



Time to Get Serious

By George Erickson 9-6-22

**We are in deep trouble with
climate change.**

**Expanding nuclear power is the safest,
most effective way to cut back on
carbon.**

2,000 years ago, when there were just

300 million people, Seneca warned,

“A bull is content with a meadow,

and a forest is enough for 100 elephants,

but the little body of a man devours

more than all other living creatures.”

An aerial photograph of a densely populated hillside in Mexico City. The foreground is dominated by a massive, sprawling landfill of garbage, with various pieces of trash and debris visible. The hillside above is covered in a dense residential development, with numerous small buildings and structures packed closely together. The overall scene highlights the environmental and urban challenges associated with rapid population growth and waste management in a major city.

Mexico City
Think about the garbage.

Let's also look closer to home

Sustainable



Sustainable?

Garbage barges

10,000 tons/day



Extreme weather events - Nebraska 2019

**2022 Pakistan flood
20 million homeless
1,200 dead**



Lake Mead 2021



Lake Powell, which feeds Lake Mead, is **down 150 feet**



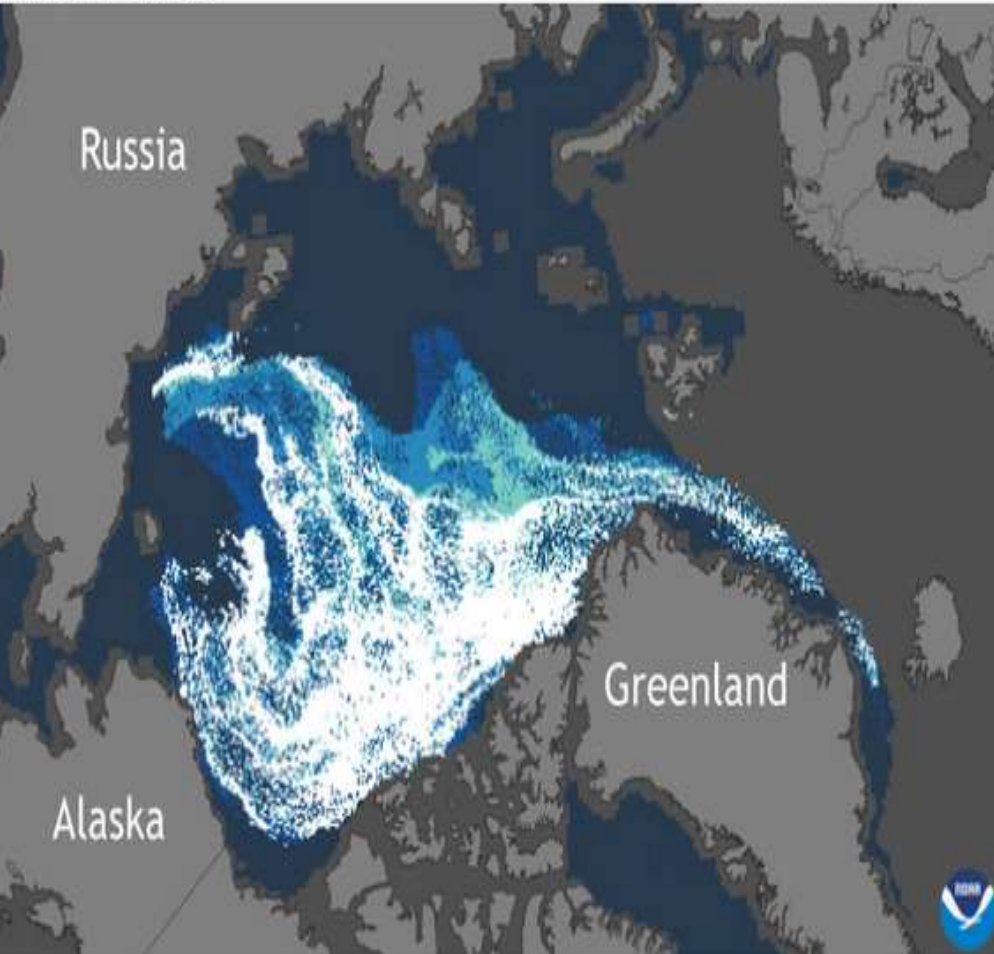
By **2025**, Cairo, population **20,000,000**,

will be short of water,

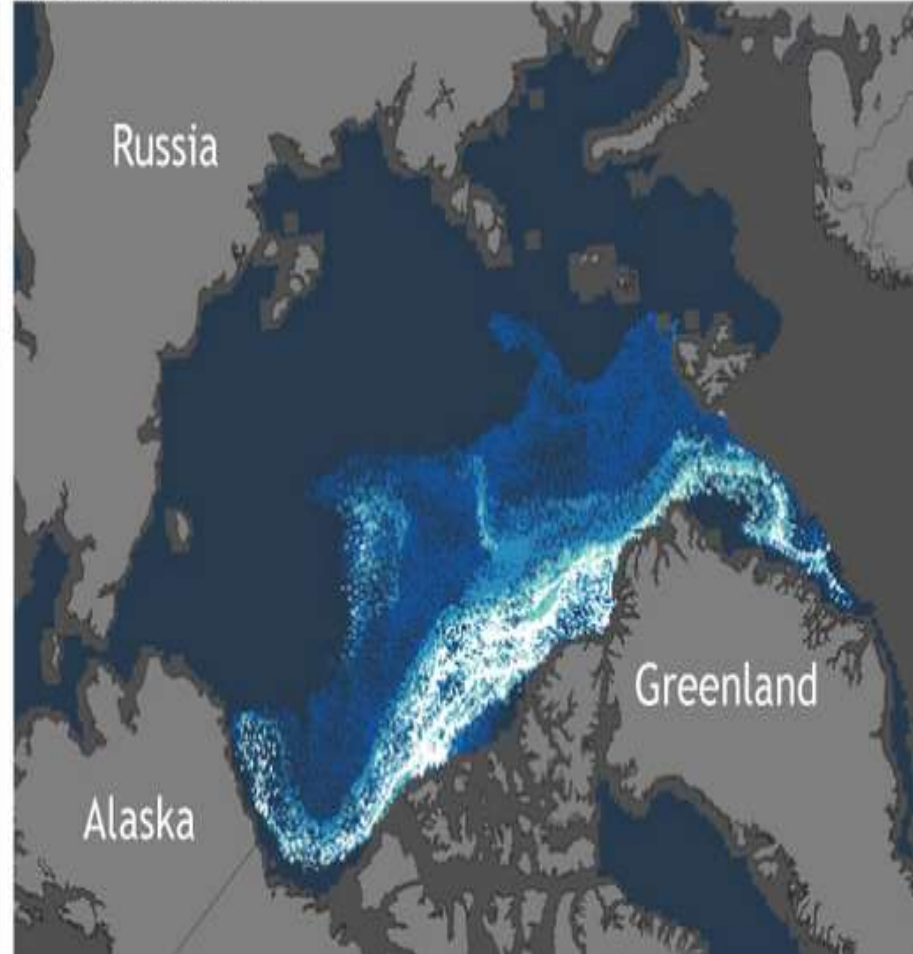
by **2050**, the **6 billion** people who depend
on dwindling mountain runoff
will be desparate.

In **March 1950** the Arctic ocean was **100% ice**, but note the decrease from 2000 – 2020, and it's worse now!

March 2000



March 2020



Ice reflects heat, but water absorbs it, and warm water holds less oxygen.



Without ice, starving polar bears and birthing seals will be driven ashore, becoming prey for foxes, wolves & grizzlies.

