For Humanity's Sake: Expand Nuclear Power Now!

October 21, 2023

College of Complexes

Meeting # 3,739 - Nancy Spannaus, Author

Speaker states that: "It is not only necessary, but urgent that the new Administration and U.S. Congress act immediately to expand investment in nuclear power.

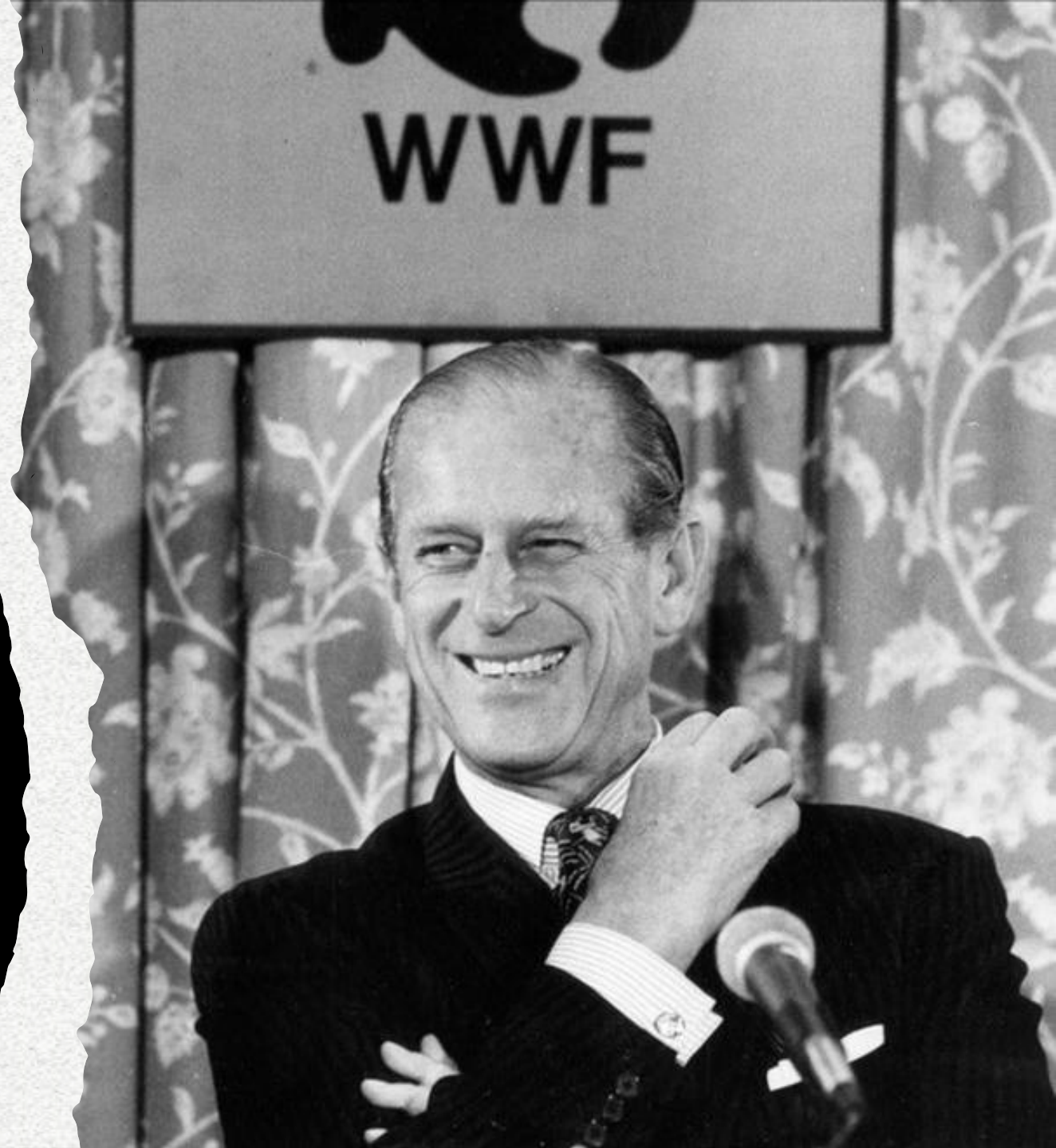
1. The Issue is People!

Who Said This?

"In the event that I am reincarnated, I would like to return as a deadly virus, in order to contribute something to solve overpopulation."

Prince Philip

The quote comes from Deutsche Press Agentur in 1988. Philip helped establish the WWF in 1961 and was its president between 1981 and 1996.



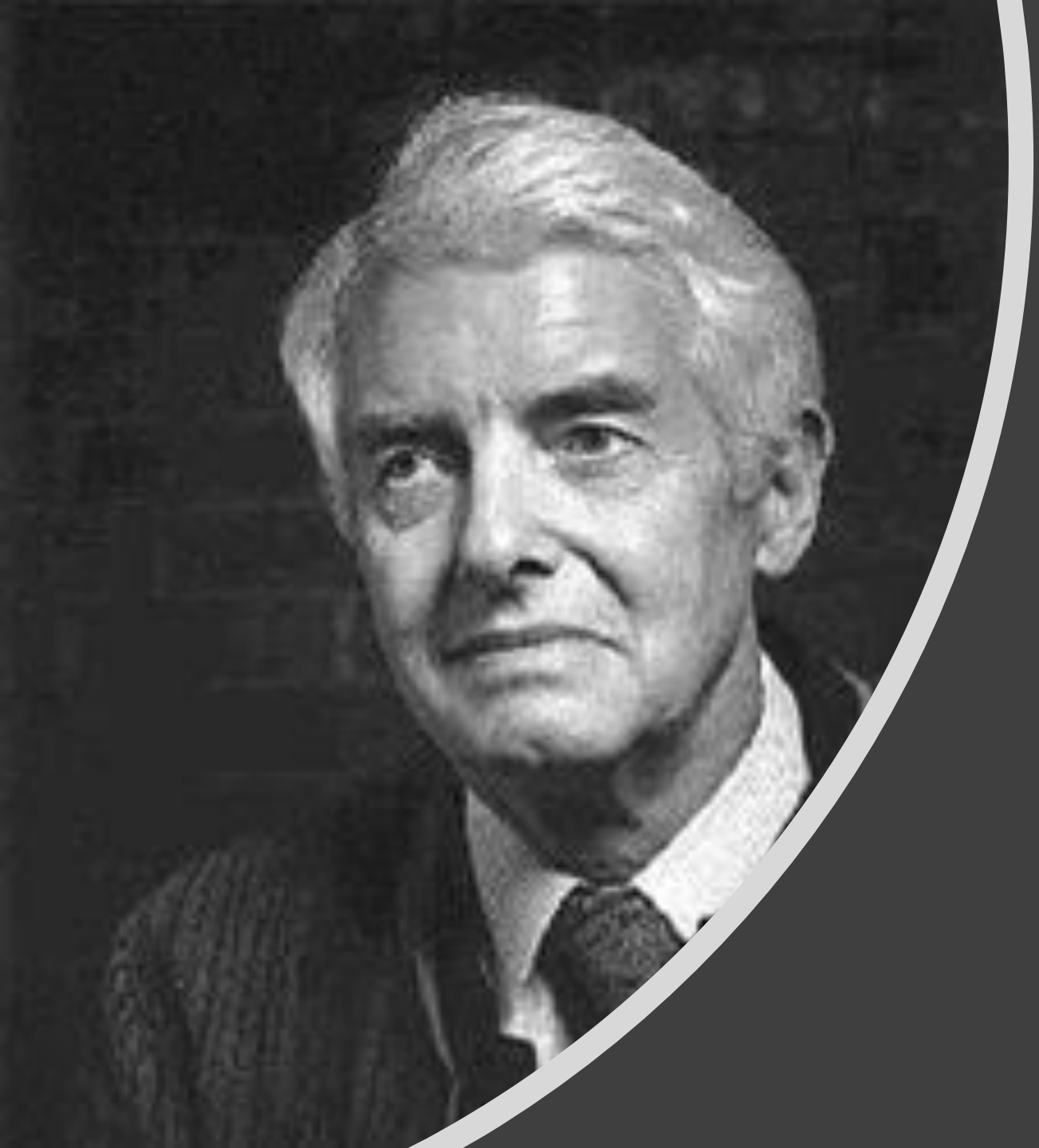
Julian Huxley, founder of UNESCO

"Thus, even though it is quite true that any radical eugenic policy will be for many years politically and psychologically impossible, it will be important for UNESCO to see that the . . . public mind is informed of the issues at stake so that much that now is unthinkable may at least become thinkable."

