

hearing comments

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Thu 9/5/2024 9:49 PM

To:HearingComments, DNREC (MailBox Resources) <DNRECHearingComments@delaware.gov>

Cc:Cobb, Dayna (DNREC) <Dayna.Cobb@delaware.gov>

For your information concerning the Delaware windmill project, transmission lines and permitting for a substation.

LAND BASED NATURAL GAS COMBINED CYCLE (NGCC)
MAY BE
MORE RELIABLE, REDUCE MORE CARBON DIOXIDE AND
BE MORE COST EFFECTIVE
THAN
OFF SHORE OCEAN BASED WIND POWER SYSTEMS
(EITHER WITH OR WITHOUT NGCC BACKUP)

by

John Stamberg PE, retired
former Vice President and Owner of Energy Ventures Analysis Inc

for

Public Comment Period
September 9, 2024



PURPOSE

The purpose of my effort is to document the quantifiable characteristics and analyze the offshore wind project which has a proposed goal to reduce use of fossil fuels at all costs. The project is an incomplete project because it has no proposed backup to make this project reliable. In February 2021 the ERCOT electrical grid in Texas misused the intermittent and highly variable wind and solar projects as if they were reliable. This resulted in a major disaster as shown in Display 1. The deaths were between 246 to 702 and the damage cost was greater than or equal to \$195 billion. The Federal Energy Regulatory Commission (FERC) and the National Renewal Energy Lab (NREL) are both pursuing how to regulate wind and solar to best fund an approach to handle reliability of wind and solar to avoid another Texas disaster..

The offshore windmill project should provide electricity reliably under the FERC/NREC legal requirements.. The project should provide FERC/NREL reliability and not save fossil fuels at all costs.

Display 1

Date February 10-27, 2021^[2]
(2 weeks and 3 days)

Location Texas, United States

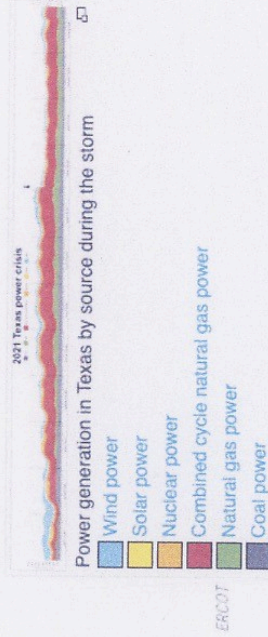
Also known as The Great Texas Freeze

Type Statewide power outages, food/water shortages

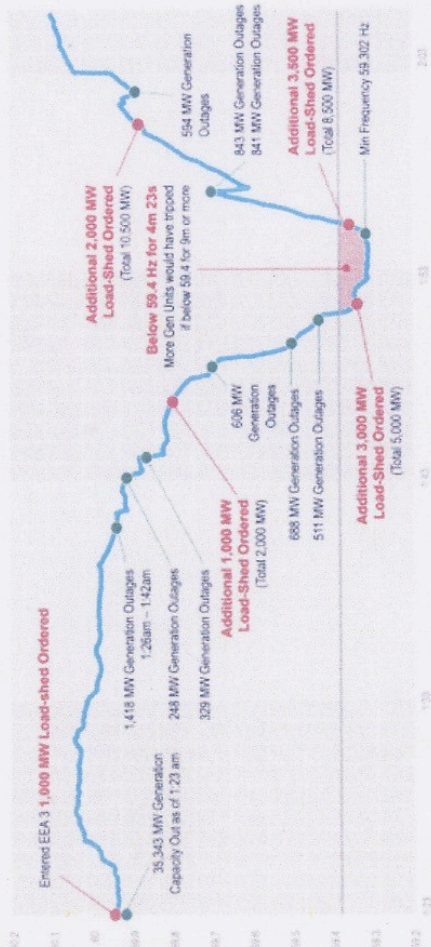
Cause February 2021 North American cold wave and accompanying winter storms

Deaths 246^[3] to 702 (estimate)^[4]

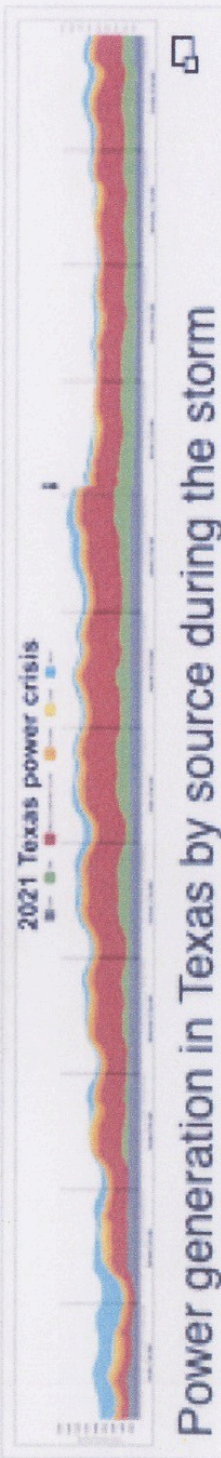
Property damage ≥ \$195 billion (2021 USD)^[5]



Rapid Decrease in Generation Causes Frequency Drop



A timeline of Texas' power grid frequency on the morning of Monday, Feb. 15.



