EXECUTIVE SUMMARY 2014

REPORTING ON 2013 ACTIVITIES

vinyl plus

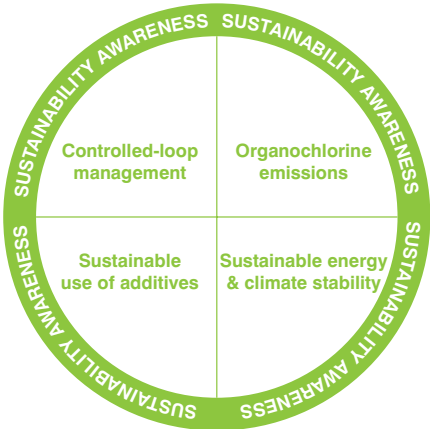
COMMITTED TO SUSTAINABLE DEVELOPMENT

Voluntary Commitment Challenges and Achievements

Launched in 2011, VinylPlus is the renewed ten-year Voluntary Commitment to Sustainable Development by the European PVC industry. The VinylPlus programme was developed through open dialogue with stakeholders, including industry, NGOs, regulators, civil society representatives and PVC users.

Five key challenges have been identified based on The Natural Step System Conditions for a Sustainable Society (www.naturalstep.org).

The regional scope of the programme is the EU-27 plus Norway and Switzerland.



This Executive Summary summarises VinylPlus' progress and achievements in 2013 in each of the five challenges. All the information reported has been independently audited and verified by external third parties.

Expenditure by VinylPlus for 2013, including EuPC[1] and its members, amounted to €6.3 million.

For detailed descriptions of the projects and activities please visit www.vinylplus.eu.

[1] EuPC: European Plastics Converters (www.plasticsconverters.eu)

PVC window profiles guarantee excellent thermal insulation, contributing to energy efficiency of buildings

PHOTO: COURTESY OF REHAU

CHALLENGE 1

Controlled-loop Management: "We will work towards the more efficient use and control of PVC throughout its life cycle."

Recycling

Recycled PVC volumes increased significantly in 2013 to 444,468 tonnes, despite continued adverse economic conditions. Of this, 435,083 tonnes were registered and certified by Recovinyl, the organisation set up in 2003 to facilitate PVC waste collection and recycling. The consolidation of waste streams contributed to this achievement, as did the involvement of the converters contributing industrial waste in the Recovinyl system.

In 2013, Recovinyl focused on implementing the 'pull-market' concept – i.e. consolidating and increasing the steady supply of PVC waste being recycled in Europe by creating demand for recycled PVC material from the converting industry – helping and motivating converters to use more recyclates and setting up three levels of agreement and corresponding audit protocols.

In 2013, VinylPlus also started to investigate the possibility of increasing recycling volumes in regulated PVC waste streams such as automotive trim and household packaging.

VINYLOOP®

VinyLoop® is a physical, solvent-based technology that is able to recycle difficult-to-treat, end-of-life PVC waste, and produces high-quality R-PVC (recycled PVC) compounds. In 2013, VinyLoop® concentrated its efforts on improving the efficiency of the treatment of scraps containing fibres, and achieved a significant increase in tarpaulin recycling (802 tonnes, +55% compared to 2012). Furthermore, VinyLoop Ferrara decided to make its technology available for licensing worldwide.

Legacy Additives

Legacy additives are substances whose use in PVC products has been discontinued but that are contained in recycled PVC. EU regulations impacting legacy additives were a critical challenge in 2013, because of their potential to reduce the amount of PVC that can be recycled. VinylPlus has further strengthened its cooperation with the competent authorities to address this issue.

LOW MOLECULAR WEIGHT PHTHALATES

The Competent Authorities for REACH[2] and CLP[3] (CARACAL) issued its interpretation on REACH Regulation for recyclates containing Low Molecular Weight phthalates in March 2013. The opinion of the European Chemicals Agency's (ECHA) Risk Assessment Committee (RAC) on the application for Authorisation is expected to be released in September 2014.

LEAD

Since restrictions on lead might severely affect recycling, VinylPlus in March 2012 initiated a study on the socio-economic impact of recycling waste streams containing lead with the Dutch consultant Tauw (www.tauw.com). The study assessed the potential impact of possible regulations limiting lead content in PVC articles for building and construction over the time span 2015-2050. In 2013, a modelling study on lead migration into water from sewage pipes conducted by the German institute Fabes (www.fabes-online.de) was completed. The study demonstrated very low levels of migration, well within Environmental Quality Standards for surface water.

PVC coated fabrics waste from Serge Ferrari ready to be recycled at the VinyLoop® plant in Ferrara, Italy

Controlled-loop Committee

Thanks to the work done by the Controlled-loop Committee, the new VinylPlus definition of recycling is now fully embedded in all applications. In 2013, the wall coverings industry also joined the Committee.

