Market evolution: Air conditioning machines (CN 8415) — 2015–2025

Introduction

This report examines the European Union’s external trade in air conditioning machines and parts (CN code 8415) from 2015 to 2025. The analysis covers the full product scope, including split systems, heat pumps, parts and vehicle air conditioners, in transactions with non-EU partners. Over the decade, the EU market has been reshaped by a massive surge in imports, a steady premiumisation of exports and high-impact geopolitical shocks. The data reveal a deepening trade deficit, rising import concentration and a notable shift towards higher-value goods on both sides of the trade balance.

A widening trade gap: import surge reshapes the EU market

Imports triple in value, led by China and emerging suppliers like Türkiye

Between 2015 and 2025, the EU’s imports of air conditioning machines jumped from €2.77 billion to €7.57 billion, a increase of 172.9 %, while imported volumes grew by 182.8 % (Trade overview). Asia has been the driving force, especially China, whose shipments more than tripled in value, and Türkiye, which expanded its presence at an extraordinary pace.

Import partner	2015 (€ million)	2025 (€ million)	Change (%)
China	1 141	4 091	+258.6
Thailand	533	1 258	+135.9
Türkiye	36	661	+1 723.6
Malaysia	135	291	+114.6
Korea, Rep. of	165	210	+27.1
United Kingdom	204	210	+3.0
Japan	248	209	–15.7

Top import partners, 2015–2025

The substantial increases from China and Thailand reflect large-scale manufacturing capacity, while Türkiye’s near-eighteen-fold rise points to its role as a competitive near-shore supplier for the EU market.

Domestic production growth cannot offset the import deluge

EU production of air conditioning machines rose in value from €4.80 billion in 2015 to €7.17 billion in 2024, yet the volume of units produced slipped from 4.40 million to 4.06 million over the same period (Production volumes). The growing divergence between production value and quantity shows that European manufacturers have moved towards higher-value products, but they have been unable to match the volume of imports needed to satisfy fast-rising demand. The trade intensity ratio – imports plus exports relative to production – climbed from 41.1 % in 2015 to 63.8 % in 2024 (Trade intensity), confirming that the EU is increasingly open to foreign supply.

Net import reliance rises sharply, signalling growing external dependency

The trade balance swung from a modest deficit of €65 million in 2015 to a deficit of €3 887 million in 2025 (Trade overview). Net import reliance – the share of apparent EU consumption met by imports from outside the EU – jumped from 1.8 % in 2015 to 29.6 % in 2024 (Net import reliance). This dramatic increase indicates a structural weakening of the EU’s self-sufficiency in air conditioning equipment.

Premiumisation and resilience in exports: shifting from volume to value

Export value rises despite falling volumes, driven by parts and heat pumps

EU exports of air conditioning goods increased in value from €2.71 billion to €3.68 billion (+35.9 %), even as the quantity exported shrank by 19.6 % (Trade overview). The implied average export price therefore rose by 69 % over the decade. This premiumisation is most visible in the product mix. Parts (code 841590) remained the largest export category, rising from €1.24 billion to €1.70 billion, while heat pumps (841581) more than held their ground and the “other” non-refrigerating units (841583) grew from €469 million to €648 million (Product segments). The shift towards higher-value, technologically advanced goods has allowed EU exporters to maintain revenue growth despite lower physical volumes.

The United States becomes a major growth engine for EU exports

Exports to the United States nearly tripled, from €161 million in 2015 to €478 million in 2025, a rise of 196.5 % (Top export partners). The US has become the second-largest destination for EU air conditioning equipment, reflecting strong demand for high-efficiency and environmentally-friendly systems. At the same time, traditional neighbouring markets such as Switzerland (+37.4 %) and Norway (+61.4 %) also recorded solid growth, while the United Kingdom remained the top partner with a 64.4 % increase.

Geopolitical shocks reshape export geography: the collapse of the Russian market

Russia was the EU's second-largest export market in 2015, absorbing €261 million worth of air conditioning goods. By 2025, that figure had plummeted to just €24 million, a drop of 90.8 % (Top export partners). The sanctions imposed after 2022 abruptly severed established trade flows. The shock was not only one of volume but also of price: the unit price of remaining exports to Russia jumped by 50.8 % in 2023, as reported by the algorithm detecting abnormal price shifts (Shock events). The destruction of an important market forced EU producers to redirect their sales, contributing to the growing importance of the US and other markets.

Concentration and vulnerability: the risks of an imbalanced supply

Import concentration intensifies, with China's share dominating

The Herfindahl-Hirschman Index (HHI) for imports rose from 2 290 to 3 342 (+45.9 %), signalling a marked increase in supplier concentration (Concentration HHI). China alone accounted for 54.1 % of the EU's external imports by value in 2025, up from 41.2 % in 2015. The combined share of China and Thailand reached 70.5 % in 2025, leaving the EU heavily reliant on a small number of Asian suppliers.

Price shocks expose supply-side fragility

Several significant price shocks punctuated the decade, the most dramatic of which was the 28.8 % spike in Chinese import prices in 2022, when the volume of imports from China continued to climb (Shock events). Although the data detected no major supply disruptions in terms of quantity, such price surges pass through to higher costs for EU buyers. On the export side, the Russia shock aside, the war in Ukraine caused a 39.4 % price increase for EU exports to that country, albeit from a small base. Türkiye's import volatility (CV of 0.61) and Morocco's high variability (CV 0.96) further illustrate the unpredictability inherent in the import mix (Volatility bars).

Member state specialisation highlights regional divides

The pattern of revealed comparative advantage (RCA) in 2025 shows that the most specialised EU exporters are Central and Eastern European economies, notably Czechia (RCA 3.36), Slovakia (3.17) and Italy (1.90), while Western economies such as Ireland (RCA 0.21), Luxembourg (0.06) and Finland (0.34) are distinctly under-specialised (Specialisation map). This divide reflects deeper industrial structures and means that any shock to the sector will be felt unevenly across the Union, with Czechia, Slovakia, Lithuania and Malta particularly exposed to changes in trade conditions for air conditioning goods.

Conclusion

EU trade in air conditioning machines has undergone a profound transformation over the 2015–2025 period. Imports, especially from China and Thailand, have expanded dramatically, turning a small deficit into a trade gap of nearly €4 billion and pushing net import reliance to almost 30 %. While European producers have succeeded in moving up the value chain – visible in rising export prices and an increasing share of sophisticated products – they have been unable to keep pace with home demand in volume terms. The high and rising concentration of import sources, combined with the volatility demonstrated by recent price shocks, leaves the EU import market vulnerable to supply-side disruptions. On the export side, the loss of the Russian market and the rapid pivot towards the United States illustrate how geopolitical events can quickly redraw trade maps. Policymakers and businesses will need to weigh these vulnerabilities against the benefits of an integrated global supply chain in a product group that is set to gain further strategic importance with the energy transition.

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