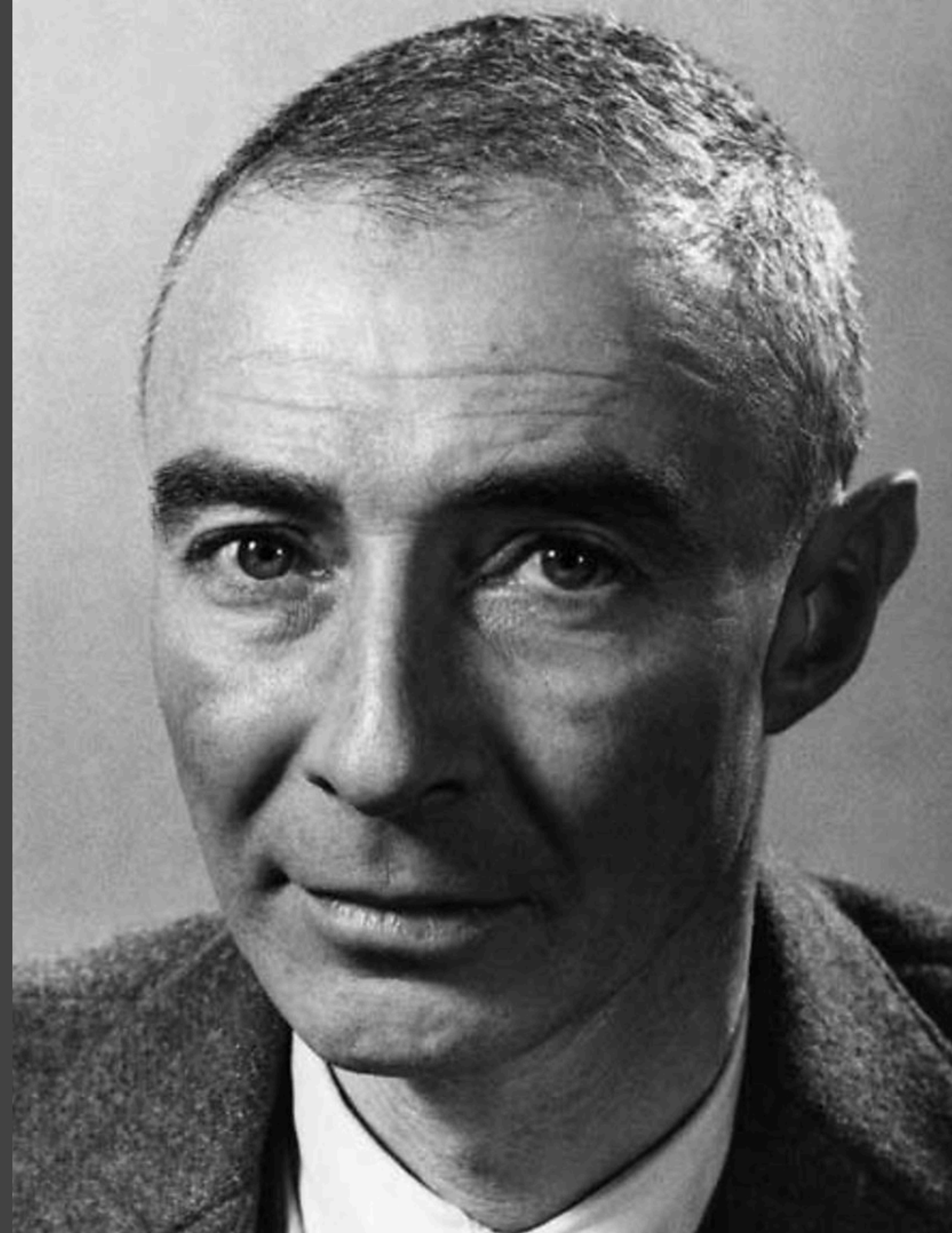


Saving Power in Danger

Michael Shellenberger

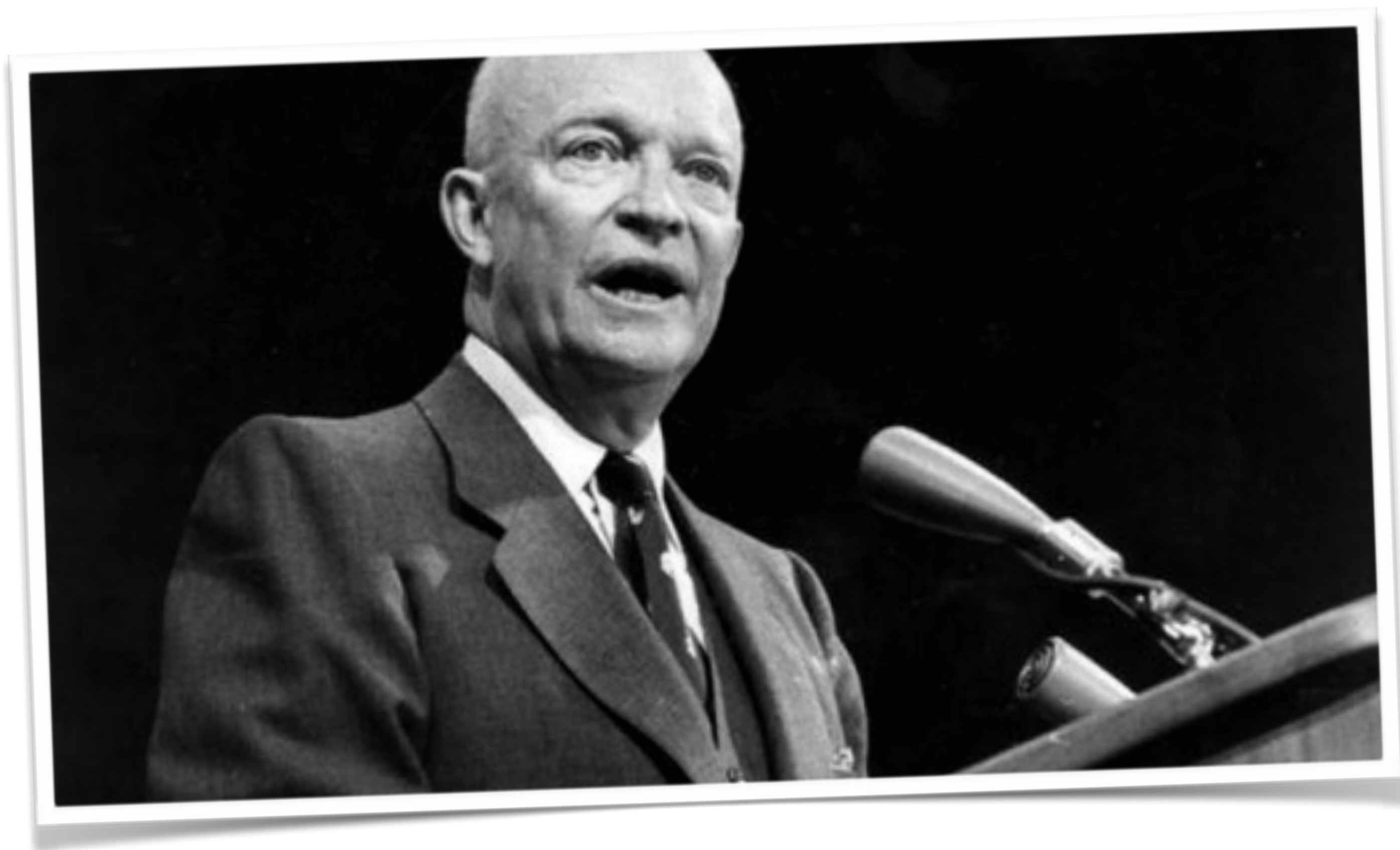
IAEA :: Abu Dhabi :: October 30, 2017





"Everybody dead on both sides with no hope anywhere.... Is this all we can do for our children?" — Eisenhower





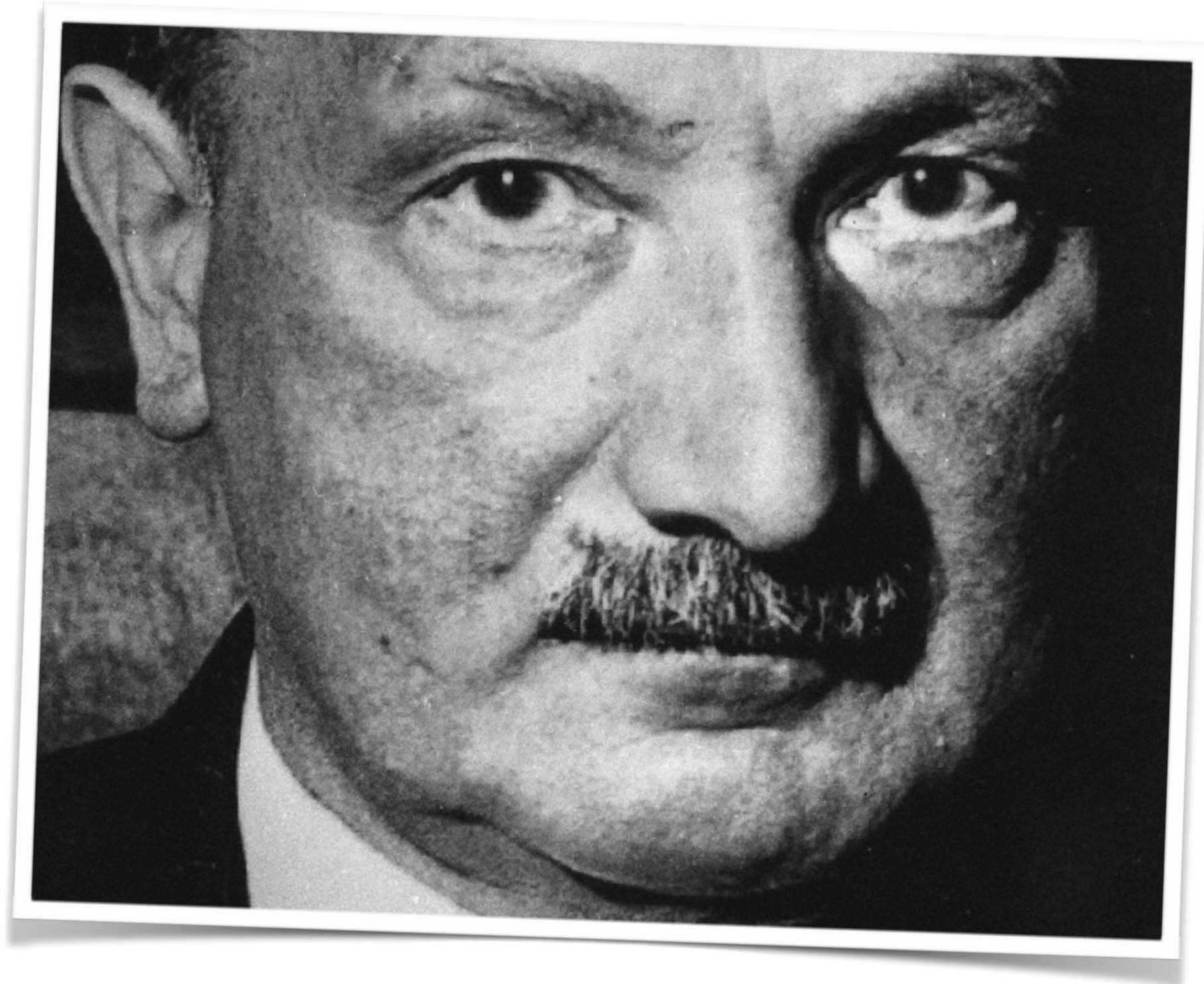
“Experts would be mobilized to provide abundant electrical energy in the power-starved areas of the world.”

