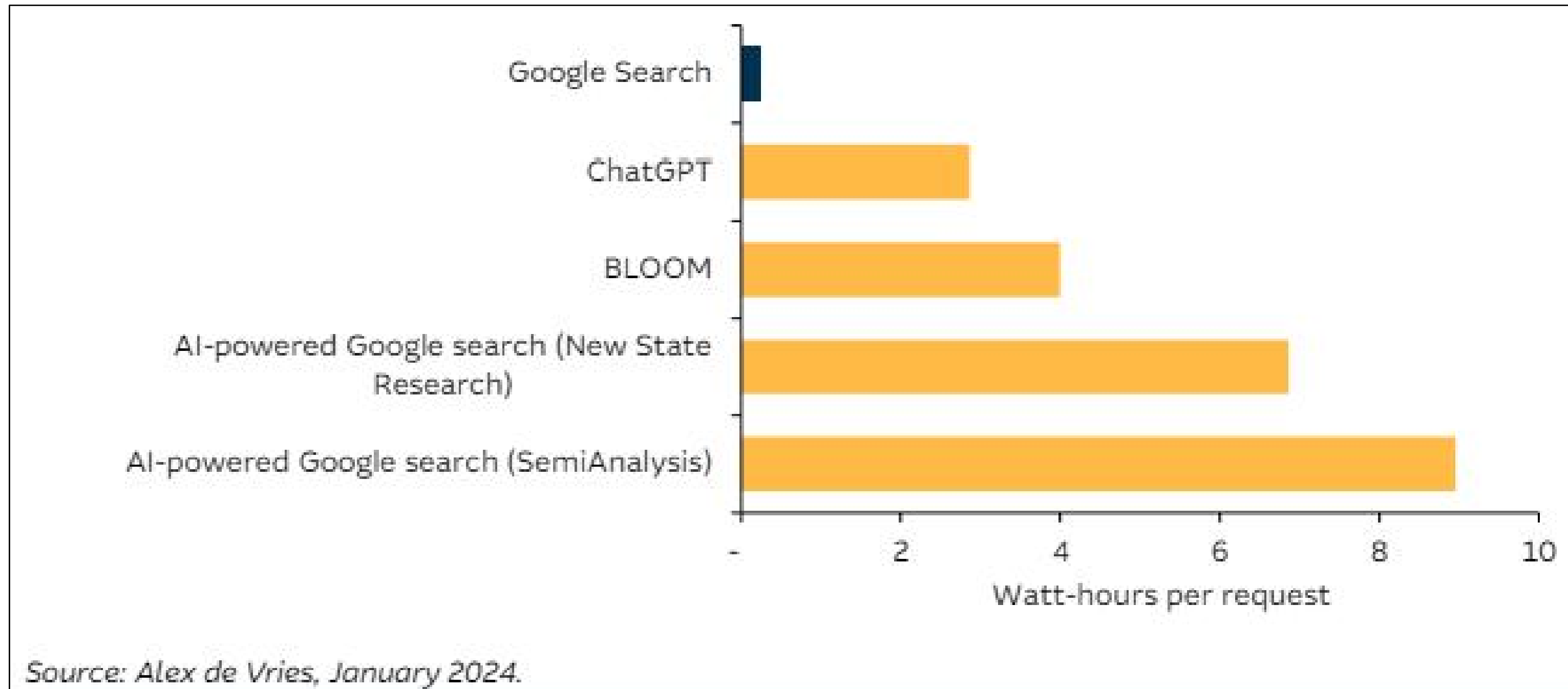


# Insights Unwrapped

*Lighting the Nuclear Power: The Cleanest Approach*

# High Energy Footprint of Artificial Intelligence

**A typical Google search consumes ~0.3Wh of electricity, while an AI-powered Google search consumes ~7-9 Wh of electricity.**



# AI Giants in the USA seek Nuclear Energy

- **Oracle has secured permits to build three Small Modular Reactors (SMR) to power its AI data center. (*source: recent Oracle concall notes*)**
- **Microsoft is seeking to power its datacenters with Small Modular Reactors.**
- **Notable companies making strides in SMR technology include Rolls-Royce, Last Energy, NuScale and Oklo.**

# Nuclear Energy's Contribution to Clean Power

## COMPARING CARBON PROFILES

Carbon dioxide emissions per megawatt-hour

Average coal plant  
emits about



2,200 lbs

Average natural gas  
plant emits about



1,100 lbs

Nuclear  
plant emits



0 lbs

- In 2023, Nuclear Energy provided 19% of all US electricity.
- It contributed 47% of the nation's zero emissions power—more than 10% higher than utility-scale wind and solar combined.

