

The Home Appliance Industry in Europe 2022-2023



The Home Appliance Industry in Europe 2022-2023

Table of contents

Introduction

Foreword	3
APPLiA Direct Members	4
National Associations	5
APPLiA Secretariat	6
The home appliance industry in Europe in 2023 ..	7
Products	8
Projects	9
Policy developments in 2023	10
Roadmap to a fair, sustainable and prosperous European society	16
Heading towards the 2024 European elections	17

Pillar 1

Advancing sustainable lifestyles 18

Material use during the production process	20
Average water consumption of washing machines and dishwashers	21
Average energy consumption of washing machines and dishwashers	22
Average material composition of home appliances	23
Quantities of individual materials used in home appliances	24
Average material composition of large home appliances	25
Average material composition of small home appliances	26
Plastic flows from home appliances	27
Routes of recycled plastics from WEEE	28
Energy consumption in the home in 2021	29
Hoarding of WEEE	30
WEEE flows in the home appliance sector	31
Materials recovered from waste	32

Pillar 2

Accelerating Europe's growth 33

Electrical and electronic equipment placed on the EU market	35
European market historical picture	36
Large appliances sold globally in 2023	37
Units traded in Europe	38
APPLiA Direct Members manufacturing sites in Europe, in 2023	39
Patents filed and granted for home appliances	40
Investment in R&D by EU Member States	41
Investment in R&D by EU Member States as fraction of GDP	42

Foreword



Hakan Burlgurlu
— APPLiA President

Amidst continued macroeconomic and political turbulence, the global economy is still navigating choppy waters. Consumers worldwide experience the ripples of these challenges, facing heightened uncertainty. The looming threat of deindustrialization and social unrest underscores the critical importance of Europe's dual mission: maintaining industrial leadership while pursuing a socially just, green transition. Climate change is here, and our industry plays a pivotal role in the decarbonisation of the economy.

This report aims to showcase the progress made by the sector towards the adoption of a circular model and an improved policy framework bolstering a united and harmonised EU single market. It covers all major aspects, from production materials and consumption, to repair and recycling, market trends, and an outlook on 2024 European Elections.



Paolo Falcioni
— APPLiA Director General

Over the past century, we have burned through fossil resources at an alarming rate. Our planet and the future generations are asking us to act. In this sense, the upcoming 2024 European elections will be a defining moment for Europe and the world. Addressing climate change means mobilising several levers at the same time. Home appliances are at the centre of our everyday life at home and strategic enablers of sustainability with the potential to significantly reduce energy consumption and carbon emissions while preserving the well-being of consumers.

Establishing the right policy framework is integral to realising this promise to its fullest extent. The next EU legislative term (2024-2029) will need to devise further practical and effective solutions to promote a low-carbon economy, encourage investment, and ensure Europe's competitiveness on the global stage.

The 8th edition of the report presents a comprehensive update on the industry's achievements, an overview of the upcoming regulatory landscape, and its impact on the industry. Additionally, the document includes APPLiA's industry Manifesto, providing actionable recommendations for the European Commission, the European Parliament, and the 27 national governments throughout the 2024-2029 legislative term.

APPLiA Direct Members

APPLiA has 25 Direct Members, which have at least one manufacturing facility in Europe and a direct presence in at least four European countries.

All Direct Members are also a member of the relevant APPLiA National Associations in more than 50% of the countries in which the company has direct operations.

APPLiA Direct Members subscribe to APPLiA's statutes, by-laws, all industry-established agreements, and are signatories of the APPLiA Code of Conduct on Corporate Social Responsibility to promote fair and sustainable standards for working conditions, social compliance and environmental performance.



National Associations



APPLiA Secretariat

APPLiA's Secretariat counts 14 staff members from different nationalities, working on communication, corporate, energy, environment and digital and competitiveness policy areas.



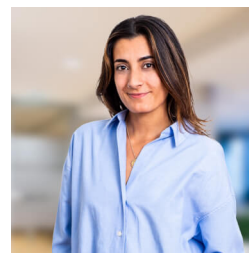
Paolo Falcioni
Director General



Candice Franck
Office Manager



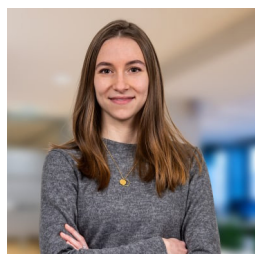
Federica Lavoro
Senior Communication
Manager



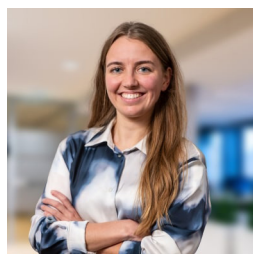
**Maria Vittoria
Sbrescia**
Communication
Officer



Korrina Hegarty
Senior Policy Director,
Environment



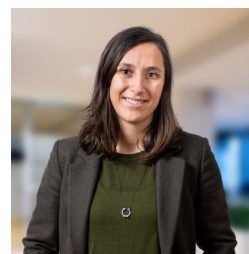
Naomi Marc
Policy Manager,
Environment



Franziska Decker
Policy Manager,
Environment



Matteo Rambaldi
Senior Policy Director,
Energy



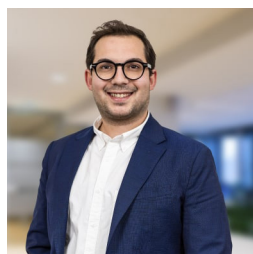
Giulia Zilla
Senior Policy Manager,
Energy & Environment



Anton Arabadjiev
Policy Officer, Energy



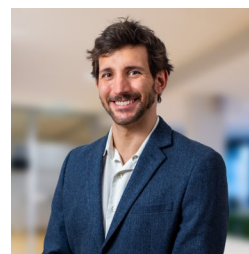
Candice Richaud
Senior Policy Manager,
Corporate



Martin Oresic
EU Institutions Liaison
Officer



Michał Zakrzewski
Senior Policy Director,
Digital & Competitiveness



Alvaro Vilas
Policy Manager, Digital
& Competitiveness

The home appliance industry in Europe in 2023



3.300

Number
of enterprises



54,0
billion €

Total purchases of
goods and services



220.000

Persons employed



77,0
billion €

Direct & indirect value
added to GDP

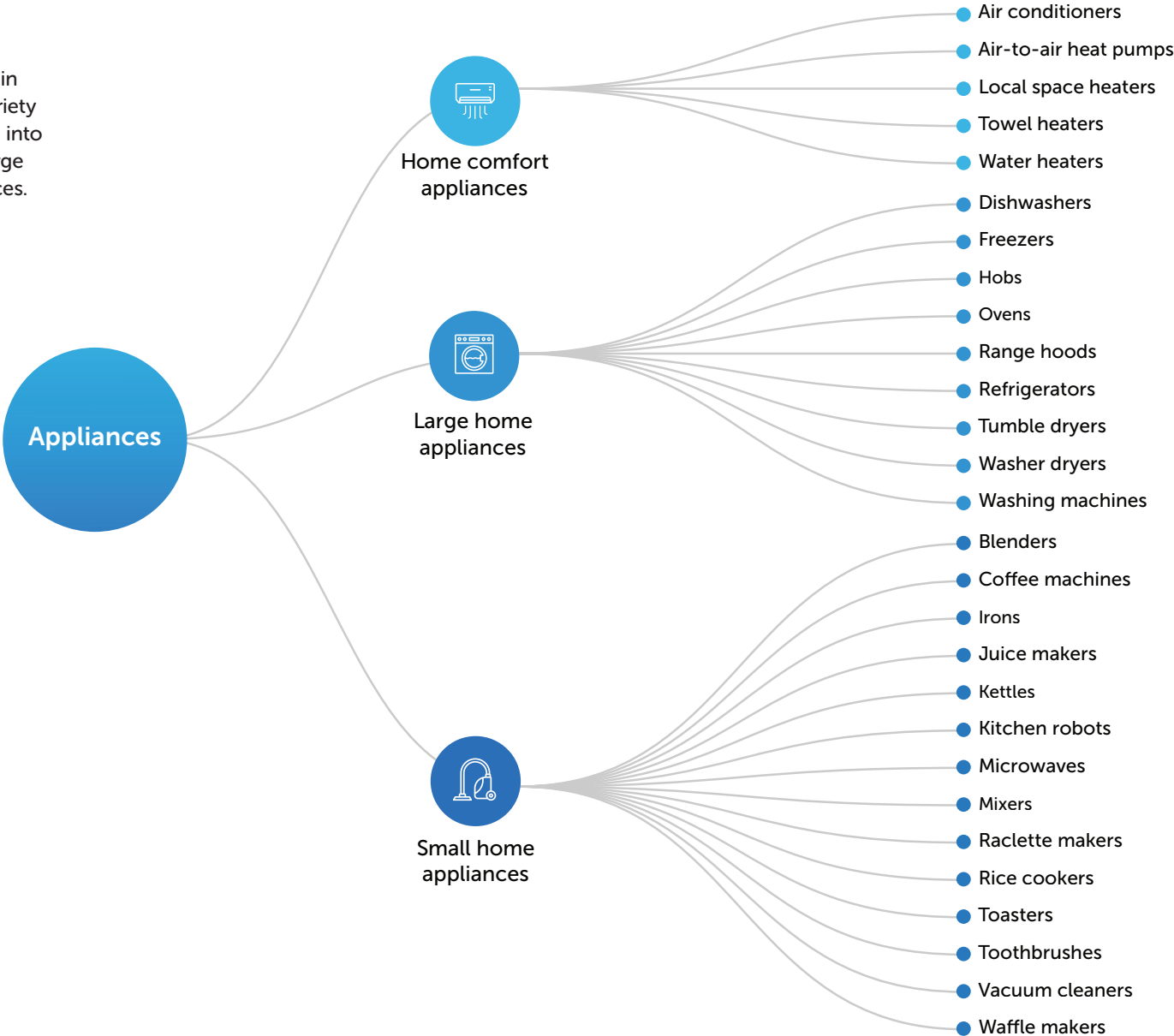


968.000

Indirect & direct
employees

Products

APPLiA represents the home appliance sector in Europe. Our members manufacture a wide variety of home appliances which can be categorised into three main groups: small home appliances, large home appliances, and home comfort appliances.



Projects



The Circular Plastics Alliance works on innovative and sustainable solutions that reduce packaging waste and increase recycling to make a difference for the environment. And that together with carefully selected companies who, like APPLiA, want to reduce their carbon footprint. Will you join us?



ECOSWEEE is financed by the LIFE Programme 2021-2027 of the European Union and is aimed at improving the small WEEE collection rate. APPLiA is a member of the Advisory Board of the project.



The I4R platform provides treatment and recycling facilities and preparation for re-use operators with access to WEEE recycling information in line with the requirements of Directive 2012/19/EU. To better respond to recyclers' needs, APPLiA and DIGITALEUROPE have created this single central online platform – the Information for Recyclers Platform (I4R) – where recyclers can access recycling information at product category level. The WEEE Forum, an international association of producer responsibility organisations and a centre of competence, hosts and maintains the platform.



INCREASE is a EU-funded project aimed at increasing the uptake of recycled plastics in products through innovative and interdisciplinary solutions. By using recycled plastics from Electrical and Electronic Waste, the project will tackle areas where the use of recycled plastics is marginal today. APPLiA is a member of the Advisory Board of the project.



PRIMUS is a EU-funded project aimed at reforming secondary plastics to become the primary raw material choice for added value products. APPLiA is a member of the Advisory Board of the project.



FutuRaM is a EU-funded project looking to enable fact-based decision making for the recovery and use of secondary raw materials within and outside the EU. APPLiA is a member of the Advisory Board of the project.

Policy developments in 2023

2023 was a crucial year in the run-up to the 2024 European elections. The impact of climate change is now more visible than ever. Citizens and businesses are struggling to cope with the rising cost of living and to reduce carbon emissions. In the first half of the year, electricity prices in the EU continued to show an increase compared to the same period in 2022, making it hard for European companies to compete in international markets and for households to pay their bills. Alongside, the economy has been affected by unprecedented geopolitical and sanitary crises, putting at stake Europe's capacity to invest and innovate. All of which couples with alarming labour shortages in sectors vital to the green and digital transition, with a risk of jeopardising common objectives of the EU industrial strategy.

The European Green Deal is the key legacy of the concluding Von der Leyen Commission (2019-2024) setting ambitious climate targets and regulations for 2030, in concert with the European



Parliament and the 27 national governments. While a lot has been achieved, much remains to be done and it will be up to the next legislative term (2024-2029) to find concrete ways to accelerate decarbonisation in Europe, while minimising the costs on society and setting a competitive model for sustainable investments.

Sustainability

Ecodesign for Sustainable Products Regulation (ESPR)

Published in March 2022, the Ecodesign for Sustainable Products Regulation (ESPR) would reach the final stages with the plenary vote foreseen for April 2024. The new legislation would apply on all products placed on the EU market, including home appliances, with an eye to foster performance and sustainability throughout their lifecycle. Concretely, the law would extend the existing Ecodesign framework setting criteria not only for energy efficiency, but also for circularity with an overall reduction of the environmental and climate footprint of products. In its advocacy, APPLiA highlighted the importance of taking into account interdependencies and trade-offs between different products' aspects, defining product sustainability through an aggregated evaluation instead of setting individual requirements. From energy efficiency and use of recycled materials to durability and reparability, the roads to sustainability are many and they should all be equally valued. All regulated goods would also have a Digital Product Passport, a set of product-specific information accessible



electronically by all consumers. APPLiA alongside other pivotal industries to the European economy found common agreement on the importance of building on already existing databases such as SCIP and EPREL to avoid unnecessary and burdensome replications. The new product framework is expected to enter into force from 2025.

Fit for Purpose Evaluation of the WEEE Directive

In Autumn 2022, the European Commission launched its call for evidence on the evaluation of EU rules on waste from electrical and electronic equipment (WEEE) to assess if the legislation is still fit for purpose according to the key objectives of the European Green Deal and Circular Economy Action Plan. A targeted amendment to the WEEE Directive approved in March 2024, introduced a review clause by which the Commission must assess the need for a revision of the Directive by the end of 2026. In view of such revision and

leveraging its 20+ years experience with WEEE requirements, the home appliance sector values the current evaluation of the WEEE legislation and looks forward to collaborating with the Commission to investigate the challenges and the potential future solutions to further improve the level of WEEE collected and properly treated and recycled across the EU. Home appliances make up a large proportion of the WEEE volume. Amounts of WEEE collected and properly recycled have steadily increased through the investments made by industry, in line with the WEEE Directive. Better recycling techniques have been developed through cooperation between producers and recyclers and the introduction of European standards with respect to collection, handling, storage, recycling, preparation for reuse and treatment of WEEE. However, APPLiA has been advocating for future WEEE legislation to close the existing gaps. In this regard, we support that all WEEE actors involved in the collection, transportation, sorting and treatment should have a responsibility under an effectively enforced legislation to ensure that all WEEE is accounted for and treated properly. Future WEEE legislation should define obligations for all actors based on a good understanding of their respective roles in WEEE management.

