1 General economy and reference to the plastics industry

Ifo-Institut: The shortage of materials in industry has noticeably eased. In December, 50.7 % of the companies surveyed reported it after 59.3 % in November. This is the third fall in a row. This can be seen in the current survey from the ifo Institut, see https://www.ifo.de/pressemitteilung/2023-01-03/merklich-weniger-materialengpaesse-derindustrie. "A relaxation of the bottlenecks now seems to be emerging in many sectors," says Klaus Wohlrabe, Head of the ifo surveys. "This will support the economy in the months ahead. Depending on the development of the coronavirus situation in China, there may be setbacks with regard to the bottlenecks."

The number of companies with material bottlenecks has fallen in practically every sector of the industry. However, some of the current values are still well below their long-term average values. Mechanical engineering and the automotive sector are still most affected, with around 75 % in each reporting problems. In the electrical industry the figure was around 63 %, and 33 % in rubber and plastic products. The paper sector is currently the least affected at 11.3 %.

A very detailed and accurate review of 2022 can be found in PIE – Plastics Information Europe in issue 2561, 19.12.2022. Just excerpts of the introduction are reproduced here, see https://www.kiweb.de/. The review of the year comprises the plastics industry, including the circular economy.

Another "annus horribilis" started for the plastics industry with the start of the war in Ukraine - which is still ongoing and will continue in 2023. We are heading for stormy economic times ahead. First of all, many companies had to deal with record prices for raw materials and as well as disruptions to the supply chain, then there was high inflation and a massive fall in demand due to the economy weakening in the wake of the war in Ukraine. Additional difficulties were caused by the lockdowns in major ports and entire regions in China.

The spectre of recession is looming over Europe. Reports of production shutdowns and insolvencies are increasing. And even though there are the first signs on the market that demand is recovering, a sustainable improvement cannot be expected very soon. But even professional pessimists have to admit: 2023 can actually only be better - more peaceful politically and less challenging economically.

2 Primary markets - standard plastics

The unfamiliar situation for plastics manufacturers is continuing: supply is much higher than demand. Even production cutbacks have scarcely changed the current situation. The plastics markets therefore continue to be mainly shaped by demand, Or, put another way, plastics processors largely determine the prices with their demand.

Since April 2022 (2,255 €/t) the prices of standard plastics have been gradually falling. Experts do not yet feel that the end of the price falls has been reached. In December 2022 the EUWID average price of 1,624 €/t was 55 €/t lower than in the previous month (1,679 €/t), see Table 1. In a year-on-year comparison, it can be seen that the average quotes from December 2022 (1,624 €/t) were as much as 344 €/t lower than those of the previous year (1,968 €/t), see EUWID, www.euwid-recycling.de. The quotes for LDPE fell by an average 30 €/t, LLDPE by 40 €/t, HDPE by 20 €/t, PP by 45 €t, PS by 100 €/t and PVC by 70 €/t.

Prices in €/t	December 2022	Nov. 2022	Oct. 2022	Sept. 2022	Aug. 2022
LDPE film grade	1540- 1640	1570- 1670	1550- 1650	1600- 1700	1650- 1800
LLDPE film grade	1400- 1620	1450- 1650	1450- 1650	1550- 1700	1600- 1750
HDPE injection moulding	1420- 1520	1450- 1550	1450- 1550	1400- 1550	1450- 1650
HDPE blow mould-ing	1380- 1530	1400- 1550	1400- 1550	1350- 1500	1400- 1600
PS crystal clear	1750- 1800	1850- 1900	1850- 1950	1850- 1950	2050- 2150
PS high impact	1800- 1900	1900- 2000	1900- 2050	1900- 2000	2100- 2200
PP homopolymer	1600- 1700	1630- 1760	1630- 1780	1680- 1830	1880- 2030
PP copolymer	1650- 1750	1680- 1810	1680- 1830	1730- 1880	1930- 2080
PVC tube grade	1510- 1610	1580- 1680	1630- 1730	1680- 1780	1730- 1830
PVC film/cables	1630- 1730	1700- 1800	1750- 1850	1800- 1900	1840- 1940
Average Price	1624 ± 141	1679 ± 164	1694 ± 177	1717 ± 181	1833 ± 230

Table 1: Standard plastics prices according to EUWID over the past five months, listed in €/t.

