

Tuesday, June 16, 2020 | weekly publication

## **Tuesday Espresso**

## **Weekly Commodity Roundup**

Analysts: Kamil Kliszcz +48 22 438 24 02, Jakub Szkopek +48 22 438 24 03

#### Utilities

EEX German power futures have dropped by 2 euros to EUR 38/MWh over the week under pressure from declining ARA coal quotes. Emission allowances have settled above EUR 22/t.

In Poland, contracts for 2021 deliveries have experienced little movement over the recent days, implying stable clean-dark spreads for local coal plants.

Utility stocks in Europe and the US have shed about 3-4% – a reflection of bullish sentiment that swept through the markets. In Poland, sentiment continues to be shaped by the government's emerging energy agenda, which may include the separation of coal-producing assets from power generators. The potential implications of such spin-offs have triggered different reactions from the market depending on the stock.

Note that, in a scenario where the coal-mine spin-off includes all their debts (up to 2.5x EBITDA), in case of Tauron the EV/EBITDA valuation of the separated generation assets would far exceed those of competitors. Stocks in Energa have had no reaction so far to the changing market landscape, which is baffling considering the instant upgrade it got from the nixing of the Ostrołęka project while other utilities have to wait while lawmakers mull over various ideas for our energy future.

#### Gas & Oil

Refining margins remain squeezed, with slim cracking spreads on gasoline and diesel as petroleum inventories continue to rise (diesel stocks at the ARA hub are up 18% on the year) amid higher imports from China. The Urals-Brent differential is still negative at -\$1.4.

Margins on petrochemicals have bounced back from last week's lows but remain at low levels. This includes thin margins on purified terephthalic acid produced by PKN Orlen.

Gas prices on the EU's 1-month-forward market are currently hovering around EUR 5/MWh while contracts for 2021 delivery hold above EUR 12/MWh. European gas storage levels remain higher than this time last year at 76% vs. 67% in June 2019 and a 5-year average of 51%. That being said, the rate of the build-up is decreasing, offering hope that summer prices on the spot market will not shift into the negative territory.

## **Chart of the Week**



Source: Bloomberg, mBank

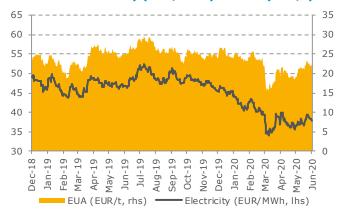
# Polish power use mid- and post-lockdown Polish electricity consumption fell 9.8% in April and 8.9% in May compared to the corresponding periods in 2019, and it seems toot be down by about as much in the first two weeks of June – though comparisons are made difficult by the floating dates of the Corpus Christi feast, which falls on a Thursday in June with many Poles taking the following Friday off to make it a long weekend. Looking at 28-day moving averages, the declines in demand narrowed to 6-7% after lockdown restrictions started to ease, only to accelerate again in June with Corpus Christi falling on the 11th this year versus the 20th in 2019.

