



RESEARCH VIRUS

**ENVIRONMENTAL
TRANSITION**

TEVA MEYER

**ENERGY INDEPENDENCE,
A SHIFTING TECHNO-POLITICAL
CATEGORY**

PUG

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is part of the **Research Virus** collection

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ENVIRONMENTAL TRANSITION
A SERIES IN THE **RESEARCH VIRUS** COLLECTION

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Have a stimulating read!

ENERGY INDEPENDENCE, A SHIFTING TECHNO-POLITICAL CATEGORY

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The invasion of Ukraine in February 2022 rekindled debate on Europe's energy independence, in particular regarding oil, gas and coal imported from Russia. In France this debate closely followed President Emmanuel Macron's fresh determination to patch up the nuclear power industry. So two takes on the situation clashed in the public arena. On one side people pointed out that with no uranium mines on French soil, it was impossible to equate nuclear power with independence. The other side raised four points to counter this stance: raw materials only account for a small share of the price of electricity generated by nuclear power plants; global uranium ore deposits are fairly evenly spread; France has the necessary resources to convert ore into fuel; it also has the means to recycle part of the spent fuel. This controversy actually highlights the difficulty of determining what 'energy independence' means. Far from being a scientific classification, this notion operates as a 'techno-political category'², shifting in time and space, which various actors use to compare energy sources.

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Energy independence or security?

Energy independence may be omnipresent in France's political narrative, but little research has focused on it as a concept. Academic debate, primarily in the English-speaking world, has preferred to address 'energy security', giving rise to over 50 definitions in the literature. In this work energy security refers to the ability to provide consumers with effective, environmentally friendly

1. Centre for Research on Economics, Society, Arts and Technology.

2. Hecht, G., *The Radiance of France: Nuclear Power and National Identity after World War II*, MIT Press, Cambridge (MA), 1998.

energy services in a manner that is fair, affordable and socially acceptable. The aim is to assess the dependability of supply, without restricting it to the geopolitical dimension and looking at it from the consumer's point of view, not as an import.

The existing definitions of independence are more restrictive, among others “a state in which national policy decisions, including national defence, are not subject to the restraining or directing influence of oil producers”³. There is a historical context for this epistemology. The concept formed in Europe in 1957, as part of the build-up to the treaty establishing the European Atomic Energy Community. At the time the purpose of nuclear power was to reduce dependence on oil from the Middle East, almost 20 years before the first energy crisis.

Overlapping streams

Energy independence is an intrinsically spatial idea which questions the balance between the sites of production and consumption. In the absence of a proper definition for this concept, several understandings of the scale of independence co-exist. Should it be seen as a form of autarchy? If so how can we assess the independence of a given energy system without taking into account all the necessary streams?

What, for instance, is the nationality of electricity generated at Tricastin NPP, using fuel rods assembled at Romans sur Isère, France, made of zirconium from Senegal and of uranium, enriched at Seversk, Russia, and originally mined at Olympic Dam, Australia? The overlapping of streams, specific to energy globalization, calls into question the idea of independence itself.

In a situation of this sort any attempt to assess energy independence statistically depends on the options selected by the relevant actors. Such options are open to dispute and constantly reworked, which, of course, is not specific to energy. Whenever scientists decide on benchmarks they must first draw up categories in order to offer a common definition for dissimilar situations⁴. For instance France's National Institute of Statistics and Economic Studies (Insee) defines

3. Greene, D. (2010). Measuring energy security: can the US achieve oil independence?, *Energy Policy*, vol. 38, 1614-1621.

4. Bouleau, G., Deuffic, P. (2016). Qu'y a-t-il de politique dans les indicateurs écologiques?, *VertigO*, vol. 16, n° 2.

the “energy self-sufficiency rate” as “the ratio between national primary energy output (coal, oil, natural gas, nuclear, hydraulic and renewable energies) and consumption of primary energy⁵ in a given year⁶.” In 2020 this rate in France was 56%, which means that the country covered more than half its requirements. With regard to nuclear power Insee has opted to treat all the power generated as being French, taking as the basis for its calculations the heat produced by French NPPs, only part of which is converted into electricity, and not the source of the uranium used in this process.

