1 The primary plastics market

According to reports published by the Germany's plastics industry for the second quarter of 2016, cf. PlasticsEurope Deutschland e.V, the index for plastics production fell by 0.3 % compared to the previous month if the overall trend is not taken into account. However, the previous year's level was exceeded by 3.7%. Plastics material production rose by 0.6% relative to the previous month. Thus, production was able to attain a 2.3 % increase compared to the previous quarter. 35% of the plastics processed in Germany is used in the area of packaging. The second largest area of use is the building sector with approximately 24 %, followed by the automotive industry with 10 % and the electronic and electrical equipment sector, which attained 6%.

Plastics production in the user industries resurged slightly in the second quarter; however, in total, there was still little fluctuation – only the automotive sector was able to rise significantly. The building sector stagnated in the second quarter compared to the previous three months. A comparison with last year shows that the building sector rose by 2.6 %. The production figures for the automotive sector increased considerably, attaining a 2.2% rise. The production level was 5.3% above the average reached in the second quarter of last year. The production index for the electronic industry, which does not take the overall trend into account, rose by 0.6 % compared to the previous quarter, attaining a 2.4% rise compared to the previous three months.

Europe's plastics production increased by 0.3% in the second quarter compared to the preceding three months. Last year's second quarter was exceeded by 4.4%. Europe's plastics production also exceeded the level attained in the previous quarter by 0.8%. Production could even be increased by 3.7% compared to last year.

Standard plastics: In July the average price of standard plastics fell by as much as 38 €/t compared to the previous month, cf. Table 1. A comparison of the average listings reached in July 2016 (1274 €/t) with those attained in July 2015 (1525 €/t) shows that the price fall even reached 251 €/t! July's price slump in plastics is due to the low demand during the summer season. Above and beyond this, it is possible to observe shifts in purchasing aimed at attaining even more favourable purchase prices in the months to follow.

While PE prices fell by 36 €/t and those of PS by 125 €/t, PP and PVC held their own. Packaging PET is listed at an average 1103 €/t. Hence, PET listings fell by 13 €/t relative to the previous month in July, too. Even though the precursor prices of polyolefins rose, the prices of the plastics made from them fell. The fact that demand for PVC and EPS is, overall, relatively restrained is mainly due to the developments in the building sector, which is faltering.

What is commonly known as 'borehole processing' is increasing in significance as a result of the low crude oil prices, which are predicted to be listed at approximately 50 US \$ per barrel for yet another year. Besides crude oil extraction, borehole processing includes the on-site manufacture of anything from precursors through to polyolefins for the global markets in question. The low income gained from trade with the Middle East, which is due to the low crude oil price, can thus be balanced out by increased value creation in down-stream stages of the production process. Or to put is another way: borehole processing leads to higher quantities of polyolefins being offered on the global markets.

For a detailed analysis including information on price indices for virgin materials, used plastics and precursors, please refer to EUWID Recycling und Entsorgung (EUWID Recycling and Waste Management), cf. www.euwid .de, or to EUWID Kunststoff (EUWID Plastics), cf. www.euwid-kunststoff.de, and KI-Kunststoffinformation (KI Information on Plastics), cf. www.kiweb.de.

Table 1: EUWID listings for standard plastics over the past five months; prices in €/t.

| Prices in €/t | July 2016 | June 2016 | May 2016 | April 2016 | March 2016 |
|-------------------------|------------|------------|------------|------------|------------|
| LDPE film grade | 1360- 1480 | 1420- 1510 | 1420- 1530 | 1390- 1500 | 1330- 1420 |
| LLDPE film grade | 1330- 1450 | 1390- 1480 | 1410- 1500 | 1380- 1470 | 1320- 1410 |
| HDPE injection moulding | 1380- 1430 | 1410- 1470 | 1420- 1470 | 1410- 1470 | 1350- 1400 |
| HDPE blow moulding | 1380- 1430 | 1400- 1460 | 1400- 1460 | 1390- 1460 | 1330- 1380 |
| PS crystal clear | 1340- 1430 | 1440- 1550 | 1440- 1510 | 1450- 1520 | 1350- 1420 |
| PS high impact | 1430- 1530 | 1550- 1650 | 1530- 1610 | 1540- 1620 | 1440- 1520 |
| PP homopolymer | 1180- 1250 | 1180- 1250 | 1180- 1250 | 1180- 1270 | 1100- 1200 |
| PP copolymer | 1230- 1300 | 1230- 1300 | 1230- 1300 | 1230- 1320 | 1150- 1250 |
| PVC tube grade | 850- 880 | 850- 880 | 840- 870 | 820- 850 | 800- 850 |
| PVC film/cables | 890- 920 | 890- 920 | 880- 920 | 860- 900 | 840- 900 |
| Average Prices | 1274 ± 217 | 1312 ± 246 | 1309 ± 246 | 1304 ± 247 | 1238 ± 218 |

2 The secondary plastics market

In its July price index, plasticker reported that prices had more or less held their own compared to the previous month. The purchase bids and offers listed in plasticker indicate that demand for standard plastics was restrained in July. The EUWID Price Watch for used plastics shows that prices fell by an average 5 €/t to 10 €/t during the same month. Demand for used plastics was reported to be low in July.