F-gas Regulation Review

In Spring 2022, the European Commission put forward a proposal to update the F-gas Regulation with an eye at further reducing greenhouse gas emissions, as part of the set climate ambitions. The new Regulation was adopted and published at the beginning of 2024, which includes bans of using F-gas refrigerants for certain types of applications. Applications include heat pumps, which will

have to rely on natural refrigerants as from 2027. However, heat pumps remain at the centre of the European Commission's REPowerEU plan to ditch Europe's dependence on fossil fuels, with a target to deploy 60 million units by 2030. Despite the new bans, the home appliance industry remains committed to find and invest in new technologies and innovations as an integral part of its broader emission reduction efforts.

Green Deal Industrial Plan

In March 2023, the European Commission presented its Green Deal Industrial Plan to make the industry fit for 2050. The Plan would provide a framework to support the transition of European industry toward climate neutrality and to develop the net-zero technologies necessary to achieve the EU's climate targets. Under its scope and with an eye to enhancing industry competitiveness, the Commission tabled the Net-Zero Industry Act and the Critical Raw Materials Act.

The **Net-Zero Industry Act** would aim to provide a simplified regulatory environment suited for the quick deployment of net-zero technologies. The Council adopted a General Approach on the file in early December 2023 with trilogue negotiations between the institutions expected for early 2024. While the proposal is essential in defining Europe's path to 2030, most home appliances - with the sole exception of heat pumps - were left out of the Commission's list of solutions whose deployment would be instrumental to ramp up European production capacities for renewable energy technologies. By 2030, more than 1,5 billion home appliances will be placed on the European market, offering immediate savings. Decarbonisation tools would already be available today and should all be

equally accelerated and enabled. A defined scope that takes technology neutrality as a starting point and identifies products critical for meeting the EU's climate neutrality target must be assessed, that builds on the EU's existing strengths and setting in place a stable and long-term regulatory framework.

The **Critical Raw Materials Act** is meant to diversify the bloc's supply of raw materials needed for green transition technologies, by setting a number of targets for domestic extraction, processing and recycling of so-called strategic raw materials. Recycling of household appliances is a valuable means to ensure a steady supply of raw materials, avoiding further extraction and keeping resources in the loop. According to the adopted text, products including washing machines, tumble dryers, microwaves, vacuum cleaners or dishwashers would have to affix a label stating whether they contain permanent magnets or not as an information for recyclers, accompanied by a data carrier.



Green Claims Directive

In March 2023, the European Commission put forward a proposal for a Directive on Green Claims. The proposed directive would aim to fight so-called greenwashing practices by preventing companies from making unclear or unsubstantiated environmental claims on products at the point of sale. Particularly, the Commission proposed to prohibit all voluntary environmental claims unless they have been certified by a third-party verifier. As an active player in the discussion, APPLiA supported the overall goal of empowering consumers with clear information for informed purchasing decisions. Green claims are, for brands, a driver of innovation and progress in the area of sustainability. However, concerns have been raised that this proposal could be overly restrictive and ultimately decrease transparency and progress. Specifically, the amendment banning all green claims on products containing hazardous substances was highly critical. Existing chemical regulations already set strict limits and exemptions for specific applications. This ban wouldn't accelerate the phase-out of harmful substances, but rather hinder significant investments in



sustainable product development and limit valuable information reaching consumers. The provisional deal needs final approval from the Parliament and the Council. The plenary session is foreseen for March 2024.

Packaging and Packaging Waste Regulation (PPWR)

2023 was a heated year also for the EU's proposed Packaging and Packaging Waste Regulation (PPWR), a landmark legislation to combat the over-packaging of products and growing amounts of waste in Europe. Packaging is necessary to protect home appliances in the factory warehouses and during shipping, ensuring that the product is in good working order when it arrives at consumers homes, and the consumer's safety is preserved while using the equipment. Under the Commission's proposal, 90% of packaging used for large household appliances must be made available in reusable transport packaging by 2030 when they are placed on the EU market for the first time. However, APPLiA has raised concerns about the technical feasibility and the environmental impact of this approach which risks compromising product's integrity. Any targets should be based on comprehensive analyses that take into account the full packaging life cycle. The proposal is undergoing the final stages of the trilogue negotiations which should conclude in the first quarter of 2024.

Corporate

Right to Repair

On 1 February 2024, institutions reached an agreement on the European Commission's proposal to promote the repair of goods.



While the repair of home appliances has been a reality for years already, the future law will require manufacturers to provide consumers with repair options for products that are technically repairable under Ecodesign rules. APPLiA had strongly advocated to keep the link to Ecodesign also for spare parts access and availability, providing manufacturers, repairers and consumers alike legal certainty and product safety.

If the repair occurs within the legal guarantee of conformity, consumers will in the future be entitled a 12-month extension of this guarantee after repair. APPLiA had supported such an extension of the legal guarantee after repair as it could act as a boost for consumers to choose repair over replacement. Yet, policymakers missed another opportunity to harmonise the requirement across the EU. Member States will indeed be allowed to go beyond the 12 months period, with a high risk of further fragmenting the EU Single Market.

Empowering consumers for the green transition

We expect the law aiming to better inform consumers before purchase and protect them against greenwashing to pass in Spring 2024.

The Association has been supportive that information on the product is better communicated at the point of sale as a means to empower consumers while keeping company freedom in determining terms of commercial guarantees of durability. It also called for consistency in setting requirements in this Directive and both the Green Claims Directive and the Ecodesign for Sustainable Products Regulation that were negotiated in the same period.

Directive on Corporate Sustainability Due Diligence

In December 2023, the Council and the European Parliament reached a provisional deal on the Commission's proposed Directive on Corporate Sustainability Due Diligence. The Directive would set obligations for large companies regarding actual and potential adverse impacts on human rights and the environment, with respect to their own operations, those of their subsidiaries, and those carried out by their business partners. While sharing the purpose of the legislation, APPLiA has been engaging with policymakers to consider a "supply chain" instead of a "value chain" scope. APPLiA members agreed that companies must be responsible when there is an established, direct relationship and more accountable to their supply chain identifying any potential risk. As such, the duty of effort has to be recognised and verified.

The formal adoption has been postponed a few times due to adverse views in the Council, raising uncertainty for the industry.

Deforestation Regulation

The Regulation on Deforestation-free products entered into force in June 2023. Under the new legislation, any operator or trader who places commodities including wood, cocoa, rubber, and some of their derived products, such as chocolate, tyres, or furniture on the EU market or exports from it, must be able to prove that the products do not originate from recently deforested land or have contributed to forest degradation. Some of these commodities covered by the Regulation, namely rubber and paper, can be found in certain home appliances. Given the commitment of the industry to an improved circularity and reduced carbon footprint at the different stages of the product life cycle, APPLiA kick-started an internal discussion with its member companies and applied to be part of the Multi-Stakeholders Platform on protecting and restoring the world's forests. A clear distinction between natural rubber and synthetic one has



been advocated by APPLiA, to make sure only the former was part of the legislation.

Energy

Directive on Energy Efficiency

To meet the EU's 2030 climate target, energy efficiency needs to be prioritised. To step up its efforts, the Commission had put forward in July 2021 a proposal for a recast Directive on Energy Efficiency requiring EU countries to collectively ensure an additional reduction of energy consumption of 9% by 2030 compared to the 2020 reference scenario projections. Co-legislators eventually agreed to set the 2030 EU energy efficiency target at an 11.7% reduction for both final and primary energy consumption. For the first time, the target for final energy would be binding at European level. APPLiA advised relevant policymakers on putting the efficiency first principle at equal footing with emissions reduction and renewable energy and is continuously working to push for the rollout of the most energy efficient appliances into households via financial incentives. In 2023, the recast Energy Efficiency Directive was officially published in the EU Official Journal.

Energy Performance of Buildings Directive

To boost the energy performance of buildings, the EU has established a legislative framework that includes the Energy Performance of Buildings Directive revised in 2023. Buildings represent 40% of the EU's energy consumption, with space heating and domestic hot water accounting for about 80% of the total energy use in European households. Two thirds of this energy is currently produced



with old and inefficient systems based on fossil fuels, which is why APPLiA has been advocating to accelerate and support the modernisation of the installed heating stock. Replacing obsolete systems with highly efficient and renewable-based appliances is pivotal to achieve Europe's decarbonisation goals. Furthermore, securing sufficient funding for these replacements and adequate incentives to appliance owners would also support the competitiveness of EU industries in the renewables and energy efficiency fields. The formal adoption process of the Directive is foreseen for 2024.

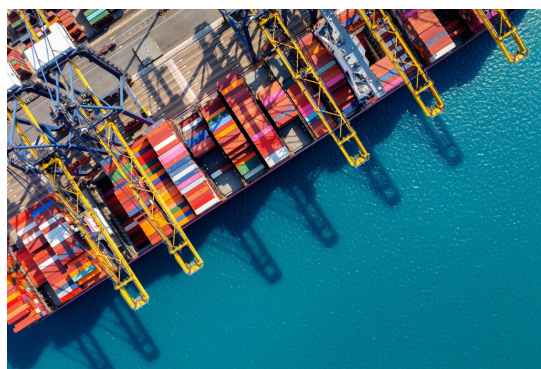
Digitalisation & Trade

Artificial Intelligence Act

In the close of 2023, the Council presidency and the European Parliament's negotiators have reached a provisional agreement on the proposal on harmonised rules on artificial intelligence (AI). The draft regulation aims to ensure that AI systems placed on the European market and used in the EU are safe and respect fundamental rights and EU values. This landmark proposal also aims

to stimulate investment and innovation on AI in Europe.

The AI Act includes a list of banned applications that are deemed to pose an unacceptable risk. Concretely, the draft law considers as high-risk products in which AI poses potential risks to individuals, society or environment. In its advocacy on the subject, APPLiA has been remarking how striking a fair balance between safety and innovation is crucial to strengthening Europe's ability to compete globally. As the final text of the Act is being finalised, home appliances risk falling onto the wrong category because of a bureaucratic loophole. More specifically, in the absence of the harmonised standards listed under the Radio Equipment Directive Delegated Act, home appliances would automatically be categorised as high risk, when using AI systems as a safety component. And not because they present a serious threat in any of the above-mentioned targeted areas. The text will need to be worked at technical level and confirmed by both institutions before formal adoption by the co-legislators, in 2024.



Carbon Border Adjustment Mechanism (CBAM)

Europe's carbon tax officially entered its trial phase on October 1, 2023. From this date, companies are required to report the amount of materials such as cement, iron and steel, aluminium, fertilisers, electricity and hydrogen, that they have imported into the EU and relative CO₂ emissions generated. This transitional phase will run until 31 December 2025, when carbon pricing will start applying.

The levy will progressively replace free ETS allowances, with an eye to help fight climate change by putting a tax on raw materials based on their CO₂ emissions. The home appliance sector in Europe is an important downstream user of CBAM-covered materials. Which makes it highly vulnerable to carbon leakage due to its degree of openness to international trade and the estimated cost impacts. The phasing-in of CBAM and the phasing-out of free ETS allowances will lead to a carbon cost increase of 580 million € for EU home appliance manufacturers, without considering additional costs generated on electricity. Given the significant impact on the sector, APPLiA has carried out extensive outreach to raise awareness about the implications of the measure on several European industries.

Cyber Resilience Act (CRA)

The Cyber Resilience Act (CRA) introduces mandatory cybersecurity requirements for products with digital elements. Around 10% of applications are classed as 'critical' or 'most critical' in the Act, including possibly some home appliances. APPLiA has been advocating for a clear distinction between critical and non-critical cybersecurity products, to

be reflected in standards. Concerning the support period for security updates, a reasonably good outcome of at least five years had been agreed. The text is foreseen to be voted by Parliament as a whole during the April 2024 plenary session or the first session of the new Parliament by Autumn 2024.

EU Data Act

The Data Act is the centrepiece of the Von der Leyen Commission's Data strategy. It aims to unlock data sharing at EU level to create a single market for data and make Europe a global leader in the data-agile economy by imposing data sharing obligations on companies. With appliances producing an unprecedented amount



of information, APPLiA has been a key actor in the public debate portraying the pitfalls of data-sharing for the industry. Each operated by a different technology, home appliances deliver a great range of services to users. Ensuring intellectual property is protected at all times is a key prerogative of all brands when marketing their products and for the consolidation of the EU data-driven market.. The European Parliament formally endorsed the new

legislation during its November 2023 Plenary. The text was published in the Official Journal in December 2023. Following its entry into force, the Data Act will become applicable mid-2025.

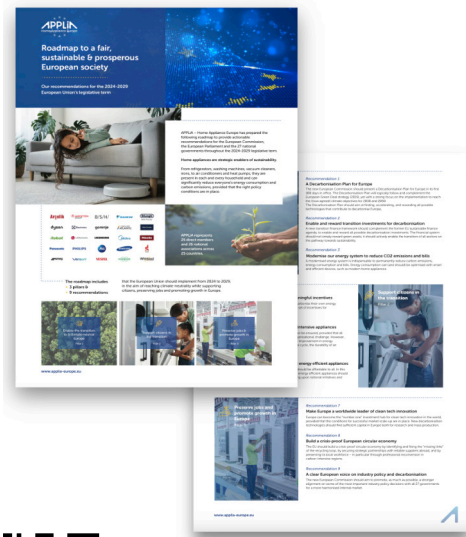
Product Liability Directive

Since 1985, the Product Liability Directive provides consumers who have suffered damage caused by defective products with the legal basis to seek compensation. As products have become more complex in the digital age, the European Commission published a proposal for a new directive on liability of defective products in September 2022. Under the new rules, consumers would be able to claim any loss or corruption of data for their products including home appliances. Concretely, this means manufacturers would be asked to quantify the data loss in economic terms. While it is vital that consumers can seek compensation for harm caused by defective products, APPLiA has been highlighting in its public advocacy the difficulty of quantifying a data loss when it comes to a washing machine or a dishwasher. The Directive would apply to all products placed on the EU market 24 months after it enters into force.

Roadmap to a fair, sustainable and prosperous European society

Tomorrow's industry calls for stepping up today. European manufacturing needs a strong and unfragmented industrial policy strategy preserving jobs, minimising costs on society and setting a competitive benchmark for sustainable investments.

This is our call to action for Europe 2024-2029.



