

SOVEREIGNTY THROUGH DECARBONISATION A NECESSARY PATH FOR FRANCE AND EUROPE

Summary – November 2025



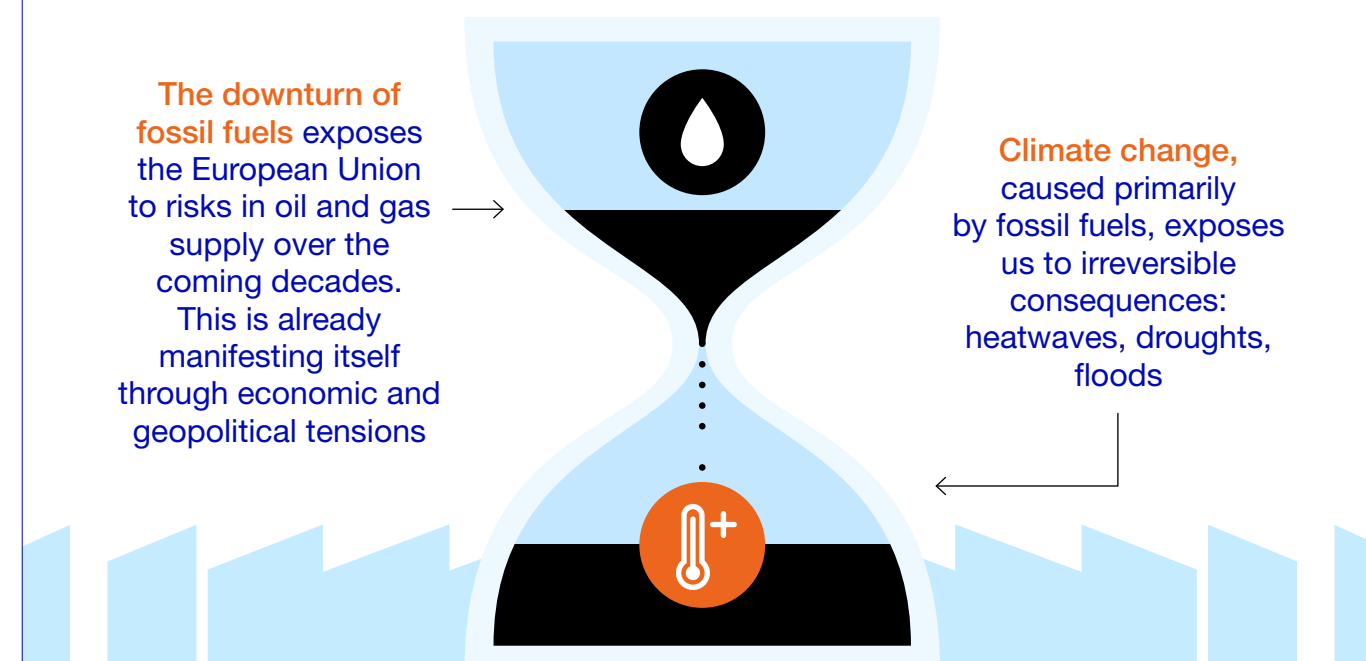
Context



Fossil fuels are central to the functioning of the economy and our ways of life. They expose France and Europe to a dual carbon constraint:

The downturn of fossil fuels exposes the European Union to risks in oil and gas supply over the coming decades. This is already manifesting itself through economic and geopolitical tensions

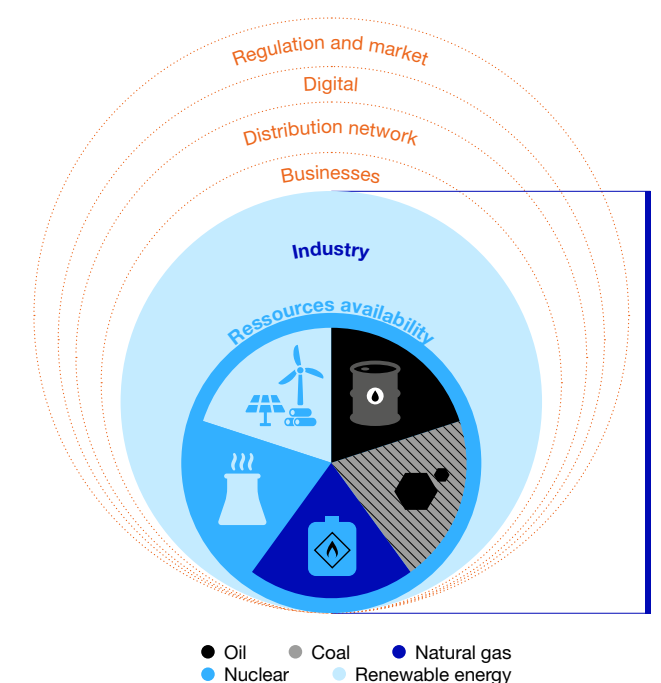
Climate change, caused primarily by fossil fuels, exposes us to irreversible consequences: heatwaves, droughts, floods



Today, **this dependency on fossil fuels also threatens the sovereignty of France and Europe**. No form of sovereignty can be sustainably realised without sovereignty in the energy sphere. In the current uncertain international landscape, **decarbonisation becomes an imperative for our sovereignty**, in order to guarantee the long-term competitiveness and resilience of our society and economy.

Sovereignty is multidimensional. This report examines the vulnerabilities of our sovereignty in the domain of energy, from energy production to energy consumption, and the conditions underpinning it.