This approach has drawn criticism from several quarters. First, using primary rather than final energy makes no allowance for losses – amounting to almost two-thirds of the heat – during the shift between the two states. Second, it disregards the fact that the type of primary energy available in a country does not necessarily correspond to demand. Behind this statistical dispute lie various political stakes. The indicators exist both on account of their value as administrative tools, guiding policy-making by putting figures on the stakes, but also for their performative value⁷.

A French obsession?

The overwhelming importance of energy independence in political debate in France might suggest that everyone shares this concern. But debate in the European Union suggests quite the opposite. Of all the written or spoken questions relating to energy independence raised in the European Parliament in 2004-21, over half were submitted by French MEPs. Yet they account for only 10% of all seats. A comparison of France and Germany is even more striking. The term has cropped up more than 215 times in debate in parliamentary debate in France since 1990, but only on 10 occasions in the Bundestag.

This difference in perception between the two countries mainly reflects the political circumstances under which industrial power plants have been built.

5. Primary energy is contained in raw materials prior to processing; final energy is what the consumer uses.

6. <https://www.insee.fr/en/metadonnees/definition/c1811> (last checked 16/05/2023).

7. Desrosières, A., *La Politique des Grands Nombres: Histoire de la Raison Statistique*, Éditions La Découverte, Paris, 1993.

Strategies, symbols and legacy

In Germany two approaches guide policy on energy imports. On the one hand ‘strategic interdependence’ treats imports of this sort as a means of maintaining reciprocal links with Russia, the aim being to strengthen what is seen as a strategic partnership, both in economic and security terms. On the other hand Germany is represented as being vulnerable, precisely because of such connections. Up until the invasion of Ukraine in 2022 the first standpoint was largely predominant in the political arena. Only a few actors – conservative thinktanks and lignite-mine operators – disagreed, with little chance of making any impression.

Interdependence drew its force from the use of energy imports from Russia, starting in the 1970s, to sustain the *Neue Ostpolitik*, the ultimate aim of which was to achieve German reunification by lowering barriers between East and West.

The situation in France was very different. The pivotal nature of energy independence related to the use of energy to restore national identity and France’s international position in the aftermath of the second world war. To serve this aim the electricity industry was concentrated to form a single, nationalized company, *Électricité de France* (EDF).

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A fresh look at socio-spatial representations

In addition to these throwbacks, the way that energy independence is categorized has much to do with socio-spatial representations. In France nuclear policy is underpinned by a deterministic narrative by which it compensates for the geographical handicap of being short of energy resources. This idea first emerged in the 1920-30s and came to the fore in the 1960s. France was unable to match the discovery of new hydrocarbon resources elsewhere in Europe; at the same time it lost control of Algeria and its mineral resources. Nuclear power, in contrast, would use uranium mined in France⁸.

This narrative persists, even now, despite the last uranium mines in France having closed. The stock of fissile material obtained from re-processing spent nuclear fuel is touted as an artificial mine capable of securing independence for several centuries to come. On the other side of the Rhine, spatial representations also come into play in a narrative that harks back to the *Mittellag* concept

8. France’s last uranium mine closed in 2001.

– inspired by Germany’s central position – thanks to which its location enables it easily to source gas from various places. At the same time this view makes interdependence the ‘natural’ solution, positing geographical complementarity between Russia, with plentiful raw materials but little capital, and Germany, with massive financial clout and a powerful industry.

So, to conclude, energy independence acts as a spatially situated category. At a European level there is no consensus as to its meaning. This in turn is an obstacle to framing a single European energy policy. Much as with any category, its definition shifts, constantly reworked by controversy between actors and the strategic use they make of it to promote certain sources. It remains to be seen whether the war in Ukraine will contribute to the emergence of a definition common to all parties for EU energy independence.

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