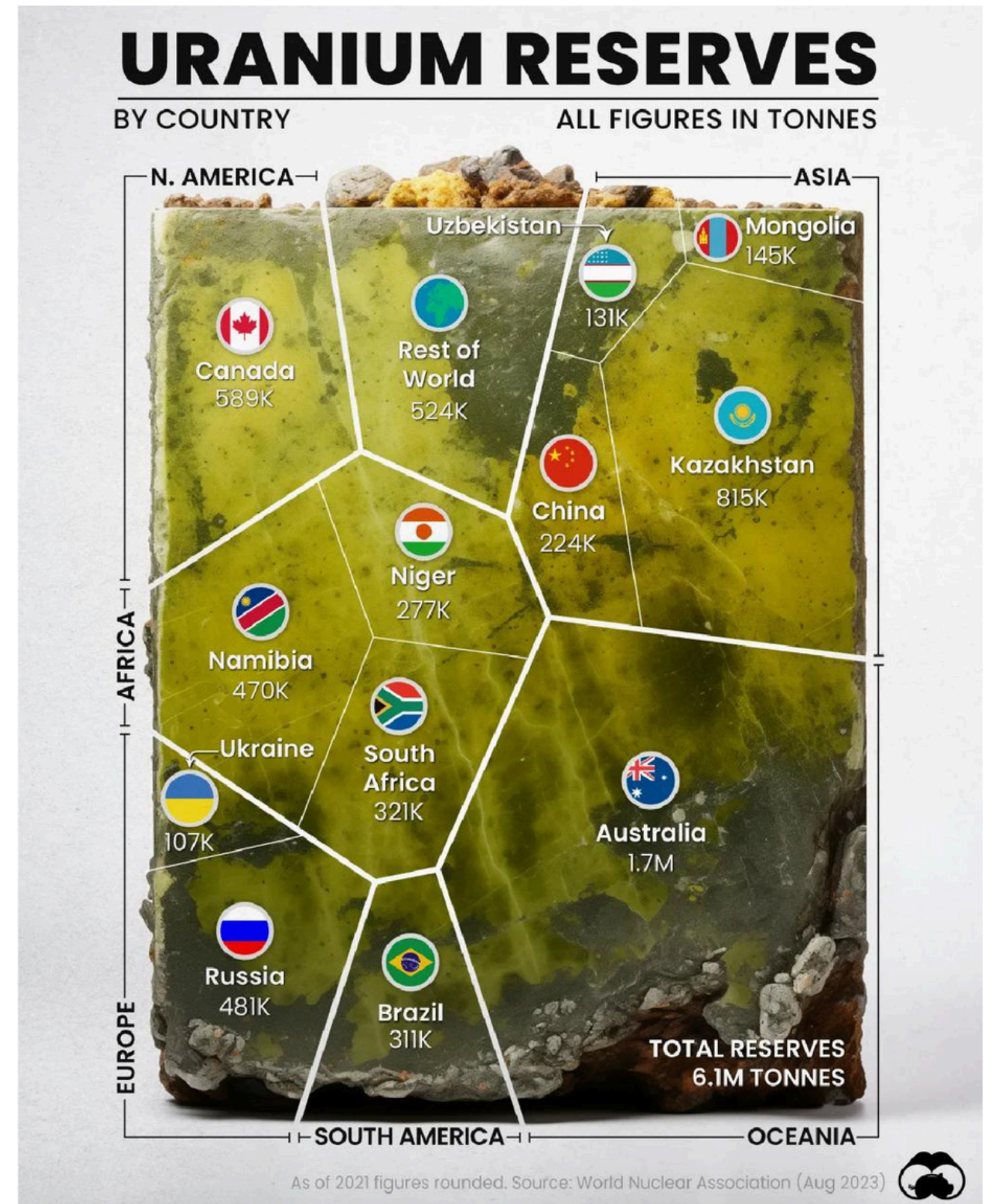
Source: Centre for Climate and Energy Solutions



# Facts about Nuclear Energy

- Australia has the highest Uranium reserves (28%) followed by Kazakhstan (14%), Canada (9%) and Russia (8%).
- One Uranium fuel pellet creates as much energy as one ton of coal or 17,000 cu feet of natural gas.