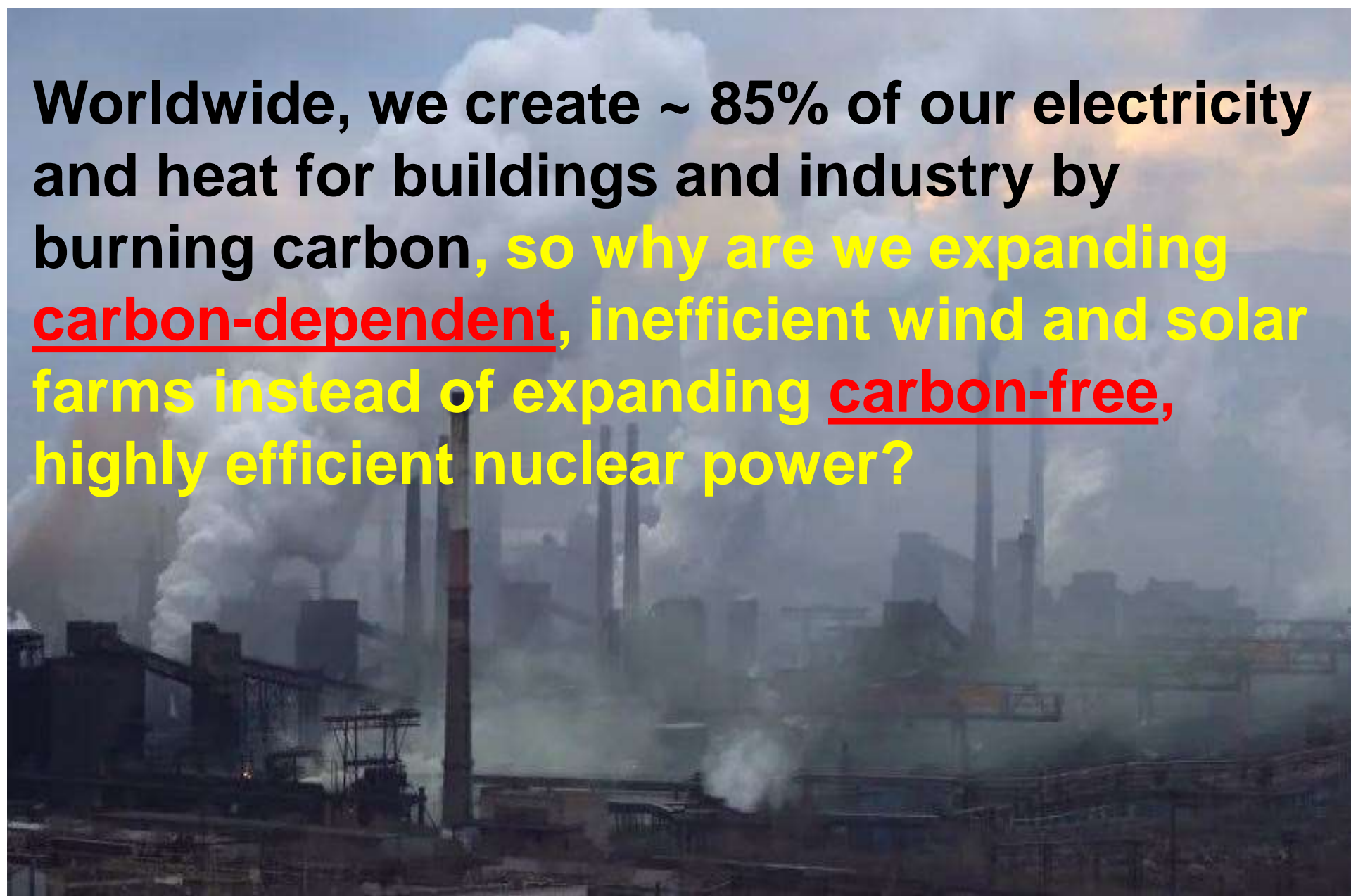
Even a healthy polar bear is no match for a grizzly.

California - the Golden State - 2020




Bark beetles, once held in check by cold winters, are surviving.


Worldwide, we create ~ 85% of our electricity and heat for buildings and industry by burning carbon, so why are we expanding carbon-dependent, inefficient wind and solar farms instead of expanding carbon-free, highly efficient nuclear power?



Canada's Tar Sands – one of North America's worst GHG emitters.



We have created **2 trillion tons** of Industrial Age CO_2 , to which we are adding **50 billion tons/yr.** 1/3 has already dissolved in our seas, making them increasingly hostile to the life that provides **20% of our protein and 50% of our oxygen!**


An aerial photograph of a nuclear power plant. Two large, white, dome-shaped containment structures are the central focus. They are situated on a hillside overlooking a body of water. The plant's main building is a long, dark structure between the domes. Other smaller buildings and infrastructure are visible around the site. The surrounding landscape is hilly and appears to be a mix of dry grass and some greenery. The water in the foreground is blue with white foam from waves crashing against a breakwater.

Russia, China, Korea, Turkey, India, and 15 other nations are expanding nuclear power,

but, led by BP, Exxon and willfully ignorant “greens,” we have closed 4 nuclear plants while fighting to keep Diablo Canyon open!



Yes, “willfully ignorant.”
The Sierra Club and its clones that take money from oil companies refuse to watch presentations on the superiority of nuclear power and the defects of wind and solar.

A man wearing a blue t-shirt, a dark baseball cap, and khaki pants is sitting on a large array of solar panels. He is looking towards the camera. The background shows a clear blue sky and some distant buildings.

Bill McKibben, whose book, *The End of Nature*, turned me on to Climate Change, privately supports nuclear power but will not go public. When asked why not, he told William Tucker that he'd lose half of his 350.org members if he endorsed nuclear power. Once again, money has trumped the environment. **This is tragic!**

Watch Michael Moore's *Planet of the Humans*.
It's **FREE** on the web.

Protecting Mining Jobs and Communities



A message from Australia's coal miners

Climate change is real and we need a Government that will tackle it.
Doing nothing is no longer an option.

Voters have a choice at the election:

Labor

- Support \$1.5 billion investment in Clean Coal Technology
- No nuclear power station

Coalition

Continue to neglect Clean Coal Technology
Develop nuclear power stations that would replace the coal industry.

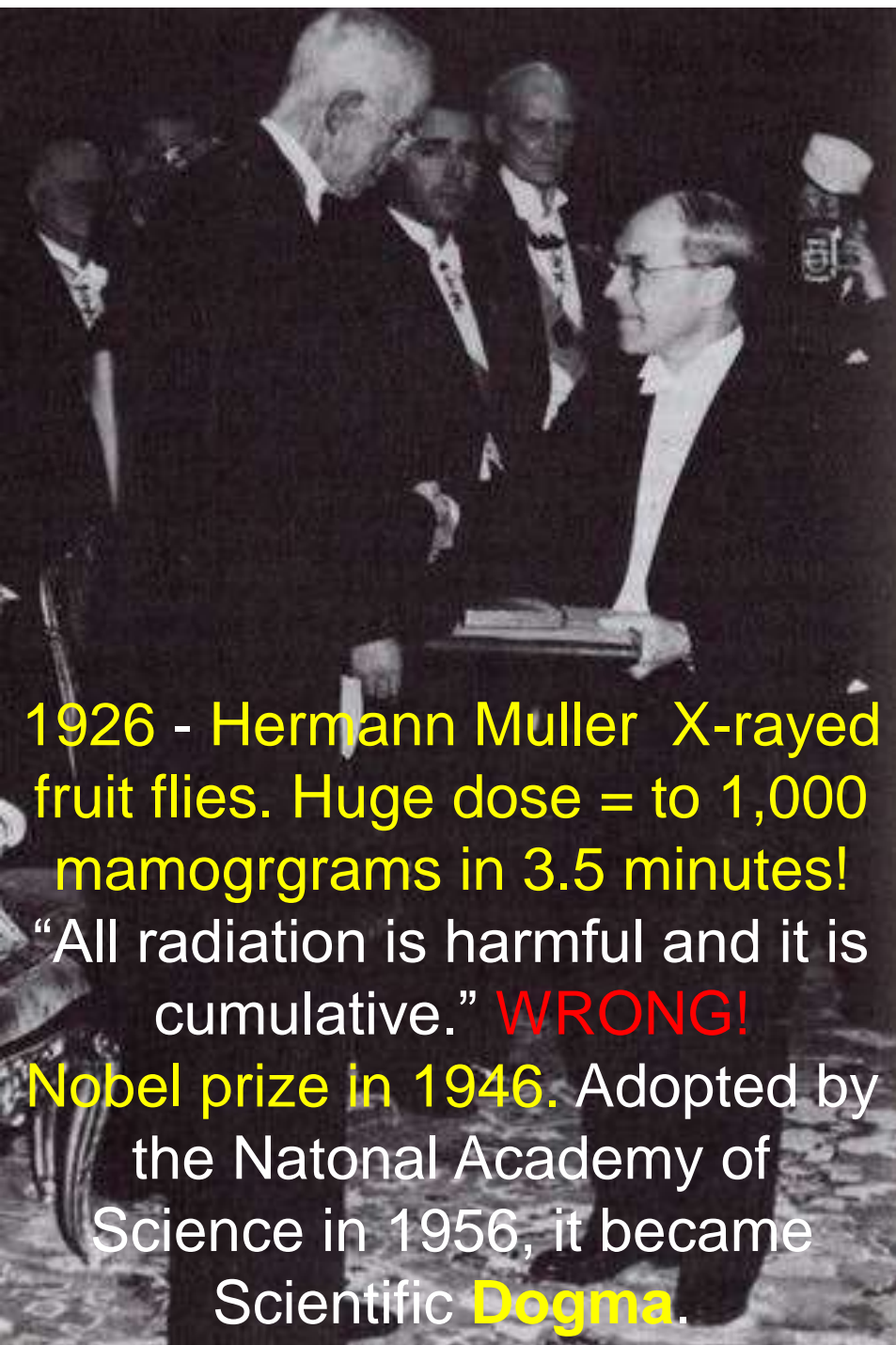
Nuclear Power Will Kill the Coal Industry

... communities don't support the Liberal and National parties' plans to introduce nuclear power stations.