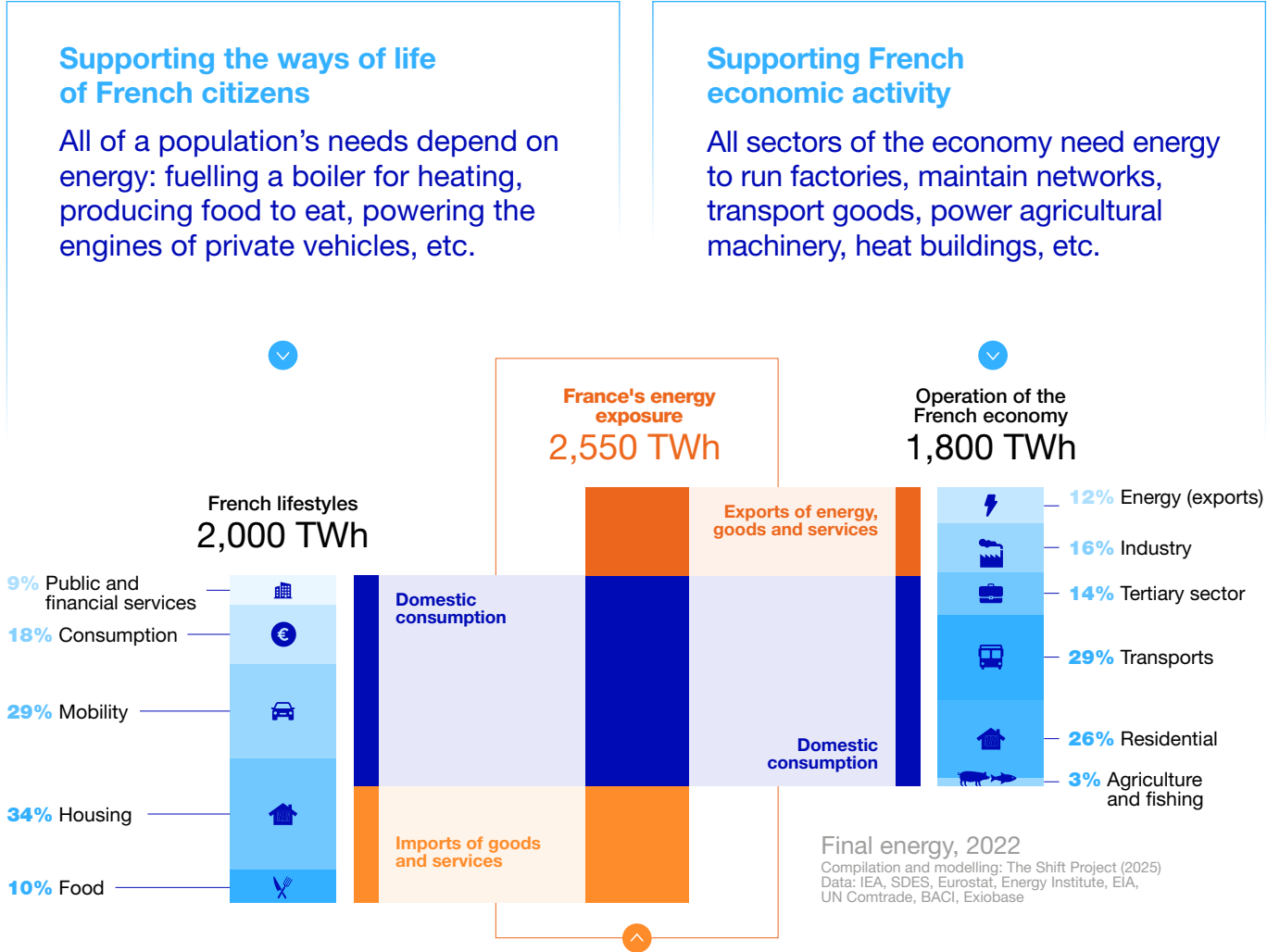
INTERDEPENDENCIES WITHIN THE ENERGY SECTOR



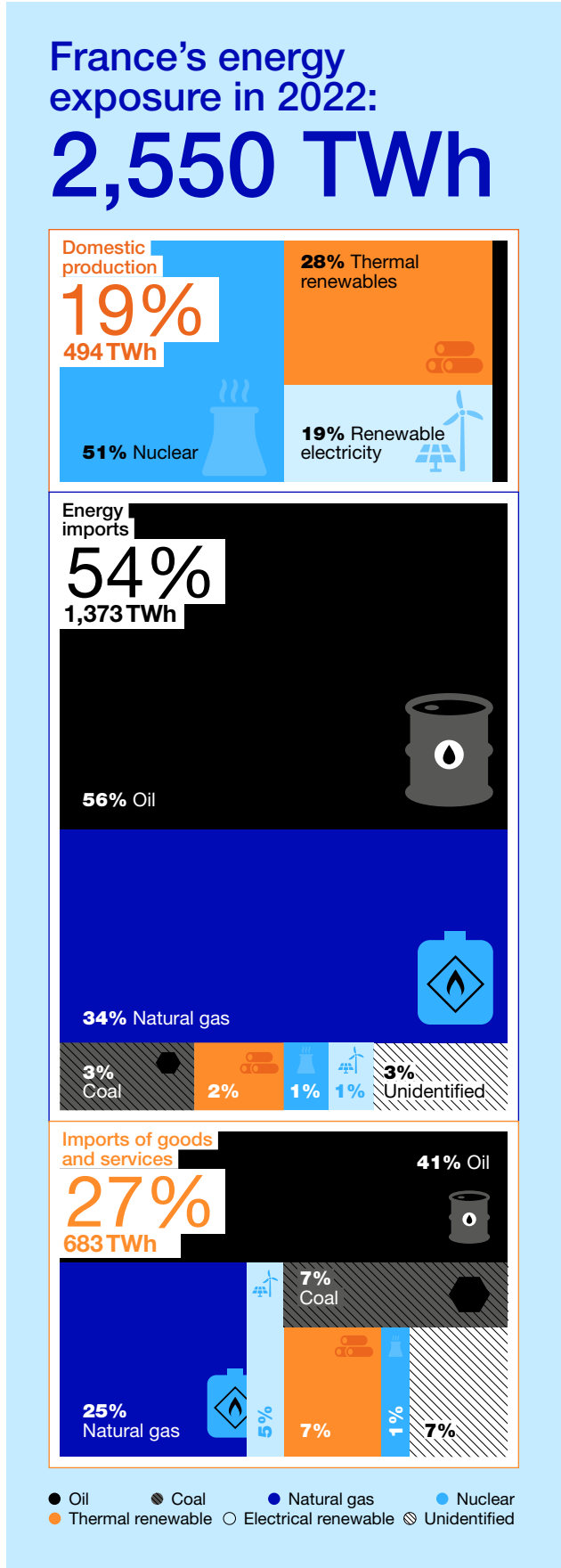
Perimeter of The Shift Project

Measuring the energy required for France's functioning: energy exposure

To understand France's sovereignty in energy terms, it is necessary to measure all the energy required for the functioning of the country:



Key messages



2,550 TWh are required for France's functioning, in order to support the French population's lifestyles and the national economy. This total reflects **France's exposure to various types of energy risks**: fossil-fuel supply, industrial dependence, geopolitical tensions...

This represents:

5x more energy than that produced within French territory

70% from fossil energies (mainly oil and natural gas)

Although France produces enough electricity overall to meet its current electricity demand, **this should not obscure the share of fossil energies still used**, in France and abroad, for transport and heating, as well as for producing the goods and services we consume.

