

Report 2022/2023

Thinktank and competence center of the PLASTICS INDUSTRY

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BKV – THINK TANK AND COMPETENCE CENTRE OF THE PLASTICS INDUSTRY

The BKV compiles data and facts on the topics of resource efficiency and the circular economy of plastics, and makes this information available, without discrimination, to interested market players and users.

ENVIRONMENTAL TOPICS

The BKV offers its expertise on environmental issues with regard to the use and recycling of plastics, irrespective of the particular application.

DATA AND FACTS

The BKV has a broad network of experts, whom it can draw on. The solid data basis is valued by many users and is widely acknowledged.

VISIBLE PRODUCT RESPONSIBILITY

The BKV is thus a visible part of the producer responsibility of the plastics industry. Its shareholders are plastics producers, plastics converters and plastics machinery manufacturers.

Studies and projects are at the heart of the work done by out on behalf of the plastics industry, which comprises plastic producers, plastic converters and plastic machinery manufacturers. At BKV, the plastics industry thus operates under a common umbrella. For the plastics industry, BKV plays an important part in knowledge generation and also in broadening this knowledge, above all to specialists in industry, science and administration. In this way, the BKV is able to objectify the often emotional discussion in the fields of sustainability, circular economy and environment, and to provide a solid basis with the aid of proven findings. Key examples of this are, for example, the projects. plastics flow, the importance of the plastics circular

Studies and projects are at economy as part of the voluntary agreements on climate the heart of the work done by protection in the Chemistry4Climate project, and also plastics in the environment with its special report on plastic pellets.

The studies and projects carried out at BKV are especially important because they tackle current social issues from politics and industry, both scientifically based and also the capability of implementing them in practice. Especially after the past few very difficult economic years, it is essential that all players in the plastics industry work together and continue to meet the constantly growing demands from politics and society. The path to a circular economy is irreversible. For this reason, it is essential to pool our industry's forces. Precisely with the BKV, we have the ideal platform for this. For this reason, I look forward to continuing good cooperation with new and exciting projects.

Since it was founded in 1993, BKV GmbH has undergone various developments, and the purpose of the company has changed over the course of time. The original purpose of the BKV no longer exists today. It was, in fact, the majority involvement of the plastics industry in the former Deutsche Gesellschaft für Kunststoffrecycling (DKR – German Society for Plastics Recycling) and, thus, the organisation of the operational collection, sorting and recycling of sales packaging, for which the Dual System Deutschland was founded in the 1990s.

Both the restructuring of the market and the changes made to the legal fundamentals are responsible for the transformation and the realignment of the BKV. Against this background, the BKV reorganised itself just ten years ago. Although the BKV is not operationally active itself in plastics waste management, it does make an important contribution to producer responsibility through its unique profile. The studies and projects in key topic areas play an important part in this, mainly, for example, in the fields of resource efficiency, circular economy, market data and plastics in the environment. Furthermore, the BKV actively supported the setting-up of the Zentrale Stelle Verpackungsregister (ZSVR – Central Agency Packaging Register). We are also involved in the technical development of the minimum standard for recyclability. Following its new conception ten years ago, this year's BKV activity report covers the development and experiences since this time.

A special feature of the BKV is the expertise of established committees with companies and associations from BKV's shareholders, and the highly committed small team which I have got to know and learned to appreciate after spending what is now a good year on the management team. For this, I would like to express my thanks to them.



MATTHIAS STECHHAN

LYONDELLBASELL, HEAD OF POLYOLEFIN SALES IN CENTRAL EUROPE, CHAIRMAN OF THE BKV ADVISORY BOARD

DR. INGO SARTORIUS

BKV GMBH, MANAGING DIRECTOR

REORGANISATION OF THE BKV SINCE 2013

INTRODUCTION Ten years ago, on January 1, 2013, the BKV was reorganised. The aim was to create a professional basis for current issues

Since then, the motto has been: "plastics, concepts and recovery".

