1 General economy with reference to the plastics industry

ifo business climate index: The ifo business climate index improved markedly again in June 2021, see <u>www.ifo.de/ifo-geschaeftsklimaindex</u>. It rose to 101.8 points in June, following on from 99.2 points in May. Companies assess their current business situation as much better. And optimism also increased greatly with regard to the second half of the year. The German economy is shaking off the coronavirus crisis.

The index has risen in the manufacturing sector and reached the highest level since April 2018. Companies were much more satisfied with current business. Expectations were somewhat less optimistic. Mechanical engineering and the electrical industry in particular stand out in the generally very good development in the industrial sectors. The increasing bottlenecks in precursor products are causing concern for many companies.

VDMA Members' Assembly Plastics and Rubber Machinery Construction: at the Members' Assembly in June 2021, Ulrich Reifenhäuser reported that German plastics and rubber machinery construction is reaching new heights. It was undergoing a quick recovery after the challenges of the coronavirus pandemic. Clearly increasing incoming orders are creating momentum for 2021. The shortage of materials is the machine constructors' biggest concern, see <u>https://www.vdma.org/viewer/-/v2article/render/16796086</u>.

2021 could also be a record year again. In the first four months of 2021, incoming orders are up 92 %, meaning they are almost twice as high as in the comparable period of 2020, and turnover has also stabilised with a rise of 8 %.

2 Primary markets - virgin grade

2.1 The standard plastics market

Wow: how quickly the markets change. The price rise for virgin grades, standard plastics in this case, is coming to a standstill. Although prices continue to record peaks, they are falling slightly. The price index is characterised by increased supply and, associated with this, falling prices. However, the fall in prices is surprising because the processors' demand for standard plastics is high and not all purchase queries can be satisfied.

In June 2021 the average price of 1,960 \in /t was an average 60 \in /t lower than in the previous month (2,020 \in /t), see Table 1. In a year-on-year comparison, it can be seen that the average quotes from June 2021 (1,960 \in /t) were 1,050 \in /t higher than those of the previous year (910 \in /t), <u>www.euwid-recycling.de</u>.

Plastics made of PE and PS record falling prices, whereas PP and PVC are still quoting slight price rises. Specifically, the average price changes are as follows: LDPE film at -75 \in /t, LLDPE film at -75 \in /t, HDPE at -50 \in /t, PS at -275 \in /t, PP at +50 \in /t and PVC at +50 \in /t.

PET: The PET supply has now stabilised. Or, to put it another way, sufficient quantities of virgin grade are available again. The PET manufacturers have now even built up warehouse stocks. All of the orders that have accumulated from virgin grade manufacture have been satisfied. In June and July, it should be possible to discern much higher demand for PET bottles due to the summer. Because of the weather, this demand is lower than expected. Packaging PET was quoted at an average price of 1,340 \in /t in June 2021, and thus 40 \in /t lower than in the previous month, see <u>https://www.kiweb.de/</u>.

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Prices in €/t	June 2021	May 2021	April 2021	March 2021	Feb. 2021
LDPE film grade	2000- 2150	2050-2250	1950- 2100	1850- 2000	1450- 1550
LLDPE film grade	2000- 2150	2050-2250	1950- 2100	1800- 1900	1440- 1540
HDPE injection moulding	1900- 2050	1950- 2100	1920- 2050	1650- 1800	1350- 1430
HDPE blow moulding	1900- 2050	1950- 2100	1910- 2040	1630- 1780	1330- 1410
PS crystal clear	1950- 2100	2250-2350	2150- 2250	1850- 1950	1370- 1470
PS high impact	2050-2200	2350- 2450	2250- 2350	1950- 2050	1450- 1550
PP homopolymer	2050- 2250	2000- 2200	1900- 2100	1700- 1800	1400- 1500
PP copolymer	2100-2300	2050- 2250	1950- 2150	1750- 1850	1450- 1550
PVC tube grade	1400- 1500	1350- 1450	1300- 1400	1100- 1200	1000- 1090
PVC film/cables	1500- 1600	1450- 1550	1400- 1500	1200- 1300	1020- 1100
Average Price	1960 ± 259	2020 ± 324	1936 ± 302	1706 ± 282	1373 ± 177

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

2.2 The technical plastics market - virgin grade

Increased demand is coming up against shortages, resulting in higher prices. Price rises can be seen for PC, PA and PBT, whereas the quotes for PMMA, ABS and POM are unchanged. A change to the shortages is expected in early autumn.

