super Cycle

ESG > malinvestment; diverts $ trillions from oil, gas, and nuclear
> Commodity Super Cycle

Natural gas price will rise: demand for *reliable* energy for grid

Near term, oil will be $85-150, with excursions above $200,

Long term, $200/bbl will be floor (DeMis, 2021)

Twelve years from now, no talk of Wind and Solar as baseload power for the grid

Corpus Christi Geological Society Papers available for purchase at the Texas Bureau of Economic Geology

Note: Publication codes are hyperlinked to their online listing in The Bureau Store (http://begstore.beg.utexas.edu/store/).

Cretaceous-Wilcox-Frio Symposia, D. B. Clutterbuck, Editor, 41 p., 1962.
CCGS 002S $15.00

Type Logs of South Texas Fields, Vol. I, Frio Trend. Compiled by Don Kling. Includes 134 fields. 158 p., 1972. Ring binder.
CCGS 015TL $25.00

Type Logs of South Texas Fields, Vol. II, Wilcox (Eocene) Trend. Compiled by M. A. Wolbrink. 98 p., 1979. Ring binder.
CCGS 016TL $25.00

Field Trip Guidebooks

South Texas Uranium. J. L. Cowdrey, Editor. 62 p., 1968.
CCGS 102G $12.00

Hidalgo Canyon and La Popa Valley, Nuevo Leon, Mexico. CCGS 1970 Spring Field Conference. 78 p., 1970.
CCGS 103G $8.00

Padre Island National Seashore Field Guide. R. N. Tench and W. D. Hodgson, Editors. 61 p., 1972.
CCGS 104G $5.00

Triple Energy Field Trip, Uranium, Coal, Gas—Duval, Webb & Zapata Counties, Texas. George Faga, Editor. 24 p., 1975.
CCGS 105G $10.00

Minas de Golondrinas and Minas Rancherias, Mexico. Robert Manson and Barbara Beynon, Editors. 48 p. plus illus., 1978.
CCGS 106G $15.00

Portrero Garcia and Huasteca Canyon, Northeastern Mexico. Barbara Beynon and J. L. Russell, Editors. 46 p., 1979.
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Modern Depositional Environments of Sands in South Texas. C. E. Stelting and J. L. Russell, Editors. 64 p., 1981.
CCGS 108G $15.00

Geology of Peregrina & Novillo Canyons, Ciudad Victoria, Mexico, J. L. Russell, Ed., 23 p. plus geologic map and cross section, 1981.
CCGS 109G $10.00

Geology of the Llano Uplift, Central Texas, and Geological Features in the Uvalde Area. Corpus Christi Geological Society Annual Spring Field Conference, May 7-9, 1982. Variously paginated. 115 p., 53 p.
CCGS 110G $15.00

Structure and Mesozoic Stratigraphy of Northeast Mexico, prepared by numerous authors, variously paginated. 76 p., 38 p., 1984.
CCGS 111G $15.00

Geology of the Big Bend National Park, Texas, by C. A. Berkebile. 26 p., 1984.
CCGS 112G $12.00

TYPE LOGS OF SOUTH TEXAS FIELDS by Corpus Christi Geological Society

NEW (2019)TYPE LOGS IN RED; lost now found

ARANSAS COUNTY
Aransas Pass/McCampbell Deep
Bartell Pass
Blackjack
Burgentine Lake
Copano Bay, South
Estes Cove
Fulton Beach
Goose Island
Half Moon Reef
Nine Mile Point
Rockport, West
St. Charles
Tally Island
Tract 831-G.O.M. (offshore)
Virginia

BEE COUNTY
Caesar
Mosca
Nomanna
Orangedale(2)
Ray-Wilcox
San Domingo
Tulsita Wilcox
Strauch_Wilcox

BROOKS COUNTY
Ann Mag
Boedecker
Cage Ranch
Encintas
ERF
Gyp Hill
Gyp Hill West
Loma Blanca
Mariposa
Mills Bennett
Pita
Tio Ayola
Tres Encinos

CALHOUN COUNTY
Appling
Coloma Creek, North
Heyser
Lavaca Bay
Long Mott
Magnolia Beach
Mosquito Point
Olivia
Panther Reef
Powderhorn
Seadrift, N.W.
Steamboat Pass
Webb Point
S.E. Zoller

CAMERON COUNTY
Holly Beach
Luttes
San Martin (2)
Three Islands, East
Vista Del Mar

COLORADO COUNTY
E. Ramsey
Graceland N. Fault Blk
Graceland S. Fault Blk

DEWITT COUNTY
Anna Barre
Cook
Nordheim
Smith Creek
Warmsley
Yorktown, South

DUVAL COUNTY
DCR-49
Four Seasons
Good Friday
Hagist Ranch
Herbst
Loma Novia
Petrox
Seven Sisters
Seventy Six, South
Starr Bright, West

GOLIAD COUNTY
Berclair
North Blanconia
Bombs
Boyce
Cabeza Creek, South
Goliad, West
St Armo
Terrell Point

HIDALGO COUNTY
Alamo/Donna
Donna
Edinburg, West
Flores-Jeffress
Foy
Hidalgo
LA Blanca
McAllen& Pharr
McAllen Ranch
Mercedes
Monte Christo, North
Penitas
San Fordyce
San Carlos
San Salvador
S. Santallana
Shary
Tabasco
Weslaco, North
Weslaco, South

JACKSON COUNTY
Carancahua Creek
Francitas
Ganado & Ganado Deep
LaWard, North
Little Kentucky
Maurbro
StewartSwan Lake
Swan Lake, East
Texana, North
West Ranch

JIM HOGG COUNTY
Chaparosa
Thompsonville,N.E.