80% of the energy required for France's functioning is consumed in France or in Europe. Decarbonising at the European scale would significantly strengthen France's sovereignty.

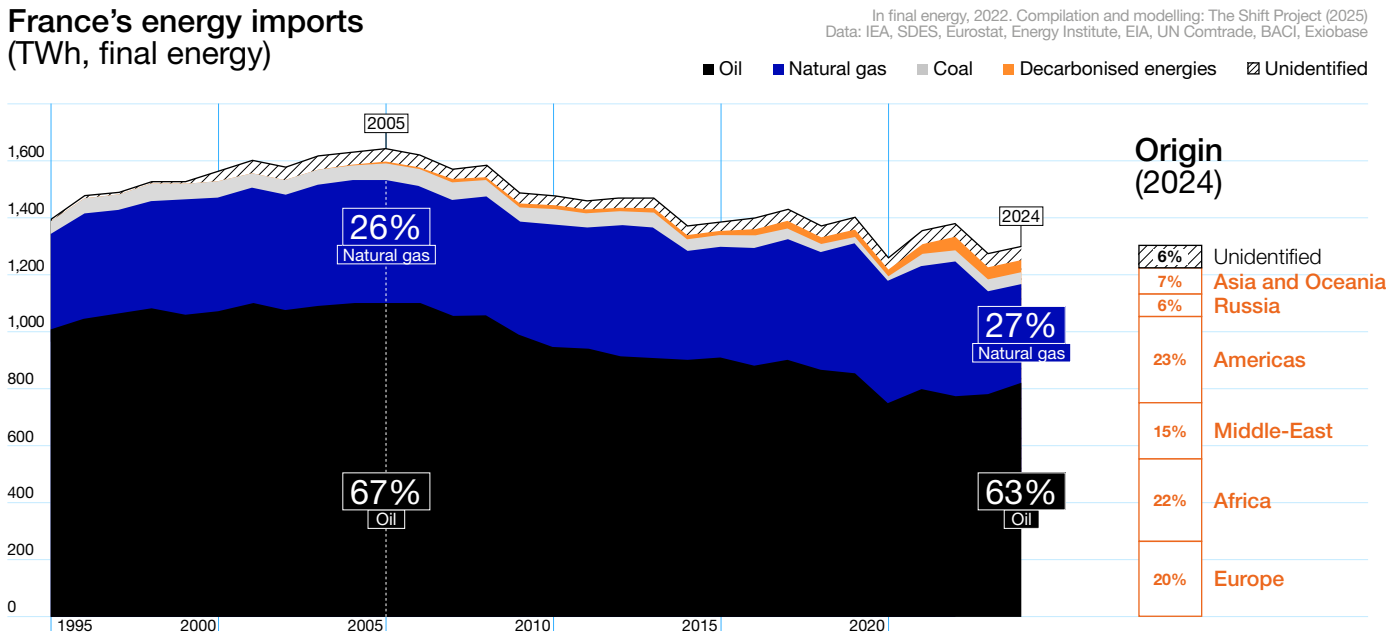
1/4 of France's energy exposure is linked to the "embedded energy" contained in imported goods and services: **meaning more than the total amount of energy the country produces annually.**

DIRECTLY IMPORTED ENERGY

imports composed of 90% oil and gas

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France's energy imports (TWh, final energy)



France imports three times more energy than it produces. Composed almost exclusively of oil and gas, France's energy imports have been declining since 2005, driven by a reduction in imported oil. At the same time, oil consumption has fallen across all sectors except transport.