Power generation in Texas by source during the storm

Meanwhile, power plants across the state were going offline because of the cold weather; natural gas, coal, nuclear and wind energy sources were all failing. Equipment and pipelines were freezing up. At 12:15 a.m. Monday, ERCOT went to its first level of energy emergency alert.

4 approach 1.jpeg

Ocean Offshore Wind Turbines

With CT to make the system FERC/NREL reliable.

Ocean Offshore Wind Turbines

Without any backup to be FERC/NREL reliable

All of the wind conditions in the United States are best in the ocean offshore - Display 3. The dark blue areas of the coast are superior to most land based areas but the ocean windmills are costly. Wind turbine technology has evolved - Display 4. Modern wind turbines need to use exacting control to get maximum electricity production from ideal wind speeds of about 14mph to 25mph. Even more controls are needed to get electricity from lower wind speeds of 5mph to 14mph – Display 5. Wind shifts can be a land breeze, an ocean breeze or from various directions. Funding for this control equipment and personnel may not be recognized in the cost of the proposed offshore windmill project.

Display 2

Table 1b. Estimated unweighted levelized cost of electricity (LCOE) and levelized cost of storage (LCOS) for new resources entering service in 2027 (2021 dollars per megawatthour)

Plant type	Capacity factor (percent)	Levelized capital cost	Levelized fixed O&M ^a	Levelized variable cost	Levelized transmission cost	Total system LCOE or LCOS	Levelized tax credit ^b	Total LCOE or LCOS including tax credit
Dispatchable technologies								
Ultra-supercritical coal	85%	\$52.11	\$5.71	\$23.67	\$1.12	\$82.61	NA	\$82.61
Combined cycle	87%	\$9.36	\$1.68	\$27.77	\$1.14	\$39.94	NA	\$39.94
Advanced nuclear	90%	\$60.71	\$16.15	\$10.30	\$1.08	\$88.24	-\$6.52	\$81.71
Geothermal	90%	\$22.04	\$15.18	\$1.21	\$1.40	\$39.82	-\$2.20	\$37.62
Biomass	83%	\$40.80	\$18.10	\$30.07	\$1.19	\$90.17	NA	\$90.17
Resource-constrained technologies								
Wind, onshore	41%	\$29.90	\$7.70	\$0.00	\$2.63	\$40.23	NA	\$40.23
Wind, offshore	44%	\$103.77	\$30.17	\$0.00	\$2.57	\$136.51	-\$31.13	\$105.38
Solar, standalone ^c	29%	\$26.60	\$6.38	\$0.00	\$3.52	\$36.49	-\$2.66	\$33.83
Solar, hybrid ^{c,d}	28%	\$34.98	\$13.92	\$0.00	\$3.63	\$52.53	-\$3.50	\$49.03
Hydroelectric ^d	54%	\$46.58	\$11.48	\$4.13	\$2.08	\$64.27	NA	\$64.27
Capacity resource technologies								
Combustion turbine	10%	\$53.78	\$8.37	\$45.83	\$9.89	\$117.86	NA	\$117.86
Battery storage	10%	\$64.03	\$29.64	\$24.83	\$10.05	\$128.55	NA	\$128.55