— President Dwight D. Eisenhower,
December 1953



Cheap energy in unlimited quantities is one of the chief factors allowing a large, rapidly growing population to set aside wildlands, open space and lands of high-scenic value. Even our capacity and leisure to enjoy this luxury is linked to the existence of cheap energy.

— Will Siri, Sierra Club President, 1966



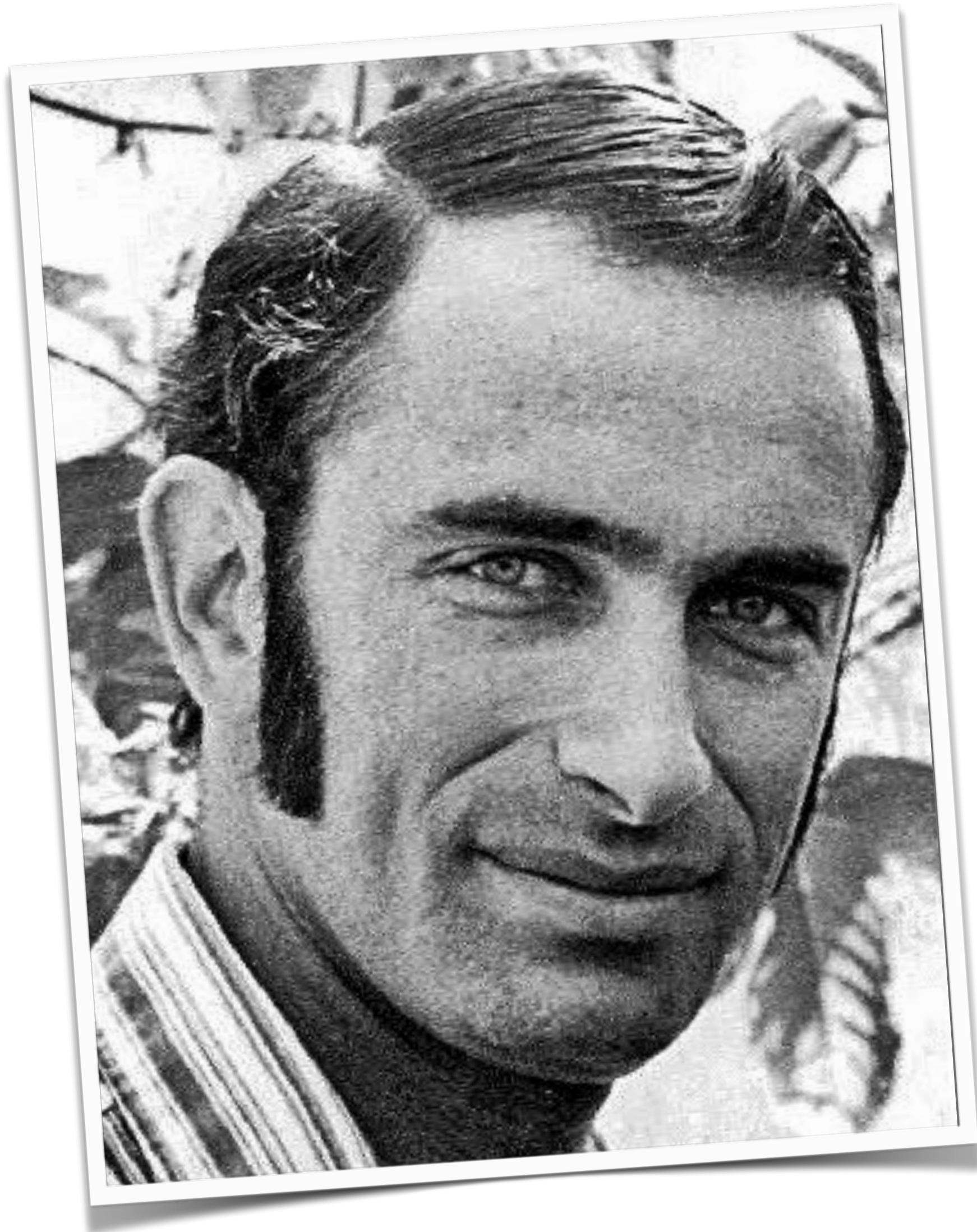
“Modern technology...puts to nature the unreasonable demand that it supply energy which can be extracted and stored as such... Air is now set upon to yield nitrogen, the earth to yield ore, ore to yield uranium...to yield atomic energy...”

– Martin Heidegger, “The Question of Technology,” 1953



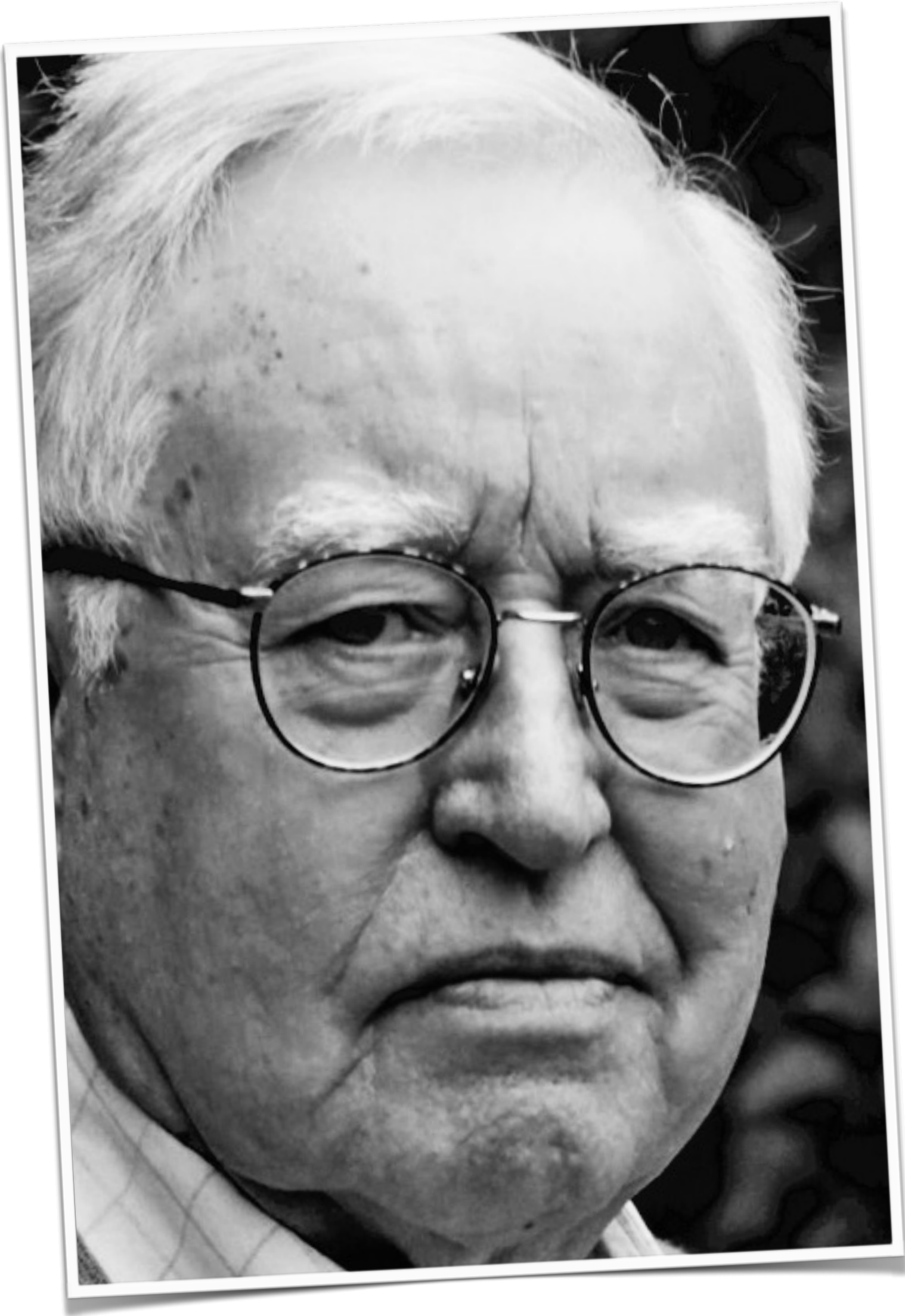
“It’d be little short of disastrous for us to discover a source of clean, cheap, abundant energy *because of what we would do with it.*”

— Amory Lovins, 1977 (emphasis in the original)



“Giving society cheap, abundant energy ... would be the equivalent of giving an idiot child a machine gun.”

— Paul Ehrlich, Stanford University



“Our campaign stressing the hazards of nuclear power will supply a rationale for increasing regulation... and add to the cost of the industry...”