JIM WELLS COUNTY
Freebom
Hoelsher
Palito Blanco
Wade City

KARNES COUNTY
Burnell
Coy City
Person
Runge

KENEDY COUNTY
Candelaria
Julian
Julian, North
Laguna Madre
Rita
Stillman

KLEBERG COUNTY
Alazan
Alazan, North
Big Caesar
Borregos
Chevron (offshore)
Laguna Larga
Seeligson
Sprint (offshore)

LA SALLE COUNTY
Pearsall
HAWKVILLE:EAGLEFORD

LAVACA COUNTY
Halletsville
Hope
Southwest Speaks
Southwest Speaks Deep

LIVE OAK COUNTY
Atkinson
Braslau
Chapa
Clayton
Dunn
Harris
Houdman
Kittie West-Salt Creek
Lucille
Sierra Vista
Tom Lyne
White Creek
White Creek, East

MATAGORDA COUNTY
Collegeport

MCMULLEN COUNTY
Arnold-Weldon
Brazil
Devil's Waterhole
Hostetter
Hostetter, North

NUECES COUNTY
Agua Dulce (3)
Arnold-David
Arnold-David, North
Baldwin Deep
Calallen
Chapman Ranch
Corpus Christi, N.W.
Corpus Christi West C.C.
Encinal Channel
Flour Bluff/Flour Bluff, East
GOM St 9045(offshore)
Indian Point
Mustang Island
Mustang Island, West
Mustang Island St. 889S(offshore)
Nueces Bay/Nueces Bay West
Perro Rojo
Pita Island
Ramada
Redfish Bay
Riverside
Riverside, South
Saxet
Shield
Stedman Island
Turkey Creek

REFUGIO COUNTY
Bonnieview/Packery Flats
Greta
La Rosa
Lake Pasture
Refugio, New
Tom O'Connor

SAN PATRICIO COUNTY
Angelita East
Commonwealth
Encino
Enos Cooper
Geronimo
Harvey
Hiberia
Hodges
Mathis, East
McCampbell Deep/Aransas Pass
Midway
Midway, North
Odem
Plymouth
Portilla (2)
Taft
Taft, East
White Point, East

STARR COUNTY
El Tanque
Garcia
Hinde
La Reforma, S.W.
Lyda
Ricaby
Rincon
Rincon, North
Ross
San Roman
Sun
Yturria

VICTORIA COUNTY
Helen Gohike, S.W.
Keeran, North
Marcado Creek
McFaddin
Meyersville
Placedo

WEBB COUNTY
Aquilares/Glen Martin
Big Cowboy
Bruni, S.E.
Cabezon
Carr Lobo
Davis
Hirsch
Juanita
Las Tiendas
Nicholson
O'Hem
Olmitos
Tom Walsh

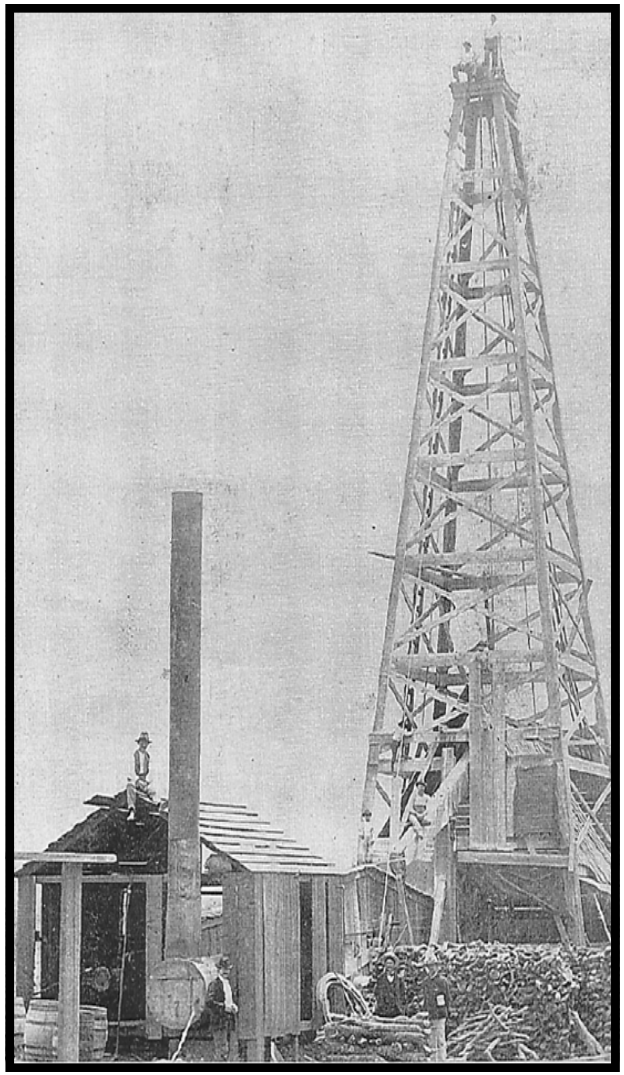
WHARTON COUNTY
Black Owl

WILLACY COUNTY
Chile Vieja
La Sal Vieja
Paso Real
Tenerias
Willamar

ZAPATA COUNTY
Benavides
Davis, South
Jennings/Jennings, West
Lopeno
M&F
Pok-A-Dot

ZAVALA COUNTY
El Bano

Call Coastal Bend Geological Library, Letty: 361-883-2736
I log -- $10 each, 5-10 logs $9 each and 10 + logs $8.00 each – plus postage



Wooden Rigs—Iron Men

The Story of Oil & Gas in South Texas

By Bill & Marjorie K. Walraven

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