

# SMASHING ATOMS

## THE HISTORY OF URANIUM AND NUCLEAR POWER

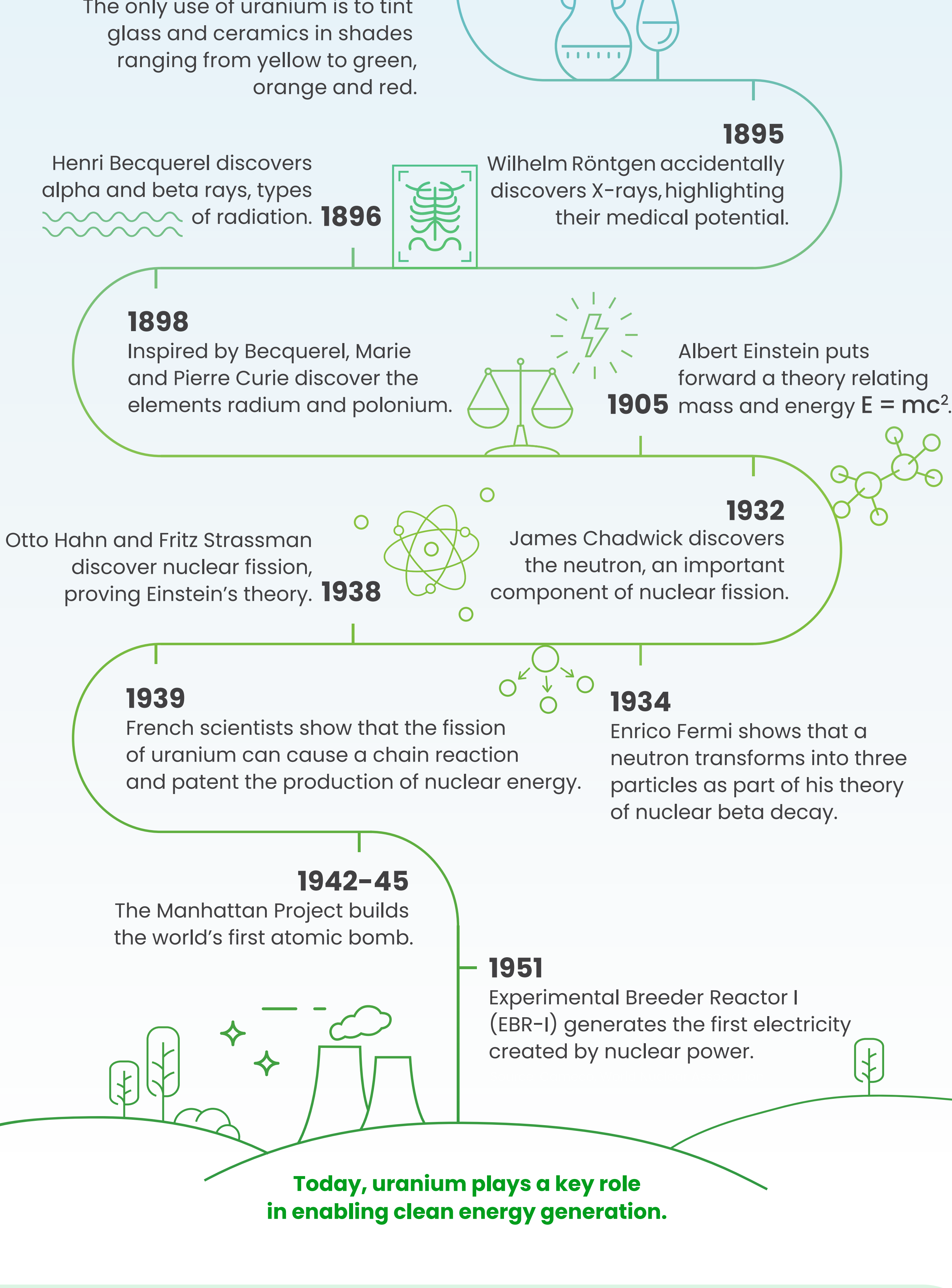


The transition to clean energy requires sustainable and zero-carbon energy sources. Nuclear power offers a clean energy solution powered by uranium.

**But how did uranium and nuclear power come to be?**

### Uncovering Uranium: From Discovery to Fission

Uranium has been in existence since the Earth formed, but it was discovered just over 200 years ago.