— Sierra Club Executive Director, Michael McCloskey, 1974



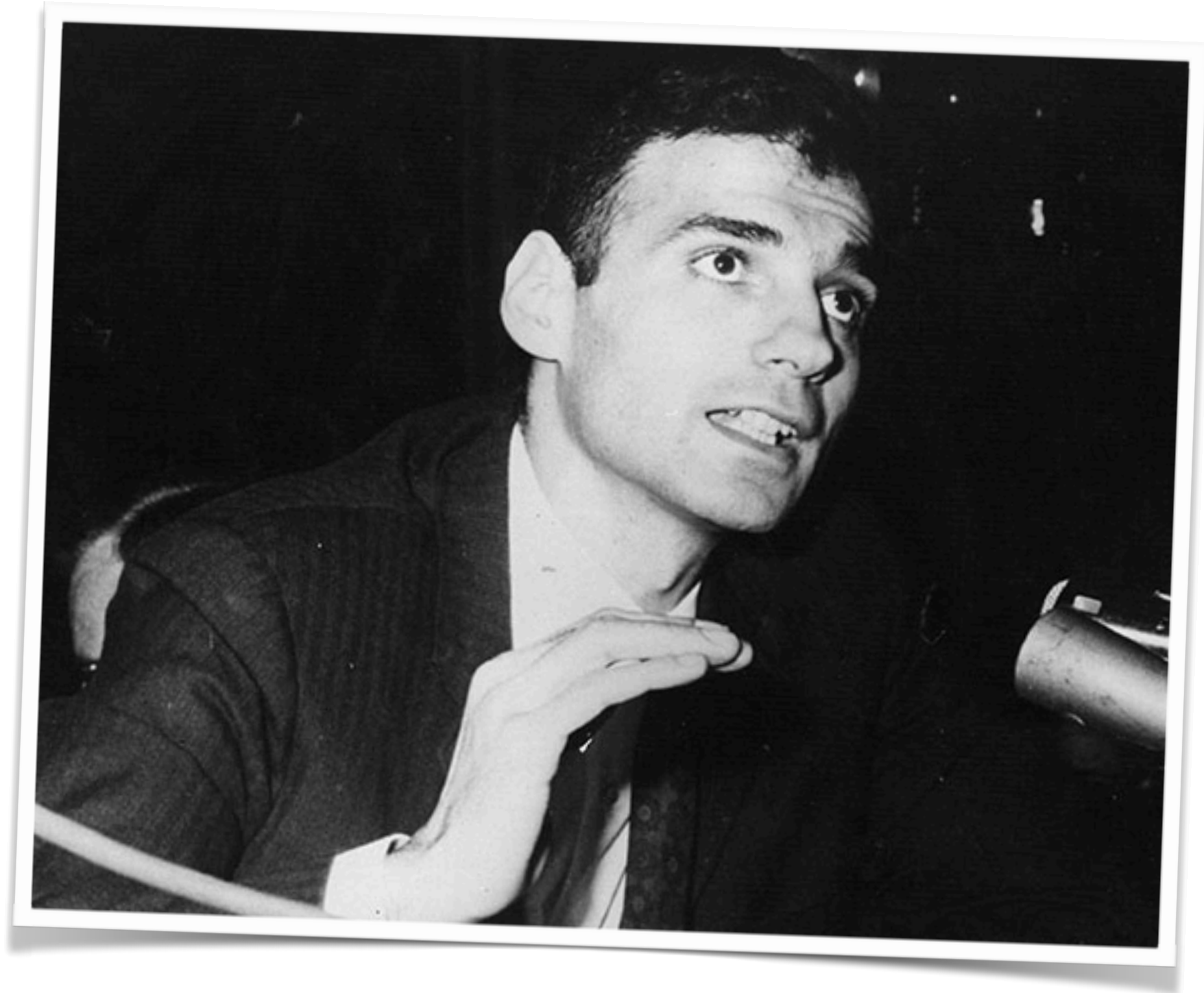
1979



1987



2016



"A nuclear accident
could wipe out
Cleveland and the
survivors would
envy the dead."
— Ralph Nader