Thomas Malthus

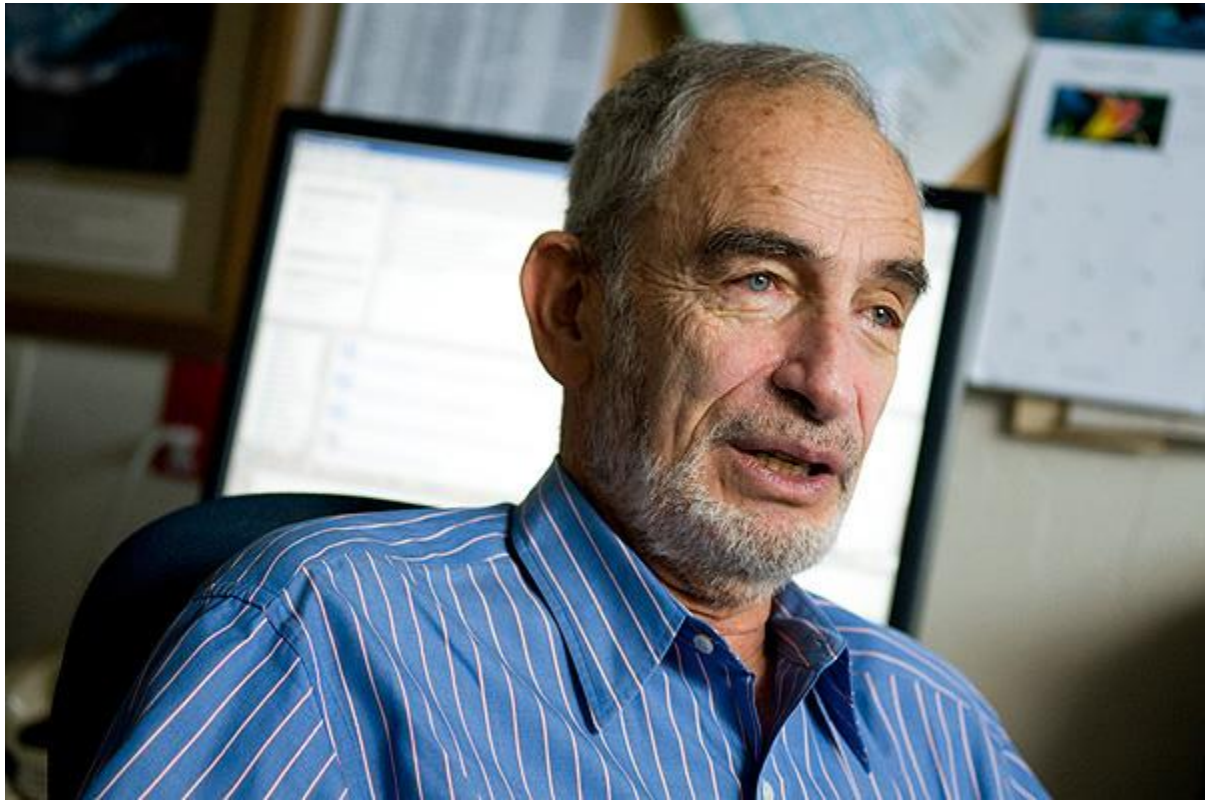
From Malthus’ Essay on Population, 1798

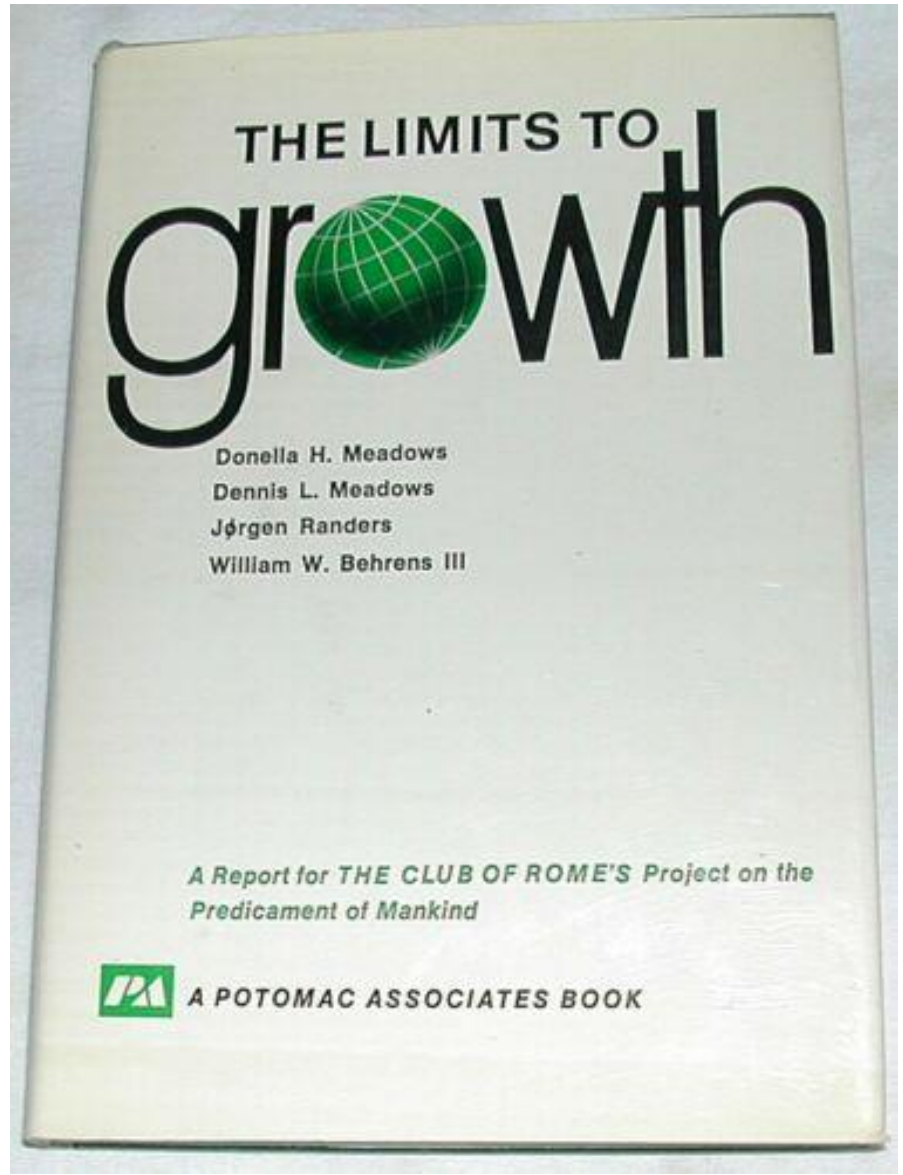
"Instead of recommending cleanliness to the poor, we should encourage contrary habits. In our towns we should make the streets narrower, crowd more people into the houses, and court the return of the plague. In the country, we should build our villages near stagnant pools, and particularly encourage settlement in all marshy and unwholesome situations. But above all , we should reprobate specific remedies for ravaging diseases and restrain those benevolent, but much mistaken 'men who have thought they are doing a service to mankind by protecting schemes for the total extirpation of particular disorders."



David Brower, founder of Friends of the Earth

Paul Ehrlich, author of The Population Bomb




THE LIMITS TO
growth
Donella H. Meadows
Dennis L. Meadows
Jørgen Randers
William W. Behrens III
A Report for THE CLUB OF ROME'S Project on the Predicament of Mankind
A POTOMAC ASSOCIATES BOOK

The Pro-People Tradition

BREVE TRATTATO DELLE CAVSE.

CHE POSSONO FAR ABBONDARE

Li Regni loro, & argento.

DOVE NON SONO MINIERE

Con applicatione al Regno di Napoli.

DEL DOTTOR ANTONIO SERRA.

della Città di Cosenza.

DIVISO IN TRE PARTI.

IN NAPOLI,

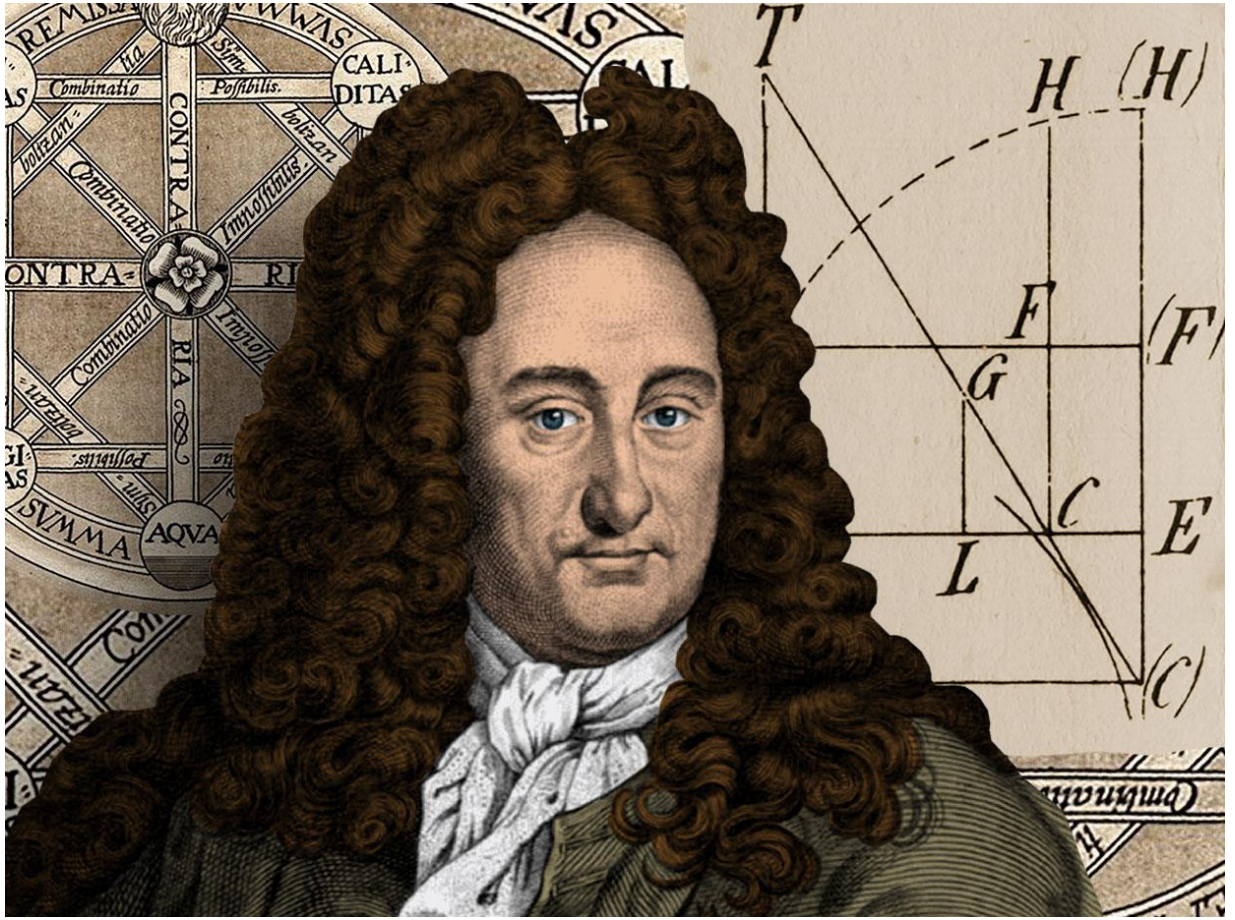
Appresso Lazzaro Scoriggio. M.DC.XIII.