## 1-Week & YTD Performance

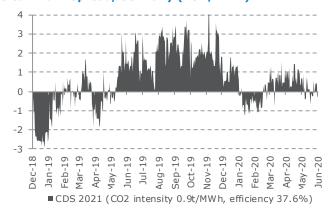
Company         1W         YTD           OMV         -14.5%         -39%           PKN Orlen         -12.4%         -27%           Lotos         -10.0%         -29%           KGHM         -6.5%         -11%           LW Bogdanka         -6.3%         -36%           ZCh Police         -6.2%         30%           Ciech         -6.0%         -17%           Grupa Azoty         -5.1%         8%           MOL         -4.9%         -34%           Tarczyński         -4.8%         -13%           PCC Rokita         -4.6%         -4%           ZA Puławy         -4.3%         1%           Tupras         -3.8%         -32%           A lumetal         -2.5%         -3%           CEZ         -2.4%         -4%           Kruszwica         -2.3%         21%           Kety         -1.1%         6%           JSW         -0.8%         -11%           Kernel         -0.6%         -5%           Energa         -0.5%         14%           Boryszew         0.4%         -14%           Orzeł Biały         1.3%         -12%	1-Week & YTI	Perform	mance
PKN Orlen         -12.4%         -27%           Lotos         -10.0%         -29%           KGHM         -6.5%         -11%           LW Bogdanka         -6.3%         -36%           ZCh Police         -6.2%         30%           Ciech         -6.0%         -17%           Grupa Azoty         -5.1%         8%           MOL         -4.9%         -34%           Tarczyński         -4.8%         -13%           PCC Rokita         -4.6%         -4%           ZA Puławy         -4.3%         1%           Tupras         -3.8%         -32%           Alumetal         -2.5%         -3%           CEZ         -2.4%         -4%           Kruszwica         -2.3%         21%           Kęty         -1.1%         6%           JSW         -0.8%         -11%           Kety         -1.1%         6%           DSW         -0.8%         -11%           Energa         -0.5%         14%           Boryszew         0.4%         -14%           Orzeł Biały         1.3%         6%           Energ         1.6%         -11%           <	Company	1W	YTD
Lotos         -10.0%         -29%           KGHM         -6.5%         -11%           LW Bogdanka         -6.3%         -36%           ZCh Police         -6.2%         30%           Ciech         -6.0%         -17%           Grupa Azoty         -5.1%         8%           MOL         -4.9%         -34%           Tarczyński         -4.8%         -13%           PCC Rokita         -4.6%         -4%           ZA Puławy         -4.3%         1%           Tupras         -3.8%         -32%           Alumetal         -2.5%         -3%           CEZ         -2.4%         -4%           Kruszwica         -2.3%         21%           Kety         -1.1%         6%           JSW         -0.8%         -11%           Kety         -1.1%         6%           JSW         -0.8%         -11%           Kernel         -0.6%         -5%           Energa         0.5%         14%           Boryszew         0.4%         -14%           Orzeł Biały         1.3%         -12%           Enea         1.6%         -11%           ZE	OMV	-14.5%	-39%
KGHM       -6.5%       -11%         LW Bogdanka       -6.3%       -36%         ZCh Police       -6.2%       30%         Ciech       -6.0%       -17%         Grupa Azoty       -5.1%       8%         MOL       -4.9%       -34%         Tarczyński       -4.8%       -13%         PCC Rokita       -4.6%       -4%         ZA Puławy       -4.3%       1%         Tupras       -3.8%       -32%         Alumetal       -2.5%       -3%         CEZ       -2.4%       -4%         Kruszwica       -2.3%       21%         Kęty       -1.1%       6%         JSW       -0.8%       -11%         Kernel       -0.6%       -5%         Energa       -0.5%       14%         Boryszew       0.4%       -14%         Orzeł Biały       1.3%       -12%         Enea       1.6%       -11%         ZE PAK       3.0%       6%         PGNiG       5.0%       8%         IMC       5.3%       3%         Astarta       9.4%       13%         PGE       17.9%       -6% <td>PKN Orlen</td> <td>-12.4%</td> <td>-27%</td>	PKN Orlen	-12.4%	-27%
LW Bogdanka       -6.3%       -36%         ZCh Police       -6.2%       30%         Ciech       -6.0%       -17%         Grupa Azoty       -5.1%       8%         MOL       -4.9%       -34%         Tarczyński       -4.8%       -13%         PCC Rokita       -4.6%       -4%         ZA Puławy       -4.3%       1%         Tupras       -3.8%       -32%         Alumetal       -2.5%       -3%         CEZ       -2.4%       -4%         Kruszwica       -2.3%       21%         Kęty       -1.1%       6%         JSW       -0.8%       -11%         Kernel       -0.6%       -5%         Energa       -0.5%       14%         Boryszew       0.4%       -14%         Orzeł Biały       1.3%       -12%         Enea       1.6%       -11%         ZE PAK       3.0%       6%         PGNIG       5.0%       8%         IMC       5.3%       3%         Astarta       9.4%       13%         PGE       17.9%       -6%         Tauron       43.8%       28% </td <td>Lotos</td> <td>-10.0%</td> <td>-29%</td>	Lotos	-10.0%	-29%
ZCh Police       -6.2%       30%         Ciech       -6.0%       -17%         Grupa Azoty       -5.1%       8%         MOL       -4.9%       -34%         Tarczyński       -4.8%       -13%         PCC Rokita       -4.6%       -4%         ZA Puławy       -4.3%       1%         Tupras       -3.8%       -32%         Alumetal       -2.5%       -3%         CEZ       -2.4%       -4%         Kety       -1.1%       6%         JSW       -0.8%       -11%         Kernel       -0.6%       -5%         Energa       -0.5%       14%         Boryszew       0.4%       -14%         Orzeł Biały       1.3%       -12%         Enea       1.6%       -11%         ZE PAK       3.0%       6%         PGNiG       5.0%       8%         IMC       5.3%       3%         Astarta       9.4%       13%         PGE       17.9%       -6%         Tauron       43.8%       28%         WIG Indices       1W       YTD         WIG Gas       -8.1%       -21%	KGHM	-6.5%	-11%
Ciech       -6.0%       -17%         Grupa Azoty       -5.1%       8%         MO L       -4.9%       -34%         Tarczyński       -4.8%       -13%         PCC Rokita       -4.6%       -4%         ZA Puławy       -4.3%       1%         Tupras       -3.8%       -32%         Alumetal       -2.5%       -3%         CEZ       -2.4%       -4%         Kety       -1.1%       6%         JSW       -0.8%       -11%         Kernel       -0.6%       -5%         Energa       -0.5%       14%         Boryszew       0.4%       -14%         Orzeł Biały       1.3%       -12%         Enea       1.6%       -11%         ZE PAK       3.0%       6%         PGNiG       5.0%       8%         IMC       5.3%       3%         Astarta       9.4%       13%         PGE       17.9%       -6%         Tauron       43.8%       28%         WIG Indices       1W       YTD         WIG Gas       -8.1%       -21%         Chemicals       -5.5%       -1%	LW Bogdanka	-6.3%	-36%
Grupa Azoty       -5.1%       8%         MOL       -4.9%       -34%         Tarczyński       -4.8%       -13%         PCC Rokita       -4.6%       -4%         ZA Puławy       -4.3%       1%         Tupras       -3.8%       -32%         Alumetal       -2.5%       -3%         CEZ       -2.4%       -4%         Kruszwica       -2.3%       21%         Kęty       -1.1%       6%         JSW       -0.8%       -11%         Kernel       -0.6%       -5%         Energa       -0.5%       14%         Boryszew       0.4%       -14%         O rzeł Biały       1.3%       -12%         Enea       1.6%       -11%         ZE PAK       3.0%       6%         PGNiG       5.0%       8%         IMC       5.3%       3%         Astarta       9.4%       13%         PGE       17.9%       -6%         Tauron       43.8%       28%         WIG Indices       1W       YTD         WIG Gas       -8.1%       -21%         Chemicals       -5.5%       -1% <td>ZCh Police</td> <td>-6.2%</td> <td>30%</td>	ZCh Police	-6.2%	30%
MOL	Ciech	-6.0%	-17%
Tarczyński         -4.8%         -13%           PCC Rokita         -4.6%         -4%           ZA Puławy         -4.3%         1%           Tupras         -3.8%         -32%           Alumetal         -2.5%         -3%           CEZ         -2.4%         -4%           Kruszwica         -2.3%         21%           Kęty         -1.1%         6%           JSW         -0.8%         -11%           Kernel         -0.6%         -5%           Energa         -0.5%         14%           Boryszew         0.4%         -14%           Orzeł Biały         1.3%         -12%           Enea         1.6%         -11%           ZE PAK         3.0%         6%           PGNIG         5.0%         8%           IMC         5.3%         3%           Astarta         9.4%         13%           PGE         17.9%         -6%           Tauron         43.8%         28%           WIG Indices         1W         YTD           WIG Chemicals         -5.5%         -1%           Energy         14.1%         1%           Oil & Gas <td>Grupa Azoty</td> <td>-5.1%</td> <td>8 %</td>	Grupa Azoty	-5.1%	8 %
PCC Rokita       -4.6%       -4%         ZA Puławy       -4.3%       1%         Tupras       -3.8%       -32%         Alumetal       -2.5%       -3%         CEZ       -2.4%       -4%         Kruszwica       -2.3%       21%         Kęty       -1.1%       6%         JSW       -0.8%       -11%         Kernel       -0.6%       -5%         Energa       -0.5%       14%         Boryszew       0.4%       -14%         Orzeł Biały       1.3%       -12%         Enea       1.6%       -11%         ZE PAK       3.0%       6%         PGNIG       5.0%       8%         IMC       5.3%       3%         Astarta       9.4%       13%         PGE       17.9%       -6%         Tauron       43.8%       28%         WIG Indices       1W       YTD         WIG Chemicals       -5.5%       -1%         Energy       14.1%       1%         Oil & Gas       -8.1%       -21%         Food Industry       -1.1%       -1%         Basic Material       -6.1%       -12%<	MOL	-4.9%	-34%
ZA Puławy       -4.3%       1%         Tupras       -3.8%       -32%         Alumetal       -2.5%       -3%         CEZ       -2.4%       -4%         Kruszwica       -2.3%       21%         Kęty       -1.1%       6%         JSW       -0.8%       -11%         Kernel       -0.6%       -5%         Energa       -0.5%       14%         Boryszew       0.4%       -14%         O rzeł Biały       1.3%       -12%         Enea       1.6%       -11%         ZE PAK       3.0%       6%         PGNIG       5.0%       8%         IMC       5.3%       3%         A starta       9.4%       13%         PGE       17.9%       -6%         Tauron       43.8%       28%         WIG Indices       1W       YTD         WIG Chemicals       -5.5%       -1%         Energy       14.1%       1%         Oil & Gas       -8.1%       -21%         Food Industry       -1.1%       -1%         Basic Material       -6.1%       -12%         Ukraine       1.4%       -32% </td <td>Tarczyński</td> <td>-4.8%</td> <td>-13%</td>	Tarczyński	-4.8%	-13%
Tupras	PCC Rokita	-4.6%	-4%
A lumetal       -2.5%       -3%         CEZ       -2.4%       -4%         Kruszwica       -2.3%       21%         Kęty       -1.1%       6%         JSW       -0.8%       -11%         Kernel       -0.6%       -5%         Energa       -0.5%       14%         Boryszew       0.4%       -14%         Orzeł Biały       1.3%       -12%         Enea       1.6%       -11%         ZE PAK       3.0%       6%         PGNiG       5.0%       8%         IMC       5.3%       3%         A starta       9.4%       13%         PGE       17.9%       -6%         Tauron       43.8%       28%         WIG       -4.8%       -15%         Chemicals       -5.5%       -1%         Energy       14.1%       1%         Oil & Gas       -8.1%       -21%         Food Industry       -1.1%       -1%         Basic Material       -6.1%       -12%         Ukraine       1.4%       0%         Sector Indices       1W       YTD         Mining       -4.9%       -7%	ZA Puławy	-4.3%	1 %
CEZ       -2.4%       -4%         Kruszwica       -2.3%       21%         Kęty       -1.1%       6%         JSW       -0.8%       -11%         Kernel       -0.6%       -5%         Energa       -0.5%       14%         Boryszew       0.4%       -14%         Orzeł Biały       1.3%       -12%         Enea       1.6%       -11%         ZE PAK       3.0%       6%         PGNiG       5.0%       8%         IMC       5.3%       3%         Astarta       9.4%       13%         PGE       17.9%       -6%         Tauron       43.8%       28%         WIG Indices       1W       YTD         WIG Sas       -8.1%       -21%         Chemicals       -5.5%       -1%         Energy       14.1%       1%         Oil & Gas       -8.1%       -21%         Food Industry       -1.1%       -1%         Basic Material       -6.1%       -12%         Ukraine       1.4%       0%         Sector Indices       1W       YTD         Mining       -4.9%       -7%	Tupras	-3.8%	-32%
Kruszwica       -2.3%       21%         Kęty       -1.1%       6%         JSW       -0.8%       -11%         Kernel       -0.6%       -5%         Energa       -0.5%       14%         Boryszew       0.4%       -14%         Orzeł Biały       1.3%       -12%         Enea       1.6%       -11%         ZE PAK       3.0%       6%         PGNiG       5.0%       8%         IMC       5.3%       3%         Astarta       9.4%       13%         PGE       17.9%       -6%         Tauron       43.8%       28%         WIG Indices       1W       YTD         WIG Chemicals       -5.5%       -1%         Energy       14.1%       1%         Oil & Gas       -8.1%       -21%         Food Industry       -1.1%       -1%         Basic Material       -6.1%       -12%         Ukraine       1.4%       0%         Sector Indices       1W       YTD         Mining       -4.9%       -7%         Oil & Gas E&P       -15.8%       -40%         Refining EU       -8.6%	Alumetal	-2.5%	-3%
Kęty       -1.1%       6%         JSW       -0.8%       -11%         Kernel       -0.6%       -5%         Energa       -0.5%       14%         Boryszew       0.4%       -14%         Orzeł Biały       1.3%       -12%         Enea       1.6%       -11%         ZE PAK       3.0%       6%         PGNIG       5.0%       8%         IMC       5.3%       3%         Astarta       9.4%       13%         PGE       17.9%       -6%         Tauron       43.8%       28%         WIG Indices       1W       YTD         WIG Chemicals       -5.5%       -1%         Energy       14.1%       1%         Oil & Gas       -8.1%       -21%         Food Industry       -1.1%       -1%         Basic Material       -6.1%       -12%         Ukraine       1.4%       0%         Sector Indices       1W       YTD         Mining       -4.9%       -7%         Oil & Gas E&P       -15.8%       -40%         Refining US       -14.4%       -32%         Agri & Food       -1.3% <td>CEZ</td> <td>-2.4%</td> <td>-4%</td>	CEZ	-2.4%	-4%
JSW -0.8% -11%  Kernel -0.6% -5%  Energa -0.5% 14%  Boryszew 0.4% -144%  Orzeł Biały 1.3% -12%  Enea 1.6% -111%  ZE PAK 3.0% 6%  PGNIG 5.0% 8%  IMC 5.3% 3%  Astarta 9.4% 13%  PGE 17.9% -6%  Tauron 43.8% 28%  WIG Indices 1W YTD  WIG -4.8% -15%  Chemicals -5.5% -1%  Energy 14.1% 1%  Oil & Gas -8.1% -21%  Food Industry -1.1% -1%  Basic Material -6.1% -12%  Ukraine 1.4% 0%  Sector Indices 1W YTD  Mining -4.9% -7%  Oil & Gas E&P -15.8% -40%  Refining EU -8.6% -26%  Refining US -14.4% -32%  Agri & Food -1.3% -3%  Rubber -11.1% -25%  Fertilizers -5.1% -10%  Chemicals EU -3.9% -6%  Industrials EU -7.1% -17%  Petchem World -8.5% -20%  Utilities EU -4.2% -3%	Kruszwica	-2.3%	21%
JSW         -0.8%         -11%           Kernel         -0.6%         -5%           Energa         -0.5%         14%           Boryszew         0.4%         -14%           Orzeł Biały         1.3%         -12%           Enea         1.6%         -11%           ZE PAK         3.0%         6%           PGNIG         5.0%         8%           IMC         5.3%         3%           Astarta         9.4%         13%           PGE         17.9%         -6%           Tauron         43.8%         28%           WIG Indices         1W         YTD           WIG Chemicals         -5.5%         -1%           Energy         14.1%         1%           Oil & Gas         -8.1%         -21%           Food Industry         -1.1%         -1%           Basic Material         -6.1%         -12%           Ukraine         1.4%         0%           Sector Indices         1W         YTD           Mining         -4.9%         -7%           Oil & Gas E&P         -15.8%         -40%           Refining EU         -8.6%         -26% <t< td=""><td>Kęty</td><td>-1.1%</td><td>6%</td></t<>	Kęty	-1.1%	6%