Read our full manifesto at www.manifesto.applia-europe.eu



Recommendation 1
A Decarbonisation Plan for Europe

Recommendation 2
Enable and reward transition investments for decarbonisation

Recommendation 3
Modernise our energy system to reduce CO₂ emissions and bills



Recommendation 4
Reward and empower consumers with meaningful incentives

Recommendation 5
A European strategy to replace old energy-intensive appliances

Recommendation 6
Support for low-income households to install energy efficient appliances



Recommendation 7
Make Europe a worldwide leader of clean tech innovation

Recommendation 8
Build a crisis-proof European circular economy

Recommendation 9
A clear European voice on industry policy and decarbonisation

Heading towards the 2024 European elections

Brussels is overflowing with political activity as organisations converge to discuss the most pressing issues. From trade deals and economic policies, to environmental regulations and human rights issues, decisions made in Brussels have far-reaching consequences.

Looking at current political trends, the set EU sustainability and decarbonisation objectives will likely remain unchanged and anchored to a binary vision - net zero vs non-net-zero - outlining the political desire to support large and easily identifiable European champions and leave aside all others. This is a trap Europe must not fall into.

Just a few months ahead of the elections, the European Commission put forward a detailed impact assessment on possible pathways to reach the agreed goal of making the European Union climate neutral by 2050. However, achieving a 90% emissions reduction by 2040 will require a number of enabling conditions to be met. The Green Deal now needs to become an industrial decarbonisation deal that builds on existing industrial strengths, like home appliances. Addressing climate change means mobilising several levers at the same time. All technologies that contribute and enable climate neutrality should be part of the solution. Home appliances have a revolutionary potential to start

the transition within the walls of our homes. Only by looking at their high energy saving potential, energy efficient appliances are a ready-made solution to contribute to net-zero, provided that the right policy conditions are in place.

The clock is ticking. Europeans have the technology to decarbonise, but they must focus their efforts in the same direction. By harnessing the collective power of the home appliance sector, the next legislative cycle can drive the transition to a climate-neutral Europe and secure a brighter future for the generations to come.

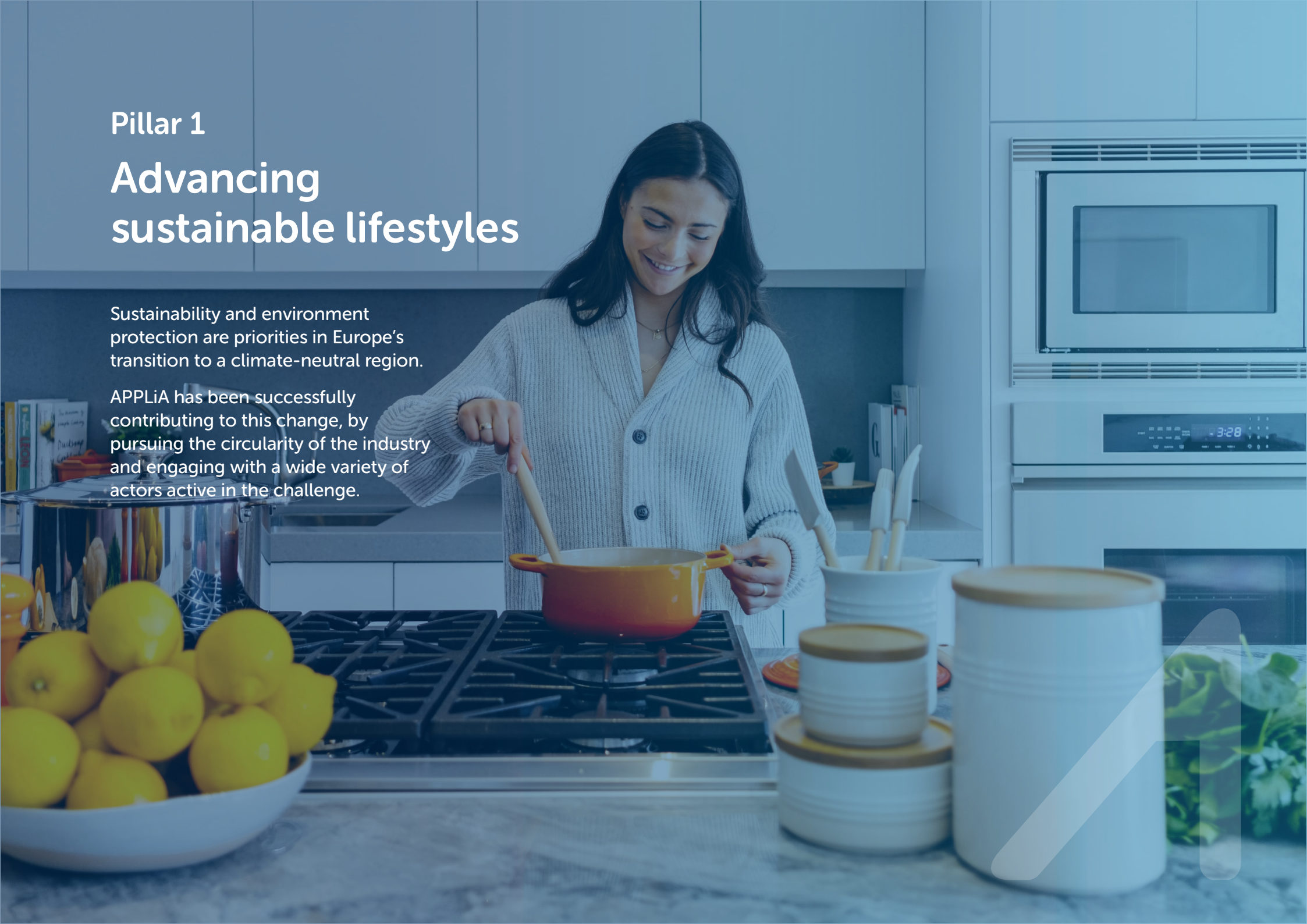


Pillar 1

Advancing sustainable lifestyles

Sustainability and environment protection are priorities in Europe's transition to a climate-neutral region.

APPLiA has been successfully contributing to this change, by pursuing the circularity of the industry and engaging with a wide variety of actors active in the challenge.



Sustainability starts at home. Home appliances improve lifestyles with innovative and resource-saving functions and promote sustainable growth.

The home appliance industry provides European households with appliances that make our lives easier by saving time, energy and water, and securing a clean and healthy home environment.

Circularity is enhanced throughout all the life stages of a device: it starts with raw materials followed by the design of the product, then it goes through production, use and consumption, repair, recycling and recovery. At this latter stage, recycled waste is injected back into the economy as a secondary raw material and the cycle begins again.

In a circular economy, products serve their purpose for as long as possible and then are turned into other home appliances or different tools including benches or bicycles, continuing to offer a service to users. This approach entails reducing material usage during production, optimising an appliance's efficiency during usage, incorporating sustainable materials, designing products for durability, repair, and eventual recovery. There are a variety of ways to drive resource efficiency and manufacture sustainable products that advance the circular economy and a whole new range of sustainable alternatives such as product-as-service models and digital solutions are underway and can contribute to a better quality of life, innovative jobs and upgraded knowledge and skills. These new sustainable goods, services and businesses, together with traditional sales models, can contribute to foster more sustainable consumption patterns.

To advance sustainable lifestyles we must tackle the issue of Europe's largest growing waste stream: e-waste. By properly recycling e-waste, it is possible to reintroduce precious raw materials found in discarded items back into the economy. This reduces the need for mining, minimises greenhouse gas emissions, and conserves our planet's natural resources. When household appliances reach the end of their lifespan, they can be recycled to retrieve minerals and materials before being sent back to manufacturers as secondary raw materials. This significantly decreases reliance on primary resources while stimulating a circular economy.

Repair is an integral part of a circular economy. Repair can stimulate a circular economy by extending the lifespan of products, reducing waste, and preserving natural resources. By repairing and reusing products instead of discarding them, it reduces the need for new appliances to be manufactured, which helps to reduce the environmental impact involved with production and consumption. The scarcity of repair workers throughout Europe is increasingly becoming a significant concern. As seasoned and qualified repair professionals are retiring, younger generations are pursuing different career paths. This is compounded by rapid technological advancements, which pose a significant risk of creating a considerable market gap that needs to be filled.

APPLiA's national associations across Europe have already taken several steps to inspire the next generation to professionally take up the craft of repair. In Hungary, a partnership with local



vocational schools has trained 60 young experts, who are now employed full-time in the sector across the country, generating new jobs in Europe and injecting skilled professionals into the market. Slovakia, Poland and Czech are following suit with their very own training programs at national level, equipping schools with household appliances and distributing educational books for teaching and learning purposes.

Material use during the production process

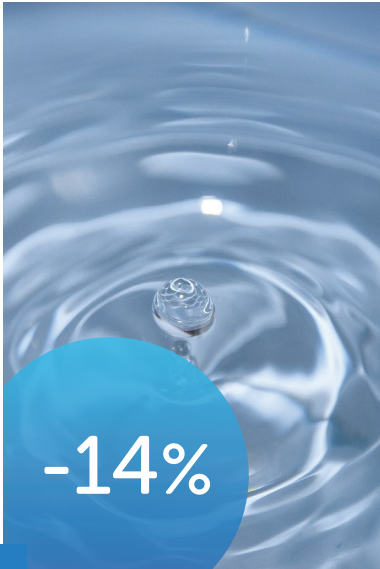
The home appliance sector works continuously to reduce its carbon footprint, throughout the entire production process.

Compared to the last decade, the sector made even greater strides in the reduction of resources used to manufacture home appliances. Particularly, waste and energy consumption dropped by an additional 6% and 18%, respectively.

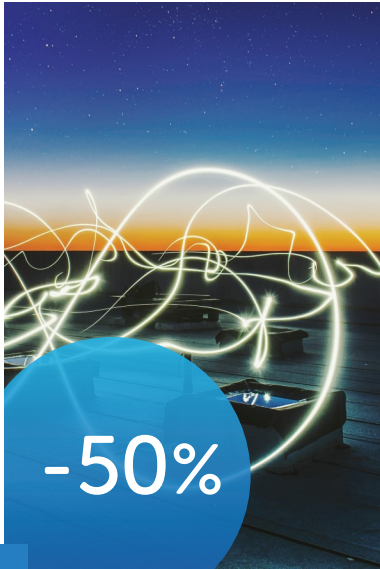
Source: dss+



Reduction in waste generation during production



Reduction in water consumption during production



Reduction in energy consumption during production

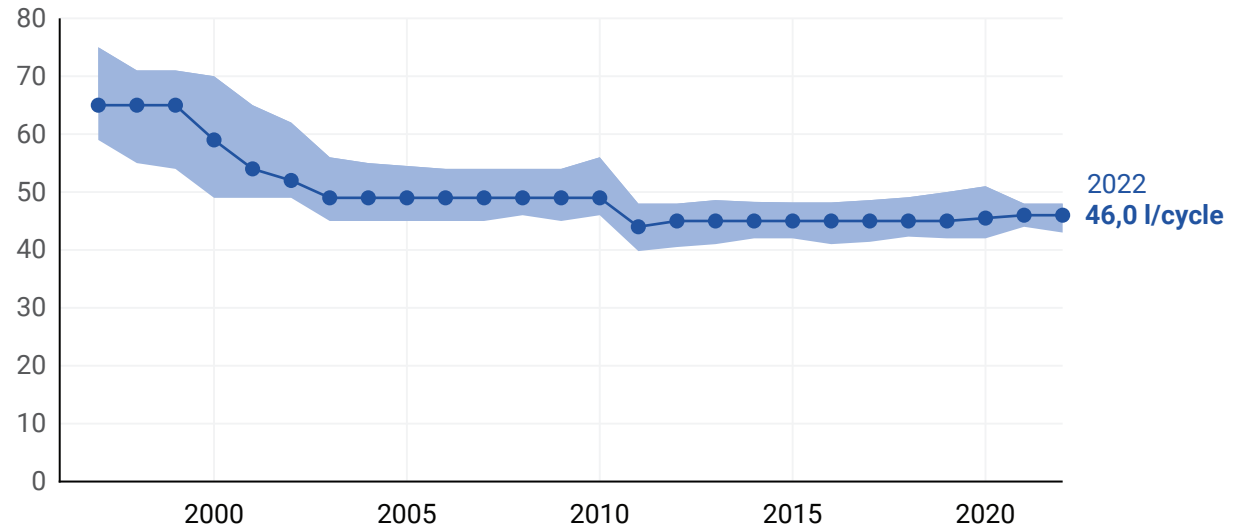
Average water consumption of washing machines and dishwashers

The water consumption of washing machines and dishwashers has generally decreased over the past 20 years, due to advancements in technology.

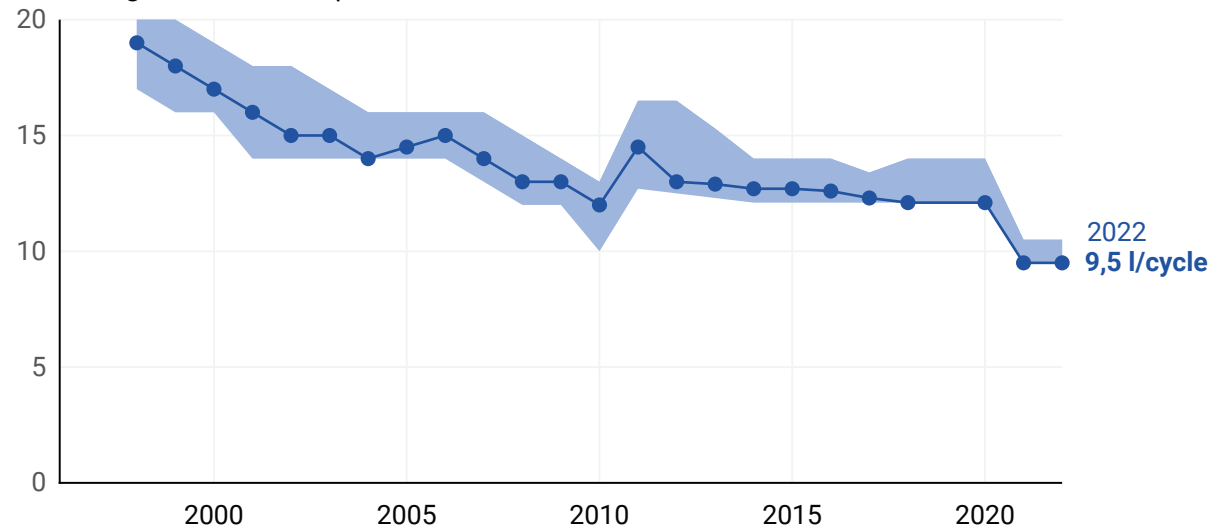
In the late 1990s, over 65 litres of water were required for a washing machine to complete a single washing cycle. By 2022, this figure had dropped significantly to just around 46 litres per cycle, highlighting a notable decrease in water usage compared to previous decades.

Similarly, about 20 litres of water were required for a dishwasher to complete a single washing cycle. By 2022, this figure had dropped significantly to less than 10 litres per cycle, highlighting a notable decrease in water usage compared to previous decades.

