



Vinyl 2010 Progress Report 2006

Report on the activities of the previous year

Executive Summary



The European PVC Industry's Sustainability Programme

EXECUTIVE SUMMARY

■ **The Progress Report, the Voluntary Commitment and Vinyl 2010**

For many years PVC has been used in thousands of products as a polymer material, adding comfort and safety to people's homes and lives at an excellent ratio of cost to performance.

The Voluntary Commitment of the European PVC industry was signed in 2000. It is a 10-year plan to ensure and improve product stewardship across the lifecycle of PVC, within a context of Sustainable Development. Vinyl 2010 is the structure to organise and implement this.

The Commitment sets out specific targets and initiatives on, for example, emissions monitoring during PVC production, the use of additives and, at end of life, responsible waste management. It operates through projects covering research, collection and recycling concepts and technology of post-consumer PVC waste as well as communication to stakeholders.

Developments in 2005

Now in its sixth full year, Vinyl 2010 is maturing into a venture with a solid record of achievement. In particular, the quantity of PVC wastes collected by Vinyl 2010 sponsored projects, more than doubled to almost 39,000 tonnes.

This continues to demand significant energy and determination in face of diverse challenges. In particular these are stimulating collection to obtain sufficient quantities of PVC waste, developing markets to absorb recycle, difficult economic conditions within the waste management market, launching new recycling initiatives and addressing certain technical setbacks.





▀ Studies on Waste Markets

Detailed research on EU waste markets, completed in 2005, indicates that Vinyl 2010 is the principal initiative for waste collection and recycling not governed by EU legislation. However, these studies also supplied evidence that the quantity of PVC waste that is both available and collectable is substantially lower than estimated at the start of the programme in 2000.

Two of these studies were undertaken by specialist consultants, one covered Europe and the other specifically Germany. The studies were launched to deepen understanding of actual market conditions, to estimate the quantities of PVC waste collected and recycled, to quantify the proportions of some major applications of PVC recyclate from the various waste streams and to assess important factors, such as re-use of 'old' PVC applications at end of life and the incidence of exports from the EU.

Also in 2005, EuPC (European Plastics Converters), completely and thoroughly revised its previous model of PVC waste arising, using updated data and revised assumptions founded on the data collected and the practical experience of the last 5 years.

▀ Resin Manufacturing

The European Union's Integrated Pollution Prevention and Control (IPPC) Directive 96/61/EC lays down a legal framework requiring Member States to issue operating permits for certain installations carrying on industrial activities, based among others on EU guidance documents called BREFs. In October 2005, ECVM technical experts participated in a meeting with the European IPPC Bureau to exchange information and discuss the BREF relative to the production of PVC. The final reference document is scheduled for publication in the first half of 2006.

▀ Plasticisers

In 2005 the EU published risk assessments for three of the most commonly used phthalates: diisononyl phthalate (DINP), diisodecyl phthalate (DIDP) and dibutyl phthalate (DBP). These assessments showed no concerns for any of the current uses of DINP and DIDP. The third risk assessment study for dibutyl phthalate (DBP), shows some potential risk to plants in the vicinity of processing sites and possibly to workers through inhalation. But in both cases, these risks can be controlled by taking simple air treatment measures and by using personal protective equipment.

The risk assessments for di-2-ethylhexyl phthalate (DEHP) and butylbenzyl phthalate (BBP) are in progress and expected to be finalised and published in 2006.

▀ Stabilisers

Also in 2005 the Voluntary Risk Assessment on lead and lead compounds was finalised by independent experts and submitted to the European Commission, which distributed it to the Member States for comments. The European Commission started its review in March 2006.

This Risk Assessment indicates that - with respect to the general population - there is no need for concern from environmental exposure to lead and lead compounds, but also that occupational exposure in stabiliser plants should be further reduced. This assessment also calls for collecting additional data on worker exposure at PVC converters. ESPA (European Stabiliser Producers Association) members have agreed to implement a programme, called LIBRE (Lead In Blood Reduction Programme), aiming at reducing worker's exposure.

To end 2005 ESPA members achieved a reduction of 20,2% from 127,156 tonnes in 2000 to 101,519 tonnes by end 2005. This continues a strong performance, recorded in the 2005 Progress Report, attaining the mid-term goal of a 15% reduction of sales of lead stabilisers one year ahead of plan.