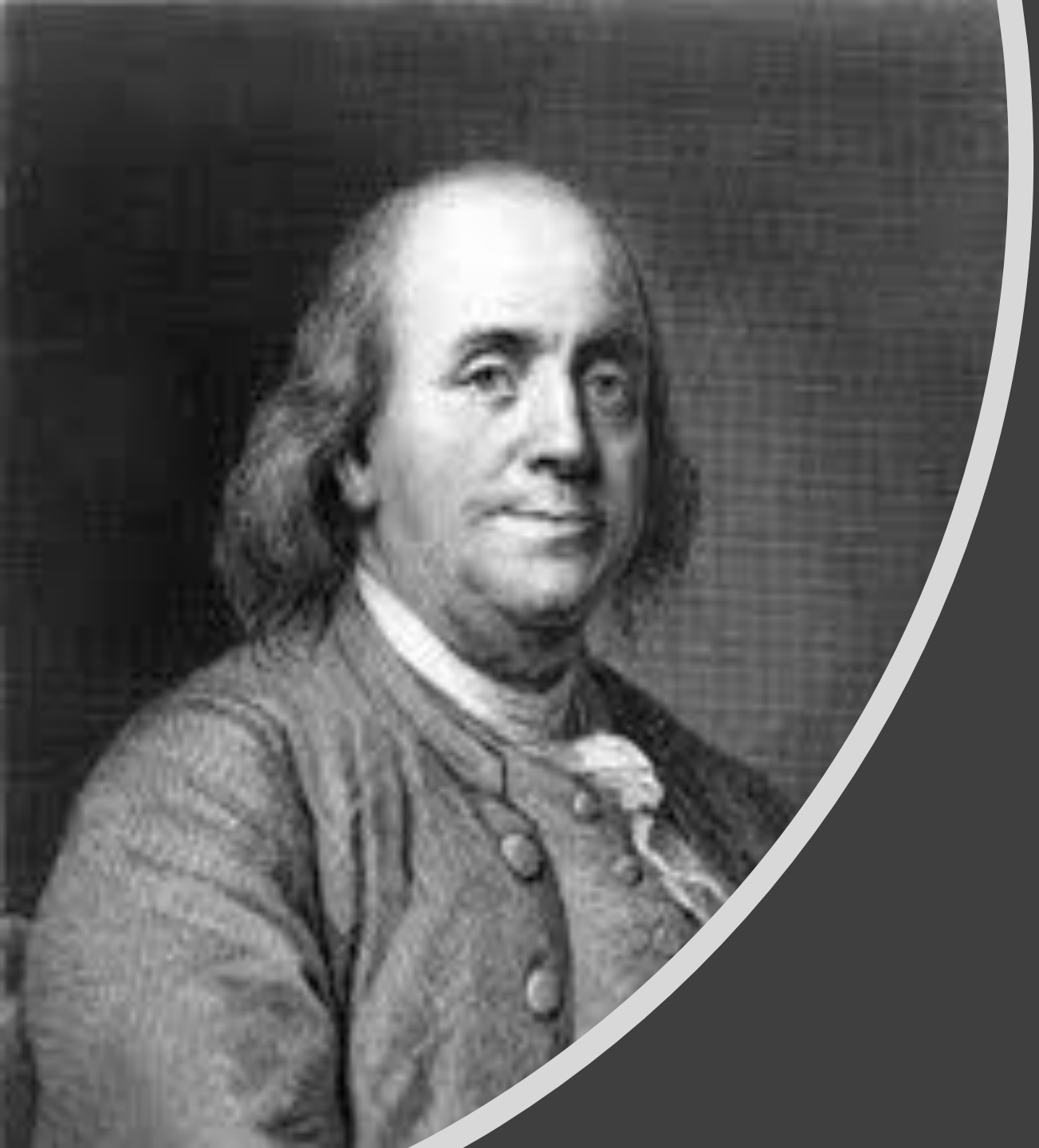
Antonio Genovesi

“The first aim of Political Economy is the increase in population .. The ways to increase the population are manufacture and the improvement of agriculture through the teaching and application of the agricultural arts.”

Jean-Baptist Colbert
1619-1683

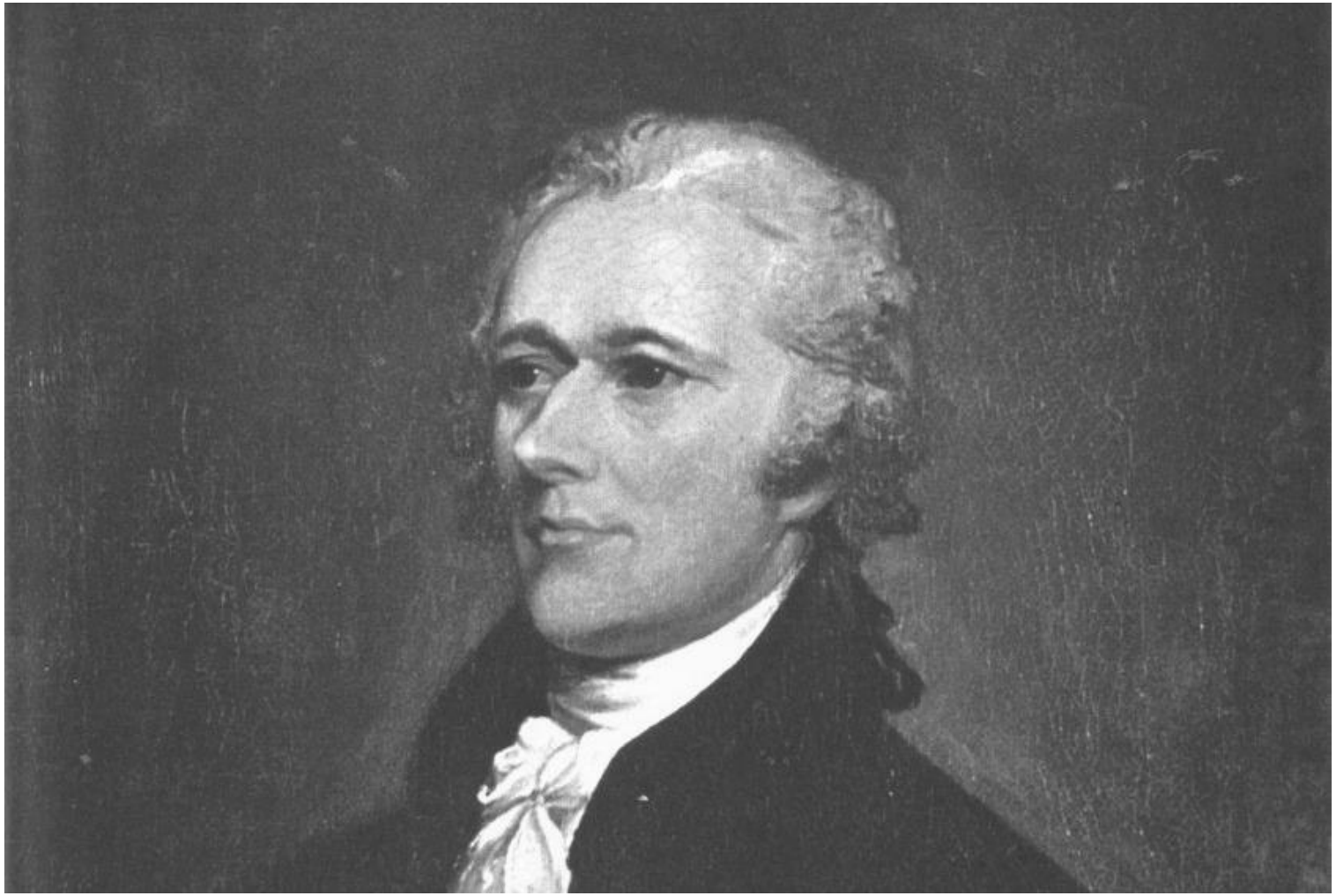
Wilhelm Gottfried Leibniz, 1646-1716





Ben Franklin

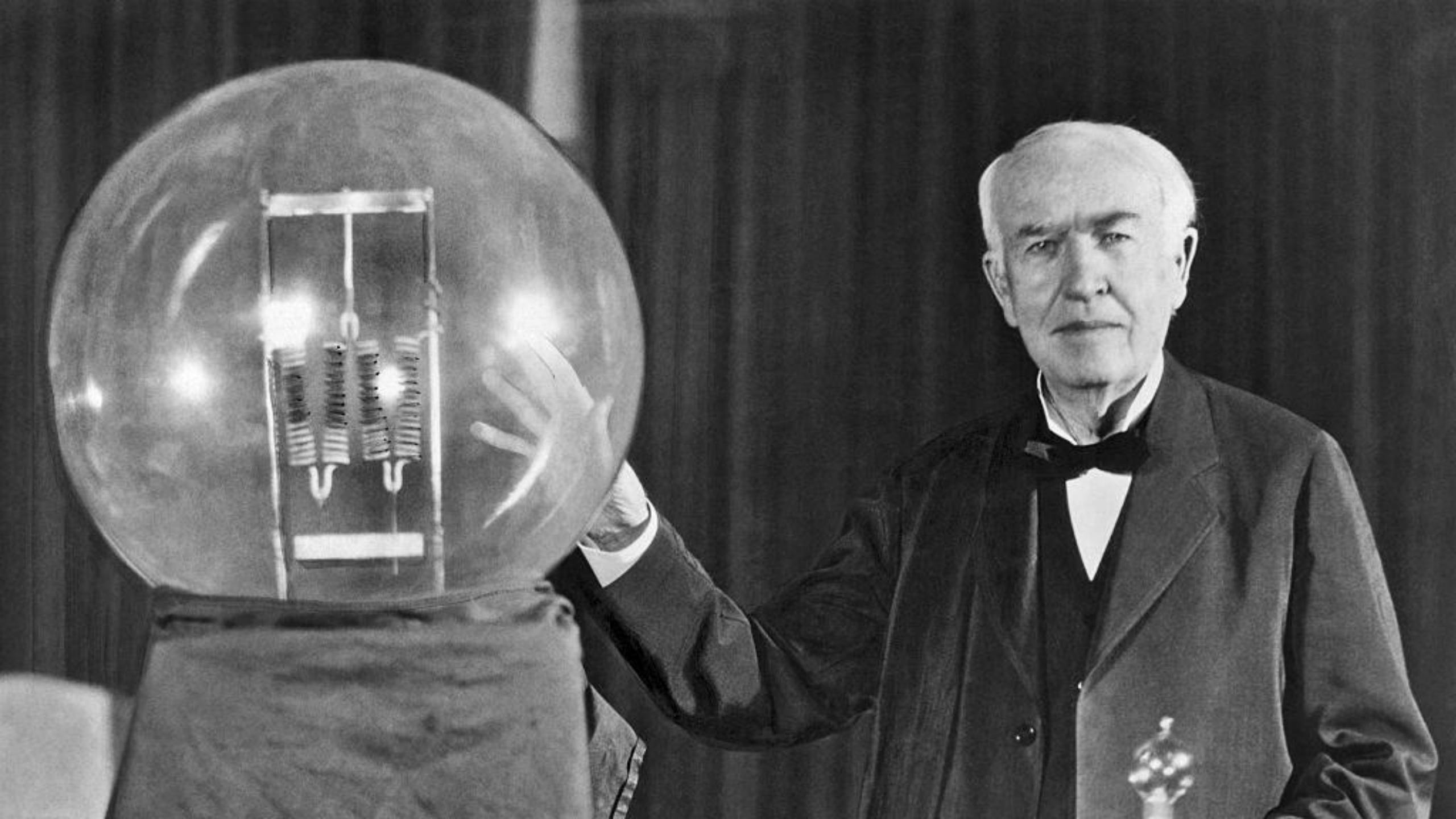
Observations Concerning the Increase of Mankind, 1751