Energa         -0.5%         14%           Boryszew         0.4%         -14%           Orzeł Biały         1.3%         -12%           Enea         1.6%         -11%           ZE PAK         3.0%         6%           PGNiG         5.0%         8%           IMC         5.3%         3%           A starta         9.4%         13%           PGE         17.9%         -6%           Tauron         43.8%         28%           WIG Indices         1W         YTD           WIG         -4.8%         -15%           Chemicals         -5.5%         -1%           Energy         14.1%         1%           Oil & Gas         -8.1%         -21%           Food Industry         -1.1%         -1%           Basic Material         -6.1%         -12%           Ukraine         1.4%         0%           Sector Indices         1W         YTD           Mining         -4.9%         -7%           Oil & Gas E&P         -15.8%         -40%           Refining EU         -8.6%         -26%           Refining US         -14.4%         -32%		-0.8%	-11%
Boryszew 0.4% -14% Orzeł Biały 1.3% -12% Enea 1.6% -11% ZE PAK 3.0% 6% PGNiG 5.0% 8% IMC 5.3% 3% Astarta 9.4% 13% PGE 17.9% -6% Tauron 43.8% 28% WIG Indices 1W YTD WIG -4.8% -15% Chemicals -5.5% -1% Energy 14.1% 1% 0il & Gas -8.1% -21% Food Industry -1.1% -12% Ukraine 1.4% 0% Sector Indices 1W YTD Mining -4.9% -7% Oil & Gas E&P -15.8% -40% Refining EU -8.6% -26% Refining US -14.4% -32% Agri & Food -1.3% -3% Rubber -11.1% -25% Fertilizers -5.1% -10% Chemicals EU -3.9% -6% Industrials EU -7.1% -17% Petchem World -8.5% -20% Utilities EU -4.2% -3%	Kernel	-0.6%	-5%
Boryszew 0.4% -14% Orzeł Biały 1.3% -12% Enea 1.6% -111% ZE PAK 3.0% 6% PGNiG 5.0% 8% IMC 5.3% 3% Astarta 9.4% 13% PGE 17.9% -6% Tauron 43.8% 28% WIG Indices 1W YTD WIG -4.8% -15% Chemicals -5.5% -1% Energy 14.1% 1% 0il & Gas -8.1% -21% Food Industry -1.1% -12% Ukraine 1.4% 0% Sector Indices 1W YTD Mining -4.9% -7% Oil & Gas E&P -15.8% -40% Refining EU -8.6% -26% Refining US -14.4% -32% Agri & Food -1.3% -3% Rubber -11.1% -25% Fertilizers -5.1% -10% Chemicals EU -3.9% -6% Industrials EU -7.1% -17% Petchem World -8.5% -20% Utilities EU -4.2% -3%	Energa	-0.5%	14%
Enea 1.6% -11% ZE PAK 3.0% 6% PGNIG 5.0% 8% IMC 5.3% 3% Astarta 9.4% 13% PGE 17.9% -6% Tauron 43.8% 28% WIG Indices 1W YTD WIG -4.8% -15% Chemicals -5.5% -1% Energy 14.1% 1% 0il & Gas -8.1% -21% Food Industry -1.1% -1% Basic Material -6.1% -12% Ukraine 1.4% 0% Sector Indices 1W YTD Mining -4.9% -7% Oil & Gas E&P -15.8% -40% Refining EU -8.6% -26% Refining US -14.4% -32% Agri & Food -1.3% -3% Rubber -11.1% -25% Fertilizers -5.1% -10% Chemicals EU -3.9% -6% Industrials EU -7.1% -17% Petchem World -8.5% -20% Utilities EU -4.2% -3%	_	0.4%	-14%
Enea 1.6% -11% ZE PAK 3.0% 6% PGNIG 5.0% 8% IMC 5.3% 3% Astarta 9.4% 13% PGE 17.9% -6% Tauron 43.8% 28% WIG Indices 1W YTD WIG -4.8% -15% Chemicals -5.5% -1% Energy 14.1% 1% 0il & Gas -8.1% -21% Food Industry -1.1% -1% Basic Material -6.1% -12% Ukraine 1.4% 0% Sector Indices 1W YTD Mining -4.9% -7% Oil & Gas E&P -15.8% -40% Refining EU -8.6% -26% Refining US -14.4% -32% Agri & Food -1.3% -3% Rubber -11.1% -25% Fertilizers -5.1% -10% Chemicals EU -3.9% -6% Industrials EU -7.1% -17% Petchem World -8.5% -20% Utilities EU -4.2% -3%	Orzeł Biały	1.3%	-12%
PGNIG         5.0 %         8 %           IMC         5.3 %         3 %           Astarta         9.4 %         13 %           PGE         17.9 %         -6 %           Tauron         43.8 %         28 %           WIG Indices         IW         YTD           WIG         -4.8 %         -15 %           Chemicals         -5.5 %         -1 %           Energy         14.1 %         1 %           Oil & Gas         -8.1 %         -21 %           Food Industry         -1.1 %         -1 %           Passic Material         -6.1 %         -12 %           Ukraine         1.4 %         0 %           Sector Indices         1W         YTD           Mining         -4.9 %         -7 %           Oil & Gas E&P         -15.8 %         -40 %           Refining EU         -8.6 %         -26 %           Refining US         -14.4 %         -32 %           Agri & Food         -1.3 %         -3 %           Rubber         -11.1 %         -25 %           Fertilizers         -5.1 %         -10 %           Chemicals EU         -3.9 %         -6 %           Industrials		1.6%	-11%
IMC       5.3%       3%         Astarta       9.4%       13%         PGE       17.9%       -6%         Tauron       43.8%       28%         WIG Indices       1W       YTD         WIG       -4.8%       -15%         Chemicals       -5.5%       -1%         Energy       14.1%       1%         Oil & Gas       -8.1%       -21%         Food Industry       -1.1%       -1%         Basic Material       -6.1%       -12%         Ukraine       1.4%       0%         Sector Indices       1W       YTD         Mining       -4.9%       -7%         Oil & Gas E&P       -15.8%       -40%         Refining EU       -8.6%       -26%         Refining US       -14.4%       -32%         Agri & Food       -1.3%       -3%         Rubber       -11.1%       -25%         Fertilizers       -5.1%       -10%         Chemicals EU       -3.9%       -6%         Industrials EU       -7.1%       -17%         Petchem World       -8.5%       -20%         Utilities EU       -4.2%       -3% <td>ZE PAK</td> <td>3.0%</td> <td>6%</td>	ZE PAK	3.0%	6%
IMC       5.3%       3%         A starta       9.4%       13%         PGE       17.9%       -6%         Tauron       43.8%       28%         WIG Indices       1W       YTD         WIG       -4.8%       -15%         Chemicals       -5.5%       -1%         Energy       14.1%       1%         Oil & Gas       -8.1%       -21%         Food Industry       -1.1%       -1%         Basic Material       -6.1%       -12%         Ukraine       1.4%       0%         Sector Indices       1W       YTD         Mining       -4.9%       -7%         Oil & Gas E&P       -15.8%       -40%         Refining EU       -8.6%       -26%         Refining US       -14.4%       -32%         Agri & Food       -1.3%       -3%         Rubber       -11.1%       -25%         Fertilizers       -5.1%       -10%         Chemicals EU       -3.9%       -6%         Industrials EU       -7.1%       -17%         Petchem World       -8.5%       -20%         Utilities EU       -4.2%       -3% <td>PGNiG</td> <td>5.0%</td> <td>8%</td>	PGNiG	5.0%	8%
Astarta 9.4% 13% PGE 17.9% -6% Tauron 43.8% 28%  WIG Indices 1W YTD  WIG -4.8% -15% Chemicals -5.5% -1% Energy 14.1% 1% Oil & Gas -8.1% -21% Food Industry -1.1% -1% Basic Material -6.1% -12% Ukraine 1.4% 0%  Sector Indices 1W YTD  Mining -4.9% -7% Oil & Gas E&P -15.8% -40% Refining EU -8.6% -26% Refining US -14.4% -32% Agri & Food -1.3% -32% Agri & Food -1.3% -35% Fertilizers -5.1% -10% Chemicals EU -3.9% -6% Industrials EU -7.1% -17% Petchem World -8.5% -20% Utilities EU -4.2% -3%		5.3%	3%
PGE         17.9%         -6%           Tauron         43.8%         28%           WIG Indices         1W         YTD           WIG         -4.8%         -15%           Chemicals         -5.5%         -1%           Energy         14.1%         1%           Oil & Gas         -8.1%         -21%           Food Industry         -1.1%         -1%           Basic Material         -6.1%         -12%           Ukraine         1.4%         0%           Sector Indices         1W         YTD           Mining         -4.9%         -7%           Oil & Gas E&P         -15.8%         -40%           Refining EU         -8.6%         -26%           Refining US         -14.4%         -32%           Agri & Food         -1.3%         -3%           Rubber         -11.1%         -25%           Fertilizers         -5.1%         -10%           Chemicals EU         -3.9%         -6%           Industrials EU         -7.1%         -17%           Petchem World         -8.5%         -20%           Utilities EU         -4.2%         -3%	Astarta		13%
Tauron         43.8%         28%           WIG Indices         1W         YTD           WIG         -4.8%         -15%           Chemicals         -5.5%         -1%           Energy         14.1%         1%           Oil & Gas         -8.1%         -21%           Food Industry         -1.1%         -1%           Basic Material         -6.1%         -12%           Ukraine         1.4%         0%           Sector Indices         1W         YTD           Mining         -4.9%         -7%           Oil & Gas E&P         -15.8%         -40%           Refining EU         -8.6%         -26%           Refining US         -14.4%         -32%           Agri & Food         -1.3%         -3%           Rubber         -11.1%         -25%           Fertilizers         -5.1%         -10%           Chemicals EU         -3.9%         -6%           Industrials EU         -7.1%         -17%           Petchem World         -8.5%         -20%           Utilities EU         -4.2%         -3%		17.9%	-6%
WIG Indices         1W         YTD           WIG         -4.8%         -15%           Chemicals         -5.5%         -1%           Energy         14.1%         1%           Oil & Gas         -8.1%         -21%           Food Industry         -1.1%         -1%           Basic Material         -6.1%         -12%           Ukraine         1.4%         0%           Sector Indices         1W         YTD           Mining         -4.9%         -7%           Oil & Gas E&P         -15.8%         -40%           Refining EU         -8.6%         -26%           Refining US         -14.4%         -32%           Agri & Food         -1.3%         -3%           Rubber         -11.1%         -25%           Fertilizers         -5.1%         -10%           Chemicals EU         -3.9%         -6%           Industrials EU         -7.1%         -17%           Petchem World         -8.5%         -20%           Utilities EU         -4.2%         -3%			
WIG       -4.8%       -15%         Chemicals       -5.5%       -1%         Energy       14.1%       1%         Oil & Gas       -8.1%       -21%         Food Industry       -1.1%       -1%         Basic Material       -6.1%       -12%         Ukraine       1.4%       0%         Sector Indices       1W       YTD         Mining       -4.9%       -7%         Oil & Gas E&P       -15.8%       -40%         Refining EU       -8.6%       -26%         Refining US       -14.4%       -32%         Agri & Food       -1.3%       -3%         Rubber       -11.1%       -25%         Fertilizers       -5.1%       -10%         Chemicals EU       -3.9%       -6%         Industrials EU       -7.1%       -17%         Petchem World       -8.5%       -20%         Utilities EU       -4.2%       -3%			
Chemicals       -5.5%       -1%         Energy       14.1%       1%         Oil & Gas       -8.1%       -21%         Food Industry       -1.1%       -1%         Basic Material       -6.1%       -12%         Ukraine       1.4%       0%         Sector Indices       1W       YTD         Mining       -4.9%       -7%         Oil & Gas E&P       -15.8%       -40%         Refining EU       -8.6%       -26%         Refining US       -14.4%       -32%         A gri & Food       -1.3%       -3%         Rubber       -11.1%       -25%         Fertilizers       -5.1%       -10%         Chemicals EU       -3.9%       -6%         Industrials EU       -7.1%       -17%         Petchem World       -8.5%       -20%         Utilities EU       -4.2%       -3%			
Energy 14.1% 1% O il & Gas -8.1% -21% Food Industry -1.1% -1% Basic Material -6.1% -12% Ukraine 1.4% 0% Sector Indices 1W YTD Mining -4.9% -7% O il & Gas E&P -15.8% -40% Refining EU -8.6% -26% Refining US -14.4% -32% A gri & Food -1.3% -3% Rubber -11.1% -25% Fertilizers -5.1% -10% C hemicals EU -3.9% -6% Industrials EU -7.1% -17% Petchem World -8.5% -20% Utilities EU -4.2% -3%			
Oil & Gas	Energy		
Food Industry         -1.1%         -1%           Basic Material         -6.1%         -12%           Ukraine         1.4%         0%           Sector Indices         1W         YTD           Mining         -4.9%         -7%           Oil & Gas E&P         -15.8%         -40%           Refining EU         -8.6%         -26%           Refining US         -14.4%         -32%           Agri & Food         -1.3%         -3%           Rubber         -11.1%         -25%           Fertilizers         -5.1%         -10%           Chemicals EU         -3.9%         -6%           Industrials EU         -7.1%         -17%           Petchem World         -8.5%         -20%           Utilities EU         -4.2%         -3%			
Basic Material         -6.1%         -12%           Ukraine         1.4%         0%           Sector Indices         1W         YTD           Mining         -4.9%         -7%           Oil & Gas E&P         -15.8%         -40%           Refining EU         -8.6%         -26%           Refining US         -14.4%         -32%           Agri & Food         -1.3%         -3%           Rubber         -11.1%         -25%           Fertilizers         -5.1%         -10%           Chemicals EU         -3.9%         -6%           Industrials EU         -7.1%         -17%           Petchem World         -8.5%         -20%           Utilities EU         -4.2%         -3%			
Ukraine         1.4%         0%           Sector Indices         1W         YTD           Mining         -4.9%         -7%           Oil & Gas E&P         -15.8%         -40%           Refining EU         -8.6%         -26%           Refining US         -14.4%         -32%           A gri & Food         -1.3%         -3%           Rubber         -11.1%         -25%           Fertilizers         -5.1%         -10%           Chemicals EU         -3.9%         -6%           Industrials EU         -7.1%         -17%           Petchem World         -8.5%         -20%           Utilities EU         -4.2%         -3%	*		-12%
Sector Indices         1W         YTD           Mining         -4.9%         -7%           Oil & Gas E&P         -15.8%         -40%           Refining EU         -8.6%         -26%           Refining US         -14.4%         -32%           A gri & Food         -1.3%         -3%           Rubber         -11.1%         -25%           Fertilizers         -5.1%         -10%           Chemicals EU         -3.9%         -6%           Industrials EU         -7.1%         -17%           Petchem World         -8.5%         -20%           Utilities EU         -4.2%         -3%			
Mining -4.9% -7% Oil & Gas E&P -15.8% -40% Refining EU -8.6% -26% Refining US -14.4% -32% A gri & Food -1.3% -3% Rubber -11.1% -25% Fertilizers -5.1% -10% Chemicals EU -3.9% -6% Industrials EU -7.1% -17% Petchem World -8.5% -20% Utilities EU -4.2% -3%			
Oil & Gas E&P -15.8% -40% Refining EU -8.6% -26% Refining US -14.4% -32% Agri & Food -1.3% -3% Rubber -11.1% -25% Fertilizers -5.1% -10% Chemicals EU -3.9% -6% Industrials EU -7.1% -17% Petchem World -8.5% -20% Utilities EU -4.2% -3%			
Refining EU       -8.6%       -26%         Refining US       -14.4%       -32%         Agri & Food       -1.3%       -3%         Rubber       -11.1%       -25%         Fertilizers       -5.1%       -10%         Chemicals EU       -3.9%       -6%         Industrials EU       -7.1%       -17%         Petchem World       -8.5%       -20%         Utilities EU       -4.2%       -3%	_		
Refining US       -14.4%       -32%         A gri & Food       -1.3%       -3%         Rubber       -11.1%       -25%         Fertilizers       -5.1%       -10%         Chemicals EU       -3.9%       -6%         Industrials EU       -7.1%       -17%         Petchem World       -8.5%       -20%         Utilities EU       -4.2%       -3%		-8.6%	
A gri & Food -1.3% -3% Rubber -11.1% -25% Fertilizers -5.1% -10% Chemicals EU -3.9% -6% Industrials EU -7.1% -17% Petchem World -8.5% -20% Utilities EU -4.2% -3%	_		
Rubber -11.1% -25% Fertilizers -5.1% -10% Chemicals EU -3.9% -6% Industrials EU -7.1% -17% Petchem World -8.5% -20% Utilities EU -4.2% -3%	_		
Fertilizers -5.1% -10% Chemicals EU -3.9% -6% Industrials EU -7.1% -17% Petchem World -8.5% -20% Utilities EU -4.2% -3%	-		
Chemicals EU -3.9% -6% Industrials EU -7.1% -17% Petchem World -8.5% -20% Utilities EU -4.2% -3%			
Industrials EU       -7.1%       -17%         Petchem World       -8.5%       -20%         Utilities EU       -4.2%       -3%			
Petchem World         -8.5%         -20%           Utilities EU         -4.2%         -3%			
Utilities EU -4.2% -3%			
	Utilities US		

