The Vinyl Institute

A Division of The Society of The Plastics Industry, Inc.

August 20, 1992

TO: VI Executive Board

RE: European Report

Attached for your review is the latest update on environmental developments in Europe prepared by Rolf Buehl of EVC.

This will be a basis of discussion at the Tripartite Conference, as well as the Board session and the next VIGOR meeting.

Sincerely yours,

Bob

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EVC

EUROPEAN VINYLS CORPORATION

UPDATE OF THE PVC RELATED ENVIRONMENTAL DEVELOPMENTS IN EUROPE AS PER JULY 1992

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UPDATE OF THE PVC RELATED ENVIRONMENTAL DEVELOPMENTS IN EUROPE

AS PER JULY 1992

Note :

This periodical update has been put together for our employees, customers and selected members of the industry. It covers the current, but constantly "moving" environmental debates in Europe concerning PVC to encourage an exchange of information. Tomorrow some major developments may have changed in one or the other direction. Therefore, this and other updates on environmental developments should only be seen as a "spotlight" that needs regular adjustments to present the trends.

We do not recommend that any part of this note is quoted out of context or distributed, since this could lead to misunderstandings.

Last "update" : December 1991

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1. AUSTRIA

The original ordinance with a ban on short-life PVC products is still considered "dead", though there are some rumours that the Environmental Minister wants to re-open his case.

Anti-PVC movements continue at municipal level, particularly in Vienna. An official regulation has been put out for the first time by the Vienna Town Council which excludes PVC from public purchases (packaging, stationery, etc.). Consequently, API, the local PVC industry group, is now focusing its activities on federal and communal contacts.

Following Greenpeace's anti-PVC and chlorine campaign with hoardings/billboards alongside the major traffic roads("stop PVC - stop chlorine"), a court case has been opened by an industry consortium, consisting of Solvay, EVC (IPW) and Wacker. This consortium applied that the court requests Greenpeace to cease and desist from this campaign, i.e. describing PVC as an "environmental poison". When the court case was filed, Greenpeace, as expected, organised a large press conference, claiming that "the rich industry is trying to close a critical voice". Since then, the lawyers of the two parties have met jointly with the judge in June. The industry provided expert input to counter the "environmental poison" arguments. The Court is now going to study these expert reports and will call in for another meeting in October. Without any doubt, this case is taken extremely serious by both parties, and the media will be more than pleased to report on it.

The drafted "all packaging waste ordinance", published in November 1991, has been revised in June 1992. Key elements of this new draft are :

* limit quantities to landfill and incineration

* no % quota, but weight targets (in tonnage)

* energy recovery open for sales packaging

* option for "Dual Collection and Recycling Scheme"

The industry is meeting with government officials to agree on timescale and targets.

RECYCLING

Recycling efforts for a number of PVC applications continue. A network of 60 collection points for used PVC flooring has been installed. Collected material is converted into flooring via AGPR in Germany and IPW in Austria.

RWE Entsorgung has completed its survey on the PVC waste stream in Austria. A report is being put together and the findings will be published in due course.

2. BELGIUM

The attacks against PVC packaging by the Flemish group BBL (Bond Beter Leefmilieu) have much calmed down, influenced by the counter-campaign from Fechiplast (local PVC industry) and the warning to take legal action. The distribution and retail industry still remains fairly neutral on PVC, acknowledging the efforts from the industry to recycle collected PVC bottles.

A project has been initiated by the PVC industry (so called "Chair Cousteau"), involving neutral, well-known experts from academia (e.g. Prof. Beukens from the Brussels University) to conduct an environmental impact analysis on the manufacture of PVC, starting with chlorine. The project is open to BBL to participate, but will take about 18 months to complete.

Greenpeace, in a further action of its European-wide anti-chlorine/PVC campaign, blocked the waste water drop point of LVM - Tessenderlo Chemie. The press reported about severe damages caused by this "raid", for which LVM will seek compensation.

RECYCLING

Kerbside collection of plastic waste has started in the Flemish region, with Brussels to follow in 1993. The Walloon region still operates a container park network, but is likely to follow kerbside collections as mentioned before.

PVC bottle recycling is increasing : in 1991, 240 tons have been recycled by Solvay, and already 150 tons during the first 5 months in 1992.

3. DENMARK

Relatively quiet after all the discriminatory hickhack in 1991. The plastics industry (without an invitation to the PVC industry !) is working on substitution programmes for PVC to satisfy the voluntary agreement with the Environmental Agency. In this situation the PVC convertors are trying to do their best, but have little choice.

The key for a change is still in the hands of APME to get the Commission to interfere in such one-sided actions.

