

How We Can Save the Planet

(If We Keep Our Heads Cool)

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“We already have all the solutions!”



“...but they are held back”

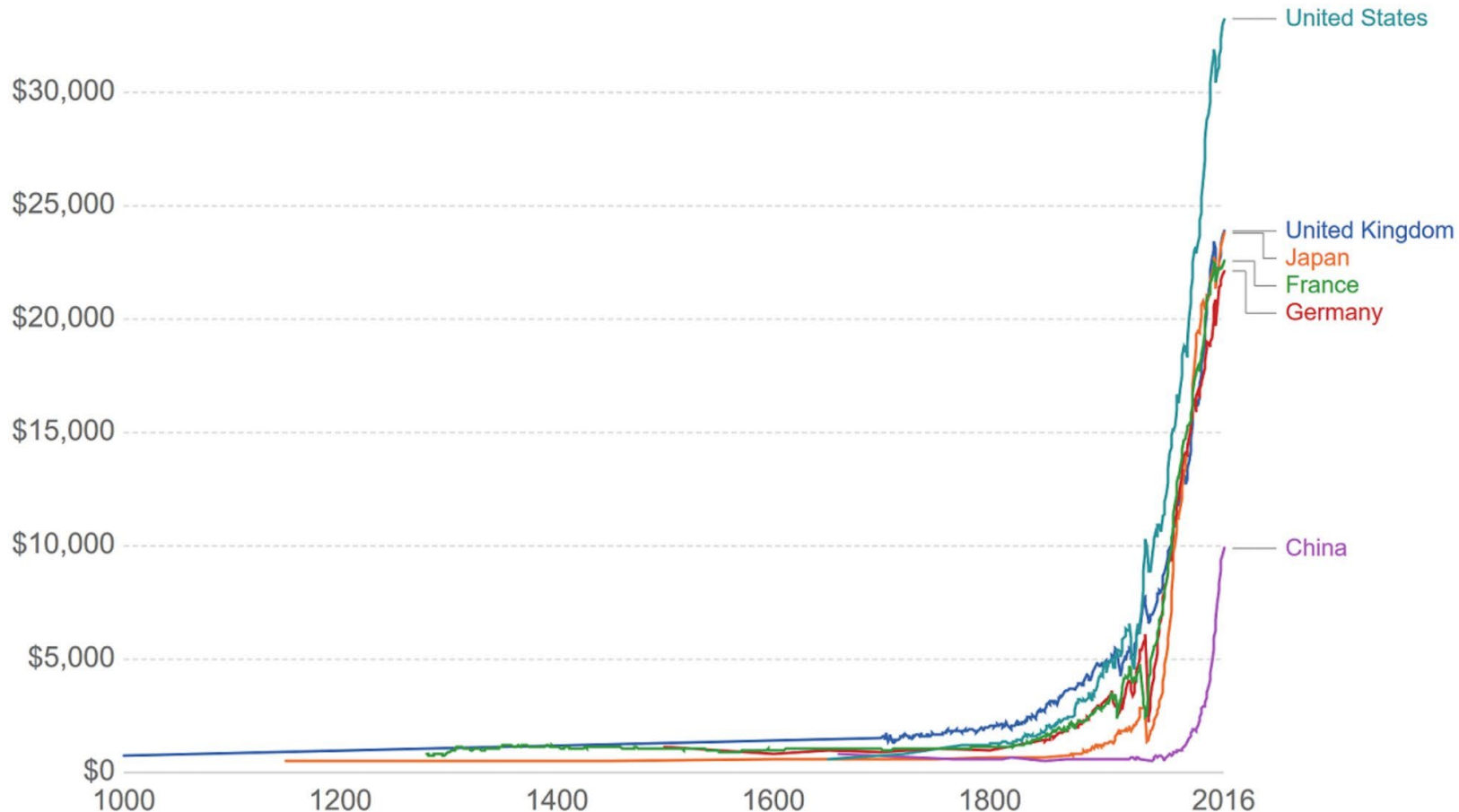


Fossil fuels are fantastic

History's hockey stick: Worldwide historical real gross domestic product per capita (1000–2016)



Unit 1 'The capitalist revolution' in The CORE Team, The Economy. Available at: <https://tinyco.re/19274920> [Figure 1.1a]



