1 The Current Crisis in Plastic Recycling

The situation is extremely critical for plastic recycling. Due to the pandemic, industrial demand for recyclates is in freefall the world over. This can be clearly seen, not just in the price of oil, but prices for virgin grade plastic have also hit historic lows. However, as a result of this, the price advantage of recyclates in comparison to virgin grades disappears or even goes into reverse.

At the same time, production in the plastics processing industry, which uses recyclates, has fallen or even come to a complete standstill, especially in Germany, France and Italy, but also, for example, in the Middle East or South America. It is noticeable that industry is using less recyclates than before. Important markets for plastic recyclers are eroding.

Recyclers are registering cancellations from countries in which they have built up stable sales markets. The combination of the price collapse for virgin grades, along with a fall in demand are major problems for the recycling companies.

To stabilise existing plastic recycling in the European Union, measures aimed at bolstering the economy should be prepared swiftly, which specifically boost recycling and intensify the restructuring and expansion of the circular economy. Now is the ideal time to create incentives for the use of recyclates and the consistently use Green Public Procurement to ensure that the public sector procures recycled plastic products and uses them in building construction and civil engineering.

2 The primary plastics market

2.1 Standard plastics

Covid-19 and the summer break: this time, too, the prices for standard plastics are following the raw materials quotes. The price rises for the precursor products are also reflected in the plastic prices. The stockpiling of previous months, the reduced demand in the summer break and falling demand by private and commercial consumers can be felt on the markets for standard plastics.

Slight price recovery for standard plastics: In June 2020, the standard plastics were quoted in EUWID, see <u>www.euwid-recycling.de</u>, at 910 \in /t and thus an average 28 \in /t higher than in the previous month (882 \in /t), see Table 1. In a year-on-year comparison, it can be seen that the average quotes from June 2020 (910 \in /t) were 344 \in /t lower than those of the previous year (1,254 \in /t). In June 2020, all standard plastics were quoted higher: LDPE +20 \in /t, LLDPE +25 \in /t, HDPE +25 \in /t, PP +30 \in /t, PS +40 \in /t and PVC +20 \in /t.

Packaging PET was quoted slightly higher in June 2020; on average it was quoted at 960 \notin /t, thus 10 \notin /t higher than in the previous month. The structural collapses in demand continue in spite of the relaxation in opening hours in restaurants. The use of PET beverage bottles in restaurants, drinks retailers and kiosks is much lower than in the same period of last year.

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Prices in €/t	June 2020	May 2020	April 2020	March 2020	Feb. 2020
LDPE film grade	810-910	790-890	830- 930	930- 1010	970- 1050
LLDPE film grade	830- 930	810-900	850- 950	950- 1040	990- 1080
HDPE injection moulding	820- 900	790- 870	820- 900	920- 1000	990- 1050
HDPE blow moulding	840- 920	820- 900	850- 930	950- 1030	1010- 1070
PS crystal clear	990- 1050	950- 1010	950- 1170	1120- 1170	1220- 1270
PS high impact	1070- 1140	1030- 1100	1030- 1100	1220- 1270	1320- 1370
PP homopolymer	970- 1030	940- 1000	990- 1040	1090- 1140	1130- 1180
PP copolymer	1020- 1080	990- 1050	1040- 1090	1140- 1190	1180- 1230
PVC tube grade	680- 720	660-700	710- 750	800- 840	800- 840
PVC film/cables	720- 760	700- 740	750- 790	840-880	840- 880
Average Price	910 ± 134	882 ± 128	916 ± 118	1027 ± 137	1070 ± 158

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

2.2 The primary plastics market - technical plastics

In technical plastics, the markets have almost come to a standstill. There is hardly any demand from processors. In this context, the main discussions concern the collapse in demand in the German and European car industry. There are also corresponding falls in demand in the worldwide interlinked manufacture of electrical devices and electronics. However, the uses for technical plastics beyond these scopes are widespread - but have a relatively fragmented structure.