RECYCLING

Nothing new to report.

4. FRANCE

Overall situation on PVC is still quiet. Greenpeace actions focus

on chlorine, not (yet ?) on PVC.

By decree of April 1992 the waste management of used packaging becomes institutionalised. The key points are :

* Reduction of waste to landfill by recovery

* Thermal (energy) recovery is acceptable. Local authorities will continue to develop this process and receive financial assistance for selective collection and sorting of packaging

* Industry to develop a recycling scheme and to contribute to the excess costs for selective sorting

The decree does not specify the targets. However, the organisations and institutions involved are obliged to report annually on the progress achieved during the first 3 "development" years, starting January 1993.

The plastics industry aims at achieving a material recycling rate of > 20%. "Eco-Emballage S.A." will be founded in the autumn of this year. The initial intention is to raise a recovery fee ("blue dot") of 3 centimes (about 1 Pf) per packaging unit, generating some 2 Billion FF (600 Million DM) per year to finance sorting and recycling.

As it stands today, the French appraoch, in contrast to Germany, is much more realistic and pragmatic. But, since 2 months, France has a new Environmental Minister.....

RECYCLING

The "PVC bottle recycling group" (Evian, Perrier, Vittel, Atochem, Shell, Solvay) recycled some 5000 tons (120 million bottles) in 1991 against a buy-back price of 1.350 FF/t (about 400 DM/t). They expect to double this quantity during 1992.

5. GERMANY

PVC products are increasingly threatened through the purchasing policy of the Länder governments. Berlin, Lower Saxia and, since recently, Bremen lead the anti-PVC movement at federal level (16 Länder in total) and make the selling of PVC products through public tenders more and more difficult. In the case of Berlin, PVC building products such as windows are prevented from subsidies for public developments, and the Public Building Society of Lower Saxia has excluded PVC from its purchase list. Lower Saxia, too, has a purchase directive ("Beschaffungsrichtlinie"), which not only covers building products, but also stationary and office equipment.

AGPU with its member companies is concentrating efforts on this development as well as on a study of the environmental impact of PVC, conducted by BLAU, a committee set up by the 16 federal countries. Information on PVC replacement and recycling costs are of particular interest to this committee, a positive

signal that economics play an increasing role in the environmental debate, an issue overlooked so easily by our critics in the past.

Consultations with UBA, the Environmental Agency in Berlin, continued. Some recent statements on PVC from the UBA indicate an adjustment in their thinking, but there seems still some way to go until PVC gets the necessary fair treatment from this influential authority.

A meeting between delegates of the PVC industry and all German car manufacturers took place to exploit the PVC position in the government sponsored PRAVDA scheme for the recycling of used cars. This meeting, and a subsequent, more detailed discussion with a group of engineers from Mercedes Benz highlighted the need to concentrate more effort on these specifiers if we want to secure our position in this application segment. Their general message was clear : the PVC image is down, and PVC is associated with dioxin formation when shredder waste is incinerated. In addition, the complexity of PVC car components such as dashboards, trim work or cable harness make the recycling extremely difficult. Whilst Opel and VW expressed strong reservation about the future of PVC in their cars, Mercedes on the other hand confessed that they had difficulties in finding replacements which match the requirements of their customers. Is was agreed to carry on with factual presentations to the other car manufacturers, organised by the VKE.

Greenpeace published a document on the "environmental impact of PVC recycling in Germany", concluding that this activity is a marketing gimmick of the industry and that recyclate products are produced which nobody wants. The document is backed up by a detailed listing of the numerous statements, publications, presentations, etc. from our industry. This document, published in June (and in Austria the same day) is currently undergoing a thorough analysis by the AGPU team. Counter-statements have been made to the press already, but it will take another few weeks before a full report is available.

Despite a negative media coverage, particularly on plastic packagings, the Duale System/Toepfer ordinance is taking shape. Behind are attempts of environmental pressure groups to exclude plastic packaging in general, and PVC specifically, from the "Green Point" collection and recycling scheme. This debate was also influenced by correspondence between the VKE and the Environmental Minister, in which the VKE officially requested Toepfer to postpone the 1995/64% recycling target (Appendix 1 and 2). The result : no change, but chemical recycling is acknowledged as a recycling process within the 64% for plastics.

Most recently, Toepfer published his targets for a revision of the overall German waste law ("Eckwerte für eine Neufassung des Abfallgesetzes"). Clear preference is given to "closed product cycles", with a minimum of waste handling by municipalities. A positive element would be the "equal treatment of all products", if the law becomes applied like that. The document is now with the industry for reaction.

