

# A new geopolitics of energy

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## 1- Energy transition and regional policies

The energy transition must respond to a continuous growth in energy demand worldwide, due to demographic changes and improved living standards, while at the same time significantly reducing the carbon content of the energy consumed, which requires major investments.

Fossil fuels still account for more than 80% of the world's energy consumption (excluding firewood). This share is slowly decreasing, but the need for coal (for electricity production in China and India), oil (for transport in countries where the development of electric vehicles is still limited) and even gas remains significant. Investments in the hydrocarbon sector fell by almost 50% between 2015 and 2020 due to the fall in oil prices and then the pandemic. They are increasing again due to increased needs and cost inflation. For example, the scenarios of the International Energy Agency foresee a very strong decrease in oil demand if very strict measures are taken to fight against climate change, but an almost stable consumption in the coming years if priority is given to satisfying needs.

The main renewable energies remain hydro, wind and solar. The growth of wind and solar power production is impressive. Investments in renewable electricity now account for 80% of power sector investments. The share of wind and solar power in meeting total energy needs remains below 5%, but these energies are absorbing a rapidly growing share of energy investments.

## 2- Transformation of the geopolitics of oil and gas

The geopolitics of oil has been deeply affected by two factors:

- the development of shale oil production in the United States, whose imports have dropped from 14 million barrels per day in 2007, a large part of which came from the Middle East, to about 3 million recently. The Quincy Agreement of February 1945 between King Ibn Saud and President Roosevelt, which provided American protection for Saudi Arabia in exchange for access to the kingdom's vast oil reserves, structured the oil industry for more than 70 years. But the United States now has fewer interests in the Middle East.

- On the other hand, the impressive increase in Chinese imports (more than 10 million barrels per day, mostly from Saudi Arabia and Iran) has led China to strengthen its ties with Middle Eastern oil producers. The recent China-sponsored agreement between Saudi Arabia and Iran is a testament to the shifting alliances in the region, placing China as an arbiter and calming relations between Saudi Arabia and Iran.

The geopolitics of natural gas has also been disrupted by the Russian invasion of Ukraine. The deterioration of relations between Russia and Europe resulted in a halt to Russian gas deliveries - about 200 billion cubic meters per year - to Europe, which covered 40% of the EU's consumption. The European Union had to take drastic measures to reduce consumption and find new suppliers. Traditional suppliers (Norway, Algeria, etc.) have been able to marginally increase their exports to Europe, but the big winners are obviously the United States, which can significantly increase

its exports of liquefied natural gas to the old continent. Another consequence of the conflict in Ukraine is the increase in natural gas exports from Russia to China.

### **3- Geopolitics of renewable energies**

The geopolitics of renewable energies differs fundamentally from the geopolitics of hydrocarbons. In the case of hydrocarbons, it is linked to the very important exchanges of oil and natural gas between producing and consuming countries. On the contrary, in the case of renewable energies, energy is produced and consumed locally for the most part. Renewable energies are largely used to produce electricity. Electricity is difficult and expensive to transport over long distances.

Solar and wind power are the only renewable energy sources that are developing very rapidly at the moment. A large part of the equipment is produced in China. This is particularly true for photovoltaic collectors, more than 80% of which are produced in China. In addition, the equipment used to ensure energy transitions requires critical materials that must be imported. Rare earths, which are used in particular to manufacture permanent magnets (neodymium, praseodymium, dysprosium, terbium) for wind turbine generators, are held predominantly by China, which produces 80% of rare earths. A 7 MW wind turbine can contain 1 ton of rare earths. Rare earths are becoming a strategic issue competition to control them is strong.

Other critical metals such as cobalt or platinum used for batteries or fuel cells must also be imported. Cobalt is produced mainly in the Congo, under conditions that pose serious social and human problems (child labour). The mass production of electric cars will require a strong development of lithium production, whose most abundant resources are in Bolivia (salt desert: salar de Uyuni).

Dependence on hydrocarbon imports is thus likely to be replaced by dependence on imports of finished equipment, or in the best case scenario by imports of raw materials.

### **4. Conclusion**

So in the same way that we were confronted with a limitation of hydrocarbon resources, regarding renewable energies, wind and solar, we risk being confronted with a limitation of raw material resources, especially in the case of rare earths or critical metals.