Alexander Hamilton, founder of American System

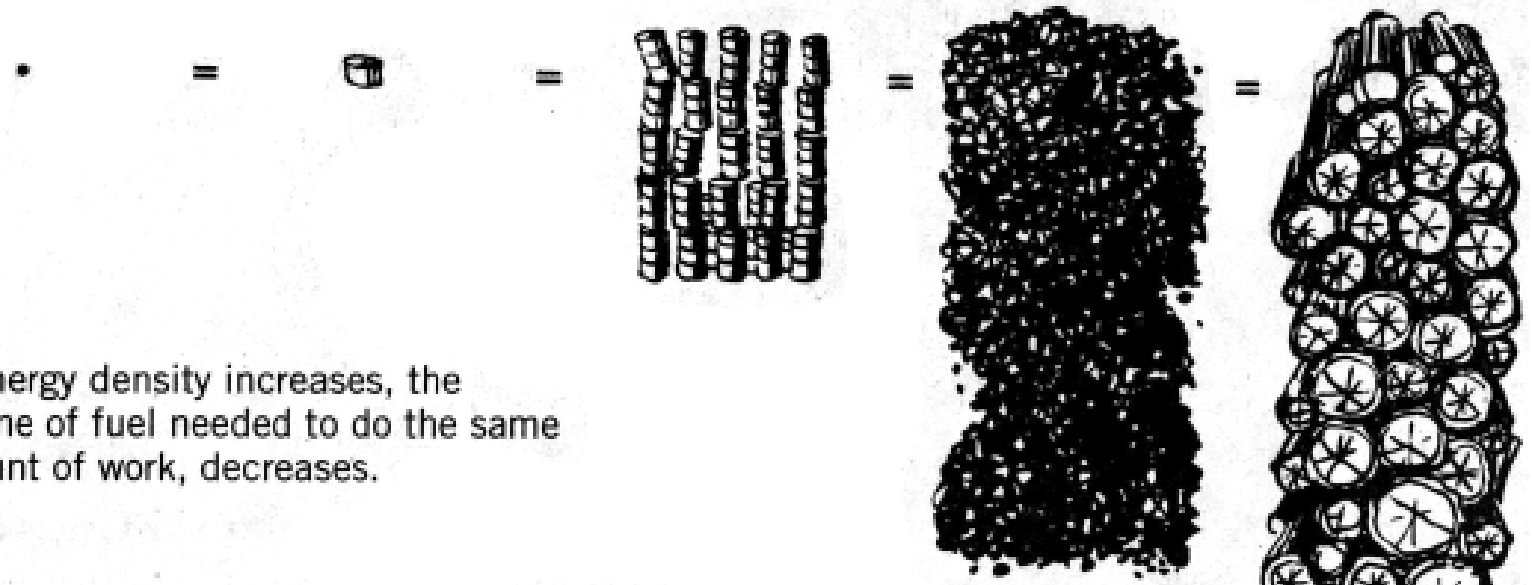
Henry Carey, opponent of Malthusianism

Abraham Lincoln



2. Now to the question of energy

The energy in .57 gram of fusion fuel (the deuterium and tritium isotopes of hydrogen)[1] = The energy in 1 uranium fuel pellet this size, weighing 1.86 grams.[2] = The energy in 30 barrels of oil (42 gallons each) = The energy in 6.15 tons of coal = The energy in 23.5 tons of dry wood.



As energy density increases, the volume of fuel needed to do the same amount of work, decreases.

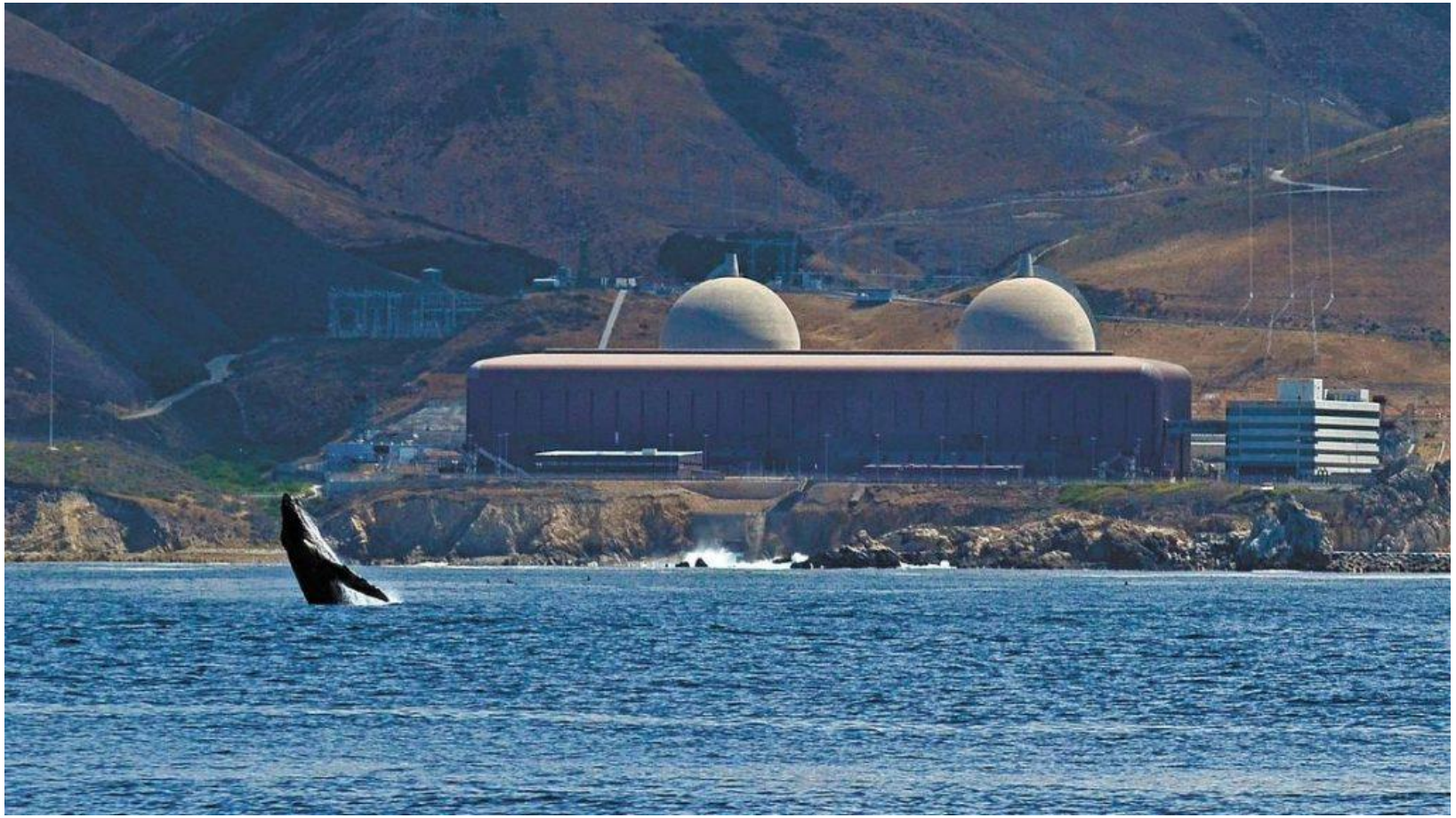
NOTES

1. One eighth of a gram of fusion fuel—deuterium—can be found in a gallon of water; the tritium is produced in the course of the fusion reaction.
2. If this amount of uranium is completely fissioned, it will produce 4.698×10^{10} calories, which is equivalent to the combustion of the amounts of oil, coal, and wood shown here.