Average water consumption of washing machines



Average water consumption of dishwashers

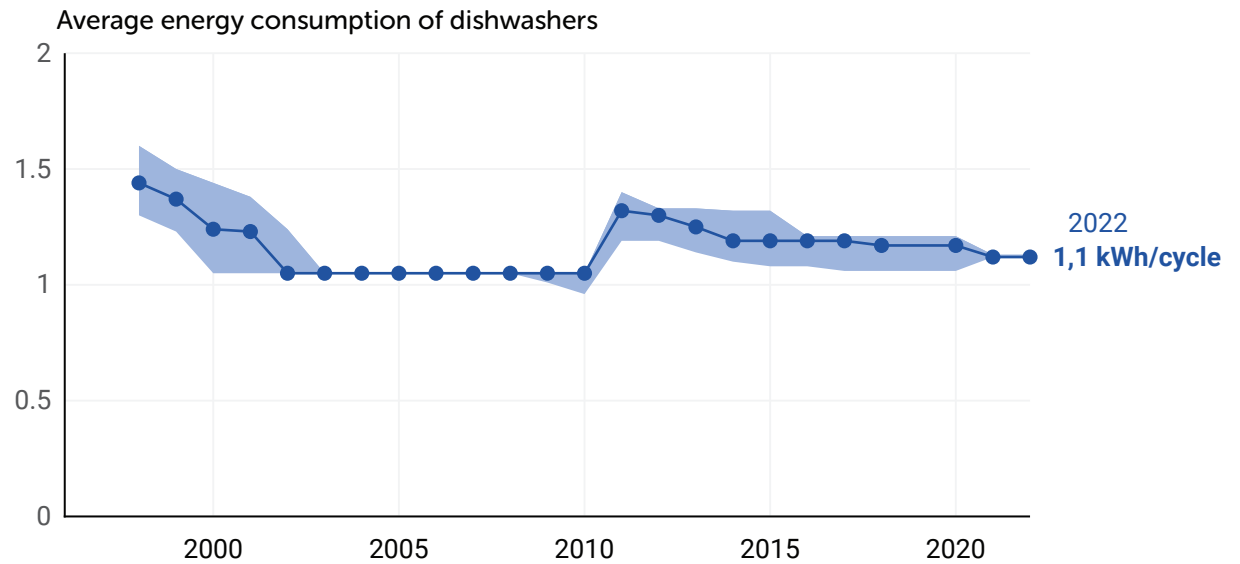
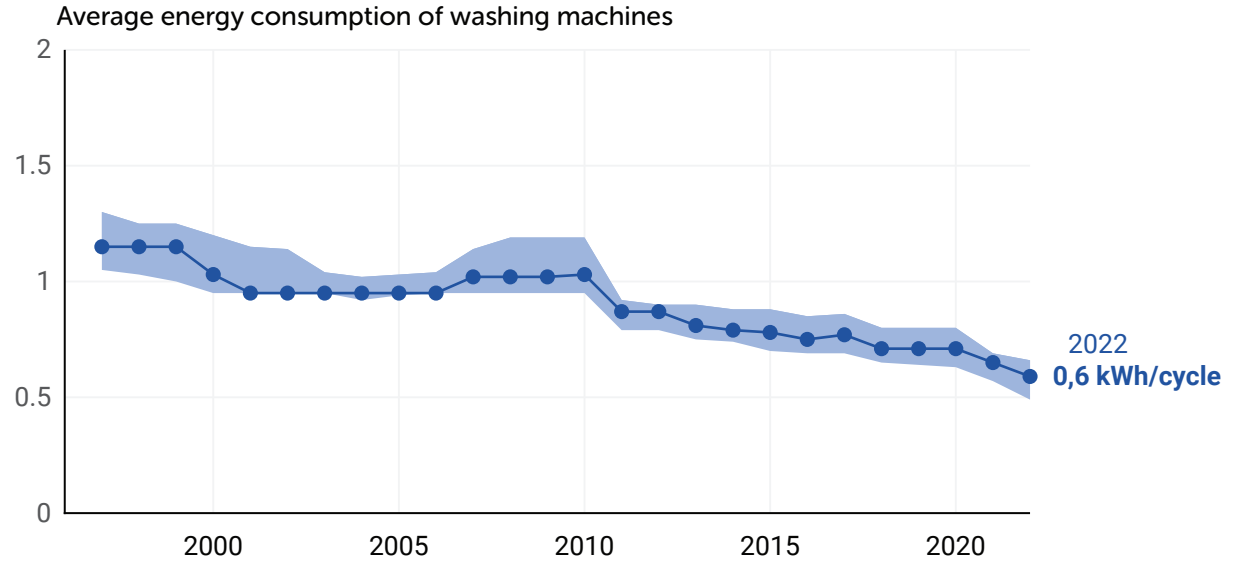


Average energy consumption of washing machines and dishwashers

The energy consumption of washing machines and dishwashers has generally decreased over the past 20 years, due to advancements in technology.

In the late 1990s, each washing cycle demanded over 1.15 kWh of energy. By 2022, this consumption has diminished to 0.59 kWh, underscoring a significant reduction in energy usage compared to previous decades.

Similarly, approximately 1.44 kWh of energy were required for a dishwasher to complete a single washing cycle. By 2022, this figure has decreased to 1.12 kWh, indicating a significant reduction in energy usage compared to previous decades.

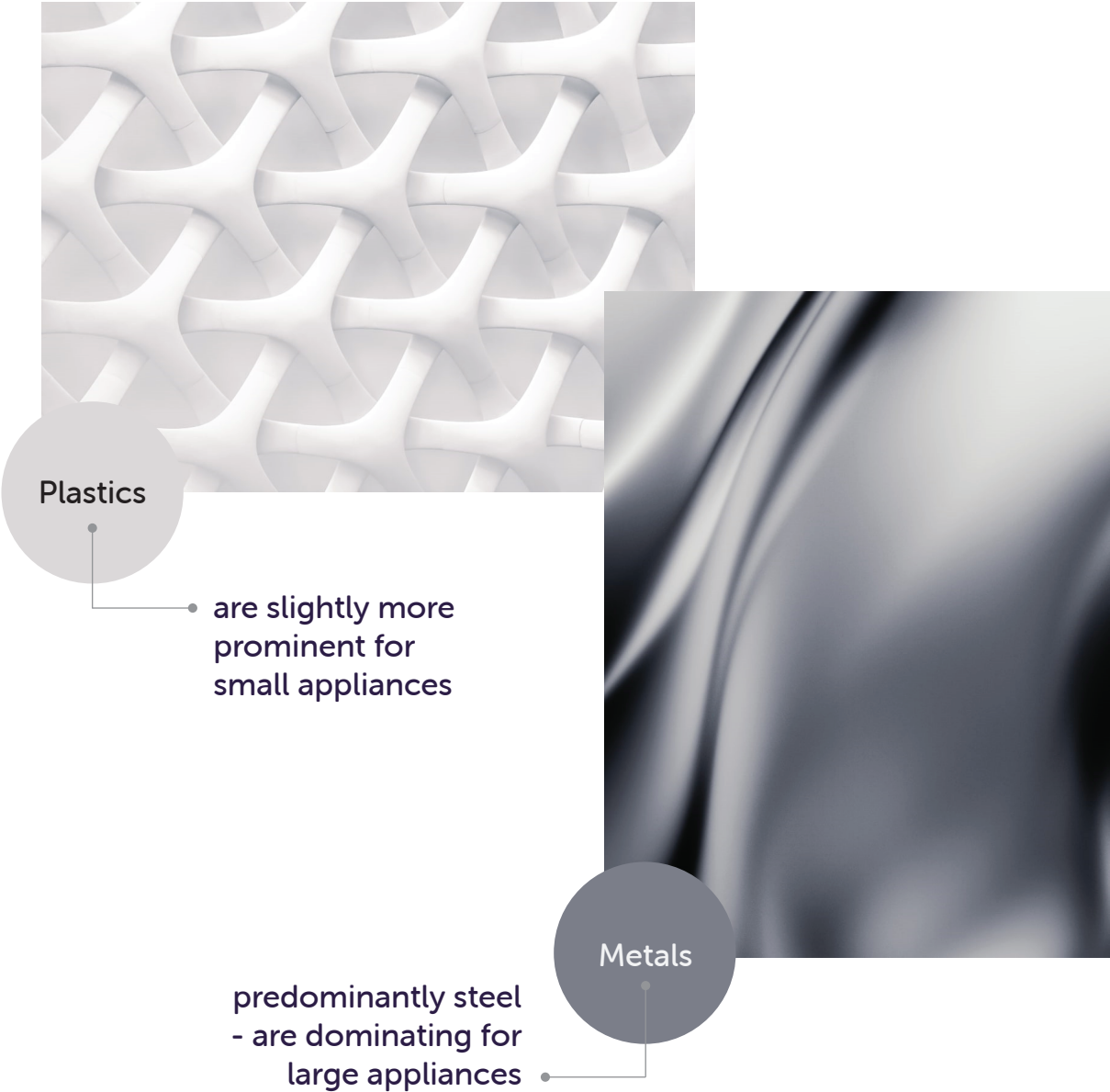


Average material composition of home appliances

To produce and supply appliances, the home appliance industry uses various materials, metal and plastics in particular. These materials come mainly from virgin sources but also increasingly from recycled sources.

The average material composition of large home appliances is dominated by steel and stainless-steel metals, while plastics are becoming more prominent for small appliances.

Source: dss+

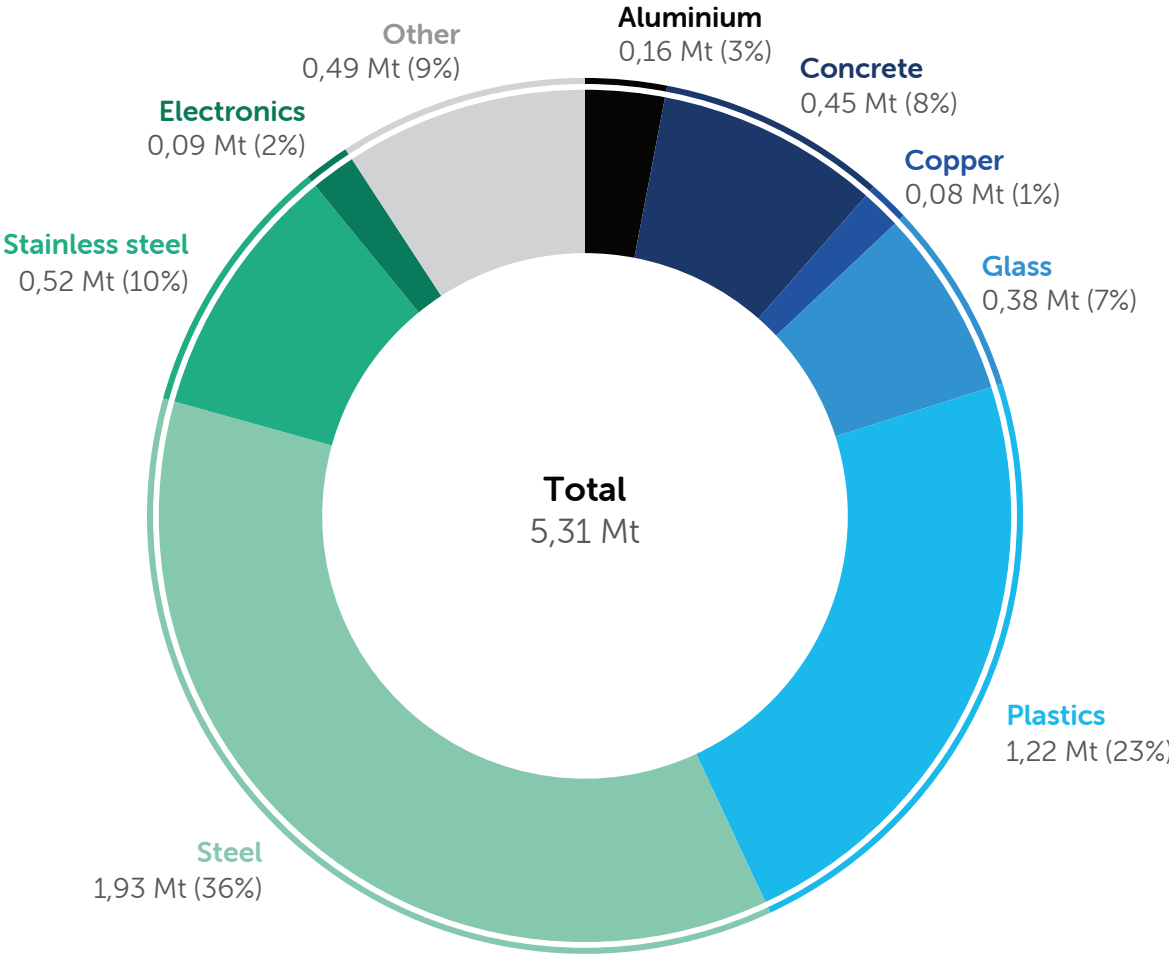


Quantities of individual materials used in home appliances

The quantities of individual materials in home appliances can vary significantly depending on the type of appliance and its specific design. On average, steel is the most predominant component, followed by plastics and other materials such as stainless steel, concrete, and glass.

Each material plays a significant role in optimising the performance, durability, and energy efficiency of products.