Going nuclear is dangerous and will mean the end of our coal industry. Choose a party.



It's all about jobs, money and nuclear **FEAR**
that began in 1926 with Hermann Muller



1926 - Hermann Muller X-rayed fruit flies. Huge dose = to 1,000 mamogrgrams in 3.5 minutes!

“All radiation is harmful and it is cumulative.” **WRONG!**

Nobel prize in 1946. Adopted by the Natonal Academy of Science in 1956, it became Scientific **Dogma.**

Nuclear: The Safest Energy Source of All

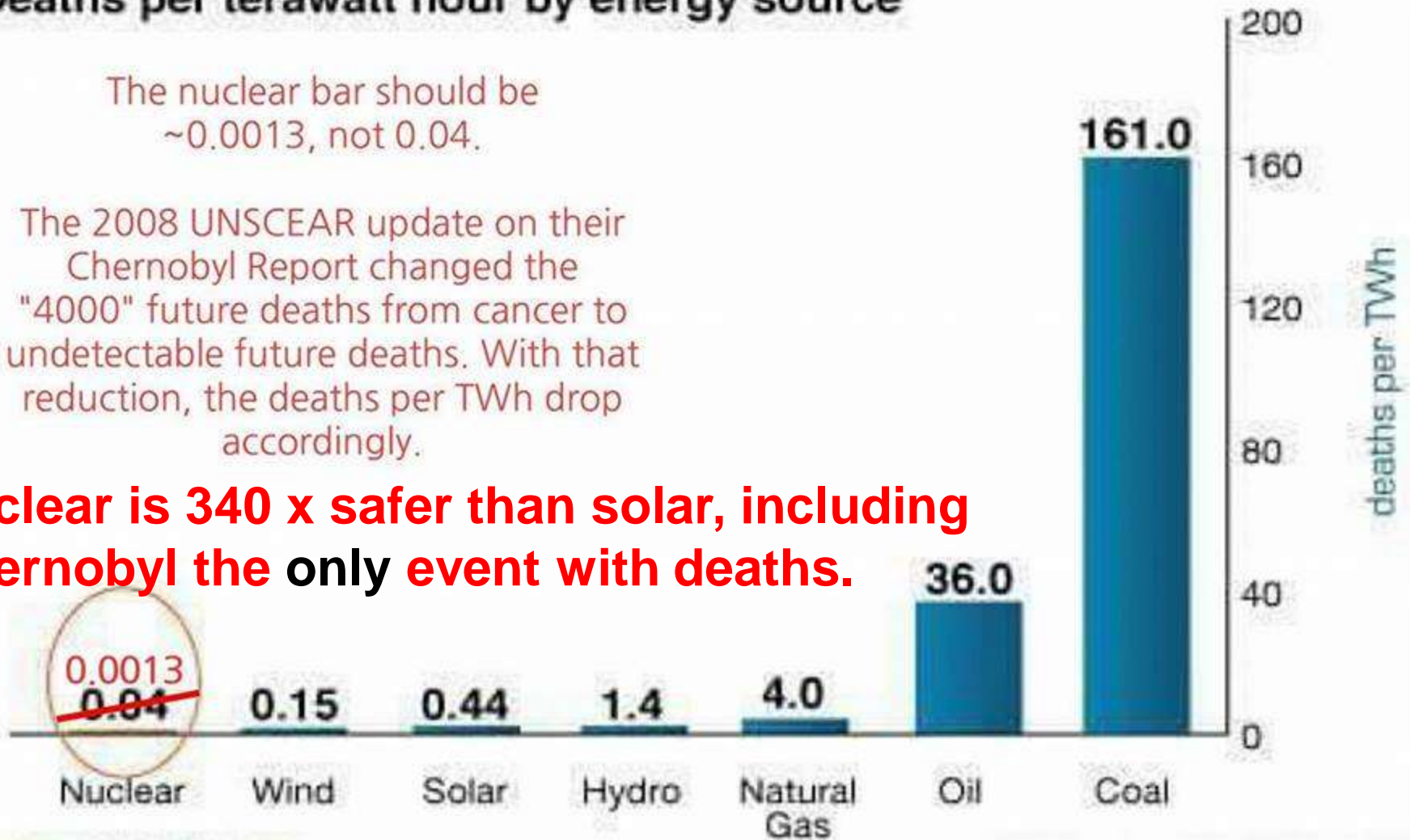
World Health Organization

Deaths per terawatt hour by energy source

The nuclear bar should be
~0.0013, not 0.04.

The 2008 UNSCEAR update on their Chernobyl Report changed the "4000" future deaths from cancer to undetectable future deaths. With that reduction, the deaths per TWh drop accordingly.

Nuclear is 340 x safer than solar, including Chernobyl the only event with deaths.



All methods of creating electricity are evaluated in two ways: the first reveals how much electricity can be generated under ideal conditions. The second measures how much is created long term, usually 1 yr

Nuclear power generates ~**92%** of its rated capacity.

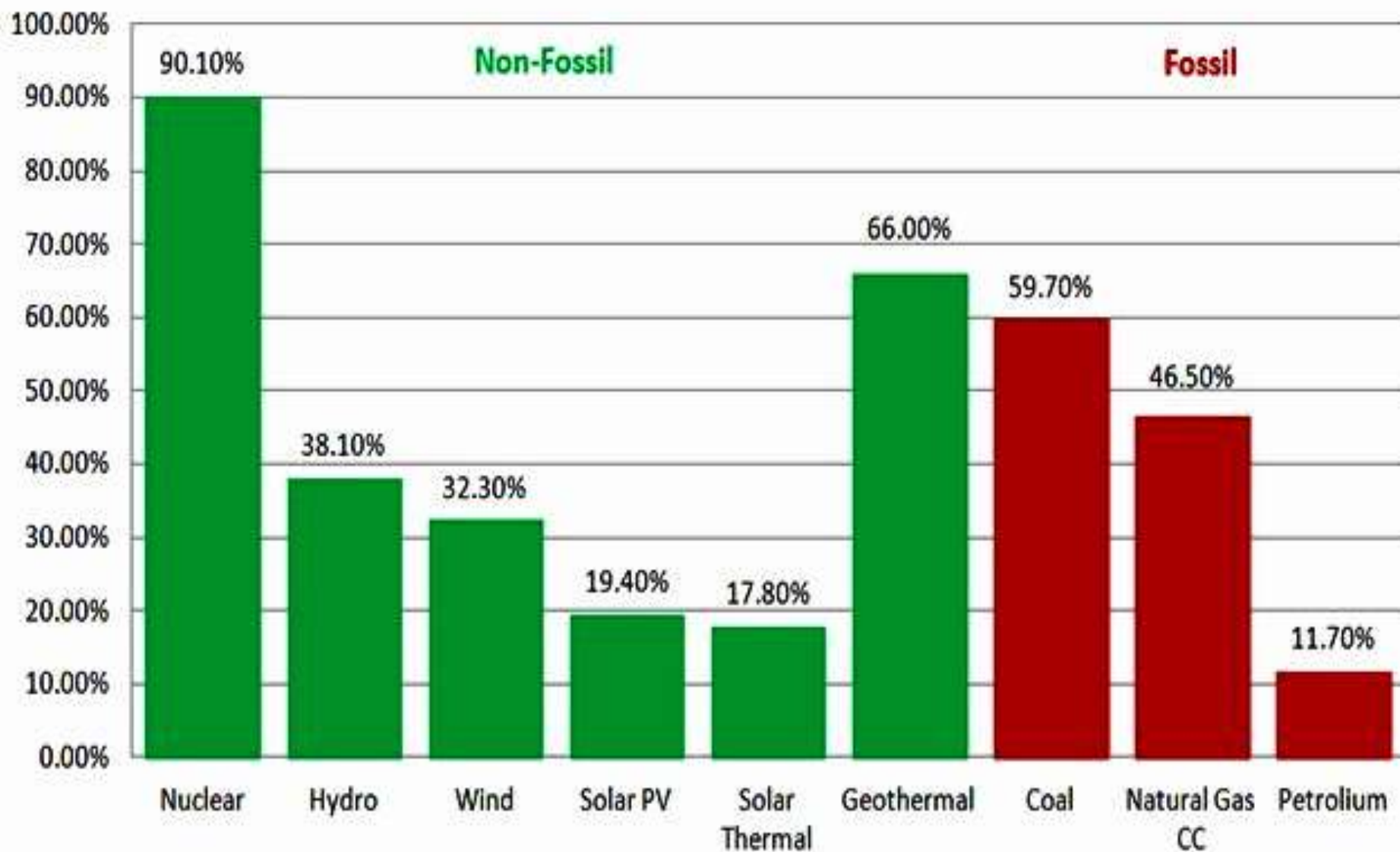
Wind and solar generate only **33%** and **20%** respectively, with the rest being created primarily by power plants that burn carbon. **They are not “green.”**

They are carbon-dependent!

