vinyl plus®

REPORTING ON
2024 ACTIVITIES

PROGRESS REPORT 2025

TABLE OF CONTENTS

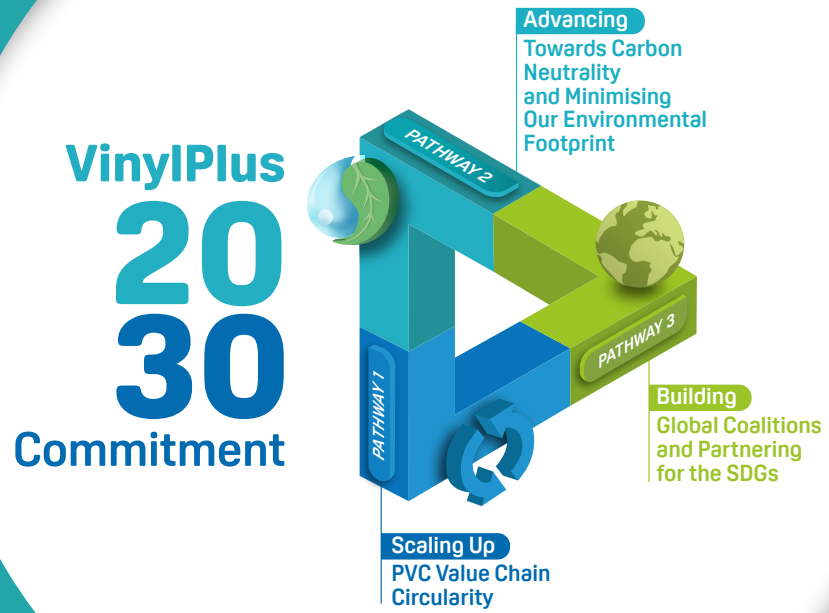
01

VINYLPLUS: OUR COMMITMENT TO SUSTAINABILITY

VinylPlus® is the European PVC industry's commitment to sustainable development. Through VinylPlus, the European PVC industry is creating a long-term sustainability framework for the entire PVC value chain, improving PVC products' sustainability and circularity, as well as their contribution to a sustainable society.

Launched in June 2021, the VinylPlus 2030 Commitment builds on over 20 years of progress and achievements throughout the EU-27, Norway, Switzerland, and the UK.

As planned from the outset, in 2025 VinylPlus will undertake a comprehensive review of its 2030 Commitment's targets measuring and evaluating its initiatives up to now, to take into account market and technical developments, as well as the evolution of the regulatory framework.



For targets, deadlines and status of achievement, scan the QR code.

02 PVC: A JOURNEY FROM MANUFACTURING TO RECYCLING

A closer look at the positive environmental impact and strategic importance of PVC

MANUFACTURING

Chloralkali Process

The production of:

- Caustic Soda
- Hydrogen
- Chlorine

PVC Manufacturing

PVC is produced across Europe

- **30% of Europe's chlorine** goes into PVC production, with **60% of PVC being derived from chlorine** in common salt, making it a low-carbon plastic.
- EU regulations and industry guidelines **ensure safe production** by controlling worker exposure, minimising emissions, and ensuring safe transport.
- PVC is **inert, non-toxic,** and has undergone **over 20 years of innovation** to remove substances of concern, aligning it with **EU environmental goals.**

The PVC and additives value chain represents 6,100 companies, **80% of which are SMEs,** and **178,000 employees.** The total turnover of the PVC converting industry is around **44.8 billion euros.**

APPLICATIONS

PVC Contributes to Society

Clean Energy & Decarbonisation

- Safe hydrogen distribution
- Wind turbine blades and cable profiles
- Biogas pipes and tank covers
- PVC solar roofing membranes for solar panels

Healthcare

- Oxygen masks
- Medical tubing
- Blood bags

Building & Construction

- Windows
- Floor, wall and ceiling coverings
- Pipes
- Cables

PVC is the only material allowing blood to be stored up to **49 days.**

70% of PVC is used for durable, affordable and recyclable building products.

CIRCULARITY

PVC End of Life & Circularity

Recycling into pipes, windows, flooring, road safety etc. **(35%)**

VinylPlus 2030: Leading the Way in PVC Recycling

Goal: Recycle **1 million tonnes** of PVC annually into new products by 2030.

How: Combining highly effective mechanical recycling with cutting-edge technologies like advanced sorting, additive extraction, and chemical recycling to maximise sustainability.

- Energy recovery **(46%)**
- Landfill **(19%)**

PVC can be recycled **multiple times.**

Since 2000, **9.5M tonnes of PVC** has been **recycled, saving 19.1M tonnes of CO_2.**

03 PVC: A SMART MATERIAL FOR A SUSTAINABLE SOCIETY

Polyvinyl chloride (PVC) is one of the most versatile and widely used polymers in the world

PVC continues to make life safer and more comfortable through its extensive use in building and construction, as well as in water distribution, automotive products, cabling, smart cards and credit cards, packaging, fashion and design, sports, agriculture, telecommunications, medical devices and a wide array of other areas and products.

PVC is an intrinsically low-carbon plastic. Composed of 57% chlorine from common salt, 5% hydrogen, and just 38% carbon, it is not only extremely durable and cost-effective but also fully recyclable – retaining its core properties through multiple life cycles.

As part of its commitment to sustainability, the European PVC industry has been developing circularity over the past twenty-four years, achieving a recycling rate of approximately 35% – one of the highest among all polymers.

Several PVC applications – such as pipes, window profiles, cables, flooring, membranes and films – have been analysed through life cycle assessments (LCAs) and in terms of eco-efficiency, and they have demonstrated excellent environmental performance.

Thanks to their intrinsic characteristics and properties, PVC products can make positive contributions towards several targets of the UN Sustainable Development Goals (SDGs).

Vinyl & You

Discover the unexpected and varied ways in which PVC contributes to our daily lives through Vinyl & You, an engaging interactive map featured on the VinylPlus website.

04
EMPOWERING A FUTURE-PROOF VALUE CHAIN

Photo: VinylPlus®

2024 has been another year shaped by significant challenges. From macroeconomic pressures to geopolitical shifts, these forces have affected not only the European industry but also our PVC sector. Yet, amid these difficulties, I am proud of the resilience and dedication we have demonstrated together.

At the global level, the ongoing United Nations negotiations for a Global Plastics Treaty strive to shape the future of plastic production and waste management worldwide. As an accredited observer organisation, VinylPlus actively contributed to this process, attending sessions in Ottawa (INC-4) and Busan (INC-5). Our participation allowed us to share our expertise in PVC and circular business models, ensuring that our industry's expertise is considered. Collaboration remains at the heart of our approach. Throughout these negotiations, we have worked closely with industry stakeholders, including other associations and the Global Vinyl Council (GVC), fostering a rich exchange of knowledge as we tackle the global issue of plastic pollution together.

At the European level, we remain committed to supporting the safety and sustainability of products, leading by example as the PVC sector. Following the publication of ECHA's *Investigation Report on PVC and PVC Additives*, we have continued working with ECHA and EU institutions, reinforcing our 25-year commitment to advancing the sustainability of the European PVC industry. Furthermore, the election of the new European Parliament and the formation of the new European Commission have provided new opportunities for engagement with regulatory bodies, alongside our industry partners.

A core focus of our work remains, of course, scaling up the circularity of the PVC value chain. 2024 has proven to be another challenging year for the entire European industrial sector. The plastics industry, including PVC, faced significant obstacles, driven by factors such as low demand for both virgin and recycled plastics, increased imports of non-EU plastic materials and reduced investments in the construction sector.

Despite these challenges, PVC waste recycling within the VinylPlus framework remained largely stable, even exceeding expectations. This resilience underscores the effectiveness of our circular business model and the industry's ongoing commitment to recycling. Many companies have enhanced their circular operations, enabling us to register recycling volumes close to those of 2023.

Throughout 2024, we dedicated significant efforts and resources to supporting technical projects, research and innovation. We worked to enhance existing collection and recycling schemes while supporting the advance of chemical recycling and other innovative sorting and recycling technologies. Additionally, we invested in pioneering solutions to detect, sort, and remove legacy additives from end-of-life PVC products. A pilot plant is currently in development to sort contaminant-free PVC using NIR and XRF technologies. These advances will be crucial in improving the efficiency and sustainability of PVC recycling.

Sustainability extends beyond circularity, and we have taken key steps to identify opportunities for reducing carbon and water footprints across all PVC sectors. This initiative is vital to support the industry's efforts to meet European decarbonisation targets and enhance its overall environmental performance.

Prioritising circularity through eco-design is a strategic target of our Commitment towards 2030, with a strong emphasis on integrating eco-design principles to enhance recyclability, particularly in the building and construction sector. Meanwhile, the launch of our VinylPlus® Digital Passport Programme aims at providing a unified system for data management, ensuring smooth market access under the new Construction Products Regulation and helping our partners meet evolving regulatory requirements and improve supply chain efficiency, while preparing for future integration with the Ecodesign for Sustainable Products Regulation.

In 2024, we remained focused on strategic refinement, and organisational review. Our efforts were all aimed at making real progress towards our 2030 Commitment while preparing for our mid-term review in 2025. At VinylPlus, our ambition is clear: to empower a future-proof PVC value chain. We will do this by continuing to support, strengthen, and challenge our partners in achieving their sustainability goals. At the same time, we will use our role as a trusted and science-based advocate to drive positive change.

Finally, I would like to extend my deepest gratitude to all our partners, stakeholders, and team members for their continued trust and collaboration. Together, we are shaping a more sustainable future for PVC in Europe and beyond.

DR KARL-MARTIN SCHELLERER
CHAIRMAN OF VINYLPLUS

05
GOVERNANCE

VinylPlus Aisbl is the legal entity set up to provide the organisational infrastructure to manage and monitor the implementation of the European PVC industry's Commitment to sustainable development.

In 2024, an internal consultation was carried out through workshops with representatives from across the entire PVC value chain, aimed at refining VinylPlus strategy and vision. The objective was to proactively address the challenges presented by the current socioeconomic context, focusing on sustainability, competitiveness, and innovation, while fostering collaboration with European institutions in the implementation of economic recovery policies. The refined strategy and vision were endorsed by the VinylPlus Steering Board in December 2024.

OUR VISION

VinylPlus enables a sustainable and future-proof PVC value chain, driving innovation and collaboration across Europe. We empower our partners to achieve their sustainability goals while championing social, economic, and environmental progress. Based on a robust scientific foundation, we nurture best practices, pioneer technical advances, and engage with stakeholders at all levels. VinylPlus leads the way in shaping a circular and responsible PVC value chain.

VinylPlus Steering Board

VinylPlus is managed by a Steering Board composed of six voting members and six substitutes, all from partner companies in representation of VinylPlus founding members,[1] and with the participation of the VinylPlus and the Vinyl Foundation[2] Managing Directors.

The Steering Board is supported by an Advisory Council composed of representatives from the VinylPlus member associations and groups of partner companies chosen to ensure a broad representation of all sector groups. Its role is to monitor industry trends, as well as regulatory and policy developments, and to advise the Steering Board.