Source: dss+

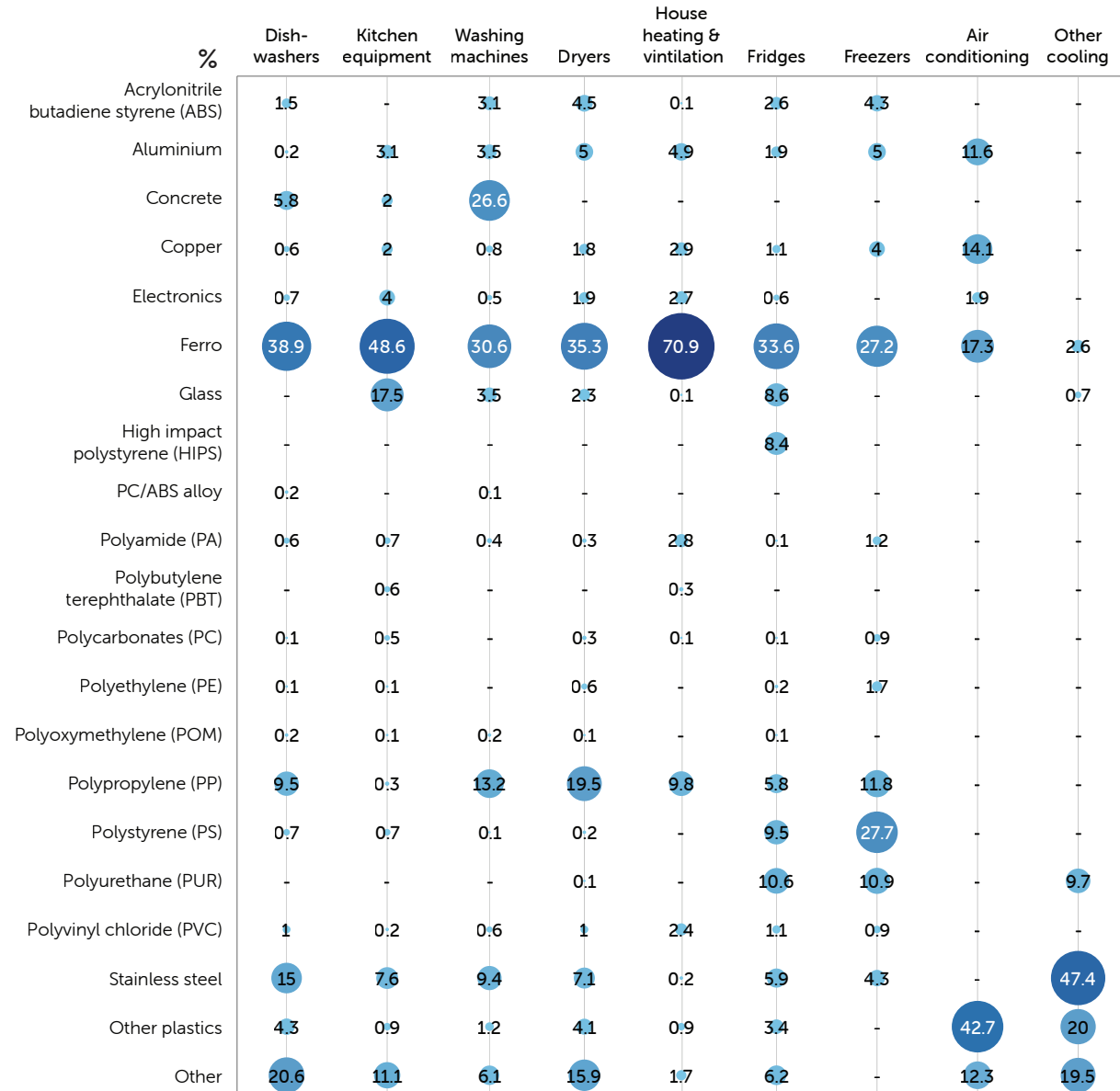


Average material composition of large home appliances

The average material composition of large home appliances can vary depending on factors such as the type of appliance, brand, model, and manufacturing processes.

However, steel and stainless steel metals are more prominent in the material composition for large appliances.

Source: dss+

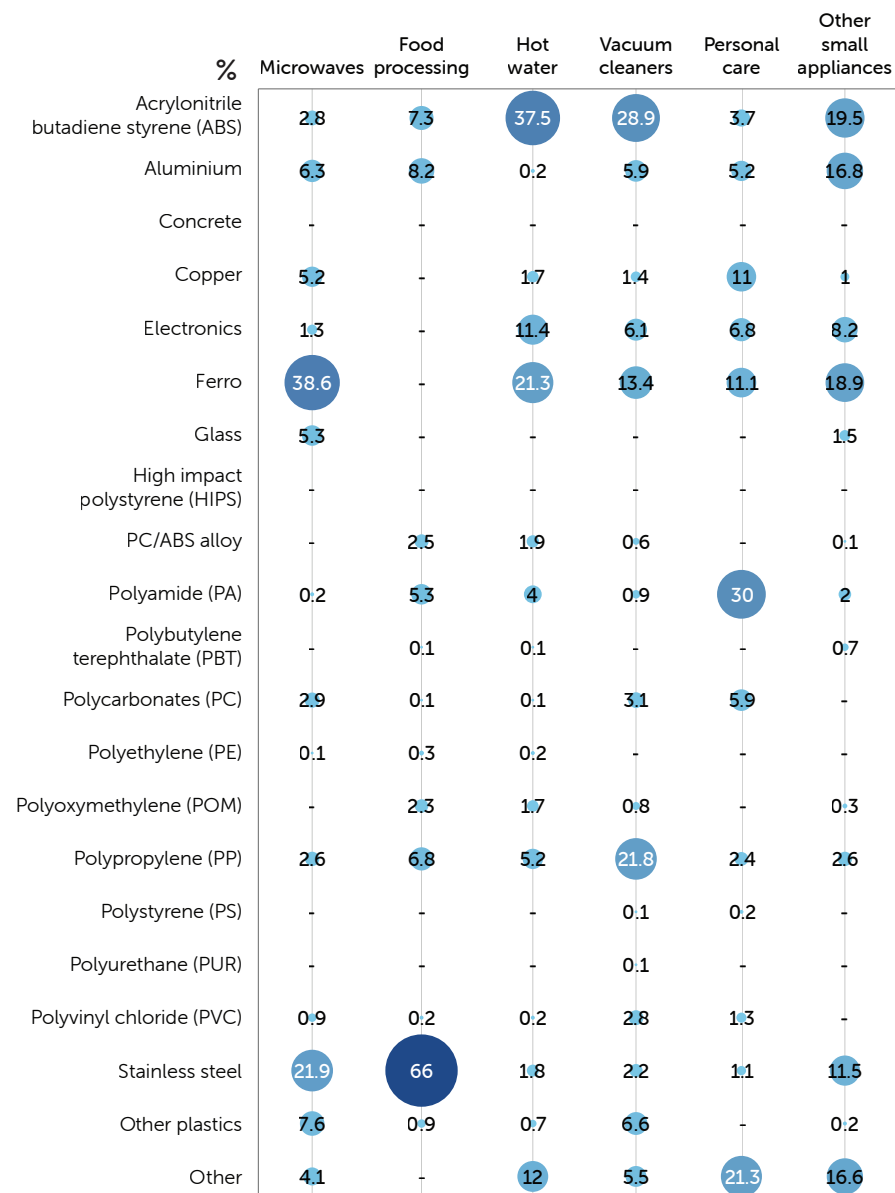


Average material composition of small home appliances

The average material composition of small home appliances can vary depending on factors such as the type of appliance, brand, model, and manufacturing processes.

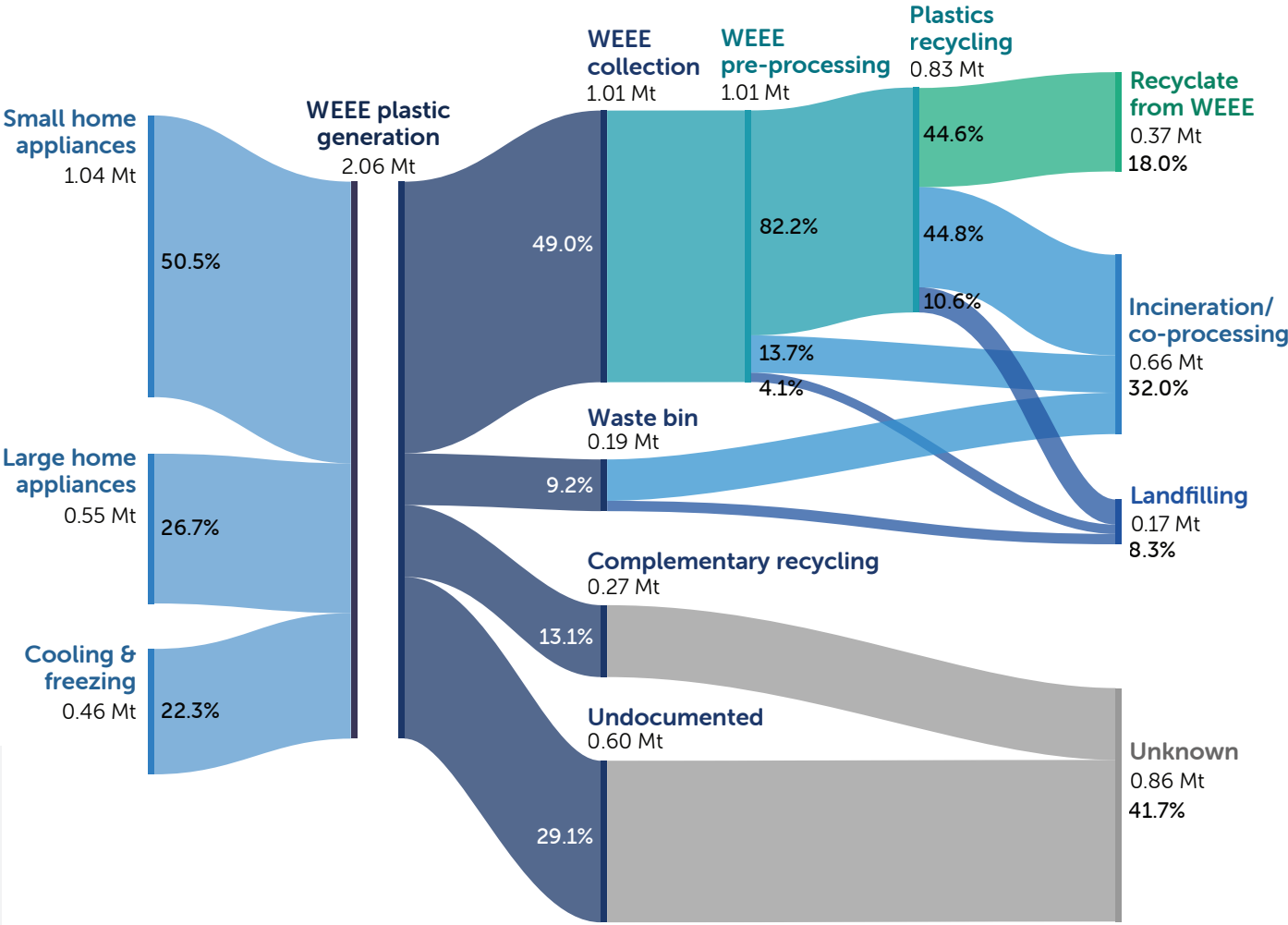
However, plastics are slightly more prominent in the material composition for small appliances.

Source: dss+



Plastic flows from home appliances

Source: dss+



APPLiA, together with more than 100 other signatories along the plastics value chain, is part of the **Circular Plastics Alliance** which works to reduce plastic waste and promote recycling plastics in Europe.

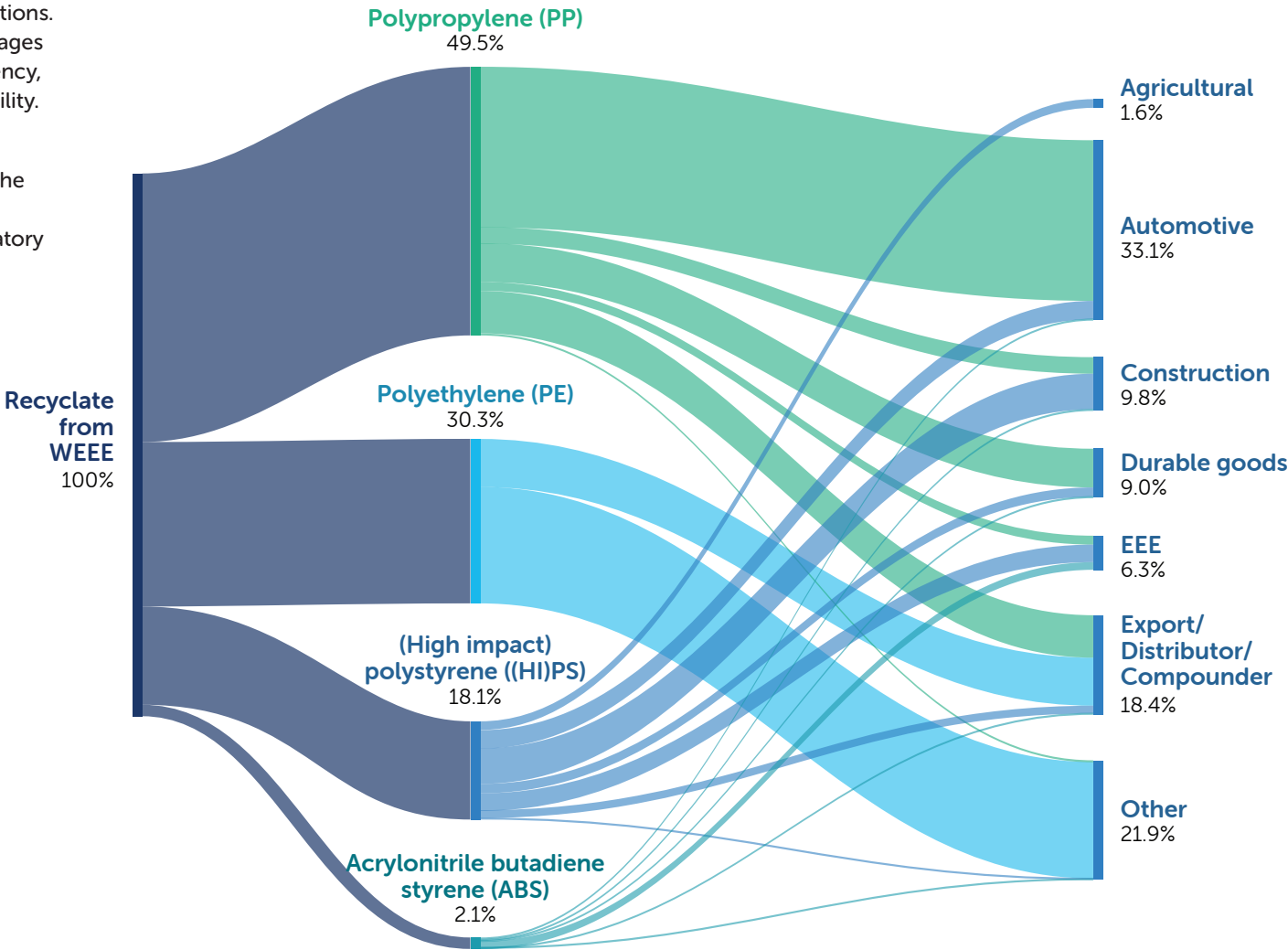
Making the **EU Plastics Strategy** a reality will require action from all players in the plastic value chain, from plastic producers and designers, through brands and retailers, to recyclers.

Routes of recycled plastics from WEEE

Recycled plastics can undergo various routes or processes to be reused in different applications. Each of these routes offers distinct advantages and challenges in terms of resource efficiency, environmental impact, and economic viability.


The choice of recycling route depends on factors such as the type and condition of the plastic waste, market demand for recycled materials, available technology, and regulatory considerations.