The proof is in the next image.

2013 Capacity Factors by Energy Source

(Source: U.S. Energy Information Administration)





The “green” fix for intermittent wind
and solar: Build more + batteries.

Nuclear power doesn't need batteries.

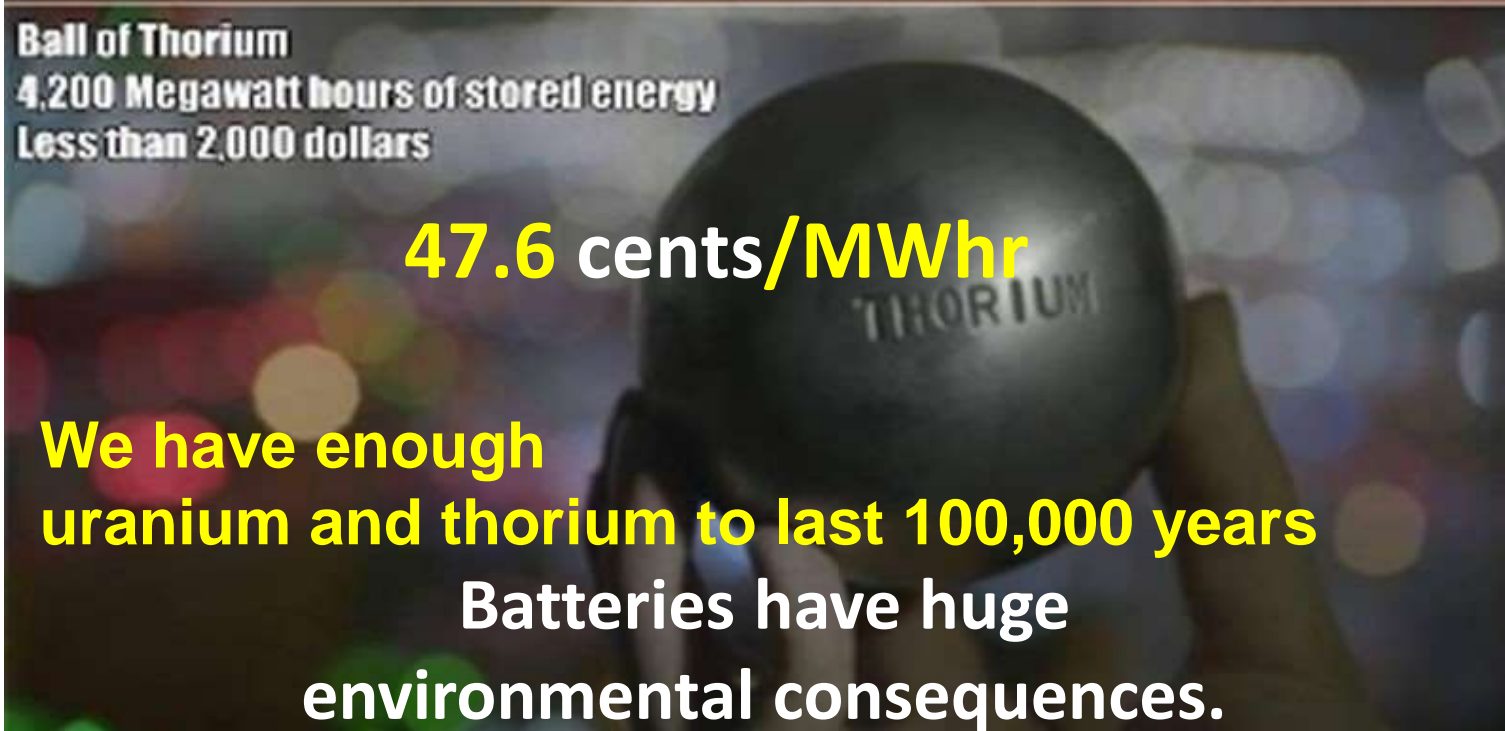
We must determine the carbon footprints
of all projects, including Carbon Capture
projects. beginning with mining.

Teslas Australian Battery Array
129 Megawatt hours of storage
50 million dollars



\$388,000 /MWhr

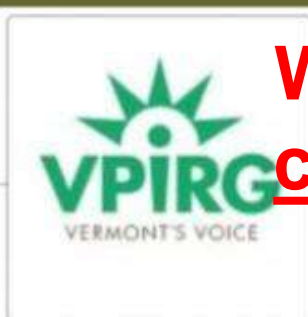
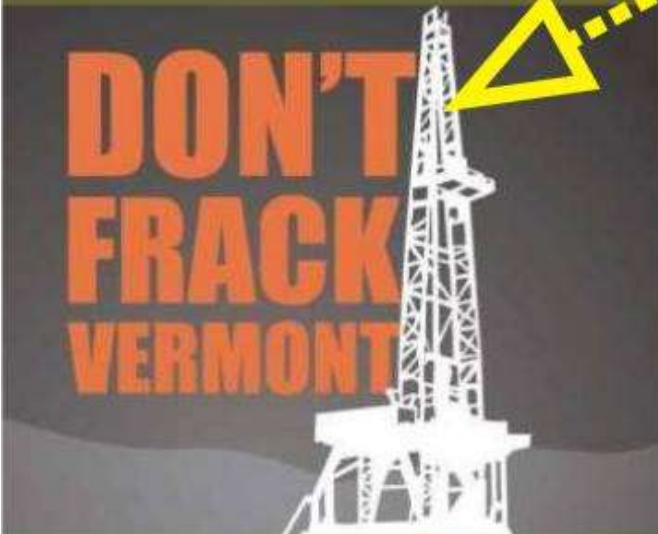
Ball of Thorium
4,200 Megawatt hours of stored energy
Less than 2,000 dollars



47.6 cents/MWhr

**We have enough
uranium and thorium to last 100,000 years**

**Batteries have huge
environmental consequences.**



Wind and solar are carbon-dependent!

VPIRG
1,317 likes · 147 talking ab

Non-Profit Organization
VPIRG is Vermont's largest grassroots advocacy organization. We work to protect Vermont's citizens and environment, and need your help. Check out



Natural gas is 90% methane, which is **80 x worse than CO₂** for decades.