As part of the PVC industry efforts to use innovative technology to recycle 100,000 tonnes/year of difficult-to-recycle PVC, the Committee visited the EcoLoop plant in Germany (www.ecoloop.eu/en) and the Alzchem (www.alzchem.com) calcium carbide plant in Bavaria. Workshops, with participants from technology institutes, businesses and associations, were also held in 2013, and several interesting R&D paths were identified.

CHALLENGE 2

Organochlorine Emissions: "We will help to ensure that persistent organic compounds do not accumulate in nature and that other emissions are reduced."

Safe Transport

VinylPlus has a target of zero accident with VCM release during transportation. No such accidents occurred in 2013.

A Task Force of experts was set up to assess the risks of transporting major raw materials, and it mapped out an action plan to identify and assess the measures already in place.

[2] REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals is a EU regulation on chemical substances
[3] CLP: European Regulation on Classification, Labelling and Packaging of chemical substances and mixtures

Temporary re-usable structures: the Kreod Pavillion in London

PHOTO: ED KINGSFORD

CHALLENGE 3

Sustainable Use of Additives: "We will review the use of PVC additives and move towards more sustainable additive systems."

Lead Replacement

ESPA[4] and EuPC are committed to replacing lead-based stabilisers across the EU-27 by the end of 2015. In 2014, the commitment will be extended to the EU-28. Over the 2007-2013 period, the use of lead stabilisers decreased by 81,372 tonnes (-81.4%) in the EU-27.

Plasticisers

The replacement of DEHP by High Molecular Weight phthalates and other plasticisers is ongoing. In 2013, ECHA published its final report on the re-evaluation of the restrictions on DINP and DIDP in toys and childcare articles which can be placed in the mouth. According to the conclusions, *"a risk from mouthing of toys and childcare articles with DINP and DIDP cannot be excluded if the existing restrictions were lifted"*. However, "*no further risks were identified*". Taking into account ECHA's report and the RAC's opinion, it can be concluded that DINP and DIDP are safe for use in all current applications.

'Sustainable Use of Additives' Criteria

The Additives Task Force brings together representatives from ECPI[5] and ESPA, related sectors such as pigments and fillers, NGOs and major PVC converting industries. In 2013, the Additives Task Force defined practical methods to assess additives based on TNS sustainability criteria. Converter associations started to update existing LCAs (Life Cycle Assessments) and EPDs (Environmental Product Declarations).

-81.4 % LEAD SUBSTITUTION IN THE PERIOD 2007-2013

[4] ESPA: The European Stabiliser Producers Association (www.stabilisers.eu)
[5] ECPI: The European Council for Plasticisers and Intermediates (www.plasticisers.org)

CHALLENGE 4

Sustainable Energy Use: "We will help to minimise climate impacts through reducing energy and raw material use, potentially endeavouring to switch to renewable sources and promoting sustainable innovation."

PHOTO: COURTESY OF DEBOLON

PVC flooring: enhanced walking comfort, good footfall sound reduction, anti-slip, warm, particularly durable surface coating

Energy Efficiency and Sustainable Footprint

In 2013, the Energy Efficiency Task Force initiated data collection by ECVM[6] member companies based on the methodology agreed with consultant IFEU (German Institute for Energy and Environmental Research – www.ifeu.de). An initial verification of the data collected will take place in 2014, and it will be combined with a revision of the VCM and PVC eco-profiles. A final report is expected by November 2014.

Converters will also strive to increase their efficient use of energy. Due to the complexity and variety of situations found in the converting sectors, setting an overall target, even by subsector, would be meaningless. It was therefore decided to proceed in a step by step approach.

PVC converters' consumption data and targets will be collected and aggregated by sector through the EuPlastVoltage benchmarking system. This system was set up to measure the progress of plastics converting companies as a whole towards increased energy efficiency.

During 2013, the Sustainable Footprint Task Force analysed the European Commission's Product Environmental Footprint (PEF) scheme and its guidance in relation to the available EPDs for PVC products. The Task Force concluded that updating the EPDs will provide much of the data needed to produce PEFs for the PVC industry. In a second stage, socio-economic aspects, as well as human health and safety parameters, could be also covered in order to develop a Sustainable Product Footprint.

Renewable Raw Materials

Established in December 2011, the Renewable Materials Task Force is investigating renewable alternative resources for the production of PVC, which is made from salt (57% – salt availability is largely unlimited) and oil (43%). After verification, in 2013 the Task Force confirmed that technical solutions to produce some raw materials from renewable resources or waste do exist.

