

## Alternatives for the Waste Industry

*Paper for the 2006 Berlin Waste Conference by Sylvia Kotting-Uhl, MdB, environmental policy spokeswoman of the Alliance 90/The Greens parliamentary group in the German Bundestag, and Dr. Michael Weltzin.*

### Introduction

The handling of waste, the way we separate it as a matter of course and the standards expected of high-quality recovery are still regarded as central elements of environmental protection as it is practiced in Germany. Yet far-reaching changes are imminent. The European framework for our future waste management policy is being revised and reorganised. The current debate is concerned with the waste management strategy that has been presented by the EU and the revision of the Waste Framework Directive as well as the proposals for a reform of the German federal system and the impact they will have on waste management policy.

Apart from this, the technology is continuing to evolve. In the light of these technical developments and the changing legal framework, requirements that made sense in the past, such as the separate collection of residual waste and lightweight packaging, need to be examined and critically interrogated. We are still far away from either real closed substance cycle waste management or integrated resource and product management policies. Unlike energy efficiency, the topic of resource efficiency has not yet found its way onto the corporate and political agenda.

*In Ensuring Environmental Protection Capacity: 12 Recommendations from the Environmental Report 2004, The German Advisory Council on the Environment (SRU) concludes: "Waste management policy needs to be reformed. The current mix of instruments used to control waste streams is losing its effectiveness and efficiency. It is legally unclear what is to be considered waste recovery and what is to be considered waste disposal. There is also increasing uncertainty about how to identify the best performing options for high-quality recovery."<sup>1</sup>*

When produced goods are no longer needed, the overwhelming majority still become waste that people want to get rid of. The fact that waste consists above all of raw materials still only

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<sup>1</sup> German Advisory Council on the Environment (SRU), *Ensuring Environmental Protection Capacity: 12 Recommendations from the Environmental Report 2004*, May 2004.

becomes apparent at second glance. The goal of Green waste management policy is the practical implementation of the idea of the closed substance cycle, which will make the "concept of waste" redundant in future, replacing it with the idea of "resources", and which is pursued regardless of any short-term economic interests. Green waste management policy is aimed at establishing closed substance cycles, which are partly to be arrived at through the use of "renewable resources", such as regenerative raw materials, and seeks to make a major contribution to sustainable economic development in this way. The central instrument for its implementation is product responsibility, under which producers take measures as early as the production phase to ensure their goods can be reprocessed effectively and environmentally compatibly when they are no longer needed. Special attention should also be given to the international context because where markets are globalised the problem of waste becomes global as well. The Away from Oil strategy put on the political agenda by Alliance 90/The Greens also refers to the waste industry expressly as a field for ecological innovations.

## **Current areas of action**

### ***Federalism reform***

There is a social consensus in Germany that the reform of the country's federal constitutional order is overdue. We need clear responsibilities in order to put in place the preconditions for an Environmental Code that draws together the concerns of environmental protection and nature conservation in a central legislative framework. Neither does the current distribution of competencies for environmental legislation allow the effective performance of ecological tasks, nor is the opportunity for simplification and the creation of transparent structures being grasped.

Articles 70 ff. of the German Basic Law regulate the legislative competencies of the German Federation and the Länder, Germany's constituent states. At the moment, the Basic Law contains no single provision regulating competencies over "environmental protection". In accordance with Article 74(1)(24) of the German Basic Law, the field of waste disposal has until now been subject to concurrent legislative powers governed by a necessity clause. This means the German Federation is only entitled to enact statutory regulations if the establishment of equal living conditions throughout the federal territory or the maintenance of legal or economic unity render this necessary in the national interest.

After several failed attempts to reform the federal system, the CDU/CSU-SPD government has made a new attempt to tackle the issue, including in its coalition agreement a commitment to put forward a bill on the topic, which is to be introduced in the German Bundestag and the Bundesrat as early as March 2006. However, from a Green point of view,

the proposals that have now been placed on the table are not appropriate if we are to adapt the distribution of legislative competencies relating to the environment under the federal constitutional order to the requirements of modern environmental protection policy. These proposals will therefore fail to create the foundations for a unified Environmental Code. Among other things, according to the ideas put forward by the coalition parliamentary groups, the waste industry would continue to be subject to concurrent legislative powers, with the German Federation being required to demonstrate federal legislation is necessary before it acts in this sector.