France's energy suppliers

Europe:

In the early 2000s, three? European countries (the Netherlands, Norway, the United Kingdom) reached their peak oil and gas production and supplied 35% of the energy imported by France, mainly oil. Since then, their oil production has halved and gas production has fallen by one third, **reducing these imports to 20%**, now mostly gas.

Americas:

Since 2010, the boom in unconventional hydrocarbons in the United States has revived our imports from America. The opening of LNG terminals from 2017 **onwards has leveraged our LNG imports**, enabling the United States to replace Russia as our leading supplier as of 2022.

Africa:

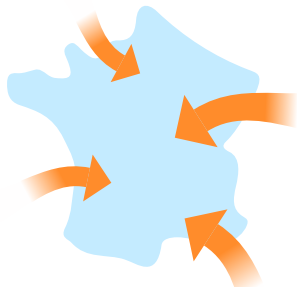
Since the late 2000s, African oil production has fallen by one third. At the same time, French energy imports from Africa, mainly oil, **declined before recently rising again to 22%**, partly offsetting the drop in Russian supplies.

Middle-East:

At the end of the 1990s, 25% of imported energy came from the Middle East. Since then, the region has intensified its trade with rapidly expanding Asia, **reducing its energy exports to France to less than 15%**, now including a small share of gas.

Russia:

During the last decade, Russia was our main supplier of oil and gas, accounting for 20% of our imports. Sanctions imposed since 2022 **have cut our imports by more than two-thirds**, mainly oil.



IMPORTED GOODS AND SERVICES

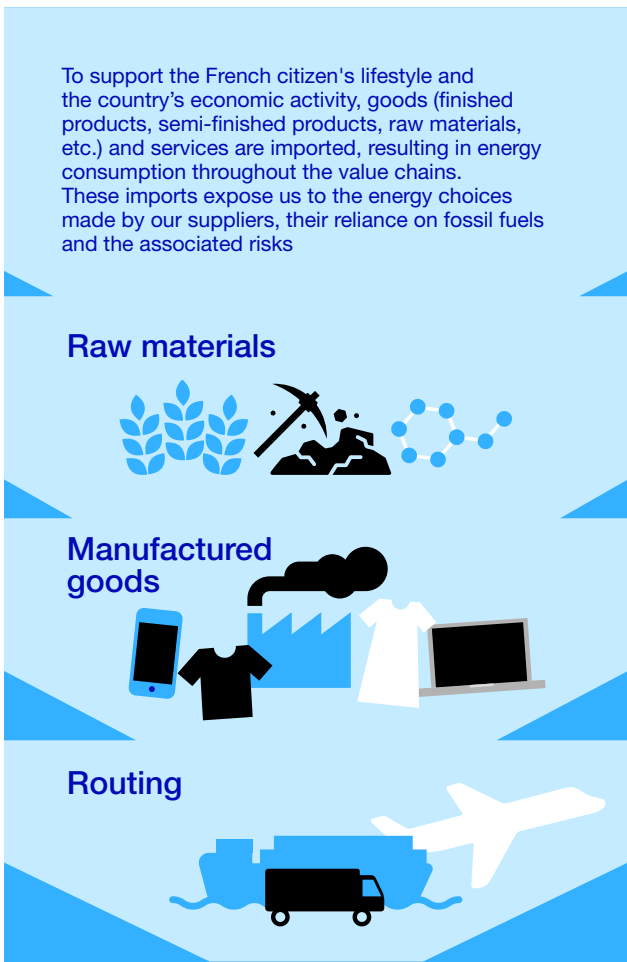
An invisible energy and industrial dependency.

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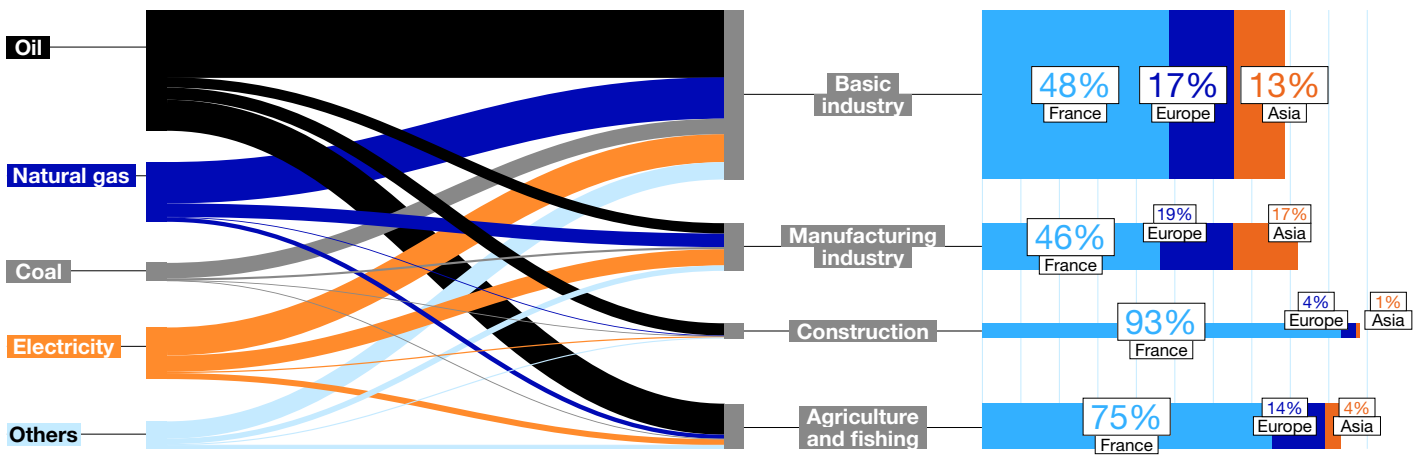
The energy embedded in goods and services imported by France accounts for **27% of its energy exposure** — more than its own energy production. Even by doubling its energy infrastructure (nuclear power plants, wind farms, hydroelectric dams...), France would still not have enough energy to produce all the goods and services it consumes.