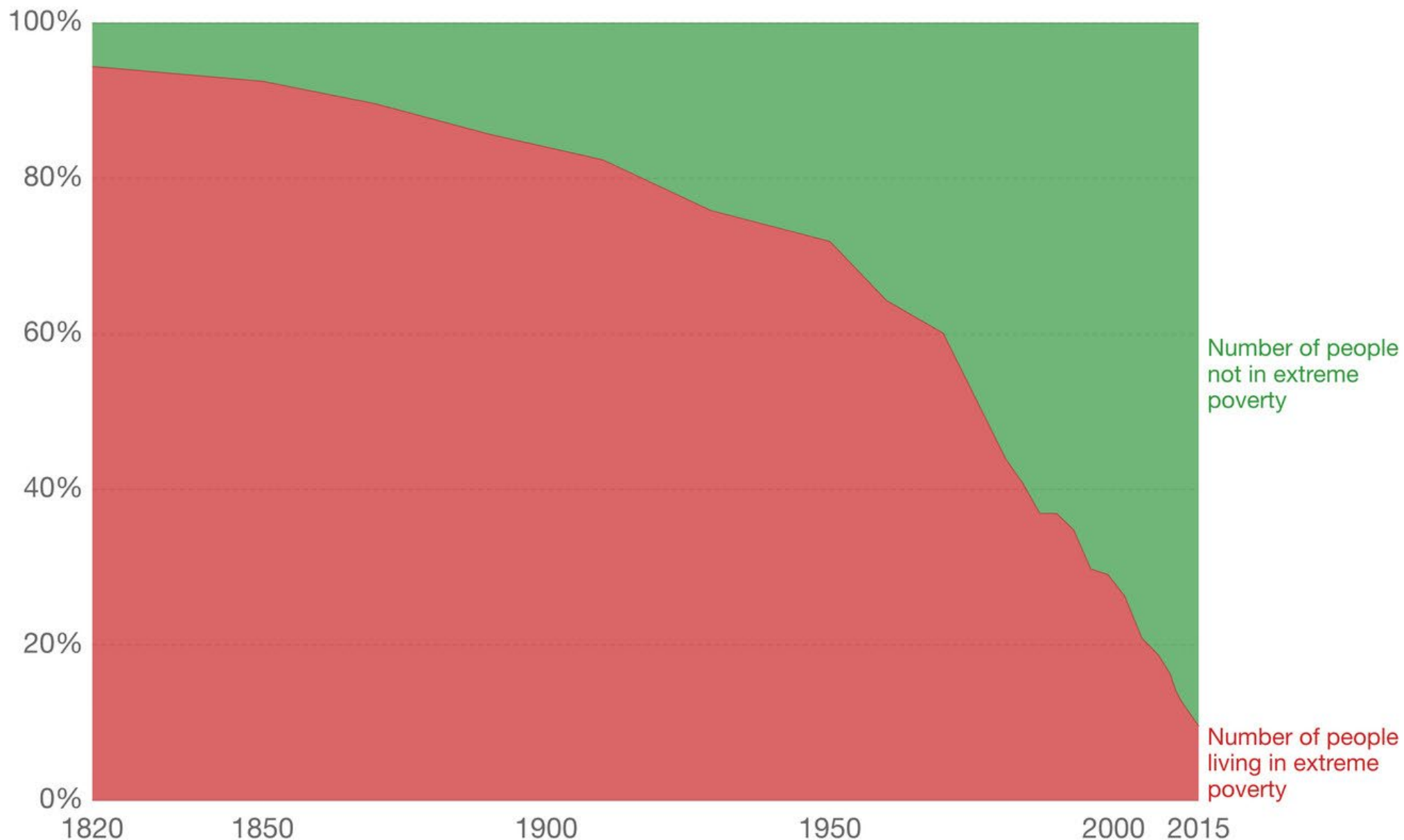
Source: Maddison Project Database (2018)

tinyco.re/19274920 • Powered by ourworldindata.org

Note: The units of measurement is '1990 US dollar' which is used to compare Purchasing Power Parity and GDP across countries over time.

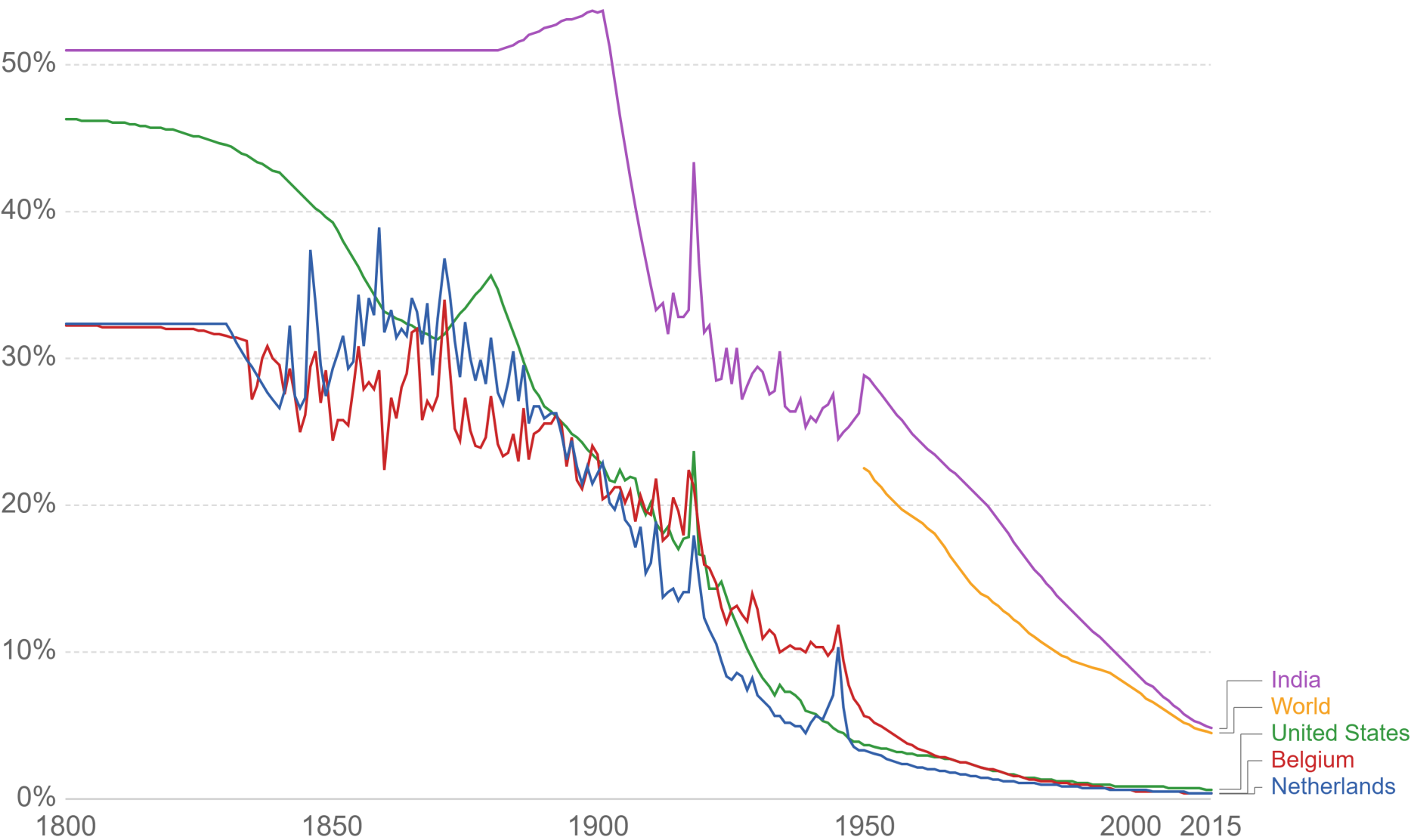
World population living in extreme poverty, 1820-2015