RECYCLING

After a slow start, the return rate from used plastic packaging, collected and pre-sorted by the DSD, is gaining momentum. About 1200 tons (note not 12.000 tons as typed by mistake in the previous update) have been handed over via VGK to recycling companies last year, this quantity rose to 8000 tons for the first six month period in 1992, and is estimated to reach some 25 - 30.000 tons by the end of the year. The clearly preferred fractions by the recyclers are bottles and film/foil to recover PE (> 75% per fraction). Main outlet for the other fraction (thermoformings, blister) is still "mixed plastics processing".

An alternative to mixed plastics is chemical recycling. Here, a successful 60 ton trial took place in the VEBA hydrogenation plant at Bottrop. Feedstock was unsorted mixed plastics waste from DSD, containing 10% of PVC, milled to below 1 mm and blended into the standard feed = distillation residues from oil refineries. Output was a suitable oil (chlorine content < 1 ppm) for conversion in the petrochemical industries, and with HCl neutralisation into Calciumchloride. Talks with VKE/VGK are taking place to modify this plant for an input of 40 000 tpa of mixed plastics.

Altogether, some 80.000 tpa of recycling capacity has been offered to the VGK to take material in 1993 including offers from abroad. This should enable the industry to fulfil the 9% recycling target for sales packaging in 1993 : +/- 70 ktons. However, there is still some way to go, and the real burden becomes the 600.000 ton waste mountain when moving towards the 64% recycling quote in 1995. This explains the protest by the VKE opposite the political authorities as described before. No doubt, unless some changes are made, i.e. permitting incineration with energy recovery to be counted as a form of recycling, the DSD system will fail in achieving the targets by 1995. At the Davos '92 recycling conference, the president of the UBA Berlin, Dr. Lersner, seemed to be leaning towards consideration of incineration, if the DSD system has first been given every chance to work.

6. HOLLAND

Since the "Packaging Covenant", issued last year with its substitution request for PVC, the situation is unchanged. However, the PVC industry is requesting a meeting with the Environmental Minister to understand the future governmental attitude on this product. Behind are a number of recent actions and statements, which reflect the biased policy by government officials and their neglection of facts :

* The Leiden University was commissioned by the government to study the relationship between PVC (household waste) and dioxin formation under laboratory conditions. Among others, the study supports the conclusion that PVC cannot be blamed as the cause of dioxin formation.

* Public statements from governmental officials with a biased and

prejudiced view on PVC, damaging the business. A protest from industry was filed at the "Nationale Ombudsman", a most respected legal institution by all parties, for judgement.

* Publication of a brochure on Office Appliances, with the green rule : "Avoid PVC", violating the Code of Conduct as set up by the "Reclame Code Commissie". The industry protested, but though the Code has no legal status, the assessment of this Commission has a high public impact.

In addition, there are first indications that communal purchase policies follow the discriminatory steps as reported in Germany and Austria.

The local PVC Steering Group within the Dutch Plastics Federation (NFK) is being reshaped to counter the increasing threats. They have requested the industry group of the Dutch Packaging Covenant to reconsider its (negative) position on PVC packaging and to drop the PVC-discriminatory paragraphs at the earliest review of the agreement.

RECYCLING

Nothing new to report.

7. ITALY

The public climate for PVC is getting worse since a number of daily newspapers and television stations spread negative messages across the country. They are a repeat of all the old accusations : "Bielefeld fire + dioxins, VCM cancer risks, chlorine, plasticiser, heavy metals, etc.". One must assume that Greenpeace is now pushing its campaign through the Italian media, too, although the actual originator(s) is not fully identified.

Assoplast and the PVC industry are alarmed by this development, though no official (governmental) actions or anti-PVC statements have been made yet. A PVC industry working group, led by EVC and Solvay, is being set up to counter the attacks and to prepare an issues management programme. As a first step, this group is informing all PVC customers in Italy on the facts opposite the accusations with the aim to get their support when defending PVC.

The consultation process between "Lega Ambiente" and delegates from the chlorine and PVC industry (under the auspices of Assoplast) is reaching its first conclusions as far as PVC is concerned : Lega Ambiente will take no one-sided action against PVC, incl. PVC packaging applications. They acknowledge the benefits to society, but equally stress the importance of recycling. It is the latter subject, on which the consultation process continues, also in the light of new waste regulations being discussed in Italy, covering all packaging applications and not just containers for liquids.

Exporters into Germany are using the "Green Point" symbol to

exclude PVC (and PS) as a packaging product, but encourage suppliers to use PET instead (Appendix 3). This falsification of the "Green Point" is taken up by Assoplast and may lead to legal actions.