Source: U.S. Energy Information Administration, *Annual Energy Outlook 2022*

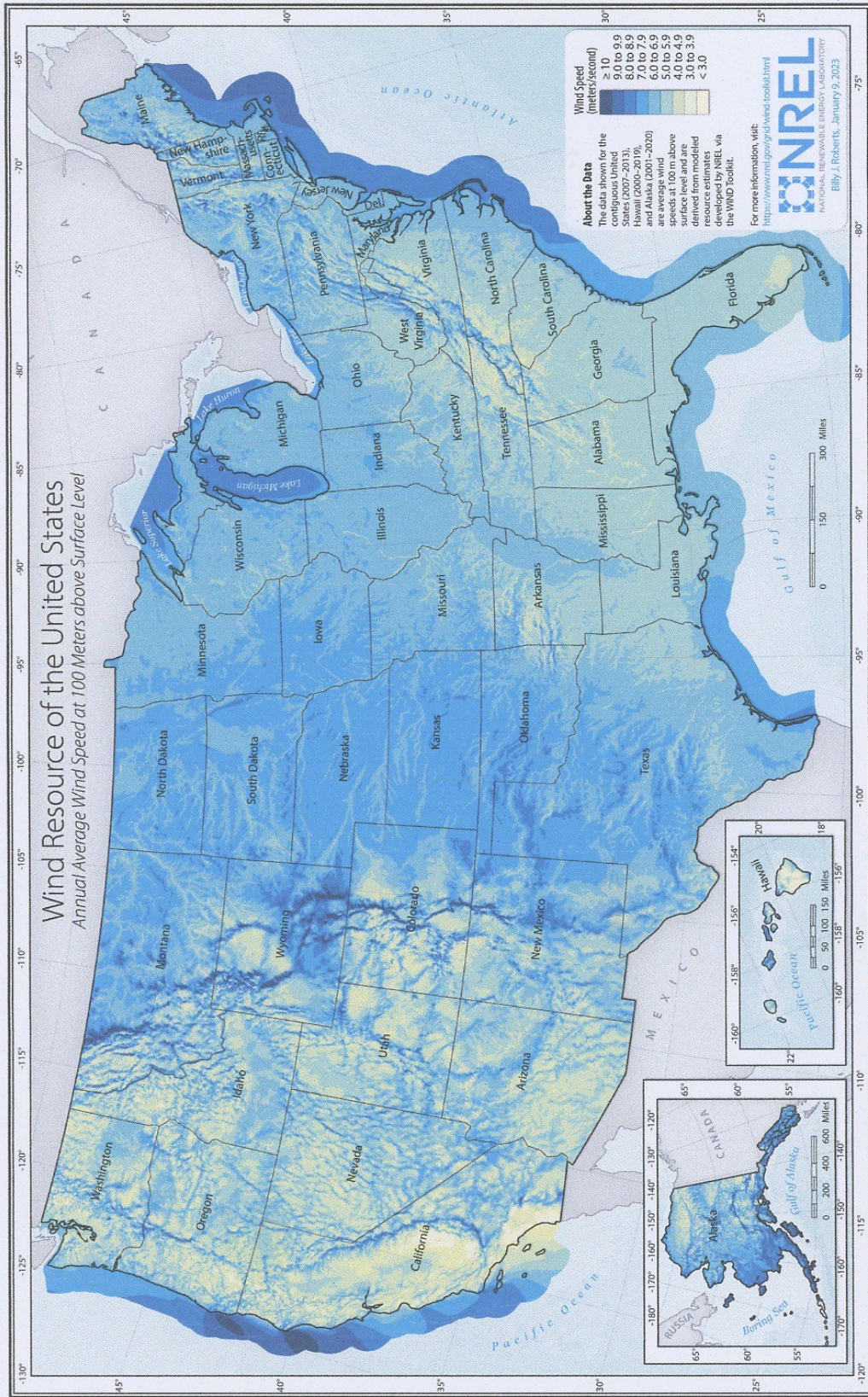
^a O&M = operations and maintenance

^b The tax credit component is based on targeted federal tax credits such as the Production Tax Credit (PTC) or Investment Tax Credit (ITC) available for some technologies. It reflects tax credits available only for plants entering service in 2027 and the substantial phaseout of both the PTC and ITC as scheduled under current law. Technologies not eligible for PTC or ITC are indicated as *NA*, or *not available*. The results are based on a regional model, and state or local incentives are not included in LCOE and LCOS calculations. See text box on page 2 for details on how the tax credits are represented in the model.

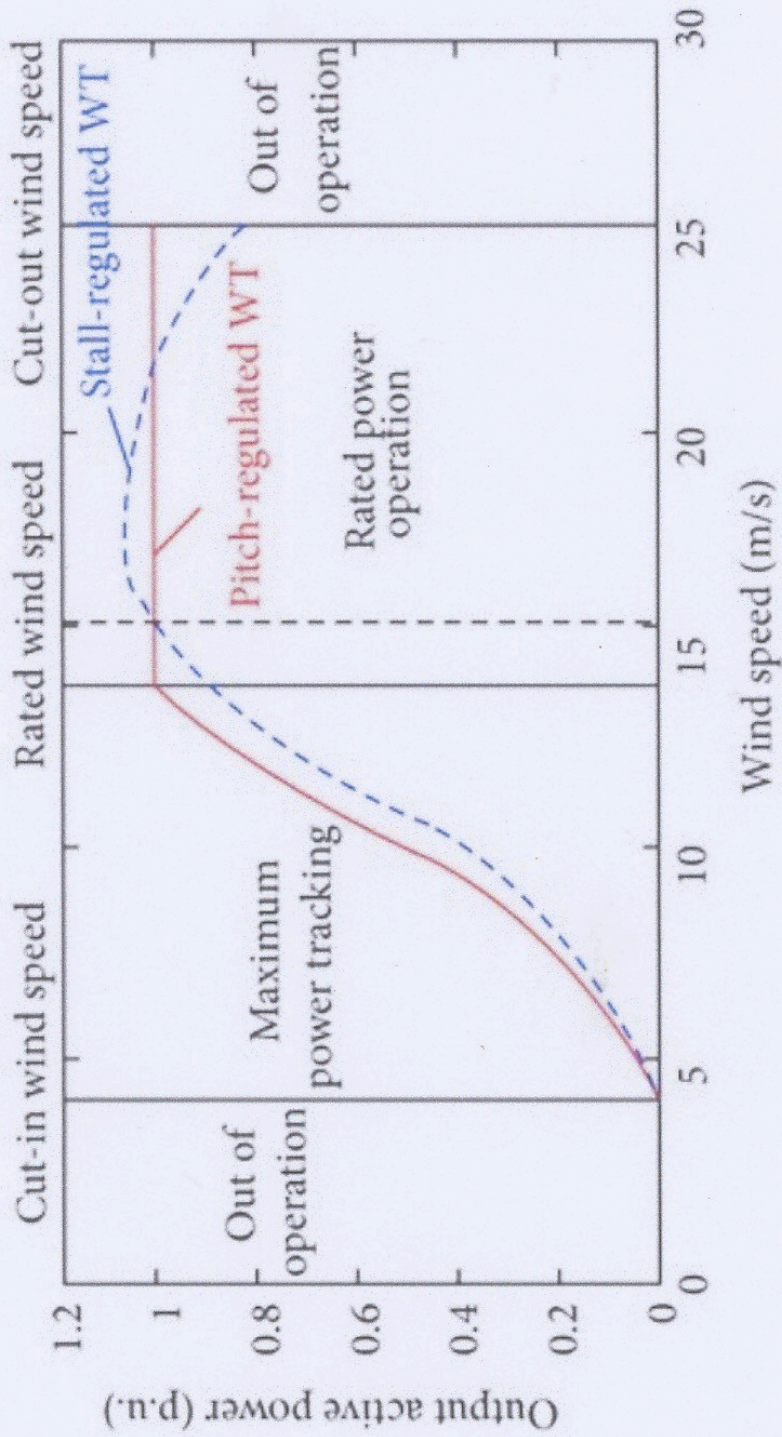
^c Technology is assumed to be photovoltaic (PV) with single-axis tracking. The solar hybrid system is a single-axis PV system coupled with a four-hour battery storage system. Costs are expressed in terms of net AC (alternating current) power available to the grid for the installed capacity.