PET: The Christmas break stabilised the PET markets. The markets were frozen and calmed down a little as a result. Although the demand is still low and supply high, the price fall was moderated. Needs continue to be low and considered to be "slack" due to the recession. And sales from production warehouses mean that there is low demand for processing input. Hopes have been placed on the new year.

Packaging PET was quoted at an average price of 1,450 €/t in December 2022, and thus 20 €/t lower than in the previous month. The current PET quotes refer to the information from EUWID www.euwid-recycling.de and from PIE – Plastics Information Europe https://www.pieweb..plasteurope.com/.

3 Secondary plastics markets in the plasticker price index

The plasticker internet platform, see http://plasticker.de, 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 January 2023; they will not become definitive until early February 2023. The two quotes stated for January 2023 below therefore indicate only an interim situation, see the left-hand column in Table 2 and Table 3.

3.1 plasticker: Standard plastics

In December 2022, too, we reported further falling quotes for standard plastics. The standard plastics were quoted at an average 716 €/t and were thus 26 €/t lower than the average quote for November of 742 €/t, see Tab. 2. The average price for December 2022 (716 €/t) was 80 €/t above that of the previous year (636 €/t). The December price index is characterised by lower demand for plastic than in the previous month. The low demand is also due to the Christmas break.

Marked price changes can be seen in the individual commodities. There were significant price changes of greater than ±40 €/t for: HDPE regrind -70 €/t, HDPE regranulates +60 €/t, LDPE bale goods +130 €/t, LDPE regranulates -50 €/t, PP bale goods +100 €/t, PP regrind -70 €/t, PP regranulates +100 €/t, PS regrind -70 €/t and PET regrind mixed colours +150 €/t.

The probable average price in January 2023 (684 €/t) is thus 32 €/t lower than in the previous month (716 €/t), see Tab. 2. The price index of 13.01.2023, shows subdued demand for plastic. The Christmas break continues.

	January ⁶ 23	Dec. 22	Nov. 22	Oct. 22	Sept. 22	Dec. 21
HDPE regrind ¹	680*	650	720	760	770	600
HDPE regranu- lates ⁵	1000	1020	960	1060	980	920
LDPE bale goods ²	270*	440*	310	150*	270	350*
LDPE regrind ¹	340*	490*	520*	600*	560*	470*
LDPE regranu- lates ⁵	870	890	940	990	990	850
PP bale goods ³	520*	480	380	400*	470*	310*
PP regrind ¹	750	770	840	900	790	630
PP regranulates⁵	1010	1190	1090	1130	1300	1400
PS regrind ⁴	550*	800*	870*	1030*	1100*	700*
PS regranulates ⁵	1240	1230	1220	1230	1470*	1160
PVC_P regrind ¹	950*	440*	860*	1010*	900*	490*
PVC_U regrind ¹	720*	520*	730*	810*	720*	480*
PET bale goods	0*	410*	400	400	450*	70*
PET regrind mixed colours	680	700	550	490	480	480
Average Price	(684)	716	742	783	804	636

Table 2: Standard plastics price according to plasticker; listed in €/t.

3.2 plasticker: Technical plastics

The gradual fall in the prices of technical plastics, which started in May 2022 (2,023 €/t), continued in December (1,809 €/t). For December 2022, there was an average price of 1,809 €/t, which was 64 €/t lower than that of the previous month (1,873 €/t), see Table 3. The average price for December 2022 (1,809 €/t) was about the same as that of the previous year (1,807 €/t).

Marked price changes can be seen in the individual commodities. There were significant price changes of greater than ±70 €/t for: ABS regranulates -90 €/t, PC regranulates -310 €/t, PA 6.6 regrind +170 €/t, POM regrind -120 €/t and POM regranulates -500 €/t. And once again we see a very large price fall for POM regranulates! The December 2022 price index is characterised by lower demand for plastic than in the previous month. The Christmas break can be felt here, too.

The probable average price in January 2023 (2,017 €/t) is thus 208 €/t higher than in the previous month (1,809 €/t). The price index of 13.01.2023 shows subdued demand for plastic. The Christmas break is continuing in mid-January.