▶ Waste Management Projects

Various projects of EuPC continue to advance and mature in terms of synergies and cooperation in the field. Several projects were challenged, however, by shortages of PVC waste as well as unfavourable developments at the Stigsnaes recycling plant, as explained below.

Some highlights were:

- ▶ EPPA (the European PVC Window and Related Building Products Association) achieved its target to recycle 50% of the total available and collectable volume of post-consumer PVC window frames. In 2005 new schemes to collect waste window profile systems were initiated in Belgium, the Netherlands and Spain.
- ▶ TEPPFA (the European Plastic Pipes and Fittings Association) reached its target to recycle 50% of collectable, available PVC waste from pipes and fittings by end 2005.
- ▶ Although achieving substantial progress on the previous year with increases of 57% in collection and 48% in recycling, ESWA (the European Single Ply Waterproofing Association) nevertheless fell short of its target to recycle 1,200 tonnes waste from this application in 2005.
- ▶ EPFLOOR (the European PVC Floor Manufacturers) collected 1,800 tonnes (an increase of 85% over the previous year) and recycled 1,650 tonnes (up by 110%) of post use PVC flooring. The commitment is to recycle at least 25% of available collectable PVC waste arising from this application by 2006, which will probably not be achieved.
- ▶ EPCOAT (EuPC's PVC Coated Fabrics) continued to develop collection schemes, to invest in recycling plants and commission studies to understand waste market conditions.

▶ Recycling Technologies and Trial Plants

Vinyloop[®] is a recycling technology based on separation by the use of solvents, operating in a plant at Ferrara, Italy. In 2005, a technically more advanced process was successfully implemented and further investment is planned in 2006.

Unfortunately, RGS90 – the Danish waste management company that developed the Stigsnaes feedstock recycling – informed Vinyl 2010 of its decision to stop accepting PVC waste for the time being and to consider other options for the plant. After apparently successful initial trials, unexpected technical difficulties emerged and the plant was also unable to compete on prices with other options, especially landfill.

The Redop project (REDuction of iron Ore in blast furnace plants by Plastics) from municipal solid wastes (MSW) is a feedstock recycling treatment for mixed plastics/cellulose fractions from MSW. The technology appears promising but there are concerns both about costs and availability of waste. Following trials in 2004 and further review in 2005, the project steering group will consider early in 2006 whether to proceed with a larger test.

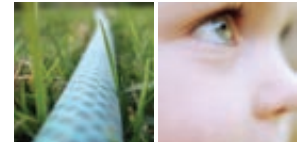
No progress was made on the Halosep-Watech flue gas treatment technology. A new series of tests is scheduled for early 2006.

▶ Other Projects

Recovinyl facilitates the collection, dispatching and recycling of mixed PVC post-consumer waste, mainly from the building and construction sectors. 2005 was the year of operational start-up, with business underway in the United Kingdom, Belgium and the Netherlands. In Catalonia, Recovinyl started cooperation with the local regional authorities and Tecni Plasper (a recycling company) to collect roller shutters waste at container parks.

Recovinyl worked closely with TEPPFA (pipes) and EPPA (window profiles) to develop synergies and strengthen collection and organisational arrangements.

The Light Concrete project examines the feasibility of recycling PVC in post consumer building and demolition waste for 'light concrete' – used for low weight and high thermal and sound insulation. The project moved forward in 2005 to optimise the blending of light concrete and to complete the tests to improve its mechanical, thermal and insulating performances. Further studies continue until early 2006.



CIFRA is a French producer of calendared PVC films that set up a project – supported financially by Vinyl 2010 – to recycle the rigid films used in the cooling towers of electrical power plants. Trials conducted in 2005 were positive and CIFRA has applied for membership of Recovinyl.

APPRICOD is the follow-up of a collaboration project between the associations represented by Vinyl 2010, the Association of Cities and Regions for Recycling and Sustainable Resource Management (ACR+) and other partners, that started in 2001. Focusing on construction, renovation and demolition waste the project is scheduled to run until May 2006 with five pilot trials. Several of the trials were delayed and additional information is still being collected. Reporting is scheduled to begin in early 2006.