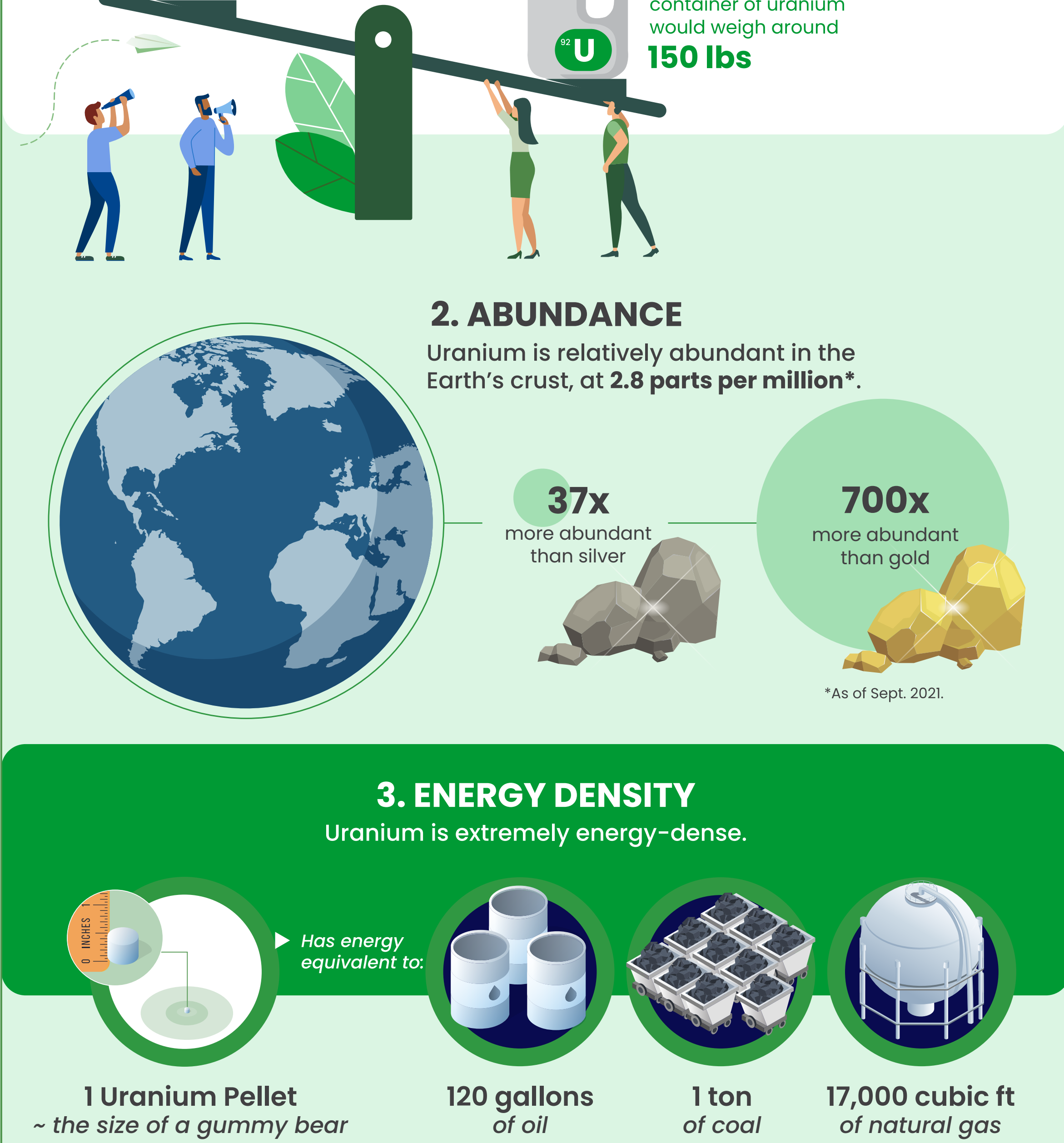
**Today, uranium plays a key role in enabling clean energy generation.**

### The Power of the Atom: Nuclear Power and Clean Energy

Nuclear power harnesses uranium's unique properties to generate clean energy.