^d As modeled, we assume that hydroelectric and hybrid solar PV generating assets have seasonal and diurnal storage, respectively, so that they can be dispatched within a season or a day, but overall operation is limited by resource availability by site and season for hydroelectric and by daytime for hybrid solar PV.

Display 3

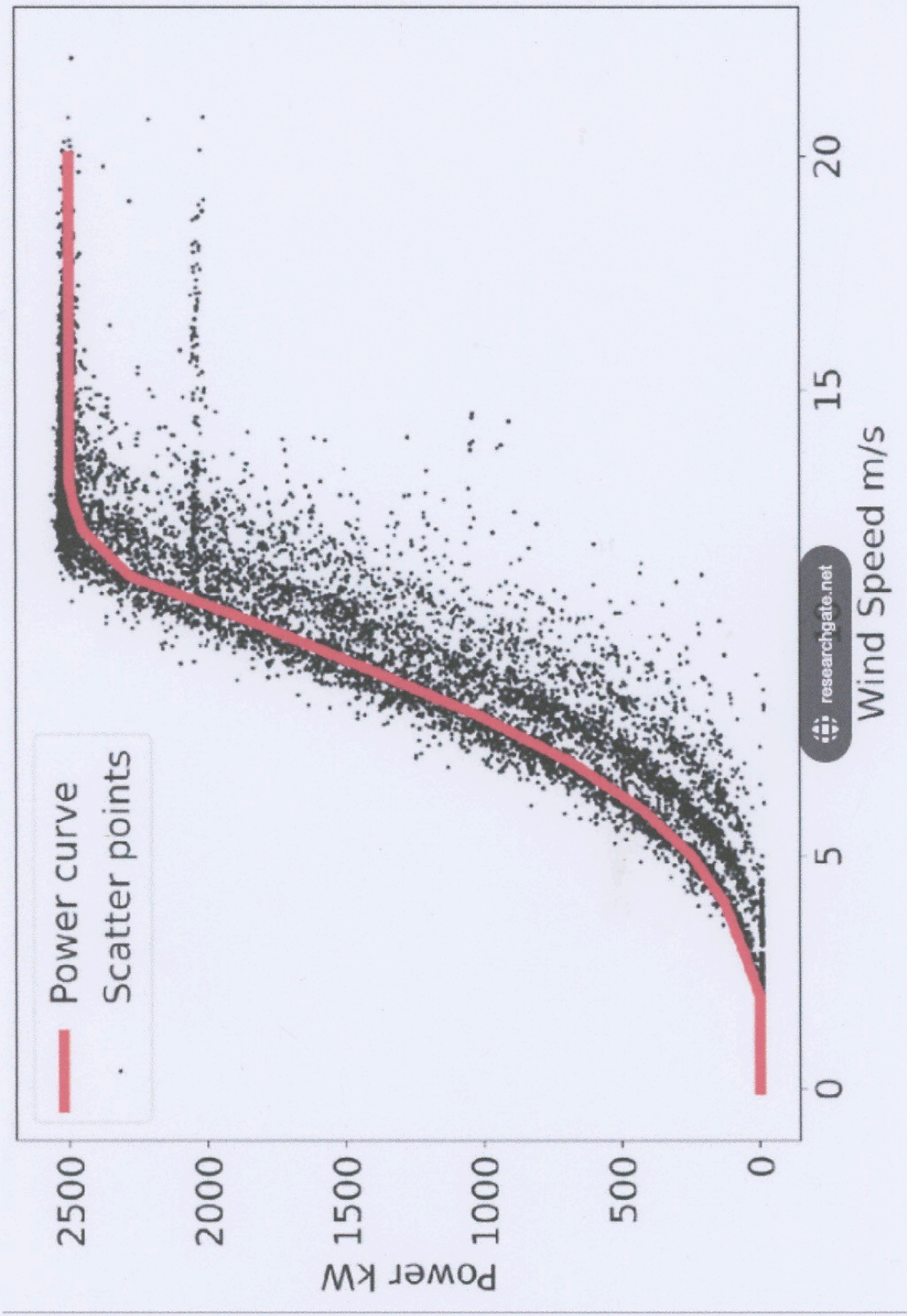


Display 4^H



Display 5

Fluxus 8



4

In my approach the goals of the project should focus on the issues listed below which are prioritized in order of importance.