There was another marked fall in the price of technical plastics: From April 2020 to June 2020, the average prices for technical plastics fell by 174 \in /t. From December 2019 (2,407 \in /t) to June 2020 (2,099 \in /t), technical plastics fell by an average 308 \in /t, see Table 2. The average price in June 2020 (2.099 \in /t) was as much as 624 \in /t lower than that of June in the previous year (2,723 \in /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 2020	April 2020	February 2020	Dec. 2019
PMMA crystal clear	2700 – 2900	2900 – 3100	2900 – 3100	3000 - 3200
ABS natural	1280 – 1330	1350 – 1400	1550 – 1600	1510 – 1560
ABS w/b	1380 – 1430	1450 – 1500	1650 – 1700	1610 – 1660
ABS coloured	1980 – 2130	2050 – 2200	2250 – 2400	2210 – 2360
PC crystal clear	2000 – 2100	2150 – 2250	2300 – 2500	2450 – 2700
PC GF-reinforced	2200 – 2300	2350 – 2450	2500 – 2700	2650 - 2900
POM natural	1750 – 1900	1800 – 1900	1850 – 1950	1850 – 1950
PA 6 natural/black	1800 – 1900	1800 – 1900	1850 – 2000	1900 – 2050
PA 6 GF-reinforced	1850 – 1900	1850 – 1900	1950 – 2000	2000 – 2050
PA 66 natural	2800 – 2900	3000 – 3100	3150 – 3250	3350 - 3500
PA 66 GF-reinforced	2800 - 2850	3000 - 3050	3000 - 3050	3200 - 3300
Average Price	2099	2173	2327	2407

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 2020; they will not become definitive until early August. The two quotes stated for July 2020 below indicate only an interim situation, see the left-hand column in Table 3 and Table 4.

3.1 plasticker: Standard plastics

An average price of 466 \in /t is calculated for June 2020. And this average price is thus only 5 \in /t lower than that of the previous month (471 \in /t); this indicates price stability, see Table 3. The average price for June 2020 (466 \in /t) was 64 \in /t below that of the previous year (530 \in /t). The June price index shows subdued demand for plastic.

The following price changes were more than ± 40 €/t: HDPE-regranulates +70 €/t, PP bale goods -50 €/t, PP regranulates -60 €/t, PS regranulates +100 €/t and PET bale goods -70 €/t. A 5-year low was reached for the prices for HDPE regrind at 510 €/t and LDPE regranulates at 580 €/t.

The preview of the July quotes indicates an average price of 444 €/t. And this average price is 22 €/t lower than in the previous month, see Tab. 3. The July 2020 price index, 10.07.2020, shows subdued demand for plastic.

	July ⁶ 20	June 20	May 20	April 20	March 20	June 19
HDPE regrind ¹	500	490	510	520	520	600
HDPE regranu- lates ⁵	700	730	660	720	720	860
LDPE bale goods ²	140*	160	160	220	220*	230
LDPE regrind ¹	490	500	520	530	530	520
LDPE regranu- lates ⁵	560	580	590	640	590	700
PP bale goods ³	90*	140	190*	190	190*	260*
PP regrind ¹	490	520	530	510	520	600
PP regranulates ⁵	750	770	830	830	860	830
PS regrind ⁴	590	590	630	610	610	610
PS regranulates ⁵	780*	830	730	800	750	930
PVC_P regrind ¹	160*	300*	260 (450*)	260	210*	300
PVC_U regrind ¹	380*	410*	400	440*	360*	430*
PET bale goods	220*	140*	210*	220	230*	200*
PET regrind mixed colours	360	360	370	380	310	350
Average Price	(444)	466	471	491	473	530

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 2020 the average price for technical plastics in plasticker is $1,143 \notin t$ and thus $29 \notin t$ lower than in the previous month $(1,172 \notin t)$, see. Table 4. A comparison of the average prices from June 2020 $(1,143 \notin t)$ with those of the previous year $(1,256 \notin t)$ shows a difference of $113 \notin t$. These plastics show price changes of more than $\pm 70 \notin t$: PA 6.6 regranulates - $100 \notin t$ and POM regranulates - $120 \notin t$. A 5-year low has been reached with ABS regranulates. The June price index records subdued demand for plastic in comparison with the previous month.

Has the trough been reached for technical plastics? The first preview of the July quotes shows price stability for technical plastics. At $1,173 \in /t$, the preview of 10.07.2020 shows an average price that is roughly unchanged in comparison with the previous month ($1,143 \in /t$). The June price index is showing subdued demand for plastic.