Source: Dr. Robert J. Moon, 1985

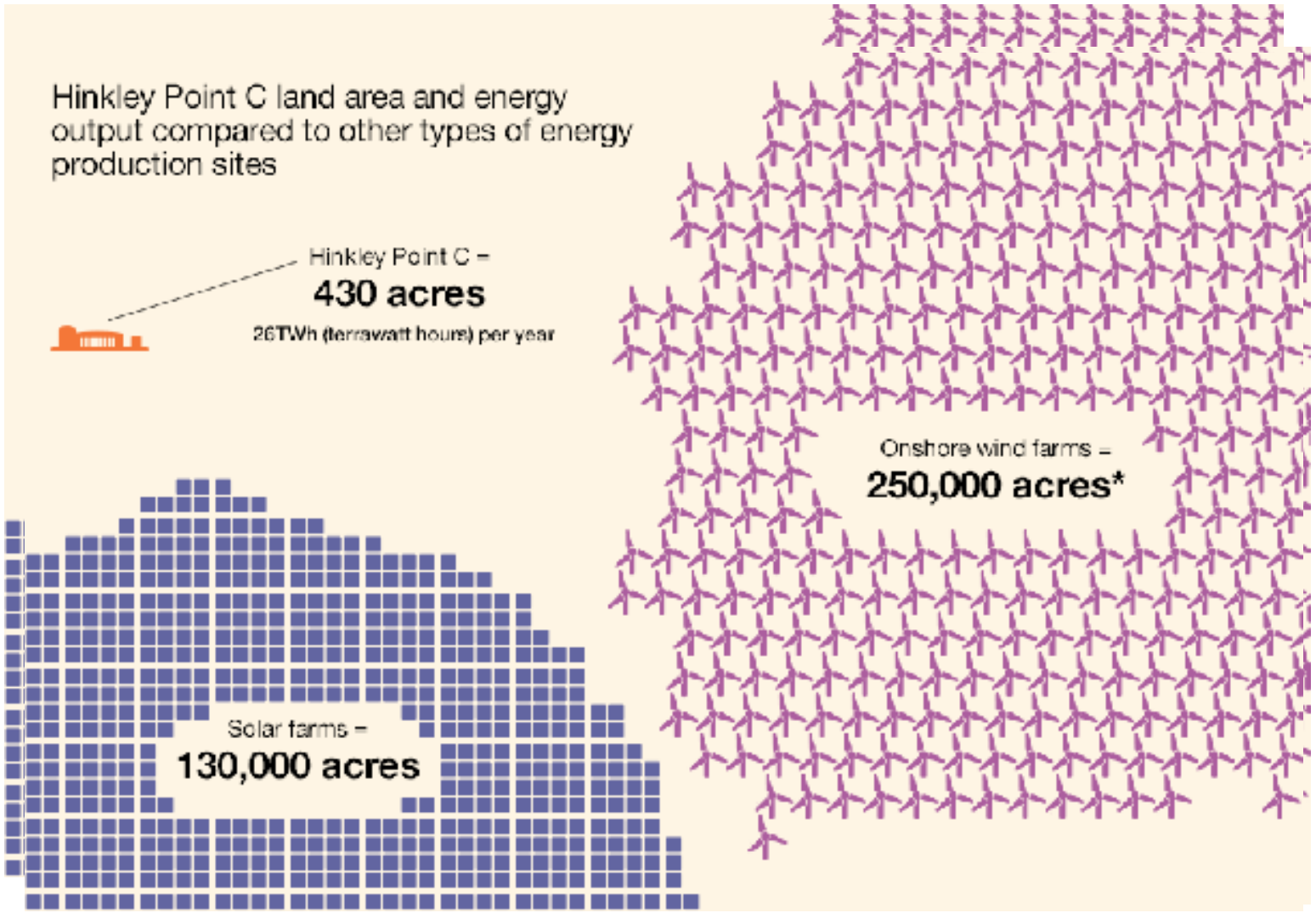
Man’s power and productivity increases

The more powerful, the cleaner



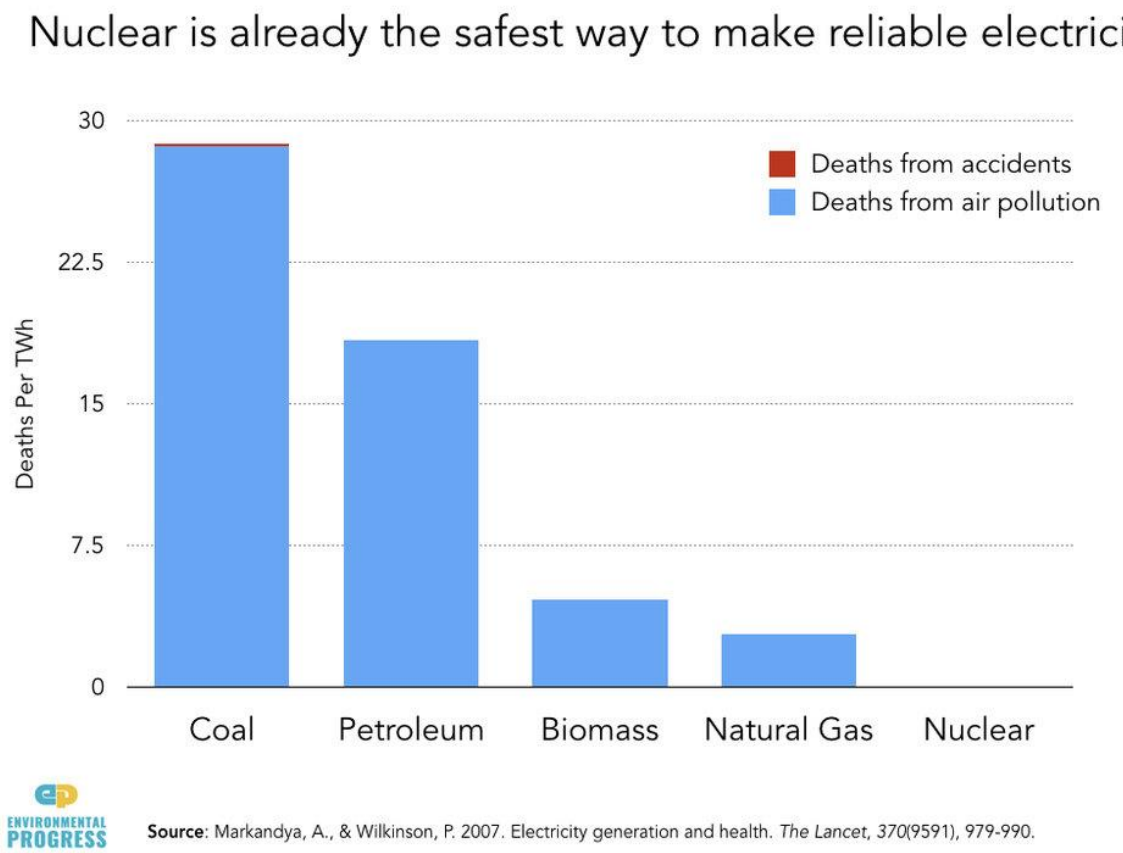
Less destructive of the environment

A solar farm in Egypt

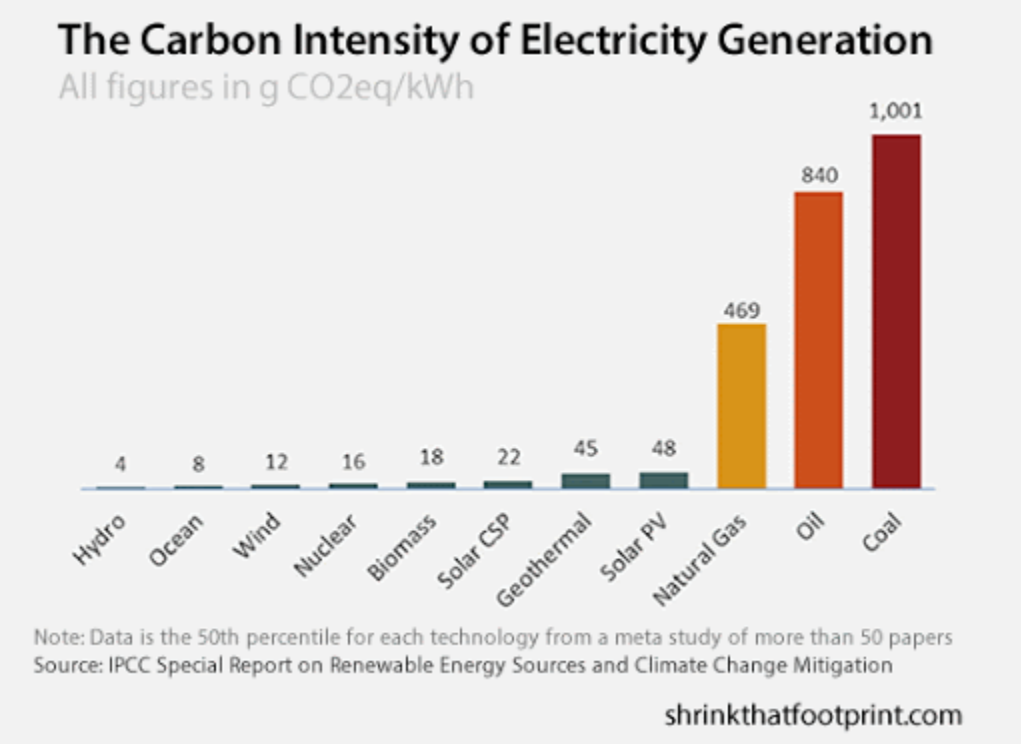


Land area required by nuclear vs. wind/solar

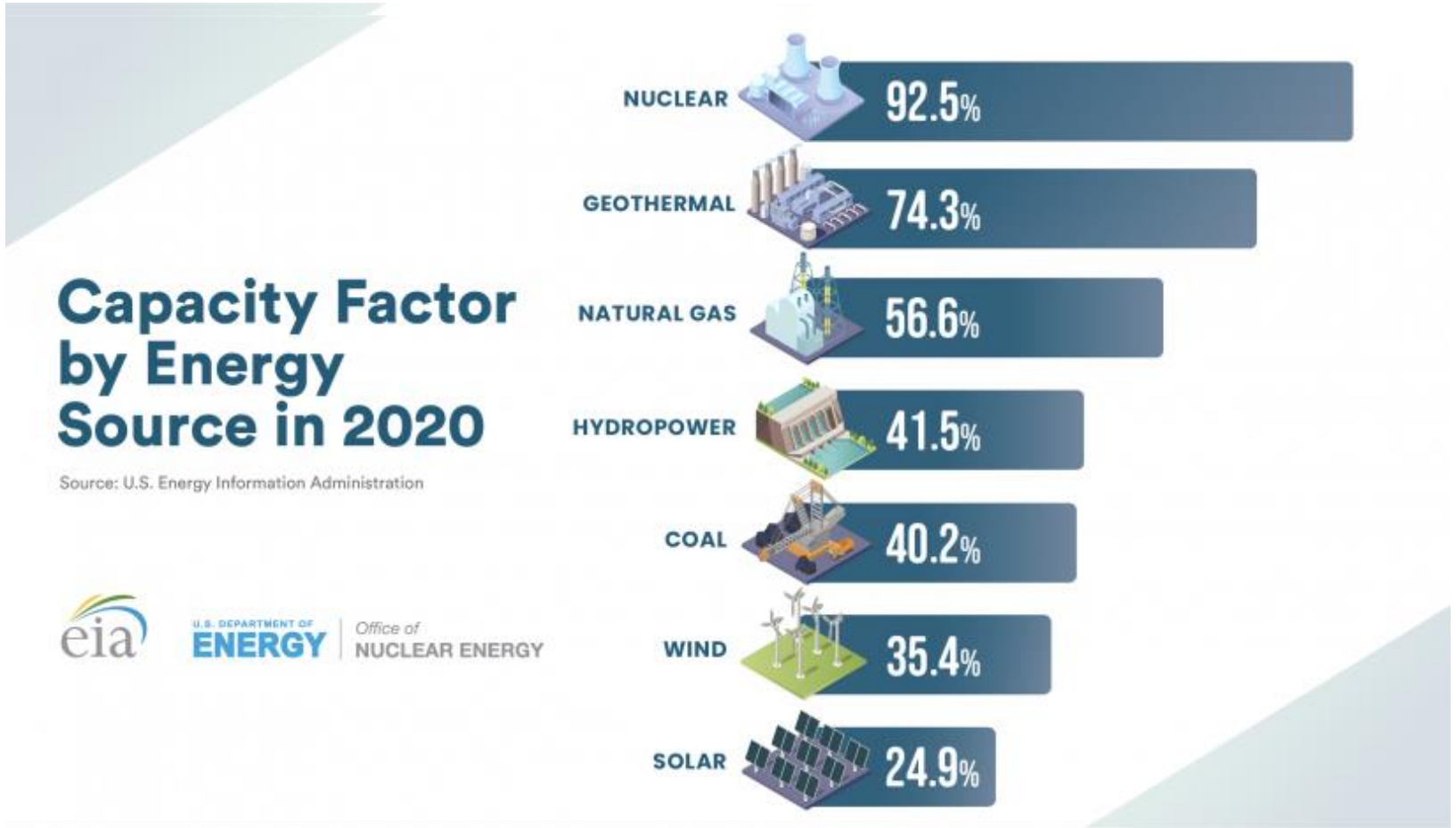
Graphic from the British Journal Lancet shows nuclear's safety record