North Korea

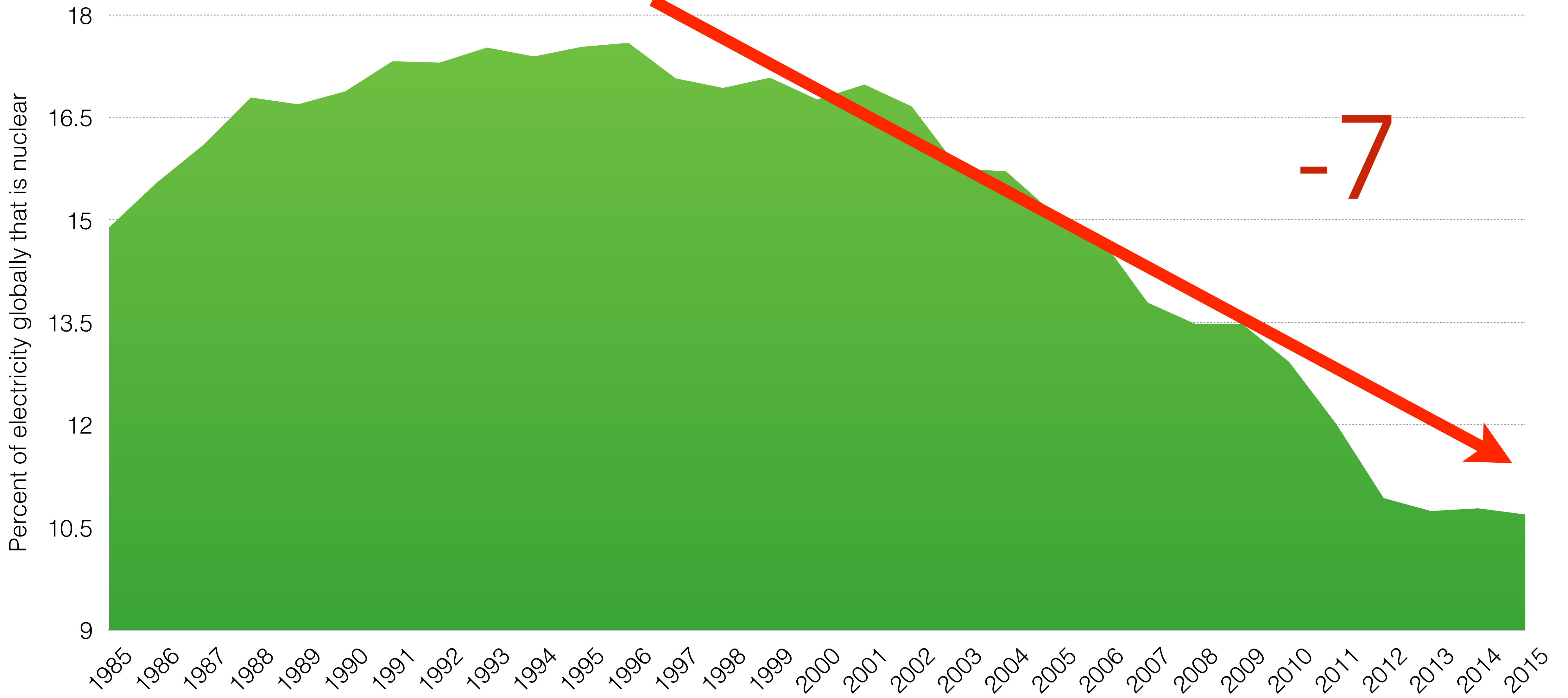
Pyongyang

Seoul

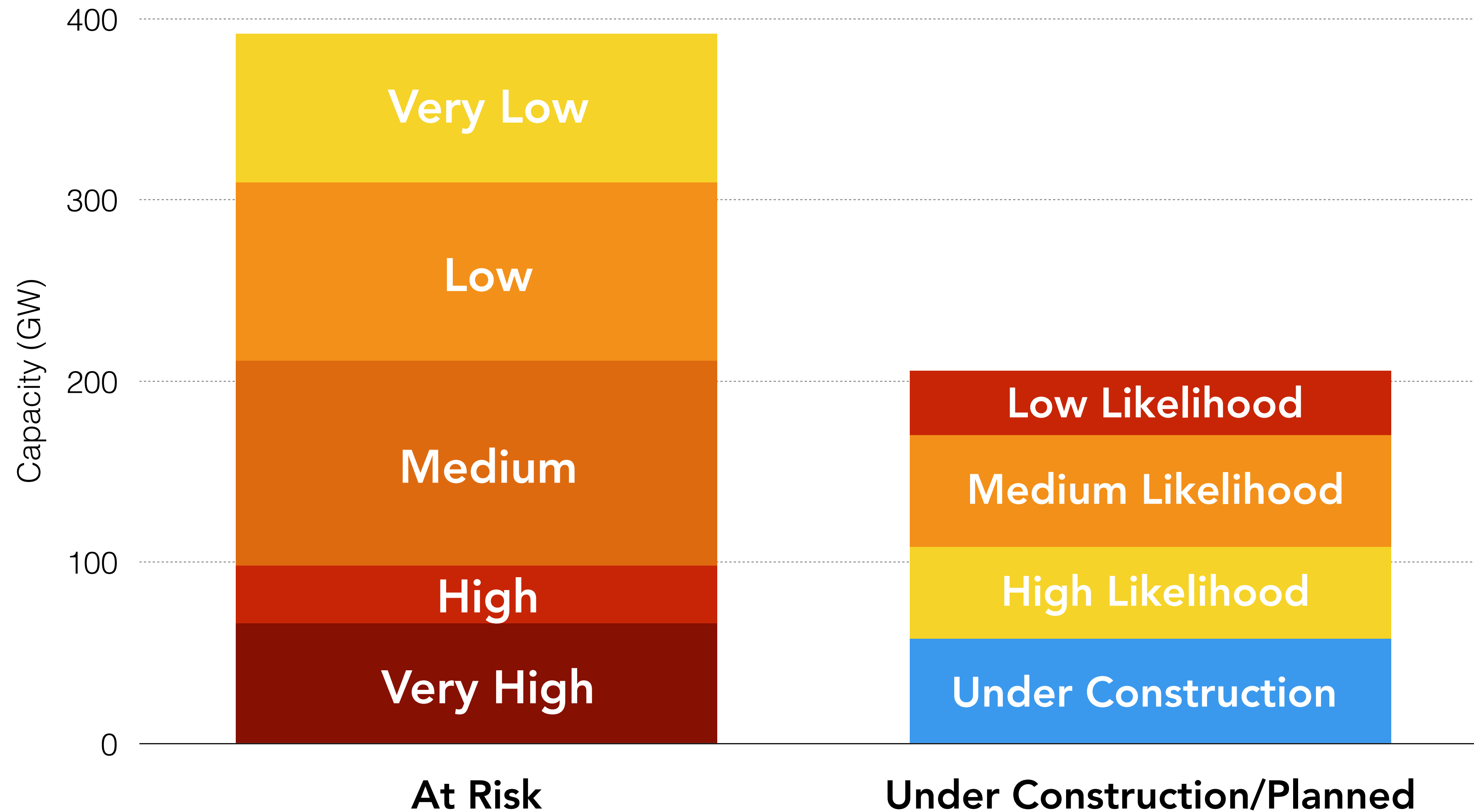
South Korea



Nuclear on the decline

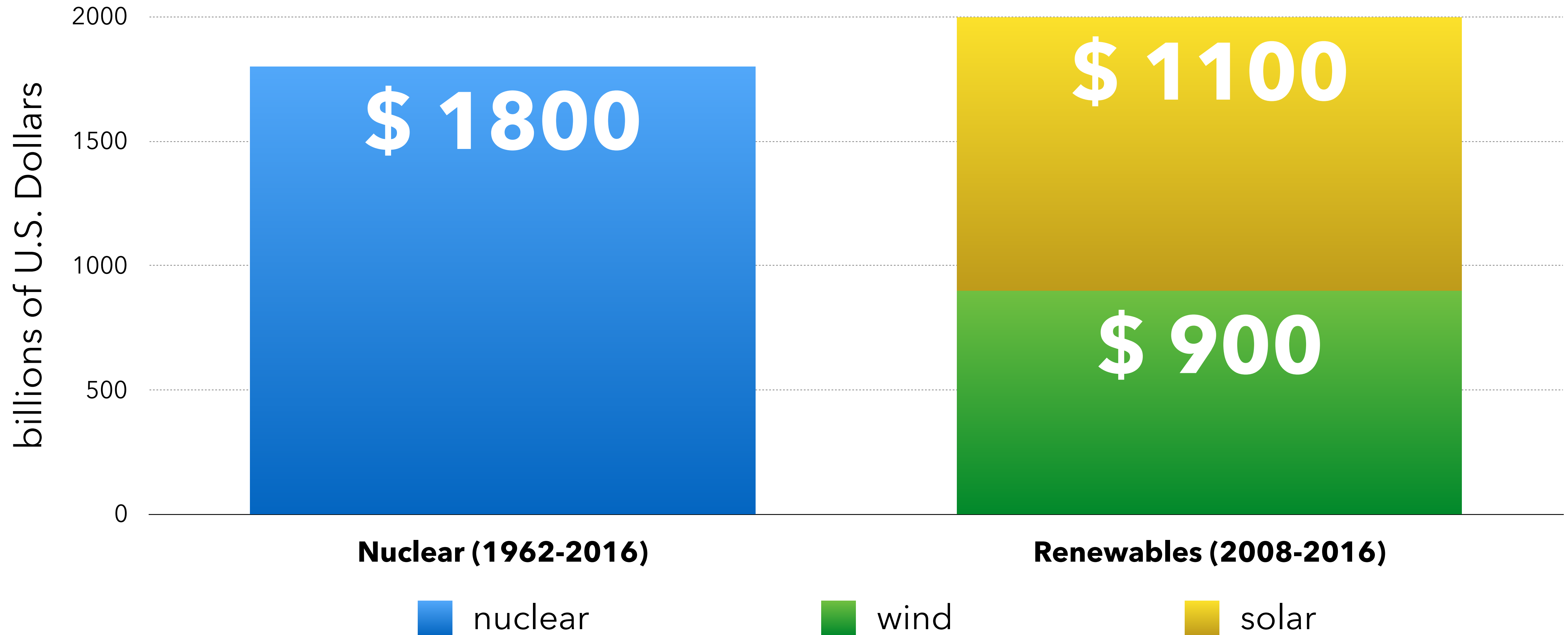


World could lose up to 2x more nuclear than it gains by 2030

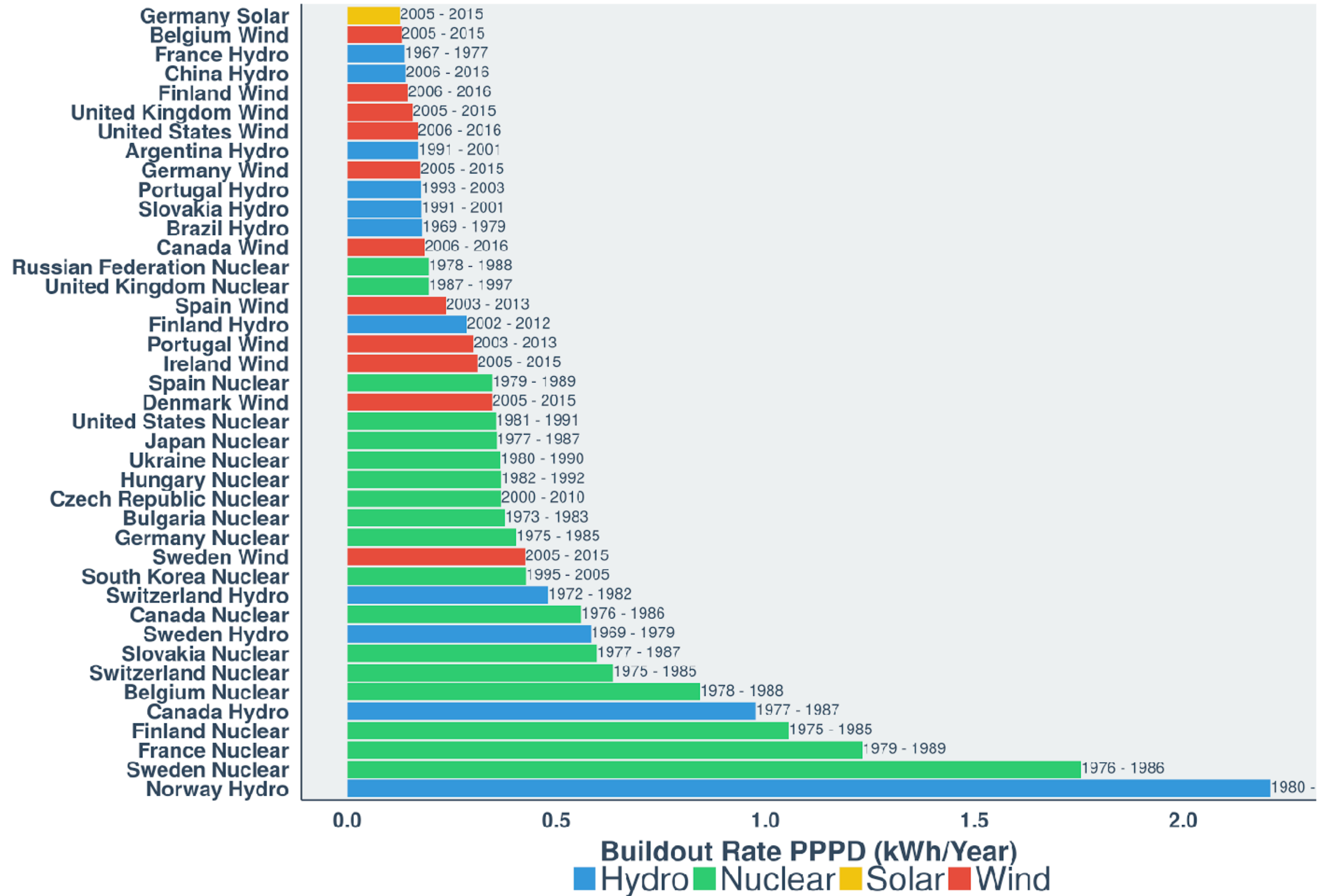


Source & Methods: EP Energy Progress Assessment, 2017. Plant-specific rankings based on economic and energy trend analysis, political and societal assessment, and expert elicitations. Longer methodology discussion can be found at environmentalprogress.org/research Last updated March 2, 2017. Email info@environmentalprogress.org for more information.

Nuclear & solar/wind have each received about \$2 trillion in public/private investment

