1 General economy and reference to the plastics industry

The ifo business climate index: The results of the ifo economic survey in August 2023 show that the business climate index in Germany is still falling, see

<u>https://www.ifo.de/fakten/2023-08-25/ifo-geschaeftsklimaindex-faellt-august-2023</u>. The mood in German board rooms has darkened even more. It fell to 85.7 points in August, following on from 87.4 points in July. This is the fourth fall in a row. The assessment of the current business situation has fallen to the lowest level since August 2020. In addition, the companies are more pessimistic about the months ahead. The lean period in the German economy is getting longer.

The business climate index has also fallen in the manufacturing sector. In particular, companies were dissatisfied with current business. The relevant indicator slipped into the negative area for the first time since October 2020. Expectations remain very pessimistic. Companies complained about falling numbers of new orders.

As in recent years, the data of the plastics processing industry was determined by TecPart – Verband Technische Kunststoff-Produkte e.V., see <u>https://tecpart.de/de/presse/604-uim-ersten-halbjahr-verschlechtert-fuer-das-zweite-halbjahr-keine-besserung-in-sicht</u>. In the first half of 2023, the approx. 3,000 German plastics processors lost 4.6 % of their turnover in comparison to the previous year, which is therefore around 38 billion euros. The highest turnover sector, construction, lost the most (almost 11 % to 10.7 billion euros), followed by packaging with -5.9 % and consumer goods -1.7%. The sector with the most employees in plastics processing, technical parts, is holding up well against the trend with growth of 3 % to 10.7 billion euros. With around 323,000 employees for all plastics processors, employment remained largely stable.

2 Primary markets - standard plastics

In July 2023 the EUWID average price of $1,337 \notin t$ was therefore $60 \notin t$ lower than in the previous month $(1,397 \notin t)$. The price drop for standard plastics continues, see Tab. 2. However, we must be very near the lowest point. When taking account of standard deviations, the average current mean value from June 2023 $(1,337 \notin t)$ is already in the range of the long-term mean $(1,294\pm146 \notin t)$ from 01/2012 to 12/2020. In a year-on-year comparison, it can be seen that the average quotes from July 2023 $(1,337 \notin t)$ were $232 \notin t$ lower than those of the previous year $(1,569 \notin t)$.

The quotes for plastics fell on average by $85 \notin t$ for LDPE, $85 \notin t$ for LLDPE, $85 \notin t$ for HDPE, $55 \notin t$ for PP, $75 \notin t$ for PS and $80 \notin t$ for PVC. The situation for standard plastics is portrayed well in EUWID, see <u>www.euwid-recycling.de</u>, and PIE – Plastic Information Europe, see <u>https://pieweb.plasteurope.com/</u>.

Prices in €/t	July 2023	June 2023	May 2023	April 2023	March 2023
LDPE film grade	1160- 1210	1230- 1310	1370- 1470	1410- 1520	1460- 1570
LLDPE film grade	1130- 1230	1200- 1310	1300- 1430	1340- 1480	1370- 1520
HDPE injection moulding	1170- 1220	1210- 1290	1290- 1390	1300- 1410	1320- 1450
HDPE blow mould- ing	1150- 1230	1190- 1300	1270- 1400	1280- 1420	1300- 1460
PS crystal clear	1560- 1640	1640- 1720	1770- 1870	1720- 1850	1720- 1850
PS high impact	1690- 1740	1770- 1820	1900- 1970	1850- 1950	1850- 1950
PP homopolymer	1330- 1420	1360- 1520	1460- 1620	1470- 1640	1510- 1680
PP copolymer	1380- 1470	1430- 1570	1510- 1670	1520- 1690	1560- 1730
PVC tube grade	1110- 1210	1150- 1250	1310- 1410	1380- 1480	1410- 1510
PVC film/cables	1240- 1340	1280- 1380	1440- 1540	1500- 1600	1530- 1630

Table 2: Standard plastics prices according to EUWID over the past five months, listed in \notin /t.

Average Price	1337 ± 193	1397 ± 206	1520 ± 213	1541 ± 190	1569 ± 180

PET: The PET markets have now stabilised, albeit at a low trading level. The demand for PET beverage bottles has hardly improved, in spite of the hot weather that persisted until mid-July. Private consumers are extremely price-aware and, in particular, are buying bigger beverage bottles rather than the more expensive little ones. Processors are starting to fill their warehouses again.

Packaging PET was quoted at an average price of 1,170 €/t in July 2023, and thus 10 €/t lower than in the previous month, see. PIE – Plastic Information Europe <u>https://pieweb.plasteurope.com/</u>. It is surprising how volatile the PET quotes have been in the last 10 years. An annual mean value of 1,256±191 €/t is calculated from the average annual mean values of the last 10 years, which fluctuate between 975 €/t and 1,690 €/t. Which means that the quote from July 2023 (1,170 €/t) is in the range of the calculated standard deviation (±191 €/t).