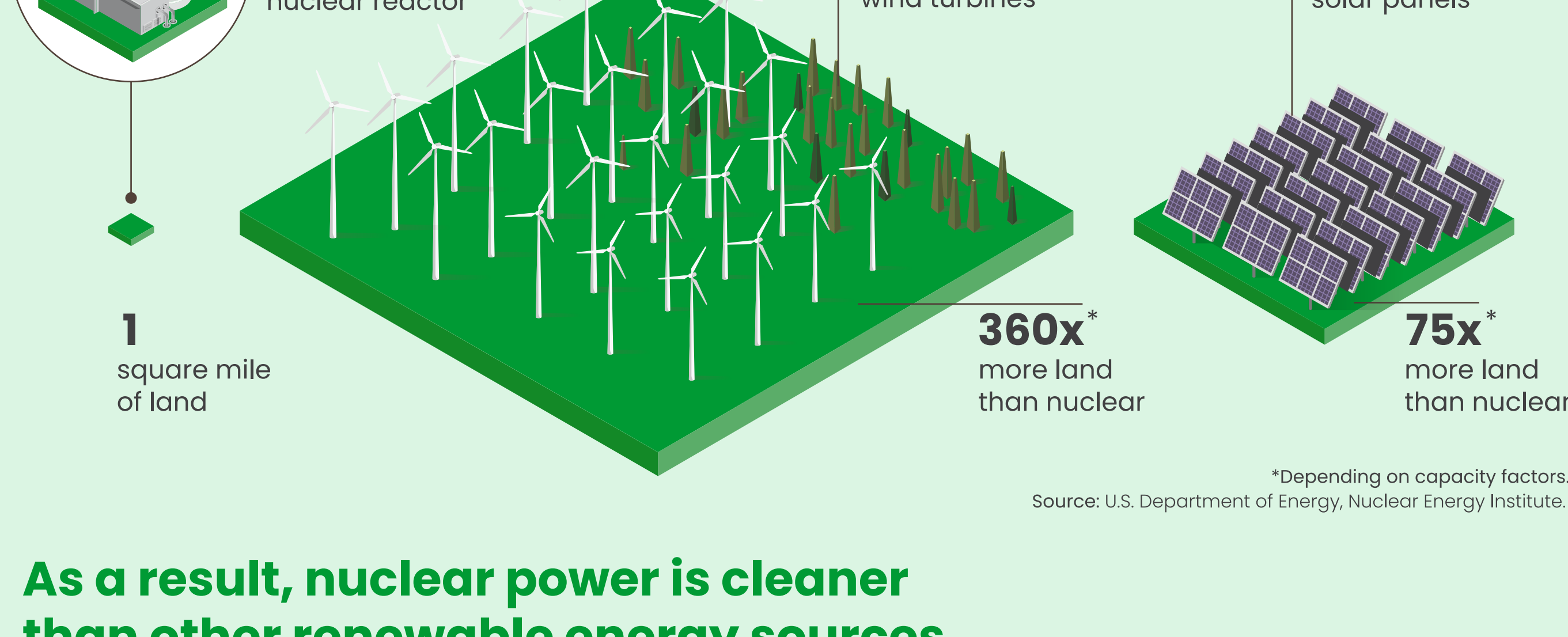
There are 3 notable properties of uranium.



Source: Argonne National Laboratory, Lumen Learning, World Nuclear Association, U.S. Department of Energy.