RECYCLING

By law 475, some 45.000 tons of plastic containers for liquids have to be sorted and recycled by the end of 1992 to fulfil the 20% quota. From existing recycling capacities, the forecast for 1992 by Replastic, the consortium to coordinate plastic bottle recycling is 15.000 tons. This puts a high risk to industry to become charged with a 100 Lira (13 Pf) fee per container when put on the market.

Consequently, Replastic is pushing for the construction of a large scale, automatic sorting plant (using detectors as applied by Reprise and Tecoplast) and to boost the capacity of Tecoplast.

8. LUXEMBURG

Nothing new to report.

9. NORWAY

The Environmental Minister has announced his restrictive policy on the use of PVC packaging and invited the Council on Packaging and the Plastics Industry to jointly meet with him "for a phase-out programme of PVC packaging" (for press release see Appendix 4).

The industry has set up task forces to prepare for this meeting. Efforts are being made to secure that the work will be based on factual and objective criteria ("ecobalance concept"), acceptable to all parties. However, one should not underestimate the enormous challenge behind this goal (remember the process in NL and DK, and the outcome !).

10. SPAIN

Nothing new to report.

11. SWEDEN

No further news except that Greenpeace now directly approaches the municipalities to stimulate PVC substitution. In a letter campaign to the heads of the municipalities the PVC industry provided arguments on the benefits and environmental impact of this product and warned against "short-sighted actions without environmental gains".

12. SWITZERLAND

Forced by dramatic business losses of the French mineraliers when switching from PVC to one-way glass bottles, Evian tried to regain

market share with PET bottles, and Vittel introduced a new package for their mineral water : PE poaches (!), as known from milk distribution. No question, this weakened the position built up by the PVC Group (Evian, Vittel, Perrier, Atochem, EVC, Solvay) opposite the Government and the Commission in Brussels.

The EC position was developing in favour of PVC, and in a meeting with Swiss officials they expressed clearly, that the Swiss ordinance violates the "free trading agreement" and the "spirit of the European Economic Area".

Since then, the Swiss Federal Court in its judgement of 7.7.92 rejected all the appeals of the above PVC Group and refused any suspensive effect. It confirmed that the ban on PVC is in line with the Swiss waste management act and neglects all arguments for fair treatment and the free trading of products. A more detailed analysis of this important judgement follows in the next update. Much is now in the hands of the Commission whether or not to take legal actions against Switzerland on this matter.

As reported for Germany and Austria, some cantons in Switzerland are putting forward "PVC free" purchase lists. Greenpeace too, concentrates efforts on municipalities, stimulating PVC-free purchases. The PVC Working Group is aware of this development and is setting up an action programme to counter these restrictions, also involving the PVC customers concerned.

RECYCLING

Nothing new to report.

13. UK

The Ministry of Agriculture, Fisheries and Food (MAFF) has backed down on its demand for more information on the effects of DEHA plasticiser use in cling films. It acknowledges that further studies are not required, thereby endorsing the stance taken by the industry five years ago, which is in line with European standards.

But while withdrawing its caveat on DEHA, MAFF has drawn attention to the need for further data on other substances used in cling film, namely epoxidised soya bean oil and polymeric plasticisers. MAFF's move has incensed the PVC film making industry both by accepting that its earlier recommendations were in fact sound and also by appearing to pick on the other additives. Both ESBO and polymeric plasticisers are used to augment the DEHA component in cling film. ESBO is on the list of European-approved additives for food contact, and polymeric plasticisers have been cleared in draft EC regulations based on approval of their monomeric content. The industry is therefore reluctant to conduct further expensive animal testing, but will be ultimately forced to do so to survive in this application.

The PVC Automotive Task Force continues with talks to the UK car manufacturers and engineers from both Ford and Rover, who have expressed strong reservations about the future of PVC in their cars. Contacts at top level are now needed to fully understand the future policy of these car manufacturers, their concerns and requests to the industry to re-establish the PVC position.

A senior official (Mike Cohen) of the DTI presented at Davos 1992 the plans of the UK government for waste management, particularly on packaging. These are not yet "consolidated", but a target of 50% by the year 2000 for recyclable household waste, of which used packaging is a major share, was put forward. A separate target for energy recovery is still to be fixed. Interestingly, it is the DTI = Department of Trade and Industry which deals with waste handling and the setting of recycling targets, and not the DOE = Department of Environment.

A consortium of the Packaging chain (COPAC), which represents the packaging industry, including retail, in the UK, is being set up to prepare a business plan to achieve the above target. Within COPAC, plastics are represented by the BPF, but there is also technical advice from ERRA and similar institutions for waste collection schemes.