## **Utilities**

## EU Prices of Electricity (EUR/MWh) & EUAs (EUR/t)



## Clean-Dark Spread, Germany (EUR/MWh)



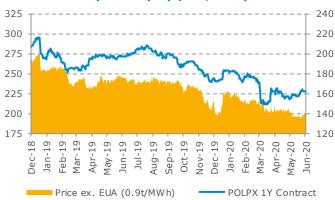
## Poland-Germany Power Price Spread (PLN/MWh)



#### ARA Coal Spot and Forward Prices (EUR/t)



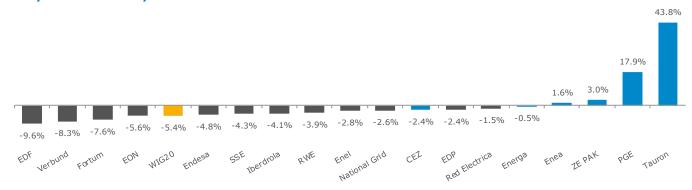
#### Polish Electricity Prices (1Y) (PLN/MWh)



## **Polish Green Certificate Prices (PLN/MWh)**



## **Weekly Returns of Utility Stocks**



## **Utilities**

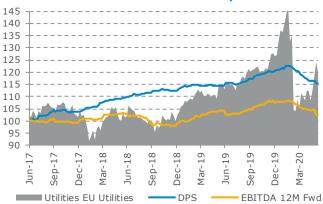




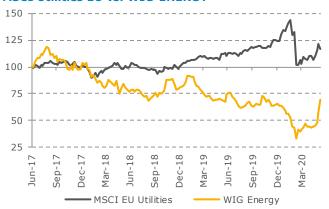
## S&P Utilities vs. S&P 500 P/E



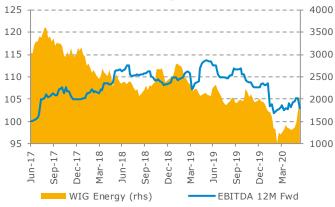
#### **MSCI Utilities EU vs. DPS & EBITDA Expectations**



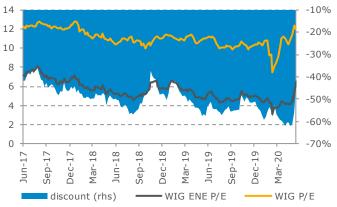
**MSCI Utilities EU vs. WIG-ENERGY** 



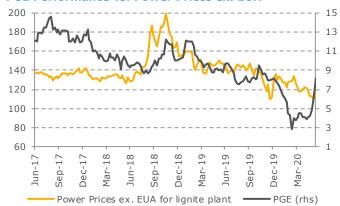
## WIG-ENERGY vs. EBITDA Expectations



WIG-ENERGY vs. WIG P/E



## PGE Performance vs. Power Prices ex. EUA



**CEZ Performance vs. EEX Power Prices (CZK/MWh)** 



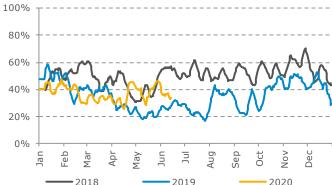
# m<mark>Ban</mark>k Biuro maklerskie

## **Utilities**





## **Load Factor, Turów Power Station**



## **Load Factor, Kozienice Power Station**



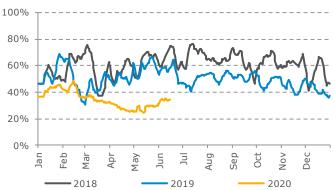
## **Load Factor, Jaworzno Power Station**



## Load Factor, Opole Power Station, Blocks B5&B6



## **Load Factor, Polaniec Power Station**



## **Actual Total Load of the Polish Power System (GW)**



## **Polish Monthly Electricity Consumption (YoY Change)**



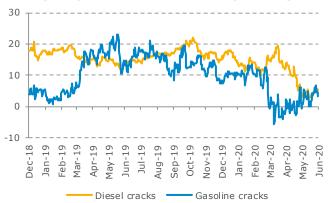
Source: PSE, mBank; Load factor = actual generation (7-day average) as a percentage of available capacity

## Gas & Oil

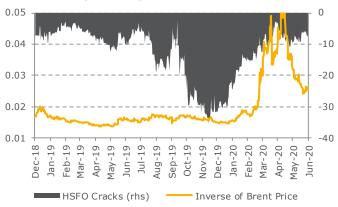
## Refining Margins (US\$/bbl)



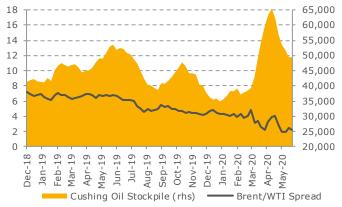
#### Cracking Margins on Diesel & Gasoline (US\$/bbl)



## HSFO Cracks (US\$/bbl) vs. Inverse of Brent Price



## **Brent/WTI Spread vs. Cushing Oil Stockpile**

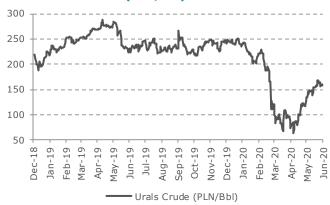


Source: Bloomberg, mBank

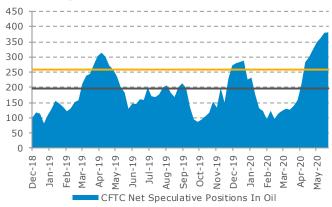
## **Urals/Brent Pricing Differential (US\$/bbl)**



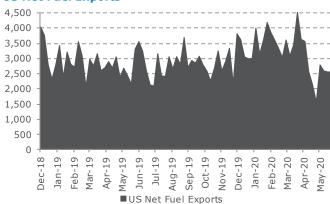
#### Price of Urals Crude (PLN/bbl)



## **CFTC Net Speculative Positions In Oil**

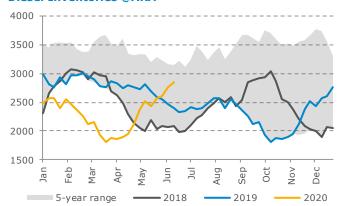


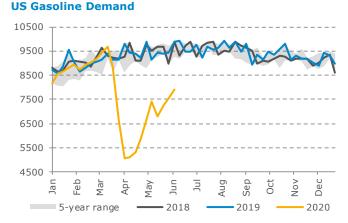
## **US Net Fuel Exports**



## Gas & Oil

## **Diesel Inventories @ARA**

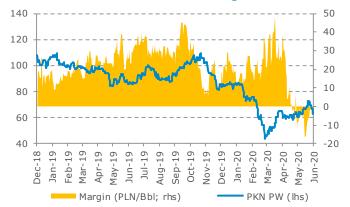




## Global Refinery Outages (mbbl/d)



## **PKN Performance vs. Benchmark Margins**

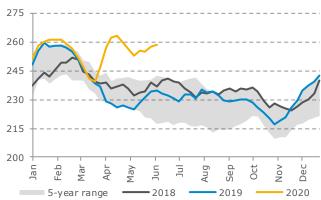


Source: Bloomberg, mBank

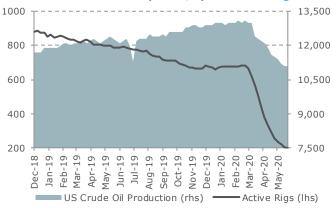
## **US Refinery Utilization Rates**



#### **US Gasoline Inventories**



## US Crude Oil Production (mboe/d) vs. Active Rigs

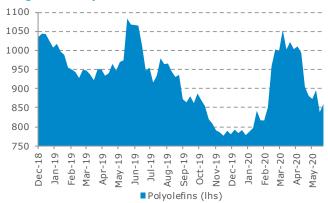


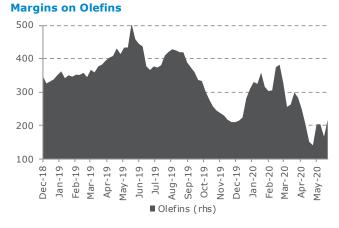
## **Normalized Oil Stock Chart**



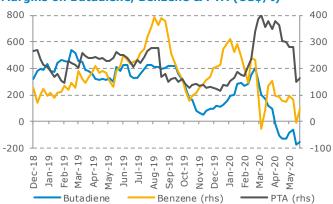
## **Petrochemicals & NatGas**

## **Margins on Polyolefins**

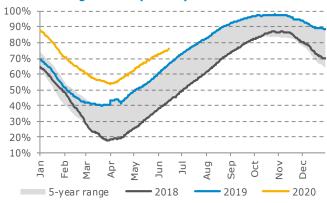




## Margins on Butadiene, Benzene & PTA (US\$/t)



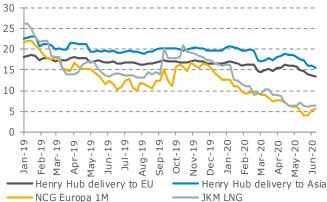
## **EU Gas Storage Levels (% Full)**



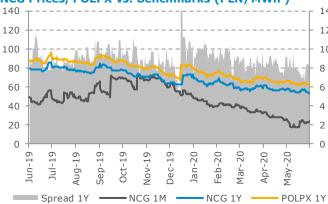
## Estimated Costs of Imported Natural Gas (PLN/MWh)



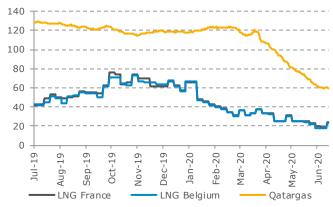
**Prices of US LNG Exports to EU and Asia** 



## NCG Prices, POLPX vs. Benchmarks (PLN/MWh)

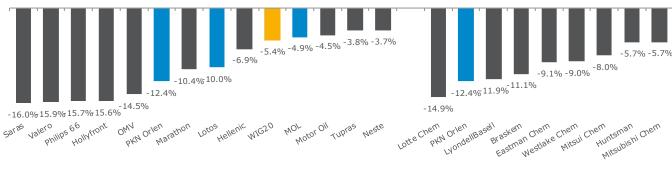


LNG Spot Rates vs. Estimated Qatargas rates

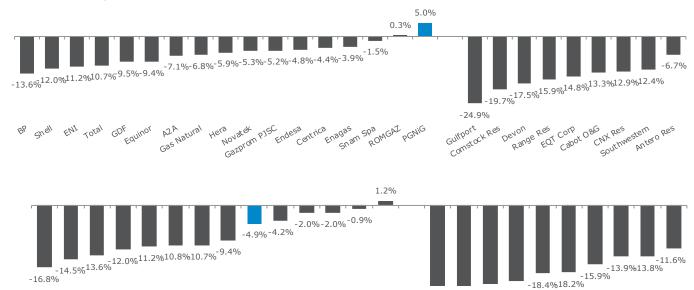


## **Weekly Performance Charts**





## **Natural Gas Companies**



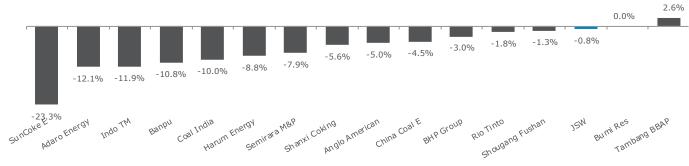
TONON ON OWN BE SHEN EM ROBED TOTAL MON ROE NEW TOTAL WELL SHIGHTNEETS

-21.9%21.7%21.2%20.6%

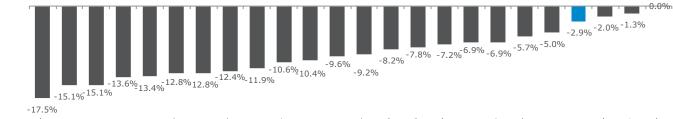
-21.9%21.7%21.2%20.6%

Occidental Marathon Res Apache Nat Pioneer ReoG Res Exxon Conocophillips Chevron Canadian Pioneer ReoG Res Exxon Conocophillips Chevron