3 Secondary plastics markets in the plasticker price index

The plasticker internet platform, see <u>http://plasticker.de</u>, publishes quotes on an hourly basis. The present market report indicates the final monthly prices. It is only possible to represent the preliminary prices for August 2023 here; they will not become definitive until early September. The two quotes stated for August 2023 below indicate only an interim situation, see the left-hand column in Table 3 and Table 4.

3.1 plasticker: Standard plastics

The standard plastics were quoted at an average $635 \notin t$ in July 2023 and were thus $16 \notin t$ higher than the average quote for June 2023 of $619 \notin t$, see Tab. 3. The average price for July 2023 ($635 \notin t$) was $259 \notin t$ below that of the previous year ($894 \notin t$). A lower price level was reached with the June quotes, which also remained stable in July and August.

There were significant price changes of greater than $\pm 40 \notin /t$ for: HDPE regranulates $+60 \notin /t$, LDPE regranulates $+90 \notin /t$, PP bale goods $+50 \notin /t$, PS regrind $+80 \notin /t$ and PS regranulates $-60 \notin /t$. Considerations of price changes with supply figures that are too low are not included here. The July price index is characterised by slightly higher purchase demand than in the previous month. The previous month recorded only low purchase demand.

The probable average price in August 2023 (635 \in /t) is thus the same as the previous month, see Tab. 3. The price index of 15.08.2023, shows subdued demand for plastic.

	August ⁶ 23	July 23	June 23	May 23	April 23	July 22
HDPE regrind ¹	620	630	670	640	660	1020
HDPE regranu- lates ⁵	890	940	880	1060	990	1250
LDPE bale goods ²	320*	320	370*	300	190*	330*
LDPE regrind ¹	280*	290*	180*	730*	410*	610
LDPE regranu- lates ⁵	810	890	800	910	870	1120
PP bale goods ³	300*	280	230*	220	280	160*
PP regrind ¹	670	700	740	740	750	830*
PP regranulates ⁵	1010	1060	1020	1030	1000	1520
PS regrind ⁴	970	790	710*	910*	810*	1110*

Table 3: Standard plastics price according to plasticker; listed in €/t.

PS regranulates ⁵	1070	1070	1130	1210	1250*	2130
PVC_P regrind ¹	490*	500*	570*	680*	760*	880*
PVC_U regrind ¹	690	660*	580*	500*	730*	750*
PET bale goods	310*	310	300*	310*	230*	90*
PET regrind mixed colours	460	440	480	570	550	720
Average Price	(635)	635	619	701	677	894

*: Supply figure too low to attain statistical significance; ¹: equivalent to the grade "post-industrial mixed colours"; ²: equivalent to K49; ³: equivalent to K59; ⁴: equivalent to "standard, mixed colours"; ⁵: equivalent to the grade "regranulates, black"; ⁶: preview (may be amended by additional quotes)

3.2 plasticker: Technical plastics

For July 2023, there was an average price of 1,812 €/t, which was 51 €/t higher than that of the previous month (1,761 €/t), see Table 4. The average price for July 2023 (1,812 €/t) was 185 €/t below that of the previous year (1,997 €/t). A turning point in the price levels was reached with the June quotes.

There were significant price changes of greater than $\pm 70 \notin /t$ for: PC regranulates $\pm 360 \notin /t$, PBT regranulates $\pm 340 \notin /t$, PA 6 regrind $\pm 130 \notin /t$, PA 6 regranulates $\pm 220 \notin /t$ and POM regranulates $\pm 100 \notin /t$. The July price index is characterised by slightly higher purchase demand than in the previous month. The previous month recorded only low purchase demand.

The probable average price in August 2023 $(1,910 \notin t)$ is thus $98 \notin t$ higher than in the previous month $(1,812 \notin t)$. The price index of 15.08.2023 shows subdued demand for plastic.

	August ⁶ 23	July 23	June 23	May 23	April 23	July 22
ABS regrind	860	820	870	910	930	1270
ABS regranu- lates⁵	1480	1510	1570	1530	1640	2340
PC regrind	1320	1260	1210	1340	1410	1190*
PC regranulates ⁵	2310	2480	2120	2480	2620	2660
PBT regrind	730*	770*	750*	750	760	830*
PBT regranulates	3310	2540	2200	2580	2620	2330
PA 6 regrind	1200	1180	1050*	1100*	1080*	920*
PA 6 regranu- lates⁵	2490	2410	2630	2890	2860	2990
PA 6.6 regrind	1300	1330	1390	1310	1310	1200*
PA 6.6 regranu- lates ⁵	4090	3600	3570	3520	3620	3940
POM regrind	740*	730	760	850*	1020*	810*
POM regranu- lates ⁵	3090	3110	3010	2920	2720	3480
Average Price	(1910)	1812	1761	1848	1883	1997

Table 4: Technical plastics price according to plasticker; listed in €/t.

*: Supply figure too low to attain statistical significance; ^{5.} equivalent to the grade "regranulates, black"; ^{6.} preview (may be amended by additional quotes)

4 Secondary plastics markets

An EU hearing has been prepared for September due to illegal waste exports from Germany to Poland. In July, Poland submitted an official complaint against Germany to the EU. The shipping of waste to Poland and the whereabouts of the wastes are controlled very strictly.