Imported goods and services represent **half of France's carbon footprint**. 80% of their production is reliant on fossil fuels, revealing a persistent global dependency on oil, natural gas, and coal. Sourcing goods and services through value chains heavily dependent on hydrocarbons therefore indirectly exposes France to supply risks, price fluctuations, and geopolitical tensions, as well as worsening its climate impact.

France's leading supplier of goods and services is Europe, for key sectors such as basic industries (plastics, steel, cement...), manufacturing industries (agri-food, machinery, automotive...), agriculture and fisheries. **France's main non-European supplier is Asia**, in both basic and manufacturing industries (textiles, technologies, consumer goods...). Notably, **China holds a near-monopoly** on many critical materials (rare earths, silicon...) and equipment (solar panels, batteries...) **essential for the energy transition**.



Which energies for which productions? (2022)



Compilation and modelling: The Shift Project (2025) — Data: IEA, Eurostat, Energy Institute, EIA, UN Comtrade, BACI, Exiobase

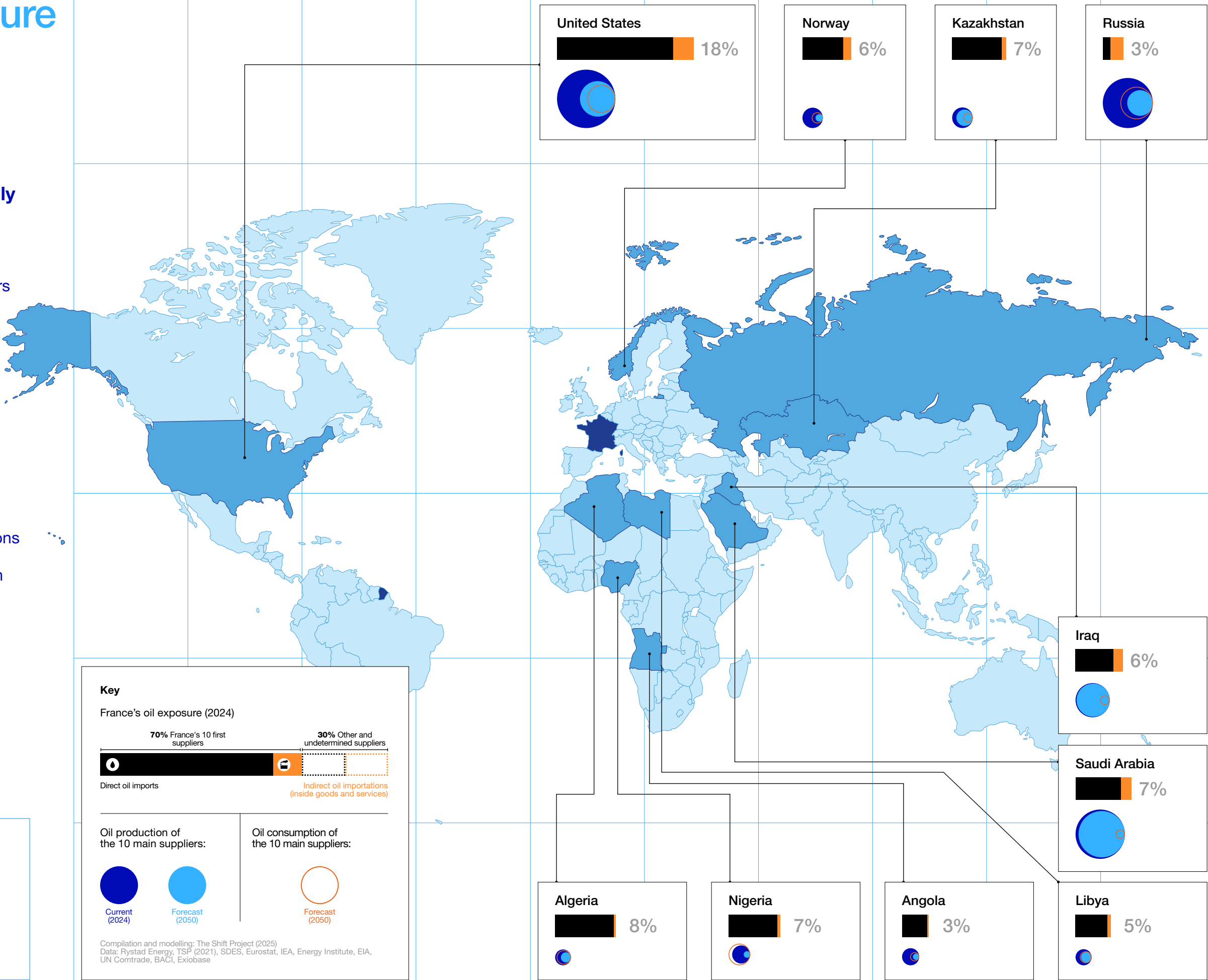
France's exposure to oil



Seven of France's ten main oil suppliers are at risk of seeing their production decline sharply by 2050. The least exposed producers are located in the Middle East and Central Asia.