## **Coal Producers**



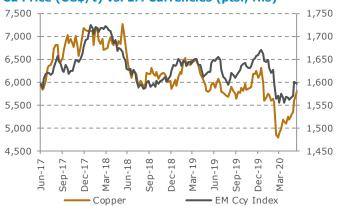
## **Steel Producers & Distributors**



HMnungai Steel nubrandings bozco nubel steel kunbb steel sakaliteel akin k tudia unics wittal steel COKB steel SSMB CMC steel wetals colum testeel transcontinus to steel DALAMINGO Ozaka steel SSMB CMC steel wetals colum testeel transcontinus steel DALAMINGO Ozaka steel SSMB CMC steel wetals colum testeel transcontinus steel DALAMINGO Ozaka steel SSMB CMC steel wetals colum testeel transcontinus steel DALAMINGO Ozaka steel SSMB CMC steel wetals columnication testeel steel stee

## **Copper Charts**

## Cu Price (US\$/t) vs. EM Currencies (pts.; rhs)



## CU Price incl. Supplier Premium (PLN 1,000/t; lhs) vs. Net Speculative Positions (1,000, rhs)



## **Physical Copper Premiums (PLN/t)**



## Copper Price Forecasts (median; US\$/t)



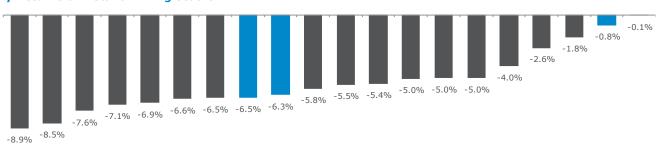
## Silver prices (PLN/kg)



## Prices of gold (PLN/oz)



## **Weekly Returns of Metal & Mining Stocks**



Which would be the bound of the

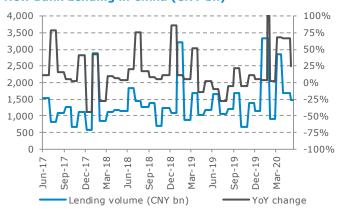
# m<mark>Ban</mark>k Biuro maklerskie

## **More Copper Charts**

## Prices of molybdenum (PLN/10 kg)



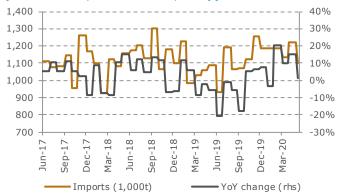
## New Bank Lending in China (CNY bn)



## China PMI (points)

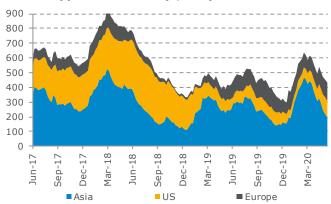


## Chine Copper Imports (concentrates, refined metal, scrap)



Source: Bloomberg, mBank

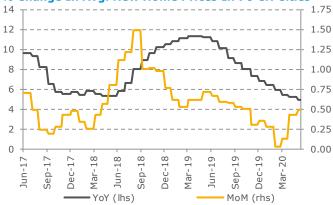
## **Global Copper Inventories (1,000t)**



## Car Sales in China (thousands)



## % Change In Avg. New Home Prices In 70 CN Cities

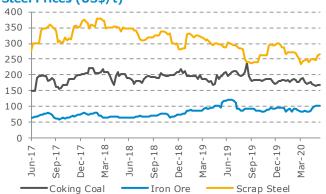


Metal Price Index (pts, rhs) vs. Net Speculative Positions (million contracts, lhs)

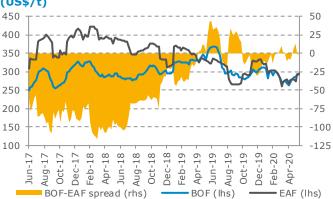


## **Steel Charts**

## China Coking Coal & Iron Ore Prices, Rotterdam Scrap Steel Prices (US\$/t)



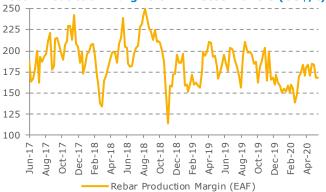
## Production Costs of BOF vs. EAF Steel Producers (US\$/t)



## Prices of Steel Rebar & Hot-Rolled Steel (US\$/t)



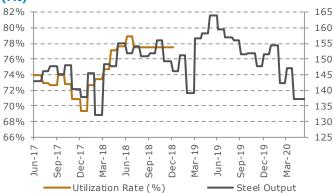
## Rebar Production Margins of EAF Steelmakers (US\$/t)



## Rolled Steel & Billet Margins of BOF Steelmakers (US\$/t)



## Global Steel Plant Capacity Utilization Rates & Output (Mt)



## China Steel PMI (pts)

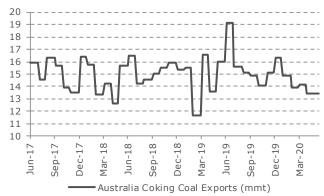


## China Steel PMI New Orders & Backlog Orders (pts)

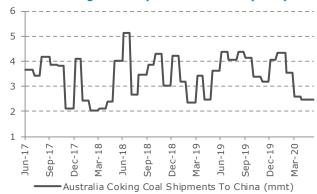


## **More Steel Charts**

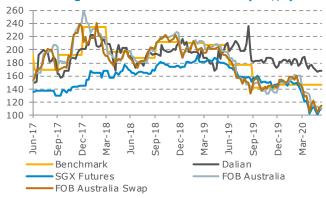
## **Australia Coking Coal Exports (mmt)**



## **Australia Coking Coal Shipments To China (mmt)**



## China Coking Coal Prices vs. Benchmark (US\$/t)

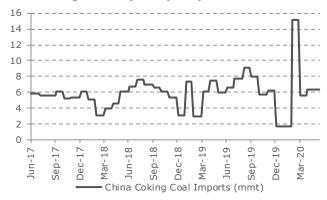


## Coking Coal-Coke Price Spread (US\$/t)



Source: Bloomberg, mBank

## **China Coking Coal Imports (mmt)**



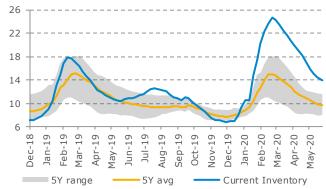
## China Coke Inventories (lhs; mmt) & Average Prices (rhs; US\$/t)



## China Coke Prices (US\$/t)



## **China Steel Inventory (mmt)**

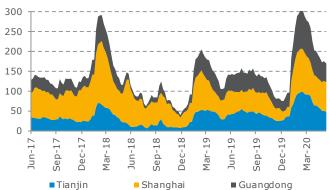


## **Zinc and Electrical Steel Charts**

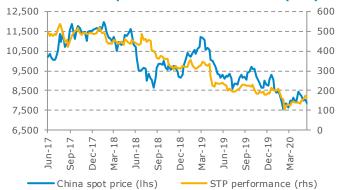
## **Exchange-Monitored Zinc Inventories (1,000t)**



## Zinc Inventories in Three Chinese Regions (1,000t)



## Zinc Prices vs. Stalprodukt Stock Performance (PLN)



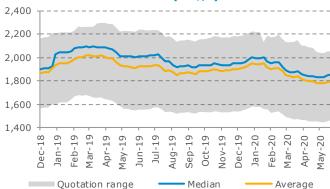
## US Dollar Zinc Prices (US\$/t)



## Polish Zloty Zinc Prices (PLN/t)



## China Electrical Steel Prices (US\$/t)



## Prices of Steel Billet & Cold Rolled Coil (US\$/t)



## **Electrical Steel Production Margins (US\$/t)**



# Biuro maklerskie

## **Thermal Coal Charts**

## Hard Coal Production & Sales in Poland (1,000t)



## Poland Hard Coal Imports & Exports (1,000t)



## Hard Coal Stockpiled By Polish Mines (1,000t)



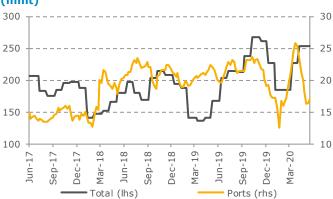
## **Inventory/ Production Ratio**



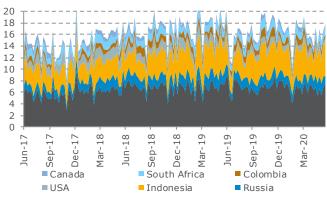
## Thermal Coal Prices vs. Benchmarks (PLN/GJ)



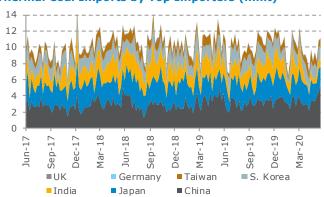
**China Thermal Coal Inventories, Total & In Ports** (mmt)



## Thermal Coal Exports By Top Producers (mmt)



## Thermal Coal Imports by Top Importers (mmt)

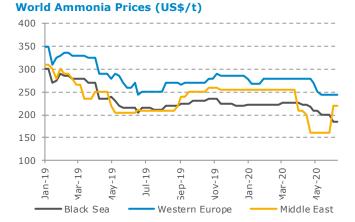


Source: Bloomberg, ARP, Eurostat, mBank \*Upper Silesian Coal Basin

## **Fertilizer Charts**

## German NatGas Prices (US\$/MWh)





#### **Urea-Ammonia Price Difference**



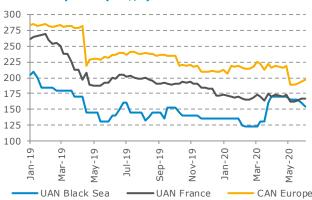
#### World Urea Prices (US\$/t)



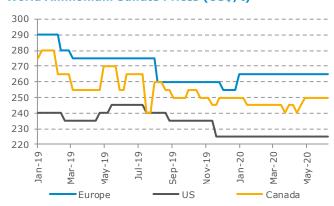
## World Ammonium Nitrate Prices (US\$/t)



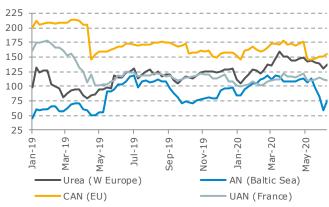
## CAN & UAN prices (US\$/t)



## **World Ammonium Sulfate Prices (US\$/t)**

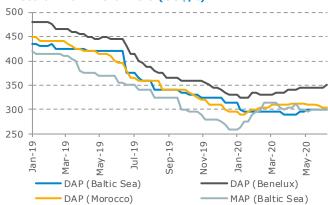


## Production Margins On Nitrogen Fertilizers (US\$/t)

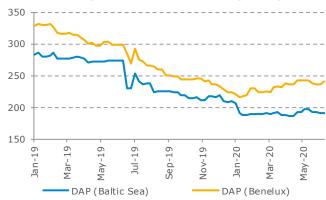


## **Fertilizer Charts**

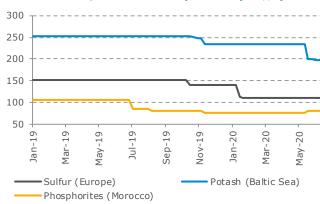
## Prices of P & K Fertilizers (US\$/t)



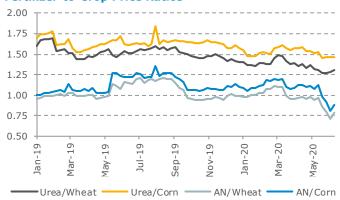
## Production Margins on P & K Fertilizers (US\$/t)



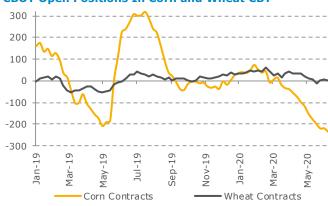
## Prices of Sulfur, Potash & Phosphorites (US\$/t)



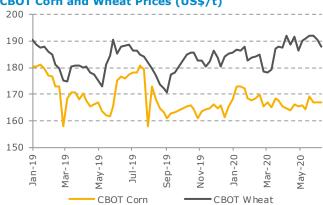
## **Fertilizer-to-Crop Price Ratios**



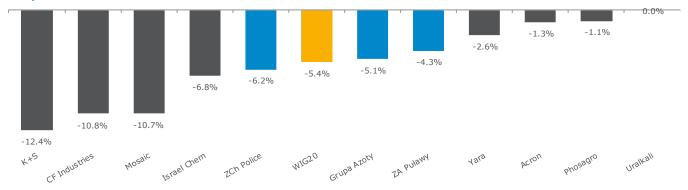
## **CBOT Open Positions In Corn and Wheat CBT**