RECYCLING

RECOUP is extending its activities for the collection of plastic bottles, including sorting. EVC-Reprise has been so far the only plant where the PVC bottle stream could be handled (when separated from PET and PE). With an increasing return of PVC bottles by RECOUP there is now the need to extend the recycling capacities for PVC bottles.

14. DEVELOPMENTS AT EUROPEAN COMMISSION LEVEL

A modified version of what was called the "final draft, dated 21.2.92" of the Council Directive on Packaging and Packaging Waste was presented by DG XI to the Commission and adopted on 15.7.92. It has now simultaneously been passed on to the European Parliament and the Council of Ministers to take the next step in the approval process. Key elements are :

* 10 years after adoption (by year 2003 ?)
  - recovery : 90% per material
  - of which is recycling : 60% per material
  - disposal of residues : max. 10% per material

* "Intermediate targets" for those countries without fixed schemes
  - recovery : 60%
  - of which is recycling : 40%
  - disposal of residues : max. 40%

* "recovery" = reuse, recycling and energy recovery

  "recycling" = recovery for the original purpose or other purpose, excluding energy recovery

* If scientific research, such as ecobalances, prove that other recovery processes show greater environmental advantages, the target for recycling can be modified.

* No discrimination between competing materials, collection and recovery methods.

* No standstill in packaging waste output

* Member states have to harmonise their individual schemes over the next 10 years towards the recovery targets mentioned above. Obligation to notify any proposed measure or voluntary agreement under other Community legislation.

Some more background to this directive has been put together by the "Packaging Chain Forum" (Appendix 5), which has been a consultation partner to DG XI when drafting this directive, and in which APME represented the plastics interests.

Assuming that there will be no further major changes to the targets, recycling 60% of used plastic packaging is still ambitious and unlikely to be achieved by the year 2000 with conventional methods only. Chemical recycling has to be developed, particularly for those plastics (and composites) where sorting into generic, valuable feedstock remains a problem to generate the recycling quantities at economic costs. Most of the plastics, including PVC, fall into this category, which puts a further focus on "Chemical Recycling" to progress this matter.

But without any question : the harmonisation process between Member States, initiated by this directive, will bring some clear guidance into the long term planning of plastic packaging and recycling capacities. It also shall (hopefully !) take away the barriers on PVC packaging as described in this report (DK, NL, CH, N, "plus what is in the pipeline").

Work at DG XI, too, is beginning to develop an EC appoach to three other waste streams. Instead of the customary drafting by the Commission of a proposal, these streams will be led by a national government, reponsible for bringing together the interested parties (industry, government, interest groups ...) to come forward with a proposal for an EC approach. These streams and their "national leadership" are :

Construction Waste : Germany
Hospital Waste : UK
Automotive Waste : France

APME/PWMI has nominated delegates to all three working groups.

R. Bühl

R Bühl
(with input from ECVM and the EVC Environmental Committee)

July 30, 1992

Enclosures : Appendix 1 to 5

VERBAND KUNSTSTOFFERZEUGENDE INDUSTRIE E.V.

Appendix 1

Position Paper

from the Association of Plastics Manufacturers e.V.

on the decree on packaging of 12.06.1992.

The decree on packaging provides for two deadlines for the return of plastic packagings for commercial goods, which are related to questions of collection and sorting. From 1.1.93 onwards, 9% of the total amount of packaging material is to be processed for material utilisation and, from 1.7.95 the figure is 64%.

The quantity of packagings to be used as reference for the aforementioned quotas has not yet been established. Our feeling on the matter is that, making allowances for losses through collection and sorting, as shown by the initial trials, the future requirements for the return of plastic packagings will be around 1.1 million tons. A proportion of this will be processed for recycling in existing reutilisation plants.

In the short term, these capacities could be increased to around 120,000 tons for ready-sorted waste and by a similar amount for mixed plastic packagings. In real terms, a maximum of 20% of the plastic packagings which are to be returned will be processed for material recycling.

In view of this shortfall and in view of the amount of residue which amounts to around 20%, other solutions must be applied, such as chemical utilisation (raw material recycling), thermal utilisation, exporting, intermediate storage and dumping:

- chemical utilisation must for this reason be recognized as material utilisation (material and raw material recycling). Chemical utilisation represents the most attractive alternative for reducing the quantity of residue material. The task of raw material recycling can only be accomplished with the help of the petrochemical industry. Intensive discussions are now under way between ourselves and the petrochemical industry with a view to collaboration and our preliminary joint research has led to very promising results. If the large-scale trials involving the chemical/material utilisation of 100 tons of plastic provided by Dualen System, which is planned for April 1992, has a positive outcome, this will lead in the short term to an additional capacity of 20-40,000 tons per year for reutilisation of plastic packagings.