TEN YEARS AGO WHEN THE BKV WAS REOR-**GANISED. YOU WERE CHAIRMAN OF THE** ADVISORY BOARD. WHAT WERE THE MAIN **CHALLENGES AT THAT** TIME. AND WHAT. FROM YOUR POINT OF **VIEW, WAS OF PARTI-CULAR IMPORTANCE?**

At the time of its reorganisation in 2013, the BKV was already a small jewel in the plastics industry, which up until today represents a platform that acts in the joint interest of the producers, converters and plastics machinery manufacturers. It is very gratifying that it has been possible to further expand the BKV to become a competence centre for the plastics industry. Furthermore, it acts across the industry for plastics from all fields of application, and above all packaging, construction, automotive and electrical.

Through the reorganisation ten years ago, the work of BKV was placed on an even more solid footing. This succeeded through the installation of the BKV management with own employees and its proprietary expertise as well as a new technical committee. As a result, the necessary structures were created that enable project working according to clear criteria and procedures while, at the same time, incorporating all companies and associations of BKV's shareholders.

The BKV as a competence centre focuses its work on the key topics of our industry. The important issues at that time were the reflection of the legal framework of waste management, resource efficiency, marine litter and market research. Here, too, the BKV has further developed very positively, and, for example, added the circular economy and recycling technologies to its list of key topics. These topics will also be decisive for our industry in the future. It is therefore important to make the acquired data and facts usable for solutions to the global challenges of our time. I wish the BKV continuing success in fulfilling this objective.

RÜDIGER KLEIN

LYONDELLBASELL, FORMER CHAIRMAN OF THE ADVISORY BOARD



FOR 20 YEARS, YOU HAVE BEEN A MEMBER OF THE ADVISORY BOARD AND, AT THE SAME TIME, ITS DEPUTY CHAIRMAN. MORE THAN ANYONE ELSE, YOU ARE FAMILIAR WITH THE DEVELOPMENT OF BKV. WHAT, IN 2013, WAS THE MOTIVATION FOR THE REORGANISATION AND HOW DO YOU SEE THE BKV TODAY?

The plastics industry operates in an environment of constant change, whether with regard to legal regulations in Germany and Europe or with regard to the growing demands of globally interconnected markets. Even before 2013, there were intensive discussions in Germany about a new regulation for collecting valuable scrap. Within the considered plastic materials not only packaging but also non-packaging should have been covered. Further, the organisations and structures for implementing the producer responsibility were up for examination. Against this background, the plastics industry went through a change process, in which not only the BKV, the RIGK and the tecpol but also the associations of the plastics industry were involved. The outcome was a stronger, reorganised BKV which is enabled to generate the data and facts relevant for the plastics industry. As a result, it has been made easier for the plastics industry to effectively take up and deal with the upcoming challenges.

Another important aspect is the moving closer together of the various sub-sectors of the plastics industry, i.e. plastics producers, converters and machinery manufacturers. By the foundation of a joint platform under the name "Wirtschaftsvereinigung Kunststoff" – WVK (German Plastics Industry Coalition) – which BKV had co-financed to a considerable extent the plastics industry became a member of the industry association BDI. Whereas the BKV was well positioned in its new structure since 2013, the WVK lacked a clear concept for dealing with the ever more challenging tasks. For this reason it was dissolved at the end of 2015

Because of the changed legal rules, above all in the packaging sector, BKV contributed to establish a Central Agency, so called "Zentrale Stelle Verpackungsregister" (Central Agency Packaging Register) and gave financial support to this. Up until today, the BKV is closely connected to the Central Agency Packaging Register through its involvement in the committee work. This important milestone is essential for the plastics industry, because it demonstrates not only the well-functioning recycling of packaging waste, but also its expansion and constant improvement. The present exceptionally high recycling targets for packaging waste in Germany document the success of this development within the European environment.

All this work calls for a high level of engagement, not only through the BKV resource themselves – both in staff terms and financially – but also by the shareholders, who above all on the advisory board, consistently observe and, if necessary, adjust the necessities for an orientation of BKV.

Both the cohesion and the collaboration under the roof of BKV are of fundamental importance here. It is imperative that in the future the cooperation the sub-segments of the plastics industry must be maintained. In this way, industry should utilise BKV's elaborated facts uniformly and more strongly in all their facets of the dialogue and networks.