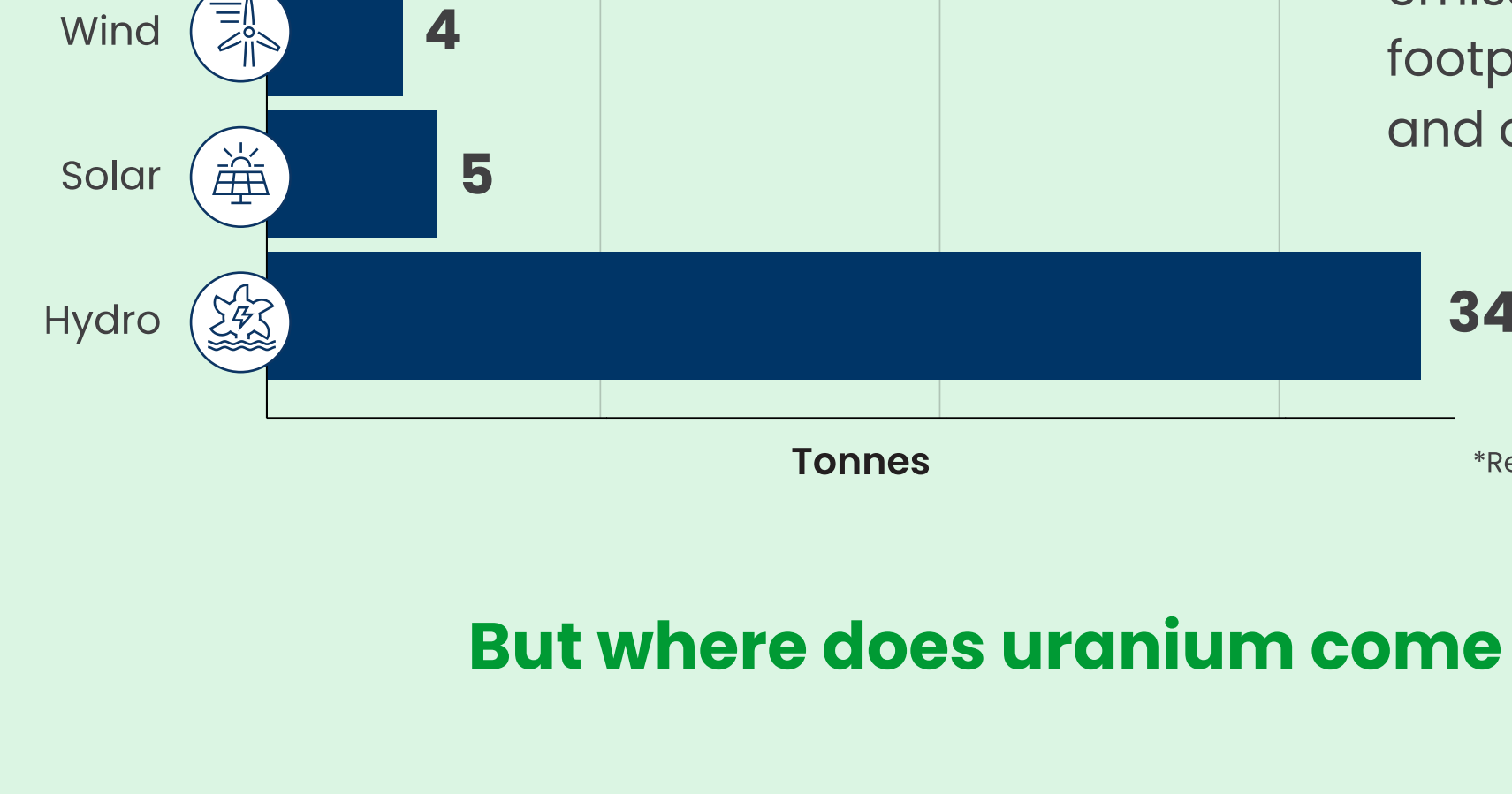
### Uranium's high energy density makes nuclear power more efficient than other clean energy sources.

Generating 1 gigawatt of electricity takes:



### As a result, nuclear power is cleaner than other renewable energy sources, even from a life cycle perspective.

CO<sub>2</sub>-equivalent Emissions Per Gigawatt-hour of Electricity\*