- Chemical utilisation must be complemented, at least partially and temporarily, by thermal utilisation. The incineration of plastic packaging for use as a source of heat in municipal garbage disposal plants is, in our view, the most valid ecological and economic solution for soiled and mixed plastic packagings (energy recycling).

  There will be available capacity in garbage disposal plants if no other materials than plastic packagings are incinerated. Otherwise material utilisation will be applied. Furthermore, the incineration of plastics must be authorized in normal power stations if we are to reach the quotas set by the decree on packagings. This would be possible if plastic packagings could be considered in law as combustibles and if plastics were included in the exceptional ruling under paragraph 1 abs. 3 of the 17th BImSchV.

- The export of used plastic packagings for material utilisation has gone on a long time and can be increased, all the more as around 50% of the plastic used for packaging is imported.

- The possibility of intermediate storage with a view to subsequent chemical or thermal utilisation for used packagings which cannot immediately be utilised is required and must be guaranteed. There is already support for this in the texts of the decree of packagings : "to ensure utilisation".

  The Länder, which execute the Laws of the Federal Government, should be obliged to act accordingly.

- Dumping is the least valid means of disposal and is therefore to be avoided.

- The Länder must also prevent the occurence of situations where, through municipal decrees, plastic packagings which cannot be processed by material utilisation and residue from the material, thermal and chemical utilisation are excluded from municipal disposal.

If thermal utilisation is not feasible in the long term in municipal garbage disposal plants, chemical recycling and thermal utilisation should be developed in other incineration plants.

The 1995 utilisation quota of 64% should be postponed until 1.1.1999 in view of the preferred alternative of chemical recycling, because it is only at this time that plants of this type will be available, provided the plants are authorized.

Frankfurt/Main, 27.03.92.

22 April 1992

Appendix 2

Töpfer rejects request for extension of plastic utilisation deadline

Bonn (dpa) - Federal Environment Minister Töpfer has turned down the request made by the Association of Plastics Manufacturers to extend the deadline for the continued utilisation of plastic packagings from 1995 to 1999. The Association had pointed out in a "letter of protest", which was also delivered to Federal Chancellor Kohl, that, in the short term, utilisation facilities could be built to process only one fifth of the yearly production of 1.1 million tons of plastic packagings.
On Wednesday, Töpfer rejected this idea in a declaration on the current decree on packagings, saying that on account of the "underdeveloped recycling facilities", the utilisation quota would first be set for plastics from 1993 onwards at 9 per cent. From 1995 onwards, however, the same conditions would apply to all other materials - glass, paper, metal or plastic. This means that, from July 1st 1995 onwards, around 64 per cent of all plastic packagings must be reutilised. "No exceptions involving an extension of the deadlines will be made for any type of material", said the Minister.
The Minister explained that the utilisation of plastic packagings is in fact a touchstone for this, as we shall see how this type of packaging will be accepted by society in the long term. Töpfer suggested that the "Duales System Deutschland GmbH", which was founded by Trade and Industry, set a price with the award of a "Green Point" for packagings which adhered to the polluter-payer principle.
The company, which is currently creating a system of recovery, sorting and utilisation of packaging waste, had recently put up strong opposition to proposals put forward by plastics manufacturers. Not only was the request for an extension to the deadline rejected, but the proposal that incineration be authorised, on the grounds that there are insufficient facilities for reutilisation, was also turned down. The company declared that it would ensure that these packagings would be used less, if necessary through a massive increase of at least 100 per cent in the tax on the disposal this type of packaging waste, and would thus ensure a balance with the available recycling facilities.

Appendix 3

3. IMBALLO VENDITA

Entrata in vigore norme dal 01.01.93
(dovere al ritiro imballi)

Questo significa che a partire da questa data tutte le confezioni vendita (o quelle che possono essere considerate tali) dovranno essere munite del "Punto Verde" (V.punto 5)

La società "Duales System Deutschland GmbH" azienda privata copprente l'intera rete nel settore della raccolta e smaltimento, è proprietaria dei diritti d'uso del Punto Verde che comprendono garanzia di presa e riutilizzo dei materiali.

DUALES SYSTEM DEUTSCHLAND

The firms that want to use the green point must follow these rules:

Attualmente le aziende che vogliono ottenere il Punto verde dovranno attenersi alle seguenti regole:

(1) - il PVC non dovrà più essere usato. Sostituzione con PET.