If these proposals are implemented by the CDU/CSU and the SPD in this form, the consequences for waste management policy will be fatal, above all in view of the recent decisions of the Federal Constitutional Court. In its judgements on the junior professorship and higher education tuition fees, the Federal Constitutional Court has set very stringent criteria with regard to necessity. According to these rulings, it is only necessary for the German Federation to legislate if the economic equilibrium and social peace are threatened. Since the waste sector does not directly threaten either social peace or the economic equilibrium, the German Federation would *de facto* no longer be able to shape waste management policy. Presumably, the uniform regulations applying throughout the Federal Republic of Germany that are currently based on the Closed Substance Cycle Waste Management Act – such as the prohibition on the storage of unpretreated waste – would then cease to apply in future.

Apart from the effects on the environment that would result from the competition to adopt the lowest standards that is to be feared, the consequences would also be fatal for businesses. Companies with production sites in several Länder could be forced to handle the disposal of their waste differently at each location. This would definitely not help to cut back unnecessary bureaucracy. Considerable uncertainties would also arise in relation to legal security, although precisely this is one of Germany's central strengths as an economic location.

The fundamental waste management policy decisions are taken in Brussels in any case. Against this background, and in view of the danger of possible treaty infringement proceedings, it makes no sense for each of the 16 Länder to operate a completely different system. The German Advisory Council on the Environment (SRU) regards waste management policy as one of the central concerns of environmental protection.<sup>2</sup> Alliance 90/The Greens will therefore do all within their power to ensure that the German Federation remains capable of acting effectively in relation to waste management policy without this field being subject to a necessity clause. When it comes to waste management policy, what we

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<sup>2</sup> Statement no. 10 of the German Advisory Council on the Environment (SRU), *Der Umweltschutz in der Föderalismusreform*, February 2006.

need are uniform standards throughout the Federal Republic of Germany. In our view, anything else would be environmental and economic policy madness.

### ***Rethinking the separate collection of residual waste and packaging***

The expedience of the separate collection of lightweight packaging in yellow bins or yellow bags has been discussed increasingly critically of late. The key issues raised have included the problems relating to incorrect separation, the amount of effort involved in sorting waste and technical innovations, such as the progressive automation of sorting. Consequently, the technical feasibility of the combined collection of residual waste and packaging is no longer called into question in principle.

Alliance 90/The Greens are critically examining the future of separate collection. Well functioning and ecologically purposeful separate collection arrangements, such as the collection of biowaste or waste paper, should continue to be maintained. We need to look hard at other separate collection systems that have no identifiable ecological benefit or where the deployment of modern sorting technologies delivers better ecological results. Above all, in this connection, regional differences will need to be given greater consideration in the future than they have received in the past. The separate collection of lightweight packaging and residual waste may be ecologically purposeful in one municipality, while the combined collection of these fractions is more advantageous in another.

Alliance 90/The Greens want the most ecologically effective method to be deployed in each individual case. It is against this background that we are supporting the development of new procedures and technologies. The possibilities offered by the mechanised sorting of waste are of particular significance in view of the target of managing waste from human settlements in zero-waste closed substance cycles from 2020 on.

From our perspective, however, it is clear that separate collection as it is currently practiced, with product responsibility limited to packaging and packaging materials, will not be viable in future. It cannot live up to the expectations of sustainable, ecological environmental policy. We are working for solutions that are oriented towards substance flows. Ecologically, it makes no sense to collect packaging as valuable substances, but not household goods that consist of the same plastics.