Extreme poverty is defined as living at a consumption (or income) level below 1.90 "international \$" per day. International \$ are adjusted for price differences between countries and for price changes over time (inflation).



Child mortality rate

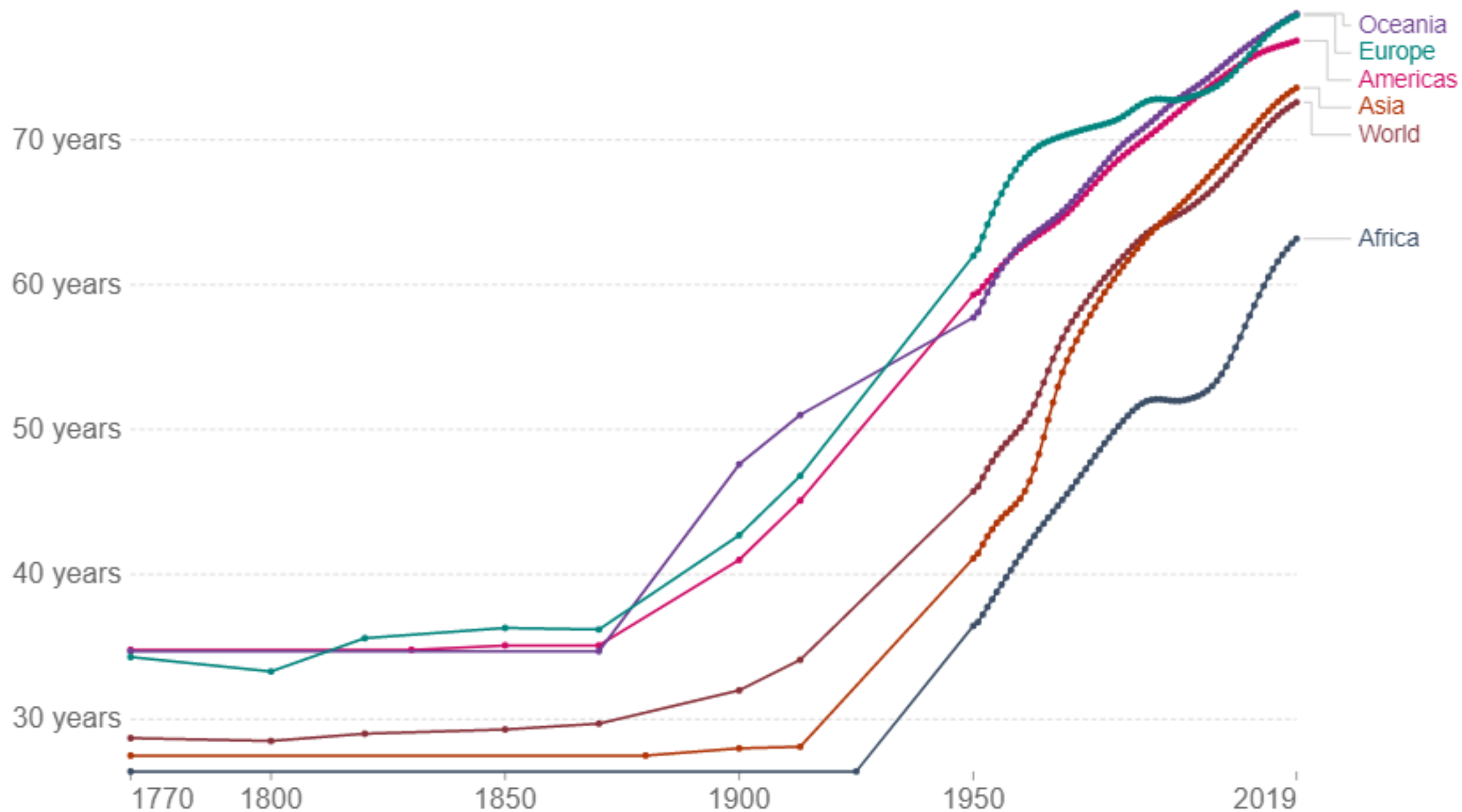
Shown is the share of children (born alive) who die before they are five years old.