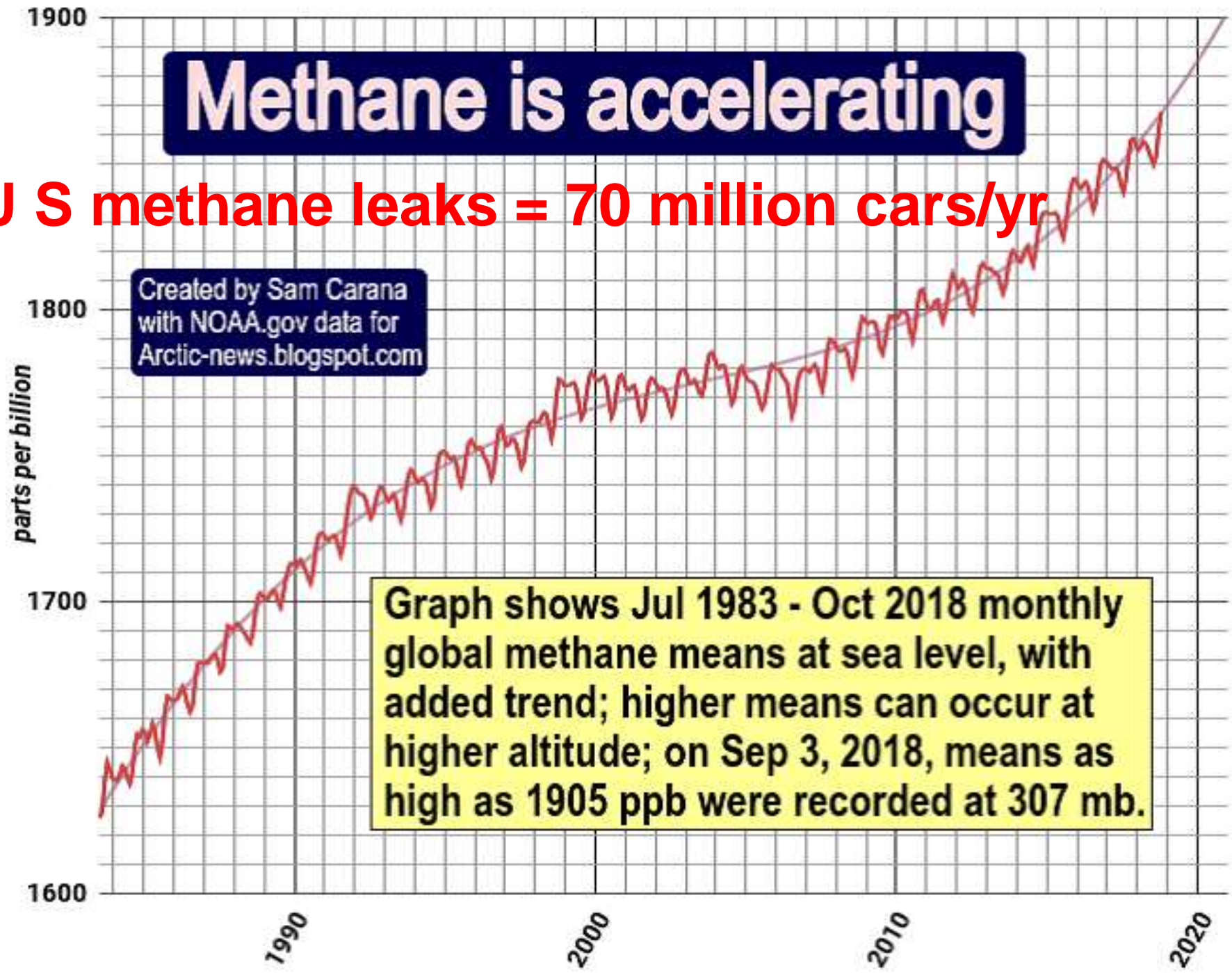
Fracking pollutes groundwater

Wind turbines are flying high. But how do you keep the lights on when the wind stops blowing? At BP, we see a simple answer: We see cleaner-burning natural gas. It's a perfect partner to renewables.

Methane is accelerating

U S methane leaks = 70 million cars/yr

Created by Sam Carana
with NOAA.gov data for
Arctic-news.blogspot.com



2012 Boston area methane leakage.



**CNN 2018: “1 dead, 24 injured
in 30 natural gas explosions in
three Boston area towns.”**

In the 30 towns used measurements made
in 2012 suggest methane leaks are everywhere.

CANADA
U.S.A

Bakken Shale Activity

Minneapolis - Saint Paul

Denver

Bakken flaring could power Chicago and Washington DC.

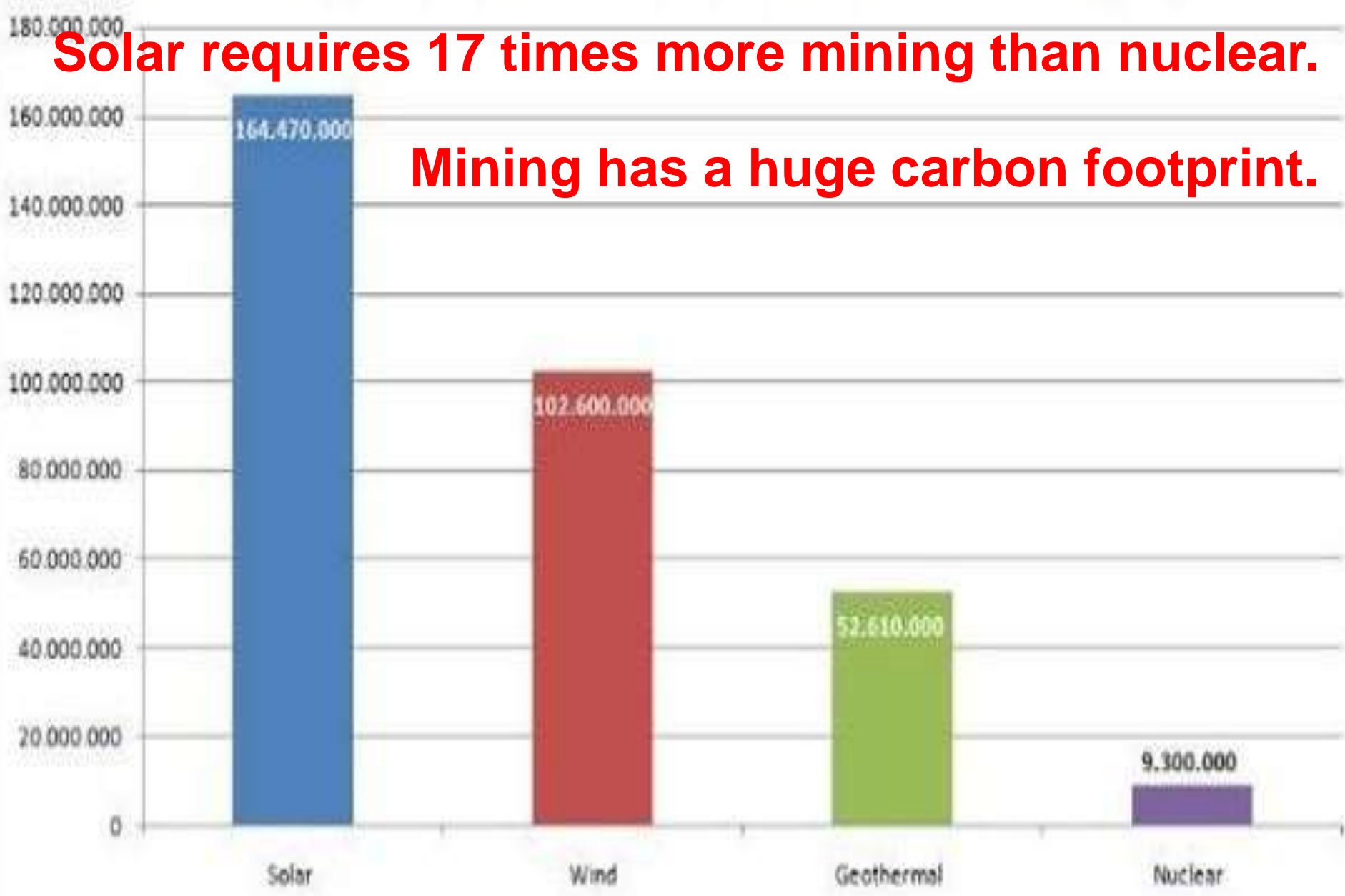
It's cheaper to flare it than pipe it to market.



Total tonnage required to build 10.000 TWh generation capacity

Solar requires 17 times more mining than nuclear.

Mining has a huge carbon footprint.