BERNHARD BORGARDT

MANAGING DIRECTOR OF THE OSTERGRUPPE, CO-CHAIR OF THE ADVISORY BOARD

YOU WERE MEMBER OF THE ADVISORY BOARD AS GENERAL MANAGER OF IK E.V. IN THE PERIOD FROM 2012 TO 2020. WHAT, FOR YOU, HAVE BEEN THE MOST IMPORTANT MILESTONES SINCE THE REORGANISATION OF BKV?



DR. JÜRGEN BRUDER

SENIOR ADVISOR FOR THE INITIATIVE ERNTEKUNSTOFFE RECYCLING
DEUTSCHLAND (ERDE – THE RECOVERY AND RECYCLING SYSTEM FOR CROP
PLASTICS IN GERMANY), AND FORMER MEMBER OF THE ADVISORY BOARD



YOU HAVE BEEN A MEMBER OF THE ADVISORY BOARD SINCE 2017 AND YOU WERE PREVIOUSLY SPOKESMAN FOR THE TECHNICAL COMMITTEE ALSO IN THE TIME WHEN THE BKV WAS RE-ORGANISED. TEN YEARS AGO, THE BKV GAINED NOT ONLY A NEW VISION, IT WAS ALSO EQUIPPED OPERATIONALLY WITH A NEW MANAGEMENT AND WITH COMMITTEES. THIS INCLUDED NOT ONLY THE ADVISORY BOARD BUT ABOVE ALL THE TECHNICAL COMMITTEE. WHAT WAS THE PURPOSE AT THAT TIME OF THIS INTENSIVE RESTRUCTURING AND HOW WOULD YOU CONCLUDE THE EXPERIENCES SINCE THEN?

The reorganisation of BKV can indeed be derived very well from the new vision: "The German plastics industry creates, develops and operates, in material competition, an outstanding competence platform." In order to effectively implement this demanding industry platform concept, the establishment of corresponding bodies of BKV and the setting-up of an operable and efficient management became necessary. In this way, the main purpose of BKV to compile data and facts on essential, society-related issues such as resource efficiency and circular economy through to plastics in the environment, was made possible. Today, BKV has developed into an important think tank for the plastics industry and it is the competence centre for our industry.

The BKV compiles and collects data and facts and makes this information available to all market players under appropriate conditions. The know-how necessary for this is mainly drawn up and collected in the Technical Committee as well as project advisory groups cogether with partners from industry and science. For example, BKV has compiled numerous studies that are of major benefit not only to the plastics industry itself, but are also valued by industry, science and administration and have in some cases even become the standard, such as the fundamental "Plastics flow in Germany". BKV's project work is thus essential for the plastics industry. It is also needed more than ever so that especially public discussion is placed on a more objective footing. Also in the future, the BKV and the plastics industry will have to tackle numerous challenges. This is why I am looking forward to many more

DR. KLAUS WITTSTOCK

BASF SE, MEMBER OF THE ADVISORY BOARD AND FORMER SPOKESMAN OF THE TECHNICAL COMMITTEE



STUDIES AND PROJECTS

OVERVIEW The BKV is the competence centre of the German plastics industry for sustainability of plastic products with a view to resource efficiency and circular economy. Its task is to provide data for a fact-oriented discussion. The demand for data and facts results from the present or foreseeable issues from industry, science, politics and society. This forms the basis for the conception and selection of the projects tackled by BKV. A preselection of the topics to be dealt with is made by BKV's Technical Committee, which is composed of experts from the shareholders of BKV.

> The topics covered by BKV in its project work can be subdivided into the following six areas:

MARKET DATA:

Sound data and facts are a key aspect for the BKV. The "plastics flow" is the prime example of a validated database for plastics through its entire life cycle.

PLASTICS IN THE ENVIRONMENT:

CIRCULAR ECONOMY:

LEGAL FRAMEWORK:

Observing and evaluating existing and future legislation forms the basis for plastic markets with constantly more complex requirements on the material and its application.