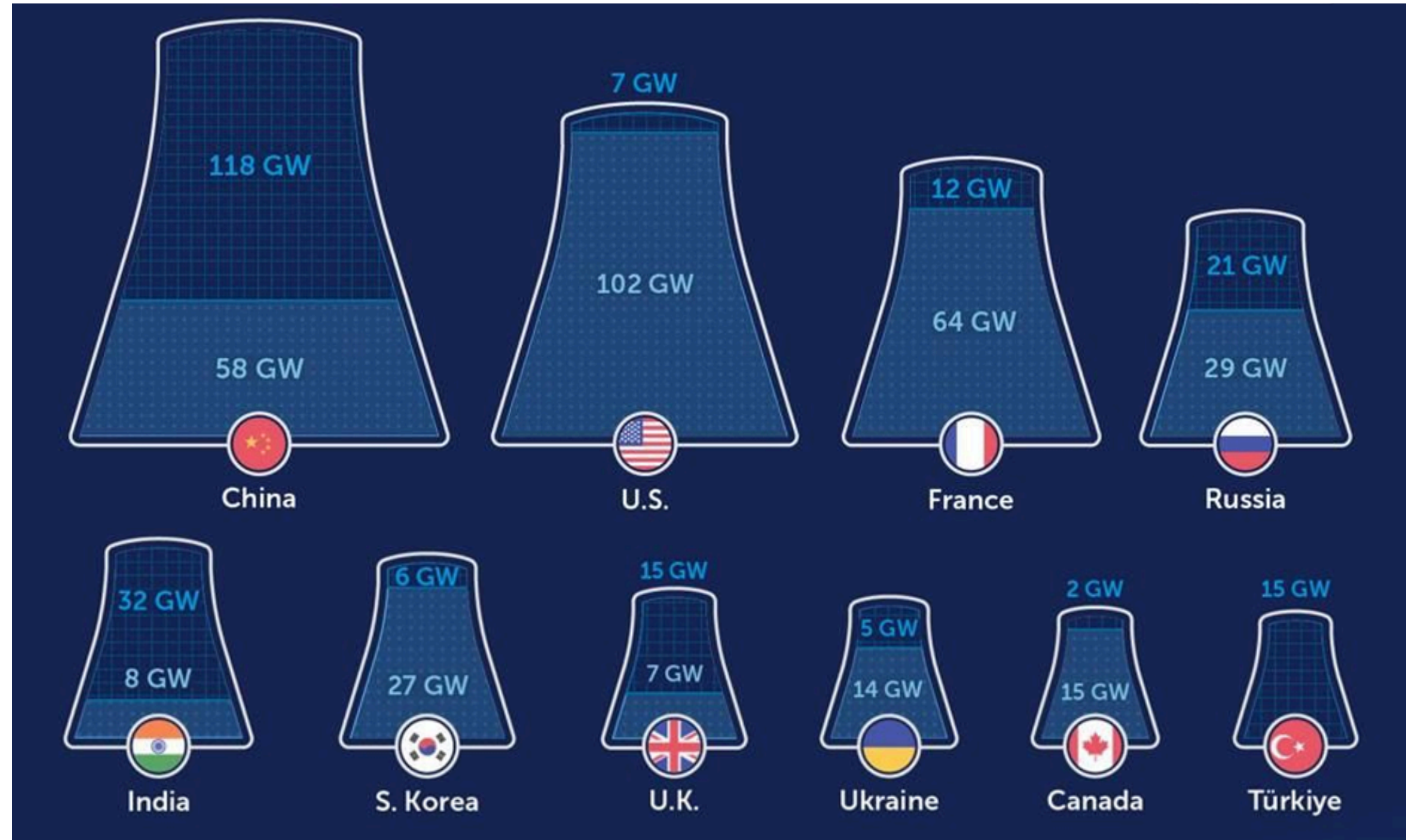
Source: nei.org





# Global Nuclear Power Capacity

- As of late 2023, global nuclear power capacity stood at 396 gigawatts (GW). An additional 299 GW is in development.
- If this prospective capacity comes online, global nuclear capacity could increase to 695 GW, a jump of over 75%.
- India is proposed to have a **10% share in this expansion.**



