EU TRADE EXPLORER

Market evolution: Electric heating appliances (CN 8516) — 2015–2025

Introduction

CN 8516 covers a broad range of electro-thermic household and heating equipment: water and space heaters, cooking appliances, hairdressing apparatus, smoothing irons, heating resistors and their parts. Over the last decade the European Union's extra-EU trade in these products has undergone a profound transformation. Export values grew by one-third, but imports surged nearly three-quarters, tripling the trade deficit. Unit prices on both sides rose steeply, and the geography of trade was reshaped by geopolitical shocks. This report distils the main dynamics from the detailed data, highlighting the widening import reliance, the reorientation of export markets and the internal shifting of EU production specialisation.

1. The import flood and the tripling of the EU's deficit

Extra-EU imports expanded far more rapidly than exports, turning a large deficit into a yawning one.

In 2015 the EU exported €4 077 million worth of CN 8516 goods and imported €5 387 million, yielding a deficit of €1 310 million. By 2025 exports had reached €5 442 million (+33.5 %) while imports climbed to €9 350 million (+73.6 %), pushing the deficit to €3 908 million — a near-trebling over the period. The import volume grew by 41.9 % (from 865 thousand tonnes to 1 228 thousand tonnes), whereas export volume actually contracted by 13.1 % (from 385 thousand tonnes to 335 thousand tonnes). Consequently, the EU's net import reliance jumped from 12.0 % in 2015 to 23.7 % in 2024, underscoring a structural shift toward external sourcing of electric heating appliances.

China's dominant and still-growing role keeps the import side highly concentrated.

Imports from China alone rose from €3 583 million to €6 365 million (+77.6 %), accounting for roughly two-thirds of all extra-EU imports throughout the decade. The import market's Herfindahl-Hirschman Index (HHI) remained extremely high, edging up from 4 579 to 4 768 in value terms, confirming that diversification has not occurred. Other notable suppliers — Türkiye, Malaysia, Egypt — also expanded strongly, but their combined share could not offset China's overwhelming weight. The only top-tier supplier that shrank was the United

Kingdom, whose post-Brexit reclassification to extra-EU status saw its imports fall by 45.1 %.

The import surge was broad-based across the main product segments.

The product breakdown shows that the largest import segments — electric ovens/cookers (HS 851660), microwave ovens (851650), other domestic electro-thermic appliances (851679), water heaters (851610) and space-heating apparatus (851629) — all recorded robust value growth. For instance, imports of electric ovens and cookers increased from €924 million to €1 792 million, while the catch-all category “other electro-thermic domestic appliances” climbed from €698 million to €1 711 million. Volumes rose sharply as well, with especially dynamic tonnage increases in the latter segment (from 98 thousand tonnes to 245 thousand tonnes). These figures reflect sustained consumer and industrial demand for mass-market and mid-range heating appliances sourced from lower-cost manufacturing hubs.

2. From Russia to America: the geopolitical re-mapping of export destinations

Exports to Russia collapsed under the weight of sanctions, while the United States and Ukraine became pivotal growth engines.

EU export markets underwent a dramatic realignment. Shipments to the Russian Federation, the second-largest outlet in 2015 (€437 million), shrank by 55.0 % to €196 million following the post-2022 sanctions regime. Conversely, exports to the United States more than doubled from €340 million to €719 million (+111.4 %), while those to Ukraine soared by 350.6 % (€57 million to €256 million), driven by reconstruction and strong pre-war commercial ties. Türkiye also emerged as a major market, growing by 69.9 % to €348 million, and Switzerland remained the second-largest destination with a steady 41.4 % increase to €529 million. The United Kingdom stayed the top export partner at €726 million despite a modest 13.3 % decline.

The export destination mix became more diversified, lowering supply-side concentration.

Export market HHI declined from 821 to 639 (value basis) and even more sharply in volume terms (from 1 033 to 620). This indicates that EU exporters have successfully spread their sales across a broader set of partners, reducing dependence on any single foreign buyer. The “Other” category expanded substantially, confirming that growth came from a wide range of smaller markets.