## **Perspectives**

### ***Protection of resources and integrated product policy***

The Closed Substance Cycle Waste Management Act of 1996 lays down three principles for the waste industry: avoidance, recovery and disposal, with avoidance having priority over recovery and recovery having priority over disposal. As far as the recovery of waste is concerned, we have undeniably achieved great progress in the past. Particularly in material recycling, there have been enormous technical developments over the last few decades that have, not least, delivered major business successes. Incidentally, in this respect, Germany has also profited a great deal economically from its leading international position in the field of environmental protection.

However, no matter how much may have been achieved to date in the field of recovery, the primary goal of the Closed Substance Cycle Waste Management Act – the avoidance of waste – has not so far been addressed with the same consistency. There have been successful and economically worthwhile efforts to reduce the volumes of waste being generated, above all in production processes, for example by the optimisation of procedures or schedules and closed substance cycles within particular processes. It is also undisputed that – despite the growth of the economy – the volume of waste generated in Germany has not increased further over the last few years. But it has not yet been possible to achieve a significant decrease. Large quantities of valuable resources still end up in incinerators or at landfill sites as waste for disposal.

The topic of waste prevention has probably also been treated rather coolly in the past because waste prevention is usually equated with the need to stop goods from being produced. However, for us Greens, waste prevention does not mean stopping goods from being produced, but using resources efficiently thanks to more intelligent management. Our primary goal is to decouple economic growth from the consumption of resources. This applies to both the consumption of energy and the consumption of raw materials.

We want a systematic approach to waste prevention that already takes effect when goods are being produced. This implies a form of production that is oriented towards the question of how household goods should be made if we want to recover their valuable raw materials without elaborate and costly processing and then feed them directly into the production process again. The primary goal of such an approach will be the systematic avoidance of hazardous substances or environmental pollutants during production and in the products themselves. Alliance 90/The Greens want to move away from the view of objects that have been used as waste towards their use as raw materials in a functioning closed substance cycle. At the same time, we want equally strict quality requirements to apply to both primary and secondary raw materials.

At the moment, apart from a few exceptions, manufacturers have no interest in retrieving their products as raw materials after they have been used. As a general rule, a manufacturer will no longer be concerned with a product once it has left their factory. It is true that there is a statutorily anchored product responsibility in many fields that obliges producers to take

back returned products. At this point, mention should be made above all of the fields of packaging, end-of-life vehicles, electrical goods and electronic devices. On the whole, the obligation to accept returned products is mostly performed by collective systems in which manufacturers make use of the services of a third party in order to comply with their product responsibility. However, collective return systems do not give manufacturers sufficient incentives to develop products that can be reused and recycled.

Nevertheless, products that already have their subsequent treatment after use taken into account while they are being produced have been on the market for a long time now. The prime example is that of the biodegradable materials that, for example, are utilised as materials for food packaging. Biodegradable materials are bioplastics that have been made in such a way that they break down biologically into water and CO<sub>2</sub> after they have been used. The distributors and manufacturers of bioplastics therefore do not even have to join a return system in order to comply with the product responsibility demanded by the Act because simply selecting and using a biodegradable material is the most consistent way of satisfying this requirement. Biodegradable materials are therefore an ideal example of the consistent implementation of an integrated product management policy.

Where it is not possible for products to break down into water and CO<sub>2</sub> after use, Alliance 90/The Greens are working for a policy of systematic waste prevention that aims for a form of product responsibility under which individual manufacturers will take back their own goods. This will enable us to manage raw materials in closed substance cycles and so achieve cost savings as well. In this respect, we Greens feel politics has an obligation to create the necessary incentives. In this way of thinking, waste management policy is not just an environmental issue, but also a central economic issue above all.

The current debates about economic policy are mostly fixated on the question of wage costs in Germany, while much less attention is given to the far more significant role played by the costs of materials and raw materials. From a Green perspective, there is still considerable potential for production costs to be reduced in this area. This will be equally beneficial to both the environment and the employment market. Above all, Green waste management policy means moving away from "end-of-pipe" technologies towards less consumption of raw materials thanks to increased materials efficiency and the practical implementation of the idea of closed substance cycle waste management with the complete reclamation of valuable resources.