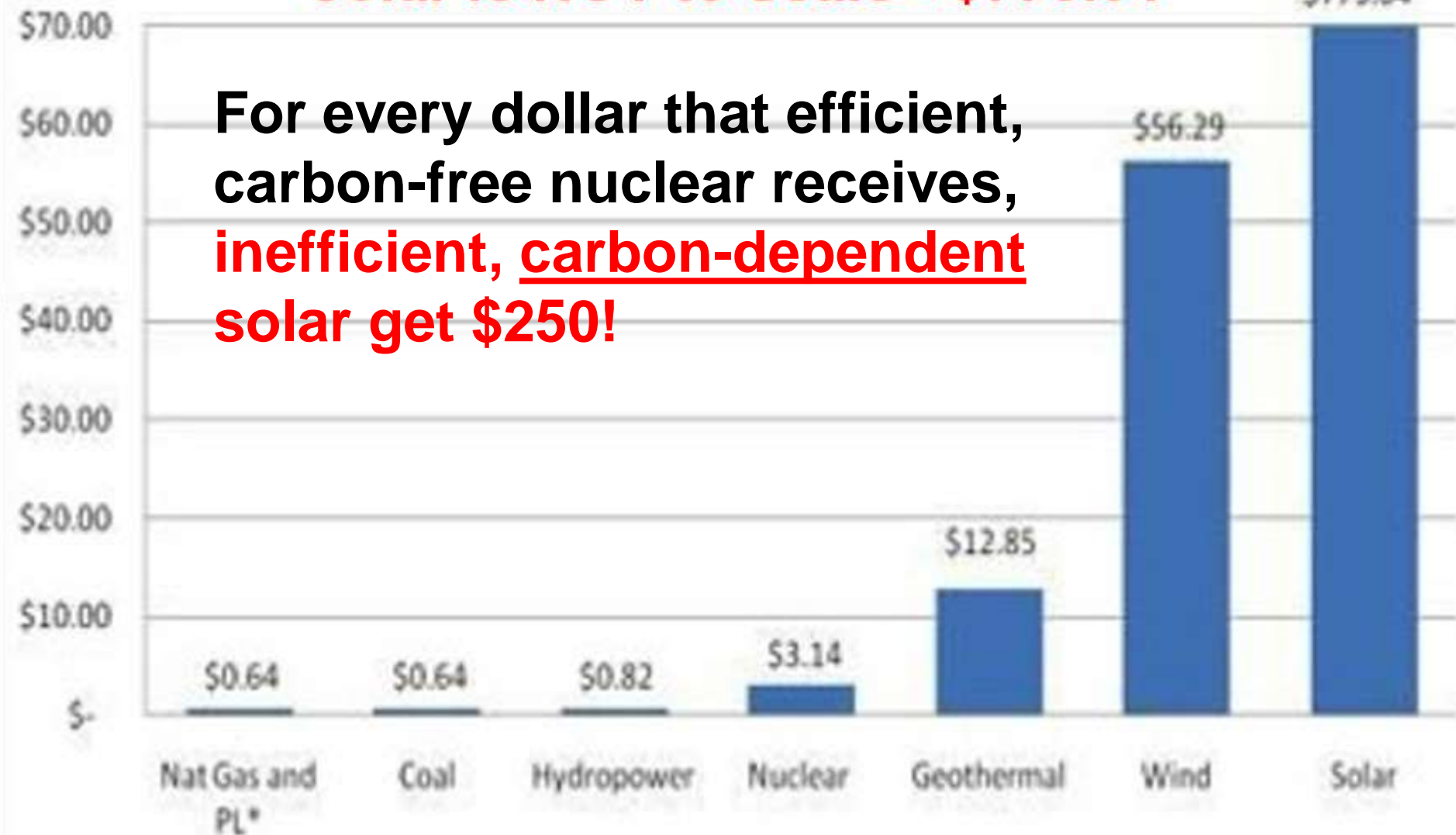


Federal Electric Subsidies per Unit of Production (2010 dollars per megawatt hour)

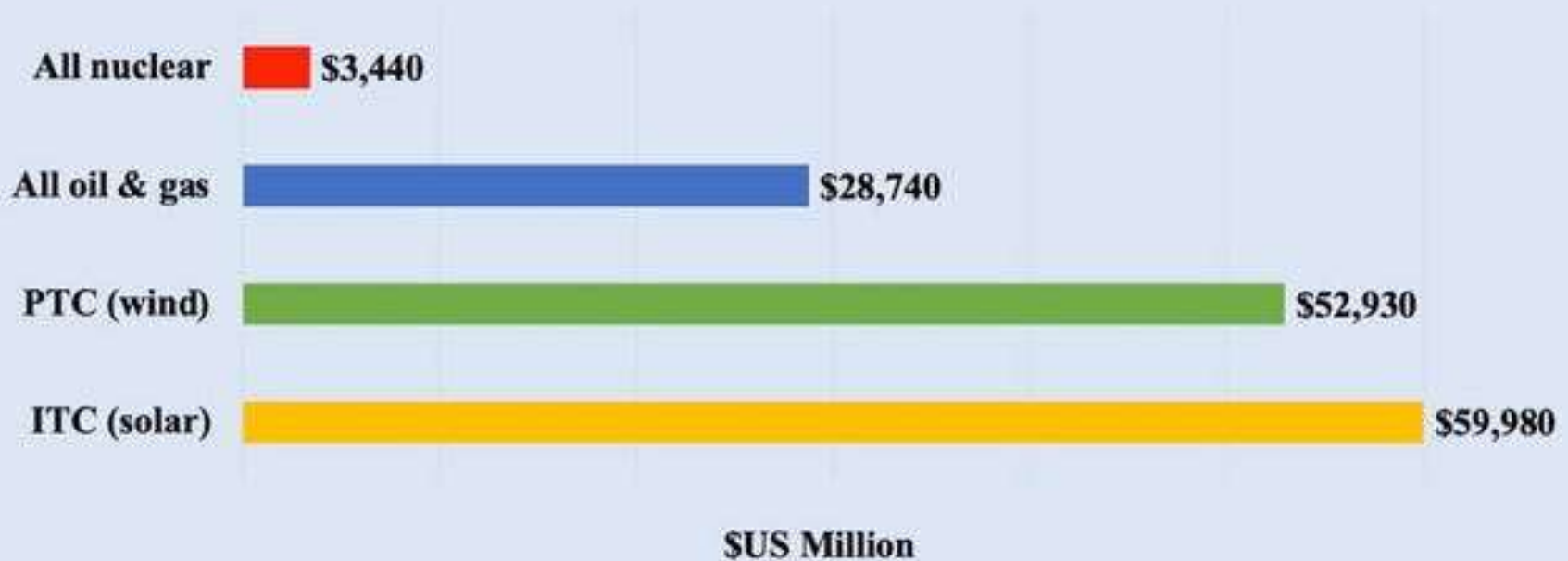
Solar is NOT to Scale - \$775.64

Solar Not
to Scale-
\$775.64

For every dollar that efficient, carbon-free nuclear receives, inefficient, carbon-dependent solar get \$250!



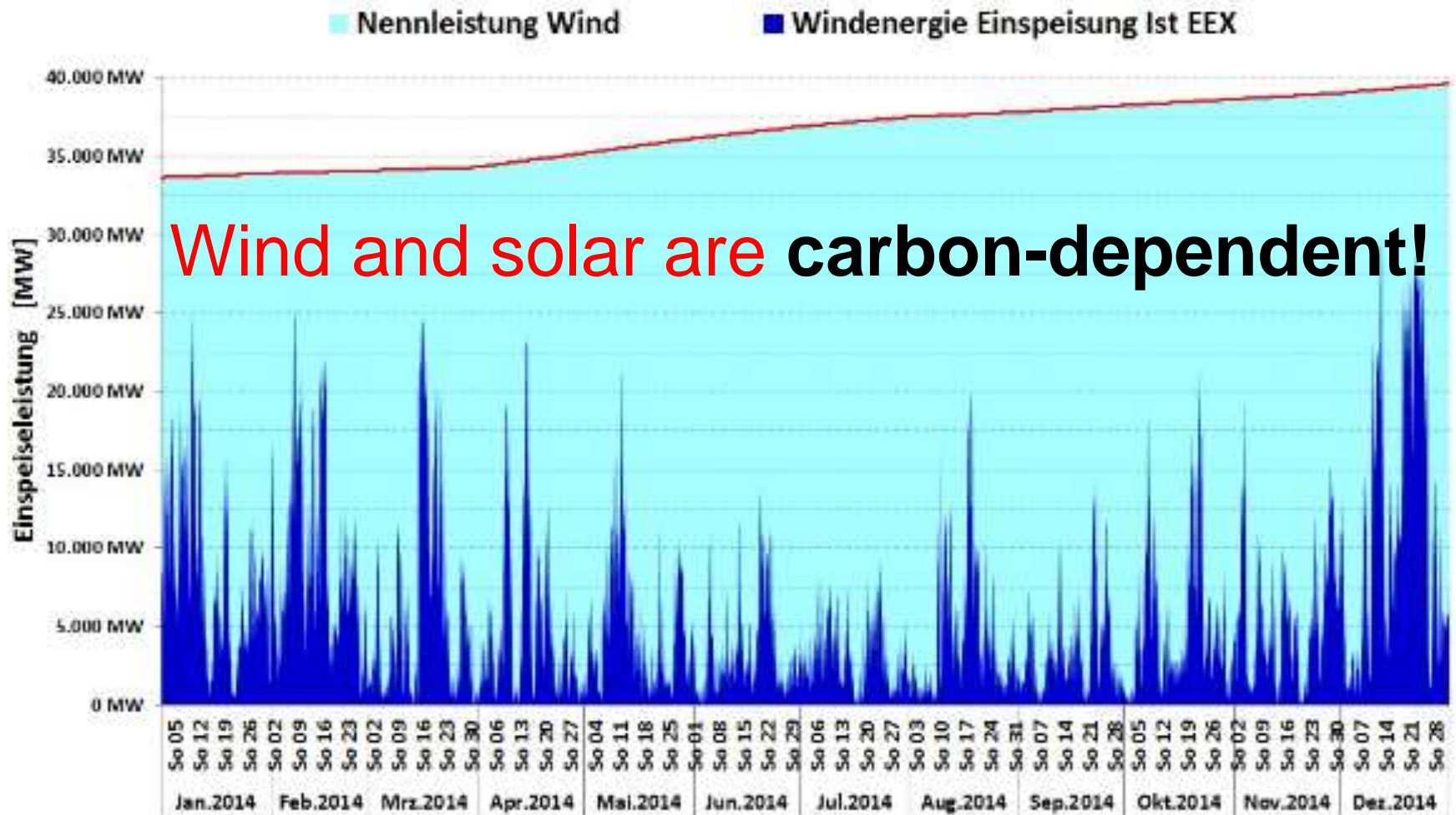
Cost Of Federal Energy-Related Tax Incentives 2021-2031