This includes life cycle emissions from raw material footprints, transport, construction and operation of power plants.

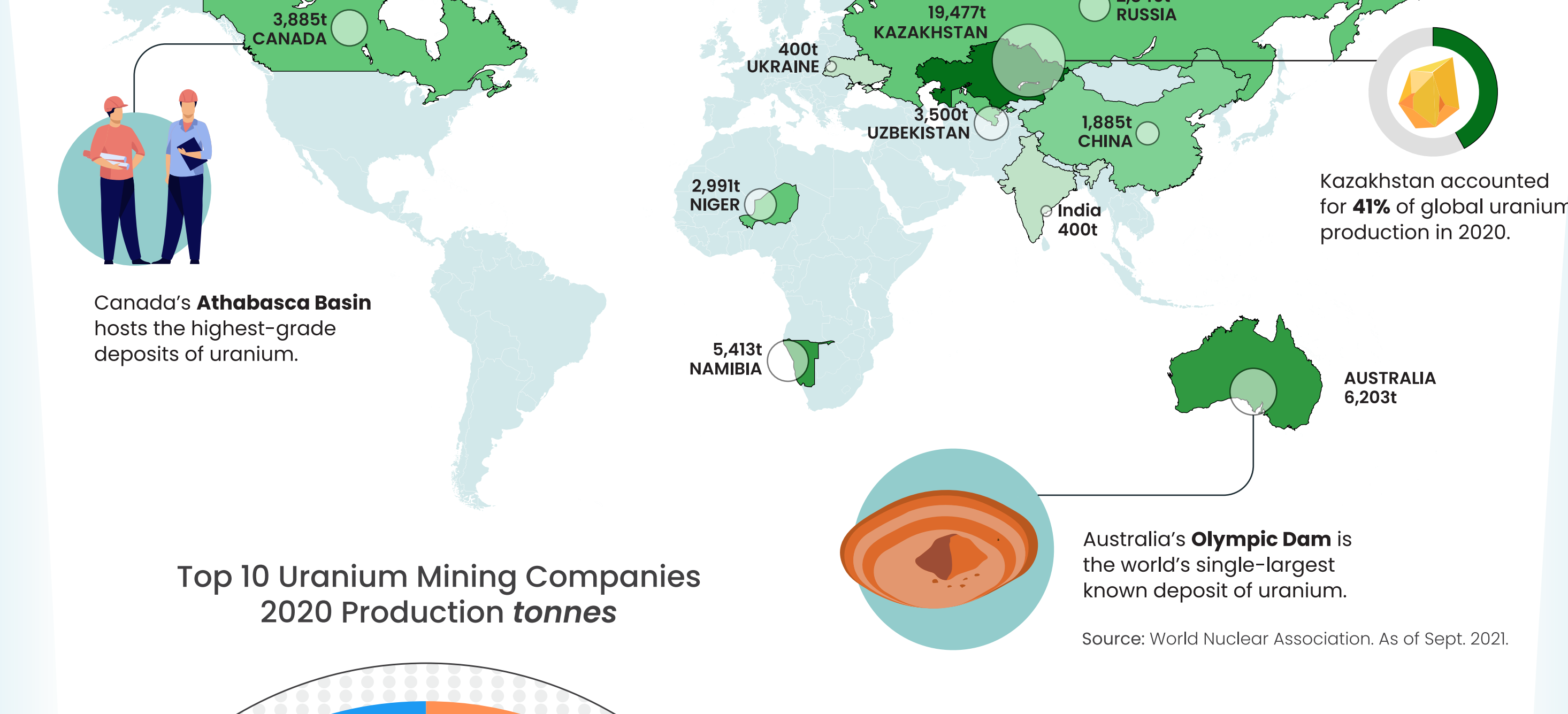
\*Refers to CO<sub>2</sub>-equivalent emissions per GWh of electricity produced over the lifecycle of a power plant.  
Source: Our World in Data.