Source: dss+






Space cooling
0,5%


Other end use
1,1%


Lighting and electrical appliances
13,6%


Cooking
6,0%


Water heating
14,5%


Space heating
64,4%

Energy consumption in the home in 2021

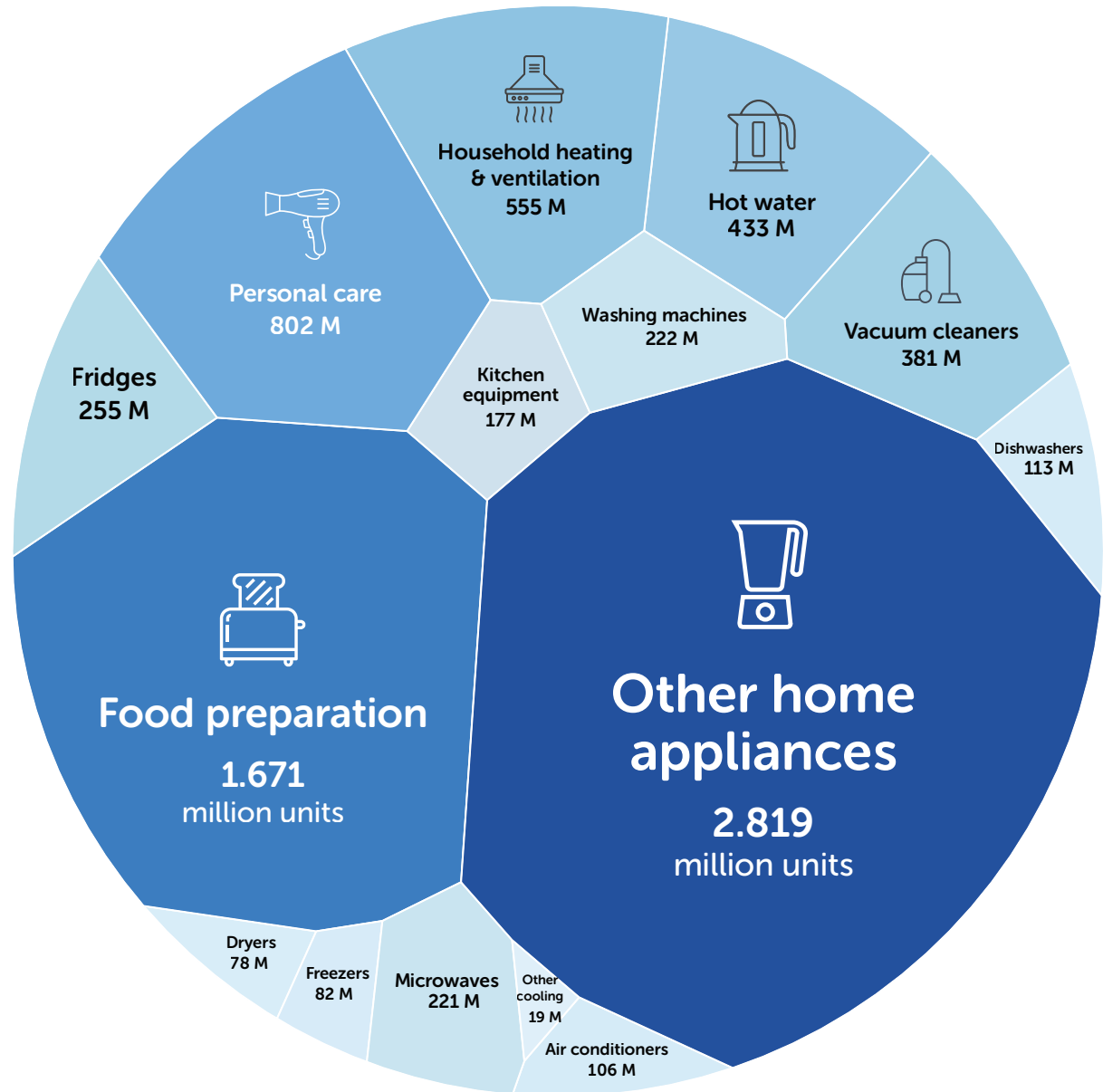
Source: Eurostat

Hoarding of WEEE

Novel statistics on hoarding of used EEE and WEEE stored in households show that households own an average of 74 EEE items (excluding lamps and luminaires), of which 61 items are in use, nine are hoarded but working, and four are hoarded and not working.

The total mass of items in households is 90 Mt, of which 7 Mt is hoarded and working, and 3 Mt is hoarded and broken.

Source: WEEE forum data and dss+



Large appliances including dishwashers, washing machines and air conditioners can be taken right away by the shop delivering your brand new appliance, thanks to take-back schemes obligation financed by manufacturers.

Small appliances like coffee machines, toothbrushes or toasters, can be brought to container parks, to the shop from which you are buying your new product or to the nearest supermarket. From there, collection networks handle the collected e-waste before shipping it to a recycling centre.

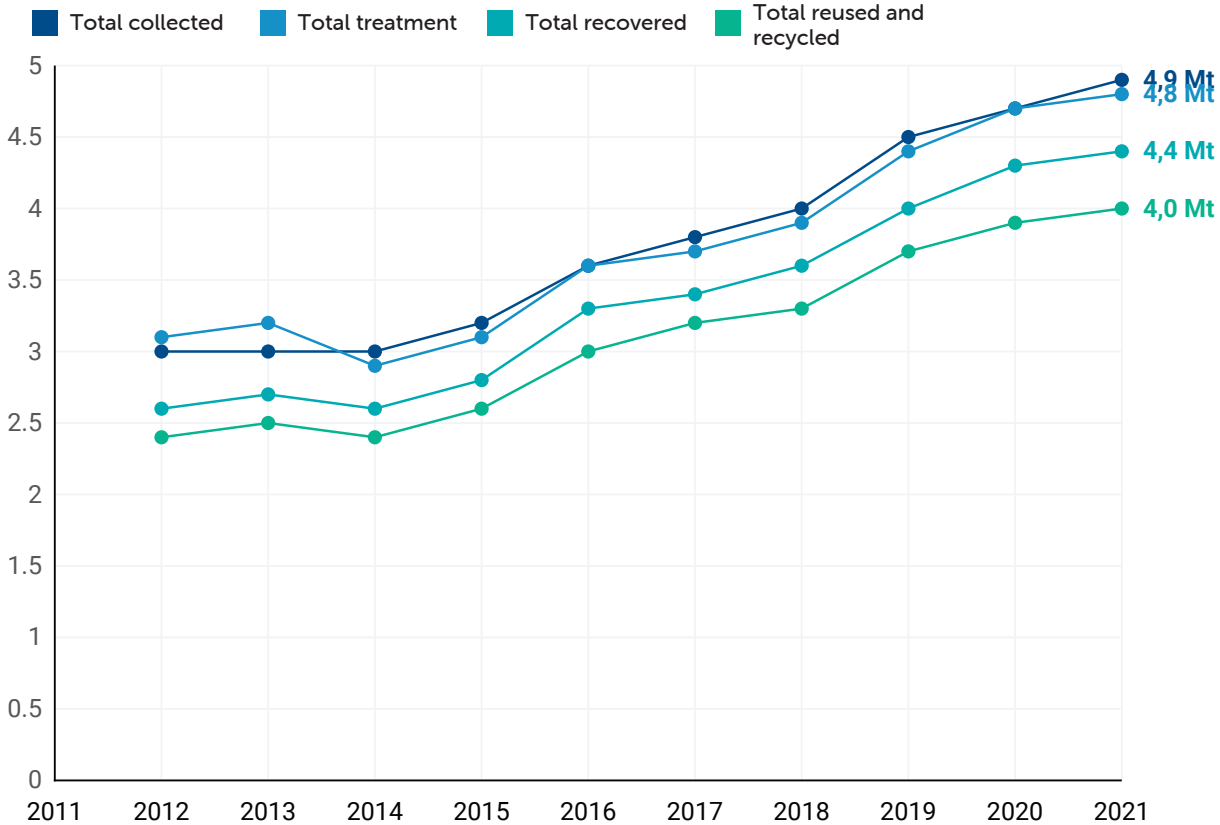
WEEE flows in the home appliance sector

Waste Electrical and Electronic Equipment (WEEE) collection, treatment, and recycling have shown significant improvement over the past decade (2011-2021).

The amount of WEEE collected, treated and recycled every year has been increasing steadily.

The home appliance sector has shown a strong commitment to improving the WEEE recycling rate with substantial success in this sustainability effort. Once properly recycled, e-waste helps reintroduce precious raw materials contained in discarded products back into the economy, helping to reduce the sector's carbon footprint, while conserving our planet's precious natural resources.

Source: dss+



Materials recovered from waste

In industrial and complementary processes, various materials and energy can be recovered from flows to minimise waste, reduce resource consumption, and improve overall sustainability.

Examples of materials recovered include metals and plastics. When it comes to energy, one way of recovering it is for the heat energy generated by industrial processes to be captured and converted into electricity, steam, or hot water for onsite use or distribution to external facilities.

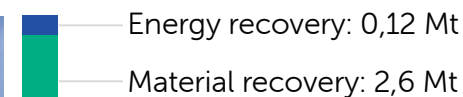
By recovering materials and energy from industrial flows, businesses can reduce waste generation, lower resource consumption, decrease environmental impacts, and enhance their overall economic and environmental sustainability.

Source: dss+

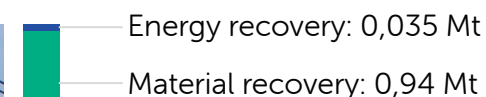
APPLiA is one of the founders of the **I4R platform**. The I4R platform, which was launched in 2018, is a user-friendly communication tool that aims to enhance recycling in the electrical and electronic sector. Its purpose is to reduce the compliance costs for both EEE manufacturers and WEEE recyclers by facilitating the exchange of information between them.

For more, visit i4r-platform.eu

Recovered from industry flows



Recovered from complementary flows



An aerial photograph of a large container ship sailing on the ocean, with a smaller ferry visible in the distance. The ship is heavily loaded with colorful shipping containers. The water is a deep blue, and the ship's wake is visible. The overall scene is set against a clear sky.

Pillar 2

Accelerating Europe's growth

Our industry thrives in a system based on free and fair trade, both among the EU's Member States and with third countries.

Europe's economic growth is inextricably linked to its ability to engage in trade, at both national and international level. This is especially true for the home appliance sector, which is highly dependent on exports and imports. The ability to trade freely and efficiently with other countries is critical for the industry's success, as it allows for access to new markets, increased competition, and the potential for greater innovation.

As the sector pushes to advance sustainable lifestyles through increasingly energy-efficient and smart home appliances, the EU Single Market is more important than ever to Europe's economic success, as various obstacles to cross-border trade must be overcome when it comes to varying national requirements. The European Parliament's "Cost of non-Europe" study estimates that the benefits of removing existing barriers in the Single Market for goods and services could amount to €713 billion by the end of 2029. A fractured Single Market not only creates a financial burden for companies but also adds to the cost that consumers have to bear. These challenges can hinder the free and cost-effective movement of goods in Europe, in turn, creating fragmentation and uncoordinated responses which negatively impact Europe's competitiveness and its influence on a globalised economy.

As one of Europe's largest manufacturing sectors, the home appliance industry is a leader in innovation and digitalisation. Today's smart homes are equipped with features providing consumers with complete control of their homes energy usage. Once home owners can control and optimise their energy usage, the many advantages of demand-side management can be reached.

This involves using appliances during off-peak hours when energy costs are lower, adjusting temperature and lighting settings to reduce energy consumption, and using appliances only when necessary. According to a study run by SmartEN, flexible consumption from energy demand sectors alone could slash consumer bills by 71 billion a year. This approach would empower consumers to make informed and voluntary decisions, encouraging them to use their appliances when it makes most sense, both in terms of cost and energy efficiency. By embracing flexible demand-side management practices, households can reduce their carbon footprint, save money on energy bills, and contribute to a more sustainable future for Europe.

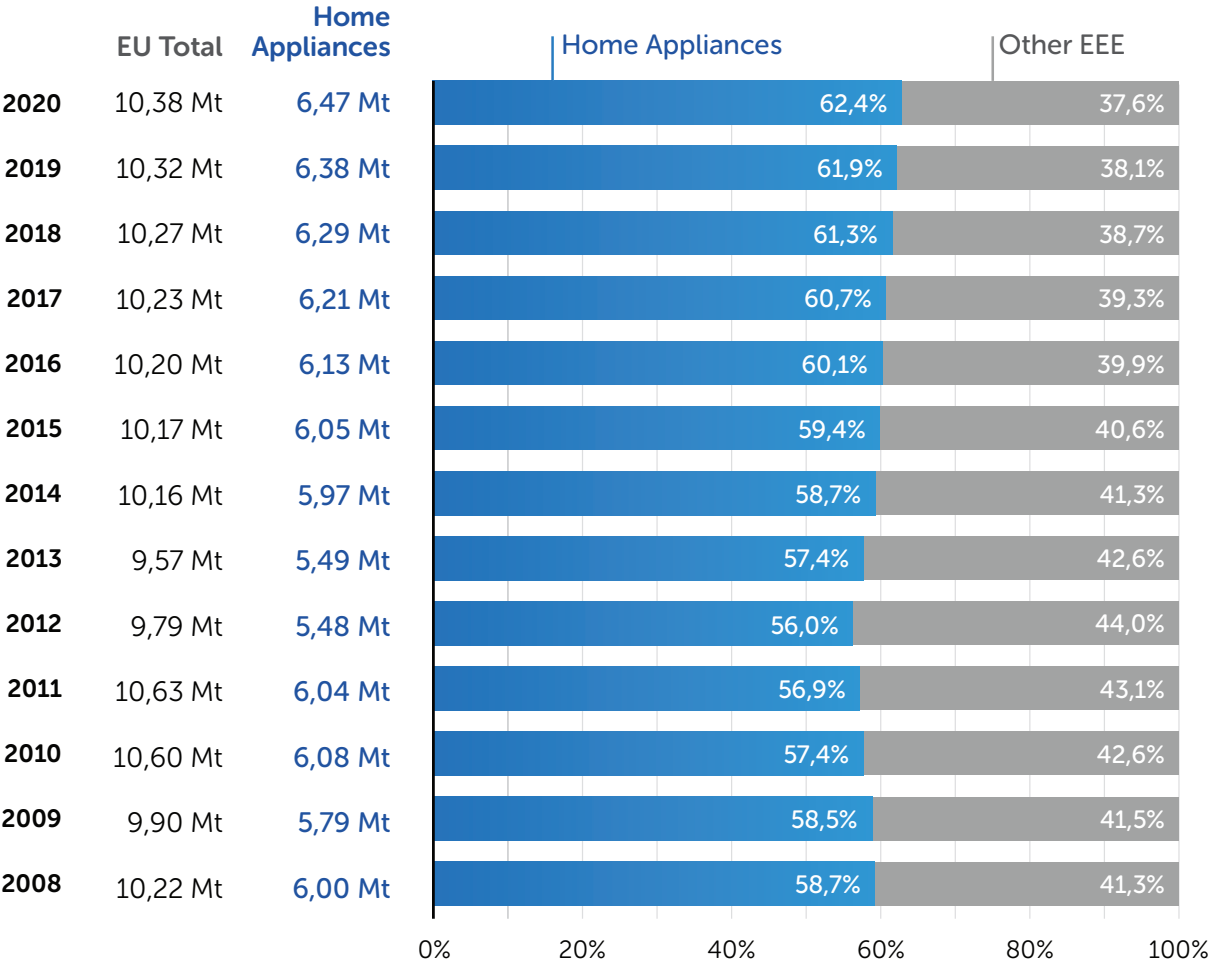
With the number of patents granted for home appliances having doubled in the past decade, new products and innovation have brought new possibilities for energy efficiency. Over the past 20 years, the energy consumption of home appliances has dropped by 50%, with a fridge today consuming 1/4 of previous energy levels. Imagine what is possible in the next 20 years!