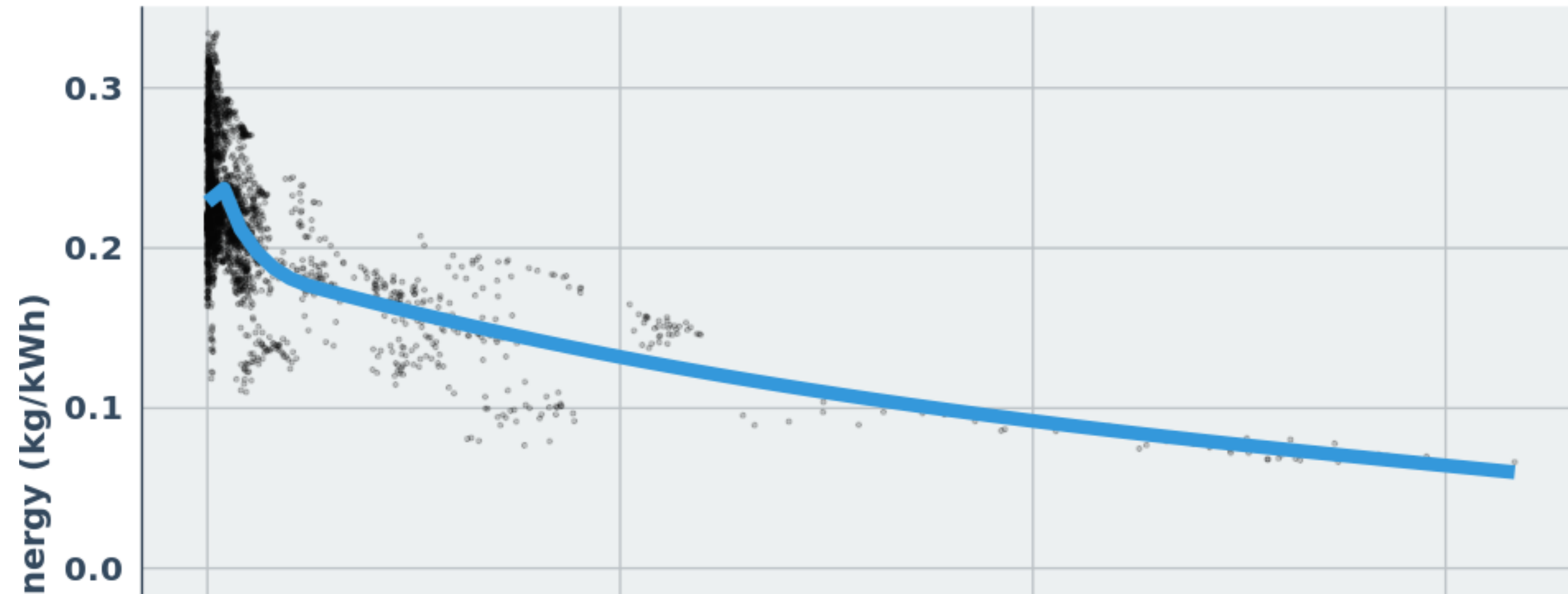


Decade of Peak Deployment by Country and Technology

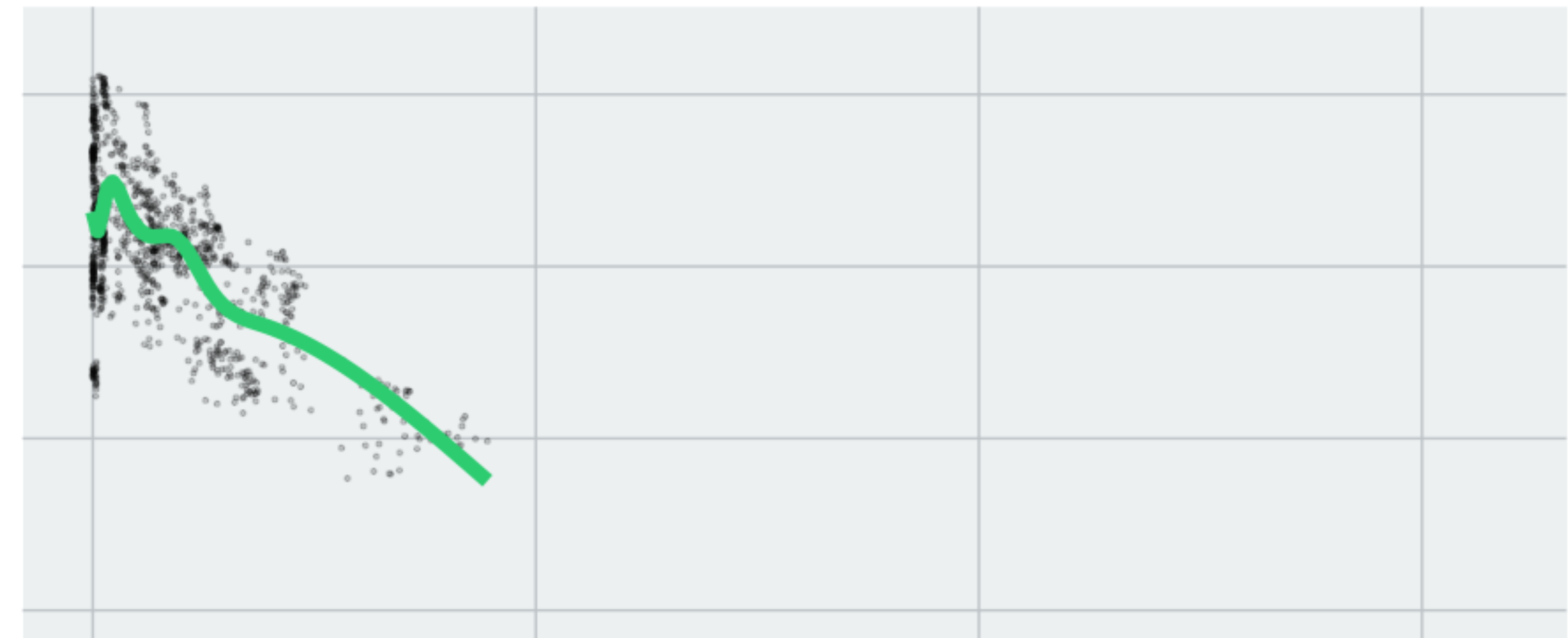


Correlation between Low-Carbon Electricity Generation and Carbon Intensity of Energy