Source: Gapminder estimates up until 1949 and UN Population Division from 1950 to today

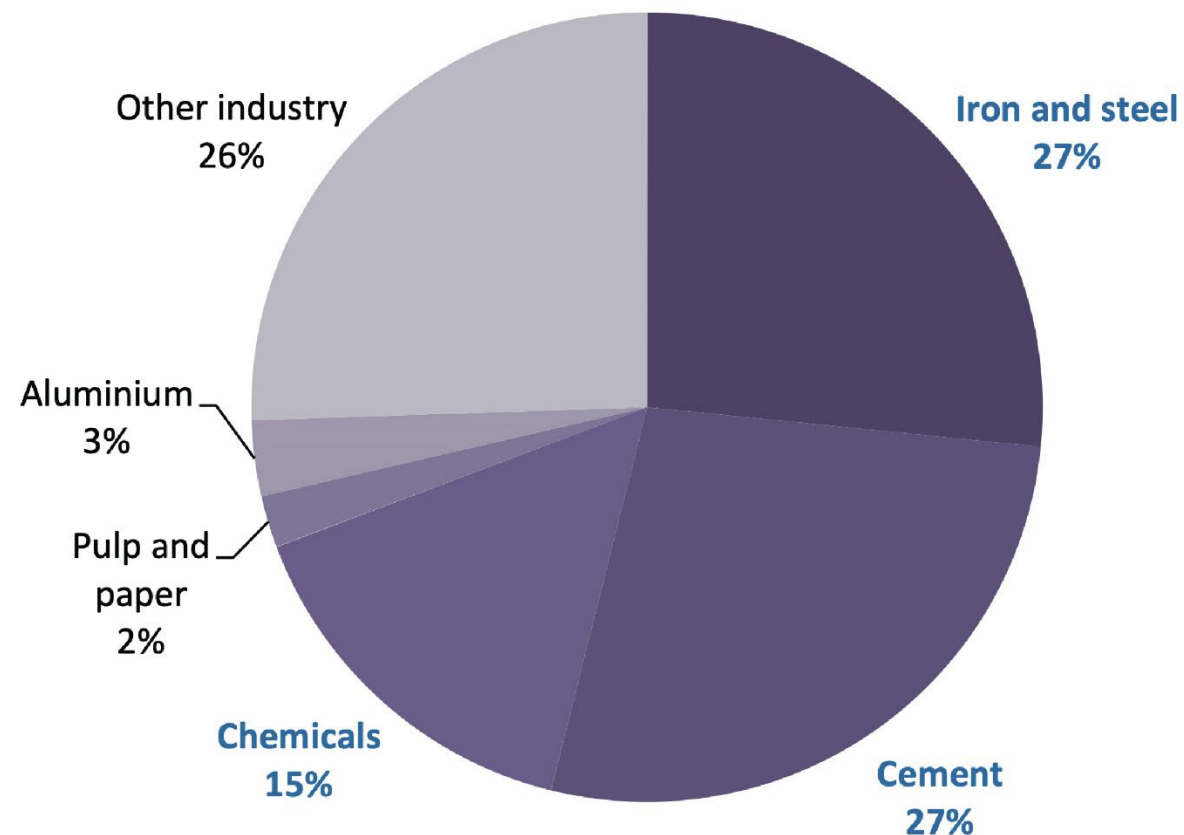
Life expectancy, 1770 to 2019

Our World
in Data






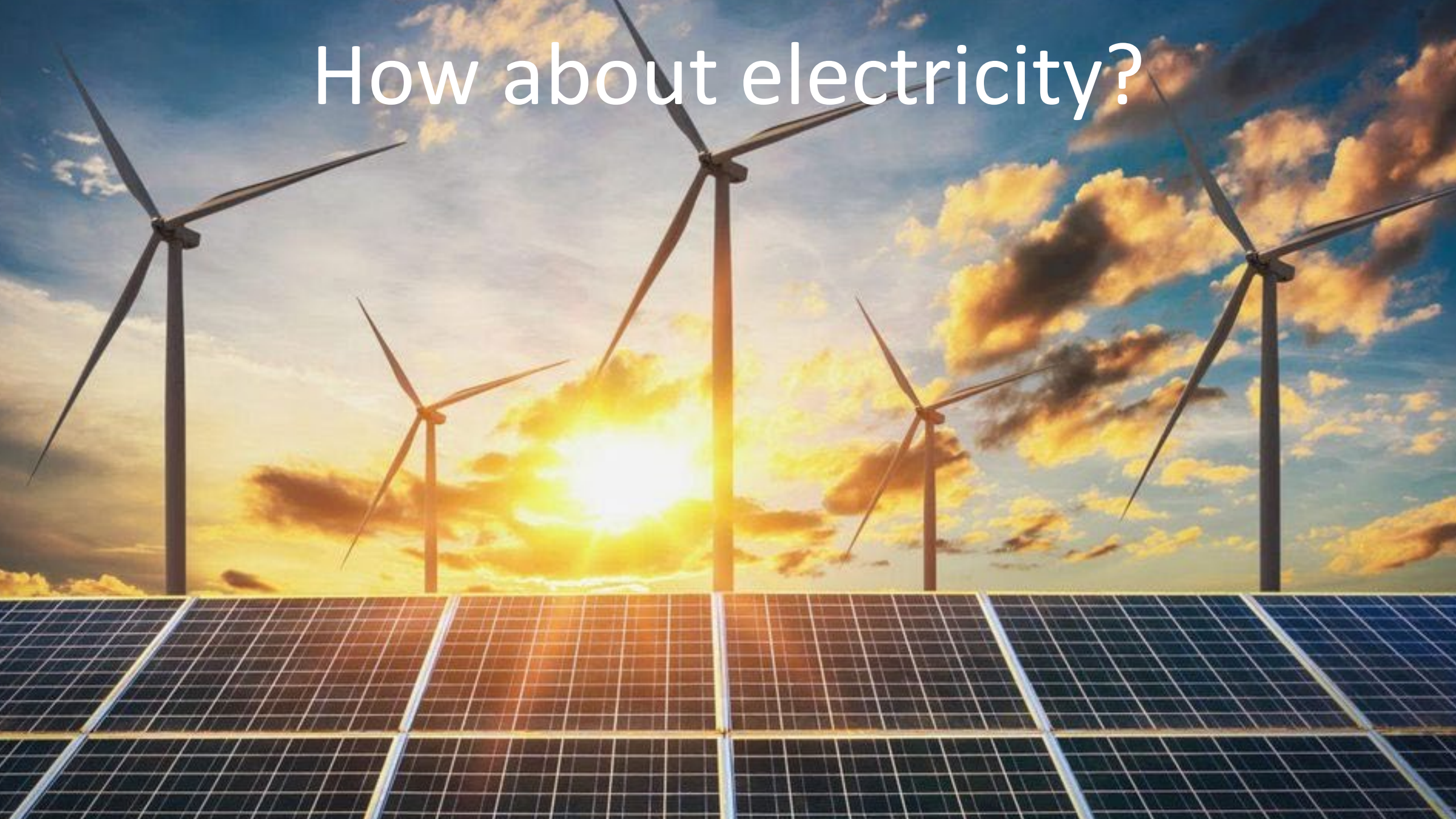
Share of Global Direct CO₂ Emissions by Industry Subsector



Source: Raimund Malischek, Adam Baylin-Stern, and Samantha McCulloch, *Transforming Industry Through CCUS* (Paris: International Energy Agency, 2019), <https://www.iea.org/reports/transforming-industry-through-ccus>.

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- A photograph of a city skyline at sunset. The sky is a gradient of orange, yellow, and blue. Several smokestacks are visible, emitting thick black smoke that rises into the air. The