Exports and imports: the trends for German exports and imports of waste plastics are still negative. Exports from 01/2023 to 06/2023 totalled 331,800 tonnes. On average, Germany therefore exported only 55,300 tonnes of waste plastics per month. This is the lowest level since evaluation of the data in 2006 by EUWID.

By way of comparison, exports from 01/2022 to 06/2022 totalled 387,200 tonnes. This corresponds to a monthly total of 64,500 tonnes for that period. However, the current low figures for imports and exports are not only caused by strict EU legislation, but in particular by the crisis in plastic recycling. The current quantities for imports and exports can be found in EUWID RE, 35, p. 17, 2023.

4.1 Standard plastics and technical plastics

Standard plastics: There is hardly any demand for plastic wastes from recyclers these days. The recyclers' warehouses are full, both in terms of processing input (plastic wastes) and output (recyclates). There is hardly any demand for recyclates from plastics processors. The prices of plastics recyclates are falling further. Longer company holidays, plant downtimes and short-term working are the consequence of a further deteriorating situation.

In July, EUWID continues to report falling prices for the quoted plastics. However, the price fall in EUWID has slowed down. The price index from PIE – Plastic Information Europe matches EUWID well in terms of trends, i.e., the price falls and the low demand. PIE – Plastic Information Europe also reports on a slowing in the price falls. For some grades, the lowest price level may have been reached.

plasticker contradicts the trends from EUWID. From the quotes in plasticker, a higher price level for standard plastics in July in comparison to June is clear. According to plasticker, demand from standard plastics has improved. The quotes and the surge in demand from plasticker give rise to hopes of a turnaround.

EUWID regrinds: regrinds from PE production wastes fell by around 30 \in /t, PP production wastes by 34 \in /t, PS production wastes by 28 \in /t and PVC production wastes together with PVC window grades by 50 \in /t.

EUWID films: the PE films from production wastes were quoted an average 28 €/t lower and PP by 18 €/t. The PE post user films fell by an average 18 €/t.

Technical plastics: In plasticker, the quotes fell continuously from February 2023 (2,158 \in /t) to June 2023 (1,761 \in /t). And in July 2023 (1,812 \in /t), a turnaround in prices and demand was emerging. In PIE – Plastic Information Europe, the regranulates prices fell by between 10 \in /t and 75 \in /t. As far as technical plastics are concerned, pieweb reported improved demand from motor manufacturing. Demand is described as surprisingly robust both by pieweb and plasticker.

4.2 PET Recycling

The markets for recycled PET are being rediscovered. The oversupply of used drinks bottles continues. And, as a result, the processing input is becoming even cheaper. The new price levels for used PET are trying to establish themselves. Moreover, the prices for regrinds and regranulates are in upheaval. Recyclates are no longer more expensive than virgin grade.

The volume of used beverage bottles was high in July and August due to the summer temperatures. But PET recyclers have hardly any warehouse capacities for the processing input. And the outflow of recyclates is also stagnating - the warehouses are also full of them.

The continuing low demand in the plastics processing industry for rPET results in PET recyclers purchasing hardly any used beverage bottles. In July, the prices for used PET singleuse bottles fell again. The relative price changes in comparison to the previous month were: PET transparent -120 €/t, PET mixed -90 €/t and PET coloured -80 €/t.

Detailed monthly reports on the PET prices for virgin grade and used beverage bottles can be found in EUWID and PIE - Plastics Information Europe.

5 Explanation on the price quotes

A detailed discussion with information of price indices for virgin grades and waste plastics as well as precursor products can be found in EUWID Recycling and Disposal see <u>www.euwid.de</u>. EUWID: No guarantee for any of the prices here; prices ex station. As a rule, the prices quoted refer to quantities in excess of 20 tons.

The quotes for secondary prices, which are updated on an hourly basis, can be calculated using the price lists that are derived from the quotations published in the raw material exchange plasticker, see <u>www.plasticker.de</u>. The prices listed in this index are quoted without reservation - as the majority of the quotes submitted are not necessarily equivalent to the sales prices. Plasticker offers the quality grades regrind and regranulates both as virgin materials and as secondary goods. The term 'bale goods' refers to waste plastics only. Furthermore, plasticker does not distinguish between the following grades: transparent, mixed colours or colour-separated. Therefore, the information provided by plasticker may indicate different market behaviour than the prices quoted by EUWID

A detailed discussion with information of price indices for virgin grades and waste plastics as well as precursor products can be found in PIE – Plastics Information Europe, see <u>www.kiweb.de</u>. For virgin grades, the indices for standard plastics (Plastixx ST) and technical plastics (Plastixx TT) provide a good overview of the price trends. Pieweb quotes the monthly regranulates prices for standard plastics and technical plastics in the secondary markets. For secondary plastics, there are also details on PET, in this case flakes (flakes transparent, flakes mixed colours) as well as transparent regranulates.

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