In June 2021, the technical plastics were quoted in EUWID, see <u>www.euwid-recycling.de</u>, at an average $3,411 \notin t$ and thus $159 \notin t$ higher than in April 2021 ($3,252 \notin t$), see Table 2. The average price in June 2021 ($3,411 \notin t$) was $1,312 \notin t$ higher than that of June in the previous year ($2,099 \notin t$). The price changes are due to an average increase for PC of 500 $\notin t$, for PA 6 of 200 $\notin t$ and for PA 66 of 175 $\notin t$.

Table 2:	EUWID quotes for technical prices, which are published every two months, over the last six
	months; prices in €/t.

Prices in €/t	June 2021	April 2021	Feb. 2021	Dec. 2020
PMMA crystal clear	3050 - 3300	3050 – 3300	2800 - 3000	2700 – 2900
ABS natural	2800 - 3000	2800 – 3000	2150 – 2250	1800 – 1900
ABS w/b	2900 – 3100	2900 – 3100	2250 – 2350	1900 – 2000
ABS coloured	3550 – 3750	3550 – 3750	2850 - 3050	2500 – 2700
PC crystal clear	3950 – 4150	3450 – 3650	2950 – 3150	2200 – 2400
PC GF-reinforced	4350 – 4550	3850 – 4050	3050 – 3250	2300 – 2500
POM natural	2150 – 2350	2150 – 2350	1850 – 2050	1750 – 1950
PA 6 natural/black	2700 – 2800	2500 – 2600	2000 – 2100	1850 – 1950
PA 6 GF-reinforced	3050 – 3150	2850 – 2950	2050 – 2100	1950 – 1950
PA 66 natural	3850 – 4200	3700 – 4000	3400 – 3500	3050 – 3150
PA 66 GF-reinforced	4000 - 4350	3850 – 4150	3400 – 3500	3050 - 3150
Average Price	3411	3252	2684	2265

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 July 2021; they will not become definitive until early August. The two quotes stated for July 2021 below indicate only an interim situation, see the left-hand column in Table 3 and Table 4.

3.1 plasticker: Standard plastics

The quotes for standard plastics remain high. There was an average price of $639 \notin/t$ for June 2021. And this average price is $19 \notin/t$ higher than that of the previous month ($620 \notin/t$), see Table 3. The average price for June 2021 ($639 \notin/t$) was $173 \notin/t$ above that of the previous year ($466 \notin/t$). There were significant price changes ($\pm 40 \notin/t$) for: LDPE granulates $\pm 200 \notin/t$, PP bale goods $\pm 50 \notin/t$, and PVC_P $-60 \notin/t$. The price index is characterised by subdued demand for plastic. In July, the prices for regrinds and regranulates have reached peaks. For example, there has been a 5-year high for HDPE regrind, HDPE regranulates, LDPE regranulates, PP regranulates, PS regrind and PS regranulates.

The preview of the July quotes indicates an average price of only $531 \notin /t$, see Table 3. And that would represent a fall in quotes of as much as $108 \notin /t!$ And this means that the peak has been passed. The price index of 14.07.2021, shows satisfactory demand for plastic to date.

	July ⁶ 21	June 21	May 21	April 21	March 21	June 20
HDPE regrind ¹	600	640	620	620	580	490
HDPE regranu- lates⁵	900	1040	1040	960	880	730
LDPE bale goods ²	210*	270*	280*	260*	160*	160
LDPE regrind ¹	430	470	490*	530	490	500
LDPE regranu- lates ⁵	710	980	780	680	640	580
PP bale goods ³	200*	260*	210*	270*	360*	140
PP regrind ¹	560	620	600	550	530	520
PP regranulates ⁵	900	1130	1120	960	850	770
PS regrind ⁴	600	700*	680	600	570	590
PS regranulates ⁵	950	1470	1480	1160	920	830
PVC_P regrind ¹	210*	290*	350*	240*	530*	300*
PVC_U regrind ¹	530*	570*	570*	480*	520*	410*
PET bale goods	160*	70*	70*	140*	80*	140*
PET regrind mixed colours	470	430	390	380	380	360
Average Price	(531)	639	620	559	535	466

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

*: 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

In June 2021, the quotes for technical plastics remain at their peak. There was therefore an average price of 1,584 \in /t for June 2021. And this average price is almost unchanged in comparison to that of the previous month (1,592 \in /t), see Tab. 4. The average price for June 2021 (1,584 \in /t) was as much as 441 \in /t higher than that of the previous year (1,143 \in /t).