1 See p. 40

2 Vinyl Foundation: the funding mechanism run by EuPC to collect PVC converters' contribution to VinylPlus (www.vinylfoundation.org)

3 ECVM 2010: the formal legal entity of ECVM (The European Council of Vinyl Manufacturers – www.pvc.org), registered in Belgium

4 EuPC: European Plastics Converters (www.plasticsconverters.eu)

5 European Plasticisers: is a Sector Group within Cefic, the European Chemical Industry Council. European Plasticisers (www.europeanplasticisers.eu) is legally represented in VinylPlus by PlasticisersPlus, the legal entity registered in Belgium

6 ESPA: European Stabiliser Producers Association is a Sector Group within Cefic. ESPA (www.stabilisers.eu) is legally represented in VinylPlus by StabilisersPlus, the legal entity registered in Belgium

MEMBERS

Mr Christophe André | ECVM 2010[3]
Mr Dirk Breitbach[(a)] | EuPC[4]
Mr Hendrik Fischer | European Plasticisers[5]
Mr Jan Hesterkamp[(b)] | ECVM 2010
Mr Carsten Heuer | Vice Chairman[(b)] (EuPC)
Mr Karsten Jänicke | EuPC
Mr Andy Jones | ESPA[6]
Dr Ettore Nanni | Treasurer (ESPA)
Dr Matthias Pfeiffer | European Plasticisers
Mr Hans-Christoph Porth[(a)] | ECVM 2010
Ms Charlotte Röber |
Managing Director of VinylPlus
Dr Karl-Martin Schellerer |
Chairman (ECVM 2010)
Mr Sascha Schmahl[(b)] | EuPC
Mr Geoffroy Tillieux |
Managing Director of the Vinyl Foundation
Ms Myriam Tryjefaczka |
Vice Chairwoman[(a)] (EuPC)
Mr Arnaud Valenduc | ECVM 2010

(a) Until May 2024
(b) From May 2024

Monitoring Committee

The VinylPlus Monitoring Committee is the independent body supervising the implementation of the VinylPlus 2030 Commitment. It plays a fundamental role in ensuring the transparency, participation and accountability of VinylPlus, and in providing guidance and advice.

Open to all external stakeholders, it currently includes representatives of the European Commission, the European Parliament, academic institutions, consumer organisations, and the European PVC industry. The Committee met formally twice in 2024, in April and in December.

To ensure maximum transparency, the minutes of each Monitoring Committee meeting are published on the VinylPlus website after formal approval at the following meeting.

7 European Consumer Organisation (www.euroconsumers.org)
8 Faculty of Bioscience Engineering, Ghent University, Belgium (www.ugent.be/en)

MEMBERS

Ms Laure Baillargeon |
Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs (DG GROW), European Commission

Mr Werner Bosmans |
Directorate-General Environment (DG ENV), European Commission

Mr Armand De Wasch |
Euroconsumers Group[7]

Prof. Dr Ir. Jo Dewulf[8] |
Chairman of the Monitoring Committee

Mr Ondřej Knotek[(a)] |
Member of the European Parliament

Mr Nuno Melo[(b)] |
Member of the European Parliament

Dr Ettore Nanni | Treasurer of VinylPlus

Ms Charlotte Röber |
Managing Director of VinylPlus

Mr Geoffroy Tillieux |
Managing Director of the Vinyl Foundation

Mr Johan Van Overtveldt[(c)] |
Member of the European Parliament

(a) Until April 2024
(b) Until March 2024
(c) From December 2024

06
2024 PROGRESS

Photo: courtesy of Karsten Knocke

SVENJA SCHULZE
GERMAN FEDERAL MINISTER FOR ECONOMIC COOPERATION AND DEVELOPMENT

We need to achieve a fundamental transformation of the economy: climate action, circular economy and social justice should be at the centre of our economic activities.

Technical projects and initiatives, scientific studies and research, as well as advocacy and communications activities, are conducted every year to progress towards the achievements of the targets set in the VinylPlus 2030 Commitment.

To understand how our **2024 projects, initiatives and activities** support our 2030 sustainability targets, scan the QR code.

We require private sector commitments such as the engagement of VinylPlus. Your commitment to a sustainable material, more recycling and less waste is very important. I would like to encourage you all to systematically continue your effort throughout your work.

Enhancing Circularity
in the PVC Value Chain

Aligned with key EU policies, such as the Chemicals Strategy for Sustainability and the Circular Economy Action Plan under the European Green Deal, VinylPlus is driving the European PVC industry towards a circular economy by enhancing PVC sustainability, increasing recycling efforts, and ensuring the safe and sustainable use of recyclates.

DRIVING CIRCULARITY THROUGH RESEARCH & INNOVATION, FOCUSING ON:

Improve
existing **collection and recycling schemes** and set up new ones for additional PVC streams

Investigate
solutions to detect, sort and **remove legacy additives** from end-of-life PVC products

Support
the development of **chemical recycling** and other recycling **and sorting technologies**

CHARLOTTE RÖBER
MANAGING DIRECTOR
OF VINYLPLUS

We are pleased to report that recycled PVC volumes within the VinylPlus framework remained relatively stable, with growth in sectors such as profiles and pipes.

Additionally, registered recyclate consumption slightly increased – an impressive achievement given the challenging market conditions impacting the entire plastics industry, both in production and recycling.

This circularity is an achievement not only of 2024 but of the past 25 years.

2024 continued to be a tough year for the entire European industrial sector. The annual average industrial production fell by 3.0% in the euro area compared to 2023 and by 2.3% across the EU.[9] The European plastics industry was also affected, registering a decline in both overall plastics production and recycled plastics.

As stated in December 2024 by 18 industry associations across the European plastic value chain – including VinylPlus – in a call[10] urging the European Union *"to boost Europe's circular economy in the 2024-2029 legislature and strengthen the EU's global competitiveness,"* the plastic value chain has been hit by a strong recession caused by persisting issues such as sharp reduction of demand for virgin and recycled plastics and increased imports of non-EU plastic materials, combined with steep increase in energy and production cost leading to reduced investments in domestic raw materials production and recycling.

The building and construction sector, the largest market for PVC, experienced a downturn throughout Europe in 2024, particularly in Germany and Belgium.[11] Similar declines were observed in France, Italy, Poland and other European markets.

In this context, marked by macroeconomic uncertainty and shifting market conditions, the PVC industry has also been affected, experiencing a contraction in both virgin material production and recycling. The downturn in the construction sector, along with reduced government support for housing projects in some countries, played a major role, reducing the availability of PVC waste for collection. Additionally, lower production levels, the increasing competitiveness of virgin PVC, which reduced the attractiveness of recyclate for converters with sluggish demand and unsold materials, and increased imports of non-EU virgin and recycled PVC, further impacted market stability.

OUR RECYCLING HIGHLIGHTS

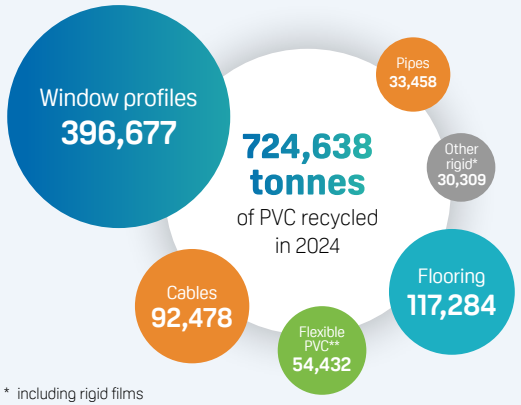
9.5M
tonnes of PVC recycled since 2000

19.1M
tonnes of CO_2 saved since 2000

+1,500
direct jobs in recycling plants

9 https://ec.europa.eu/eurostat/web/products-euro-indicators/w/4-13022025-ap
10 www.plasticsrecyclers.eu/news/eus-competitiveness-under-severe-threat-plastics-sector-at-crossroads
11 www.brusselstimes.com/1386079/building-permits-at-lowest-level-in-more-than-a-decade
12 Conversio Market & Strategy GmbH: consulting and market research company (www.conversio-gmbh.com)

PVC RECYCLED WITHIN THE VINYLPLUS FRAMEWORK



* including rigid films
** including roofing and waterproofing membranes and films

Nevertheless, despite the challenges faced in 2024, PVC waste recycling results in the VinylPlus framework exceeded expectations, remaining relatively stable. Reasons for this stability include committed and stable sourcing of recycled PVC, as an increasing number of companies has circular operations – products that rely on recycle input or secured access to recycle due to the acquisition of own recycling facilities by converters over the past decades. This allowed to maintain recycling volumes close to those of 2023. A total of 724,638 tonnes of PVC waste were recycled within the VinylPlus framework in 2024, with only a 1.8% decrease from the previous year. Of this, 61.4% was pre-consumer waste and 38.6% was post-consumer waste.

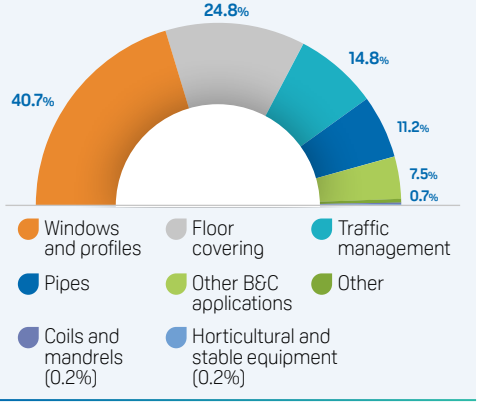
For post-consumer waste, the amount of PVC recycled represents approximately 25% of the total PVC waste in the EU-27, Norway, Switzerland, and the UK, based on a market study and dynamic waste model developed by the consultancy Conversio[12] in 2021. When pre-consumer waste recycling is included, this percentage increases to 35%.

LUC CASTIN
SUSTAINABILITY BUSINESS MANAGER,
INEOS INOVYN

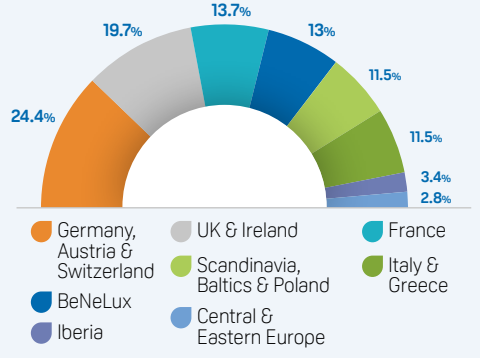
To continue growing the demand for recycled materials, decoupling it from raw materials volatility, VinylPlus would welcome legal obligations to collect plastics for recycling. We also encourage the adoption of measures to enhance the competitiveness of the European plastics value chain, creating a level playing field for EU and non-EU actors, and to revitalise industries such as building and construction.

The volume of PVC recyclates registered in RecoTrace® (https://recotrace.com – also see p. 14) by converters increased by 4.3% compared to 2023, reaching 490,278 tonnes. With the help of RecoTrace,® VinylPlus has also increased the traceability of recycled PVC establishing a clearer picture of which applications are recycled and which ones subsequently use this recyclate.

USAGE OF 2024 rPVC



RECYCLED PVC WASTE PER REGION IN 2024



Nevertheless, the general market outlook for 2025 remains difficult and highly challenging. The price advantage of virgin PVC continues to challenge recyclers, threatening smaller operations in particular, while integrated recyclers, with both conversion and recycling operations, remain more resilient. Overall, recyclers emphasise the need for stronger policy support and improved market conditions to drive recovery.

In the years to come, VinylPlus will increase its focus on addressing the total PVC waste generated in Europe, identifying additional potential sources of PVC waste not yet covered and making them recyclable, thereby enabling further investments in recycling capacity.

HOW VINYLPLUS TRACKS PVC WASTE AND RECYCLED PVC IN NEW APPLICATIONS

Recovinyl® – the organisation set up in 2003 to facilitate PVC waste collection and recycling in the framework of the European PVC industry's Commitments[13] – plays a key role in monitoring, verifying and reporting PVC recycling and the use of recycled PVC (rPVC) in Europe.

Its audit framework has been recognized as one of the approved auditing systems and schemes by the Circular Plastics Alliance (CPA).[14] Data from converters and recyclers are collected through RecoTrace® – a multi-polymer online data collection system for recycled plastics in Europe. RecoTrace® was originally developed by Recovinyl® for PVC and then extended to cover all the main polymers.