Efficient use of energy has the potential to be a crucial element in the response and recovery efforts found in today's political climate. Governments can strategically plan and incorporate incentives for energy efficiency within their economic stimulus packages. This approach is significant not only for addressing the long-term issue of climate change but also because energy efficiency can substantially aid in economic recovery. A surge in demand for more efficient appliances can stimulate the manufacturing industry by generating employment opportunities and lowering overall costs. As a result, the adoption of energy-efficient appliances by households worldwide may increase significantly.



Electrical and electronic equipment placed on the EU market

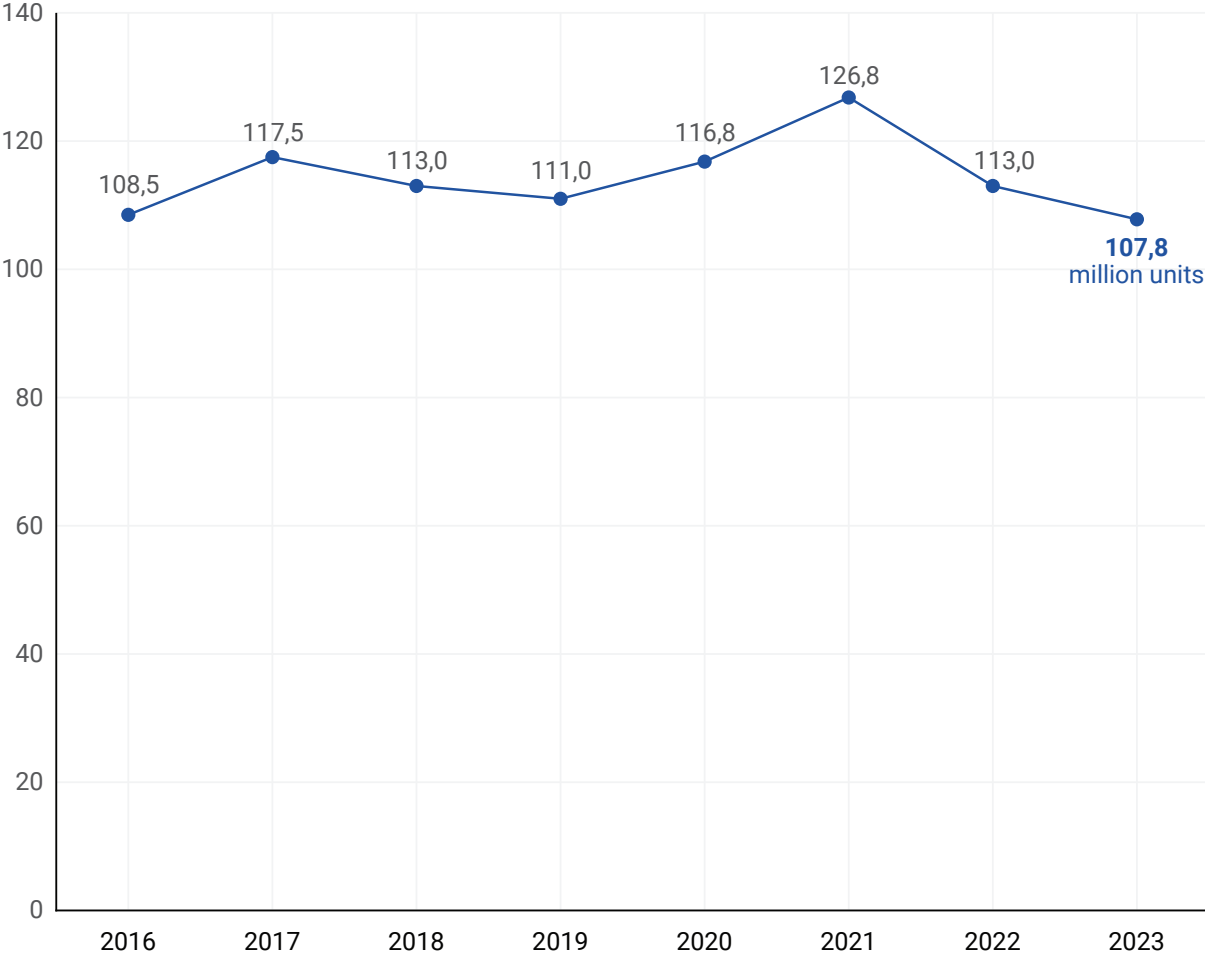
Source: UNU-VIE SCYCLE



European market historical picture

The EU market for home appliance products has been growing steadily until 2021, after which it experienced a downward trend for the last two years.

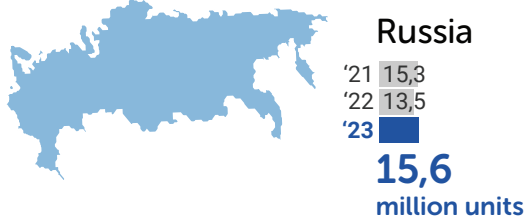
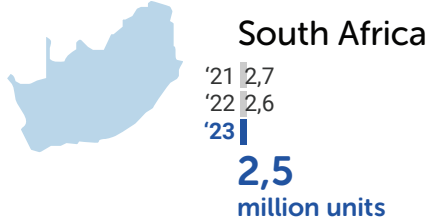
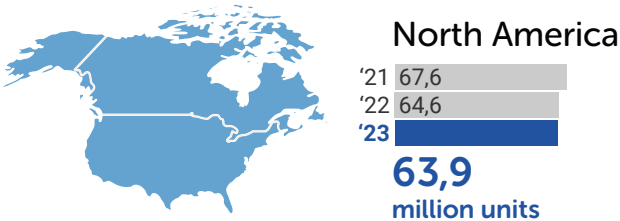
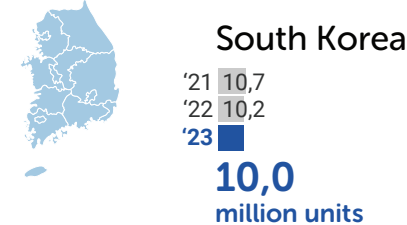
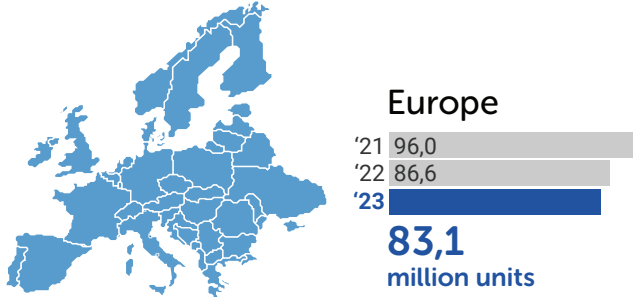
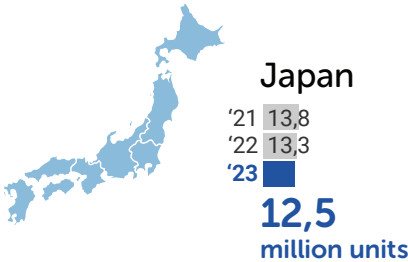
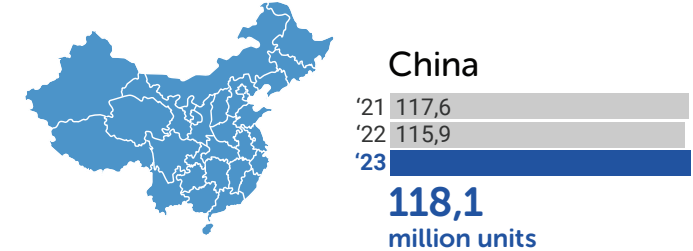
These fluctuations are the result of different factors including the economic downturn, the pandemic impact, the shift in consumer priorities and regulatory changes.



Large appliances sold globally in 2023

Large appliances such as washing machines, fridges, and microwave ovens are pivotal to the sector generating millions of sales globally each year.

Source: IRHMA



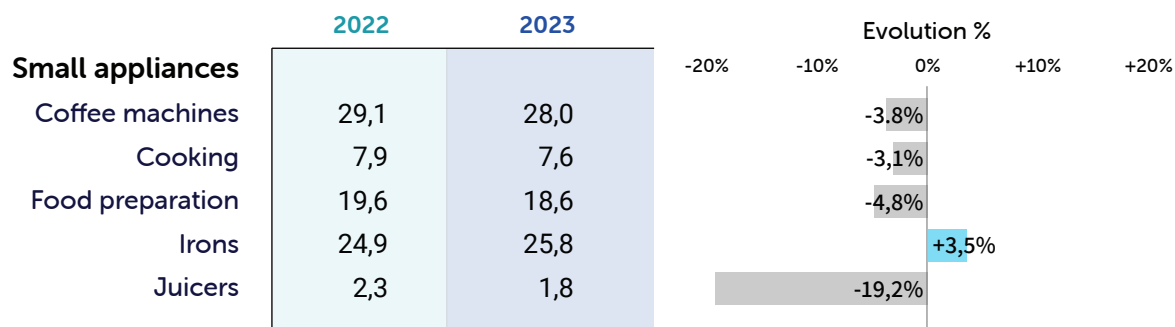
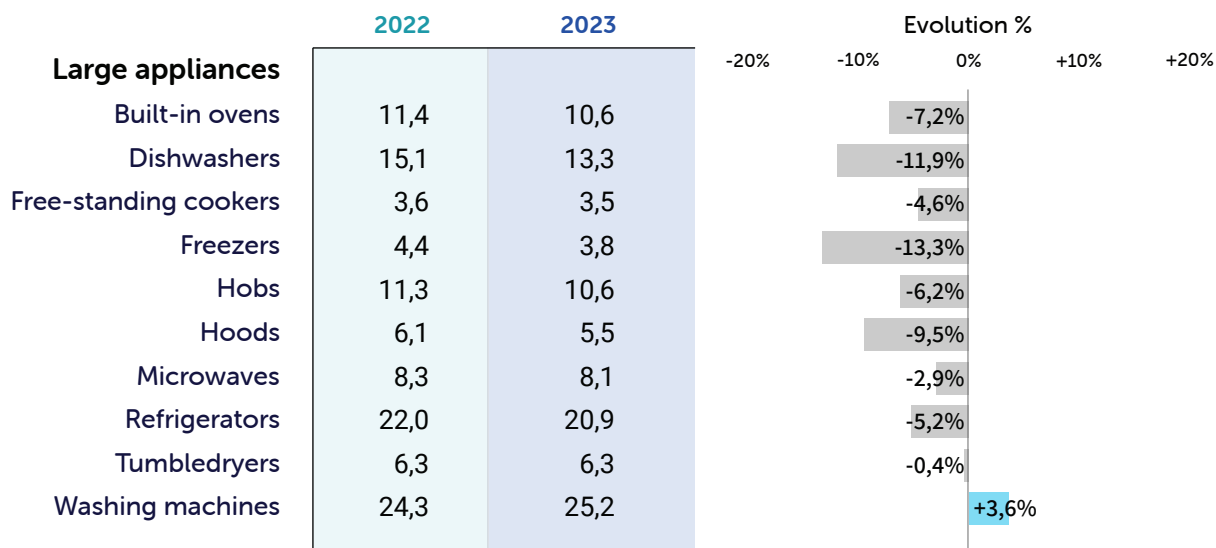
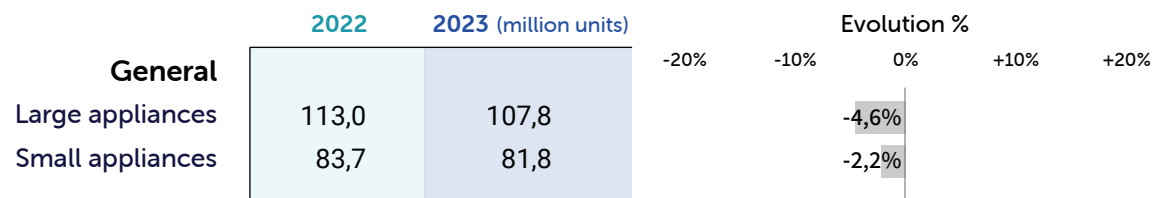
Units traded in Europe

Both for large and small home appliances, the number of units traded in Europe has slightly dropped between 2022 and 2023.

For the large home appliances, the number of units traded in Europe dropped in most categories, in particular for freezers (-13,3%). The sole exception is for washing machines which rose instead by 3,6%.