smoke from multiple stacks has combined to form a large, dark skull shape in the center of the sky. The city buildings are silhouetted against the bright sunset.
- Side-effect of progress
 - Very hard to get rid of

How about electricity?



Low power density





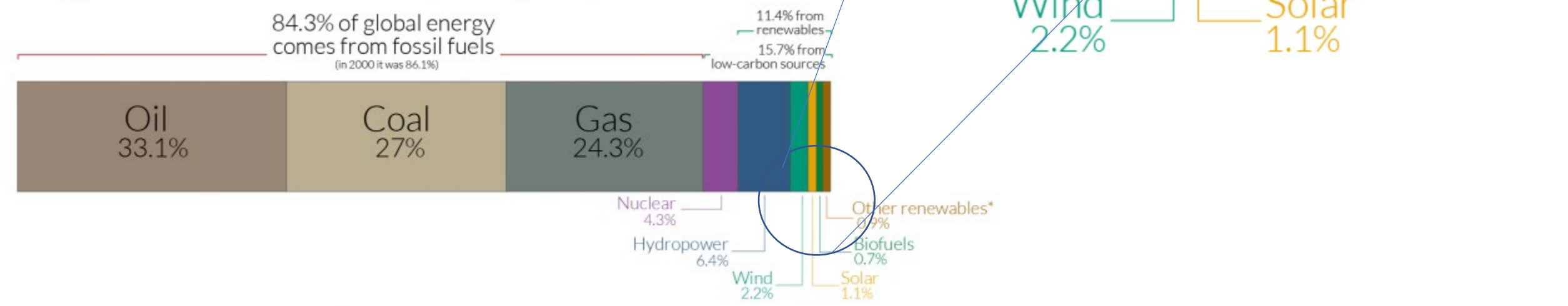
165%



INTERMITTENCY

Global primary energy consumption by source

The breakdown of primary energy is shown based on the 'substitution' method which takes account of inefficiencies in energy production from fossil fuels. This is based on global energy for 2019.



*'Other renewables' includes geothermal, biomass, wave and tidal. It does not include traditional biomass which can be a key energy source in lower income settings.