1. RELIABILITY per FERC/NREL to avoid another ERCOT Texas catastrophe.

2. COST AND COST EFFECTIVENESS per the financial cost/cost effectiveness when “pay check to pay check” is now one word and inflation has become daily news. People, commerce and industry need to be cost conscious.

3. REDUCE FOSSIL FUEL USE AT ALL COSTS needs to be questioned and not based on media, political and governmental rhetoric, non fact based information or weather reports declaring that a state or city is hot today. Terminology such as existential may be trivial or even a hoax. Information leads me to question this goal - Display 6. References that I used to make my statements:

- Display 6 History of the Earth's Evolution
- Display 7 Glacial or Interglacial Periods over the last 400,000 plus years with global glacial cooling at 65% of the time versus, interglacial warming of 37% of the time conditions, years of melting
- Display 8 Atmospheric CO₂ over millions of years
- Display 9 Relative Photosynthetic Rates vs CO₂ concentrations
- Display 10 Two Princeton, MIT Scientists Say EPA Climate Regulations Based on Hoax

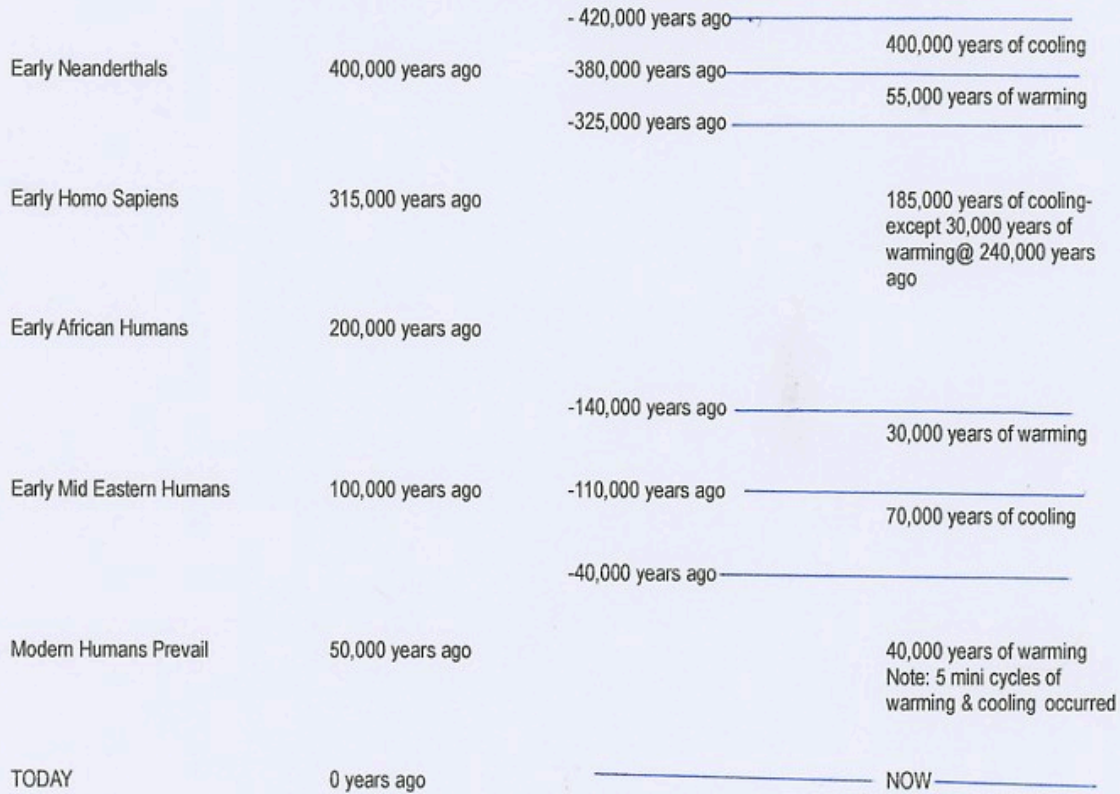
Subjective values for health, air quality, recreation, fishing days, surfing days, boating days or swimming days etc are not quantified in this analysis.