	June ⁶ 20	June 20	May 20	April 20	March 20	June 19
ABS regrind	560	600	610	630	620	690
ABS regranu- lates⁵	1010	940	980	1040	1240	1150
PC regrind	860	860	830	820	880	880
PC regranulates ⁵	1570	1580	1640	1940	1610	1880
PBT regrind	440	450	430	450	460	490
PBT regranulates	1660	1620	1640	1880	1640	1710
PA 6 regrind	860	860	860	850	850	830
PA 6 regranu- lates⁵	1800	1750	1790	1850	1830	1990
PA 6.6 regrind	930	920	910	920	890	850
PA 6.6 regranu- lates⁵	2090	2020	2120	2040	2070	2260
POM regrind	610	600	610	640	580	600*
POM regranu- lates⁵	1680	1520	1640	2120	1820	1740
Average Price	(1173)	1143	1172	1265	1208	1256

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 Evaluation of the secondary plastic markets

4.1 Plastic wastes

Both price indices, i.e. EUWID and plasticker, report of subdued demand for plastic waste in June. In addition to the crisis caused by coronavirus, the summer break is also taking effect now. The hopes for increased demand for plastic waste now lie with the end of the summer break. There is a marked surplus in collections of good plastic waste from light packaging plastics. However, good plastic waste from trade and industry is highly sought after. The export demand for plastic waste, which almost came to a standstill in the crisis, is picking up again. Film waste is sought in particular.

Inconsistent EUWID price quotes for standard plastics initially refer to the unchanged prices for PE, PVC and PS post-industrial waste, then to one-sided price falls for PE post-industrial waste and PVC windows and finally to the price rises for films from PE post user. The rise in prices for PE films is due to the higher demand from abroad. Moreover, PE films are also in

demand because, due to coronavirus, much less is being produced in trade and industry than before the crisis.

There is still demand for good PE film waste, but this is not the case for shrink hoods. In June, the mean EUWID quotes for PE post user films are: LDPE shrink hoods natural 290 \in /t, LDPE shrink hoods mixed colours 7 \in /t, thin film transparent natural 145 \in /t, thin film transparent coloured 10 \in /t, LDPE agricultural film -50 \in /t, commercial mixed film (90/10) 68 \in /t and commercial mixed film (80/20) 38 \in /t.

4.2 Plastic recycling

Standard plastics: there are falls here for recyclates that are competing with virgin grade. The summer break on the one hand and the coronavirus pandemic on the other hand are resulting in short-time working or plant downtime in this plastic recycling sector. As mentioned at the start, the demand for recyclates has fallen greatly. After the drops in April, May and June, things are still very tight for some recyclers - bankruptcies are imminent.

The recyclate prices ultimately track the prices of the virgin grade. However, in June the price rises of the virgin grade - with the exception of some film qualities - have not reached the recyclates. Only the prices for LDPE films were able to hold their own or, in the case of LDPE film natural, actually rise by an average of $20 \notin t$. Experts report that the prices for standard regranulates have reached the bottom of the trough.

Mixed plastic recycling: only mixed plastic recycling has proved to be crisis-proof. The demand for items and products of mixed plastic recycling in building construction and civil engineering held their own. Orders from abroad have also been served again. Private demand for mixed plastic products has improved somewhat in the crisis - demand from trade and industry, however, has fallen.

Technical plastics: here, too, hopes that the current desolate situation will improve also rest with the end of the summer break. The recyclers of technical plastics have to combat the price falls of virgin grade, low demand for recyclates and the relatively high costs of plastic waste. The costs for freely traded production and processing waste are relatively high because only small quantities are available on the markets.

4.3 PET Recycling

There is still pressure on PET recycling. The low-cost virgin grade is suppressing recyclates from the sectors that they have established and developed over years. PET recyclers are working short hours or have closed their operations down.

In Germany, the volume of used PET beverage bottles has risen markedly in comparison to the previous month. The higher volumes will subsequently result in price falls for used PET beverage bottles. After the falls in April and May, the June quotes for used PET returnable bottles also fell, PET clear -25 €/t, PET mixed -30 €/t and PET coloured -30 €/t.

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-kunststoff.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.

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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 guoted by EUWID

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