(2) - evitare l'uso di polistirolo, sostituzione con forme di cartone.

- usare imballi di un solo materiale - evitare imballi a più materiali - (la garanzia di utilizzo è data fino al 1993).

(1) PVC can not be used anymore.
You have to use The PET.

(2) Avoid to use PS
You have to use The carton

Appendix 4

Norway

Press Release

24 March 1992

MINISTRY OF ENVIRONMENTAL PROTECTION PVC POLICY

The Ministry of Environmental Protection has launched an initiative to urge the sections of industry concerned to draw up plans for the phasing out of disposable packaging containing PVC and of environmentally harmful additives in plastics, including PVC. The environmental protection authorities will also undertake a more detailed evaluation of the environmental drawbacks of long lifespan products containing PVC and alternative products.

PVC, polyvinyl chloride, is a plastic material with a range of uses. There are environmental drawbacks in the production, use and disposal of products containing PVC. The most serious occur in refuse management in which the most conspicuous problems today are due to PVC products with short lifespans, disposable packaging for example. These products quickly end up on the refuse tip or in the incineration plant and are difficult to sort from other refuse. Plastic and rubber products contain various environmentally harmful additives. Of these, PVC products contain the greatest number of environmentally harmful additives.

The Ministry of Environmental Protection has studied the policies and regulations of other countries with regard to products containing PVC. The environmental protection authorities abroad are increasingly implementing similar measures, especially voluntary agreements with industry on short lifespan PVC products and general refuse reduction measures dealing with, amongst others, PVC products.

The Ministry of Environmental Protection has therefore launched an initiative to urge affected sections of industry to draw up plans for the phasing out of disposable packaging containing PVC and of environmentally harmful additives in plastics, including PVC. The environmental protection authorities will also make a more detailed evaluation of the environmental drawbacks of long lifespan products containing PVC and alternative products.

The Minister for Environmental Protection, Thorbjørn Berntsen, will shortly invite the Norwegian Cooperation Council on Packaging and the Environment to a meeting to discuss the drawing up of a plan on the complete or partial phasing out of the use of PVC in disposable packaging. The Norwegian Cooperation Council on Packaging and the Environment is made up of representatives from amongst others the packaging manufacturers and users, business and environmental and consumer organisations.

The Minister for Environmental Protection will also invite the Norwegian Plastics Industry Association to a meeting to discuss how the plastics industry can draw up a plan for the phasing out/replacement of environmentally harmful plasticisers, stabilisers and pigments used in the manufacture of plastic including PVC. The Norwegian Plastics Industry Association is a national organisation for the Norwegian industries using plastics, raw materials producers and suppliers.

The two plans will also explain the consequences of such measures to the industry.

In addition the Norwegian Environmental Protection Agency (SFT) will be asked to appoint a working group to undertake a more detailed evaluation of the environmental drawbacks of long lifespan products containing PVC and alternative products. This study is to focus on life-cycle analyses, labelling, arrangements for the return of plastics and opportunities for their recycling. Important long lifespan products containing PVC include pipes, pipe fittings, carpets, floor coverings and cable insulation.

The Minister for Environmental Protection, Thorbjørn Berntsen, wishes to emphasise that this initiative matches the trend in Norwegian and European environmental policy of recent years for all sections of society to take responsibility for sustainable development. Trade organisations must therefore to a greater degree expect to accept their responsibility for the environmental damage caused by the use and disposal of their products. The Minister also points out that in general industry can itself undertake effective and flexible environmental measures without the intervention of the authorities.

Appendix 5

EC Directive on Packaging and Packaging Waste

Source: "The Packaging Chain Forum", July '92

RECOVERY AND RECYCLING TARGETS

The targets set by the proposal

The proposed directive sets an overall RECOVERY target of 90% by weight of all packaging waste. The proposal sets a RECYCLING target of 60% by weight of EACH MATERIAL. The inclusion in the directive of recycling target flexibility in view of scientific evidence is to be welcomed. Both targets are highly ambitious and will require significant effort both from the public and private sectors to put in place the necessary infrastructure, as well as profound changes in consumer behaviour.

The Packaging Chain Forum believes that targets should be based on scientific evidence and on the attainment of environmental benefit. They should also reflect an understanding of the true economic cost involved. Regular, automatic reviews of these targets should be foreseen in the directive.

All targets should be overall targets and thus non-discriminatory and flexible

The Packaging Chain Forum supports the principle of non-discrimination between packaging materials, collection and recovery methods and economic operators.