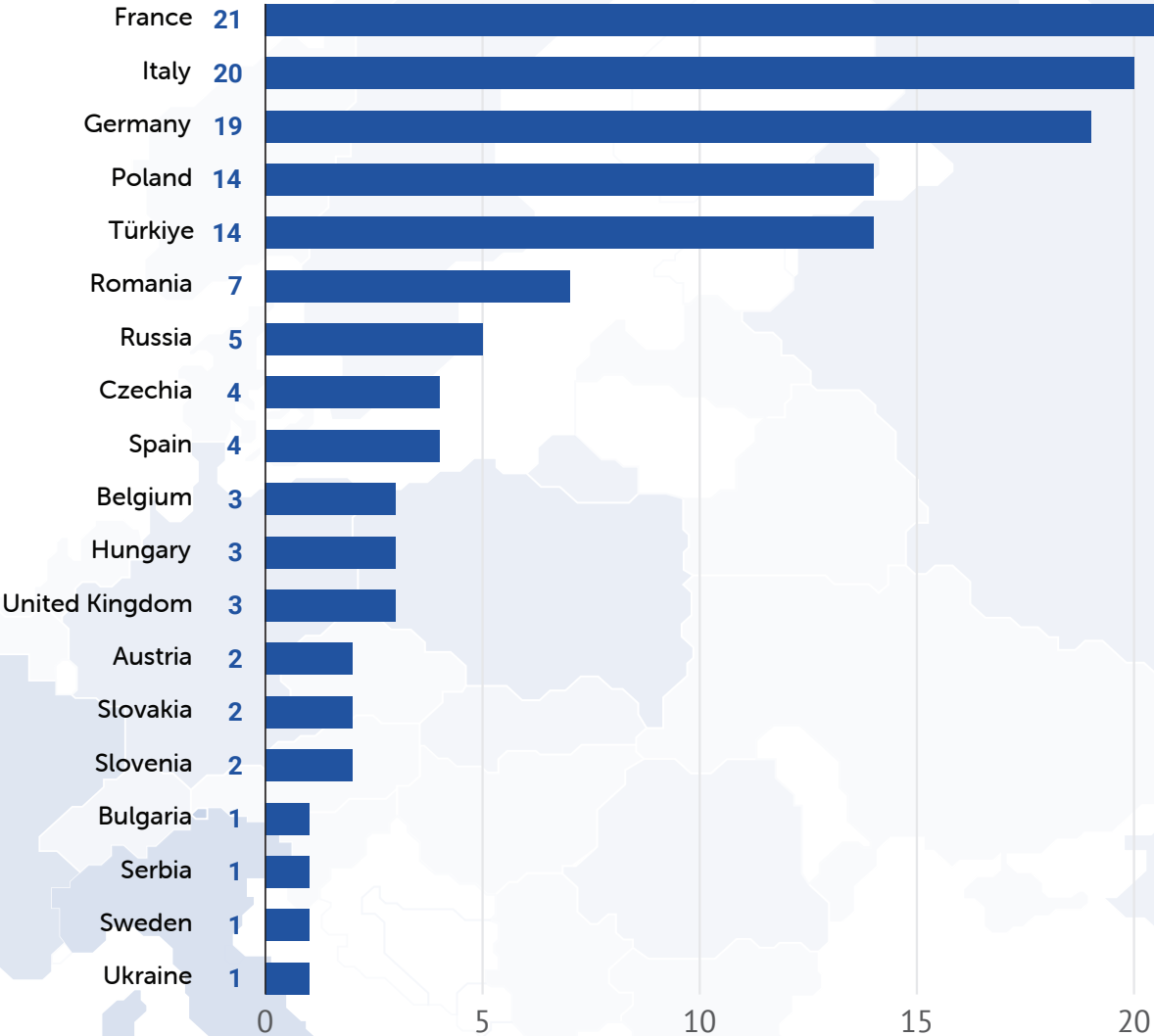
Within the small home appliances, the biggest decrease is noticed within the juicers category (-19,2%), while the irons category has seen a small growth (+3,5%).

Source: APPLiA members data



APPLiA Direct Members manufacturing sites in Europe, in 2023

As APPLiA membership continues to grow, so does the number of manufacturing sites owned by our members in Europe, helping to stimulate the economy by creating new jobs each year.

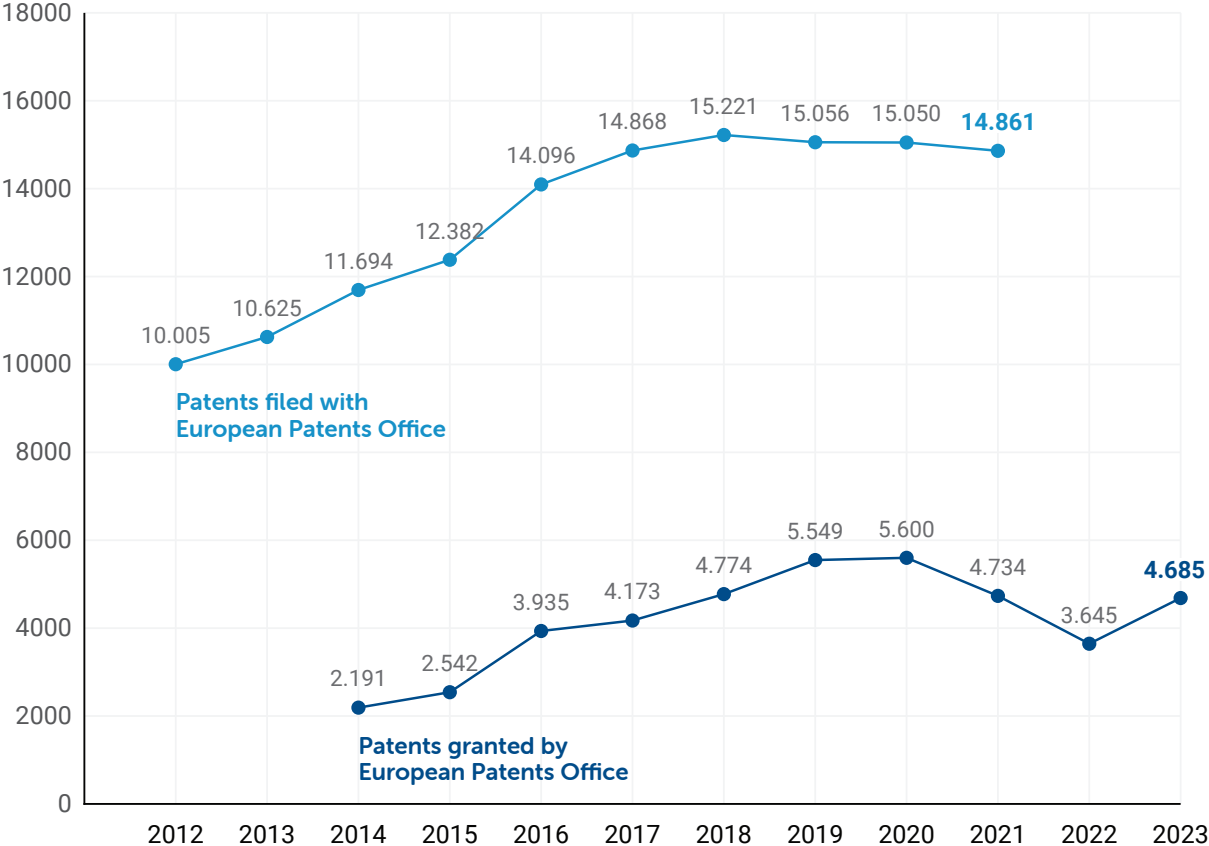


Patents filed and granted for home appliances

Over the past decade, the number of patents filed and granted for home appliances has increased.

This rise in patent filings could be attributed to the development of new technologies, which has led to a wider variety of appliances with improved features and functionalities.

Source: Clarivate Analytics Derwent Innovation

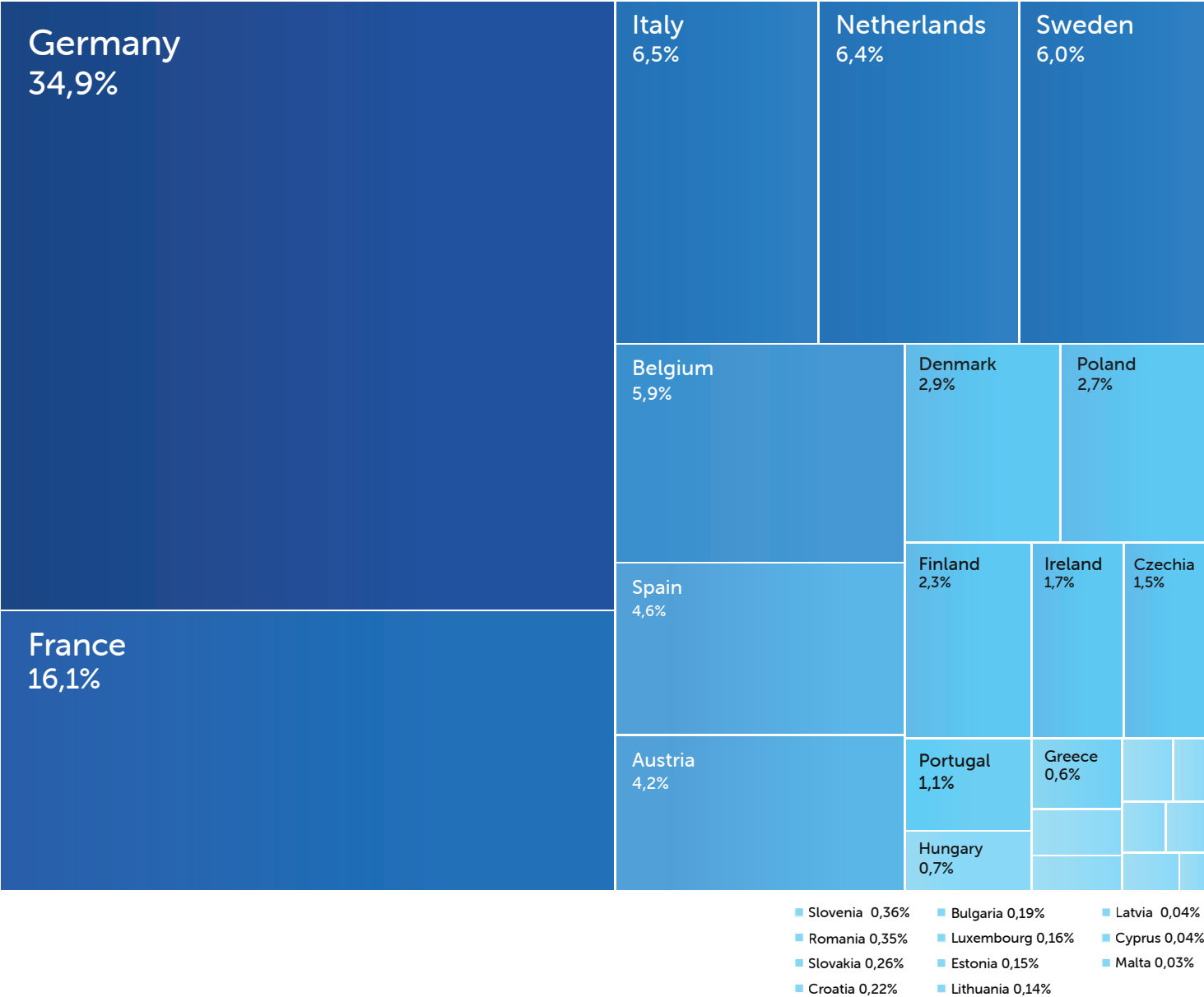


Investment in R&D by EU Member States

Investment in R&D plays a crucial role in driving innovation and competitiveness in the home appliance sector, enabling manufacturers to develop cutting-edge products that deliver superior performance, efficiency, and user experience while addressing emerging market trends and sustainability challenges.

In Europe, Germany (34,9%), France (16,1%) and Italy (6,5%) are the countries investing the highest share in R&D.

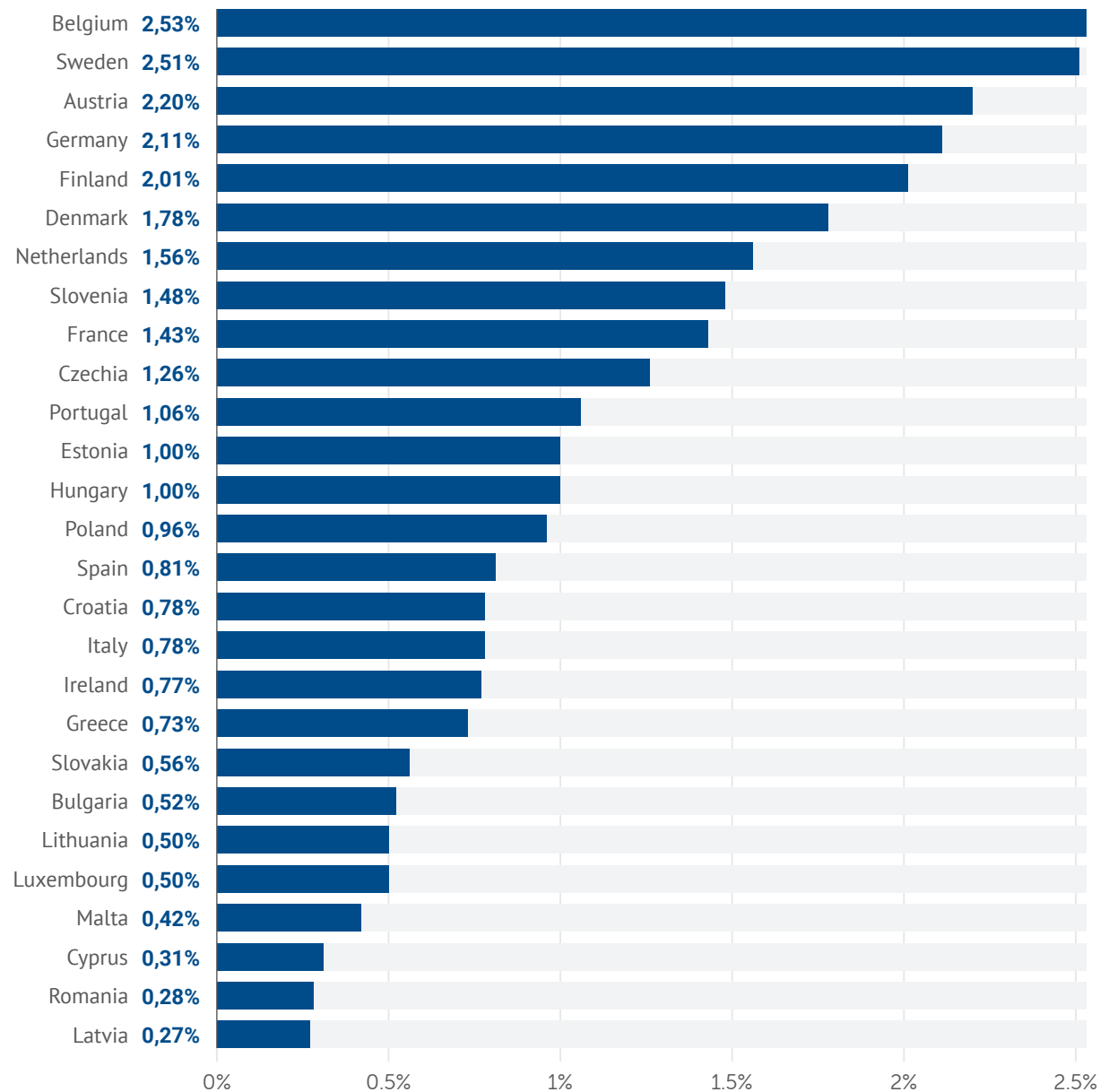
Source: Eurostat



Investment in R&D by EU Member States as fraction of GDP

By investing in R&D, APPLiA members can concentrate on key aspects such as energy efficiency and smart functionalities. These developments are driven by consumer demand for technologically advanced and sustainable appliances.

Source: Eurostat



Connect with us

Bld. Brand Whitlock 114
1200 Brussels
Belgium

hello@applia-europe.eu
www.applia-europe.eu

This document may only be used for consultation by the recipient of this report subject to prior acknowledgment and acceptance of the terms of this notice, and solely for the recipient's own internal purposes – expressly excluding any commercial use of the information contained herein. Any reproduction in part or whole of this APPLiA report and any extraction of the information contained herein are subject to prior written authorization from APPLiA. Any use of this APPLiA report in part or whole other than in accordance with the above limited permission may trigger enforcement by APPLiA and/or its licensors.

© All rights reserved APPLiA 2024