## **CBOT Corn and Wheat Prices (US\$/t)**



## **Weekly Returns of Fertilizer Stocks**

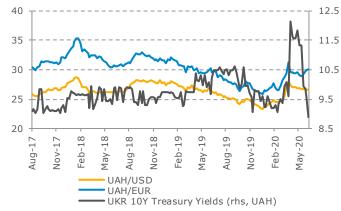


## **Agricultural Commodities**

## Sugar Prices (US\$/Mt)



## **UAH Exchange Rates & Ukraine 10Y Treasury Yields**



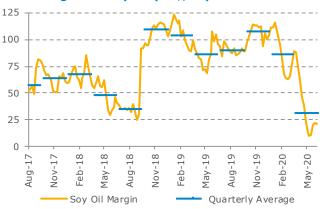
## Wheat Prices (US\$/Mt)



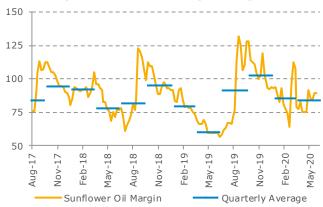
## Corn Prices (US\$/Mt)



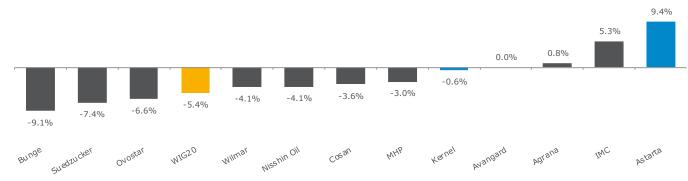
## Model Margins on Soy Oil (US\$/Mt)



## Model Margins on Sunflower Oil (US\$/Mt)



## **Weekly Returns of Agricultural Stocks**





## **Comparison of Utility Company Valuations**

		EV/EBITDA				EV/S		P/E EBITDA Margin						DY		
	Price	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
UTILITIES																
CEZ	488.0	6.7	7.5	8.1	1.9	2.0	2.0	12.1	16.9	22.2	29%	27%	25%	7.0%	7.5%	5.3%
Enea	7.1	3.0	2.7	-	0.5	0.6	-	2.9	2.3	-	18%	21%		0.0%	3.5%	-
Energa	8.0	5.1	4.5	4.4	0.8	0.8	0.8	10.5	8.2	8.0	15%	18%	18%	0.0%	0.0%	1.8%
PGE	7.5	4.1	3.0	3.1	0.6	0.6	0.6	10.1	4.9	5.5	15%	21%	21%	0.0%	2.5%	5.1%
Tauron	2.1	5.3	4.6	4.2	0.9	0.9	0.9	5.6	3.1	3.1	17%	19%	21%	0.0%	0.0%	0.0%
ZE PAK*	8.2	0.6	0.5	0.7	0.0	0.1	0.1	11.0	4.0	8.4	8%	11%	8%	-	3.1%	4.3%
EDF	8.2	4.8	4.4	4.3	1.1	1.0	1.0	22.5	15.4	14.4	22%	23%	24%	1.2%	3.0%	3.5%
EDP	4.1	9.2	9.1	8.7	2.2	2.2	2.6	17.9	16.7	16.0	24%	24%	30%	4.7%	4.8%	5.2%
Endesa	21.6	7.4	7.3	7.3	1.5	1.4	1.5	13.6	13.5	13.7	20%	20%	20%	7.3%	6.0%	5.2%
Enel	7.4	7.7	7.4	7.1	1.7	1.7	1.7	14.7	13.7	13.0	22%	23%	23%	4.9%	5.2%	5.5%
EON	9.7	8.2	7.9	7.6	0.9	0.9	0.9	15.7	14.1	11.4	11%	11%	12%	4.8%	5.0%	5.3%
Fortum	16.7	9.1	7.4	7.7	0.5	0.4	0.4	10.4	11.6	12.2	5%	5%	5%	6.6%	6.6%	6.6%
Iberdola	9.7	10.4	9.7	9.1	2.9	2.8	2.7	17.3	16.2	15.2	28%	29%	29%	4.3%	4.6%	4.8%
National Grid	9.2	11.4	10.8	10.5	3.9	3.8	3.7	15.5	15.1	15.3	34%	35%	36%	5.3%	5.5%	5.6%
Red Electrica	16.5	10.1	10.1	9.9	7.8	7.8	7.7	13.4	13.4	13.0	77%	78%	77%	6.2%	6.2%	6.4%
RWE	29.8	7.3	6.6	6.4	1.4	1.4	1.2	18.2	15.1	14.9	20%	21%	19%	2.9%	3.0%	3.1%
SSE	12.5	12.2	11.7	11.5	3.3	3.4	3.3	15.1	14.0	13.9	27%	29%	29%	6.2%	6.3%	6.4%
Verbund	38.5	12.7	12.4	11.4	4.3	4.3	4.3	24.8	24.2	21.6	34%	35%	38%	1.9%	2.1%	2.6%
Median		7.6	7.4	7.6	1.4	1.4	1.5	14.1	13.8	13.7	21%	22%	23%	4.7%	4.7%	5.2%

**Comparison of Gas & Oil Company Valuations** 

Companison of G	as & On t	compa	ily va	luatio	15											
		EV	/EBITD	A.		EV/S			P/E		EBI	TDA Mar	gin		DY	
	Price	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
OIL REFINERS																
Lotos	59.02	25.9	4.7	4.1	0.8	0.7	0.6	-	8.4	7.5	3%	15%	14%	1.7%	5.1%	5.1%
MOL	1941.00	7.6	5.3	4.2	1.0	0.9	0.8	100+	11.6	7.3	14%	17%	18%	0.0%	3.6%	3.8%
PKN Orlen	62.74	8.2	4.4	4.4	0.6	0.5	0.4	-	9.2	9.5	7%	12%	10%	1.6%	4.8%	4.9%
Hellenic Petroleum	6.10	9.1	6.6	6.0	0.7	0.6	0.5	23.2	9.3	7.8	7%	9%	9%	4.7%	7.0%	9.0%
HollyFrontier	31.48	13.5	7.0	5.1	0.7	0.5	0.3	-	15.9	8.5	6%	8%	6%	4.4%	4.5%	4.7%
Marathon Petroleum	37.84	12.6	7.7	6.3	0.8	0.6	0.5	-	18.0	9.2	6%	8%	8%	6.1%	6.3%	6.9%
Motor Oil	14.18	8.1	5.4	4.7	0.4	0.4	0.3	17.4	7.7	6.2	5%	7%	7%	6.5%	7.7%	8.7%
Neste Oil	34.51	14.9	12.4	9.9	2.4	2.1	1.8	23.2	19.8	15.1	16%	17%	18%	2.6%	2.9%	3.5%
OMV	30.44	5.6	4.0	3.3	1.2	1.0	0.8	17.3	8.2	6.0	22%	25%	26%	6.4%	6.3%	6.8%
Phillips 66	75.60	15.2	7.6	7.0	0.7	0.5	0.5	34.6	12.0	9.9	4%	7%	7%	4.8%	5.1%	5.5%
Saras	0.75	4.4	3.2	3.5	0.2	0.1	0.1	83.0	10.1	10.8	4%	5%	3%	6.2%	5.5%	4.0%
Tupras	85.95	10.2	5.6	4.8	0.6	0.4	0.3	39.7	7.4	5.6	6%	7%	7%	8.4%	11.6%	15.5%
Valero Energy	63.59	20.5	7.5	5.5	0.6	0.4	0.3	-	16.6	9.5	3%	6%	5%	6.2%	6.3%	6.4%
Median		10.2	5.6	4.8	0.7	0.5	0.5	23.2	10.1	8.5	6%	8%	8%	4.8%	5.5%	5.5%

**Comparison of Petrochemical Company Valuations** 

Comparison of Petrochemical Company Valuations																
		EV	/ EBITD	A		EV/S			P/E		EBIT	DA Mar	gin		DY	
	Price	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
PETROCHEMICALS																
PKN Orlen	62.74	8.2	4.4	4.4	0.6	0.5	0.4	-	9.2	9.5	7%	12%	10%	1.6%	4.8%	4.9%
Axiall	54.32	9.4	8.6	8.0	1.5	1.4	1.4	40.7	26.2	20.6	16%	17%	17%	1.9%	2.0%	2.1%
Braskem	24.50	7.8	6.7	5.9	1.2	1.0	0.9	-	26.5	14.8	15%	15%	15%	0.1%	0.6%	3.5%
Eastman Chemical	69.60	8.9	8.1	7.8	1.9	1.8	1.7	11.8	10.1	8.7	21%	22%	22%	3.8%	4.0%	4.3%
Huntsman Corp	18.59	11.4	7.1	6.1	0.9	0.8	0.8	50.1	13.5	10.5	8%	11%	13%	3.5%	3.6%	3.8%
Lotte Chemicals	165,000	4.7	3.4	3.1	0.5	0.5	0.4	13.2	7.3	6.4	11%	14%	14%	3.6%	4.3%	4.8%
LyondellBasell	67.28	9.5	7.3	6.6	1.4	1.2	1.2	14.5	9.1	7.9	15%	17%	18%	6.3%	6.4%	6.7%
Mitsubishi Chemical	633.10	8.6	8.8	7.4	0.9	1.0	0.9	16.6	18.7	10.0	10%	11%	12%	5.1%	4.1%	4.6%
Mitsui Chemicals	2287.00	7.7	9.0	6.8	0.7	0.8	0.7	11.7	19.4	10.5	9%	9%	11%	4.4%	3.7%	4.0%
Westlake Chemical	54.32	9.4	8.6	8.0	1.5	1.4	1.4	40.7	26.2	20.6	16%	17%	17%	1.9%	2.0%	2.1%
Median		8.7	7.7	6.7	1.1	1.0	0.9	15.5	16.1	10.2	13%	14%	15%	3.5%	3.9%	4.2%

Source: mBank for Polish companies, Bloomberg for foreign firms and companies marked with an asterisk

**Comparison of NatGas Company Valuations** 

		EV/EBITDA							P/E		EBI	TDA Mar	gin		DY	
	Price	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
GAS COMPANIES																
PGNiG	4.69	5.3	4.4	4.2	0.9	0.9	0.8	15.2	10.5	9.4	16%	20%	20%	2.0%	2.6%	4.7%
A2A	1.26	6.6	6.3	5.9	1.1	1.1	1.1	13.0	12.6	10.9	17%	17%	18%	6.4%	6.5%	7.1%
BG Group	13.35	6.7	5.0	3.9	0.9	0.7	0.6	40.6	13.0	8.4	13%	14%	16%	4.1%	4.2%	4.6%
BP	3.16	7.1	5.4	4.2	0.8	0.7	0.6	100+	10.6	6.0	11%	12%	13%	9.7%	9.5%	9.7%
Centrica	0.43	4.0	4.0	4.0	0.3	0.3	0.3	9.7	6.8	5.9	7%	7%	7%	4.5%	5.6%	9.2%
Enagas	21.22	9.5	9.7	10.1	8.0	8.5	8.8	12.6	12.5	12.8	84%	87%	87%	7.9%	8.0%	8.1%
Endesa	21.59	7.4	7.3	7.3	1.5	1.4	1.5	13.6	13.5	13.7	20%	20%	20%	7.3%	6.0%	5.2%
Engie	10.81	6.0	5.5	5.3	1.0	0.9	0.9	12.8	9.9	9.2	17%	17%	17%	6.0%	7.2%	7.8%
Eni	8.58	5.2	4.0	3.1	0.9	0.8	0.7	-	22.4	10.1	18%	20%	23%	8.7%	8.7%	9.0%
Equinor	141.65	4.7	3.4	2.7	1.3	1.2	1.0	86.5	18.4	10.6	28%	34%	38%	3.3%	4.3%	4.9%
Gas Natural SDG	16.50	8.2	7.7	7.7	1.6	1.5	1.5	13.7	11.9	11.6	19%	19%	19%	8.7%	9.1%	9.5%
Gazprom	194.20	5.5	4.3	3.4	1.1	1.0	0.9	9.8	5.4	3.6	21%	23%	27%	5.2%	8.9%	13.6%
Hera	3.40	7.8	7.5	7.4	1.1	1.1	1.1	16.5	15.5	15.0	15%	15%	15%	3.2%	3.2%	3.5%
NovaTek	150.40	14.8	12.2	9.3	4.4	3.8	3.2	16.0	12.9	9.5	30%	31%	34%	3.0%	5.4%	4.3%
ROMGAZ	31.20	5.0	4.4	4.1	2.4	2.3	2.1	10.9	9.5	8.6	49%	52%	52%	8.8%	10.0%	11.0%
Shell	15.08	6.7	5.1	3.9	0.9	0.7	0.6	41.2	13.2	8.6	13%	14%	16%	4.1%	4.1%	4.6%
Snam	4.43	12.5	12.1	11.7	10.1	9.8	9.6	13.6	12.8	12.5	80%	81%	82%	5.6%	5.9%	6.3%
Total	34.69	7.6	5.8	4.5	1.0	0.9	0.8	34.8	15.3	9.3	13%	15%	19%	7.5%	7.8%	7.9%
Median		6.7	5.5	4.3	1.1	1.1	1.0	13.7	12.7	9.5	17%	19%	19%	5.8%	6.3%	7.4%