Source: Global Energy meter;  
Range ETFs/ Visual Capitalist

Prospective Capacity  
Construction, Pre-construction, Announced  
Operating Capacity



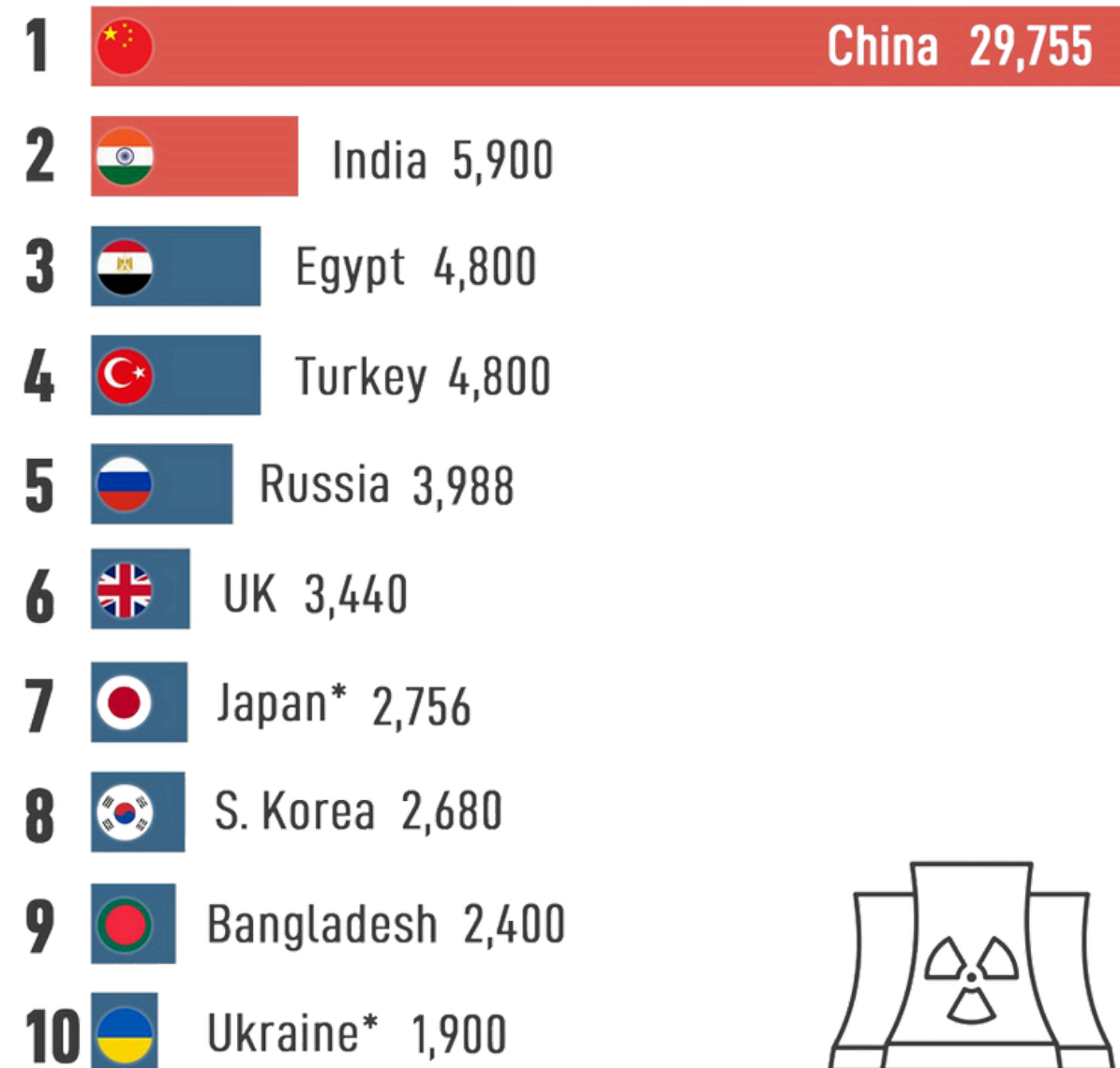
# China and India to lead the growth

A typical nuclear power plant generates enough electricity to power 6,90,000 homes without creating air emissions.