[6] ECVM: The European Council of Vinyl Manufacturers (www.pvc.org)

CHALLENGE 5

Sustainability Awareness: "We will continue to build sustainability awareness across the value chain – including stakeholders inside and outside the industry – to accelerate resolving our sustainability challenges."

Official signature of the Green Industry Platform Statement of Support

Independent Monitoring

VinylPlus is continuing the best practices established by Vinyl 2010 and maintains an independent and critical Monitoring Committee, whose majority of members are external stakeholders.

Annual Reporting

The Progress Report 2014 has been independently verified by SGS, whilst expenditure and tonnages of PVC waste recycled have been audited and certified by KPMG. The Natural Step made a commentary on the overall work and progress of VinylPlus.

External Stakeholder Dialogue and Communication

In 2013, VinylPlus' Voluntary Commitment, its progress and its achievements were presented through active participation in conferences, events and exhibitions at both the European and global level.

In April 2013, VinylPlus organised its first Sustainability Forum, in Istanbul, Turkey, aiming to engage a wider range of industry and external stakeholders. The 2013 edition saw the participation of 120 delegates, and of Ambassador Tomas Anker Christensen, Senior Advisor at the United Nations Office for Partnerships, as keynote speaker.

In November 2013, VinylPlus became a member of the Green Industry Platform (GIP), a joint initiative of the United Nations Industrial Development Organization (UNIDO) and the United Nations Environment Programme (UNEP).

Programme Participants

Despite the financial crisis, the net number of companies contributing to the programme through the Vinyl Foundation increased by 5.4% compared to the year 2010.

	2010	2010 NET NUMBER[7]	2013
Vinyl Foundation	163	148	156

VinylPlus Partner Certificate and Product Label

The Partnership Certificate is released on a yearly basis to the companies which contribute to the VinylPlus Voluntary Commitment. In 2013, the Product Label scheme developed in close cooperation with BRE Global (UK-based certification experts on responsible sourcing for building and construction products – www.bre.co.uk) and TNS, was concretely verified through test audits at several converting companies that volunteered for this phase.

[7] Net number: number of companies after deduction of plants disappearing following bankruptcy or mergers and acquisitions

VinylPlus Partners

In 2013, contributors were:

A. Kolckmann GmbH (Germany)
Alfatherm SpA (Italy)
Aliaxis Group (Belgium)
Altro (UK)
aluplast Austria GmbH (Austria)
aluplast GmbH (Germany)
alwitra GmbH & Co (Germany)*
AMS Kunststofftechnik GmbH & Co. KG (Germany)
Amtico International (UK)
Armstrong DLW AG (Germany)
BM S.L. (Spain)
BT Bautechnik Impex GmbH & Co. KG (Germany)
BTH Fitting kft (Hungary)
CIFRA (France)
Coveris Rigid Hungary Ltd, former Paccor Hungary (Hungary)
CTS Cousin Tessier SAS (France)
CTS-TCT Polska Sp. z o.o. (Poland)
debolon dessauer bodenbeläge GmbH & Co. KG (Germany)
Deceuninck Ltd (UK)
Deceuninck NV (Belgium)
Deceuninck Polska Sp. z o.o. (Poland)
Deceuninck SAS (France)
DHM (UK)
Dickson Saint Clair (France)*
Dietzel GmbH (Austria)
Döllken Kunststoffverarbeitung GmbH (Germany)
Dyka BV (Netherlands)
Dyka Plastics NV (Belgium)
Dyka Polska Sp. z o.o. (Poland)
Elbtal Plastics GmbH & Co. KG (Germany)
Epwin Window Systems (UK)*
Ergis Eurofilms SA (Poland)
Eurocell Profiles Ltd (UK)
FDT FlachdachTechnologie GmbH & Co. KG (Germany)
Finstral AG (Italy)
FIP (Italy)
Flag SpA (Italy)
Floridienne Chimie SA (Belgium)
Forbo Coral NV (Netherlands)
Forbo Flooring UK Ltd (UK)
Forbo Sarlino SAS (France)
Forbo Giubiasco SA (Switzerland)
Forbo-Novilon BV (Netherlands)
Gallazzi SpA (Italy)*
Gealan Fenster-Systeme GmbH (Germany)
Georg Fischer Deka GmbH (Germany)
Gerflor Mipolam GmbH (Germany)
Gerflor SAS (France)
Gerflor Tarare (France)
Gernord Ltd (Ireland)
Girpi (France)
Griffine Enduction (France)*
H Producter AS (Norway)
Heubach GmbH (Germany)
Heytex Bramsche GmbH (Germany)
Heytex Neugersdorf GmbH (Germany)
Icopal Kunststoffverarbeitungs GmbH, former MWK Kunststoffverarbeitungs GmbH (Germany)
IGI – Global Wallcoverings Association (Belgium)*
IKA Innovative Kunststoffaufbereitung GmbH & Co. KG (Germany)
Inoutic/Deceuninck GmbH (Germany)
Jimten (Spain)
Juteks d.o.o. (Slovenia)
Klöckner Pentaplast GmbH & Co. KG (Germany)
Konrad Hornschuch AG (Germany)
KWH Pipe Oy AB (Finland)
Manufacturas JBA (Spain)
Marley Deutschland (Germany)
Marley Hungária (Hungary)
Mehler Texnologies GmbH (Germany)
MKF-Ergis Sp. z o.o. (Poland)
MKF-Folien GmbH (Germany)
Molecor (Spain)*
Mondoplastico SpA (Italy)
Nicoll (France)
Nicoll Italy (Italy)
Nordisk Wavin A/S (Denmark)
Norsk Wavin A/S (Norway)
NYLOPLAST EUROPE B.V. (Netherlands)
Omya International AG (Switzerland)*
Perlen Packaging (Switzerland)
Pipelife Austria (Austria)
Pipelife Belgium NV (Belgium)
Pipelife Czech s.r.o (Czech Republic)
Pipelife Deutschland GmbH (Germany)
Pipelife Eesti AS (Estonia)
Pipelife Finland Oy (Finland)
Pipelife Hellas S.A. (Greece)
Pipelife Hungária Kft. (Hungary)
Pipelife Nederland BV (Netherlands)
Pipelife Polska SA (Poland)
Pipelife Sverige AB (Sweden)
Poliplast (Poland)
Poloplast GmbH & Co. KG (Austria)
Polyflor (UK)
Polymer-Chemie GmbH (Germany)
PROFIALIS NV (Belgium)
PROFIALIS SAS (France)
Profine GmbH (Germany)
Protan AS (Norway)
PUM Plastiques SAS (France)*
Redi (Italy)
REHAU AG & Co (Germany)
REHAU GmbH (Austria)
REHAU Ltd (UK)
REHAU SA (France)
REHAU Sp. z o.o. (Poland)
REHAU Industrias S.A. (Spain)
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)
Riuvert (Spain)
Roechling Engeneering Plastics KG (Germany)
S.I.D.I.A.C. (France)
Salamander Industrie Produkte GmbH (Germany)
Sattler (Austria)
Schüco PWS GmbH & Co. KG (Germany)
Serge Ferrari SAS (France)
Sika Services AG, former Sika Manufacturing AG (Switzerland)
Sika Trocal GmbH (Germany)
Solvay Benvic Europe – Italia SpA (Italy)
SOTRA-SEPEREF SAS (France)
Tarkett AB (Sweden)
Tarkett France (France)
Tarkett GDL SA (Luxembourg)
Tarkett Holding GmbH (Germany)
Tarkett Limited (UK)
Tessenderlo Chemie NV (Belgium)
TMG Automotive (Portugal)*
Tönsmeier Kunstoffe GmbH & Co. KG (Germany)
Upofloor Oy (Finland)
Uponor Infra Oy, former Uponor Suomi Oy (Finland)
Veka AG (Germany)
Veka Ibérica (Spain)
Veka Plc (UK)
Veka Polska (Poland)
Veka SAS (France)
Verseidag-Indutex GmbH (Germany)
Vescom BV (Netherlands)
Vulcaflex SpA (Italy)
Wardle Storeys (UK)*
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)
W.R. Grace S.A. (France)

PVC producers contributing to VinylPlus in 2013

Borsodchem (Hungary)
Ineos Vinyls (Belgium, France, Germany, UK, Netherlands, Norway, Sweden)
Shin-Etsu PVC (Netherlands, Portugal)
SolVin (Belgium, France, Germany, Spain)
VESTOLIT GmbH (Germany)
Vinnolit GmbH & Co. KG (Germany, UK)

Stabiliser producers contributing to VinylPlus in 2013

Akcros Chemicals
Akdeniz Kimya A.S.
Asua Products SA
Baerlocher GmbH
Chemson Polymer-Additive AG
Floridienne Chimie
Galata Chemicals
IKA GmbH & Co. KG
Lamberti SpA
PMC Group
Reagens SpA

Plasticiser producers contributing to VinylPlus in 2013

BASF SE
Evonik Industries AG (Germany)
ExxonMobil Chemical Europe Inc.
Perstorp Oxo AB (Sweden)

* Companies that joined VinylPlus in 2013

Cover: Monumenta, Grand Palais, Paris, France. Designer: Daniel Buren. Photo credits: ADAGP Paris, Didier Plowy