### But where does uranium come from?

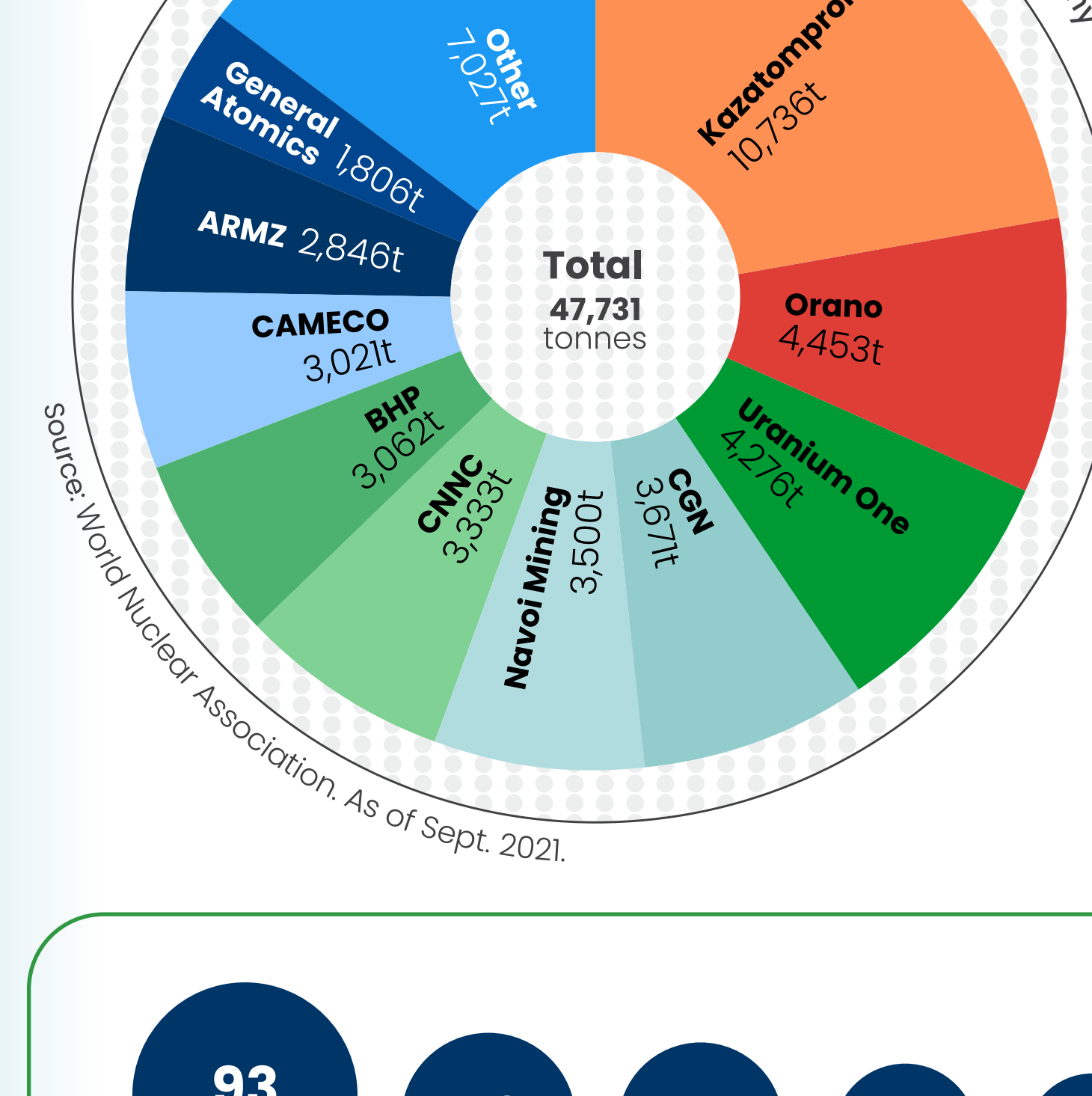
### Uranium Supply and Demand

The supply of uranium relies on miners who extract natural uranium from the ground.

Here are the top 10 uranium producing nations as of 2020.



Top 10 Uranium Mining Companies 2020 Production tonnes



Although uranium mining is a global activity, only a handful of companies account for the majority of production.

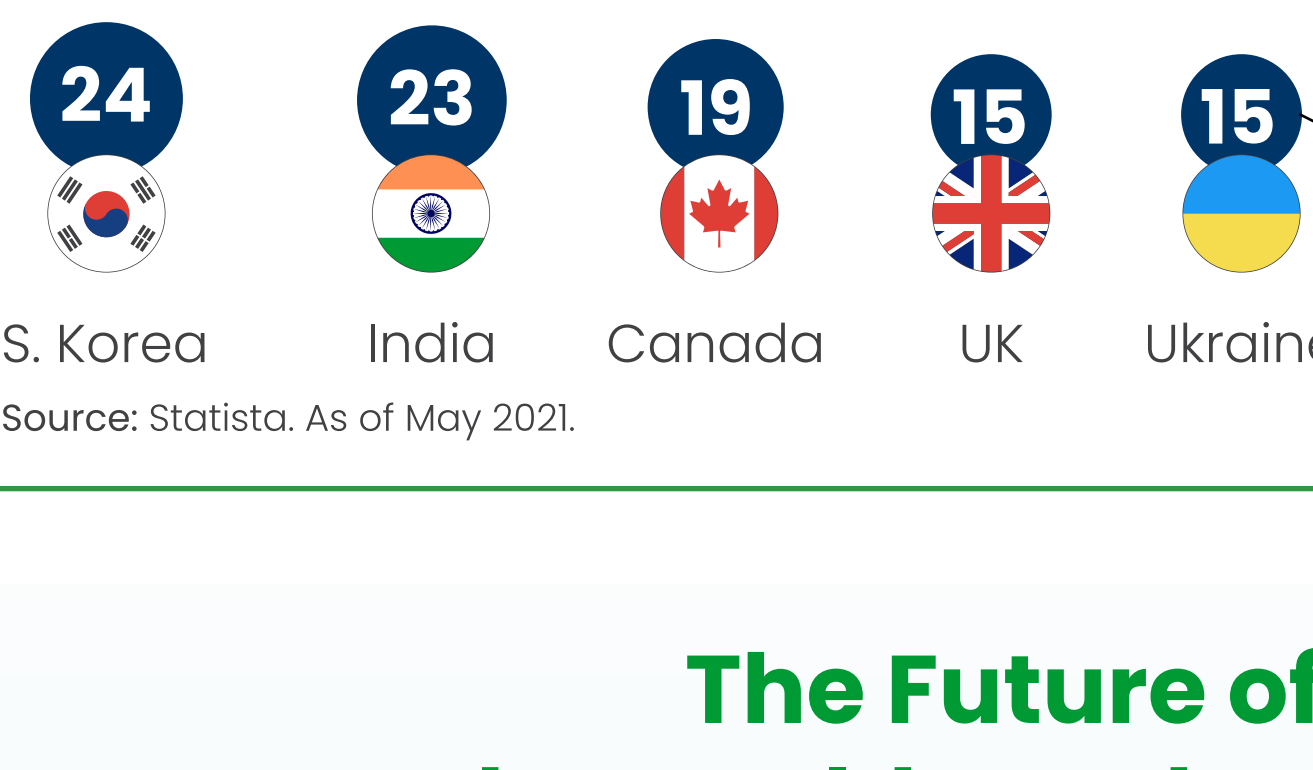
The top 10 uranium mining companies accounted for 85% of global production in 2020.