Source: nei.org

## CHINA AND INDIA LEAD GROWTH IN NUCLEAR POWER CAPACITY

Capacity of nuclear reactors under construction (MWe gross)



Note: \*Under Construction figures include a number of units where construction is currently suspended.  
Source: World Nuclear Performance Report 2023 by World Nuclear Association, World Energy Outlook 2023 by IEA

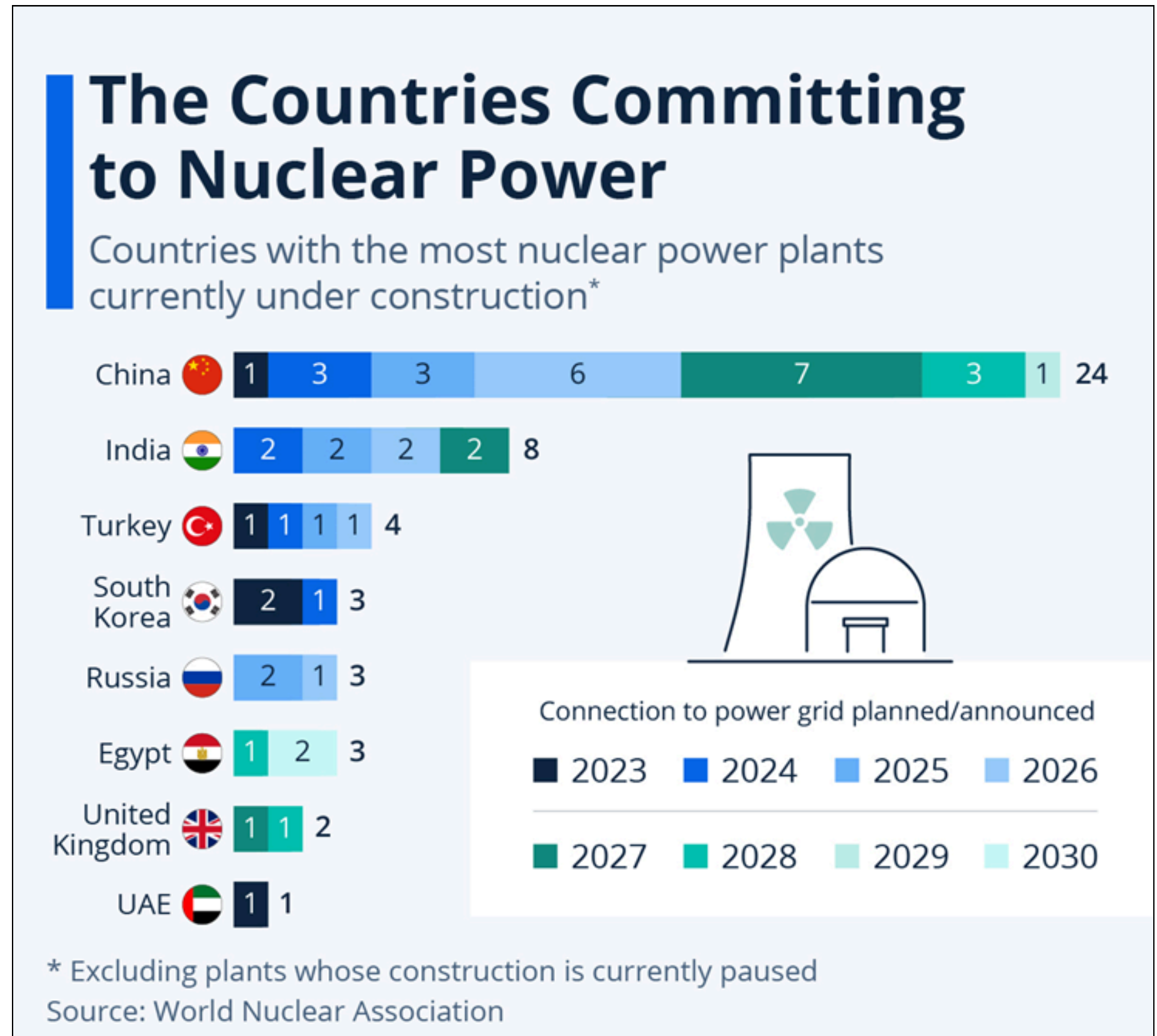


# India's Nuclear Power Future

- *India's Nuclear Power generation capacity is expected to increase by around 75% in the next 5 years.*
- *The installed capacity is projected to grow from 7.48 GWe to 13.08 GWe by 2029.*