Until 2023, a significant number of PVC converters and recyclers used the EuCertPlast (eucertplast.eu) certification scheme to verify their data for registration on the RecoTrace® platform. In late 2023,[15] EuCertPlast and RecyClass (recyclass.eu) joined forces to enhance transparency in plastics recycling and strengthen trust in recycling claims. They merged their expertise under the RecyClass Recycling Process Certification. Both audits follow the EN 15343 standard, ensuring waste traceability and environmentally sound operations.

COLLECTING DATA FROM RECYCLERS & CONVERTERS

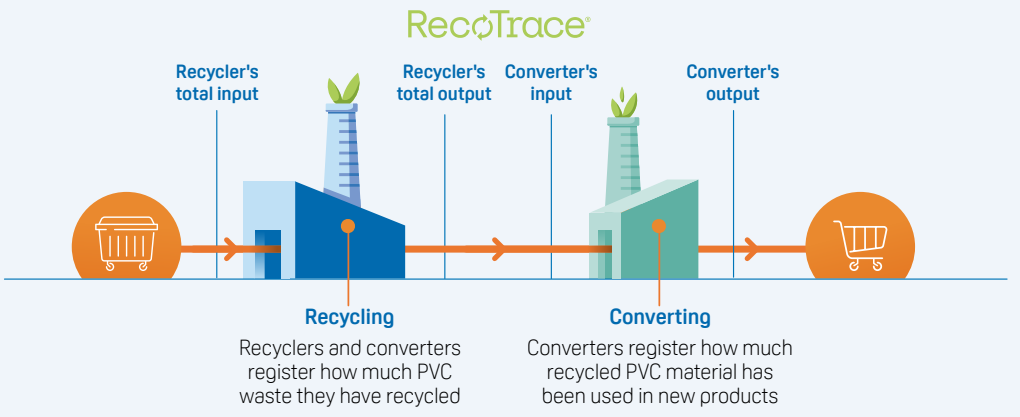



Photo: VinylPlus®

Witnessing PVC circularity in practice

In 2024, **European Commission** representatives were invited to visit two PVC recycling facilities, Deceuninck and Raff Plastics.

13 www.recovinyl.com

14 CPA: Circular Plastics Alliance. The European Commission's multi-stakeholder platform aimed at boosting the market for recycled plastics to 10 million tonnes by 2025 (https://ec.europa.eu/growth/industry/policy/circular-plastics-alliance_en)

15 https://recyclass.eu/news/eucertplast--recyclass-join-forces-to-strengthen-plastics-recycling-processes-certification

To maximise the opportunities to achieve higher recycling rates of post-consumer PVC waste in Europe, VinylPlus continued in 2024 to support innovative projects aimed at enhancing the collection and recycling of specific PVC applications, establishing additional collection and recycling schemes where needed, and promoting the use of recycled PVC in new products.

IMPROVING COLLECTION AND RECYCLING

The EPPA[16] five-year action plan aims to boost PVC window recycling in France, Germany and Poland. This through the promotion of PVC window recycling among key stakeholders, the optimisation of recycling processes and encouraging the use of rPVC-U (unplasticised recycled PVC) in new products. The plan also supports regional partnerships for closed-loop recycling, aligning with frameworks such as France's Extended Producer Responsibility (EPR). It involves from PVC profile and window manufacturers to installers, collectors and recyclers, to ensure effective recycling and reduce the environmental impact of PVC window production.

In France, the EPPA partner UFME[17] continued to expand its FERVAM[18] collection network. This reached 152 signatories and over 568 collection sites by December 2024, and post-consumer PVC collection increased by 50% from 2023. Collaboration with eco-organisations and recycling partners remained an essential part of UFME's activities, which in 2024 included: the promotion of the benefits of PVC window recycling at global forums such as the Worldwide Forum on Buildings and Climate in Paris; pushing for stronger commitments from FERVAM signatories; and work on improving the tracking and traceability of rPVC, contributing to the decarbonisation of the French building sector.

The EPPA project made significant progress in all three countries, namely France, Germany and Poland, driving the adoption of circular economy practices and promoting the use of rPVC in new window products.


Photo: courtesy of Rehau


Photo: courtesy of Profine Group

16 EPPA: the European Trade Association of PVC Window System Suppliers (www.eppa-profiles.eu)
17 UFME: Union des Fabricants de Menuiseries (Association of Doors and Windows Manufacturers – www.ufme.fr)
18 FERVAM: Filière Engagée pour le Recyclage et la VAlorisation des Menuiseries, the UFME's label which value best practices in window recycling

In Germany, the long-term partner Rewindo[19] expanded recycling infrastructure, which increased to over 90 collection points in 2024 and involved new recycling partners. A decline in construction affected recycling volumes but expanded partnerships and improved infrastructure partially counteracted this. Advocacy and communications efforts to improve recycling practices and industry engagement continued. Events such as Architecture Day 2024 helped raise awareness of the importance of window recycling among architects and planners. An EPR study was conducted in 2024 in partnership with other German window associations. It aims to improve recycling of all components of windows (including glass, metal, etc.) and is expected to be finalised in 2025.

In Poland, significant progress was made in consolidating the sector and increasing partnerships for recycling, despite negative market trends due to a significant drop in consumption and a sharp slowdown in building and construction. Companies such as EMABO (https://emabo.com.pl) and METAL-PLAST (www.metal-plast.pl) joined the OKNOREC project,[20] and METAL-PLAST increased post-consumer window recycling by 166% in 2024. Advocacy efforts continued with the Ministry of Climate and Environment to simplify logistic procedures to facilitate recycling.

ELENA VYBOLDINA
MANAGING DIRECTOR
OF EPPA

In the current economic context, governments are forced to make savings, leading to cuts in sustainability programmes that affect the building and construction sector, such as Poland's Clean Air scheme for window replacements. This is why we welcome initiatives like the EU Clean Industrial Deal, which aims to boost industry's competitiveness and resilience.

Building on work[21] in Germany and the Netherlands in 2023, TEPPFA[22] in 2024 commissioned a material flow analysis (MFA) of plastic pipes in the UK in collaboration with the BPF[23] Pipes Group.

The study assesses material flows in the plastic pipe industry, providing a foundation for future projects to improve the collection, sorting, and processing of plastic pipe waste. It also explores the development of a holistic value chain, covering organisation, agreements, costs, and financing. Key elements include overviews of market participants, plastic pipe production by application, waste generation and recycling. The analysis also examines the use of post-consumer recyclates in plastic pipes, including the proportions of recyclates and their origins, such as packaging or construction. The final report by Oakdene Hollins,[24] the consultant selected in early 2024 to carry out the study, is expected in 2025.

Photo: courtesy of PVC4Pipes

19 Rewindo: the German recycling initiative for PVC windows, roller shutters and related products (www.rewindo.de)
20 OKNOREC: PVC window collection and recycling project powered by EPPA in Poland. Also see p. 17 of VinylPlus Progress Report 2024
21 See p. 18 of VinylPlus Progress Report 2024
22 TEPPFA: the European Plastic Pipes and Fittings Association (www.teppfa.eu)
23 BPF: British Plastics Federation, the leading trade association for the UK plastics industry (www.bpf.co.uk)
24 Oakdene Hollins: sustainability and circular economy consultancy (www.oakdenehollins.com)

The ERFMI[25] project aims to advance the circular economy for PVC flooring by increasing post-consumer recycling and enhancing the use of recyclate in new products. This is done by expanding the collection of post-consumer flooring and exploring technologies to sort and remove legacy additives.[26]

One major achievement has been the successful pilot project launched in Germany in 2022 as part of the Revinylfloor initiative, aiming to increase the collection of PVC floor covering from scraps and post-consumer products. Partnering with two wholesalers, Lotter + Liebherr (www.lotter-liebherr.de) and Laminat Depot (https://laminatdepot.de), which set up collection centres in some of their locations, 120 tonnes of PVC flooring were collected since 2023. These materials were processed into fine regrind PVC at the AgPR[27] recycling plant.

The pilot demonstrated that PVC flooring can be collected effectively at wholesalers' locations using backhaul logistics.

Contributing to PVC flooring circularity through effective pilot waste collections and cutting-edge sorting solutions.

To assess the feasibility of large-scale PVC flooring collection in Europe, ERFMI also commissioned a study in 2024 to review regulatory frameworks, waste management requirements, and the status of EPR schemes for floor coverings in countries such as France, Germany, Poland and the UK.

Further developments in 2024 included trials to improve sorting methods for PVC flooring, which focused on separating PVC waste containing certain plasticisers, such as DEHP and DINP, from other PVC flooring waste. Partnering with Phoenix RTO (www.phoenix-rto.com) through VinylPlus, promising initial results were achieved using AI-based systems. In addition, the ERFMI project is exploring the financial viability of alternative recycling technologies, such as dissolution or supercritical CO_2, to extract and remove legacy additives.

CHARLOTTE RÖBER
MANAGING DIRECTOR
OF VINYLPLUS

"Collection of waste is a key vulnerability of every circular value chain. EPR schemes, when setting the right incentives, can increase separate collection of waste supporting PVC recycling."

Photo: courtesy of Gerflor

Photo: courtesy of Gerflor

25 ERFMI: European Resilient Flooring Manufacturers' Institute (www.erfmi.com)
26 Legacy additives are substances that are no longer used in new PVC products but can be present in recycled PVC
27 AgPR: Arbeitsgemeinschaft PVC-Bodenbelag Recycling (Association for the Recycling of PVC Floor-Coverings – www.agpr.de)

In Italy, WREP (Waste Recycling Project) is continuing[28] to promote the development of pilot schemes for sorting, collecting and recycling PVC from bulky urban waste and from demolition and renovation activities, in collaboration with multiutilities and recyclers.

In 2024, 14 collectors, converters and recyclers signed a memorandum of understanding (MOU) to set up a recycling working group, coordinated by VinylPlus Italia,[29] for collaboration to boost post-consumer PVC recycling in Italy. The objective of the MOU is to encourage the development of potential synergies between companies and to promote joint innovative projects for the collection and recycling of PVC.

The consultancy Plastic Consult (plasticconsult.it) was commissioned to conduct three studies of key facets of the PVC industry. One delivered an up-to-date analysis of Italy's PVC supply chain, while another delved into the factors limiting demand for rPVC in the country. The third explored the most effective applications for post-consumer rPVC sourced from building demolitions. These studies provided a clear understanding of the challenges and opportunities for PVC recycling in Italy, taking into account the current micro- and macroeconomic situation. They aim to support the achievement of VinylPlus circularity targets in Italy.

The PVC-Recyclers meet PVC-Converters project, led by VinylPlus Deutschland with AgPR, IVK Europe[30] and Rewindo, promotes PVC recycling and rPVC uptake.

It showcases VinylPlus 2030 Commitment, recycling achievements and national initiatives, while connecting recyclers with converters to share insights into new and existing recycling processes.

In 2024, the project also provided an opportunity to present the RecoTrace® data collection system and encourage recyclers and converters to register their data. Activities included networking, plant visits and bilateral talks. Key events included VinylPlus Deutschland's participation in Fachtagung Abbruch, one of Europe's major conferences on demolition and dismantling, in Berlin in March 2024; and two on-site meetings involving around 60 participants – one at the KKF reVinyl GmbH plant in Erfurt in September and the other at the Biotrans GmbH plant Schwerte in November.

The project helped establish and strengthen networks with recyclers and converters while also reaching out to non-partner companies, three of which became VinylPlus partners in 2024.

