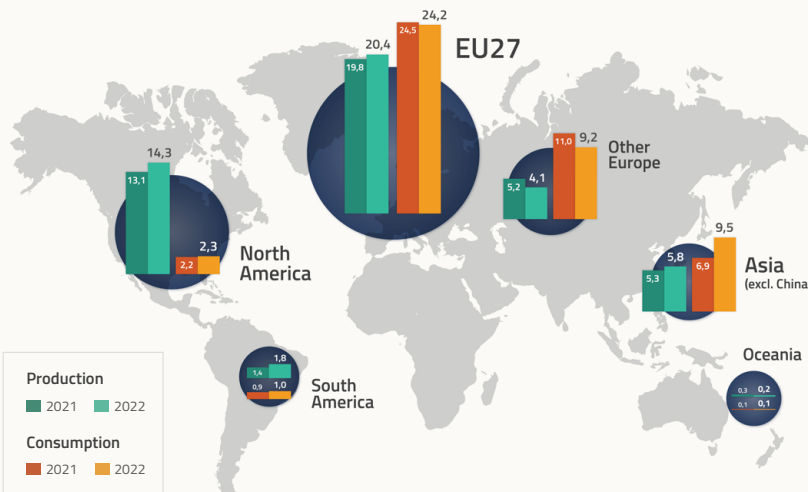


A Growing Market

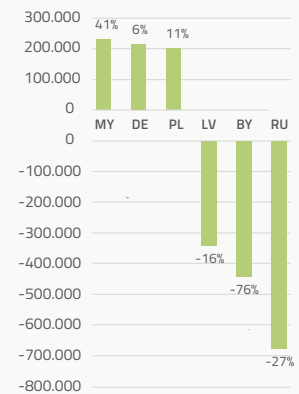
Wood pellets are a refined form of biomass that have a greater uniformity and a higher energy density than many other biomass feedstocks. Wood pellets are an important part of the bioenergy mix and promote sustainable solutions and displace fossil fuels to contribute to the EU's climate and energy goals. The main feedstocks for pellet production are wood residues, like sawdust. The EU continues to be the global leader in wood pellet production, producing 20,6 million tons in 2022 followed by North America, which produced 14,3 million tons. Production rose in all regions except Other Europe, where trade restrictions in response to the Russian invasion of Ukraine led to a sharp drop in Russian production. Consumption also fell in the EU and Other Europe as markets experienced volatile prices related to the energy crisis. Noticeably, there was a large increase in consumption in Asia as Japan and South Korea increasingly invest in pellets.

World pellet map of production and consumption in 2021 and 2022 (million tonnes)



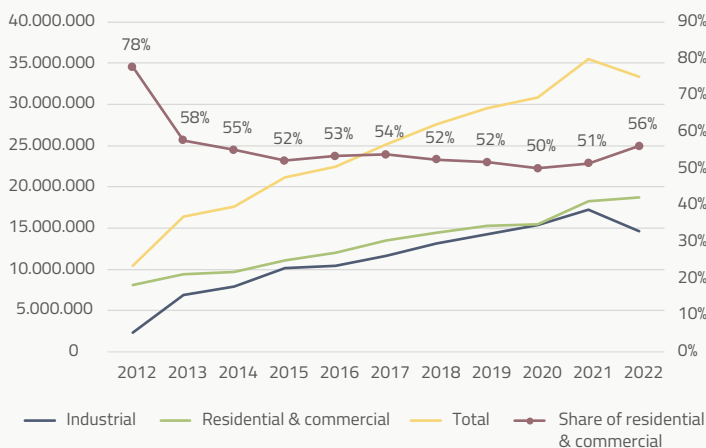
Source: EPC Survey 2023; Hawkins Wright

Growth in pellet production by country between 2021-2022 (tonnes and %)



Source: EPC survey 2023; FAO; Argus Media, ENplus®

Evolution of pellet consumption in Europe by type (tonnes and %)