Relative Carbon Issuance by electricity source



Efficiency of various power sources

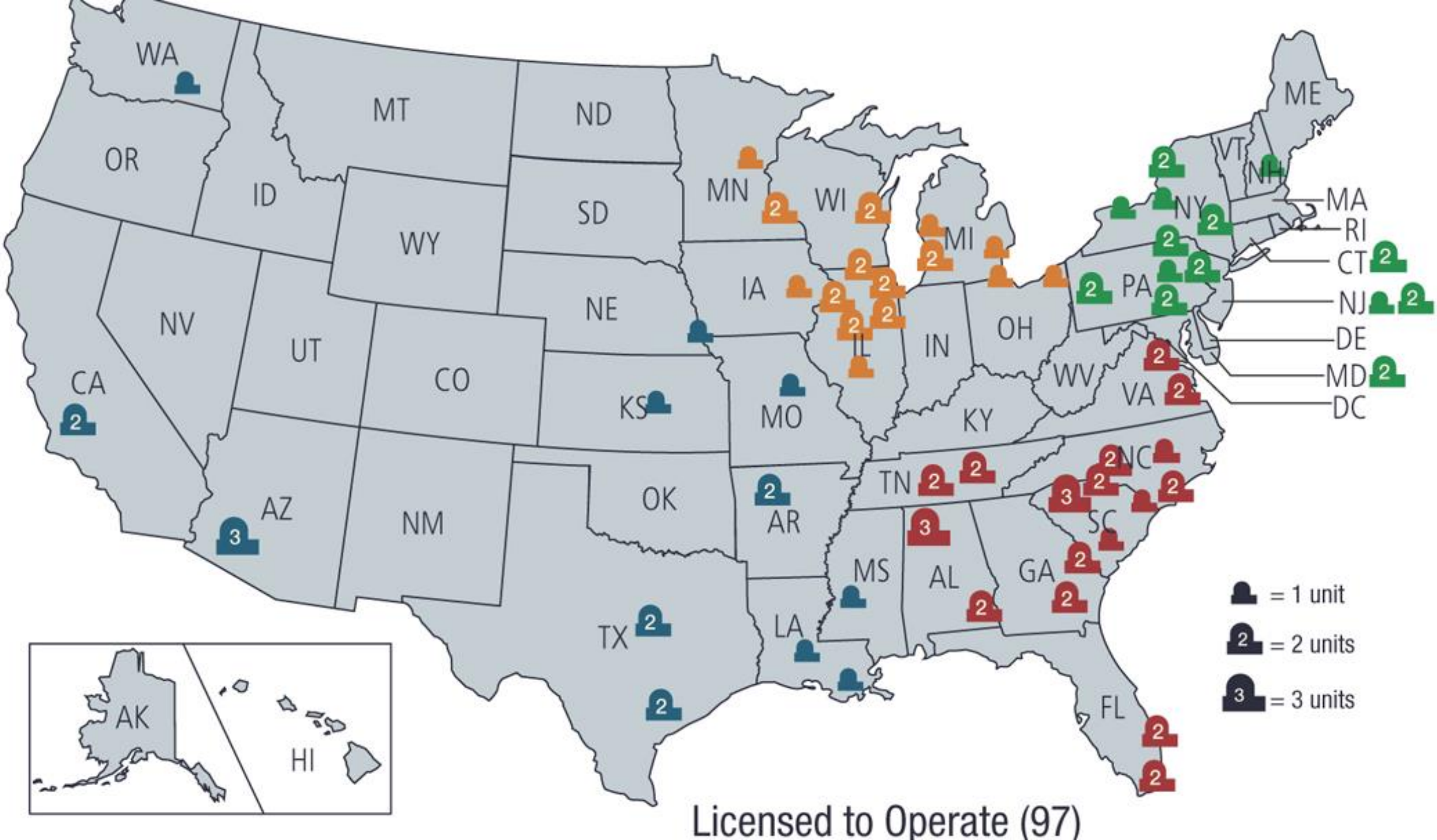


Support for solar/wind from gas companies

Over a billion people lack electricity, most in Africa, giving new meaning to “dark continent”

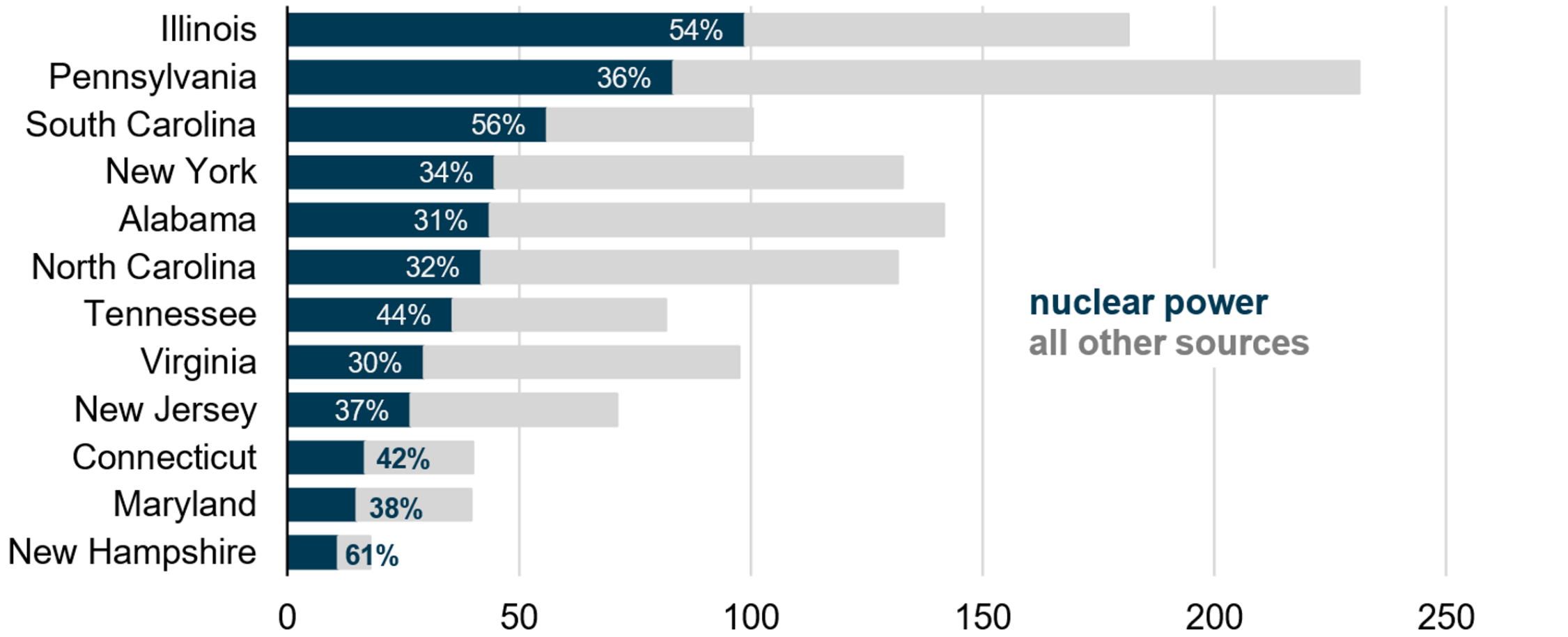
Maglev trains are just one of the new sources of demand for electricity

3. Where We Stand



Licensed to Operate (97)