Traditional high-income partners provided a stable backdrop while the big swings happened elsewhere.

Exports to Norway (€217 million to €286 million, +31.8 %) and Australia (€195 million to €225 million) displayed steady, if unspectacular, growth. Such mature markets, together with Switzerland, acted as anchors and absorbed a large share of high-value appliances. Their low volatility coefficients — Norway’s coefficient of variation (CV) for export quantity was just 0.07, Switzerland’s 0.07 — contrast sharply with the turbulence experienced in Russia (CV 0.38) and Ukraine (CV 0.33), as shown by the volatility analysis.

3. Doing more with less: rising unit prices and Eastern Europe’s manufacturing ascent

Unit values for both imports and exports escalated strongly, signalling a broad-based premiumisation.

Between 2015 and 2025 the average export unit price of CN 8516 goods rose from €10 580 per tonne to €16 241 per tonne (+53.5 %), while import unit prices climbed from €6 225 to €7 614 per tonne (+22.3 %). The price surge was particularly pronounced in 2022, when a detected price shock for imports from China saw the unit value jump by 47 % relative to the 2020-21 baseline — from €5 619 to €8 261 per tonne — before partially retreating to €6 697 in 2025. This event contributed materially to the overall import price trend. On the export side, a distinct price shock for shipments to the United States around 2017 (a 19 % unit-value drop) was followed by a recovery, reflecting temporary competitive pressure.

EU production value increased despite declining volumes, a clear sign of upmarket repositioning.

Domestic production data (available through 2024) show that the quantity produced in the EU fell from 131.3 million units in 2015 to 131.1 million units in 2024 — essentially flat — while the total production value rose from €9 601 million to €11 978 million (+24.8 %, and even +58.6 % compared with the 2003 value). The implied factory-gate unit price thus moved from roughly €73 per unit in 2015 to over €91 in 2024. This disconnection between ton- or unit-based output and value mirrors the trade data and points to a structural shift toward higher-end, feature-rich appliances, as well as the effect of general cost inflation in materials and components.

Eastern EU Member States strengthened their specialisation, while some Western economies retreated.

By 2025 the most specialised EU exporters in CN 8516 were Romania (revealed symmetric comparative advantage, RSCA, of 0.585), Slovenia (0.453), Poland (0.230), Hungary (0.209) and France (0.125). Romania's RCA index of 3.82 means it exports nearly four times its "fair share" of these goods. Meanwhile, countries such as Ireland (RSCA –0.989), Cyprus, Luxembourg and Finland were heavily under-specialised. Among the large Member States, Italy (RSCA 0.06) maintained a mild specialisation, while Germany — the largest absolute exporter — had a neutral profile (RSCA –0.02), indicating that its sizeable exports are proportional to its overall share of EU trade. The export value HHI across reporters fell from 821 to 639, confirming that the external success is spread more evenly than before. Hungary's export value grew by 196.9 % (from €101 million to €301 million), and Germany's by 29.2 %, illustrating how both Eastern and Western producers expanded, but the centre of gravity tilted eastward in relative terms.

Conclusion

Over the 2015–2025 period the EU's extra-EU trade in electric heating appliances became significantly more imbalanced. Imports, dominated by China, grew relentlessly and widened the deficit, while net import reliance doubled. Export markets were forcefully redirected from Russia towards the United States, Ukraine and other partners, increasing diversification. Unit prices escalated on both sides of the trade account, driven partly by one-off supply-side shocks and partly by a sustained upmarket drift. Behind these external flows, EU production maintained its value through premiumisation, and manufacturing specialisation intensified in Eastern Member States. The overall picture is one of an EU that is more deeply integrated into global value chains, more dependent on a single major supplier for mass-market appliances, yet simultaneously moving its own output up the value ladder and spreading its export risks across a wider set of markets.