Source: US Treasury, <https://fiscer.treasury.gov/policy-issues/tax-policy/tax-expenditures>

© Robert Bryce

The projected subsidies are even worse!
Oil + gas will receive 9 x more than nuclear!



Datenquelle: EEX Leipzig

Auflösung: Viertelstundenwerte

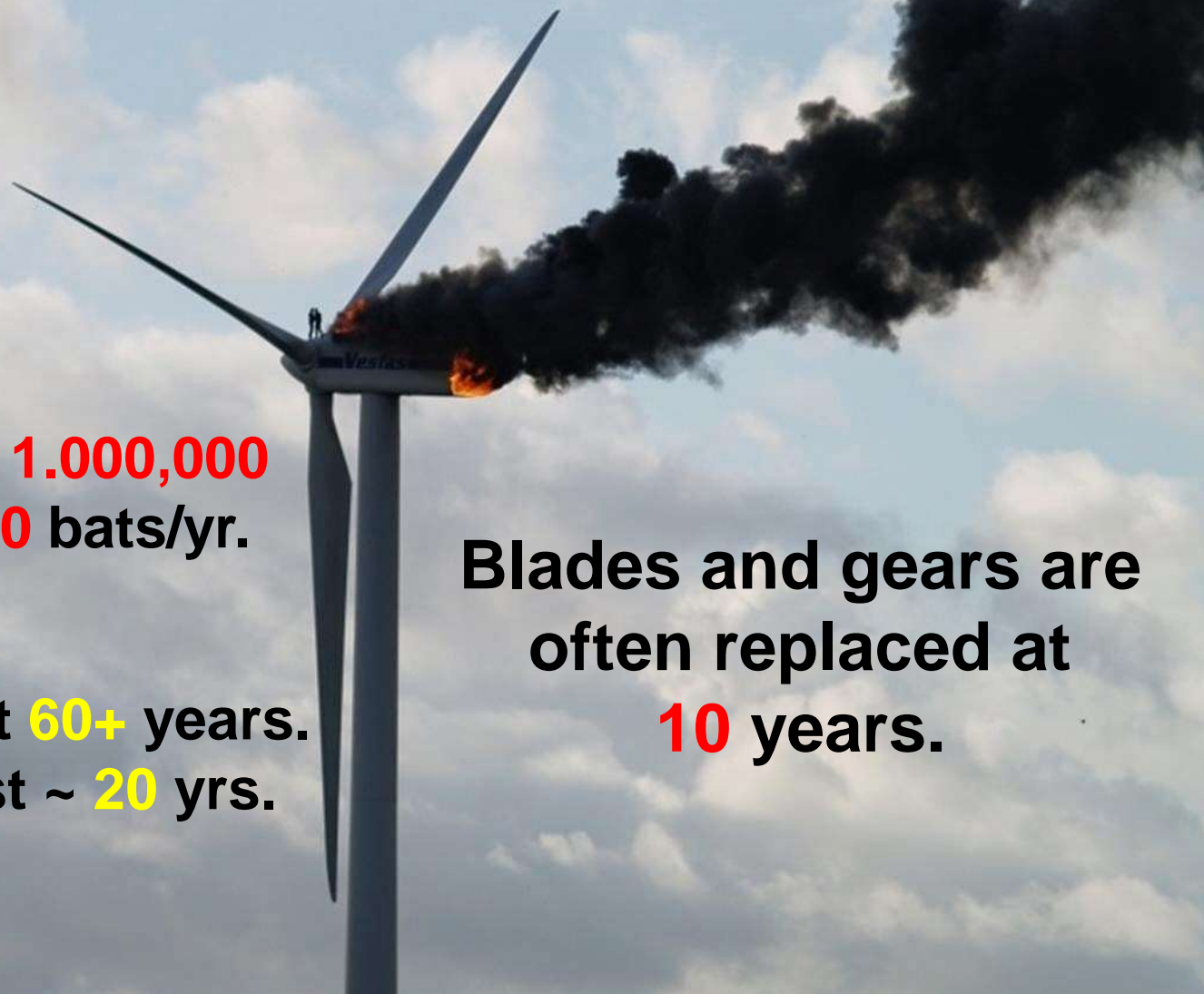
Darstellung: Rolf Schuster

Germans paid for the “plate rating” (the red line) but only got the blue spikes, so they make up the difference by burning coal, lignite or gas, which makes more CO₂.

Germany burns **lignite** – the dirtiest runt of the coal family.



2 Dutch engineers waiting to die!



U S Windmills kill **1,000,000** birds and **1,000,000** bats/yr.

Nuclear plants last **60+** years.
Wind and solar last ~ **20** yrs.

Blades and gears are often replaced at **10** years.

Wyoming Blade cemetery.
Think carbon footprint!



An aerial photograph of a solar power plant, likely the Ivanpah facility. The image shows three large, circular heliostats (mirrors) arranged in a triangular pattern. Each heliostat is surrounded by a dense field of smaller mirrors. In the center of each heliostat is a receiver tower. The landscape is arid and hilly, with mountains visible in the background under a clear sky.

Ivanpah "bird-broiler" cost more than \$1.6 billion. Terminated due to gross inefficiency. Also Tonapah in NV!

Michigan - Species displacement - These panels can get
50 degrees **hotter** than their surroundings.

Think Global Warming!





Panels must be recycled as hazardous waste at a cost of ~\$30 per panel.

Panels contain toxic elements!

Immense pollution at Lake Baotou, China.
Rare earth mining for wind and solar



Species extinctions are rising, and we are on the list!

Monoculture forests are replacing mixed forests that were home to thousands of species. Chips or pellets are sent to Germany.