### ***"Away from Oil" requires ecological innovation in waste management policy***

We Greens regard the move "away from petroleum" as a central goal of our political work, which means replacing fossil sources of energy and raw materials by creating ecological alternatives. We also see the future of closed substance cycle waste management in this

context. For example, the ecological replacement of petrochemical products such as plastics could make a major contribution to the goal of waste prevention.

Our daily lives could no longer be imagined without plastics, and they are continuing to gain ground in almost all fields of life. Their advantages are obvious: Plastics can be tailor made for different applications, as well as being light and therefore helping to save surplus weight. This undeniably has ecological benefits but, almost without exception, plastics are also produced from petroleum, which is a finite resource.

In the past, an elaborate system for the collection and recycling of used plastics was built up to deal with this, and recycling technology has achieved considerable successes. Nevertheless, it continues to be true that materials of very different compositions end up at some point as a colourful mix in a recycling plant, where they can usually only be recycled with difficulty, and real closed substance cycle waste management is not possible. Instead, in the great majority of cases we find what is merely "downcycling", the end result of which is a product of lesser quality. However good classic plastics may be in terms of their material characteristics, they will probably never become real closed cycle products.

Only the use of long and short-life plastics based on regenerative raw materials will open up new perspectives for waste recovery as well. Although, for reasons connected with the protection of resources, waste management legislation has hitherto had the aim of ensuring that material recycling is of the highest possible quality, products made from regenerative materials could also be utilised in a real closed cycle thanks to energetic recovery.

On account of the proportion of biogenic carbon they contain, it would, for example, be possible to generate power and heat in a climate-neutral way. There would be no greenhouse gas effect because regenerative raw materials are constantly being formed anew from water and CO<sub>2</sub> by sunlight; and only these components are released again when they are burned. It would also be possible to drastically simplify our existing waste management law. Regulations on material recycling would be just as redundant as the specification of particular recovery paths. Ecological innovation will therefore help to cut back bureaucracy.

For Alliance 90/The Greens, the use of regenerative raw materials therefore means far more than just the generation of power and heat or their use as building and insulating materials. Bioplastics consisting of regenerative raw materials are already being used for packaging and foils today. It is a long time since such technologies were just niche applications, and they now represent a basis for our future industrial production and a market that will see strong growth in the years to come. Even though we have already succeeded in eliminating a major obstacle to bioplastics with the Third Ordinance Amending the Ordinance on the Avoidance and Recovery of Packaging Wastes, other statutory regulations, such as the Ordinance on Biowastes, currently make it impossible for new materials like bioplastics to

come onto the market in large quantities. We want to carry on removing such obstacles in a targeted fashion and, in this way, help new materials produced from regenerative sources to make the breakthrough onto the market.

### ***The 2020 target***

The implementation of the Ordinance on Environmentally Compatible Storage of Waste from Human Settlements and on Biological Waste Treatment Facilities by the SPD-Green German Federal Government on 1 June 2005 was a milestone in waste management policy. It was a decisive point along the path that will end forever the "burying and forgetting" of waste from human settlements in landfill sites and so finally consign this least sustainable form of waste disposal to "history". However, the Ordinance on Environmentally Compatible Storage of Waste from Human Settlements and on Biological Waste Treatment Facilities was just a first stage on this path and raises questions about the way forward from here and the further objectives we should be pursuing.

Alliance 90/The Greens are campaigning to end completely the surface disposal of waste from human settlements on landfill sites by 2020. This ambitious target presupposes the complete recovery or sorting of waste from human settlements. A look at what is already technically possible today soon makes it clear that the 2020 target is not utopian, but a genuinely realistic objective.

These days, waste from human settlements can already be sorted fully automatically and, consequently, the valuable substances it contains almost completely recovered. Not only can the sorting residues that are left over be used to generate energy in waste incineration plants operated to very high standards, the by-products of waste incineration can also be reused. Slags are now attaining levels of quality that permit at least their limited emplacement without protective measures, for example in road construction. The reusable products of waste incineration include high-quality hydrochloric acid and gypsum for use in the construction materials industry.