WREP IN A NUTSHELL

- **13** multiutilities involved
- A network of **14** collectors, recyclers and converters
- PVC-sorting training programme for plant operators
- Selective demolition training programmes
- **97%** recycling rate
- **50%** cost reduction vs disposal
- **2,500t** of CO_2 saved
- Handheld scanner developed to sort PVC from other plastics and detect legacy additives and MCCPs

28 See p. 19 of VinylPlus Progress Report 2024
29 www.vinylplusitalia.it
30 IVK Europe: Industrieverband Kunstoffbahnen e.V. (Plastic Sheets and Films Association – www.ivk-europe.com)


Photo: VinylPlus®

ADVANCING CIRCULARITY IN THE HEALTHCARE SECTOR

PVC is a material of choice and is widely used in the healthcare industry for its versatility, functionality, reliability and high safety standards. Single-use, PVC medical devices are fundamental in hospitals. Besides being hygienic, safe and affordable, PVC is recyclable.

Most PVC medical waste is non-infectious and can be properly sorted, collected, and recycled. That is why VinylPlus proactively launched programmes such as VinylPlus® Med and VinylPlus® PharmPack, aiming to boost PVC waste recycling and thereby accelerate sustainability in the European healthcare sector.

VinylPlus® Med facilitates the recycling of discarded single-use PVC medical devices, such as masks and tubing, into new, durable products for healthcare settings, such as wall covering and flooring.

The programme is built on partnerships among hospitals, waste management companies, recyclers, social partners and the PVC industry. It currently involves 23 hospitals, and eight new hospitals are planning to start collecting medical PVC waste in 2025.

A key achievement in 2024 was the successful integration of the recycled PVC produced in the framework of VinylPlus® Med in products from Vescom (wall coverings – https://vescom.com) and Gerflor (homogeneous floor coverings – www.gerflor.com). Major efforts were dedicated to improving the quality and cleanliness of the collected materials, and hospitals were provided with stricter sorting instructions to prevent contamination.

In Belgium, an additional waste hub – the De Loods De Nekker – was involved in the project. It began dismantling PVC medical waste in November 2024 and had processed around 1 tonne by the end of the year, which was redirected to recyclers for further processing.


Photo: VinylPlus®

Optimising hospital waste management with Select4Care

The **Select4Care** partnership project,[31] funded by the Flemish government, kicked off in February 2024. It focuses on optimising waste collection logistics and maximising recycling rates for non-infectious plastic waste in hospitals. As a project partner, VinylPlus contributes its expertise and shares the best practices developed through the VinylPlus® Med programme.

31 See p. 41 of VinylPlus Progress Report 2024

vinyl plus med

PVC MEDICAL RECYCLING PROCESS

2024 numbers

- **23** hospitals currently involved
- **8** hospitals on waiting list
- **21.6 tonnes** PVC medical devices collected
- **540k** oxygen masks

In France, many hospitals expressed interest in the VinylPlus® Med programme. A feasibility study was launched in partnership with Terra (https://terra.coop), experts in the circular economy, and Medtronic (https://europe.medtronic.com), a global healthcare technology leader. The study focuses on the combined collection of soft PVC medical devices and rigid PVC video-laryngoscope blades. Collaboration with MédiPôle Villeurbanne, the largest clinic in France, further expanded the project's scope, in particular to dialysis lines.

The VinylPlus® PharmPack programme[32] aims to demonstrate the recyclability of pharmaceutical blister packaging made of aluminium and PVC.

Advancing circularity in the pharmaceutical sector by turning PVC-aluminium waste into quality rPVC for new blisters.

It focuses on developing recycling technologies to produce rPVC suitable for reuse in film calendering processes. In 2024, larger-scale trials were successfully conducted at Fraunhofer IVV[33] using dissolution technology to separate PVC from aluminium. The rPVC obtained was suitable for producing rigid films, which were tested and converted into blisters by Liveo Research (www.liveoresearch.com) and Perlen Packaging (www.perlenpackaging.com).

This project confirmed that the dissolution technology could produce rPVC of sufficient quality for new rigid films for pharmaceutical blisters, while the rPVC produced with existing mechanical recycling can be used in other applications, such as profiles and pipes. A final scientific paper is expected in 2025.

32 See p. 22 of VinylPlus Progress Report 2024
33 Fraunhofer IVV: Fraunhofer Institute for Process Engineering and Packaging (www.ivv.fraunhofer.de)

SAFE AND SUSTAINABLE USE OF ADDITIVES

The VinylPlus commitment to circularity involves providing scientific evidence to demonstrate safe use of additives and of PVC articles containing recyclates with legacy additives. It also includes supporting R&D projects to detect, sort, reduce, or remove legacy additives in PVC waste streams. For the past two decades, the European PVC industry has been working not only on solutions for legacy additives but also on methods (also see the ASF methodology at p. 27) to ensure that additives used in new PVC products result safe and high-performing also in the foreseeable future. VinylPlus will continue to support research and studies to provide users and consumers with safe and sustainable PVC products, in line with upcoming European initiatives, including the Ecodesign for Sustainable Products Regulation (ESPR).[34]

For a safe use of additives and recyclates with legacy additives

In 2024, European Plasticisers commissioned a scientific study to investigate the release of plasticisers from soft PVC sheets into drinking and sea water.

It assessed plasticiser concentrations and the kinetics of release, both with and without agitation (to simulate sea waves). It focused on plasticisers, such as DINP, DIDP, DOA, and DOTP, which are currently under scrutiny from NGOs, ECHA and European decision makers. Preparation is ongoing of the scientific paper to be published in a peer-reviewed journal.

ECHA INVESTIGATION REPORT ON PVC AND PVC ADDITIVES

As reported in last year's VinylPlus Progress Report,[35] the European Chemicals Agency's (ECHA) *'Investigation Report on PVC and PVC Additives'* was published in November 2023, followed by VinylPlus' comprehensive response[36] in February 2024.

The *Investigation Report* was presented to and discussed in both the European Parliament's ENVI Committee and at the meeting of the Competent Authorities for REACH and CLP (CARACAL) in March 2024. The second of these meetings featured participation by EU Member States, industry representatives, and NGOs.

Also in March, VinylPlus met with the European Commission to discuss its response to ECHA's findings. The Commission acknowledged some factual errors in the ECHA report, particularly regarding organotins and recycling, but confirmed that the report would not be amended. It clarified that the ECHA report should be viewed within the broader context of ongoing initiatives and confirmed that ECHA's recommendations would be addressed either under REACH or through other regulatory tools. The Commission also expressed appreciation for VinylPlus' research efforts to address the data gaps identified by ECHA.

Confirming its commitment to continue working with regulators, VinylPlus commissioned several new studies in 2024, which are currently ongoing.

In April 2024, VinylPlus organised a webinar, with the participation of Simone Doyle of ECHA, to present the *Investigation Report* to and discuss it with the European PVC value chain. It attracted more than 300 participants.

34 https://commission.europa.eu/energy-climate-change-environment/standards-tools-and-labels/products-labelling-rules-and-requirements/ecodesign-sustainable-products-regulation_en
35 See p. 23 of VinylPlus Progress Report 2024
36 www.vinylplus.eu/wp-content/uploads/2024/02/VinylPlus_Detailed_Comments_ECHA_Report_20_02_2024.pdf

Detecting and sorting legacy additives from PVC waste streams

Detection Technologies for Legacy Additives in PVC Products is a collaborative project by EuPC, PVC4Cables[37] and VinylPlus to tackle the challenge of recycling PVC waste containing legacy additives.

It builds on the results achieved by two WREP and PVC4Cables projects, specifically the development of handheld detectors[38] to sort PVC waste containing legacy additives using near-infrared hyperspectral (NIR) technology, and a feasibility study[39] on using X-ray fluorescence (XRF) technology to detect lead and other contaminants in an in-line pilot plant.

The new project focuses on developing an in-line pilot plant to separate PVC waste – from old cables, but also pipes, profiles and flooring – containing phthalates and heavy metals such as lead.

The objective is to create a sustainable solution for sorting PVC waste by detecting and removing contaminants, that will contribute to the VinylPlus 2030 Commitment to scale up PVC circularity.

The pilot plant will integrate the two technologies in an innovative way: XRF, to identify lead and other metals, and NIR spectroscopy, to detect phthalates and medium-chain chlorinated paraffins (MCCPs). Tests conducted by Phoenix RTO as part of the feasibility study mentioned above showed that these technologies could be successfully applied to industrial-scale sorting. In addition, the handheld NIR device developed as part of the WREP project will be further enhanced with AI-based machine learning systems, not only to detect but also to identify phthalates and MCCPs.

Photo: courtesy of European Plastisers

SUPPORTING INNOVATIVE RECYCLING TECHNOLOGIES

Mechanical recycling remains the most widely used method for processing PVC waste today. To continue progressing towards circularity and reach ever more ambitious recycling commitments, the industry is focused on developing advanced recycling technologies to tackle the residue PVC waste that cannot be mechanically recycled, such as PVC containing legacy additives and composite PVC products. These technologies include for example dissolution, extraction, pyrolysis and gasification.

Recycling advances

EXPLORE PVC RECYCLING ADVANCES

To learn more about cutting-edge chemical recycling of PVC and discover VinylPlus Partners progress in advanced recycling technologies for industrial-scale solutions, scan the QR code.

34 DIFFERENT RECOVERY OPTIONS INVESTIGATED SINCE 2000

- **5** Conventional mechanical recycling with special features
- **2** Inclusion in other materials
- **3** Non-conventional mechanical recycling
- **8** Waste separation
- **10** Feedstock recycling
- **6** Incineration with energy recovery and material recycling

37 PVC4Cables: the ECVM's platform dedicated to the PVC cables value chain (https://pvc4cables.org)
38 See p. 20 of VinylPlus Progress Report 2024
39 See p. 25 of VinylPlus Progress Report 2024

Assessing chemical recycling technologies

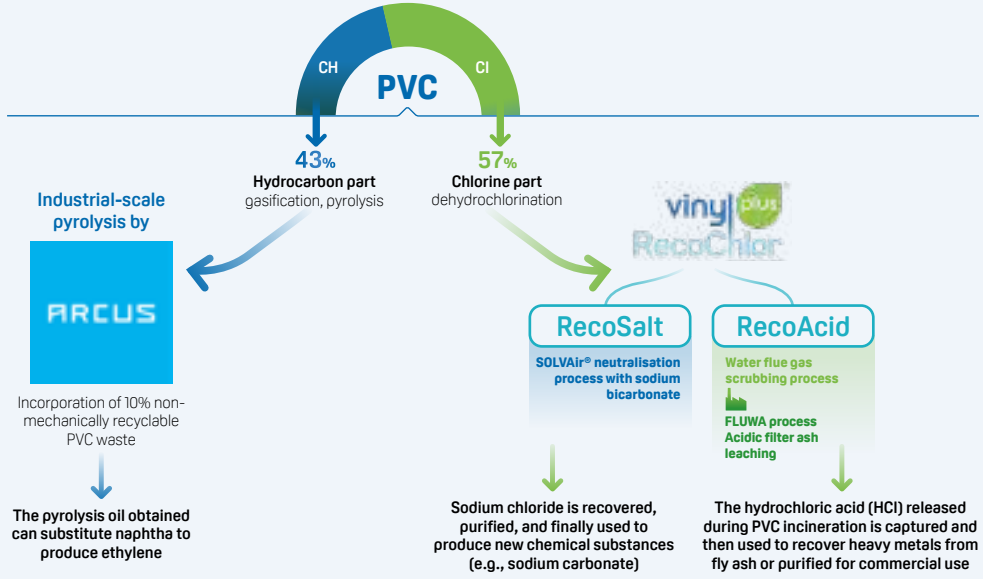
The Arcus project focuses on recycling waste streams into pyrolysis oil for the petrochemical industry, with a particular emphasis on processing non-mechanically recyclable PVC waste streams.

In 2024, trials were conducted at Arcus Greencycling Technologies' (https://arcus-greencycling.com/en) chemical recycling facility in Frankfurt, Germany, to demonstrate that adding non-mechanically recyclable PVC waste streams (up to 10%) does not negatively impact the pyrolysis process. The results showed the successful production of good-quality pyrolysis oil on an industrial scale, confirming that "*the pyrolysis oil produced from a mixed-plastic waste stream including 10% of PVC waste is of similar quality to an oil obtained without the addition of PVC*". This oil can subsequently be used as a feedstock in steam crackers to produce olefins, contributing to a more circular economy for plastics.