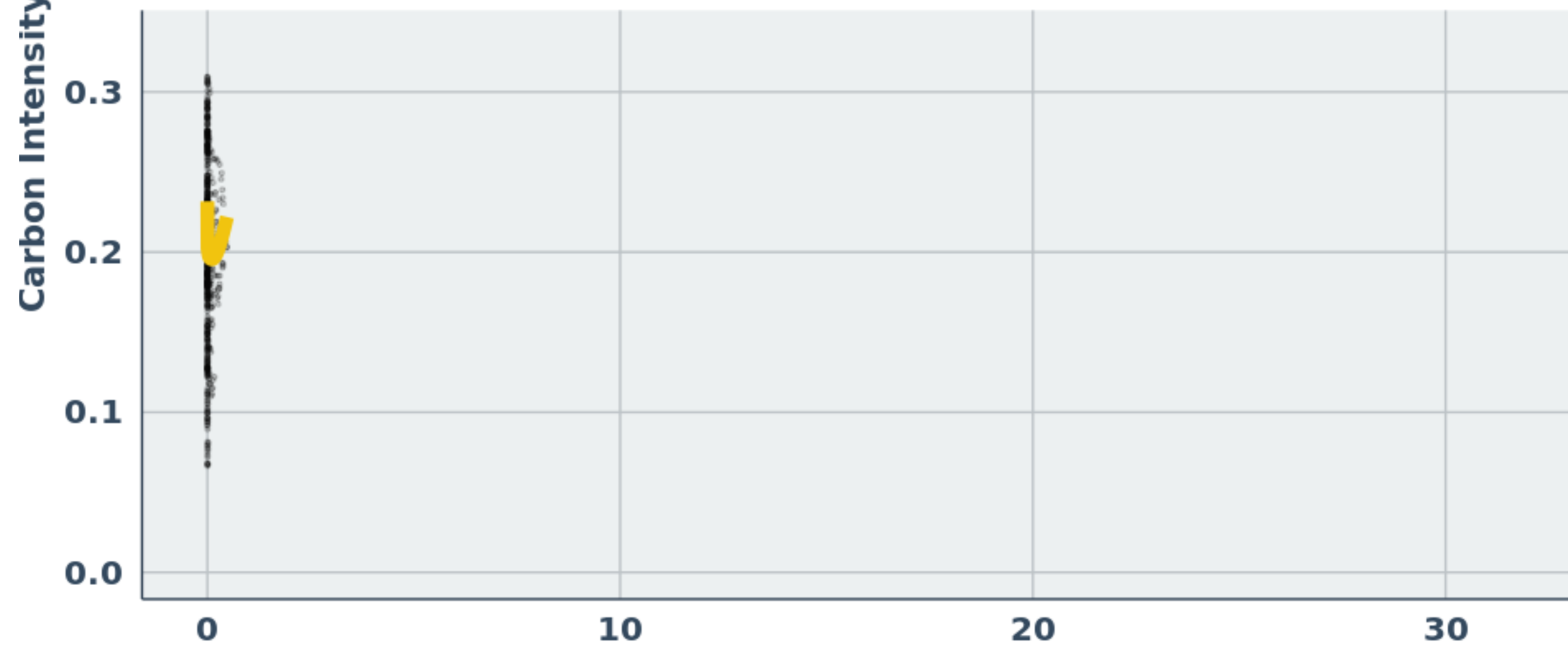
Hydro



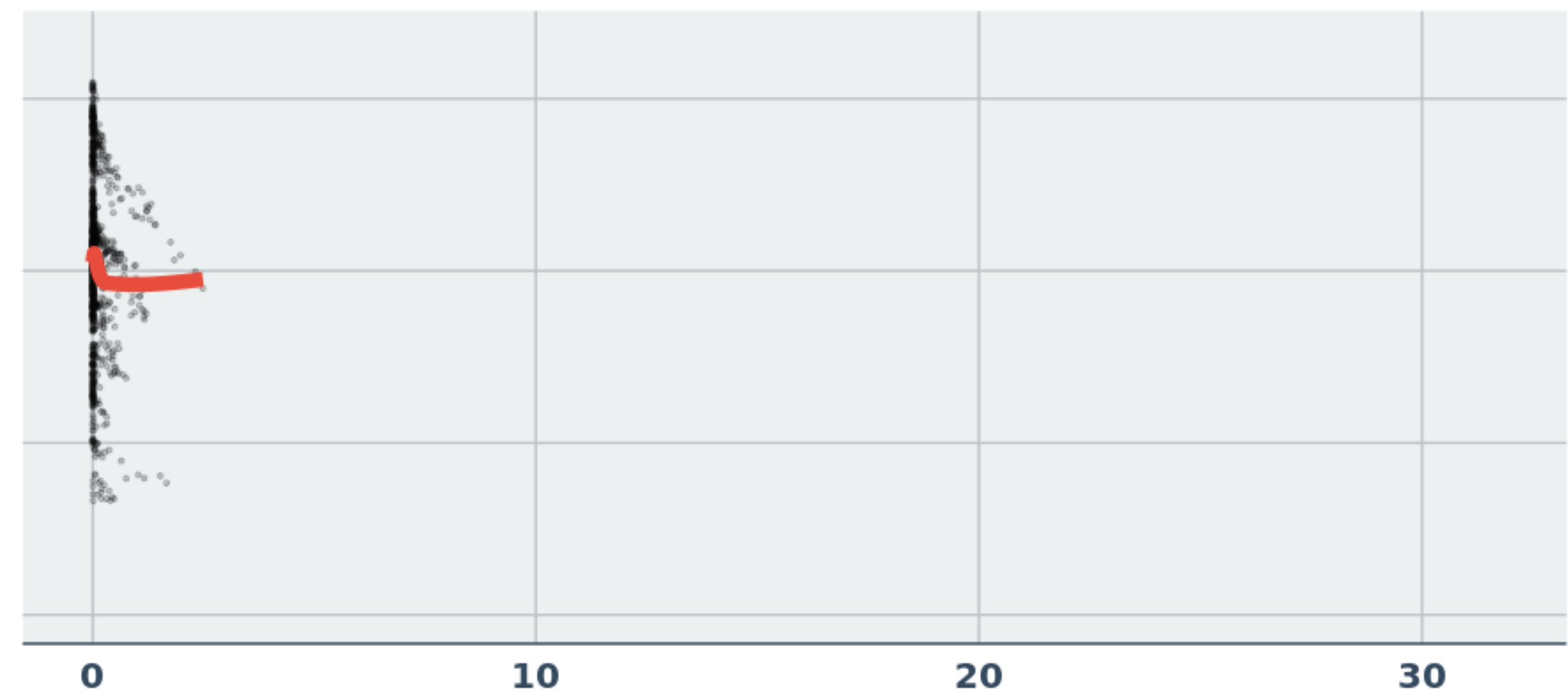
Nuclear



Solar



Wind



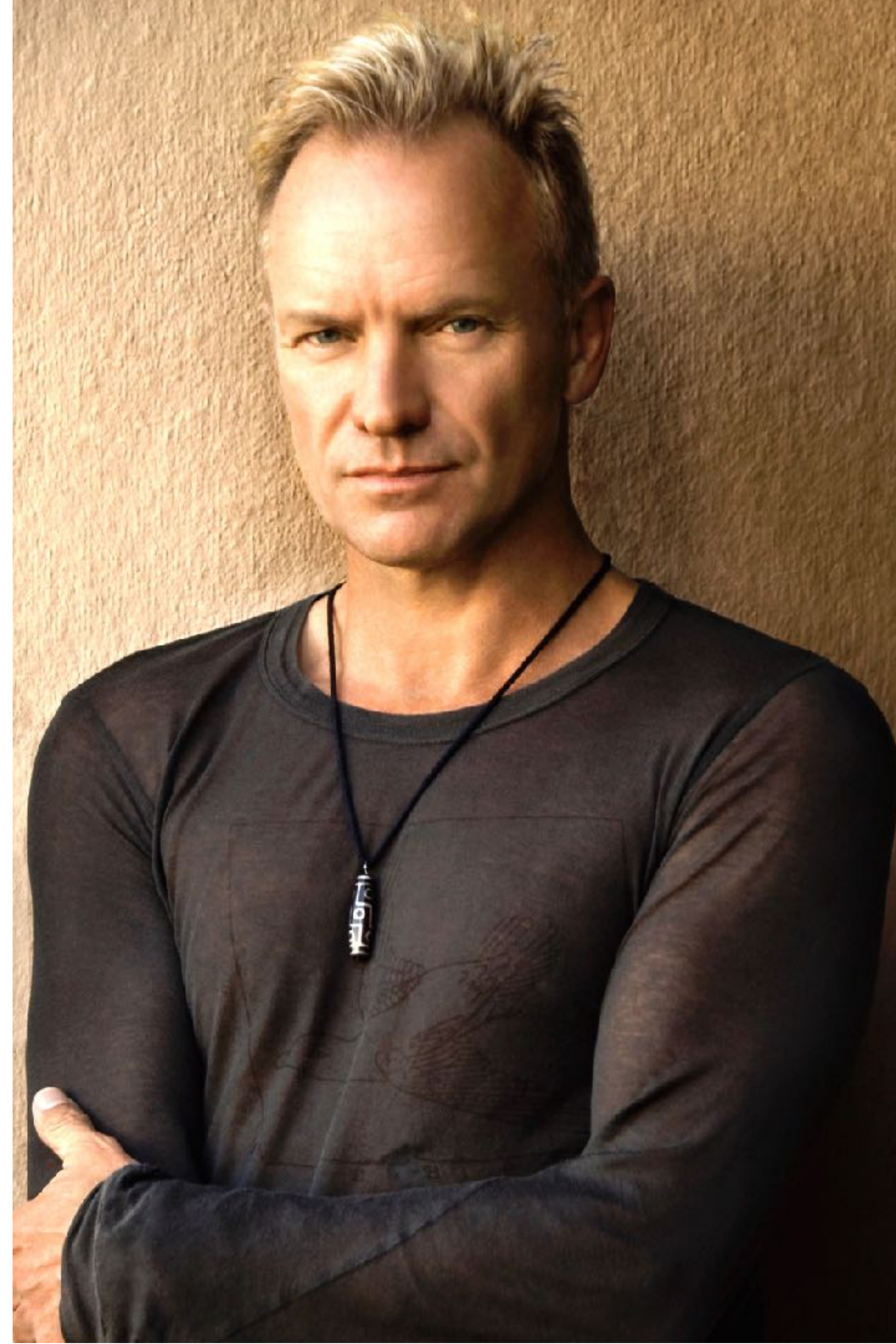
Annual Electricity Generation from Solar, Wind, Nuclear, or Hydro (MWh per Capita)

Hydro Nuclear Solar Wind

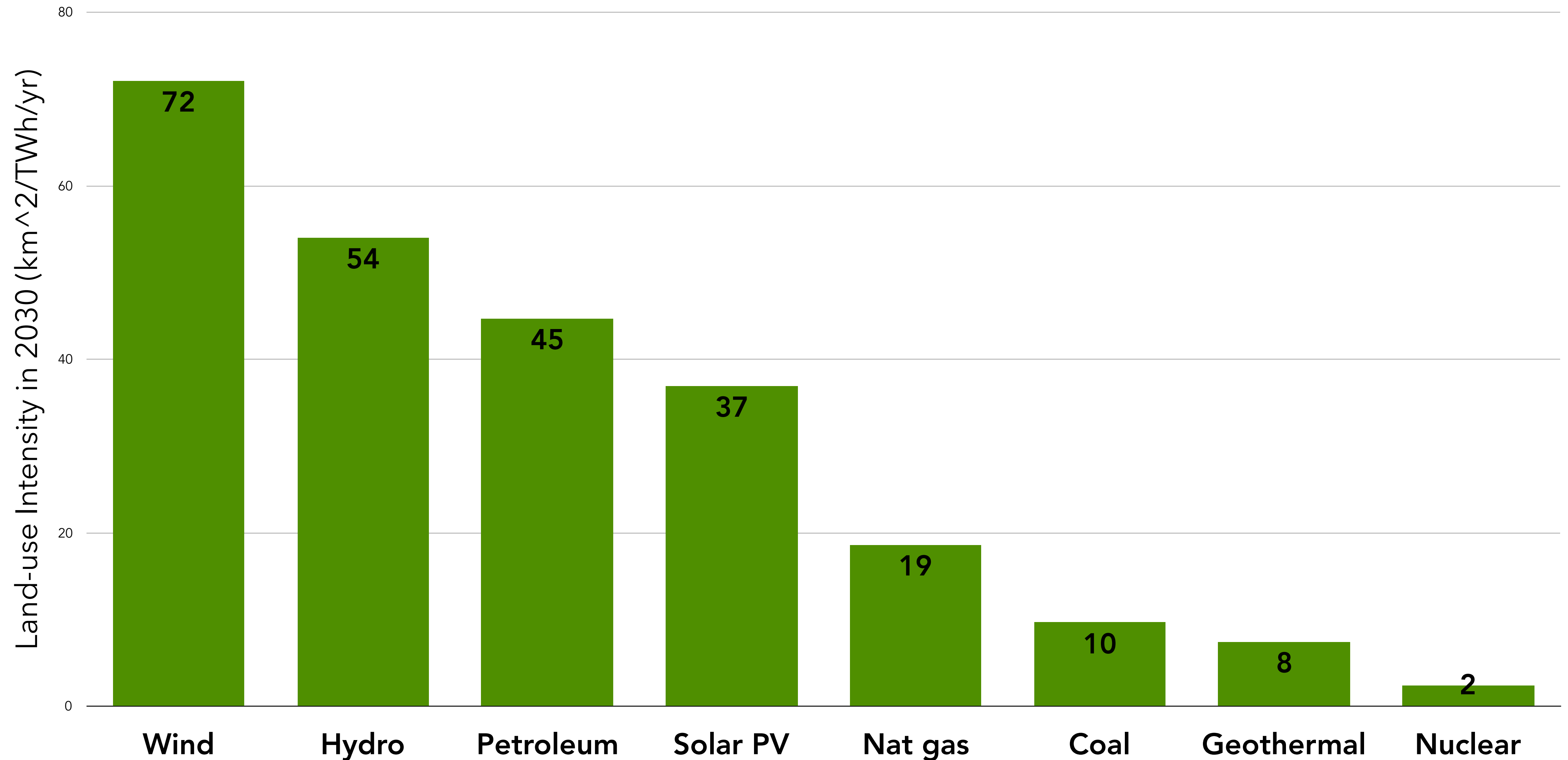


"If we're going to tackle global warming, nuclear is the only way you can create massive amounts of power."