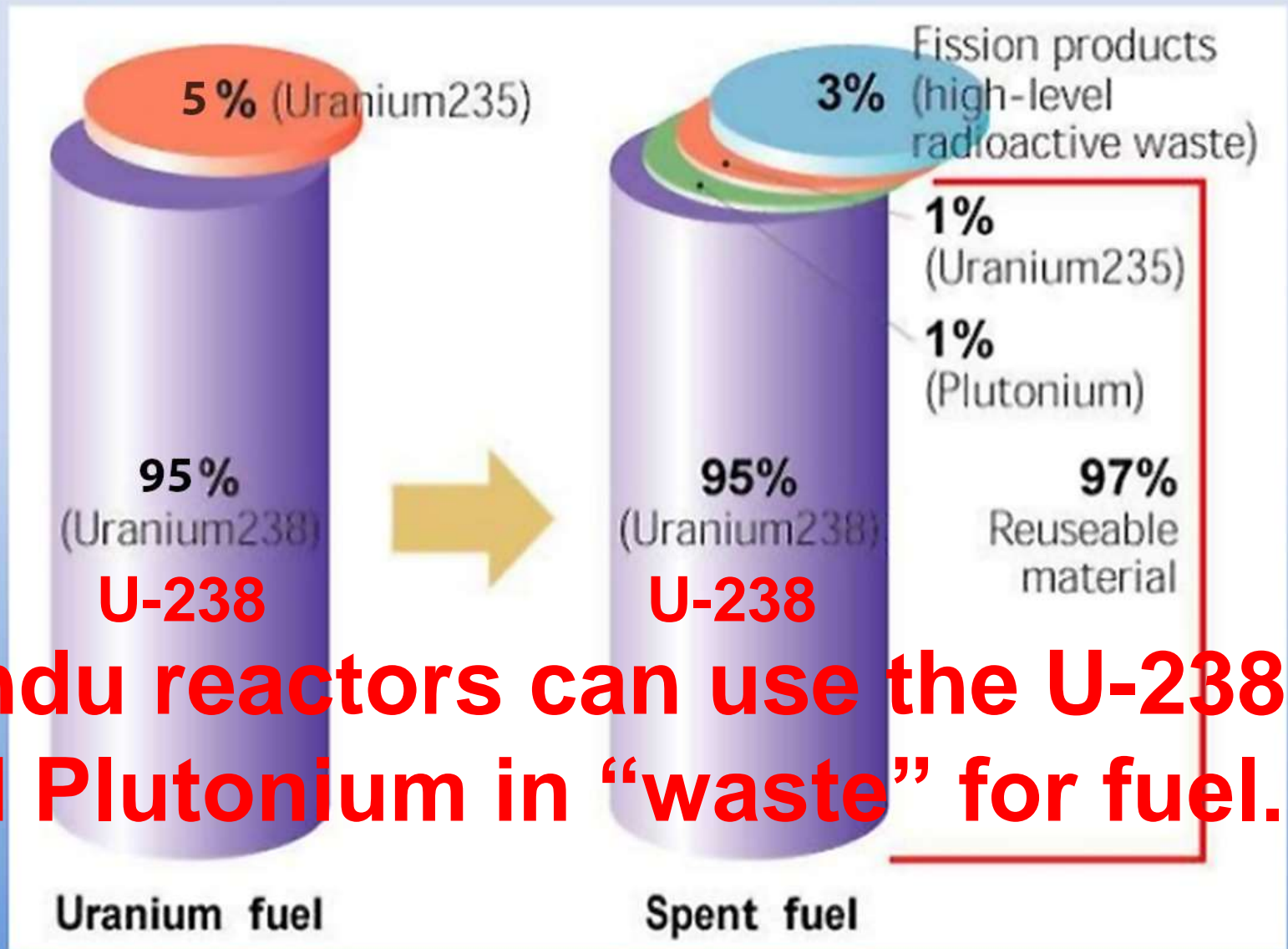




Just one **\$3** pellet = 30,000
gallons of gasoline.

Used Nuclear Fuel Anatomy

Let's look inside



Candu reactors can use the U-238 and Plutonium in “waste” for fuel.

Our 70 years of U. S. spent fuel could be stored on 1 football field.



Workers do not need protective clothing.

Very

Greenjacked!

The derailing of
environmental action
on climate change

How anti-nuclear activists
misused our love of nature
to deliver us into the grip
of coal and a deadly
climate future

Geoff Russell



Good!

Expanding safe, highly efficient, environmentally benign, resource sipping, long lived, 24/7, **carbon-free nuclear power is our single most effective way to slow climate change** – but we are foolishly expanding less-safe, intermittent, grossly inefficient, environment-wrecking, resource-gobbling, short lived, **carbon-dependent** wind and solar farms.

If we truly care for the environment and the species that depend upon it, we must **publicize** the science that proves the superiority of nuclear power. **We must become active ambassadors for nuclear power by writing op-eds and offering presentations to colleges, schools and service clubs. NOW!**

Unintended Consequences

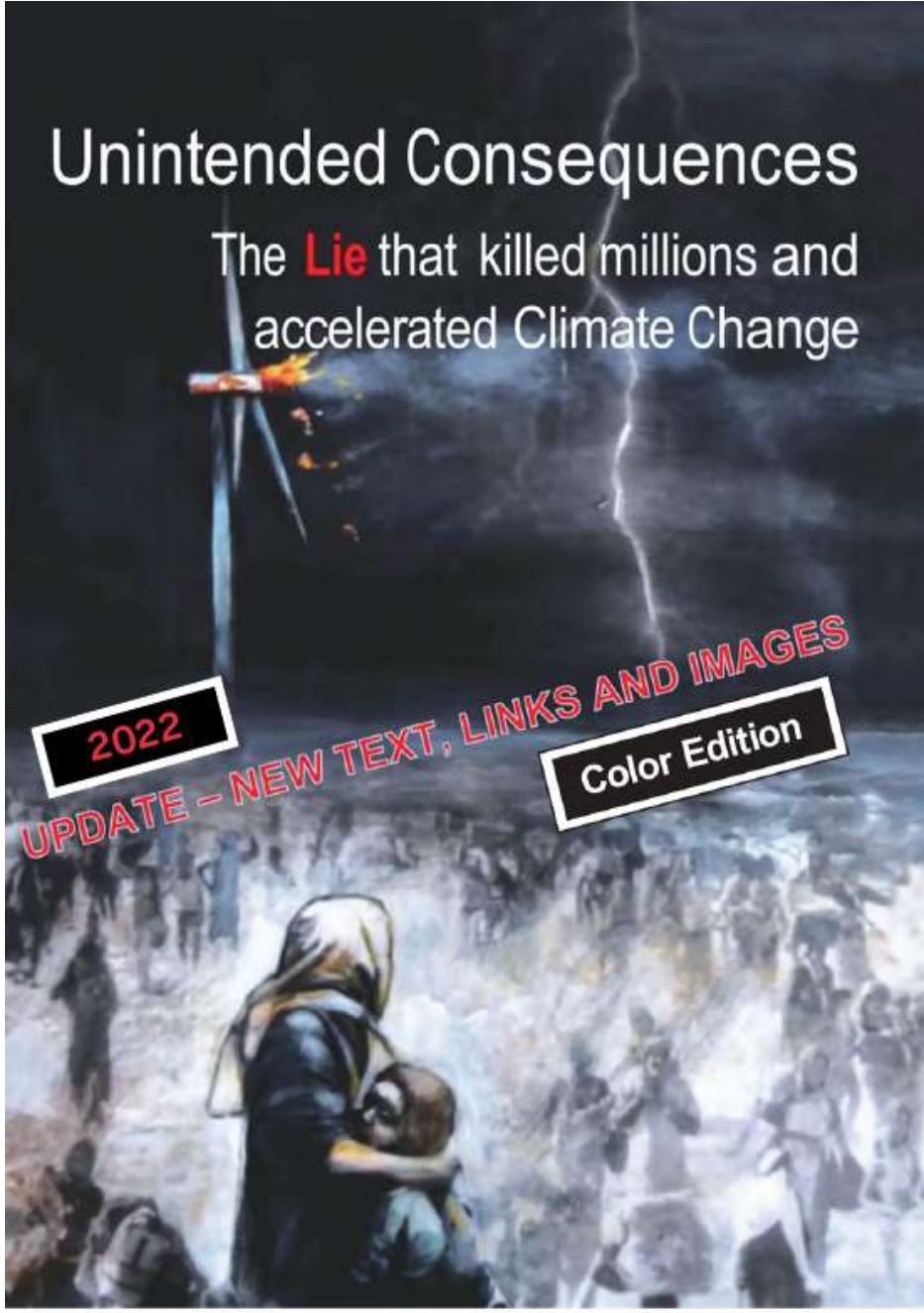
The **Lie** that killed millions and
accelerated Climate Change

2022

UPDATE - NEW TEXT, LINKS AND IMAGES

Color Edition

by Best Selling Author George Erickson



FREE from
tundra cub.com

FREE from
tundracub.com

Download and forward the **FREE
August 2022 PDF of *Unintended
Consequences* from the homepage of
www.tundracub.com or request it
from tundracub7@gmail.com.**

**Dr James Hansen, former Chief
Climate Scientist at NASA – “Your
writing is brilliant and so clear.”**

Cree saying - Only when the last tree has died, the last river has been poisoned and the last fish has been caught, will we realize that we cannot eat money.

**I need your
help.**



A close-up photograph of a baby monkey sitting on the ground. The monkey has large, dark, expressive eyes and a small, pinkish nose. It is looking directly at the camera with a slight smile. The background is a natural setting with dry leaves and twigs. The text "Me, too!" is written in a bold, yellow font in the upper left corner. In the lower center, there is a block of white text that reads: "Each and every animal on earth has as much right to be here as you and me".

Me, too!

Each and every
animal on earth
has as much right
to be here
as you and me