The production volume of six suppliers (Algeria, Angola, Libya, Nigeria, Norway, Russia) could fall below their own consumption levels, threatening their export capacity and thus France's supply. Furthermore, consumption in the Middle East, Africa and Asia could continue to rise by 2050, creating risks of supply diversion to France's detriment .

In these scenarios, the widening gap between oil production and consumption could exacerbate tensions over global supply. This underscores that dependency on this resource can be used as geopolitical leverage.



Reading note:

In 2024, the United States produced 18% of the oil imported by France, directly (as crude or refined products) or indirectly through the embodied energy contained in imported goods and services.

France's exposure to natural gas

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En 2024, plus de la moitié
In 2024, more than half of
global natural gas production
is concentrated in
the United States, Russia
and the Middle-East.

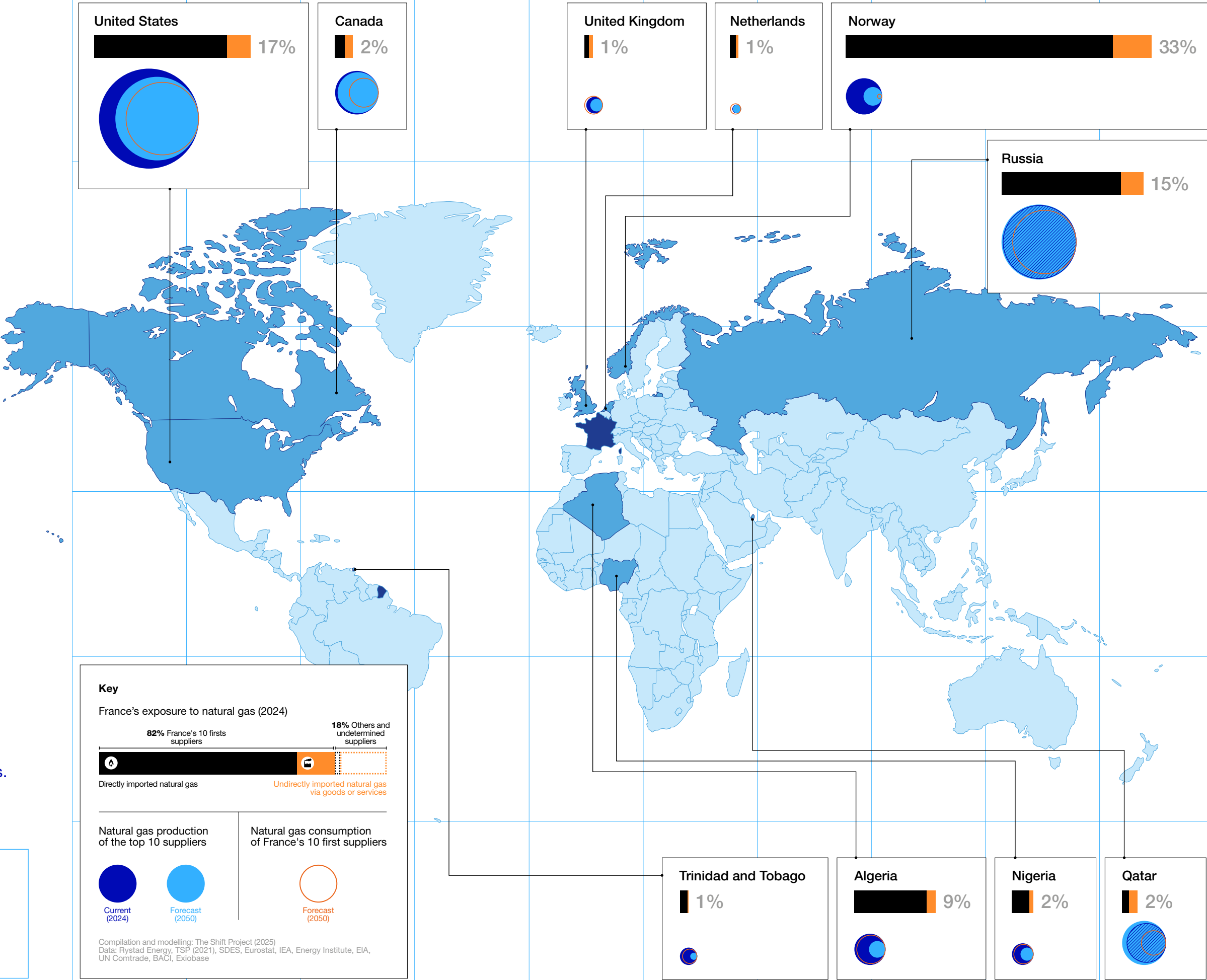
By 2050, this monopoly
could become even
more pronounced, with
production in Norway,
Africa and South America
projected to decline by
that time.

Diversifying supply sources and
retaining freedom of choice among
natural gas suppliers may therefore
become increasingly difficult. Even
Norway, the last major European
producer and France's main supplier,
may see its export capacity decline
significantly.