The demand for this uranium comes from nuclear reactors around the world.

### TOP 10 COUNTRIES FOR URANIUM CONSUMPTION

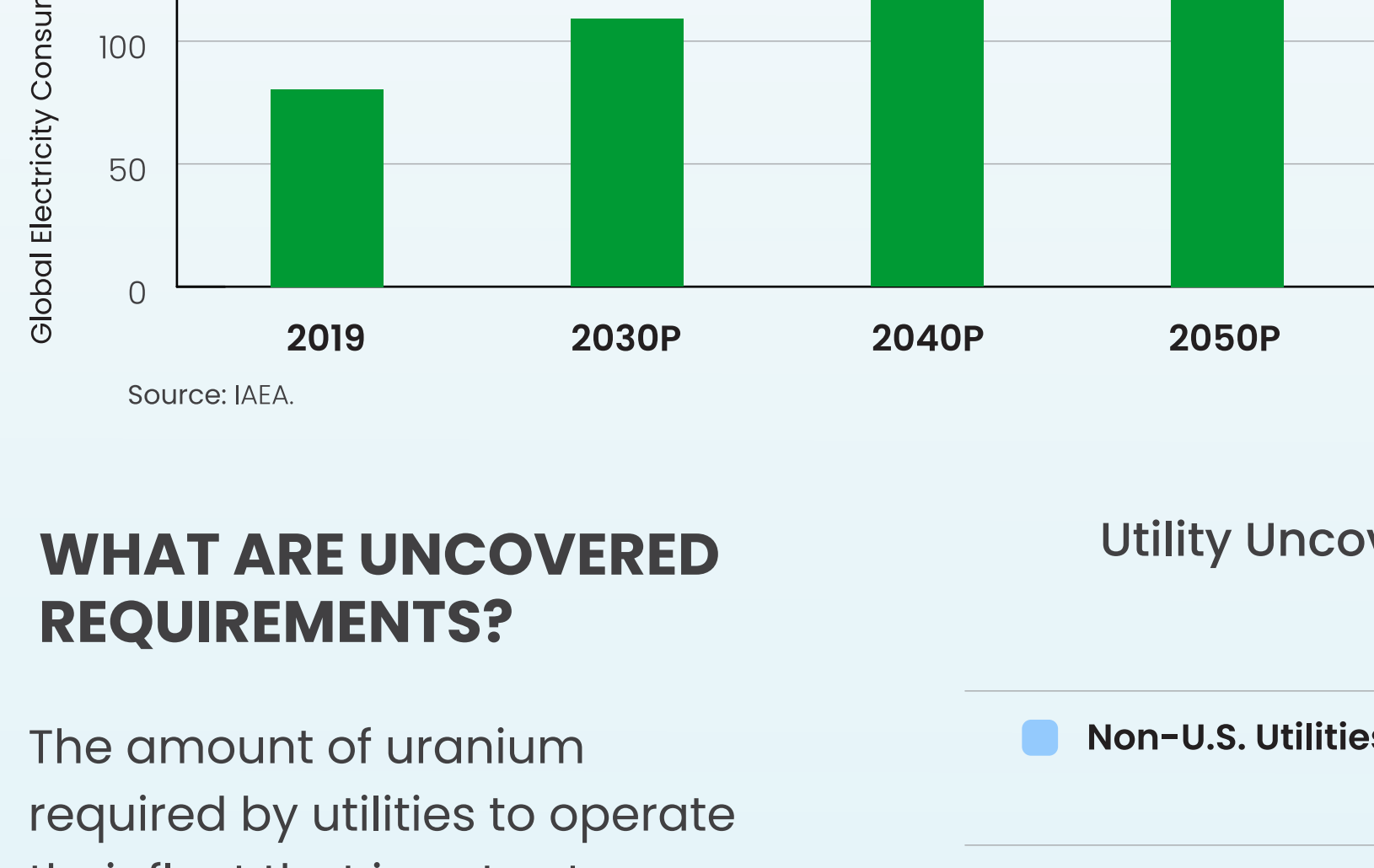
As countries around the world work towards decarbonization, uranium's role in generating clean energy is set to grow.

Number of operational reactors



### The Future of Uranium: The World Needs Clean Electricity

The world's energy needs are constantly growing.