Source: Department of Atomic Energy; PIB

*Watch out for companies in this space.*



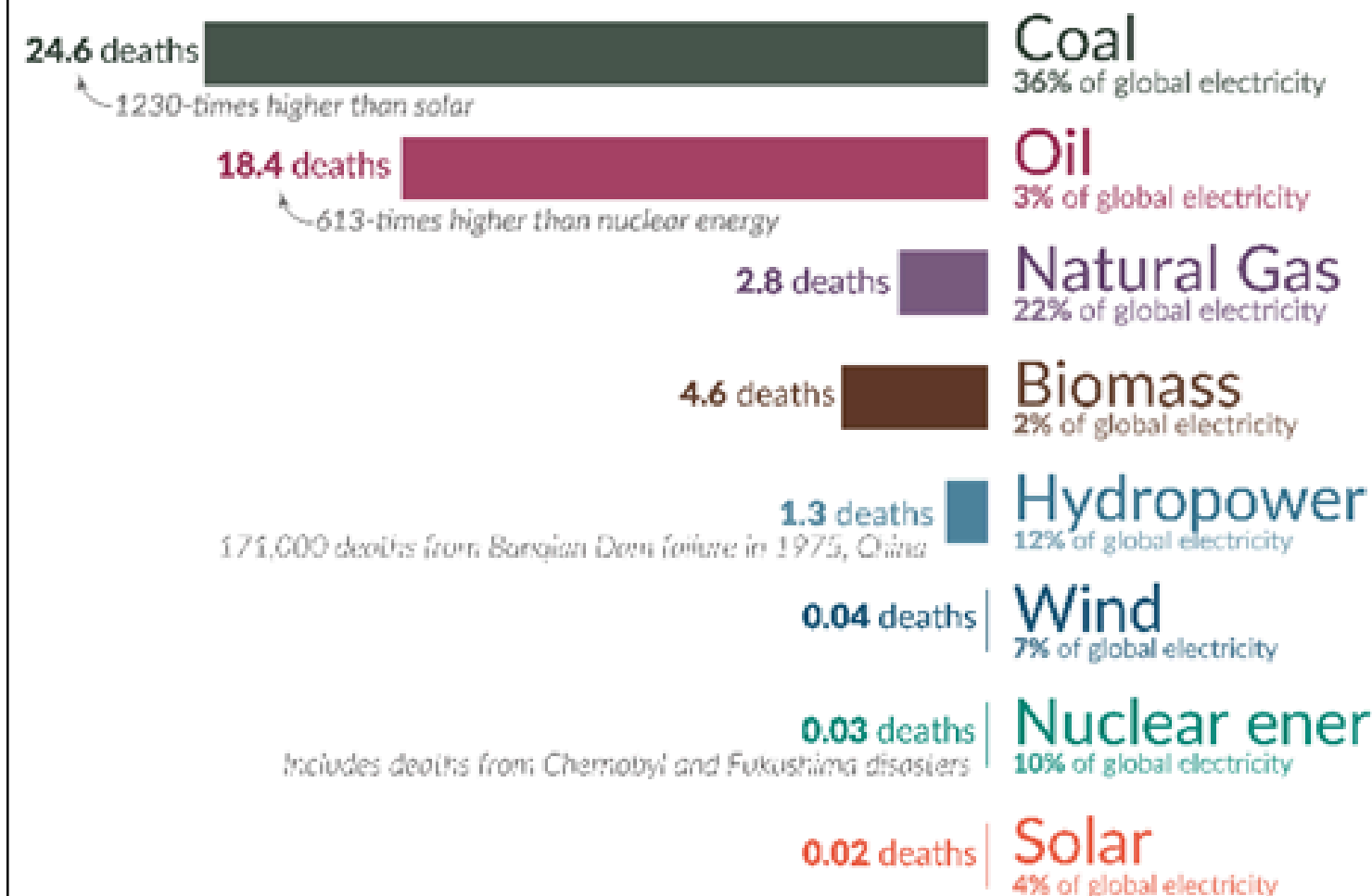


# What are the **safest** and **cleanest** sources of energy?

Our World  
in Data