Display 6

EARTH HISTORY EVOLUTION

Earth Formed	46 billion years ago
First Photosynthesis Bacteria Found	3400 million years ago
First Cyno Bacteria Found	2700 million years ago
First Evidence of Atmospheric Oxygen Found	2300 million years ago
Red & Brown Algae Found	1200 million years ago
Green Algae Found	750 million years ago
First Vascular Plants Found	423 million years ago
Dinosaurs Emerge	175 million years ago
Dinosaurs Extinct	65 million years ago

THE EARTH COMES ALIVE THANKS TO PHOTOSYNTHESIS & SUNLIGHT
 This occurred at the end of the Cenozoic Era when earth tectonics matured



Glacial-interglacial cycles over the past 450,000 years

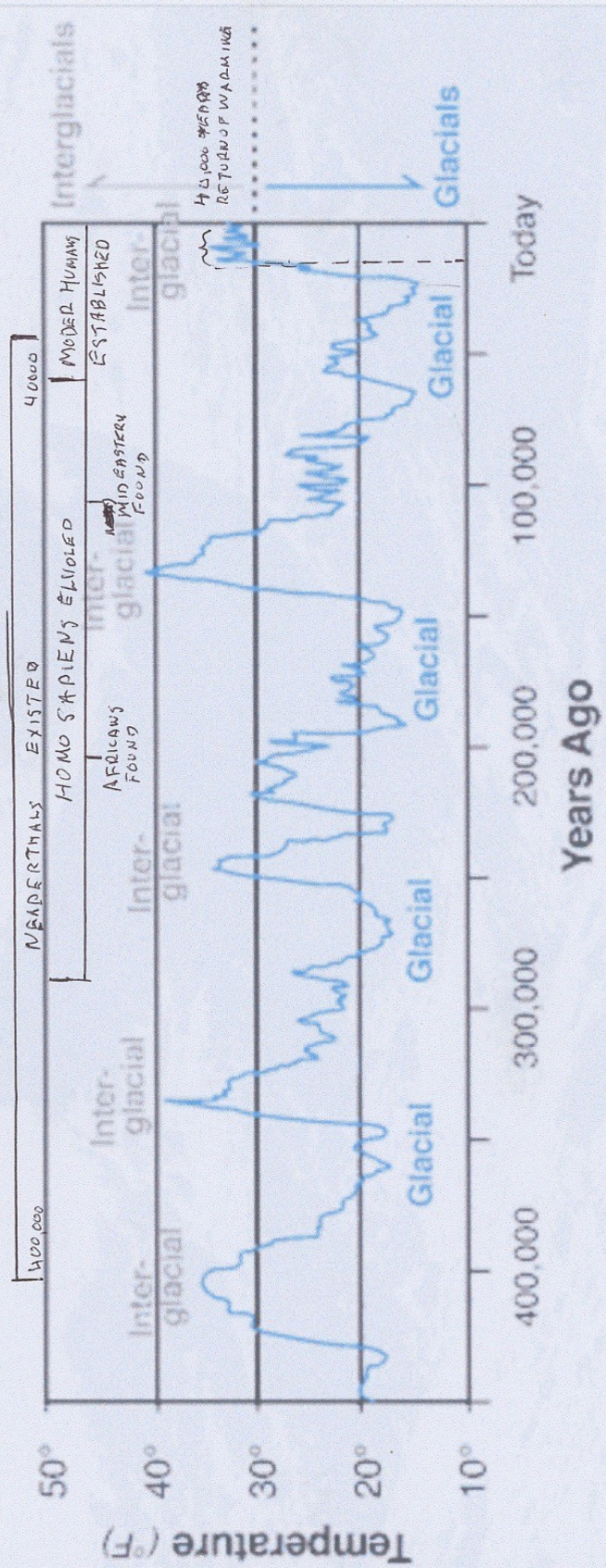
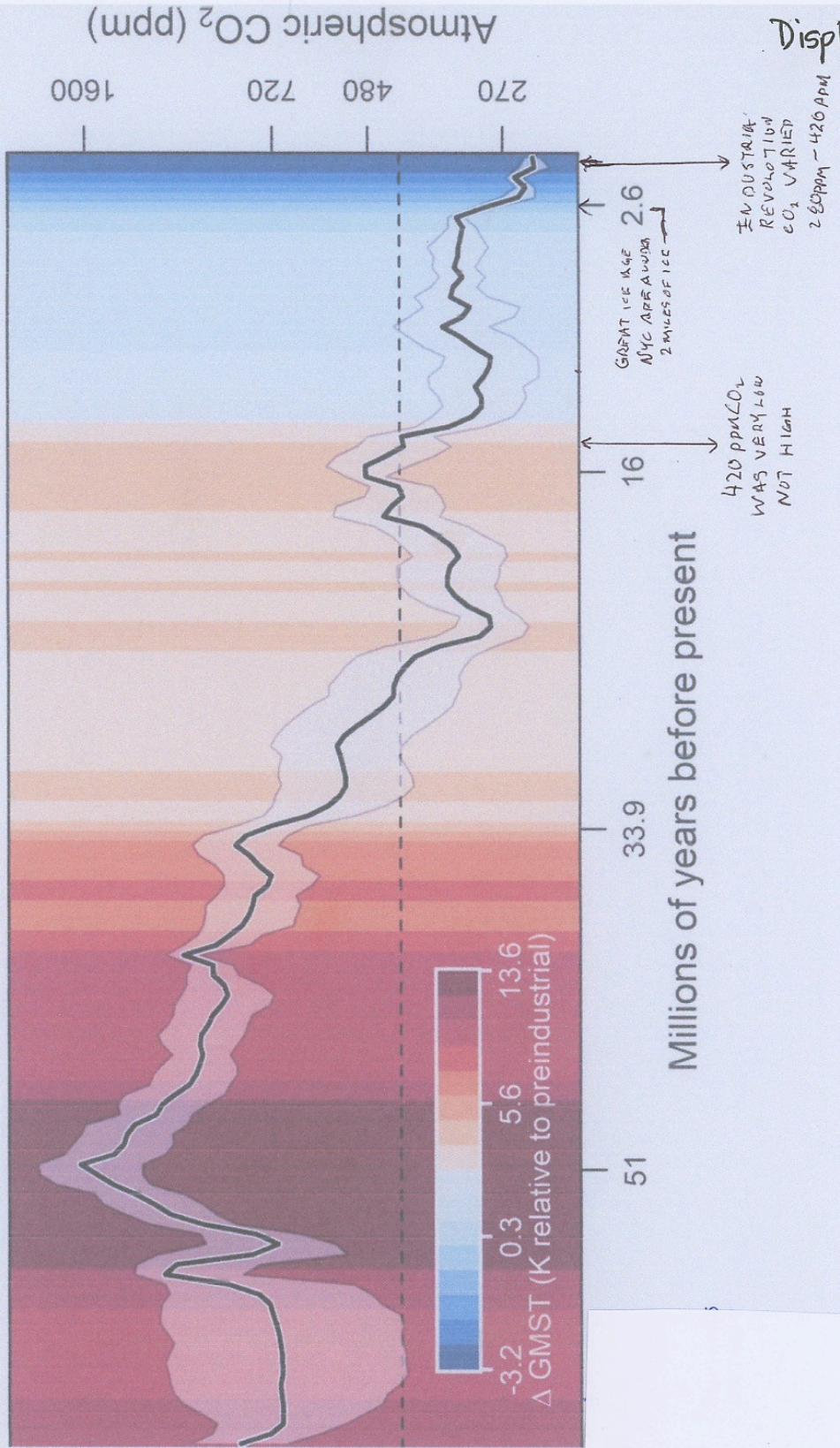