2.1 Waste plastics:

The summer break has led to a significant fall in the demand for used plastics. This situation is also explained by the considerable supply of used plastics. The rise in incineration prices has led to an increased amount of used plastics being sorted out and recycled. The outflow of used plastics to the Far East, i.e. the People's Republic of China and the tiger economies in particular, is faltering. According to reports by traders and sales agents, India has resumed importing used plastics.

There is considerable supply of used plastics – not only in Germany, but all across Europe. As a rule, it is possible to reduce the prices of used plastics by 10 €/t compared to the previous month. There is very little demand for used PS. Demand for PVC is very low, too; this is primarily due to the low demand in the building sector. According to the EUWID Price Watch for used and disposable PET beverage bottles, the listings for transparent PET beverage bottles have fallen by 5 €/t. The listings for coloured PET bottles have also slumped, reaching values below zero due to the excess supply of PET bottles. Demand for film from the part of Europe's plastics recyclers is very restrained. Where film is being purchased, the quality offered must absolutely be up to standard.

The sale of used EPS, including insulation panels from demolition activities in particular, is faltering all across Europe as a result of the ban on HBCD stipulated by the POP Regulation No. 850/2004 (EC), which will take effect on 1st October 2016. Besides shifting a material flow of 74,000 t/a from recycling to disposal without this being necessary, the governing authorities have gone so far as to classify the material as hazardous waste in this case. The consequences thus ensuing for disposal have been very insufficiently taken into consideration by the governing authorities. Above and beyond this, there are only a very limited number of waste incineration plants available in Germany to accept the EPS insulation panels. In this respect, too, those enforcing the Regulation are thus leaving waste disposal managers in the lurch with regard to the problems caused.

2.2 Recyclates:

As a result of the holiday period, demand for recyclates is lower than in the previous months. Above and beyond this, plastics recyclers are currently under price pressure from low-cost virgin materials. Thus, demand for recyclates from HDPE and PP has been restrained. The building sector, too, is showing signs of weakness, which is pulling PS and PVC sales down. Plastics recyclers agree in their reports that there is sufficient processing material available on the markets. Recyclers are only buying high-quality materials. Nevertheless, plastics recyclers continue to report that the quality of processing input for PP and PE has not improved to the extent expected. The market for PET recyclates is benefiting from the favourable purchase prices for used PET bottles. PET flake and PET regranulate sales are stable. The sale of recyclates for bottle production is gaining in importance.

3 Plasticker Price Index

The **plasticker** internet platform, cf. 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 August 2016. These listings thus merely reflect an interim situation that does not become definitive until September 2016. Plasticker offers the quality grades regrind and regranulates both as virgin materials and as secondary materials. The term 'bale goods' refers to waste plastics only.

3.1 Standard plastics:

In July 2016, the average price listed in plasticker was 8 €/t higher than in the previous month. The average listings for standard plastics have changed marginally since March. There is still a trend towards slight monthly price changes. The listings for July 2016 (557 €/t) fell short of those for July 2015 (601 €/t) by as much as 41 €/t. As a result of the summer holidays, demand for standard plastics was restrained in July.

The listings for the following quality grades changed considerably in July 2016: LDPE bale goods -60 €/t LDPE regrind -60 €/t, PP bale goods +70 €/t and PET regrind +70 €/t. The prices quoted for LDPE regrind (over the past 3.5 years) and PS regrind reached very low levels. Since May 2016 the price listed for LDPE regrind has been relatively high.