The calculations assume that, in line with the latest developments in technical capabilities, the only unrecoverable residual substances that would remain from what was originally one tonne of waste from human settlements would be about 20 kilograms of boiler and filter dust and 7 kilograms of mixed brine. This means that, overall, less than one percent of the original volume of the waste would be left over and would actually have to be "disposed of" by classic methods (underground).<sup>3</sup> The subsequent sorting and reuse of products from the incineration

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<sup>3</sup> Kessler, Hermann, *Müllmagazin* 3/2004

of sorting residues would be decisive for the complete recovery of waste from human settlements. In this respect, we Greens want to make sure German policy is heading in the right direction in good time. For us, it is one of the main aspirations of sustainable waste management that we should not leave the generations who follow us any more landfill sites full of rubbish.

### ***Necessity of international minimum standards***

Whenever people have talked about international environmental protection over the last few months and years, they have been primarily concerned with the important topic of climate protection. In their political work, Alliance 90/The Greens want to foster much greater public interest in "classic" environmental policy and its international context again. It is not just climate protection that is a global challenge, but also "classic" environmental policy, above all the environmentally appropriate handling of waste.

When business representatives look enviously at China at the moment, they do so principally on account of the country's enormous economic growth. Yet it is usually disregarded that China is still paying for its growth with serious environmental burdens. Growth that, incidentally, is founded above all on rising demand from Europe and the USA. And this economic growth is being accompanied by growing mountains of rubbish. The amounts of waste being generated are rising rapidly, above all in the cities. According to figures from Deutsche Bank Research,<sup>4</sup> volumes of waste are increasing at an annual rate of 10% and only about 20% of waste is really disposed of in an environmentally appropriate fashion. Waste frequently ends up on illegal landfill sites with fatal effects for people and the environment, and we are all aware that environmental impacts know no borders.

Old computers are transported to the developing countries for reuse, something that is done with nothing but good intentions. However, these donations very quickly become an environmental problem once they reach their destinations. In a report published in 2005, the Basel Action Network (BAN) mentions the port at Lagos in Nigeria as an example of this.<sup>5</sup> According to BAN, approximately 500 containers with electronic materials arrive there every month, which corresponds to about 400,000 used computers. However, the report also says that, despite the country's increasing adoption of modern technologies, Nigeria lacks the necessary infrastructure for the recycling of computers. Many computers therefore simply

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<sup>4</sup> Deutsche Bank Research, *Aktuelle Themen 341: Umweltsektor China*, January 2006

<sup>5</sup> BAN, *The Digital Dump: Exporting Re-Use and Abuse to Africa*, October 2005

end up being dumped on landfill sites, with the serious negative effects on the environment and human health with which we are familiar.

Automotive production is a significant pillar of the German economy. It is true that manufacturers are obliged by law to take back end-of-life vehicles in Germany and Europe. But this does not apply to exports outside the EU. Furthermore, we are still very far from ensuring that all cars registered in the EU are disposed of competently. However, figures from 2003 show a global dimension in this field too. More than 3.5 million vehicles were finally deregistered in Germany in 2003, but only half of them, about 1.75 million vehicles, were actually recycled in Germany. The other 1.75 million vehicles were exported as used vehicles. A considerable proportion of them went to foreign countries outside Europe. It is to be assumed that a large proportion of our end-of-life vehicles will go this way in future too. We can only speculate – and it is hard not to suspect the worst – about what happens when these vehicles finally become waste.

These are just a few examples that demonstrate the urgent need for action. On the one hand, we need products that are free of pollutants and, on the other, international minimum standards for the recovery and disposal of waste that will secure the conservation of resources. The protection of the environment and human health represent one aspect of the matter, the opportunities for the European and German economies that result from systematic recycling are the other aspect, one that points the way forward into the future. Thinking about environmental protection and economic development together and harmonising them permanently is one of the decisive issues that will have to be resolved over the next few years.