

Market evolution: Electricity (CN 2716) — 2015–2025

Introduction

Extra-EU trade in electrical energy (CN 2716) underwent a profound transformation between 2015 and 2025. The product falls under Chapter 27, “Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes,” and covers only physically measurable power flows with non-EU countries (quantities are not recorded in the dataset). All figures quoted in this report come exclusively from the Electrical energy on the Trade Dashboard.

The 11-year window reveals three dominant dynamics: an explosion of import values, especially after 2021; the near-disappearance of the EU’s traditional trade surplus; and a profound reorientation of partner-country relationships, partly driven by geopolitical shocks. The following sections detail these shifts.

From Chronic Surplus to Precarious Balance: The Extra-EU Electricity Trade Rollercoaster

Total imports skyrocketed by 316 %, with an unprecedented spike in 2022

EU imports of electrical energy stood at €2 024 million in 2015 and reached €8 421 million in 2025, a cumulative increase of 316 %. The trajectory was anything but linear. After a gradual rise to €3 652 million in 2018, imports dipped in 2019–2020 before accelerating sharply: they more than doubled between 2020 and 2022, surging from €2 468 million to an all-time high of €22 115 million. The 2022 peak was driven by exceptional market conditions during the energy crisis. By 2025 imports had receded to €8 421 million, still more than four times the 2015 level.

Exports grew 126 %, but remained far below the import peak

Extra-EU exports rose from €3 796 million in 2015 to €8 585 million in 2025 (+126 %). The annual pattern broadly mirrored imports, with a trough in 2020 (€2 660 million) and a record-high in 2022 (€16 252 million). However, the post-2022 correction was sharper on the export side, and the 2025 value still exceeded all pre-2021 annual figures.

The structural trade surplus almost disappeared, turning into a deficit in 2022

The EU had long enjoyed a surplus in electricity trade with non-EU countries. In 2015 the balance was €1 772 million. The surplus eroded over the decade, reaching only €163 million in 2025 – a drop of 90.8 %. The most dramatic reversal occurred during the energy crisis, when the EU recorded a deficit of –€5 863 million in 2022 and smaller deficits in 2023 (–€1 402 million) and 2024 (–€621 million). By 2025 the Union barely returned to a surplus.

Year	Exports (€ million)	Imports (€ million)	Balance (€ million)
2015	3 796	2 024	1 772
2016	2 736	2 399	337
2017	4 125	2 789	1 336
2018	3 639	3 652	–12
2019	4 021	3 340	681
2020	2 660	2 468	192
2021	8 035	6 681	1 354
2022	16 252	22 115	–5 863
2023	9 014	10 416	–1 402
2024	7 310	7 931	–621
2025	8 585	8 421	163

Source: Overall trade dashboard.

Geographical Realignment: Concentration, Diversification, and the Ukraine Effect

Switzerland consolidated its role as the dominant import supplier and top export market

Switzerland remained the EU's foremost extra-EU electricity partner throughout the period. On the import side, Swiss flows grew from €431 million (2015) to €3 283 million (2025), an increase of 661 %. Its share of extra-EU imports intensified, contributing to the rise in the import Herfindahl-Hirschman Index (HHI) from 1 458 to 2 384 (+63.5 %). On the export side, Switzerland also led, with exports rising from €1 444 million to €2 359 million (+63.4 %). Despite this absolute growth, the export HHI fell from 2 473 to 1 830 (–26 %), signalling that other destinations gained weight while Switzerland's dominance in exports was diluted.

Ukraine's role flipped: from a source of imports to a critical export destination

Ukraine illustrates the geopolitical reorientation of electricity trade. EU imports from Ukraine fell by 32.7 %, collapsing from €174 million in 2015 to €117 million in 2025; they almost disappeared after 2022. In contrast, EU exports to Ukraine surged by 680.4 %, from €97 million to €753 million, making Ukraine the second or third largest export market by 2025. This reversal reflects the EU's effort to supply Ukraine's grid after the Russian invasion and the destruction of domestic generation capacity.

Import sources became more concentrated while export destinations diversified

The decade-end configuration of partner countries underscores diverging trends:

- **Imports:** Apart from Switzerland, Montenegro posted dramatic growth (€26 million to €253 million, +887 %); Bosnia and Herzegovina and North Macedonia also expanded notably. The Russian Federation's share, once a significant supplier (€263 million in 2015), effectively vanished by 2025 (€0.7 million). The net effect was a more concentrated import structure, with Switzerland and a few Balkan countries accounting for a larger slice of extra-EU purchases.
- **Exports:** Beyond Switzerland and Ukraine, Serbia remained a major market (€560 million to €1 116 million, +99 %). Norway showed strong growth (€93 million to €242 million, +162 %), and the United Kingdom – recorded in concentration data – emerged as a destination of comparable size to Switzerland, though not appearing in the top-7 partner list.

