

Chapter 3 part 2

World Natural Resources and Major Energy Players

World reserves of natural resources are the quantities of raw materials that have been identified and can be exploited profitably with current technologies and economic conditions. Their distribution is very unequal across the globe, which creates major geopolitical issues, especially in the context of the energy transition.

Fossil energies

Fossil energies, although their use is declining as part of the fight against climate change, still form the basis of the **world** economy.

- **Oil:** Venezuela has the largest proven oil reserves in the world, followed closely by Saudi Arabia, Canada (thanks to its oil sands), Iran and Iraq.
- **Natural gas:** Russia holds the largest natural gas reserves, followed by Iran and Qatar; these three countries control a very large share of world reserves.
- **Coal:** The United States has the largest coal reserves, ahead of Russia, Australia and China; coal remains an abundant but highly polluting resource.^[1]

Strategic minerals

The transition to a low-carbon economy increases demand for specific metals and minerals, often described as **strategic** or **critical**.

- **Lithium:** Essential for batteries, its reserves are mainly concentrated in Chile, Australia and Argentina; these countries form what is sometimes called the “lithium triangle”.
- **Cobalt:** Also crucial for batteries, more than 70% of world production comes from the Democratic Republic of Congo (DRC), which also holds nearly 50% of global reserves.
- **Rare earths:** This group of 17 metals is indispensable for many high-tech applications (magnets for wind turbines, electronics). China largely dominates this market, with about 35% of world reserves and an almost complete monopoly on refining

Vital resources

Beyond energy and industry, other natural resources are fundamental for life and ecosystems.

- **Renewable freshwater:** These are water resources that are replenished by precipitation. Brazil, thanks to the Amazon basin, has the largest resources, followed by Russia (notably Lake Baikal, which contains around 20% of the planet's liquid surface freshwater) and Canada.
- **Forests:** Forest area is a crucial resource for biodiversity and climate regulation. Russia has the largest forest area in the world, followed by Brazil, Canada, the United States and China.

1. Top 10 crude oil exporters

Main **crude oil** exporters (export value, 2023–2024).

1. Saudi Arabia
2. Russia
3. United States
4. United Arab Emirates
5. Canada
6. Iraq
7. Norway
8. Nigeria
9. Kuwait
10. Brazil

2. Top 10 natural gas exporters

Main natural gas exporters (pipelines + LNG, 2023–2024).

1. United States
2. Russia
3. Qatar
4. Norway
5. Australia
6. Canada
7. Algeria
8. Turkmenistan
9. Malaysia
10. Nigeria

3. Largest oil consumers

Largest oil-consuming countries (barrels per day, 2023).

- United States
- China
- India
- Russia
- Japan
- Saudi Arabia
- Brazil
- South Korea
- Canada
- Germany

4. Largest natural gas consumers

Largest natural gas-consuming countries (recent annual volumes).

- United States
- Russia
- China
- Iran
- Canada
- Saudi Arabia
- Japan
- Germany
- United Kingdom
- India

5. Main nuclear power countries

Countries with the highest **nuclear** electricity production (GWh, around 2024).

1. United States
2. China
3. France
4. Russia
5. South Korea
6. Canada
7. Japan
8. India

9. Spain

10. Sweden