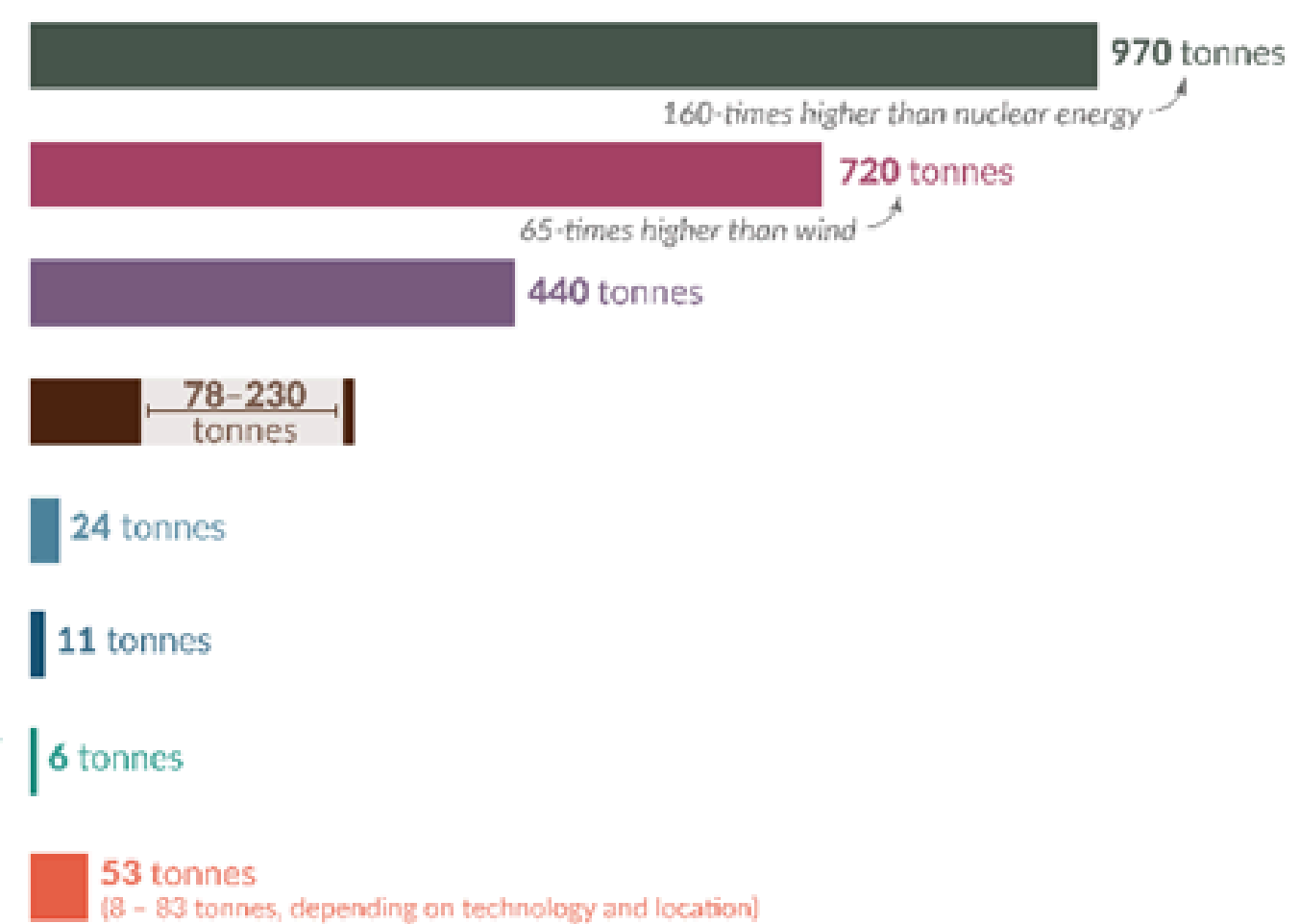
## Death rate from accidents and air pollution

Measured as deaths per terawatt-hour of electricity production.  
1 terawatt-hour is the annual electricity consumption of 150,000 people in the EU.