Table: Change in value of selected extra-EU partner flows (€ million)

Flow	Partner	2015	2025	Change %
Import	Switzerland	431	3 283	+661 %
Import	Montenegro	26 ¹	253	+887 %
Import	Ukraine	174	117	–32.7 %
Import	Bosnia and Herzegovina	119	173	+45.4 %
Import	North Macedonia	85	214	+151.7 %
Export	Switzerland	1 444	2 359	+63.4 %
Export	Ukraine	97	753	+680.4 %
Export	Serbia	560	1 116	+99.3 %
Export	Norway	93	242	+162.0 %

¹ Montenegro first appears in the dataset in 2020; the 2015 value is null.

Source: *Top partners dashboard* and *Concentration dashboard*.

A Patchwork of National Roles: How Member States Power Extra-EU Flows

Italy, Germany, and Denmark led the import surge, while France and Germany anchored exports

The surge in extra-EU imports was heavily concentrated in a few Member States. Italy's imports soared from €25 million to €2 557 million (+10 049 %), Germany's from €159 million to €1 312 million (+723 %), and Denmark's from €130 million to €799 million (+512 %). France, by contrast, recorded only a modest 6 % increase. On the export side, France remained the single largest extra-EU exporter, with shipments rising from €954 million to €2 283 million (+139 %). Germany, the second largest, grew by a more moderate 35 % (€751 million to €1 016 million), while Switzerland-facing flows from Austria actually declined slightly (−2.3 %).

Smaller players like Slovenia, Belgium, and Croatia recorded explosive percentage growth

Several smaller Member States expanded their extra-EU electricity trade at extraordinary rates:

- **Belgium** went from a negligible €0.06 million in 2018 to €315 million in 2025.
- **Slovenia** expanded exports by 544 % (€119 million to €769 million).
- **Croatia** boosted exports by 450 % (€83 million to €456 million) and also increased imports by 52.6 %.
- **Hungary** recorded solid growth on both sides: imports +31 %, exports +108 %.

These increases often reflect new or upgraded interconnectors and, in some cases, the role of transit countries for Swiss-EU electricity flows.

Bulgaria and Greece stand out as the most specialised exporters, while Malta and Luxembourg are the least

In 2025, revealed symmetric comparative advantage (RSCA) values show which Member States are disproportionately specialised in extra-EU electricity trade:

Most specialised (positive RSCA)

Member State	RSCA	RCA	Product share	Total trade share
Bulgaria	0.7382	6.64	4.18 %	0.63 %
Greece	0.5506	3.45	2.33 %	0.67 %
Slovenia	0.5140	3.12	3.13 %	1.01 %
Slovakia	0.4743	2.80	5.93 %	2.11 %
Denmark	0.4246	2.48	4.27 %	1.72 %

Least specialised (negative RSCA)

Member State	RSCA	RCA	Product share	Total trade share
Malta	−0.9917	0.004	0.0002 %	0.04 %
Luxembourg	−0.7691	0.13	0.04 %	0.32 %
Italy	−0.6918	0.18	1.46 %	8.01 %
Belgium	−0.4970	0.34	2.84 %	8.46 %
Portugal	−0.2134	0.65	0.90 %	1.38 %

Source: Specialisation dashboard.

The specialisation pattern highlights countries with high cross-border transmission capacity relative to their total trade, often acting as power bridges to non-EU neighbours.

Conclusion

The decade from 2015 to 2025 reshaped EU extra-EU electricity trade from a predictable surplus activity into a volatile, crisis-driven flow. Import values multiplied more than fourfold, erasing the traditional surplus and even generating large deficits during the 2022 energy shock. The partner mix concentrated on the import side – with Switzerland and Balkan countries dominating – while export markets diversified, aided by the rise of Ukraine as a strategic destination. Within the Union, the adjustment was uneven: large economies such as Italy and Germany absorbed the bulk of new imports, while smaller, well-connected states such as Slovenia, Croatia, and Bulgaria exploited their comparative advantage to expand exports. Going forward, the EU's extra-EU electricity trade will remain highly sensitive to geopolitical events, cross-border infrastructure development, and the relative price of generation fuels on both sides of the border.

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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.