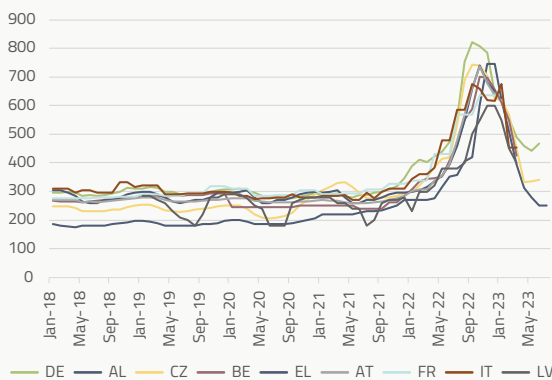
Source: EPC survey 2023, Hawkins Wright

It is not just in consumption where there is significant growth in Asia, the countries with the greatest growth in pellet production between 2021 and 2022 are split between Europe and Asia. Germany and Poland had the second and third largest growth but was a more modest 6% and 11%. In Malaysia, Indonesia and Thailand, the growth rates were very high (41%, 50%, and 335%) underscoring the emerging production. On the other hand, the largest contraction is seen in Russia followed by Belarus which were heavily targeted by sanctions. Other countries with decreases including Latvia, Romania, and Serbia can be explained by high electricity prices which affected the profitability of pellet production.

2022 also caused a significant shift from industrial use towards residential and commercial use; 56% of the total was residential and commercial use, the highest share since 2014. This is partly in response to skyrocketing gas and electricity prices which encouraged individuals to use pellets even though volatility was also experienced in the pellet market. Additionally, the price volatility also impacted financial decisions by industrial users leading to reduced consumption.

Estimation of bagged pellet prices in European countries with highest prices between January 2018 and July 2023

(retail price, 1 pallet in €/tonne VAT incl.)

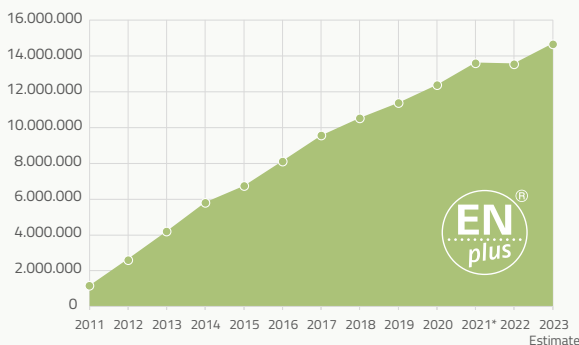


Source: EPC survey 2023

Cost competitiveness

A key factor behind the increasing popularity of wood pellets is their cost-competitiveness compared to other energy carriers: natural gas, electricity, oil. In 2021, industrial wood pellet prices even fell below coal highlighting their competitiveness. However, the invasion of Ukraine and resulting energy crisis in 2022 caused dramatic price fluctuations unlike anything the market had previously experienced, though still less than what was seen in the gas and electricity markets. In many countries, pellet prices doubled in the short-term as there were questions about how Europe would be able to cope without Russian gas, but now prices have fallen closer to the historical average while still remaining a bit elevated.

Worldwide ENplus® certified pellet production (tonnes)



2021*Due to the war situation numbers for Ukraine, Russia and Belarus could not be confirmed. Source: ENplus®

Improved consumer reliability through fuel certification

Residential consumers need to be sure of the quality of the pellets used in their appliances. In this regard, the ENplus® fuel quality certification scheme has been a huge success for over ten years now, ensuring wood pellet quality by guaranteeing it over the entire supply chain (i.e. from production to end-user delivery). In 2022, around 13,6 million tons of pellets were certified by the system in 50 countries all over the world. Although Europe is the leading market when it comes to certification having both the highest number of certified producers and volume of ENplus® certified pellets, the scheme's strong international presences show it is on its way to becoming the global standard for the pellet industry.

Policy Recommendations

1. Europe must **end all fossil fuel subsidies** and **develop a clear defossilisation strategy**. This should include recognition of pellets, bioenergy, and other renewables.
2. A **fund** should be established for the **modernisation of heating appliances** and to **promote investments in efficient bioenergy use**. This will accelerate the deployment of renewables, reduce air pollutant emissions, improve resource efficiency all while shielding vulnerable consumers from energy poverty.
3. A **stable policy framework** is essential to provide a long-term perspective to companies to further invest in pellet production capacity, fostering European pellet production and thus ensuring adequate supply along with promoting climate mitigation efforts.