RECYCLING TECHNOLOGIES:

This section is concerned with the investigation of technology-neutral recycling and recovery paths for plastics-containing material streams. It covers optimisation of mechanical recycling in the context of the collection and treatment as well as techno-economic analysis of complementary chemical recycling processes. These procedures aim to use less waste in the future for energy recovery.

STANDARDISATION:

The BKV is engaged in the Plastics Committee of the German Standardisation Body DIN, both as co-chair in the Plastics Committee's Board as well as chairing the corresponding environmental committee and being member of the recycling working group.

STUDIES AND PROJECT

STUDIES ON CIRCULAR ECONOMY:

STUDY	COSTS
Plastics Flow in Germany 2021	2022. 121 pages. Price EUR 600 (plus VAT) Short version: free of charge, (German language only)
Economic assessment of instruments for promoting the recycling of plastics	2022. 76 pages. Price EUR 950 (plus VAT) Short version: free of charge, (German language only)
Plastics Flow in Germany 2019	2020. 114 pages. Price EUR 300 (plus VAT) Short version: free of charge, (German language only)
Plastics-relevant waste flows in Germany 2019	2020. 74 pages. Price EUR 400 (plus VAT) Short version: free of charge, (German language only)
Potential for the use of recycled plastics in packaging	2020. 103 pages. Price EUR 500 (plus VAT) Short version: free of charge, (German language only)
Plastic Parts from ELVs	2020. 117 pages. Price EUR 450 (plus VAT) Short version: free of charge
Global Plastics Flow 2018	2019. 103 pages. No charge Short version: free of charge

STUDY	COSTS
Thermal Processes for Feedstock Recycling of Plastics Waste	2019. 170 pages. Price EUR 500 (plus VAT) Short version: free of charge
Titanium Dioxide in Plastics in Germany	2019. 61 pages. Price EUR 400 (plus VAT) Short version: free of charge, (German language only)
Generation and management of EPS and XPS Waste in 2016 in Germany in the packaging and building industries	2017. 42 pages. Price EUR 300 (plus VAT)
Potential for increasing mechanical recycling of plastic packaging – recycling-friendly design, sorting technology	2016. Result report (38 pages) and Management Summary (24 pages). Price EUR 350 (plus VAT) Infoflyer: free of charge (German language only)
Methods and tools for the eco-design of plastic packagings	2016. Technical documentation. 85 pages. free of charge, (German language only)
Development of the efficiency of plastic packaging – 1991 to 2013	2015. 102 Seiten. pages. Price EUR 350 (plus VAT) Infoflyer: free of charge, (German language only)

STUDY	COSTS
Demand and Utilization of Carrier Bags and Vest Carrier Bags for Service Counter Goods in Germany	2014. 78 pages. Price EUR 350 (plus VAT) Short version: free of charge
Analysis of PVC production, conversion, waste and recovery streams in Germany 2013	2014. 48 pages. free of charge (German language only)
Scenarios for the collection, treatment and recovery of plastics-containing waste streams – dry bin concept (Witzenhausen Study II)	2011. 40 pages. Price EUR 330 (plus VAT) (German language only)
Treatment and recovery of plastics-rich waste streams in Germany (Witzenhausen Study I)	2009. 99 pages. Price EUR 250 (plus VAT) (German language only)
Evaluation of thermal/catalytic processes for the decomposition of plastics (TU Clausthal)	2009. 41 pages. Price EUR 250 (plus VAT) Short version: free of charge, (German language only)
SRF utilisation in SRF power plants in Germany with focus on plastics	2009. 106 pages. Price EUR 330 (plus VAT) (German language only)

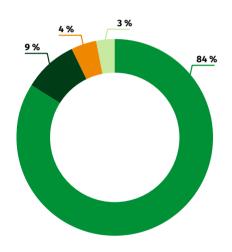
For more information on the studies go to: www.bkv-gmbh.de/studies.html

STUDIES ON PLASTICS IN THE ENVIRONMENT:

STUDIE	KOSTEN
Plastics in the Environment: Special edition "Pellet Losses".	2022. 75 pages. Can be ordered free of charge
Report: Plastics in the Environment in Germany	2021. 96 pages. Can be ordered free of charge
Marine Litter: Report and Handbook on the Model	2020, 4 th revised version. 98 pages.
"From Land to Sea"	Can be ordered free of charge
Marine Litter: Discussion paper "Tyre abrasion"	2020, 2 nd version. 18 pages. Can be ordered free of charge, (German language only)
Marine Litter: Special edition "Littering"	2020, 2 nd version. 27 pages. Can be ordered free of charge, (German language only)
Report: Study of Hydropower Plants –	2020. 18 pages. Can be downloaded free of charge,
MicBin joint project, work package 4.1	(German language only)
Report: Analysis of Direct Discharges –	2021. 29 pages. Can be downloaded free of charge,
MicBin joint project, work package 3.3	(German language only)
Report: Littering and Line Loading of Waterways –	2021. 26 pages. Can be downloaded free of charge,
MicBin joint project, work package 3.5	(German language only)
Report: Model expansion and modelling –	2021. 26 pages. Can be downloaded free of charge,
MicBin joint project, work packages 5.5 & 5.6	(German language only)

For more information on the studies go to: www.bkv-gmbh.de/studies.html

RAW MATERIAL BASIS FOR THE MARKET SUPPLY WITH PLASTICS. TOTAL AROUND 14 MILLION T



- Plastics on primary raw material basis
- Recyclates from PC (post-consumer) waste
- By-products
- Recyclates from PI (post-industrial) waste

Two particularly important studies on the areas of market data and plastics in the environment were concluded in the last financial year.

The **Plastics Flow in Germany** collects data every two years for plastics through the value chain in Germany. The latest study was finalised by Conversio Market & Strategy GmbH on behalf of BKV with the support of 14 other associations and organisations in the plastics sector at the end of 2022. The study determines data and facts on the entire life of plastics from raw material production, plastics conversion, consumer use and waste management up to the utilisation of recyclates in new products.

One of the most important results is that around 14m t of plastic materials are used to supply the market, above all the packaging, building & construction, automotive and electrical & electronic sectors. Alongside primary raw materials, an ever greater role is played here both by the use of secondary raw materials, i.e. recyclates, and the use of byproducts. Compared with the previous edition, the proportion of recyclates and by-products used in 2021 has significantly increased to a good 16 % of the volume of converted plastics (2019: just under 14 %). Furthermore, the latest report contains new details. Like all studies, the Plastics Flow is available via the BKV homepage; go to www.bkv-gmbh.de/studies.html.

On behalf of the BKV, Conversio Market & Strategy GmbH produced the first comprehensive study of the discharge of pellets into the terrestrial and aquatic environment in Germany under the name Special Report on "Pellet Losses". The study was published in August 2022 and supplements the models "Plastics in the Environment" and "From Land to Sea - Model for the documentation of land-sourced plastic litter". In addition to the information and calculations from the two models, further scientific studies, especially the BMBF funded research focus "Plastic in the Environment", were included in the analysis. Here, the projects "EmiStop" and "InRePlast" were of particular interest.

Pellets can get into the environment along the entire value chain. In the year 2020, the pellet discharges that remained in the environment totalled, according to the estimate, 624 metric tonnes. Internal waterways and sea ports as well as pellet transport along the roads made the largest contribution to the direct discharge of pellets into the environment.

The special study on pellet losses is available in German or English free of charge via the BKV website: https://www.bkv-gmbh.de/studies.html







PROJECTS

NETWORK

DIALOGUE AND NETWORKS

The BKV is in regular contact with its target audience, who, predominantly in expert groups, are concerned with topics involving the circular economy and the environment: those, who are employed in the plastics and recycling segment or hold responsible positions in the political work of German and European authorities or are employed in scientific institutions, associations and NGOs. The key instruments of communication are, in addition to a lively website, regular newsletters, specialist events and technical publications.

NEWSLETTER

The weekly edited BKV newsletter has, for many years, reached a growing number of interested persons. In brief texts, it summarises media reports of the previous week and reports on the latest news concerning plastics recycling and circular economy. More information, also on registration, can be found at https://www.bkv-gmbh.de/bkv-newsletter-2.html

In addition, the Marine Litter Newsletter is published three to four times a year with reports and interviews on the latest developments in research, politics and industry concerning plastics in the environment. For more information and registration, visit https://www.bkv-gmbh.de/marine-litter-newsletter.html.