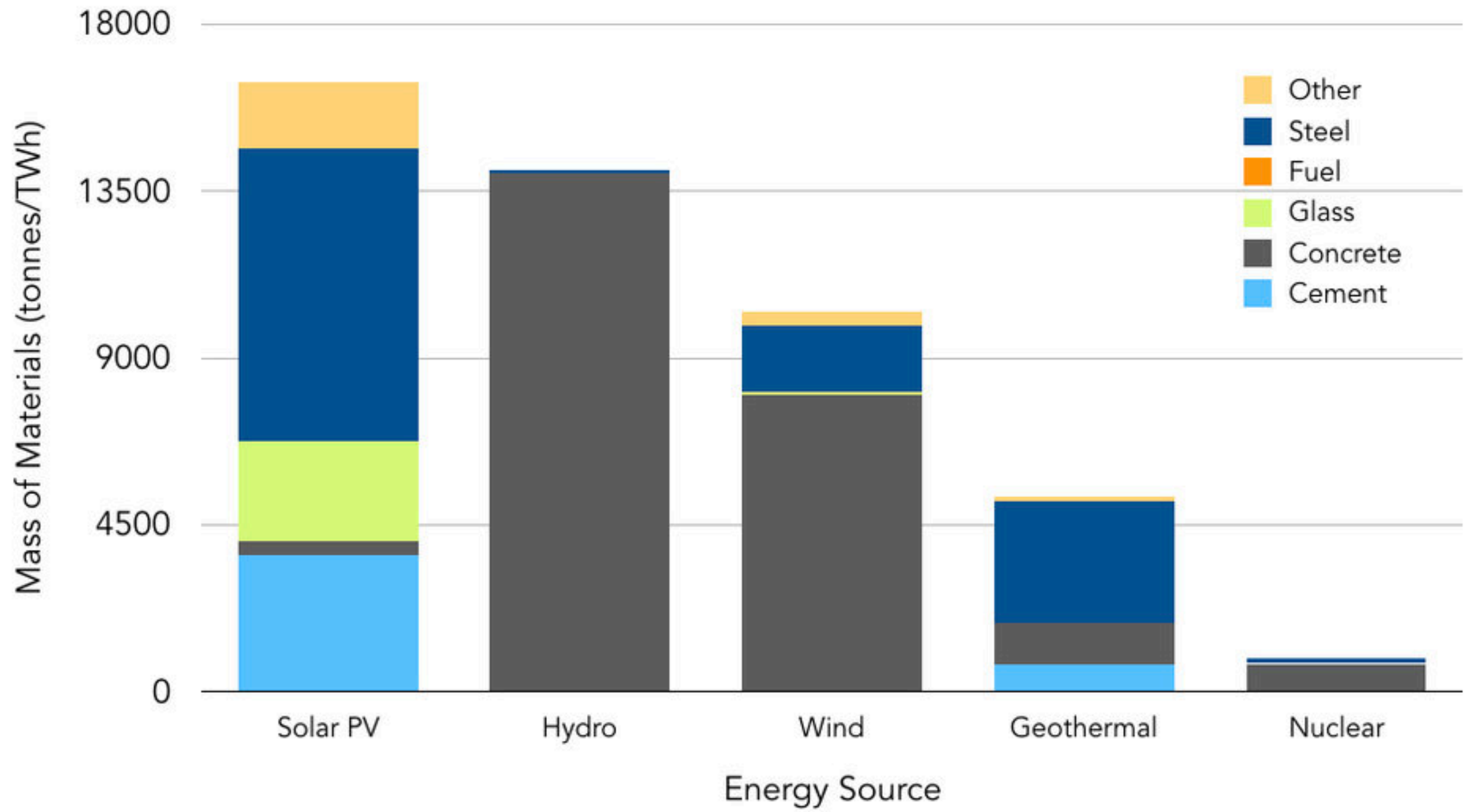
— Sting, 2016

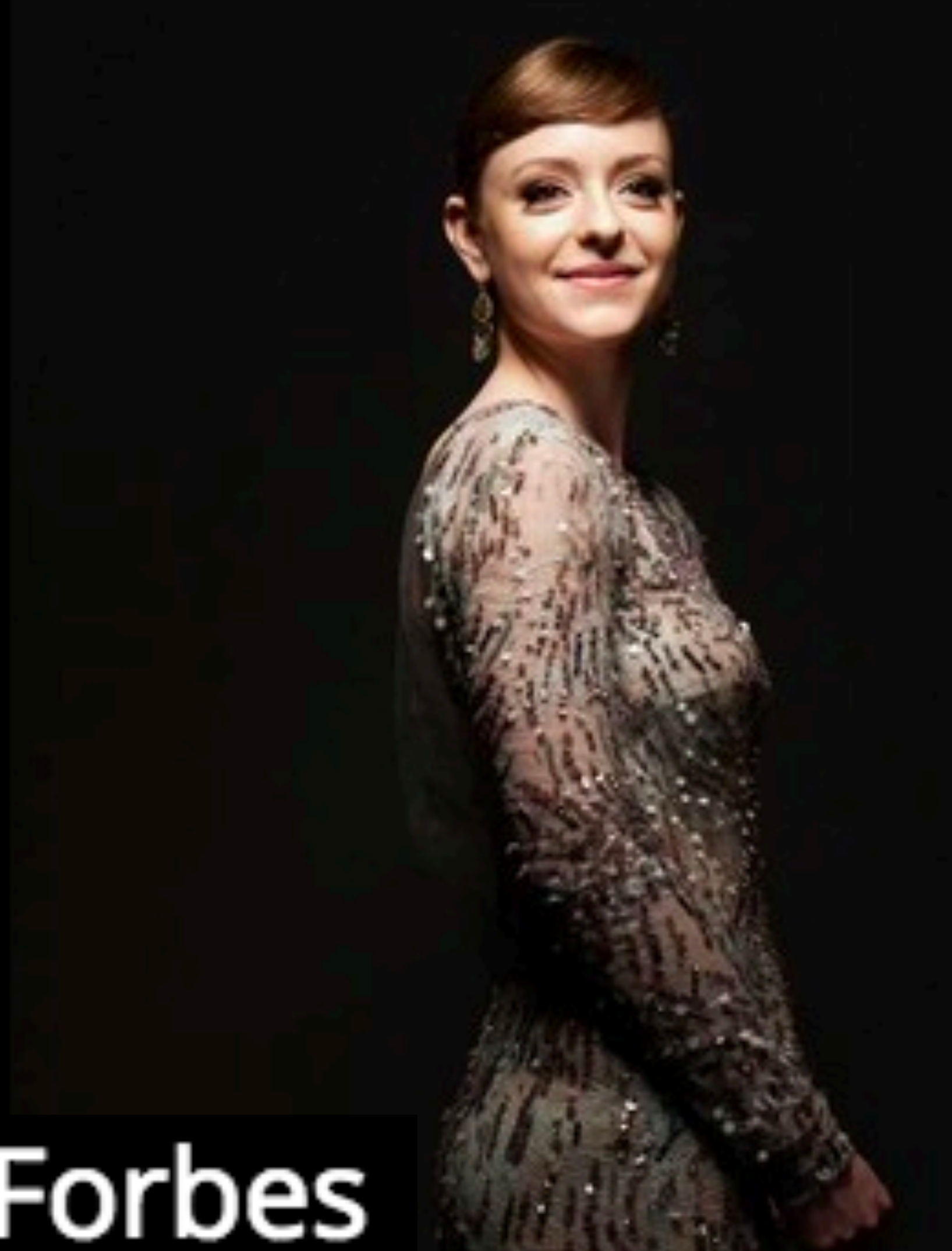


Renewables require 17 - 35 times more land than nuclear



Materials throughput by type of energy source





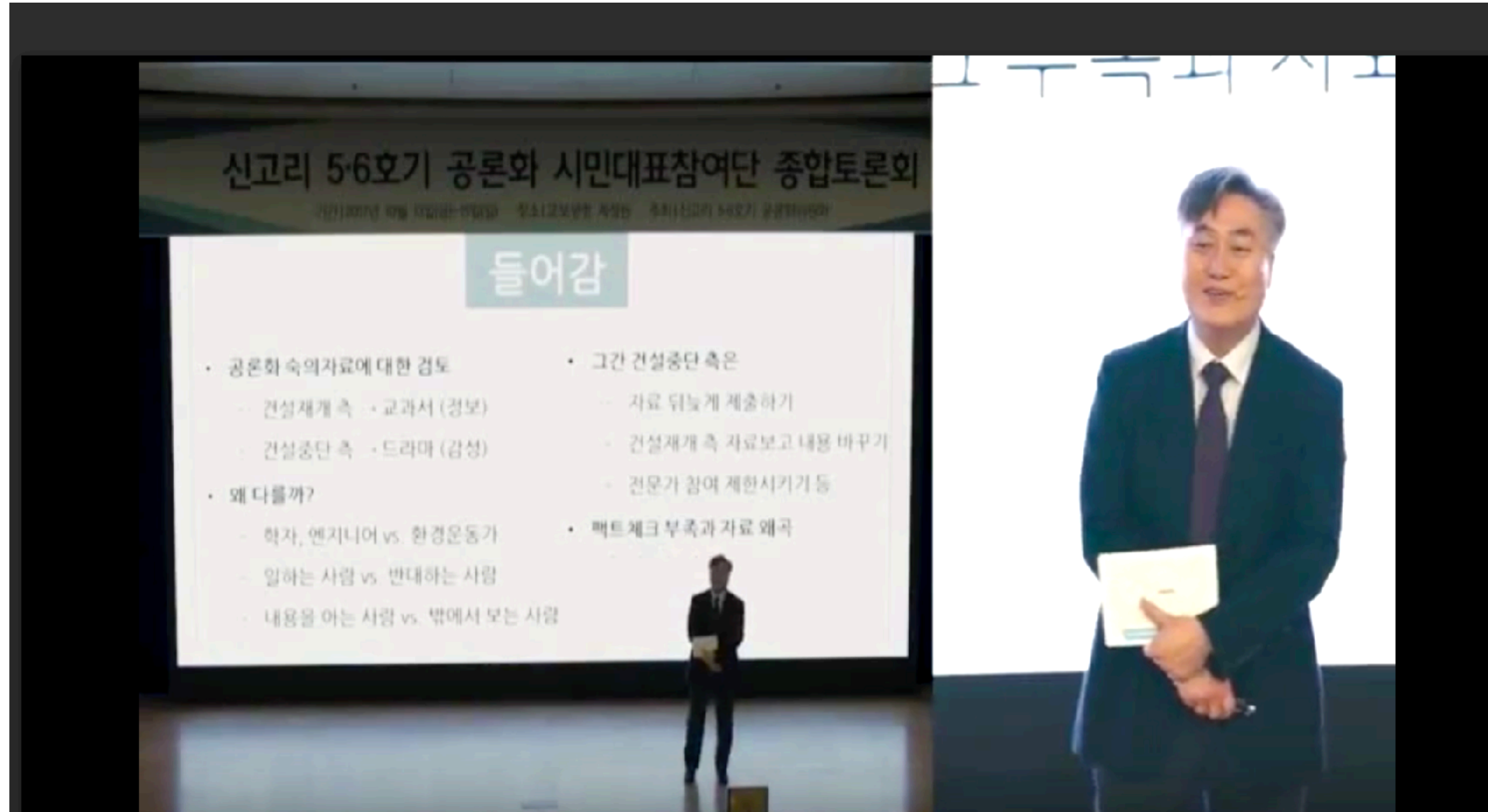
Forbes

Leslie Dewan, 27

With fellow MIT Phd candidate Mark Massie, 26, Dewan is working to develop a new nuclear reactor design. The Waste Annihilating Molten Salt Reactor (WAMSR) will utilize liquid fuel consisting mainly of the "spent" fuel rods from the nation's fleet of Light Water Reactors, which Dewan says still contain enough energy to power the entire U.S. for 70 years.

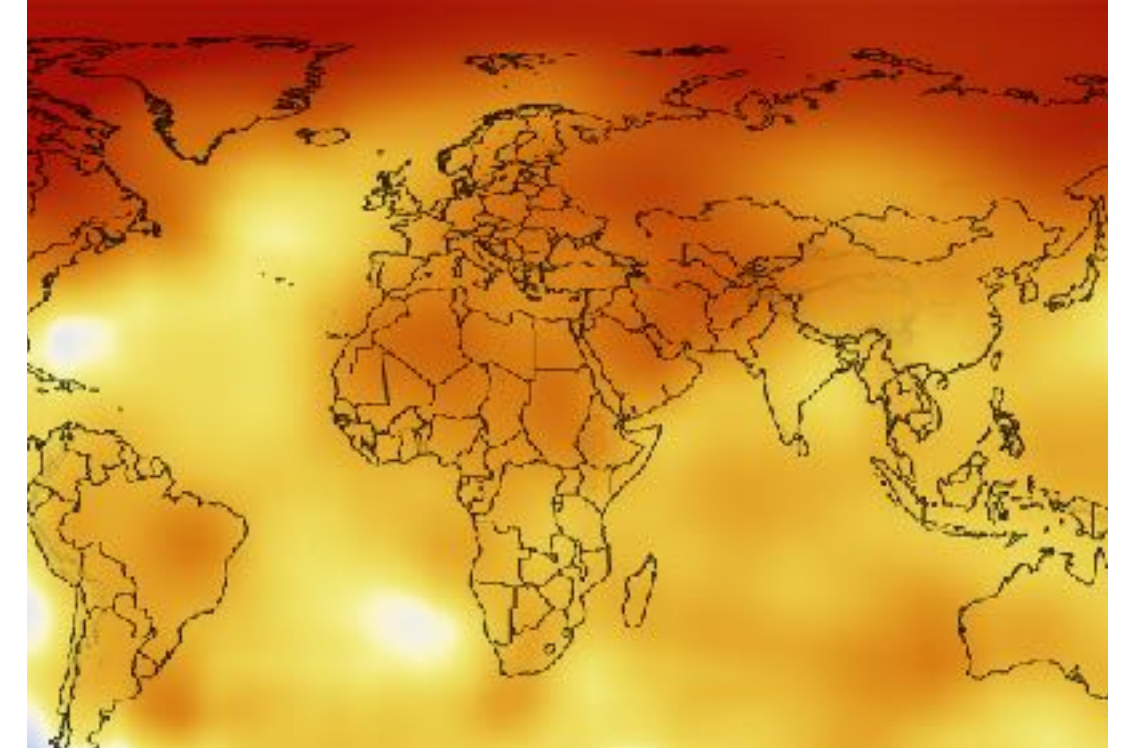


Professor Bum-Jin Chung persuades South Korea's "citizens jury"