These plastics show price changes of more than \pm 70 \in /t: ABS regranulates + 100 \in /t, PBT regranulates +120 \in /t, PA 6 regranulates -110 \in /t, and PA 6.6 regranulates +140 \in /t. The price index shows a subdued demand for plastic.

The probable average price in July 2021 (1,467 \in /t) is quoted at 117 \in /t lower than in the previous month (1,584 \in /t). Or, to put it another way, the peak will probably also be passed soon for technical plastics. The July price index of 14.07.2021 shows satisfactory demand for plastic.

	July ⁶ 21	June 21	May 21	April 21	March 21	June 20
ABS regrind	630	640	590	640	580	600
ABS regranu- lates⁵	2240	2410	2310	2300	1810	940
PC regrind	810	1030	1000	850	840	860
PC regranulates ⁵	1790	1910	2200	2000	1970	1580
PBT regrind	540	610	620*	530*	470	450
PBT regranulates	1830	2140	2020	1930	1920	1620
PA 6 regrind	920	950	950	870	870	860
PA 6 regranu- lates⁵	2370	2320	2430	2130	2070	1750
PA 6.6 regrind	950	1010	1050	970	940	920
PA 6.6 regranu- lates⁵	2690	2910	2770	2560	2560	2020
POM regrind	680*	600*	660*	690	580	500
POM regranu- lates ⁵	2160	2480	2500	1800	1770	1520
Average Price	(1467)	1584	1592	1439	1365	1143

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

⁵: equivalent to the grade "regranulates, black"; ⁶:preview (may be amended by additional quotes).

4 Secondary Plastics Markets

4.1 Plastic wastes

Plastic wastes made of PE, PP and PS are in demand on the market. Post user PE film wastes are recording price rises of an average 12 \in /t. The quotes for production wastes made of PE, PP and PS in the EUWID price index are unchanged in comparison to the previous month. PVC production wastes are enjoying average price rises of 6 \in /t and PVC window frames of 20 \in /t.

In June 2021, the mean EUWID quotes for PE post user films are: LDPE shrink hoods natural 460 \in /t, LDPE shrink hoods mixed colours 175 \in /t, thin film transparent natural 293 \in /t, thin film transparent coloured 80 \in /t, LDPE agricultural film -40 \in /t, commercial mixed film (90/10) 175 \in /t and commercial mixed film (80/20) 125 \in /t.

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4.2 Recyclates

The prices for regrinds and regranulates are maintaining their peaks. And demand for plastic recyclates remains high. Nevertheless, an end to the price rise for recyclates can now be seen. Not least, the preview of quotes for the current month in plasticker shows falling prices for recyclates.

And the falling virgin grade prices are having an impact on recyclates, with a time lag. The price rise for virgin grades has almost come to a standstill. The supply of virgin grade has improved. However, demand for plastics from processors is still very high.

4.3 PET Recycling

PET recycling is limited by the low volumes of used beverage bottles. Although the supply of used PET bottles has improved in June and July, all hopes lie with an economy that is stabilising again, so that the volume of returning bottles from drinks retailers, discounters, supermarkets, kiosks and restaurants will rise again. The prices for used PET single-use bottles changed in June as follows: PET transparent +30 \notin /t, PET mixed +40 \notin /t, and PET coloured +20 \notin /t.

The virgin grade prices fell again in June, albeit still at a high level, by $30 \notin t$ to $1,340 \notin t$. There is clear excessive demand for PET recyclates, i.e. PET regrinds and PET regranulates. The regranulate prices actually exceed the virgin grade prices by an average $85 \notin t$. Regrinds are, on average, $115 \notin t$ below the prices of virgin grade, see <u>https://www.kiweb.de/</u>.

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>, or in EUWID Plastics <u>www.euwid-kunststoff.de</u>. 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 <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

Bonn, Thursday, 29. July 2021 Dr Thomas Probst, bvse