^{*:} 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"; ⁵: preview (may be amended by additional quotes)

	January ⁶ 23	Dec. 22	Nov. 22	Oct. 22	Sept. 22	Dec. 21
ABS regrind	870	850	840	1010	1040	950
ABS regranu- lates ⁵	1840	1730	1820	1810	1990	2160
PC regrind	1400*	1360*	1310*	1340	1270	1060
PC regranulates ⁵	2650	2510	2820	2670	2520	3100
PBT regrind	670*	680*	700*	720*	820	750*
PBT regranulates	3860	2290*	2310	2040	2260	2170
PA 6 regrind	970*	1050*	1070	1130	1110	1000
PA 6 regranu- lates ⁵	3210	3070	3020	3050	3050	2400
PA 6.6 regrind	1240*	1350*	1180*	1290	1410	1200
PA 6.6 regranu- lates ⁵	3640	3790	3760	3500	3520	3250
POM regrind	970*	740*	860	900*	890	800
POM regranu- lates ⁵	2880	2290	2790	3390	3300	2840
Average Price	(2017)	1809	1873	1904	1932	1807

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

4 Secondary plastics markets

Thanks to imports from the Middle and Far East, virgin grade is once again readily available on the European markets. The availability of virgin grade plastics has a marked influence on the secondary markets. The virgin grade plastics are so cheap when manufactured outside Europe because their raw materials markets and their energy supply are unaffected by sanctions. Moreover, the Middle and Far East are expanding their capacities in crude oil processing. Following on from refining, the polyolefins are synthesised nearby, which adds further value.

During the pandemic, LVP quantities in the sorting facilities rose by 10 % to 15 %. Among other things, this is due to the move of consumption from office, retail and manufacturing to private consumption due to people working from home. Falling quantities of LVP are now being recorded in the sorting facilities because the pandemic is tailing off. A fall in the volumes of LVP plastics could influence their markets.

In Germany, underground containers have now become more important. Since social control is even lower with this method of LVP collection than with domestic recycling bins, an increased share of residual waste has been found. In some German cities, the quality collected is now so poor that the Amsterdam Model, i.e. screening out LVP in the upstream facilities of waste incineration plants, is being considered.

When collecting LVP, ever more changes to the composition of the packaging material can be seen. For example, the proportion of fibre composites is rising, which cause disruption both to paper recovery and plastics recycling. The proportion of rigids in packaging plastics is falling sharply. Plastics recyclers are well equipped with films, the flow of films from screening is stagnating. Films often only find buyers with additional payments. Rigids are increasingly being replaced by flexibles and composites.

^{*:} Supply figure too low to attain statistical significance; 5. equivalent to the grade "regranulates, black";

^{6.} preview (may be amended by additional quotes)

4.1 Plastic wastes and recyclates

The plastics recyclers went into the winter break early. Even in January, there is little movement on the plastics markets. The recyclers' demand for plastic wastes is low. Price indices depict market trends; but transactions for wastes can be well below the stated prices.

As has already been seen in previous years, recyclates, in this case mainly HDPE and PET, have once again been suppressed from the markets by virgin grade. Now that there is a sufficiently high supply of virgin grade, recyclates are once again too expensive and the quality is too poor for processors.

In December, the EUWID quotes for plastic wastes were unchanged in comparison with the previous month for bale goods. Regrinds are also quoted at unchanged prices in EUWID. There is still strong demand for granulates, especially PP and PS regranulates. However, sales of regrinds are stagnating. There is adequate demand for good film, whereas thin film is selling poorly. The longstanding strong demand for PP, both wastes and recyclates, is continuing.

4.2 PET Recycling

The PET markets have stabilised in the winter break. PET virgin grade is readily available. The flow of virgin grade to production is stagnating due to the recession. Moreover, both producers' and processors' warehouses for virgin grade are replete with stock.

The winter break is having a calming effect on secondary markets. In December and January, PET recyclers cut back their activities. Maintenance is carried out on the facilities. Although, due to the season, volumes of used PET bottles are smaller than on hot summer days, sufficient quantities of beverage bottles are nevertheless available. Moreover, the PET recyclers also have replete warehouses.

The falling prices for virgin grade and the good supply of processing grades are putting pressure on recyclate prices. In December, the prices for used PET single-use bottles have fallen: PET transparent -65 €/t, PET mixed -50 €/t and PET coloured -50 €/t. Detailed monthly reports on the PET prices for virgin grade and used 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 www.euwid.de, or in EUWID Plastics www.euwid-recycling.de. EUWID: No guarantee for any of the prices.; 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 www.plasticker.de. 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