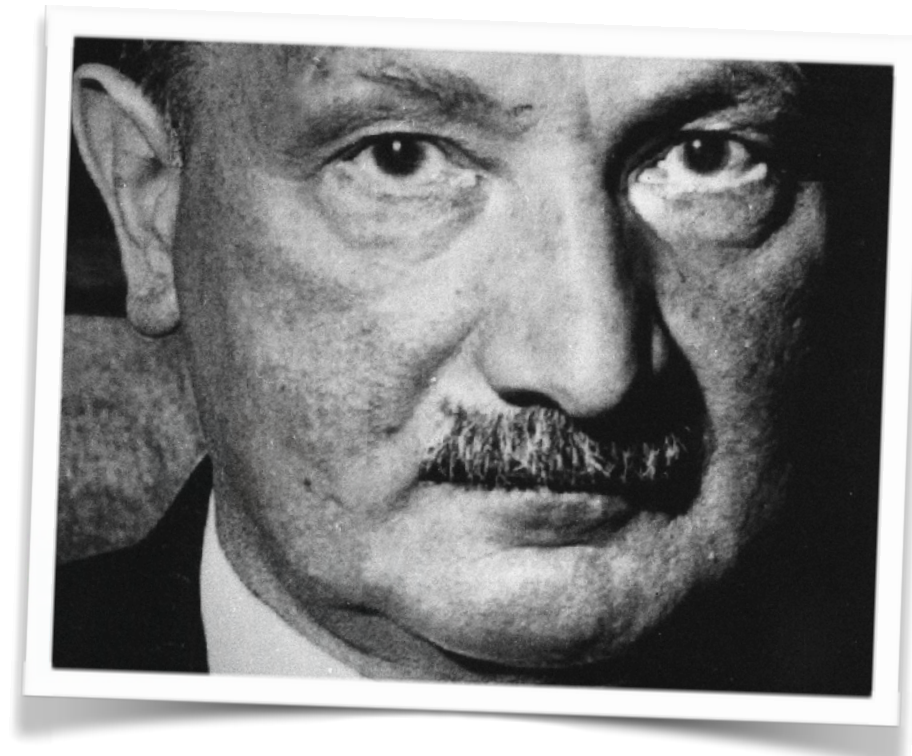
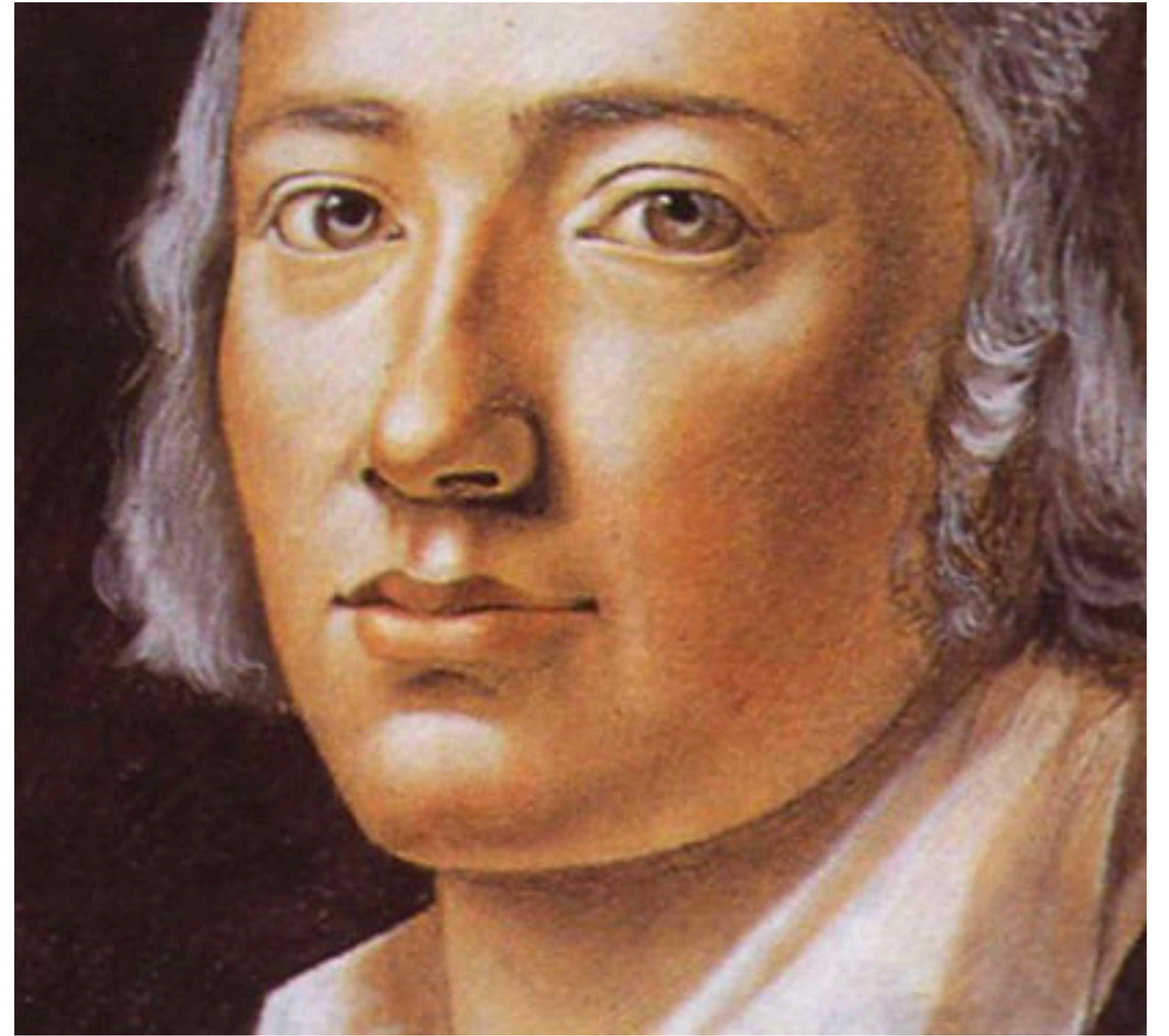


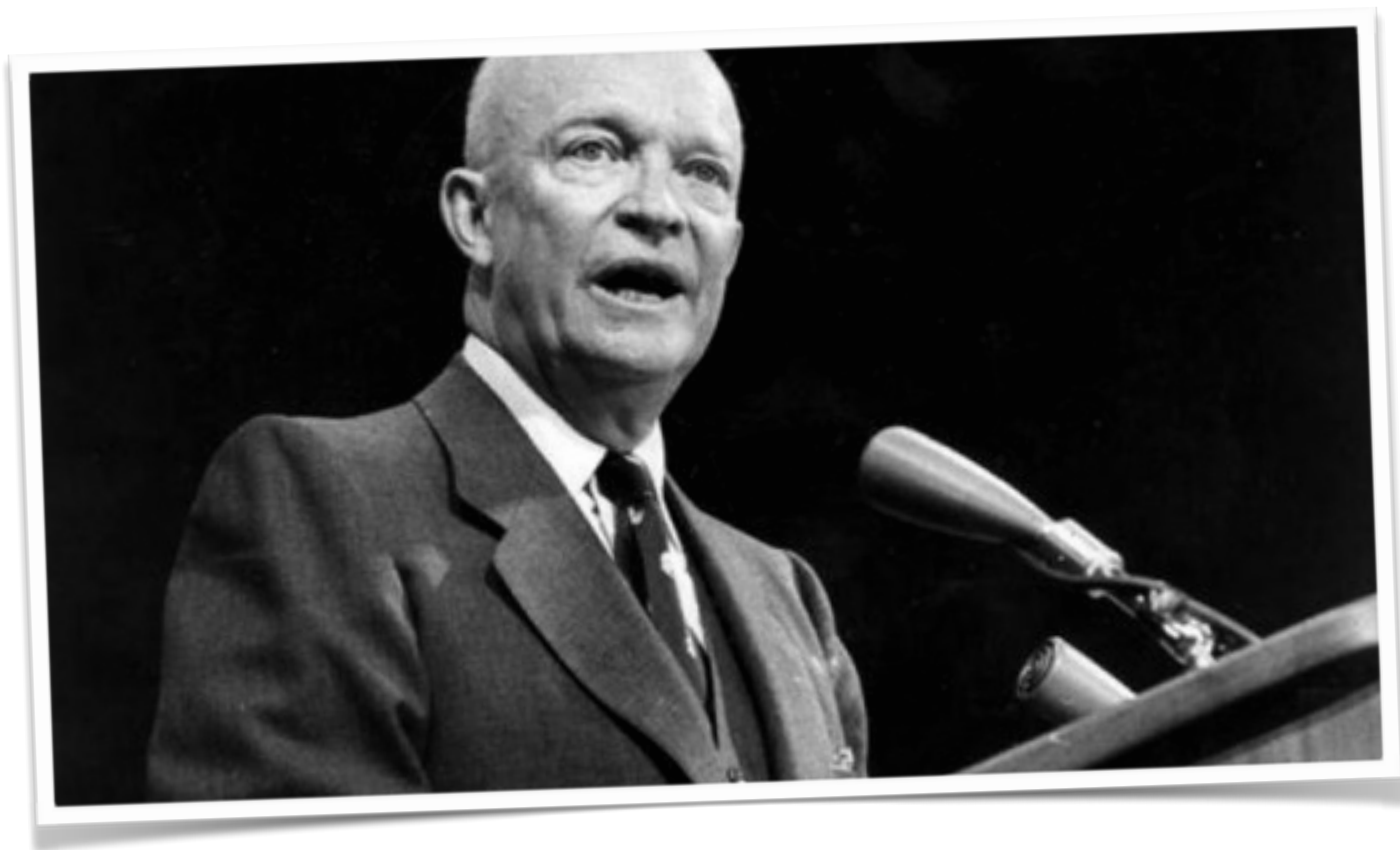
Transcendent Moral Purpose

Only nuclear can lift all humans out of poverty while saving the natural environment while creating peace on earth.



“Where the danger
lies, so too grows the
saving power.”
— Friedrich Hölderlin





“The United States pledges to devote its entire heart and mind to find the way by which the miraculous inventiveness of man shall not be dedicated to his death, but consecrated to his life.”

— President Dwight D. Eisenhower,
December 1953