Figure 2: Glacial-interglacial cycles over the past 450,000 years to present. Glacials historically last anywhere from 7 to 9 times longer than interglacials. [7]

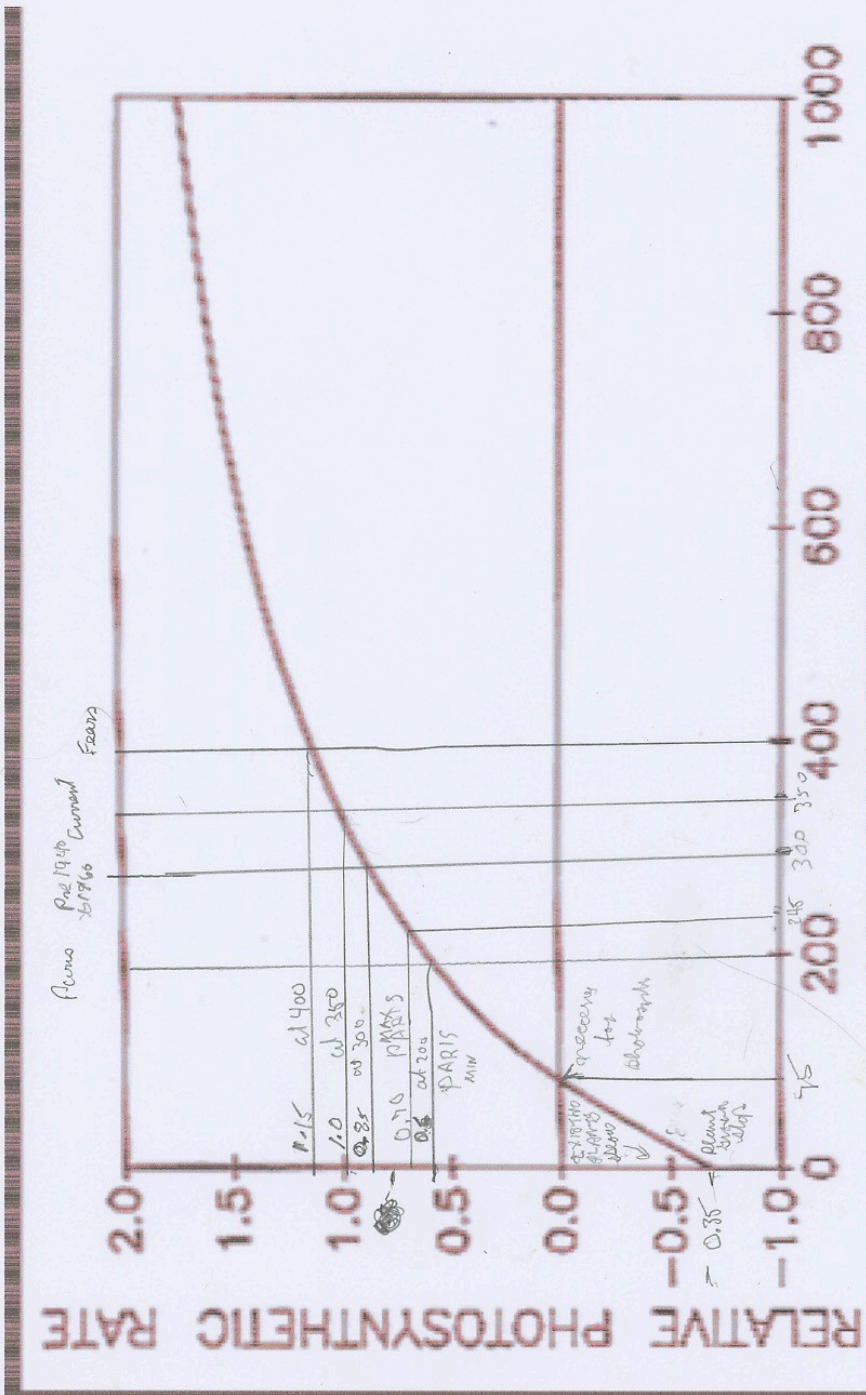
Display 7

Display 8



Display 9⁹
10

figure 4



RELATIVE PHOTOSYNTHETIC RATE

Plants only CO₂ CONCENTRATION, ppm

Plants only CO₂ increase mp Current 300-700 52% of current
 300 to 400 1.15 / 0.85 = 35% increase mp
 300 to 350 0.50 / 0.85 = 17.6% increase mp
 300 to 400 1.15 / 1.00 = 15% increase mp
 Paris around 85% 1960s

plants 1960
 = 300
 are 1960
 current
 current
 from

Display 10

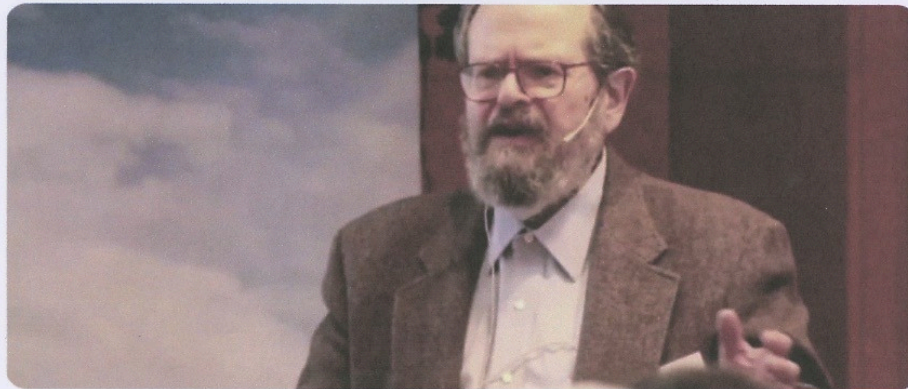
08.14.2023

Two Princeton, MIT Scientists Say EPA Climate Regulations Based on a 'Hoax'

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Physicist, meteorologist testify that the climate agenda is 'disastrous' for America

[Published first at the Epoch Times](#)

By [Kevin Stocklin](#)


8/12/2023

 16 display 10-2.jpeg

 17 display 10-3.jpeg

5

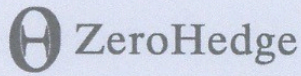
A blank chart of the non quantified or potential not yet identified information that has not been made or revealed is provided in Display 11. Examples are: demolition of the windmills, fossil fuel, transmission equipment at end of use. Performance bonds for construction and end use are needed so that the citizens are protected from bankruptcy or abandonment of the project, operation and maintenance costs (O&M), fuel costs, quid offered or paid to towns, their fire or police companies and NGO's.

 19 display 11.jpeg 21 findings 2.jpeg

Display 13

New York To Pay \$155 Per Megawatt Hour For Wind-Power, Current Rate Is \$36 Per MWH | ZeroHedge

8/27/24, 2:54 PM