## Greenhouse gas emissions

Measured in emissions of CO<sub>2</sub>-equivalents per gigawatt-hour of electricity over the lifecycle of the power plant.  
1 gigawatt-hour is the annual electricity consumption of 150 people in the EU.



Death rates from fossil fuels and biomass are based on state-of-the-art plants with pollution controls in Europe, and are based on older models of the impacts of air pollution on health. This means these death rates are likely to be very conservative. For further discussion, see our article: [OurWorldinData.org/safest-sources-of-energy](https://ourworldindata.org/safest-sources-of-energy). Electricity shares are given for 2021.

Data sources: Markandya & Wilkinson (2007); UNSCEAR (2008; 2018); Sovacool et al. (2016); IPCC AR5 (2014); UNECE (2022); Ember Energy (2021).

OurWorldinData.org - Research and data to make progress against the world's largest problems.

Licensed under CC-BY by the authors Hannah Ritchie and Max Roser.

# DISCLAIMER

This report has been prepared by Research Analyst and is solely for information of the recipient only. The report must not be used as a singular basis of any investment decision. The views herein are of a general nature and do not consider the risk appetite or the particular circumstances of an individual investor; readers are requested to take professional advice before investing. Nothing in this document should be construed as investment advice.

Each recipient of this document should make such investigations as they deem necessary to arrive at an independent evaluation of an investment in securities of the companies referred to in this document (including merits and risks) and should consult their own advisors to determine merits and risks of such investment.

The information and opinions contained herein have been compiled or arrived at, based upon information obtained in good faith from sources believed to be reliable. Such information has not been independently verified and no guaranty, representation of warranty, express or implied, is made as to its accuracy, completeness or correctness. All such information and opinions are subject to change without notice. Descriptions of any company or companies or their securities mentioned herein are not intended to be complete. Research Analyst is not obliged to update this report for such changes. Research Analyst has the right to make changes and modifications at any time.

This report is not directed to, or intended for display, downloading, printing, reproducing or for distribution to or use by, any person or entity who is a citizen or resident or located in any locality, state, country or other jurisdiction where such distribution, publication, reproduction, availability or use would be contrary to law or regulation or what would subject Research Analyst or its affiliates to any registration or licensing requirement within such jurisdiction. If this report is inadvertently sent or has reached any person in such country, especially, United States of America, the same should be ignored and brought to the attention of the sender. This document may not be reproduced, distributed or published in whole or in part, directly or indirectly, for any purposes or in any manner.

It should not be considered to be taken as an offer to sell or a solicitation to buy any security. This document is not, and should not, be construed as an offer or solicitation of an offer, to buy or sell any securities or other financial instruments. This report should not be construed as an invitation or solicitation to do business with Research Analyst.

Research Analyst do not take any responsibility, financial or otherwise, of the losses or the damages sustained due to the investments made or any action taken on basis of this report.

**TRUDENCE CAPITAL ADVISORS PRIVATE LIMITED**

**Trade Name:** TRUDENCE CAPITAL

**Registration No.:** INH000015747 **CIN:** U73200MH2024PTC417356

**Registered office Address:** FLT NO 63 1 F CTS NO. 168, KALPATARU, AURA BLDG, LBS MARG OPP R CITY MALL, MUMBAI, MAHARASHTRA, 400086

**Contact No:** 8224900841 **Email Id:** nitin@iiinsight.com

**Compliance Officer:** Nitin Mangal **Contact No:** 8224900841 **Email Id:** nitin@iiinsight.com

**Grievance Officer:** Nitin Mangal **Contact No:** 8224900841

**Email ID:** nitin@iiinsight.com

**Standard warning**

“Investment in securities market are subject to market risks. Read all the related documents carefully before investing.”

**Disclaimers**

“Registration granted by SEBI and certification from NISM in no way guarantee performance of the intermediary or provide any assurance of returns to investors”