VinylPlus® RecoChlor is a programme focused on recovering and recycling chlorine from difficult-to-recycle PVC waste through chemical recycling.

In this process, selected PVC waste streams are thermally decomposed in waste-to-energy (WTE) plants, in which chlorine is recovered either as sodium chloride (RecoSalt, dry process) or as diluted hydrochloric acid (RecoAcid, wet process). The hydrocarbon part is recovered as energy.

CHEMICAL RECYCLING OF PVC AND ITS CONTRIBUTION TO CIRCULARITY



In the RecoSalt process, the hydrochloric acid (HCl) produced during the thermal decomposition of PVC is neutralised using baking soda (SOLVAir® process).

The resulting salt (sodium chloride) is then purified and used to produce new chemicals such as sodium carbonate. The recovery of sodium chloride from flue-gas treatment residues is recognized as a recycling operation under the Best Available Techniques Reference Document for Waste Treatment.[40]

The RecoAcid process is based on the FLUWA technology, which will be mandatory in Swiss municipal WTE plants from 2026.

This process captures the hydrochloric acid (HCl) released during PVC incineration, which is then used to recover heavy metals from fly ash or purified for commercial use.[41] The project has proven successful in Switzerland, where large-scale trials demonstrated increased acid production and improved heavy metal transfer from bottom to fly ash (also see the VinylMet project at p. 24).

40 Industrial Emissions Directive 2010/75/EU, Integrated Pollution Prevention and Control, section 5.5.1.3.1; October 2017
41 www.sciencedirect.com/science/article/abs/pii/S0956053X18301648

However, a study conducted by UMTEC[42] in 2024 revealed significant challenges for the implementation of RecoAcid across Europe. While about 30% of Europe's 500 WTE plants have gas scrubbers, only a few plants currently purify mixed acid into technical-grade HCl, and there is limited political and economic support for the process. Other barriers to wider adoption include the high costs associated with incineration. Despite these challenges, the RecoAcid process has the potential to achieve environmental and economic gains.


Photo: courtesy of Hvidbjergvinduet

The VinylMet project aims to investigate and optimise the transfer of heavy metals from bottom ash to fly ash during WTE incineration processes.

It is being conducted at the WTE plant in Basel, Switzerland and is co-funded by the Swiss Federal Office for the Environment (FOEN). In December 2024, a 24-hour test incineration of PVC sorting residues was conducted to prepare for a larger-scale trial in 2025. The test compared residues from two incineration lines: one fed with PVC waste and another acting as a reference. Early results showed successful controlled feeding and effective sampling of residues. The project will continue in 2025 with longer trials, with the aim of optimising heavy metal recovery and improving PVC recycling efficiency in WTE plants.

VINCENT STONE
TECHNICAL AND ENVIRONMENTAL AFFAIRS
SENIOR MANAGER OF VINYLPLUS

Mechanical recycling is our preferred option. However, it should be acknowledged that advanced chemical recycling technologies could complement mechanical recycling when this is not possible, helping recover marketable raw materials and potentially achieving both environmental and economic gains. It would be helpful if regulators defined the conditions under which these technologies could be applied cost-effectively, for example, by using the mass balance[43] concept.

Sorting and separation technologies for complex PVC products

The EUPolySep project aims to separate PVC from complex laminated products using the Australian PVC Separation (PVCS) technology.[44]

This innovative process enables the delamination and separation of polymers from composite structures, facilitating subsequent recycling. In 2024, tests on composite PVC started at the pilot plant installed at the Centexbel (CTB) facility in Grâce-Hollogne, Belgium. The project was scheduled to be concluded in 2025, at which point the findings would be reviewed to assess whether further development of separation technologies is needed. Nevertheless, the project encountered some delays related to the fine-tuning of the operating parameters and the installation of the pilot plant. Whilst the results so far are encouraging, partners will evaluate in Q2 2025 what potential process design or optimisation adjustments should be made and determine the next steps. The full-scale evaluation of the technology at an industrial pilot scale will then likely be finalised in 2026.


Photo: courtesy of Gerflor

42 UMTEC: Institute of Environmental and Process Engineering (www.ost.ch/en/research-and-consulting-services/technology/renewable-energies-and-environmental-engineering/umtec-institute-for-environmental-and-process-engineering)
43 In the case of chemical recycling, where waste is broken down into new feedstocks, the mass balance concept can be used to track how much of the input waste is converted into marketable raw materials
44 PVCS: PVC Separation Pty Ltd is a proprietary and patented process for separating laminated polymer and other materials (www.pvcseparation.com)

PRIORITISING CIRCULARITY THROUGH ECODESIGN

The PVC industry continued to advance circularity through eco-design in 2024 as part of its commitment to sustainable development, and in line with the European Commission's Standardisation Mandate M/584,[45] which supports the European Strategy for Plastics in a Circular Economy.

EPPA led the development of *'Plastics – Design for recycling of PVC based profiles for construction products FprEN 18066'* in the CEN[46] Technical Committee 249 (*'Plastics'*) WG21 *('Profiles for windows and doors')*. Released in early 2024, this design-for-recycling (DfR) standard set guidelines for designing PVC-based profiles, such as windows and doors. These prioritise recyclability, recycled content, and product quality, thus ensuring that designs meet sustainability objectives.


Photo: courtesy of Profine Group


Photo: courtesy of Tarkett

ERFMI contributed to the release of *'CEN/TS 18075:2024 Resilient, textile, laminate and modular mechanical locked floor coverings – Circular economy and sustainability – Recommendations/ guidelines for design',* a technical specification for floor coverings, including PVC flooring. This document provides guidelines on how to design products to optimise reuse, recyclability and sustainable material sourcing for all flooring product groups covered by CEN/TC 134.[47]

In addition, TEPPFA contributed to the development of design-for-recycling guidelines for thermoplastic pipes and fittings used as construction products or to supply water to irrigation systems. Due for release in early 2025, these guidelines aim to improve both mechanical and chemical recycling efforts, promote better material selection and reduce the use of hazardous substances.


Photo: courtesy of PVC4Pipes

45 See p. 29 of VinylPlus Progress Report 2024
46 CEN: European Committee for Standardisation
47 CEN/TC 134: CEN Technical Committee *'Resilient, textile, laminate and modular mechanical locked floor coverings'*

Minimising the Environmental Footprint
of the PVC Value Chain

ADVANCING TOWARDS CARBON NEUTRALITY

In line with the European Green Deal ambitions on climate change, VinylPlus and PVC sectoral organisations are committed to foster greater collaboration within the PVC value chain and support partner companies in achieving carbon neutrality and increasing the use of renewable energy and sustainable feedstocks.

In January 2024, the consulting firm Carbon Minds (www.carbon-minds.com) was selected to assist VinylPlus in assessing the potential for core carbon reduction by 2030 and in reporting on progress.

In addition, Carbon Minds will support VinylPlus in reporting on renewable energy use and sustainable feedstock sourcing, and on water footprint reduction. Carbon Minds conducted life cycle assessments (LCAs) for six key PVC sectors during 2024, to better understand environmental impacts across the value chain. These LCAs will be the basis for identifying specific areas in all six sectors in which carbon and water footprints can be reduced and finding actionable opportunities for further sustainability improvements. This initiative is instrumental in helping the PVC industry meet European decarbonisation targets and improving its overall environmental performance.

In France, SNEP[48] started to develop a decarbonisation roadmap aimed at reducing greenhouse gas (GHG) emissions from PVC profiles used in building and construction.

The roadmap will include a comprehensive assessment of members' emissions in Scope 1, 2, and 3, enabling SNEP to set overarching emissions reduction targets. It will outline key strategies for cutting emissions, establish monitoring indicators, and define short- and medium-term trajectories. In September 2024, SNEP published its new Environmental Product Declaration (EPD), which serves as the foundation for evaluating GHG emissions and carbon footprints, marking the first step in the decarbonisation journey.


Photo: courtesy of Gerflor

EMBRACING THE SUSTAINABLE USE OF CHEMICAL SUBSTANCES

Additive Sustainability Footprint® Methodology

DEVELOPMENT
Methodology developed in collaboration with The Natural Step[49]

SCOPE
Assesses the life-cycle sustainability of additives used in PVC products

VALIDATION
Peer-reviewed by LCA experts and validated

The Additive Sustainability Footprint® (ASF)[50] is a methodology to proactively assess and promote the sustainable production and use of PVC additives throughout entire product life cycles, including the roles of additives in the performance of PVC products.

Over the past decades, VinylPlus additive partners have worked hard to ensure that the additives used in new PVC products not only fully comply with current legislation but are also developed to be safe and high-performing in the foreseeable future. The ASF methodology has significantly influenced their research and development efforts.


Photo: courtesy of European Plasticisers

A training programme in the ASF methodology was organised in 2024 involving 15 additives companies to provide company-specific examples of the Additive Sustainability Footprint.®

Participant companies benefited from developing key personnel skills in assessing additive sustainability and in driving innovation for the sustainable use of additives. Additionally, they received external advice and insights from sustainability advisors on how to enhance their company's sustainability efforts and gained an understanding of how the ASF methodology can help obtain the VinylPlus® Supplier Certificates (see also p. 31) for additive producers.

48 SNEP: Syndicat National de l'Extrusion Plastique (https://snep.org)
49 The Natural Step: sustainability expert (www.thenaturalstep.org)
50 www.vinylplus.eu/sustainability/our-contribution-to-sustainability/additive-sustainability-footprint

MINIMISING OUR ENVIRONMENTAL FOOTPRINT

Aligned with the EU Chemicals Strategy for Sustainability, VinylPlus is firmly committed to reducing the environmental footprint of all PVC products, along with their supply chains and manufacturing processes.

This includes supporting partner companies in minimising emissions and measuring, managing and reducing water use, encouraging the use of life cycle assessments (LCAs) and environmental product declarations (EPDs), and promoting the responsible handling and minimisation of potential polymer and compound spillages.


Photo: courtesy of Copaco

Collaborative initiatives along the value chain are driving tangible impacts in reducing the PVC industry's environmental footprint, enhancing sustainability and fostering a unified commitment to responsible practices.

All ECVM members are committed to the continuous reduction of their environmental and human health footprint in conformity with the requirements of the **ECVM Industry Charter**[51] for the production of Vinyl Chloride Monomer (VCM) and PVC. A first third-party verification of compliance with the Charter updated in 2019 was carried out in 2022 by Dekra GmbH (www.dekra.com), assessing 40 plants at 22 sites in nine countries. It found a compliance rate of 89.2%. A second third-party verification round expanding to 46 plants at 28 sites in the same nine countries was organised in 2024. This verification demonstrated that significant progress had been made, with a remarkable compliance rate of 99.2%. Following this achievement, Dekra issued a public statement[52] acknowledging the industry's advances in sustainability and responsible care practices.

The ECVM Production Committee worked on updating the ECVM Charter in 2024, integrating new environmental emissions criteria in line with the latest BREFs.[53] The revision will introduce a new criterion on worker exposure limits for EDC (ethylene dichloride),


Photo: courtesy of TMG Automotive

will include an appendix detailing accepted standards and analytical methods for compliance assessment, and will address Dekra's recommendations from previous verification rounds. The updated ECVM Charter is expected to be published by the end of 2025. This initiative underscores a strong commitment to ongoing improvements in environmental and worker safety standards in the PVC industry.

In 2024, the gate-to-gate environmental impact data of the **updated eco-profile**[54] for VCM and PVC production by ECVM members was shared with ecoinvent, a leading database for life cycle assessment. Ecoinvent incorporated the updated gate-to-gate data into its v3.11 release in November, improving access to accurate, up-to-date environmental impact background dataset for industry stakeholders.