**Comparison of E&P Company Valuations** 

Comparison of Ed	&P Comp															
		EV	//EBITD	Ą		EV/S			P/E		EBIT	TDA Mar	gin		DY	
	Price	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
E&P COMPANIES																
MOL	1941.00	5.0	3.8	3.3	0.7	0.6	0.5	17.7	6.3	4.8	14%	15%	16%	5.2%	6.2%	6.8%
Bashneft	1803.50	1.7	1.6	-	0.4	0.4	-	2.3	2.1	-	25%	25%	-	13.2%	14.3%	-
BP	3.16	7.1	5.4	4.2	0.8	0.7	0.6	100+	10.6	6.0	11%	12%	13%	9.7%	9.5%	9.7%
Dana Gas	0.64	4.4	5.1	3.7	2.3	2.5	2.1	10.4	12.6	6.8	52%	49%	57%	8.9%	8.6%	12.6%
Eni	8.58	5.2	4.0	3.1	0.9	0.8	0.7	-	22.4	10.1	18%	20%	23%	8.7%	8.7%	9.0%
Equinor	141.65	4.7	3.4	2.7	1.3	1.2	1.0	86.5	18.4	10.6	28%	34%	38%	3.3%	4.3%	4.9%
Gazprom Neft	350.85	6.4	5.2	4.5	1.4	1.2	1.0	8.3	6.3	5.2	21%	22%	21%	6.3%	7.8%	9.7%
Gulf Keystone	0.90	5.6	1.7	0.9	1.7	0.9	0.4	-	100+	2.4	30%	54%	52%	-	-	-
Lukoil	5264.00	5.2	4.2	3.5	0.7	0.6	0.5	17.0	9.7	7.1	14%	15%	15%	6.3%	7.6%	10.0%
Occidental Petroleum	19.05	11.3	9.6	7.3	3.5	3.5	3.2	-	-	-	31%	37%	45%	8.3%	1.6%	2.0%
Repsol	8.19	6.1	4.5	4.0	0.8	0.6	0.6	16.6	7.7	6.0	13%	14%	15%	11.8%	11.7%	11.9%
Rosneft Oil	366.15	6.7	5.1	4.2	1.5	1.2	1.0	24.9	7.1	5.0	22%	24%	24%	2.7%	6.6%	9.5%
Shell	15.08	6.7	5.1	3.9	0.9	0.7	0.6	41.2	13.2	8.6	13%	14%	16%	4.1%	4.1%	4.6%
Surgutneftegas	34.54	-	-	-	-	-	-	3.3	5.0	4.5	-	-	-	51.4%	3.8%	8.9%
Total	34.69	7.6	5.8	4.5	1.0	0.9	0.8	34.8	15.3	9.3	13%	15%	19%	7.5%	7.8%	7.9%
Tullow Oil	0.32	5.5	5.9	5.7	3.6	3.8	3.6	-	-	-	65%	65%	63%	-	-	_
Median		5.6	5.1	4.0	1.0	0.9	0.8	17.0	9.7	6.0	21%	22%	22%	7.9%	7.7%	9.0%

**Comparison of Mining Company Valuations** 

			EV/S		P/E			EBITDA Margin				DY				
	Price	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
MINING COMPANIES																
JSW	19.04	5.0	3.2	3.2	0.4	0.3	0.4	-	-	-	8%	11%	11%	0.0%	0.0%	0.0%
KGHM	84.90	5.2	6.4	4.9	1.1	1.1	1.0	11.0	21.8	11.4	20%	17%	20%	0.0%	1.8%	2.3%
LW Bogdanka*	22.25	0.9	1.1	1.1	0.3	0.3	0.3	4.1	5.4	10.1	30%	25%	26%	7.5%	3.7%	3.2%
Anglo American	17.73	5.1	4.4	4.3	1.6	1.4	1.3	12.6	9.6	9.8	31%	31%	31%	3.3%	4.4%	4.0%
Antofagasta	8.59	8.3	5.7	5.4	3.3	2.8	2.7	61.8	23.2	20.3	40%	49%	50%	0.9%	2.4%	2.6%
BHP Group	16.13	5.9	6.5	6.4	3.1	3.3	3.1	11.1	13.3	12.9	52%	50%	49%	5.8%	4.9%	4.9%
Freeport-McMoRan	10.47	15.2	6.0	5.4	2.6	1.9	1.8	-	11.0	9.5	17%	32%	34%	0.5%	1.6%	1.7%
Glencore	1.68	6.9	5.6	5.2	0.3	0.3	0.3	49.4	15.8	12.7	5%	6%	5%	3.6%	6.3%	7.8%
Grupo Mexico	50.53	6.4	5.4	5.0	2.7	2.4	2.2	22.2	11.8	9.7	42%	44%	45%	4.6%	8.5%	9.0%
Kazakhmys	4.33	5.6	5.1	4.4	2.8	2.6	2.2	7.8	6.7	5.4	49%	50%	50%	1.5%	1.3%	1.6%
Rio Tinto	44.81	5.8	6.2	6.6	2.7	2.7	2.8	10.9	12.4	13.5	46%	44%	42%	5.7%	5.2%	5.0%
Southern CC	37.22	13.5	10.3	9.7	5.6	4.7	4.5	32.0	20.4	19.0	42%	46%	47%	3.1%	3.8%	4.6%
Median		5.9	5.7	5.1	2.6	2.2	2.0	11.8	12.4	11.4	35%	38%	38%	3.2%	3.8%	3.6%
ALUMINUM PRODUCER	RS															
Grupa Kęty	366.00	8.9	8.6	8.4	1.4	1.3	1.3	13.5	12.8	12.4	16%	15%	15%	4.2%	5.9%	5.8%
Alcoa	11.41	5.5	4.0	3.6	0.5	0.5	0.2	-	-	85.1	10%	12%	7%	1.1%	1.1%	1.8%
Constellium	8.50	7.0	5.9	4.9	0.6	0.6	0.6	-	11.9	5.2	9%	10%	12%	-	-	-
Kaiser Aluminum	75.20	11.5	7.7	6.7	1.1	1.1	0.9	30.3	19.1	11.3	10%	14%	14%	3.4%	3.8%	4.1%
Norsk Hydro	25.85	5.7	4.6	4.0	0.5	0.5	0.4	29.8	13.9	10.0	9%	10%	11%	4.8%	4.8%	5.5%
Rusal	2.88	18.6	14.1	9.9	1.4	1.3	1.2	4.2	3.9	3.5	8%	9%	12%	1.6%	5.4%	6.3%
Median		8.0	6.8	5.8	0.9	0.9	0.7	21.6	12.8	10.6	10%	11%	12%	3.4%	4.8%	5.5%

 $Source: mBank \ for \ Polish \ companies, \ Bloomberg \ for \ foreign \ firms \ and \ companies \ marked \ with \ an \ asterisk$ 



## **Comparison of Fertilizer Company Valuations**

	EV/EBITDA				EV/S				P/E EBI			TDA Mar	gin		DY	
	Price	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
FERTILIZER PRODUCE	RS															
Grupa Azoty	31.55	6.1	9.1	9.1	0.8	0.9	0.9	14.8	-	75.5	13%	9%	10%	0.0%	0.0%	0.0%
ZA Police*	13.70	16.5	9.2	6.8	0.8	0.7	0.7	-	-	-	5%	8%	10%	-	-	-
Acron	5580.00	9.4	8.0	7.9	2.9	2.5	2.4	14.7	10.2	10.0	31%	32%	30%	6.5%	6.3%	5.5%
CF Industries	29.43	9.3	9.1	8.4	3.1	3.0	2.9	19.8	17.1	13.0	34%	33%	34%	4.1%	4.2%	4.1%
Israel Chemicals	11.80	7.7	6.6	6.5	1.4	1.3	1.2	15.5	12.1	12.5	18%	19%	19%	2.2%	3.6%	3.6%
K+S	6.34	9.0	6.8	6.2	1.2	1.1	1.1	-	22.8	10.2	13%	16%	17%	0.8%	1.9%	3.4%
Phosagro	2753.00	7.1	6.3	6.1	2.1	2.0	1.9	19.2	14.2	18.2	30%	32%	31%	2.8%	4.4%	5.2%
The Mosaic Company	13.37	8.7	6.3	5.4	1.2	1.1	1.1	100+	17.1	9.3	14%	18%	20%	1.5%	1.5%	1.7%
Yara International	344.40	6.3	5.8	5.6	1.1	1.0	1.0	11.3	9.4	8.7	18%	18%	18%	4.6%	5.8%	6.2%
Median		8.7	6.8	6.5	1.2	1.1	1.1	15.1	14.2	11.4	18%	18%	19%	2.5%	3.9%	3.9%

## **Comparison of Agricultural Company Valuations**

	EV/EBITDA					EV/S		P/E			EBIT	TDA Mar	gin		DY	
	Price	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022	2020	2021	2022
AGRI PRODUCERS																
Astarta*	18.00	4.3	2.9	3.8	0.8	0.7	0.7	-	3.0	9.9	19%	25%	20%	-	5.2%	16.7%
Kemel	42.00	6.0	5.8	5.5	0.6	0.6	0.6	9.4	6.2	6.2	9%	11%	10%	2.3%	2.4%	2.1%
Agrana Beteiligungs	18.20	9.1	-	-	0.7	-	-	23.6	-	-	7%	-	-	5.5%	-	-
Bunge Limited	39.82	9.8	8.4	7.9	0.3	0.3	0.3	14.6	10.0	8.6	3%	4%	4%	4.9%	5.2%	6.3%
Cosan	66.82	6.7	5.8	5.6	0.5	0.5	0.5	18.3	12.9	12.7	8%	8%	8%	2.2%	2.3%	3.4%
MHP	5.80	4.5	4.2	3.7	1.0	0.9	0.9	-	3.2	2.8	22%	22%	25%	8.9%	12.9%	12.9%
Nisshin Oillio	3295.00	7.5	7.5	7.3	0.5	0.5	0.5	13.5	12.5	12.0	6%	6%	6%	2.4%	2.4%	2.4%
Suedzucker	13.66	11.3	7.5	6.5	0.8	0.7	0.7	-	15.5	10.8	7%	10%	11%	1.5%	2.1%	2.7%
Wilmar Int.	3.78	11.9	11.0	10.2	0.7	0.7	0.6	14.1	12.8	11.6	6%	6%	6%	3.1%	3.5%	3.6%
Median		7.5	6.6	6.0	0.7	0.6	0.6	14.4	11.2	10.4	7%	9%	9%	2.8%	3.0%	3.5%

Source: mBank for Polish companies, Bloomberg for foreign firms and companies marked with an asterisk

List of abbreviations and ratios contained in the report:

List of abbreviations and ratios contained in the report:

EV – net debt + market value (EV = conomic value)

EBIT – Earnings Before Interest and Taxes

EBITDA = PERIT + Depreciation and Amortisation

PBA = Profit on Banking Activity

P/CE - price to earnings with amortisation

MC/S – market capitalisation to sales

EBIT/EV – operating profit to economic value

PJE = (Price/Earnings) – price divided by annual net profit per share

ROE = (Return on Equity) – annual net profit divided by average equity

PJBV - (Price/Book Value) – price divided by box value per share

Net debt – credits + debt papers + interest bearing loans – cash and cash equivalents

EBITDA margin - EBITDA/Sales

EBITDA margin - EBITDA/Sales

OVERWEIGHT (OW) – a rating which indicates that we expect a stock to outperform the broad market NEUTRAL (N) – a rating which indicates that we expect the stock to perform in line with the broad market UNDERWEIGHT (UW) – a rating which indicates that we expect the stock to underperform the broad market