Nuclear electricity generation in selected states (2019)
million megawatthours

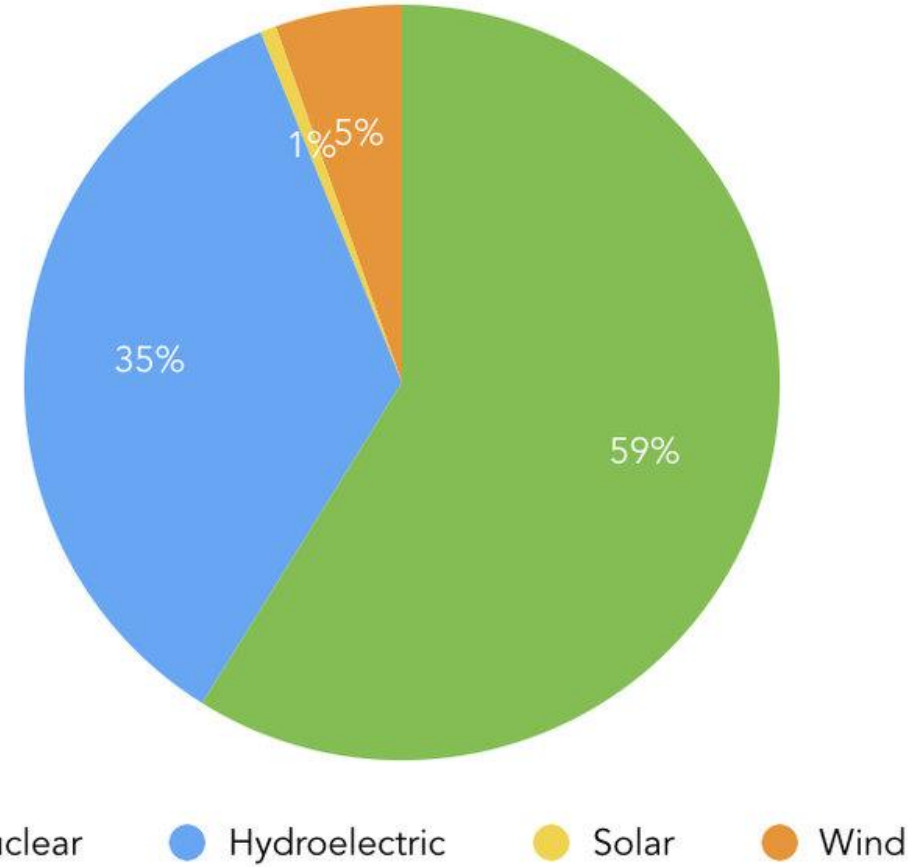


Indian Point nuclear plant about to close

Potential Impact of Indian Point's Closure

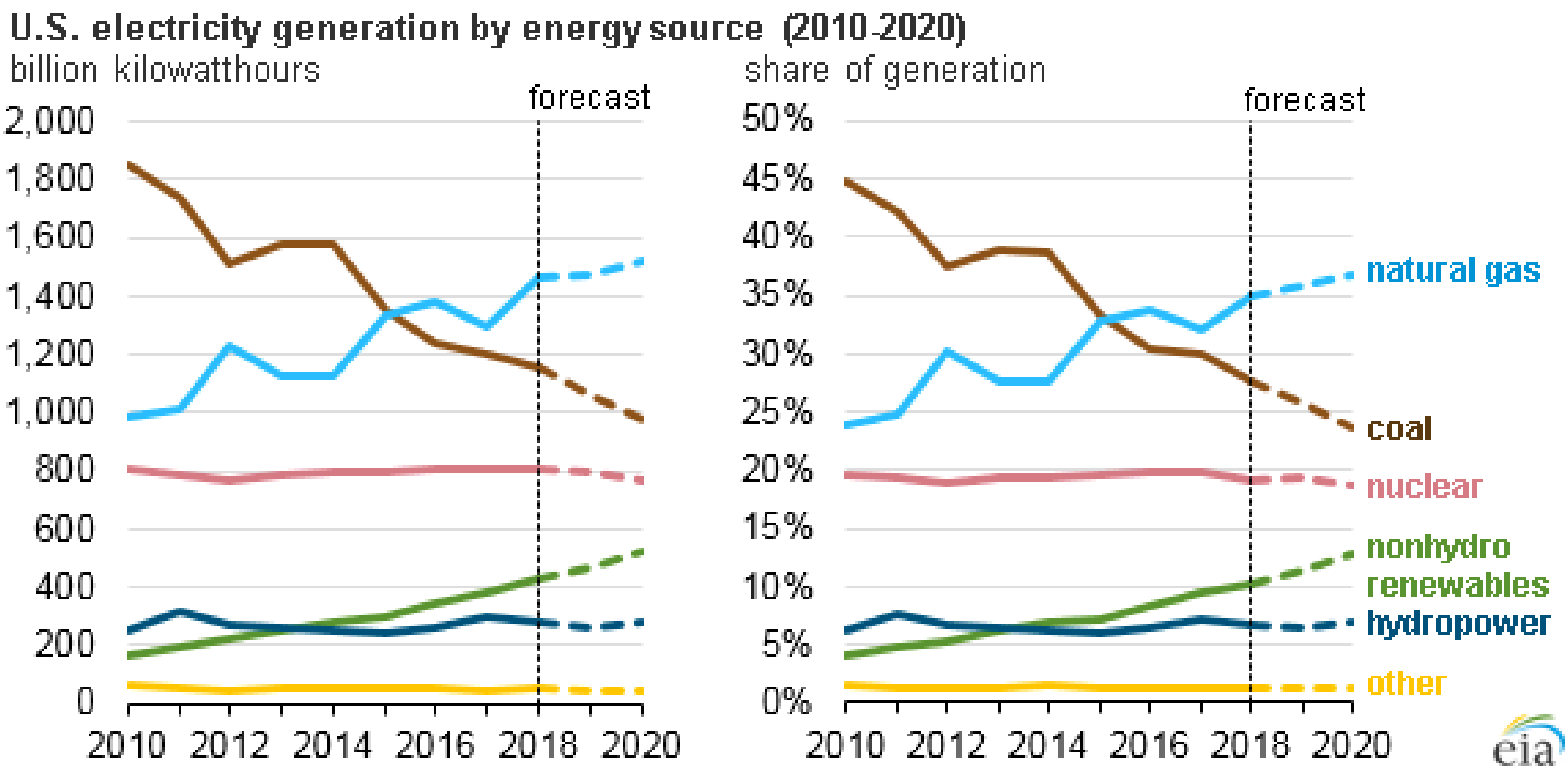
- Generates about one quarter of New York City and Westchester County's electricity use
- Natural gas plants are replacing the 2000 megawatt hours previously produced by the 3 nuclear plants at the site, with considerable more emissions.
- Authorities are relying on electricity demand remaining flat, in addition to rooftop solar panels and other renewable projects, to prevent power failures or emission increases.
- More than 1100 skilled jobs will be lost immediately, and many more dependent upon the plant.

Nuclear is 58% of NY's Clean Power



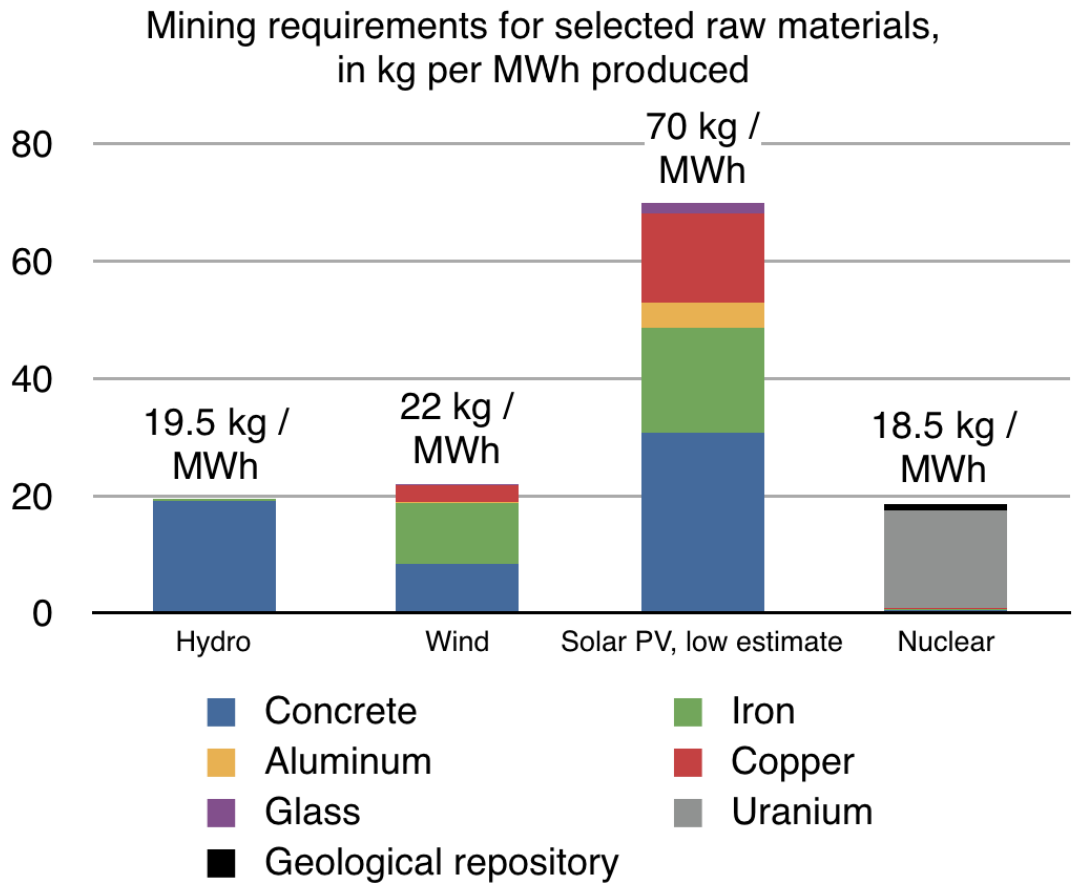
ENVIRONMENTAL PROGRESS

Source: EIA. Data are 2014 but NY ISO shows percentage of generation largely unchanged, with hydro down to 18% 2015. http://www.nyiso.com/public/webdocs/media_room/publications_presentations/Power_Trends/Power_Trends/2016-power-trends-FINAL-070516.pdf

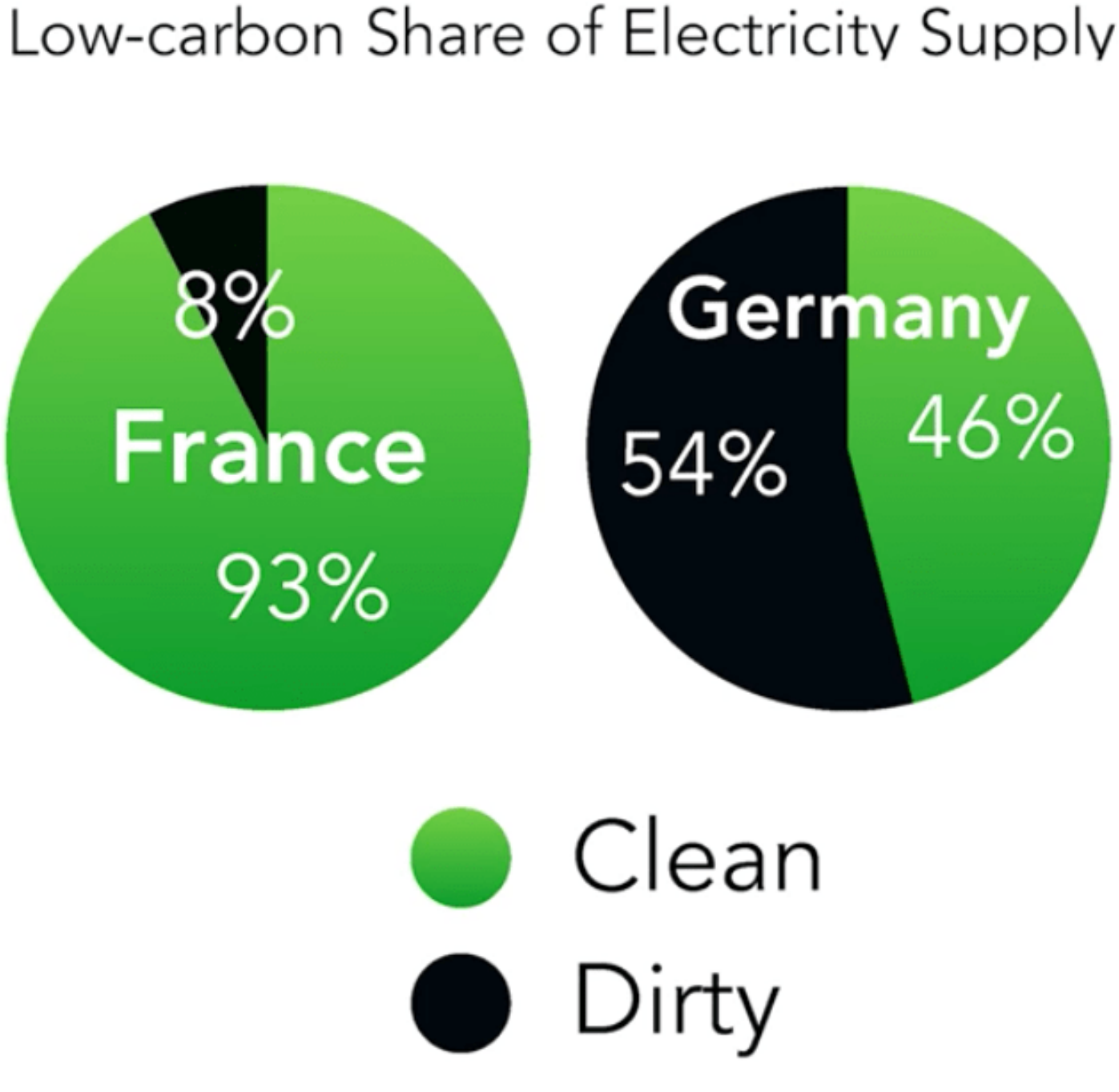

U.S. electricity generation by energy source (2010-2020)
billion kilowatthours
share of generation
forecast
forecast
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
50%
45%
40%
35%
30%
25%
20%
15%
10%
5%
0%
2010
2012
2014
2016
2018
2020
natural gas
coal
nuclear
nonhydro renewables
hydropower
other
eia

Solar Farm under construction in Texas. It will span 6734 acres.

Real Costs in Materials of various energy sources



From The Energy Collective Group, as of November 2019



The cost in human lives – deaths due to air pollution because of not going nuclear

Estimates of Cost of Not Going Nuclear

WHO says 7 million people die each year from air pollution.