51 ECVM Industry Charter: it is aimed at minimising any detrimental effects from activities and products to the environment or human health in the production phase (https://pvc.org/wp-content/uploads/2023/04/ECVM-charter-pages.pdf)

52 https://pvc.org/wp-content/uploads/2024/11/Public-Statement-for-the-ECVM-Charter-0_6.pdf

53 BREFs: BAT (Best Available Techniques) Reference Documents

54 See p. 32 of VinylPlus Progress Report 2024

TEPPFA commissioned the LCA consultancy Ecoinnovazione (www.ecoinnovazione.it) to develop two **Life Cycle Inventory (LCI) datasets** for rPVC products in 2024 – one for micronized powder and one for flakes – using EU average data. These datasets are compliant with ILCD Entry Level Requirements[55] and aim to assess the environmental footprint of rPVC in Europe. They will be used in environmental studies and EPDs for rPVC users such as pipe manufacturers. Each dataset will be adjusted for the energy mix in different EU regions, providing flexibility for various environmental contexts (e.g., PEF or EPD standards), and will undergo third-party review. By the end of 2024, data collection from four PVC recyclers had been completed, and initial results for both flakes and powder had been shared with them. Following their finalisation, the datasets are expected to be available by mid-2025.


Photo: courtesy of Profine Group


Photo: courtesy of Beaulieu International Group

The **Operation Clean Sweep® (OCS)**[56] programme aims to minimise the release of plastic particles into the environment through effective management and auditing practices. The OCS Pledge has been signed by all ECVM members, and 18 out of 30 PVC production sites (61%) were OCS-certified by the end of 2024. To support members' compliance and promote consistent OCS auditing methods across the industry, the ECVM Production Committee published *'Estimation of PVC Powder Losses'* in 2024. This document identifies sources of powder release and methods for estimating powder emissions. It also helps members prepare for the forthcoming reporting obligations included in entry 78 of REACH Annex XVII. In addition, the document *'Requirements for Minimising Product Loss During Unloading'* was issued to help PVC powder users improve their management practices for unloading operations.

RESPONSIBLE SUPPLIER CRITERIA AND PROGRAMMES

To provide VinylPlus partners with relevant and transparent information on the progress towards sustainability of the upstream supply chain, VinylPlus maintained close communication with Euro Chlor (www.eurochlor.org) and Petrochemicals Europe (www.petrochemistry.eu) – the two sector groups of Cefic representing European producers of raw materials for PVC resins.

55 https://eplca.jrc.ec.europa.eu/LCDN/developerILCD.html
56 www.opcleansweep.eu

Building Coalitions and Partnerships
for Sustainability

ENSURING TRANSPARENCY AND ACCOUNTABILITY

Each year, VinylPlus publishes an independently verified and audited report on the progress made towards each target. The progress report is proactively circulated to all relevant stakeholders.

The Progress Report 2025 was independently verified by SGS,[57] and tonnages of recycled PVC waste and expenditures were audited and certified by PKF BOFIDI.[58]

MONITORING COMMITTEE

To guarantee maximum transparency, accountability and participation, an independent body supervises the implementation of the Commitment, providing guidance and guidelines. (See p. 9 for a list of members).

CONTRIBUTING TO SUSTAINABLE DEVELOPMENT THROUGH CERTIFIED AND TRACEABLE PRODUCTS

VinylPlus sustainability certifications

The VinylPlus® Product Label[59] is a sustainability scheme for PVC products in the building and construction (B&C) sector, developed in cooperation with BRE[60] and The Natural Step.

Accredited at the European level by Accredia,[61] the label has gained significant recognition. It is acknowledged as a Responsible Sourcing Certification Scheme within BREEAM[62] and by Italian authorities in the national CAM (Minimum Environmental Criteria). It is also recognized as one of the most valued certification schemes included in the multi-material label developed by the Belgian Construction Certification Association (BCCA).

57 www.sgs.com
58 www.pkf.com/pkf-firms/europe-middle-east-and-india/belgium/pkf-bofidi-brussels
59 Also see https://productlabel.vinylplus.eu
60 BRE: Building Research Establishment, UK-based certification experts on responsible sourcing for B&C products (www.bre.co.uk)
61 www.accredia.it/en/documents/circolare-informativa-dc-n-07-2023-disposizioni-in-merito-allaccreditamento-per-lo-schema-vinylplus-product-label-v-1-4
62 BREEAM is the world-leading sustainability assessment method for the built environment and infrastructure (www.breeam.com)

The **VinylPlus® Supplier Certificates** (VSCs)[63] are sustainability schemes for additive producers and compounders that are partners of VinylPlus. The VSCs not only give these companies the chance to demonstrate their sustainability performance but can also help their converter customers shorten audit times and gain quicker access to the VinylPlus® Product Label. To date, eight additive producers and five compounders have obtained the VinylPlus® Supplier Certificates.

Photo: VinylPlus®

THE VINYLPLUS SUSTAINABILITY CERTIFICATIONS FAMILY CONTINUES TO EXPAND

verified vinyl® | VinylPlus® Supplier Certificates

25 companies certified

> 500 products and product systems manufactured at

36 European sites

Enhancing traceability through Digital Product Passports

The introduction of a 'digital product passport' (DPP) is part of broader initiatives to improve product sustainability, traceability, and circular economy practices in the EU. Various EU regulations across different sectors are aligning with or incorporating DPP requirements.

In line with EU regulations such as the EU Ecodesign for Sustainable Products Regulation (ESPR) and the Construction Product Regulation (CPR),[64] the **VinylPlus® Digital Passport Programme** aims to develop DPPs for PVC products to enable transparent tracking of product data, ensuring compliance with the EU sustainability and recycling standards. DPPs also support better resource management, facilitate product reuse, and enhance circular economy practices by providing essential information on material composition, life cycle, and end-of-life options.

In 2024, the Flex-ID project piloted DPPs for tarpaulins, cushion vinyl floor coverings, and roofing membranes, aiming to set a benchmark for product life cycle management. Led by VinylPlus alongside industry partners Beaulieu International Group, RENOLIT SE, Sioen Industries NV, and in collaboration with 3E, a company specialised in the development of DPPs, the Flex-ID project delivered key insights into DPP design and implementation.

63 Also see https://productlabel.vinylplus.eu/vinylplus-supplier-certificates
64 https://single-market-economy.ec.europa.eu/sectors/construction/construction-products-regulation-cpr_en

STEPHANE CONTENT
SENIOR TECHNICAL ADVOCACY MANAGER OF VINYLPLUS

Regulatory frameworks like the CPR and ESPR reflect a growing recognition of the need for traceability and transparency in product life cycle data, with DPPs serving as a key tool.

Aligning DPP requirements across different sectors and regulations needs standardisation, interoperability, and effective coordination, ensuring that DPPs are both comprehensive and user-friendly.

It found that no one-size-fits-all solution exists to link the product and the digital product passport; instead, technologies such as digital watermarks, QR codes, and labelling offer distinct advantages depending on product characteristics. The project also highlighted the need for harmonised regulations and long-term data accessibility. These insights led to recommendations for flexible, durable, and interoperable DPP systems, which are summarised in the *'FLEX-ID Digital Passport: Committed to Transparency and Traceability'* white paper.[65]

Flex-ID's findings have major implications for policymakers and industry stakeholders. Policymakers should adopt technology-neutral regulations and harmonised requirements while incentivising collaboration to overcome industry-wide challenges. For manufacturers and recyclers, the project's findings highlight DPPs' potential to improve resource efficiency, informed decision-making and sustainability. They support manufacturers and recyclers in adopting DPPs, ultimately fostering sustainability and circularity in the PVC sector.

A dedicated event[66] – ***The VinylPlus® Digital Passport: Committed to Transparency and Traceability*** held in Brussels in January 2025 – focused on Flex-ID and its role in advancing the PVC industry's proactive approach to the implementation of DPPs. The event also explored the current legislative framework, thanks to a contribution from EU Commission's DG GROW.

Promoting sustainable private and public procurement practices

VinylPlus Deutschland continued to promote VinylPlus as a sustainability leader in 2024, driving recognition of the VinylPlus® Product Label among corporate social responsibility (CSR) and sustainability managers. Through advertorials in *Forum Nachhaltig Wirtschaften* and social media campaigns, VinylPlus Deutschland spotlighted key achievements of the 2030 Commitment and PVC's role in healthcare. Another campaign promoted PVC as a sustainable, cost-effective choice for the public procurement and hospitality sectors. Editorials and advertorials in *KBD* and *HOTELBAU* magazines, plus online content, showcased PVC products' energy- and resource-efficiency and long-term value, amplifying their reach via social media.


Photo: VinylPlus Deutschland

65 www.vinylplus.eu/wp-content/uploads/2025/01/Vinyl-Plus-Digital-Passport.pdf
66 www.vinylplus.eu/news/vinylplus-launches-the-vinylplus-digital-passport-programme

MONA NEUBAUR
DEPUTY PREMIER AND MINISTER FOR ECONOMIC AFFAIRS, INDUSTRY, CLIMATE ACTION AND ENERGY, STATE OF NORTH RHINE-WESTPHALIA

The title of your forum contains two very important elements: common ground and ambition. The challenges facing society and economy should be tackled together. Solutions must be supported by everyone and dialogue over the right path is essential. The current industrial transformation is a task that we must accept and shape together, and we must keep the ambitions high because high standards are necessary to maintain competitiveness.

ENGAGING STAKEHOLDERS IN THE SUSTAINABLE TRANSFORMATION OF THE PVC INDUSTRY

The 12th VinylPlus Sustainability Forum (VSF2024) in Cologne, Germany, brought together over 190 delegates from 22 countries – policymakers, industry leaders, academics, and stakeholders from the PVC value chain.

Under the theme *'Together Towards Higher Ambitions',* the forum highlighted the importance of cross-sector collaboration to achieve common sustainability goals at the EU and global levels. Key discussions focused on life cycle assessments, carbon reduction, advanced recycling technologies and industry transformation. The event highlighted VinylPlus' commitment to innovation and circularity, by featuring developments in recycling technologies and addressing data gaps for future PVC recycling. Experts presented strategies for achieving carbon neutrality and reducing environmental impact. The event wrapped up with the VinylPlus Sustainability Certifications Award Ceremony, which recognised companies contributing to sustainable development through certified PVC products.

The VinylPlus UK Seminar 2024, held online in December, attracted over 120 delegates from across Europe, the USA and China. Targeting senior and middle management professionals, researchers, and students in the plastics industry, the seminar provided valuable insights into the evolving industry landscape, including regulatory updates from the UK and Europe.

Photo: courtesy of EPPA

Fensterbau Frontale 2024

Engaging in open dialogue with stakeholders, by showcasing PVC's pivotal role in sustainable solutions and PVC windows as a best practice example of the VinylPlus 2030 Commitment in action.

Photo: VinylPlus®

Engaging the European PVC value chain

Dedicated **site visits** focused on the **European PVC value chain,** from monomer production to end-of-life recycling. In 2024, sites included INEOS Inovyn, Westlake Vinnolit, Orbia Vestolit, BASF, Evonik, Dyka, Deceuninck, Raff Plastic and Van Werven.

Photo: VinylPlus®

The strong cooperation with other regional PVC associations represented in the **Global Vinyl Council** (GVC) was further enhanced in 2024. Joint work focused on important topics such as the ECHA *'Investigation Report on PVC and PVC Additives',* and the UNEP intergovernmental negotiations towards a Global Plastics Treaty.

Photo: VinylPlus®

Exchanging knowledge and best practices at the global level

The sustainable use of PVC in medical packaging was the focus of a VinylPlus meeting with a delegation of the China National Pharmaceutical Packaging Association organised in December.