Recommendations of Biuro maklerskie mBanku:

A recommendation is valid for a period of 9 months, unless a subsequent recommendation is issued within this period. Expected returns from individual recommendations are as follows:

BUY — we expect that the rate of return from an investment will be at least 15%

ACCUMULATE — we expect that the rate of return from an investment will range from 5% to 15%

HOLD — we expect that the rate of return from an investment will range from -5% to +5%

REDUCE — we expect that the rate of return from an investment will range from -5% to -15%

SELL — we expect that an investment will bear a loss greater than 15%

Recommendations are updated at least once every nine months.

mBank S.A. with its registered office in Warsaw at Senatorska 18 renders brokerage services in the form of derived organisational unit - Brokerage Office which uses name Biuro maklerskie mBanku

mBank S.A. as part of the Exchange's Analytical Coverage Support Programme ("Programme", https://www.gpw.pl/eacsp) prepares analytical reports for the following companies: Cognor Holding, Comarch, VRG. These documents are prepared at the request of Gielda Papierów Wartościowych w Warszawie S.A. ('WSE'), which is entitled to copyrights to these materials. mBank S.A. receives remuneration from the WSE for the preparation of occurrients are properly at a control request of leader applicable was assessed as a control was solved was so

This document has been created and published by Biuro maklerskie mBanku. The present report expresses the knowledge as well as opinions of the authors on day the report was prepared. The opinions and estimates contained herein constitute our best judgment at this date and time, and are subject to change without notice. The present report was prepared with due care and attention, observing principles of methodological correctness and objectivity, on the basis of sources available to the public, which Biuro maklerskie mBanku considers reliable, including information published by issuers, shares of which are subject to recommendations. However, Biuro maklerskie mBanku, in no case, guarantees the accuracy and completeness of the report, in particular should sources on the basis of which the report was prepared prove to be inaccurate, incomplete or no completeness of the report, in particular should sources on the basis of which the report was prepared prove to be inaccurate, incomplete or not complete or not particular should sources on the basis of which the report was prepared prove to be inaccurate, incomplete or not complete or not particular should sources on the basis of which the report was prepared prove to be inaccurate, incomplete or not complete or not particular should sources on the basis of which the report was prepared prove to be inaccurate, incomplete or not complete or not particular should sources on the basis of which the report was prepared prove to be inaccurate, incomplete or not complete or not particular should source on the basis of which are subject to recommendations.

This document does not constitute an offer or invitation to subscribe for or purchase any financial instruments and neither this document nor anything contained herein shall form the basis of any contract or commitment whatsoever. It is being furnished to you solely for your information and may not be reproduced or redistributed to any other person This document does not constitute investment, legal, accounting or other advice, and mBank is not liable for damages resulting from or related to the use of data provided in the documents. This document may not be copied, duplicated and/or be directly or indirectly distributed in the United States, Canada, Australia or Japan, nor transferred to citizens or residents of a state where its distribution may be legally restricted, which does not limit the possibility of publishing materials prepared for the Programme on Cognor Holding, Comarch, VRG, mBank or WSE websites. Persons who disseminate this document should be aware of the need to comply with such restrictions.

Recommendations are based on essential data from the entire history of a company being the subject of a recommendation, with particular emphasis on the period since the previous recommendation. Investing in shares is connected with a number of risks including, but not limited to, the macroeconomic situation of the country, changes in legal regulations as well as changes on commodity markets. Full elimination of these risks is virtually impossible.

Recommendations are based on essential data from the entire history of a company being the subject of a recommendation, with particular emphasis on the period since the previous recommendation.

Investing in shares is connected with a number of risks including, but not limited to, the macroeconomic situation of the country, changes in legal regulations as well as changes on commodity markets. Full elimination of these

mBank S.A. bears no responsibility for investment decisions taken on the basis of the present report or for any damages incurred as a result of investment decisions taken on the basis of the present report

It is possible that mBank S.A. in its brokerage activity renders, will render or in the past has rendered services for companies and other entities mentioned in the present report.

mBank S.A. does not rule out offering brokerage services to an issuer of securities being the subject of a recommendation. Information about any conflicts of interest that may arise in connection with the issuance of recommendations (should such a conflict exist) is provided below, and it is valid as of the date of the most recent Monthly Report published by Biuro maklerskie mBanku or as of the date of the most recent recommendation issued for an Issuer, as applicable.

mBank S.A. may have received compensation from the following companies in the last 12 months: Alchemia, Alior Bank, Ambra, Amica, Bank Handlowy, Bank Millennium, Bank Pekao, BGŽ BNP Paribas, Boryszew, Capital Park, CD Projekt, Centrum Nowoczesnych Technologii, Ceramika Nowa Gala, CI Games, Echo Investment, Elemental Holding, Elzab, Enea, Energoaparatura, Erbud, Ergis, Erste Bank, Ferrum, GetBack, Getin Holding, Getin Noble Bank, Globalworth Poland, GPW, Groclin, Helio SA, iZ Development, INDATA, ING BSK, Kruk, LW Bogdanka, MCI Capital, Mennica Polska, Mostostal Warszawa, Netia, Neuca, NWAI Dom Maklerski, Oponeo, pl, OTP Bank, PA Nova, PBKM, Pfeliderer Group, PONIG, Ridfeisen Bank International, Rawlplug, Rubicon Partners NFI, Santander Bank Polska, Seco/Warwick, Skarbiec Holding, Solar Company, Sygnity, Tarczyński, Ten Square Games, TIM, Trakcja, Unibep, Vistal Gdynia, Wittchen, Work Service, YOLO, Zastal, ZUE.

In the last 12 months mBank S.A. has acted as dealer-manager for tender or exchange offers for the shares of: Centrum Nowoczesnych Technologii, Ceramika Nowa Gala, CI Games, Ergis, Globalworth Poland, Helio SA, MCI Capital, Mostostal Warszawa, NWAI Dom Maklerski, Pfleiderer Group, Primetech.

Asseco Poland provides IT services to mBank S.A.

mBank S.A. has a cash service agreement in place with Pekao and a phone subscription agreement in place with Orange Polska S.A.

mBank S.A., its shareholders and employees may hold long or short positions in the issuers' shares or other financial instruments related to the issuers' shares. mBank, its affiliates and/or clients may conduct or may have conducted transactions for their own account or for account of another with respect to the financial instruments mentioned in this report or related investments before the recipient has received this report.

Copying or publishing the present report, in full or in part, or disseminating in any way information contained in the present report requires the prior written agreement of mBank S.A. Recommendations are addressed to all Clients of Bluro maklerskie mBanku.

Recommendations are addressed to all Clients of Biuro maklerskie mBanku.

All investment recommendations and strategies issued by mBank S.A. over the last 12 months are available at: http://www.mdm.pl/ui-pub/site/market\_and\_analysis/analysis\_and\_recommendations/fundamental\_analysis/recommendations?recent\_filter\_active=true&lang=en

The activity of mBank S.A. is subject to the supervision of the Polish Financial Supervision Commission.

Individuals who did not participate in the preparation of recommendations, but had or could have had access to recommendations prior to their publication, are employees of Biuro maklerskie mBanku authorised to access the premises in which recommendations are prepared and/or individuals having to access to recommendations based on their corporate roles, other than the analysts mentioned as the authors of the present recommendations.

This publication constitutes investment research within the meaning of Art. 36.1 of Commission Delegated Regulation (EU) 2017/565.

The compensation of the research analysts responsible for preparing investment research is determined independently of and without regard to the compensation of or revenue generated by any other employee of the Bank, including but not limited to any employee whose business interests may reasonably be considered to conflict with the interests of the persons to whom the investment research prepared by the Research Department of Biuro maklerskie mBanku is disseminated. With that being said, since one of the factors taken into consideration when determining the compensation of research analysts is the degree of fulfillment of annual financial targets by customer service functions, there is a risk that the adequacy of compensation offered to persons preparing investment research will be questioned by a competent oversight body.

For U.S. persons only: This research report is a product of mBank SA which is the employer of the research analyst(s) who has prepared the research report. The research analyst(s) preparing the research report is/are resident outside the United States (U.S.) and are not associated persons of any U.S. regulated broker-dealer and therefore the analyst(s) is/are not subject to supervision by a U.S. broker-dealer, and is/are not required to satisfy the regulatory licensing requirements of FINRA or required to otherwise comply with U.S. rules or regulations regarding, among other things, communications with a subject company, public appearances and trading securities held by a research analyst account.

This report is intended for distribution by mBank SA only to "Major Institutional Investors" as defined by Rule 15a-6(b)(4) of the U.S. Securities and Exchange Act, 1934 (the Exchange Act) and interpretations thereof by U.S. Securities and Exchange Commission (SeC) in reliance on Rule 15a 6(a)(2). If the recipient of this report is not a Major Institutional Investor as specified above, then it should not act upon this report and return the same to the sender. Further, this report may not be copied, duplicated and/or transmitted onward to any U.S. person, which is not the Major Institutional Investor.

In reliance on the exemption from registration provided by Rule 15a-6 of the Exchange Act and interpretations thereof by the SEC in order to conduct certain business with Major Institutional Investors, mBank SA has entered into an agreement with a U.S. registered broker-dealer, Cabrera Capital Markets. ("Cabrera"). Transactions in securities discussed in this research report should be effected through Cabrera or another U.S. registered broker dealer.

#### Strong and weak points of valuation methods used in recommendations:

ed as the most methodologically correct method of valuation; it consists in discounting financial flows generated by a company; its weak point is the significant susceptibility to a change of forecast

assumptions in the model.

Relative – based on a comparison of valuation multipliers of companies from a given sector; simple in construction, reflects the current state of the market better than DCF; weak points include substantial variability

(fluctuations together with market indices) as well as difficulty in the selection of the group of comparable comparable comparable of the valuation model.

Economic profits – discounting of future economic profits; the weak point is high sensitivity to changes in the assumptions made in the valuation model.

Discounted Dividends (DDM) – discounting of future dividends; the weak point is high sensitivity to changes in the assumptions as to future dividends made in the valuation model.

NAV – valuation based on equity value, one of the most frequently used method in case of developing companies; the weak point of the method is that it does not factor in future changes in revenue/profits of a company.



mBank S.A. Senatorska 18 00-950 Warszawa http://www.mbank.pl/

## **Research Department**

Kamil Kliszcz director +48 22 438 24 02 kamil.kliszcz@mbank.pl energy, power generation

Jakub Szkopek +48 22 438 24 03 jakub.szkopek@mbank.pl industrials, chemicals, metals

Aleksandra Szklarczyk +48 22 438 24 04 aleksandra.szklarczyk@mbank.pl construction, real-estate development Michał Marczak +48 22 438 24 01 michal.marczak@mbank.pl strategy

Paweł Szpigiel +48 22 438 24 06 pawel.szpigiel@mbank.pl media, IT, telco

Piotr Poniatowski +48 22 438 24 09 piotr.poniatowski@mbank.pl industrials Michał Konarski +48 22 438 24 05 michal.konarski@mbank.pl banks, financials

Piotr Bogusz +48 22 438 24 08 piotr.bogusz@mbank.pl retail, gaming

Mikołaj Lemańczyk +48 22 438 24 07 mikolaj.lemanczyk@mbank.pl financials

## **Sales and Trading**

#### **Traders**

Piotr Gawron director +48 22 697 48 95 piotr.gawron@mbank.pl

Adam Prokop +48 22 697 47 90 adam.prokop@mbank.pl Krzysztof Bodek +48 22 697 48 89 krzysztof.bodek@mbank.pl

Magdalena Bernacik +48 22 697 47 35 magdalena.bernacik@mbank.pl Tomasz Jakubiec +48 22 697 47 31 tomasz.jakubiec@mbank.pl

Andrzej Sychowski +48 22 697 48 46 andrzej.sychowski@mbank.pl

## Sales, Foreign Markets

Bartosz Orzechowski +48 22 697 48 47 bartosz.orzechowski@mbank.pl Jędrzej Łukomski +48 22 697 49 85 jedrzej.lukomski@mbank.pl

## **Private Client Sales**

Kamil Szymański director +48 22 697 47 06 kamil.szymanski@mbank.pl Jarosław Banasiak deputy director +48 22 697 48 70 jaroslaw.banasiak@mbank.pl