NUCLEAR ENERGY

Energy

mass

squared

$$E = mc^2$$

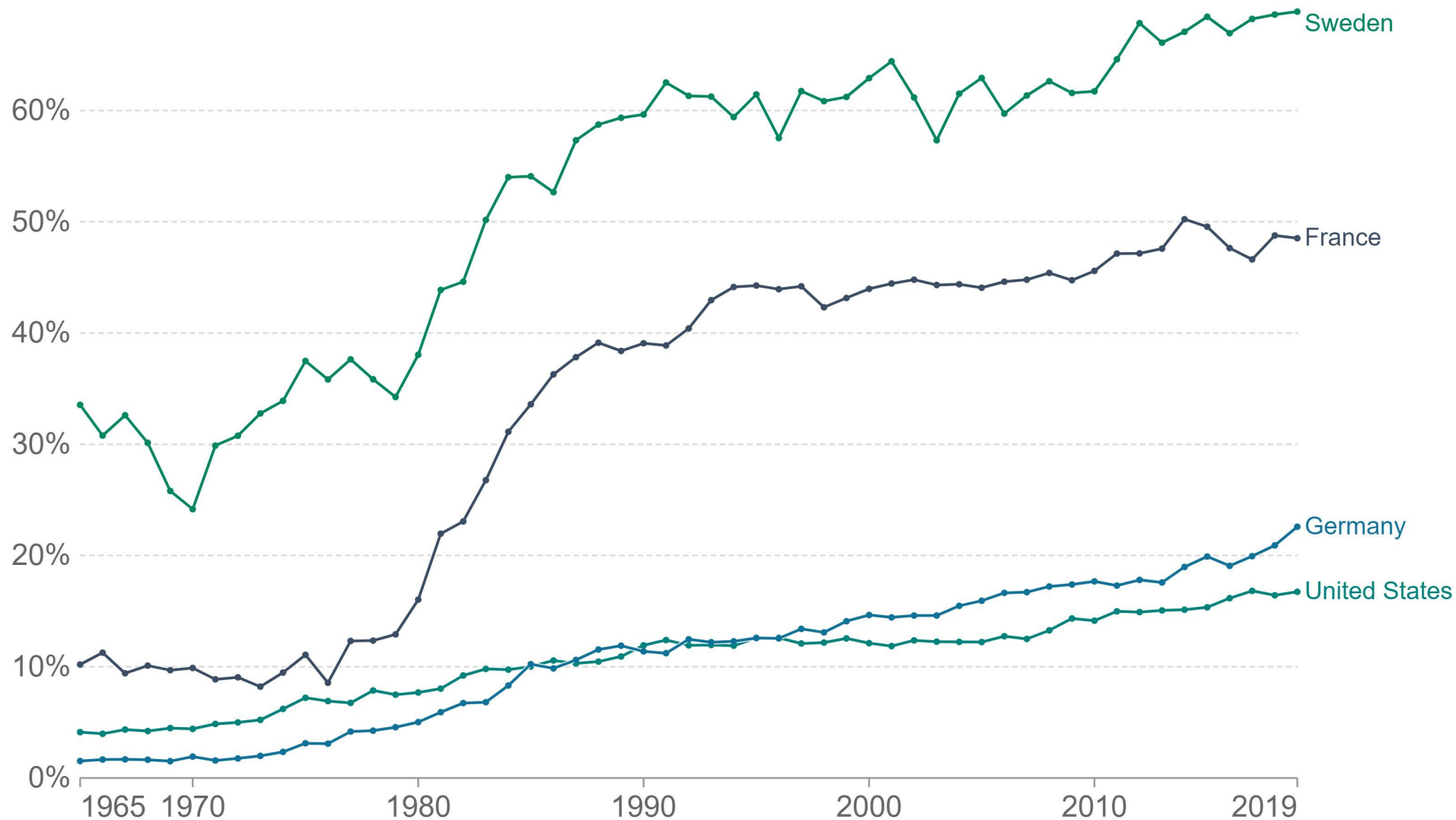
equals

speed of light
(constant)



Share of primary energy from low-carbon sources

Low-carbon energy is defined as the sum of nuclear and renewable sources. Renewable sources include hydropower, solar, wind, geothermal, wave and tidal and bioenergy. Traditional biofuels are not included.



Source: Our World in Data based on BP Statistical Review of World Energy (2020)