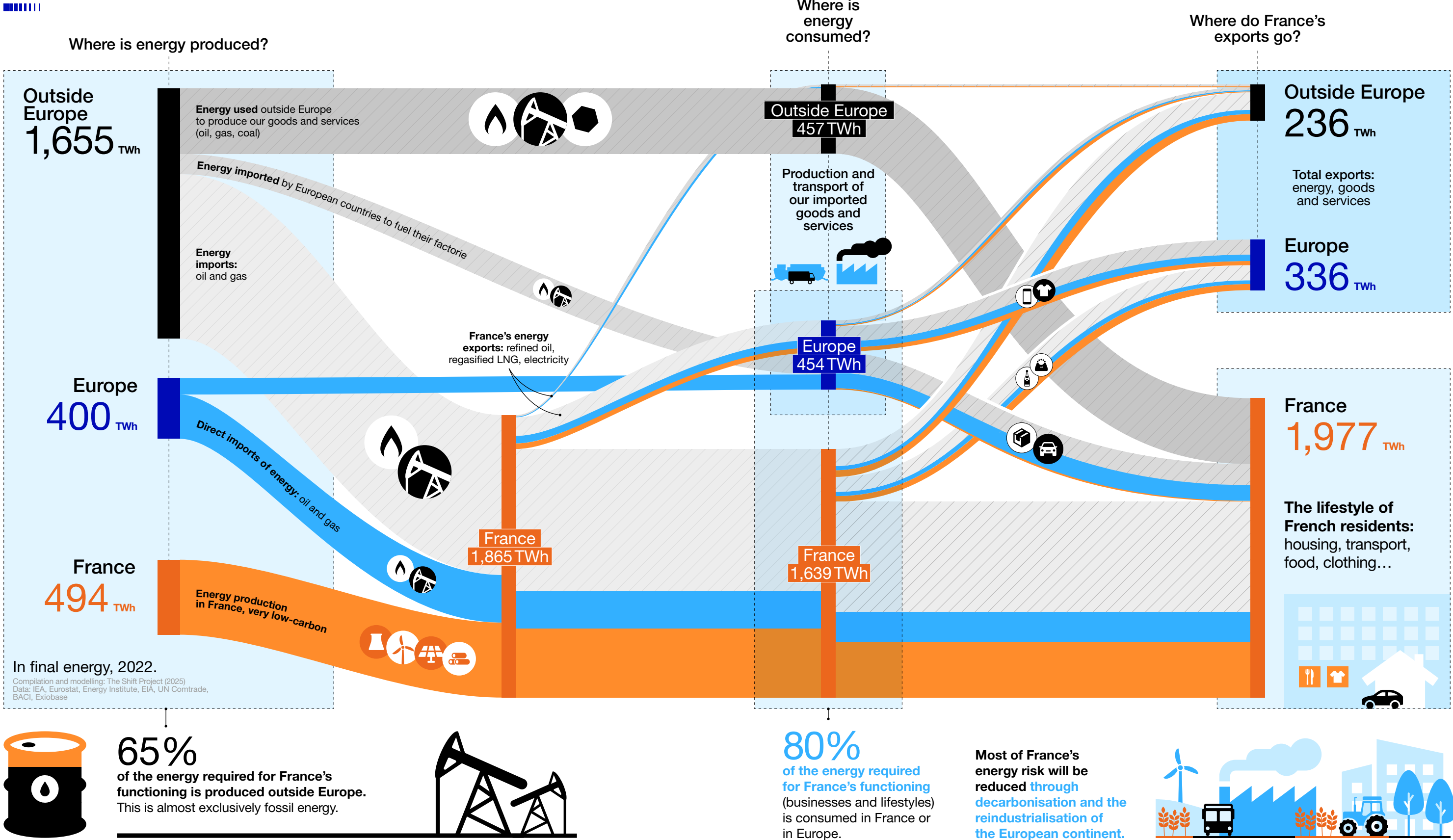
As global demand for natural gas
increases—particularly in countries
of the Global South—there is a risk
that France could be crowded out
by 2050. Added to this are industrial
risks linked to growing dependency
among importing countries
concentrated within geopolitical blocs.

Reading note:

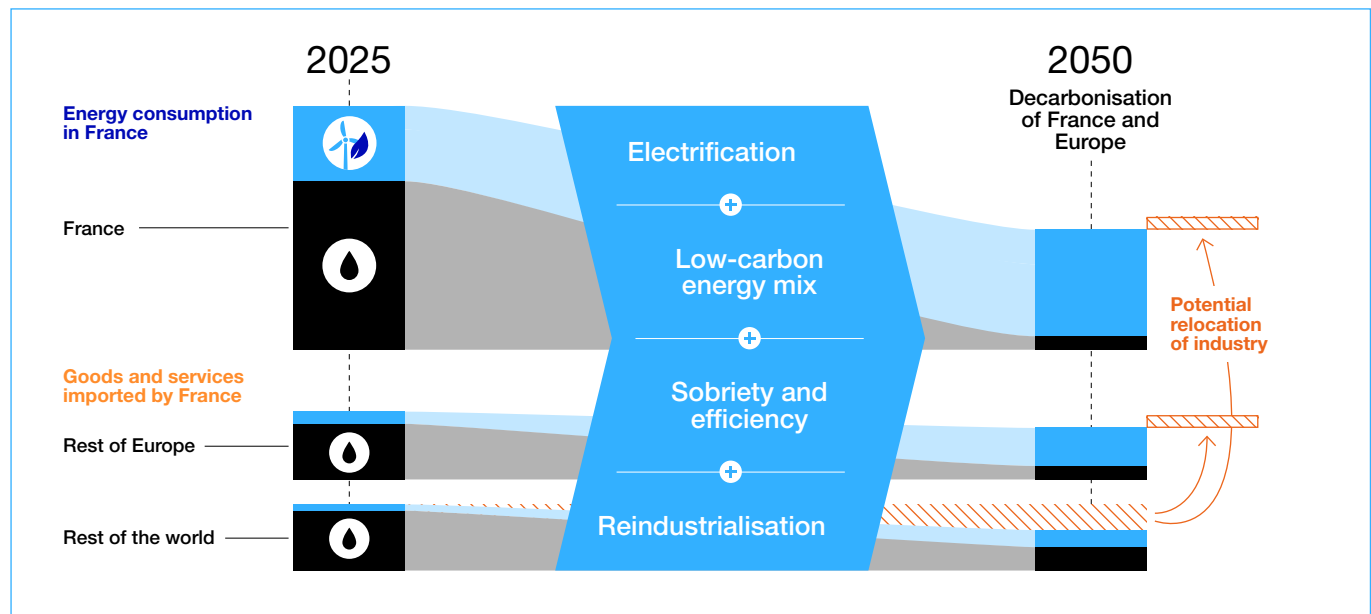
In 2024, Norway produced 33% of the natural gas imported by France, either directly or indirectly when incorporated into imported goods or services.



France's energy exposure: Sovereignty and dependencies to Europe and the rest of the world



The Shift Project's recommendations



1

Planning for decarbonisation and reindustrialisation on a French and European scale, to boost long-term competitiveness

By 2050, phasing out fossil fuels is essential to address their depletion, geopolitical pressures and climate change. This requires rigorous planning and decisions that leave no room for regret:

- **A concrete operational plan to be launched as soon as possible**, rather than risky technological gambles.
- **Realistic transformations** rather than abrupt upheavals in our ways of life.

Decarbonisation is an essential prerequisite for reindustrialisation, to ensure that European industries maintain sustainable control over their energy supplies at competitive costs in the long term.



2

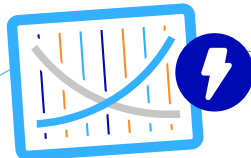
Electrify uses and plan the phase-out of fossil-fuel infrastructure

Roll out electrification on a large scale across all possible sectors:

- **Transport:** electrify the vehicle fleet (cars and lorries) and encourage modal shift
- **Buildings & heating:** roll out heat pumps and comprehensive thermal refurbishments
- **Industry:** widespread adoption of low-carbon electric processes.

Reserve low-carbon fuels for uses that are most difficult to electrify: heavy industry, defence, agriculture, maritime and air freight. Biofuels, biogas, hydrogen and synthetic fuels will only be available in limited quantities, so trade-offs will be necessary.

Organise the phased phase-out of fossil-fuel infrastructure: phasing out of gas and oil-fired boilers, reduction of gas networks, conversion of petrol stations.



3

Support all low-carbon energy sectors – renewable energies (solar, wind, hydro, biomass, etc.) as well as nuclear – to achieve a robust and diversified low-carbon energy mix.

Address the challenges of mass electrification and low-carbon reindustrialisation in France and across Europe. By 2050, nuclear power will only be able to supply half of our electricity: the rest will have to come from renewable electricity sources, which can be deployed more quickly.

Deploy all low-carbon generation options in parallel to limit risks in each sector, whilst ensuring the balance of the electricity system:

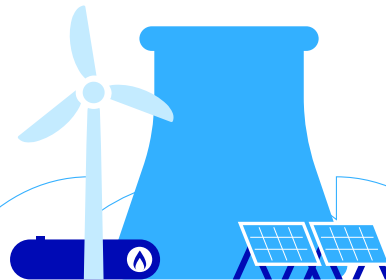
Renewable electricity and thermal energy:

- Roll-out of solar power (rooftop, ground-mounted plants, agrivoltaics)
- Roll-out of wind power (onshore and offshore)
- Maintaining hydroelectric generation
- Developing the biogas, biofuels, renewable heat and hydrogen sectors

Nuclear power:

- Extending the lifespan of the existing nuclear fleet provided it remains safe
- Immediate commencement of construction of new reactors
- Exploring depleted uranium technologies

Adapting the electricity grid to rising demand and intermittency (interconnections, storage, flexibility measures, etc.).



4

Managing and reducing energy demand:

efficiency and moderation France's energy consumption could be halved by 2050, ensuring a sovereign and carbon-free energy system. This requires **robust policies** in the following areas:

- **Efficiency** (thermal refurbishments, high-performance electrification, etc.)
- **Conservation** (appropriate infrastructure, regulations, incentives, taxation, etc.).



5

Addressing energy sovereignty in a comprehensive manner and informing the public debate:

The public debate remains overly focused on electricity, which is often reduced to the dichotomy between renewables and nuclear power, **whilst fossil fuels constitute the crux of the issue.**

Current energy balances, which focus on domestic consumption, **fail to take into account the 'grey energy' associated with our imports and exports.** Forward-looking analyses could now **incorporate the metric 'energy exposure'.**



The Shift Project is a French think tank advocating the shift to a post-carbon economy. As a non-profit association recognised as serving the public interest and guided by scientific rigour, our mission is to inform and influence the debate on the energy transition in Europe. Our members are major companies that seek to make the energy transition their priority.

www.theshiftproject.org

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