On a long enough timeline the survival rate for everyone drops to zero.

WATCH DEBATES

New York To Pay \$155 Per Megawatt Hour For Wind-Power, Current Rate Is \$36 Per MWH



BY TYLER DURDEN

SATURDAY, AUG 24, 2024 - 03:10 PM

[Authored by Mike Shedlock via MishTalk.com.](#)

It currently costs NY about \$36 per MWH for energy. But the state demanded wind. Let's discuss the amazing bottom line results.



LOGIN

So Much for So Little

Display 13

The owner-operators of the two farms—Equinor for Empire and Orsted for Sunrise—are two of the top five global wind-farm investors and operators. *Equinor is Norway's state oil company, while Orsted previously was Denmark's.*

With a break even cost of \$101 (thanks to subsidies), Equinor will make \$54 per MWH and Orsted will make a mere \$45 per MWH on something whose total cost should be \$36 per MWH.

The Journal calculates Equinor and Orsted (foreign corporations) will each receive a total subsidy of more than \$3 billion courtesy of U.S. taxpayers.

The Journal asks ***"Did New York sign an agreement that allows large wind-farm operators to earn unreasonably high after-tax profits at the expense of its residents?"***

I believe the math speaks for itself.

Not only will New Yorkers pay over four times the going rate for energy, the US will send \$3 billion to foreign companies to do so.

Congrats team Biden and New York State.

Another Green Energy Company Declares Bankruptcy

Meanwhile, [Another Green Energy Company Declares Bankruptcy, Thank Biden's Tariffs](#)

And in case you missed it [Ford Loses \\$132,000 on Each EV Produced, Good News, EV Sales Down 20 Percent](#)

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