

Market evolution: Radioactive elements (CN 2844) — 2015–2025

Introduction

This report examines the extra-EU trade of products under CN code 2844 (Radioactive chemical elements and radioactive isotopes, including fissile and fertile materials, their compounds, mixtures and residues) over the period 2015–2025. The analysis covers trade values, quantities, unit prices, partner and product composition, concentration, specialisation, and volatility. Data are drawn from the dashboard; all cited figures are from the provided dataset.

EU trade in radioactive elements (CN 2844)

1. From deficit to surplus: EU's growing export prowess in radioactive materials and isotopes

Export value tripled while import growth remained modest, flipping the trade balance into surplus by 2025

Between 2015 and 2025, extra-EU exports of CN 2844 expanded from €1.48 billion to €4.74 billion, a rise of 219.6 %, while imports increased from €3.08 billion to €4.29 billion (+39.6 %). The trade balance swung from a deficit of –€1.59 billion to a surplus of €0.45 billion, with a peak surplus of €1.35 billion recorded in 2024.

Indicator	2015	2025	Change (%)
Exports (€ mio)	1,483	4,740	+219.6
Imports (€ mio)	3,076	4,295	+39.6
Trade balance (€ mio)	–1,593	+445	+128.0

Trade overview and evolution

Export unit values rose sharply, reflecting a move toward higher-value refined products

Export quantity grew by only 32.0 % (from 3.38 kt to 4.46 kt), whereas export value surged by 219.6 %, implying a unit-value increase of 143.5 %. Import unit value rose 48.8 %, from €100 k/t to €149 k/t. The widening gap between export and import unit values suggests

that the EU is increasingly exporting high-value enriched and isotopically refined products while importing larger volumes of less expensive natural uranium.

Trade flow	2015 unit value (€/t)	2025 unit value (€/t)	Change (%)
Exports	428,502	1,043,604	+143.5
Imports	100,116	148,950	+48.8

Trade overview and evolution

2. Shifting supply chains: realignment of trade partners and product upscaling

Traditional uranium suppliers like Niger cede ground to Canada and Kazakhstan, while US and Asian destinations drive export expansion

On the import side, the most striking change was the collapse of shipments from Niger (–65.0 %, from €491 mio to €172 mio) and the simultaneous ascent of Canada (+325.2 %, to €1,164 mio) and Kazakhstan (+146.3 %, to €373 mio). Australia (+123.4 %) and Namibia (+16.2 %) also gained share. The United States remained an important supplier (€534 mio in 2025, –4.0 %).

On the export side, the United States reinforced its position as the top destination (+211.2 %, reaching €1,966 mio), followed by the United Kingdom (+246.1 %, €1,296 mio), the Republic of Korea (+370.5 %, €904 mio), and Japan (+1,771.7 %, from a low base to €290 mio). Exports to the Russian Federation (–49.6 %) and Brazil (–55.0 %) declined markedly.

Top trade partners

A clear product upgrade: EU imports natural uranium and exports enriched uranium and high-value isotopes

The commodity structure (2025) illustrates a functional division of labour. Imports are dominated by natural uranium (CN 284410: €2.43 bn, 26.7 kt) and enriched uranium (CN 284420: €1.64 bn, 1.3 kt). Exports, in contrast, consist largely of enriched uranium (CN 284420: €4.03 bn, 2.06 kt, unit value €1.95 mio/t) and other radioactive elements/isotopes (CN 284443: €635 mio, unit value €2.52 mio/t). Natural uranium exports are minor (€43 mio). Thus, the EU acts as an enrichment and radiochemical processing hub, importing raw material and shipping out high-value products.

Product segment comparison

Export specialisation is concentrated in a few Member States

In 2025 the Netherlands (RSCA 0.57) and France (RSCA 0.29) were the only Member States with a revealed symmetric comparative advantage in these products. Germany exhibited a neutral profile (RSCA -0.001), while all other EU countries were unspecialised, many with RSCA values close to -1.0 (e.g., Denmark, Slovakia). This concentration reflects the capital- and technology-intensive nature of enrichment and isotope separation.

Specialisation by Member State

3. Price instability as the norm: volatility and shock events in nuclear-related trade

Price shocks hit key partners across both imports and exports, with extreme spikes in unit values

The detection algorithm identified four major price shocks.

- **Exports to the United Kingdom (2023):** unit value jumped 985.7 % above the baseline, reaching €1,165 k/t, while quantity fell to 428 t. This spike, linked to post-Brexit trade restructuring, accounted for 25.5 % of export value.
- **Imports from the United States (2019):** price surged 796.9 % to €331 k/t as quantity collapsed to 235 t.
- **Imports from Canada (2022):** price rose 145.0 % to €82 k/t despite a drop in quantity.
- **Imports from Kazakhstan (2020):** price increased 64.8 % to €59 k/t with volume falling.

Detected price shocks

Overall volatility coefficients remain elevated, highlighting persistent supply-chain sensitivity

Quantity-based coefficients of variation (CV) for major import partners range from 0.48 (Canada) to 0.88 (United States), while for exports the CV for the United Kingdom stands at 0.72 and for South Africa at 1.65. The highest CVs are observed in smaller, erratic flows such as imports from Japan (3.28) and exports to Madagascar (2.24). These figures underscore that radioactive materials trade is subject to large, irregular swings driven by contract timing, geopolitical disruption, and changes in technology demand.

Volatility overview

Conclusion

The EU's extra-EU trade in radioactive materials (CN 2844) has undergone a profound transformation between 2015 and 2025. Exports have more than tripled in value, turning a structural deficit into a growing surplus, while the product mix reveals a clear shift toward high-value enriched uranium and specialised isotopes. Geopolitical realignments are mirrored in the rise of Canada, Kazakhstan, and Asian buyers, and in the marginalisation of previous partners such as Niger and Russia. Underneath these trends, however, the market remains extremely volatile: price shocks are frequent and severe, reflecting the sensitivity of nuclear supply chains to political, contractual, and technological changes. The data therefore depict a successful upscaling of the EU's nuclear industry, albeit one that operates in a permanently unstable environment.

Generated on 2026-07-28 based on data from tradedashboard.eu

Auto-generated report: it accelerates, and sometimes misleads, human analysis. It cannot replace it in full.

If you need advice on European trade policy, or representation for your interests in Brussels, feel free to contact me at support@tradedashboard.eu. You can find my CV at [this address](#).