As an observer organisation to the United Nations Environment Programme (UNEP), VinylPlus has been actively involved in the discussions for the Global Plastics Treaty, participating in both the **Fourth (INC-4, in Ottawa, Canada) and the Fifth (INC-5, in Busan, South Korea) sessions of the Intergovernmental Negotiating Committee** to develop an international legally binding instrument on plastic pollution, including in the marine environment.

On the ground, VinylPlus contributed its expertise on PVC and its role in reducing plastic pollution to negotiators and observers, including to delegates from the European Commission and Member States. It offered insights into the PVC sector and facilitated exchanges with other stakeholders to enhance mutual understanding. In addition, VinylPlus highlighted how the PVC industry's commitment to sustainability aligns with the treaty's objectives, particularly through recycling and circular economy practices.

Actors in the European PVC value chain were regularly updated with reports on key discussions at the INC, as well as on the strong collaboration with other industry associations. A dedicated webinar on 4 December 2024 – ***'Global Plastics Treaty – What's Next?'*** – focused on the outcome of INC-5. This included VinylPlus experience and contributions from the European Commission and explored what the Global Plastics Treaty means for the PVC industry. VinylPlus will continue to monitor and engage in the negotiation process as it unfolds.

The webinar on the Global Plastics Treaty was one of a **series of webinars** organised by VinylPlus in 2024, aimed at **engaging the PVC value chain** and keeping it informed over key topics, developments and challenges affecting the sector. These included a session on the ECHA Investigation Report in April, with the contribution of Simone Doyle of ECHA, and a session on the EU's political priorities under the new mandate, which was broadcast live from Strasbourg during the European Parliament's first plenary session.

MADHUVANTHI RAJKUMAR
CO-FACILITATOR PLASTICS ACTION WORKING GROUP,
CHILDREN AND YOUTH MAJOR GROUP

> *A very recent OHCHR[67] information note beautifully explains that the right to development is not just a number. It cannot simply be seen as GDP or economic growth. Rather, the human right to development should continually advance other human rights, including environmental, social, and economic justice.*

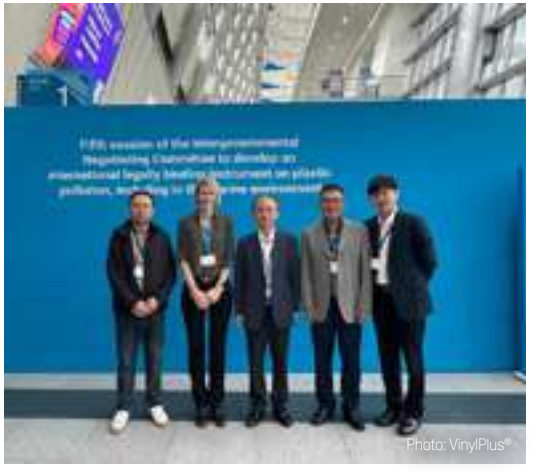


Photo: VinylPlus®

67 OHCHR: Office of the United Nations High Commissioner for Human Rights

PARTNERING WITH STAKEHOLDERS

To enhance the PVC industry's contribution to the SDGs, VinylPlus is continuing to engage with civil society, including younger generations, local communities, institutions and the private sector through partnerships, joint projects and initiatives.

Photo: VinylPlus®

VinylPlus® Med

Engaging with civil society (hospitals, adult day-care centres), waste management companies, recyclers and the PVC industry to accelerate circularity in healthcare.

The **PVC4CreativeDesign** project promoted eco-design and sustainability in PVC applications, focusing on training for engineers and architects in Italy. It also addressed the demand for innovative, sustainable designs in product development which had raised in dialogues with Italian authorities. Online meetings with over 1,800 engineers and architects boosted the visibility of VinylPlus, encouraged the adoption of the VinylPlus® Product Label, and promoted the use of sustainable PVC products, highlighting PVC's role in circularity and design innovation. The project was further supported by the *'Colours of PVC'* social media campaign, which demonstrated how the choice of colour in PVC applications can impact sustainable solutions.

Engaging with institutions and local communities

At the event *'A competitive, circular Europe: with or without plastics?'*, Members of the European Parliament (MEPs), policy advisors, and plastics industry leaders engaged in a lively debate on the future of Europe's economy and its transition towards circularity and sustainability.

Organised by VinylPlus in partnership with CEFLEX,[68] EUMEPS,[69] EuPC, PCEP,[70] Plastics Europe,[71] and PRE,[72] the event was held at the European Parliament in November 2024. Key topics included regulatory challenges and the need for innovation to reduce the environmental impact of plastics. VinylPlus reaffirmed its commitment to sustainability, building partnerships along the value chain, and emphasised the critical need for stronger cooperation between industry and policymakers to drive circularity in Europe.

Photo: courtesy of The Parliament Magazine

68 CEFLEX: The Circular Economy for Flexible Packaging initiative (https://ceflex.eu)
69 EUMEPS: European Manufacturers of Expanded Polystyrene (https://eumeps.eu)
70 PCEP: Polyolefin Circular Economy Platform (www.pcep.eu)
71 Plastics Europe: the pan-European association of plastics manufacturers (https://plasticseurope.org)
72 PRE: Plastics Recyclers Europe (www.plasticsrecyclers.eu)

Photo: courtesy of Garden to Connect

Garden to Connect

Engaging with civil society in Denmark to reuse PVC pipes in green urban transformation and community building.

In Denmark, **WUPPI**[73] continued to raise awareness of its collection and recycling activities and to promote VinylPlus' sustainability model and achievements through targeted marketing and communication campaigns. The entry into force in 2024 of the EU restrictions[74] on rPVC containing legacy additives, along with related derogations, overrode the previous, stricter Danish regulation, which had effectively made recycling impossible. As a result, WUPPI strengthened its efforts to enhance PVC recycling during the year. These included promotion of the use of rPVC in 3-layer pipes through the **Circular Pipes** project, in partnership with NPG Nordic (the Nordic Plastic Pipe Association) and several waterworks.

The **Milano-Cortina 2026** project is positioning PVC as a key material for the Winter Olympics (and sports events in general), by promoting its sustainability and circularity, and VinylPlus initiatives such as the ASF and the VinylPlus® Product Label. The project also promotes PVC's potential in sustainable urban solutions. Key activities include ongoing dialogues with Italian institutions, construction companies, and sports authorities to highlight PVC's benefits for the Olympics, particularly in terms performance, sustainability, and cost. In 2024, Gees Recycling (www.geesrecycling.com) in partnership with VinylPlus Italia tested the recycling of difficult PVC products from sports events into composites, with promising initial results.

In November, a dedicated workshop was organised in Milan, where representatives of Fondazione Milano Cortina[75] and industry players discussed the importance of eco-design and recycling to ensure that PVC products meet the Olympics sustainability criteria, and of fostering collaboration between industry and institutions.

Two social media campaigns – ***'Sustainable Flexibility in Sporting Equipment'*** and ***'Sustainable Materials in the Paris Olympic Games'*** – launched by European Plasticisers in 2024, aimed at engaging civil society, policymakers, and the PVC value chain. The campaigns highlighted the importance of flexible PVC in various aspects of life, from sports infrastructure and equipment to home and body protection. Emphasis was placed on how plasticisers are essential for modern life thanks to their versatility and the enhancements they bring in convenience, safety and functionality.

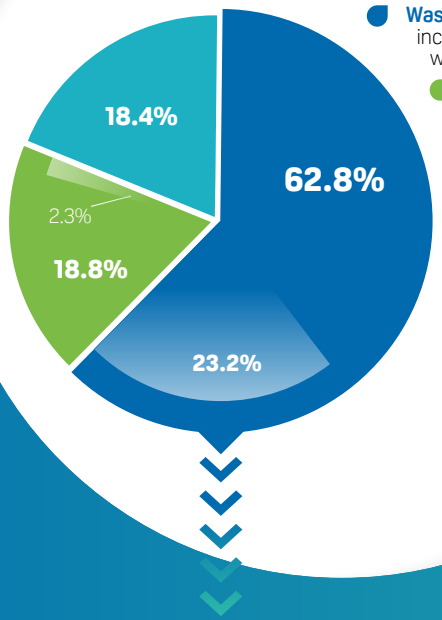
73 WUPPI: Danish company set up to collect and recycle rigid PVC (www.wuppi.dk)
74 https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R0923
75 Fondazione Milano Cortina: the foundation established to organise and coordinate all sporting and cultural events relating to the Olympic and Paralympic Winter Games (https://milanocortina2026.olympics.com/en)

07 FINANCIAL REPORT

In 2024, industry expense increased by 3.6% compared to 2023. It should be noted that overhead expense was reduced by 14% and communications by 10%, whilst project expense increased by 15%, mainly to support collection schemes and technology development.

The expenditure of VinylPlus – including EuPC and its members, as well as national and sectoral co-funding – amounted to €5.75 million in 2024.

TOTAL EXPENDITURE IN 2024: €5.75 MILLION



- **Waste management and technical projects**, including national and sectoral co-funding, which amouted to 23.2% of total industry funding
- **Communications**, including national and sectoral co-funding, which amounted to 2.3% of total industry funding
- **Overheads and Commitment development**

WASTE MANAGEMENT AND TECHNICAL PROJECTS — **TOTAL EXPENDITURE INCLUDING EUPC AND ITS MEMBERS**

FIGURES IN €1,000s	2023	2024
Flooring related projects	657	519
EPPA	723	740
ESWA/Roofcollect®	0	10
Recovinyl®	911	609
Studies, start-up & pull concept	306	612
TEPPFA*	355	556
VinylPlus Healthcare (medical applications recycling)	104	156
Advanced recycling	60	268
Digital Product Passport development	0	113
Sorting legacy additives (Pb, DEHP) from cable waste	30	28
TOTAL PROJECTS	**3,145**	**3,610**

* Expenses allocation takes into account collected polymer

08 RECYCLED PVC TONNAGES

The top table summarises the tonnages of PVC recycled in the EU-27 plus Norway, Switzerland and the UK, within the operations of Recovinyl Aisbl in the framework of VinylPlus, in the period 1 January 2024 to 31 December 2024.

The bottom table summarises the uptake of recycled PVC by applications in 2024.

The complete Report of Factual Findings regarding the Agreed-Upon Procedures (AUP) Engagement can be found on the VinylPlus website.

TYPE OF PVC (WASTE ORIGIN)	TONNAGE RECYCLED IN 2023			TONNAGE RECYCLED IN 2024		
	TOTAL TONNE	POST-CONSUMER	PRE-CONSUMER	TOTAL TONNE	POST-CONSUMER	PRE-CONSUMER
Profiles	391,093	152,585	238,508	396,677	163,687	232,990
Pipes	30,471	6,983	23,488	33,458	4,859	28,599
Cables	97,586	88,345	9,241	92,478	83,737	8,741
Flexibles	67,720	25,107	42,613	54,432	18,523	35,909
Rigid film	20,399	5,140	15,259	16,942	4,525	12,418
Coated fabrics	83	0	83	0	0	0
Flooring	118,379	3,248	115,131	117,284	2,781	114,503
Other rigid	11,913	1,250	10,663	13,367	1,582	11,785
TOTAL	**737,645**	**282,658**	**454,986**	**724,638**	**279,693**	**444,944**

RECYCLED PVC UPTAKE IN 2024*	
APPLICATIONS	TOTAL TONNE
Building & Construction – Other	36,972
Coils and mandrels	976
Floor covering	121,455
Horticultural and stable equipment	1,120
Other	3,200
Pipes	54,749
Traffic management	72,440
Windows and profiles	199,367
TOTAL	**490,278**

* These figures do not fully reflect the total use of recycled PVC in Europe. While Recovinyl represents a significant share of recyclers, it does not yet cover a representative portion of converters using recycled PVC. As a result, actual usage in Europe is higher than what is shown.