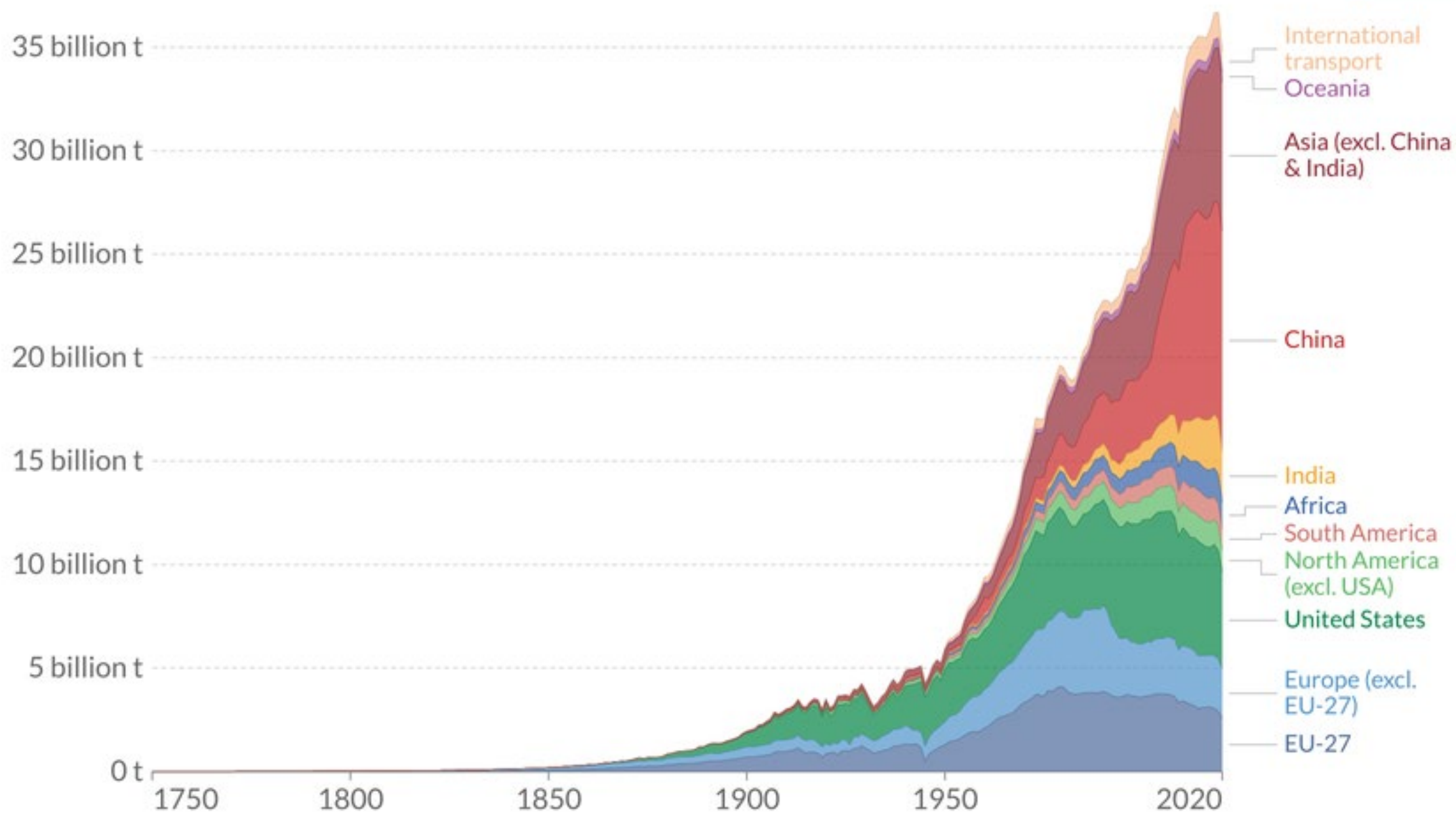
OurWorldInData.org/energy • CC BY

Note: Primary energy is calculated using the 'substitution method' which takes account of the inefficiencies energy production from fossil fuels.

THINK GLOBALLY
(Greenhouse gases don't respect borders)



Annual CO₂ emissions from fossil fuels, by world region



A world map with a dark blue background. The landmasses are outlined in a lighter blue. Overlaid on the map is text in a light blue color. The text is centered in the upper half of the image. The map shows the distribution of electricity access across different regions, with Africa having the highest percentage of the population without electricity (57%), followed by Asia (17%), the Middle East (8%), and Latin America (5%).

**In 2012, nearly 25 percent of the population
of 105 developing countries had no electricity**

LATIN
AMERICA
5%

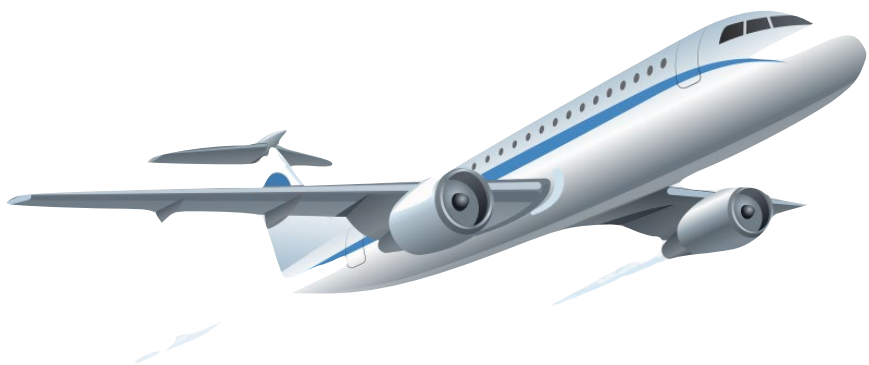
AFRICA
57%

MIDDLE
EAST
8%

ASIA
17%

Percentage of population
without electricity

**1.3 BILLION ARE LIVING
IN THE DARK**





EVERYONE SWEEPING THEIR OWN SIDEWALK?