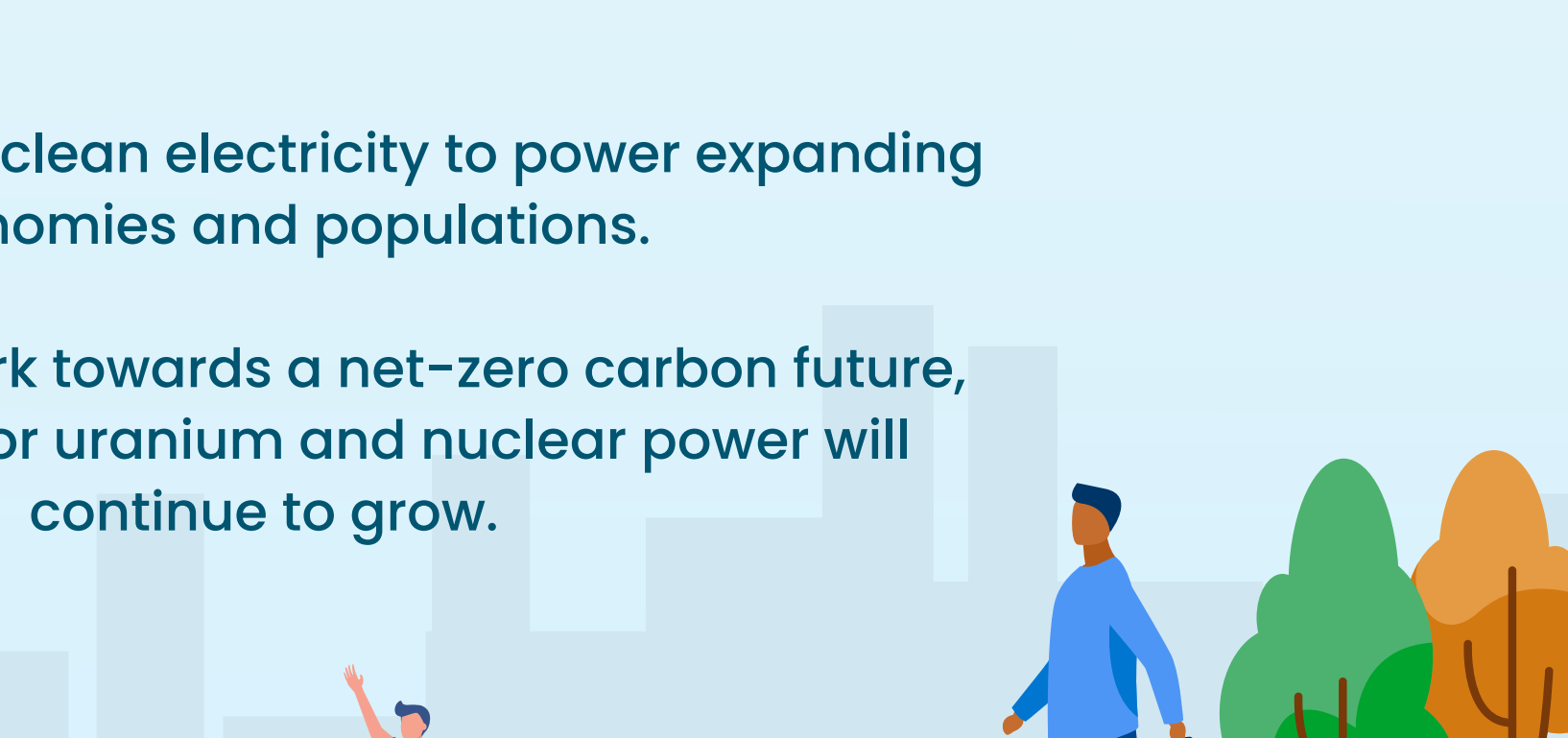
The rising need for clean energy and nuclear power plants is translating into higher demand for uranium.

### WHAT ARE UNCOVERED REQUIREMENTS?

The amount of uranium required by utilities to operate their fleet that is not yet covered by supply contracts.

In 2020, mine production of uranium covered only 74% of world reactor requirements.

Utility Uncovered Uranium Requirements 2020-2035



The world needs clean electricity to power expanding economies and populations.

As countries work towards a net-zero carbon future, the demand for uranium and nuclear power will continue to grow.

**Sprott** Physical Uranium Trust

The Sprott Physical Uranium Trust provides a secure, convenient and exchange-traded alternative for investors interested in holding uranium.

The World's Largest Physical Uranium Fund\*  
TSX: U.U (\$US) | U.UN (\$CA) [sprott.com/uranium](https://sprott.com/uranium)



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