09
VERIFICATION STATEMENTS

VinylPlus expenditures in 2024, as well as the tonnages of recycled PVC waste, were audited and certified by PKF BOFIDI, while the Progress Report 2025 was independently verified by SGS.

To read the verification statements, scan the QR codes.

PKF BOFIDI Certification of Expenditure

Independent Accountant's Report on Applying Agreed-Upon Procedures.

PKF BOFIDI Report on Tonnages Recycled

Agreed-Upon Procedures Report on Tonnages of PVC Recycled in the EU-27, Norway, Switzerland, and the UK in 2024.

SGS Verification Statement

SGS Independent Verification Statement about the VinylPlus Progress Report 2025.

10

OUR FOUNDING MEMBERS AND PARTNERS

Photo: VinylPlus®

VinylPlus involves 200 partners across Europe, from resins and additives producers to plastics converters, and a network of 150 recyclers.

Since 2000, the European PVC industry has been strongly committed to implementing a long-term sustainability framework for the entire PVC value chain and to improving PVC products' sustainability and circularity, as well as their contribution to a sustainable society.

VINYLPLUS FOUNDING & CURRENT MEMBERS

ECVM

The European Council of Vinyl Manufacturers represents seven leading European producers of PVC resin and its monomer VCM, which account for around 85% of the PVC resin and VCM manufactured in Europe. These businesses operate around 46 different plants spread over 28 sites and employ approximately 8,000 people (incl. required upstream products like chlorine production).

www.pvc.org

EuPC

European Plastics Converters is an association representing more than 50,000 companies in Europe, which produce over 50 million tonnes of plastic products every year from both virgin and recycled polymers. They employ more than 1.6 million people, generating turnover in excess of €260 billion per year.

www.plasticsconverters.eu

ESPA

The European Stabiliser Producers Association represents eight companies that produce more than 95% of the stabilisers produced in the European market. They provide direct employment to more than 2,000 people in Europe.

www.stabilisers.eu

European Plasticisers

European Plasticisers is a Sector Group of Cefic representing 11 major European plasticiser manufacturers, producing approximately 90% of the plasticisers manufactured in Europe. Over €6 billion has been invested in innovative, safe and sustainable alternative plasticisers over the last 25 years.

www.europeanplasticisers.eu

EPPA

The European Trade Association of PVC Window System Suppliers, which represents the PVC profile industry across Europe, became a full member of VinylPlus in 2023. Representing 22 window system producers and national associations, EPPA currently covers over 90% of the European production of PVC window profiles.

www.eppa-profiles.eu

200 companies

3 national associate members

150 recycler partners

recovinyl

ecvm EUPC ESPA european plasticisers EPPA

VINYLPLUS PARTNERS

In 2024, the contributors were:

Converters, recyclers and other partners:

A. Kolckmann GmbH (Germany)
Aliaxis Group (Belgium)
Alphacan Srl (Italy)
Altro (UK)
Altro Deutschland GmbH & Co. KG (Germany)
aluplast Austria GmbH (Austria)
aluplast GmbH (Germany)
aluplast Italia Srl (Italy)
aluplast Sp. z o.o. (Poland)*
alwitra GmbH (Germany)
Amtico International (UK)
APA SpA (Italy)
Ateco Srl (Italy)
Beaulieu International Group (Belgium)
BM S.L. (Spain)
BMI Group (Germany)
Bonlex Europe Srl (Italy)
BT Bautechnik Impex GmbH & Co. KG (Germany)
BT Nyloplast (Germany)*
BTH Fitting Kft. (Hungary)
CF Kunststofprofielen (Netherlands)
CGT Alkor (France)*
Chieftain Fabrics (Ireland)
CIFRA (France)
Copaco Screenweavers (Belgium)
Crown General (Belgium)*
Danosa (Spain)
Deceuninck Germany GmbH (Germany)
Deceuninck Ltd (UK)
Deceuninck NV (Belgium)
Deceuninck SAS (France)
Dekura GmbH (Germany)
DHM (UK)
Dow Belgium BV (Belgium)
Dyka BV (Netherlands)
Dyka Plastics NV (Belgium)
Dyka Polska Sp. z o.o. (Poland)
Dyka Reseaux SAS (France)*
Dyka SAS (France)
Elbtal Plastics GmbH & Co. KG (Germany)
Epwin Window Systems (UK)
Ergis SA (Poland)
Eurocompound Srl (Italy)
Fatra a.s. (Czech Republic)
Finproject SpA (Italy)
Finstral AG (Italy)
FIP (Italy)
Forbo Flooring BV (Netherlands)
Forbo Flooring GmbH (Germany)
Forbo Novilon BV (Netherlands)
Forbo Sarlino SAS (France)
Forbo-Giubiasco SA (Switzerland)
Funke Kunststoffe GmbH (Germany)
Gealan Fenster-Systeme GmbH (Germany)
Georg Fischer Deka GmbH (Germany)
Gerflor Mipolam GmbH (Germany)
Gerflor SAS (France)
Gerflor SpA (Italy)
Gerflor Tarare (France)
Gernord Ltd (Ireland)
Girpi (France)
Gislaved Folie AB (Sweden)
Griffine Industries (France)
Hamos GmbH (Germany)
Helioscreen (Belgium)
H-fasader AS (Norway)
Holland Colours NV (Netherlands)
Hundhausen Kunststofftechnik GmbH (Germany)
I.C.P. SpA (Italy)
Imerys Talc Europe (France)
Industrias REHAU SA (Spain)
Industrie Generali SpA (Italy)
Industrie Plastiche Lombarde SpA (Italy)
Inoutic/Deceuninck Sp. z o.o. (Poland)
Internorm Bauelemente GmbH (Austria)
Inverplast Srl (Italy)
IVC BVBA (Belgium)
Jimten (Spain)
Kisuma Chemicals BV (Netherlands)
KRONOS International Inc (Germany)
KURO Kunststoffe GmbH (Germany)
Liveo Research (Germany)
Lubrizol Advanced Materials Europe BVBA (Belgium)
Manufacturas JBA (Spain)
Marley Deutschland (Germany)
Marley Hungária (Hungary)
Mehler Texnologies GmbH (Germany)
Mermet Suncreen (France)
Michael Girstenbrei Recycling GmbH (Germany)*
MKF-Ergis GmbH (Germany)
MKF-Ergis Sp. z o.o. (Poland)
Molecor (Spain)
Mondorevive SpA (Italy)
Nicoll (France)
Nicoll Italy (Italy)
Nissen Plast GmbH (Germany)*
Nordisk Wavin AS (Denmark)
Norsk Wavin AS (Norway)
NYLOPLAST EUROPE BV (Netherlands)
Objectflor Art und Design Belags GmbH (Germany)
Omya International AG (Switzerland)
Palram DPL Ltd (UK)
PCW GmbH (Germany)
Perlen Packaging (Switzerland)
Pipelife Austria (Austria)
Pipelife Belgium NV (Belgium)
Pipelife Czech s.r.o (Czech Republic)
Pipelife Eesti AS (Estonia)
Pipelife Hungária Kft. (Hungary)
Pipelife Nederland BV (Netherlands)
Pipelife Norge AS (Norway)
Pipelife Polska SA (Poland)

Pipelife Sverige AB (Sweden)
Poliplast (Poland)
Poloplast GmbH & Co. KG (Austria)
Polyflor (UK)
Polymer-Chemie GmbH (Germany)
profine GmbH – International Profile Group (Germany)
profine Italia Srl (Italy)
PROJECT FLOORS GmbH (Germany)
Qi Sistemi Srl (Italy)
Redi (Italy)
REHAU AG & Co (Germany)
REHAU GmbH (Austria)
REHAU Ltd (UK)
REHAU SA (France)
REHAU SpA (Italy)
REHAU Sp. z o.o. (Poland)
RENOLIT Belgium NV (Belgium)
RENOLIT Cramlington Ltd (UK)
RENOLIT Hispania SA (Spain)
RENOLIT Ibérica SA (Spain)
RENOLIT Milano Srl (Italy)
RENOLIT Nederland BV (Netherlands)
RENOLIT Ondex SAS (France)
RENOLIT SE (Germany)
Resysta International GmbH (Germany)
Riflex Film (Sweden)
Riuvert (Spain)
Roechling Industrial Lahnstein SE & Co. KG (Germany)
Saint Clair Textiles (France)
Salamander Industrie Produkte GmbH (Germany)
Sattler PRO-TEX GmbH (Austria)
Schüco Polymer Technologies KG (Germany)
Screen Protectors SL (Spain)
Serge Ferrari SAS (France)
Sika Services AG (Switzerland)
Sika Trocal GmbH (Germany)
SIMONA AG (Germany)
Sioen Industries (Belgium)
SKZ-Testing GmbH (Germany)
Soprema Srl (Italy)
Sovere SpA (Italy)
STIR Compounds Srl (Italy)
Tarkett AB (Sweden)
Tarkett France (France)
Tarkett GDL SA (Luxembourg)
Tarkett Holding GmbH (Germany)
Tarkett Limited (UK)
Tarkett Polska Sp. z o.o. (Poland)
Teraplast SA (Romania)
Titanstuc SpA (San Marino)
TMG Automotive (Portugal)
TPV Compound SpA (Italy)
Veka AG (Germany)
Veka Ibérica (Spain)
Veka Plc (UK)
Veka Polska (Poland)
Veka SAS (France)
Verseidag-Indutex GmbH (Germany)
Vescom BV (Netherlands)
Vinilchimica Srl (Italy)
Vi.Pa. Srl (Italy)
Vulcaflex SpA (Italy)
Wavin Baltic (Lithuania)
Wavin Belgium BV (Belgium)
Wavin BV (Netherlands)
Wavin France SAS (France)
Wavin GmbH (Germany)
Wavin Hungary (Hungary)
Wavin Ireland Ltd (Ireland)
Wavin Metalplast (Poland)
Wavin Nederland BV (Netherlands)
Wavin Plastics Ltd (UK)
WEMAS Baseplates GmbH (Germany)*
Westlake Compounds Italy Srl (Italy)
Windmöller GmbH (Germany)

PVC resin producers:

Ercros (Spain)
Kem One (France, Spain)
INEOS Inovyn (Belgium, France, Germany, Norway, Spain, Sweden, UK)
Shin-Etsu PVC (Netherlands, Portugal)
VESTOLIT GmbH (Germany)
Westlake Vinnolit GmbH & Co. KG (Germany)
Vynova Group (Belgium, France, Germany, Netherlands, UK)

PVC stabiliser producers:

Akdeniz Chemson Kimya San. ve Tic. A.Ş.
Asúa Products S.A.
Baerlocher GmbH
Galata Chemicals GmbH
IKA GmbH & Co. KG
PMC Group Inc.
Reagens SpA
Valtris Specialty Chemicals Ltd

PVC plasticiser producers:

BASF SE
DEZA a.s.
Eastman
Evonik Performance Materials GmbH
ExxonMobil Chemical Europe Inc.
Grupa Azoty ZAK SA
LANXESS Deutschland GmbH
Perstorp Oxo AB
Polynt Group
Proviron
Varteco

Associate members:

British Plastics Federation (BPF) VinylPlus UK
VinylPlus Deutschland e.V. (Germany)
VinylPlus Italia (Italy)

* Companies that joined VinylPlus in 2024

vinyl plus®
COMMITTED TO SUSTAINABLE DEVELOPMENT

Avenue de Cortenbergh 71
B-1000 Brussels, Belgium
Tel. +32 (0)2 329 51 05
info@vinylplus.eu
www.vinylplus.eu

@VinylPlus_EU
VinylPlus
VinylPlus
VinylPlus

Cover photo: courtesy of BoysPlayNice