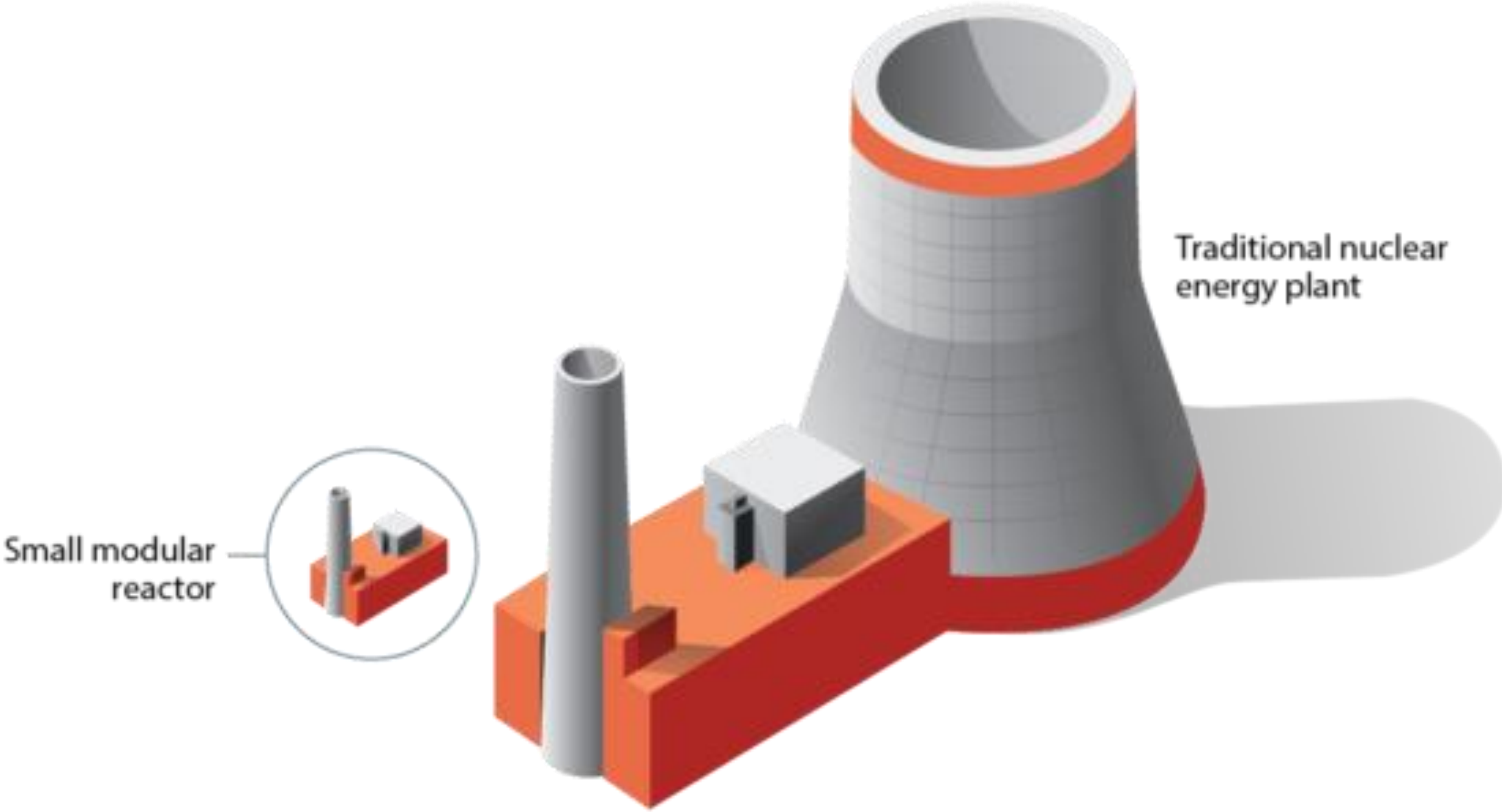
Scientist James Hansen, one of many environmentalists who went from being anti-nuclear to advocating nuclear power, estimates that nearly 2 billion lives have been saved by the existence of nuclear power.

And what is the cost of lack of cheap electricity in lack of modern health care, clean water and sewer, and other modern amenities?

4. What can be done

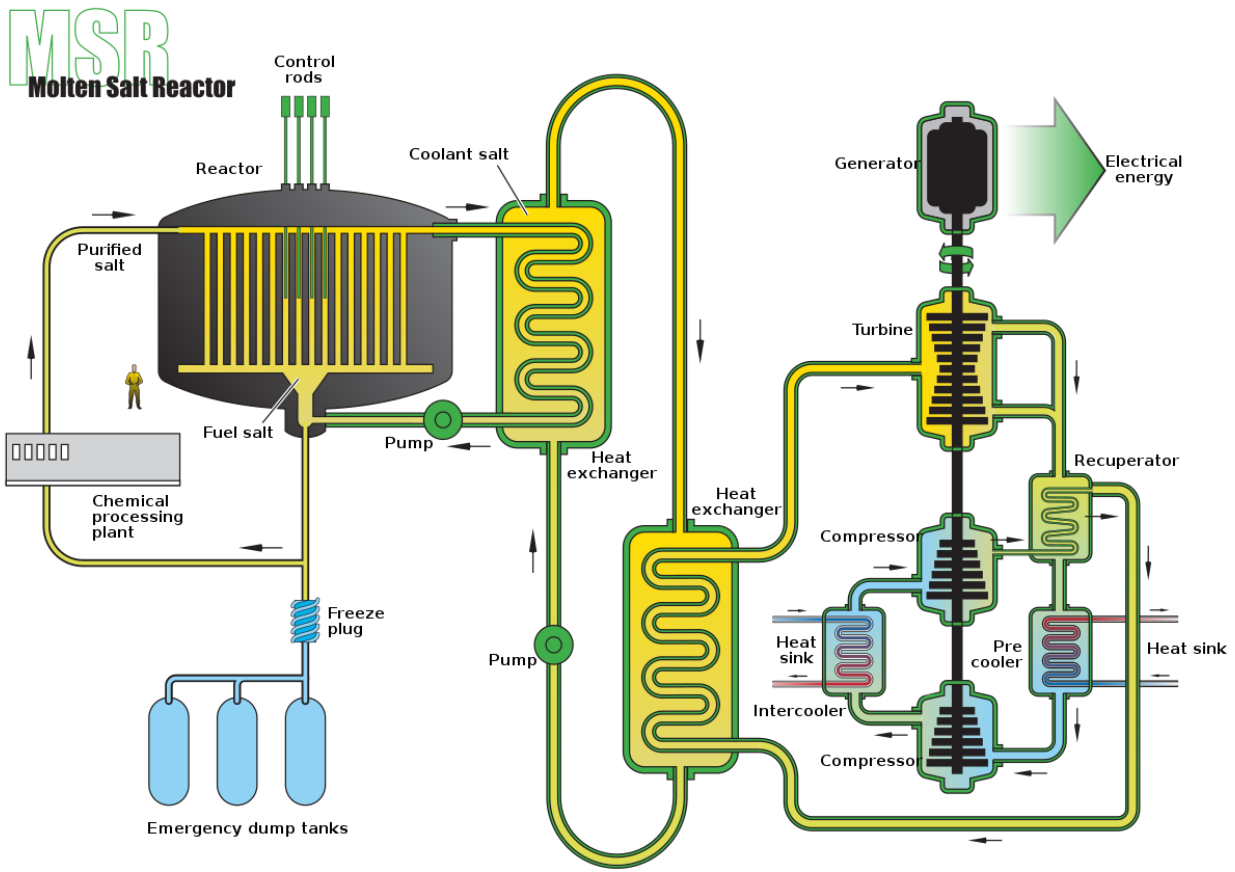
Save the Existing Plants, like this Byron plant in Illinois, now slated to close

Expand development of Small Modular Reactors


Traditional nuclear
energy plant
Small modular
reactor

Floating nuclear plants can use SMRs

A model of a molten salt reactor, one of the so-called Generation IV reactors

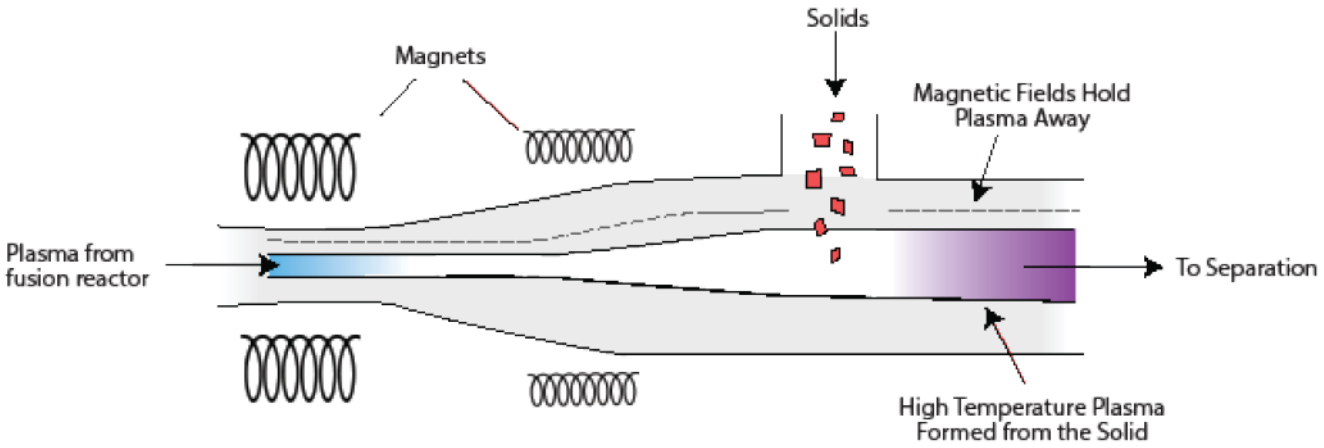


A High Temperature Gas-cooled Reactor in Japan, about to be reopened

A celebration at the International Tokamak project in France

China’s Tokamak Project – an “artificial sun”

“Recycling” with a Fusion Torch



The French Example – “we have ideas”

The Apollo Project

If we could mobilize in 8 years to get to the Moon, what's holding us back from building a clean, nuclear-power-based economy?

Some useful sources for my argument

Why Renewable can't save the Planet, Michael Shellenberger, https://www.youtube.com/watch?v=N-yALPEpV4w There are many other TED talks by him as well which address this issue.

Series by nuclear expert Jonathan Tennenbaum, https://asiatimes.com/2021/03/bidens-climate-plan-has-a-nuclear-solution/

https://americansystemnow.com – numerous articles. Especially recommend https://americansystemnow.com/jfks-conservation-policy-versus-todays-environmentalism/

https://world-nuclear-news.org/Articles/Why-nuclear-is-an-environmentalists-story#