Yet setting the same recycling target for each packaging material is discriminatory for the following reasons:

- The proposal itself recognises the contributions which different packaging materials can make to the reduction of packaging waste, e.g. in the definitions of reusable, recoverable and recyclable packaging.

  Each packaging material has its own specific contribution to make to reducing the impact of packaging waste on the environment. Some materials are best suited to material recycling, others contribute to an overall reduction in packaging materials, still others are ideal for clean incineration with energy recovery. Removing flexibility by setting recycling targets which are unrealistic for some materials will make it much more difficult to achieve the overall recovery target.

- Industry is involved in many schemes which will help to determine the optimal level of material recycling for specific materials. Suitability for recycling will be determined in large part by the build up of collection and sorting infrastructures, by technological advances and by the development of markets for secondary raw materials.

Essential requirements for recycling of packaging materials

The requirement that recycling must result in material of a "quality similar to the original material and not leading by the individual material composition or by mixing different materials to a substantial material degradation" is inappropriate. For some materials, material degradation in the recycling process is unavoidable, yet marketable products can still be produced. In fact, for many recycled materials applications other than packaging are more appropriate and offer greater benefit from the same resources.

EC Directive on Packaging and Packaging Waste

ENERGY RECOVERY

Why is the recovery of energy from waste a vital waste management option ?

Community policy

- Incineration with energy recovery already forms part of the European Community's approach to waste management : Council Directive 75/442 on waste (as amended by Council Directive 91/156).

- Community objectives, as set out in the 5th Environmental Action Programme recognise that waste to energy can form part of the cyclic approach to the use of natural resources.

Flexibility in waste management

- The possibility to use various waste management methods taking into account different geographical, material and environmental and economic circumstances is crucial to the ability of the public and private sectors to provide effective waste management.

- Incineration with energy recovery is a recognised waste management option providing a secondary use for materials, not simply a final disposal method. It does not compete with recycling or other recovery methods but complements them.

- Separated combustible packaging waste can also be used as a high calorific value fuel to replace coal, oil or gas in power stations, and in major energy consuming industries such as cement production.

Major contribution to energy and waste recovery

- Reduction of the volume of waste going to landfill is a clear Community waste management objective. Incineration with energy recovery can make a major contribution in this respect.

- Some materials which permit reduction in packaging weight are better suited to incineration with energy recovery than material recycling.

- Incineration with energy recovery can make a valuable contribution to the Community energy policy, which places a growing importance on conservation of non renewable resources and greater reliance on renewable forms of energy including waste to energy options.

Clean incineration

- Modern waste to energy incinerators are capable of working to strict EC environmental standards.

- Incineration with energy recovery is a widely used method of handling waste in Europe e.g. Switzerland, Sweden and Denmark, with their high environmental standards, incinerate more than 50% of waste.

REUSABLE PACKAGING IN A WASTE MANAGEMENT STRATEGY

The reusable container

The reusable container, returned to the local filler via the distributor, is often seen as the environmental ideal for waste reduction. It is reused rather than disposed of in landfill and therefore ensures that resources are used to their maximum potential.

Reusable containers have environmental benefits in some circumstances, but these may be offset by the effect on the environment of transport over long distances and cleaning of the used containers, including the energy consumption of these activities. Recycling of the packaging or clean incineration with energy recovery may in many cases be better solutions. As long as life cycle assessments based on common methodology do not establish that either reuse or recovery is environmentally superior, no formal preference should be given to either.

The benefits of reuse must also be assessed from an economic perspective. Although in certain cases reuse systems can achieve some cost savings, their wider application can place large burdens on trade, industry and the consumer. The cost of handling, storage and cleaning of returnable containers are high and will be passed ultimately to the consumer.

Other types of reusable packaging

The above limited focus on the concept of reusability ignores the many other areas where reusable containers may make environmental and economic sense.

In recent years a number of products such as cleaning agents, detergents and fabric softeners have begun to be packed in refillable containers. The consumer buys a product, possibly in concentrated form, in a permanent container which is subsequently refilled from a refill pack. There are a number of benefits :

- Less energy and materials are used to produce and transport the refill packs.
- Waste is reduced because the refill pack requires far less packaging material and occupies a small volume on disposal.
- The permanent container requires no transportation and minimal cleaning since it never leaves the home.
- For the consumer the refill pack is convenient and less expensive.

Environmental benefits are also being obtained by the increasing use of reusable transport packaging (e.g. pallets, crates, cartons).

Conclusion

There are many valuable applications of reuse, but under many circumstances other forms of recovery may have a greater environmental benefit. In any case, definitions of reusable packaging must take into account not only packaging which is refilled by the producer, but also those refilled by the user at home from refill containers.