EXPERT'S EVENTS

BKV invites to expert events on given occasions, in which presentations are held and being discussed i.a. on current topics, also on the basis of results from the BKV's project work. In 2022, the BKV again held its own workshop as part of the byse conference on recycling of plastics. A workshop of this kind is also planned for 2023. More information can be found at https://altkunststofftag.byse.de.

ORGANISATION

ADVISORY BOARD OF THE BKV

The advisory board is the statutory controlling body of the company and supervises the management.

TECHNICAL COMMITTEE (TA)

The TA consists of experts from the shareholder companies and organisations. It assesses project proposals, including the required budget, and monitors the results. It reports to the Advisory Board. The spokesman of the Technical Committee is Dr. Frank Buckel (Covestro).

EXCHANGE WITH STAKEHOLDERS

Another BKV committee is made up of representatives of key stakeholders, especially from industry, science and administration. The committee advises the company in fundamental issues of the business purpose, and thus gives the plastics industry the opportunity to discuss relevant issues based on facts and oriented to practice.

MEMBERS OF THE ADVISORY COMMITTEE



Chairman:

Matthias Stechhan (IvondellBasell)

Vice chairman:

(Ostedruck)

Bernhard Borgardt





Dr. Helen Fürst (Fürst Group)



Dr. Christian Haessler (Covestro)



Dr. Klaus Wittstock (BASF)



Marc van den Biggelaar



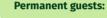
Inga Böhlke (Bischof + Klein)



Dr. Martin Engelmann (IK Industrievereinigung Kunststoffverpackungen)



Michael Freutsmiedl (Borealis)



Ingemar Bühler (Plastics Europe Deutschland)



Thorsten Kühmann (Fachverband Kunststoff und Gummimaschinen im VDMA)

MANAGEMENT



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SHAREHOLDERS

- A. Schulman GmbH
- Akzo Nobel GmbH
- Amoco Chemical (Europe) S.A.
- Arbeitsgemeinschaft Kunststoffe und Folien GbR
- Baerlocher GmbH
- Basell Polyolefine GmbH
- BASF Lampertheim GmbH
- BASF Polyurethanes GmbH
- BASF SE
- Bischof + Klein SF & Co. KG
- Borealis Polymere GmbH
- Borealis Polyolefine GmbH
- Covestro Deutschland AG
- Dow Olefinverbund GmbH
- Dürrmann GmbH & Co. KG
- Fastman Chemical B.V.
- ETIMEX Primary Packaging GmbH
- Evonik Operations GmbH
- Gesamtverband kunststoffverarbeitende Industrie e.V. (GKV)
- Greif Packaging Germany GmbH
- Heuchemer Verpackung GmbH & Co. KG
- IK Industrievereinigung Kunststoffverpackungen e.V.
- Industrieverband Kunststoffbahnen Europe e.V. (IVK)
- Ineos Manufacturing Deutschland GmbH

- INOVYN Deutschland GmbH
- INOVYN Schkopau GmbH
- Liveo Research GmbH
- Mauser-Werke GmbH
- MKF-Schimanski-FRGIS GmbH
- Müller AG Plastics
- Nordfolien GmbH
- Petainer Lidköping AB
- PlasticsEurope Deutschland e.V.
- Repsol Chemie Deutschland GmbH
- RPC Neutraubling GmbH
- RPC Packaging Belgium N.V.
- RPC Packaging Holdings (Deutschland) B.V. & Co. KG
- RPC Wiko GmbH
- SABIC Deutschland GmbH
- Schütz GmbH & Co. KGaA
- Seufert Verpackungen GmbH
- SL Packaging GmbH
- STRUBL GmbH & Co. KG Kunststoffverpackungen
- TotalEnergies Petrochemicals & Refining SA/NV
- Verband Deutscher Maschinen- und Anlagenbau e.V. (VDMA)
- Versalis Deutschland GmbH
- Weener Plastik GmbH

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