MAKING NEW 'BROOMS'

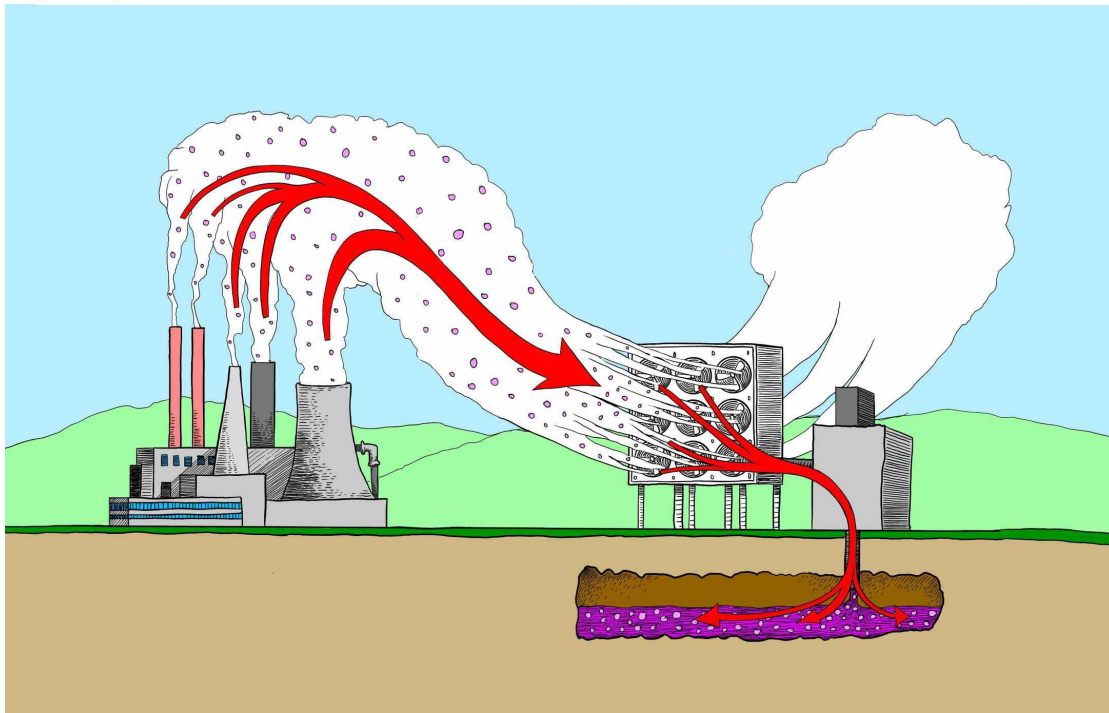
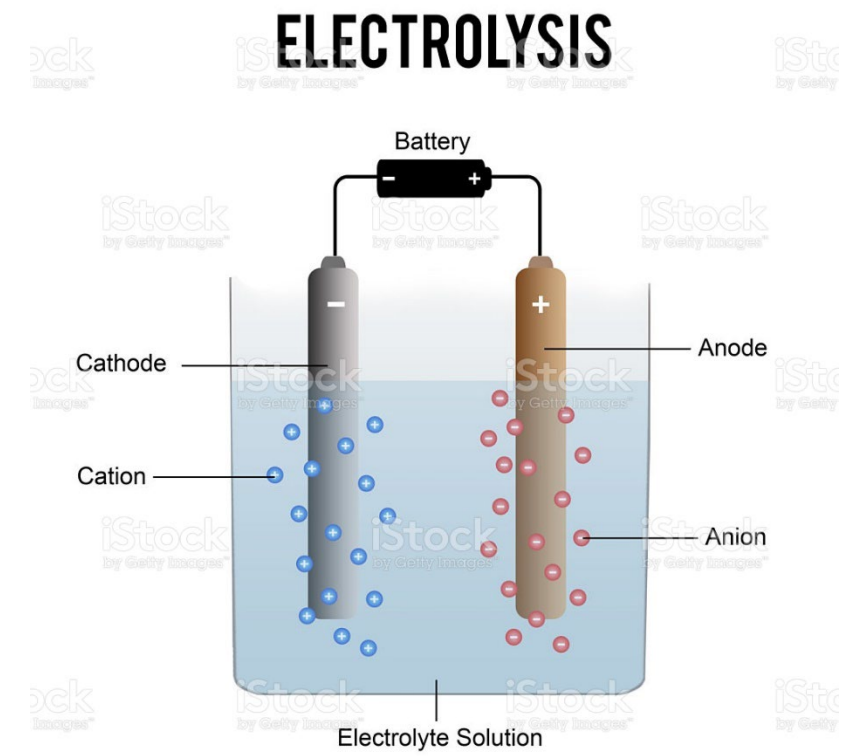




Energiewende

Technological innovation







Pictorial Press Ltd / Alamy Stock Photo

Why Environmentalists Pose a Bigger Obstacle to Effective Climate Policy than Denialists



Maarten Boudry
27 Jan 2022 • 9 min read



'A rising star.'
STEVEN PINKER, AUTEUR VAN *VERLICHTING NU*

— MAARTEN BOUDRY —

WAAROM ONS KLIMAAT NIET NAAR DE KNOPPEN GAAT



(ALS WE HET HOOFD KOEL HOUDEN)

PROFETIUS

HUMANS ARE THE PROBLEM,
BUT ALSO THE SOLUTION.



I'M AFRAID
YOU HAVE
HUMANS...