The first preview of the August listings, which cannot be definitively reported until the beginning of September, shows the prospective average price to 12 €/t higher. In August, standard plastics markets can be assessed as satisfactory despite the summer break. Some listings, notably those for HDPE regranulates, PP regrind, PP regranulates and PS regranulates, are likely to change considerably relative to the previous month.

| | A | I. d. | I | Mari | | |
|-----------------------------------------------------------------------|---|-------|---|------|--|--|
| Table 2: Listings for standard plastics in plasticker; prices in €/t. | | | | | | |

| | August | July | June | May | April | March | July 2016 |
|--------------------------------|-------------------|------|------|------|-------|-------|-----------|
| | 2016 ⁶ | 2016 | 2016 | 2016 | 2016 | 2016 | |
| HDPE regrind ¹ | 620 | 610 | 610 | 620 | 610 | 590 | 620 |
| HDPE regranulates ⁵ | 850 | 910 | 920 | 920 | 890 | 870 | 920 |
| LDPE bale goods ² | 180 | 180 | 240 | 220 | 330 | 230 | 240 |
| LDPE regrind ¹ | 690* | 670 | 730 | 720 | 560* | 570* | 620* |
| LDPE regranulates ⁵ | 820 | 840 | 820 | 800 | 830 | 800 | 1020 |
| PP bale goods ³ | 220 | 230 | 160 | 150 | 220 | 210 | 260 |
| PP regrind ¹ | 540 | 570 | 570 | 550 | 540 | 550 | 590 |
| PP regranulates ⁵ | 820 | 840 | 830 | 830 | 840 | 880 | 950 |
| PS regrind ⁴ | 670 | 640 | 630 | 620 | 610 | 630 | 710 |
| PS regranulates ⁵ | 990 | 880 | 880 | 950 | 990 | 980 | 1060 |
| PVC_P regrind ¹ | 420 | 420 | 410 | 380 | 410 | 420 | 340 |

| PVC_U regrind ¹ | 460 | 430 | 410 | 420 | 450 | 440 | 450 |
|----------------------------|-------|-----|-----|-----|-----|-----|-----|
| PET bale goods | 250 | 180 | 140 | 130 | 180 | 260 | 220 |
| PET regrind, coloured | 440 | 400 | 340 | 440 | 420 | 420 | 420 |
| Average Price | (569) | 557 | 549 | 554 | 563 | 561 | 601 |

^{*:} 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 that may be amended by additional quotes

3.2 Technical plastics:

In July 2016 the average price of technical plastics listed in plasticker almost remained unchanged at 1156 €/t. A comparison of the average prices quoted for July 2016 (1156 €/t) with those for July 2015 (1258 €/t) shows the current price to be 102 €/t lower. Of all the quality grades listed, only the price of PC regranulates changed considerably in July 2016, reaching -70 €/t. Despite the summer break, the July markets for standard plastics can be assessed as satisfactory.

The first preview of the July listings, which cannot be definitively reported until the beginning of September, shows that prices will hold their own. According to the plasticker internet platform, demand for technical plastics was satisfactory until August 2016 – even in consideration of the summer break. Technical plastics can still be purchased at favourable prices.

Table 3: Listings for technical plastics in plasticker; prices in €/t.

| | Aug. 2016 ⁶ | July 2016 | June 2016 | May 2016 | April 2016 | March 2016 | July 2016 |
|------------------------------|---------------------------|--------------|--------------|----------|---------------|---------------|--------------|
| ABS regrind | 660 | 660 | 670 | 700 | 680 | 740 | 760 |
| ABS | 1340 | 1270 | 1290 | 1250 | 1230 | 1290 | 1380 |
| regranulates ⁵ | | | | | | | |
| PC regrind | 790 | 810 | 830 | 900 | 880 | 920 | 870 |
| PC regranulates ⁵ | 1950 | 1800 | 1870 | 1750 | 1760 | 1720 | 1960 |
| PBT regrind | 470 | 500 | 490 | 470 | 440 | 450 | 490 |
| PBT regranulates | 1470 | 1600 | 1620 | 1710 | 1680 | 1640 | 1540 |
| PA 6 regrind | 950 | 920 | 930 | 970 | 950 | 910 | 1040 |
| PA 6 | 1490 | 1590 | 1600 | 1610 | 1610 | 1720 | 1830 |
| regranulates5 | | | | | | | |
| PA 6.6 regrind | 920 | 920 | 870 | 920 | 950 | 970 | 1060 |
| PA 6.6 | 1640 | 1730 | 1760 | 1800 | 1690 | 1790 | 1970 |
| regranulates5 | | | | | | | |
| POM regrind | 610 | 590 | 590 | 600 | 600 | 570 | 620 |
| POM | 1670 | 1490 | 1430 | 1530 | 1550 | 1420 | 1580 |
| regranulates ⁵ | | | | | | | |
| Average Price | (1163) | 1156 | 1163 | 1184 | 1168 | 1168 | 1258 |

^{5:} equivalent to the grade "regranulates, black"; 6: preview that may be amended by additional quotes

No guarantee for any of the prices. All EUWID prices are quoted ex works. As a rule, the prices quoted refer to quantities in excess of 20 tons. The monthly quotes for **secondary plastics**, 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** (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. 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, Wednesday 24 August 2016

Dr Thomas Probst, byse