Monitoring, Access to Information and Stakeholder Relations

▶ Guidance from the Monitoring Committee

Under the chairmanship of Professor Alfons Buekens of the Free University of Brussels (VUB), the Monitoring Committee monitors and guides the various Vinyl 2010 activities and furthers dialogue with stakeholders. The Committee met twice in 2005. It welcomed as a member Mr. Carlos Sanchez-Reyes de Palacio, President of the Spanish Consumers and Users Organisation (OCU), and member of the Executive of the European Consumers Organisation (BEUC) as well as of the Board of EUROCONSUMERS.

▶ Finance

Expenditure by Vinyl 2010, including EuPC and its members amounted to € 4.44 million in 2005 up from € 4.15 million the year before.

▶ Independent Auditors

Vinyl 2010 is committed to transparency and has engaged independent auditors and verifiers.

- The financial accounts of Vinyl 2010 were audited and approved by KPMG.
- KPMG also audited the statement of tonnages of products recycled.
- The 2006 Progress Report was reviewed by DNV Consulting and verified as giving a true and honest representation of Vinyl 2010's performance and achievements.

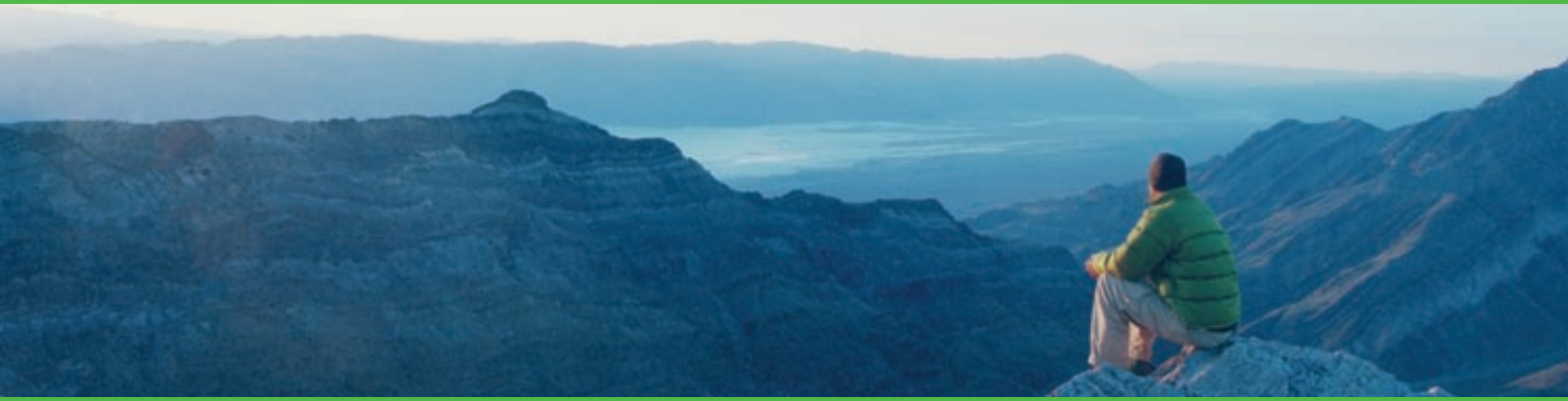
▶ Encouraging Dialogue with Stakeholders

The vinyl industry works actively on communications and dialogue with stakeholders. In 2005, Vinyl 2010 presented at several major international conferences, including the 10th European Roundtable on Sustainable Consumption and Production (ERSCP) in Antwerp, a waste management symposium in Sardinia, organised by the University of Padua and the IWWG (International Waste Working Group), and Green Week in Brussels. As an example of a successful industry partnership programme, Vinyl 2010 was also invited by the United Nations Economic Commission for Europe to present at the Second Regional Implementation Forum on Sustainable Development, held in Geneva.

All annual Progress Reports, published since 2001, are available in the main EU languages at www.vinyl2010.org.

▶ Midterm Review

As planned from its beginning in 2000, the programme was reviewed and revised in 2005 to take into account practical experience, progress to date and changing external conditions, such as EU enlargement. The review was undertaken in close consultation with the Monitoring Committee and includes revisions to targets and activities. Copies are available online at www.vinyl2010.org.



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