



Sortownie



Kompostownie



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Group*

Communal and Commercial waste

Analyses of market volumes and capacities



ZAPROJEKTUJ



WYBUDUJ



ZARZĄDZAJ

Waste fraction definition

Communal waste

Bio waste

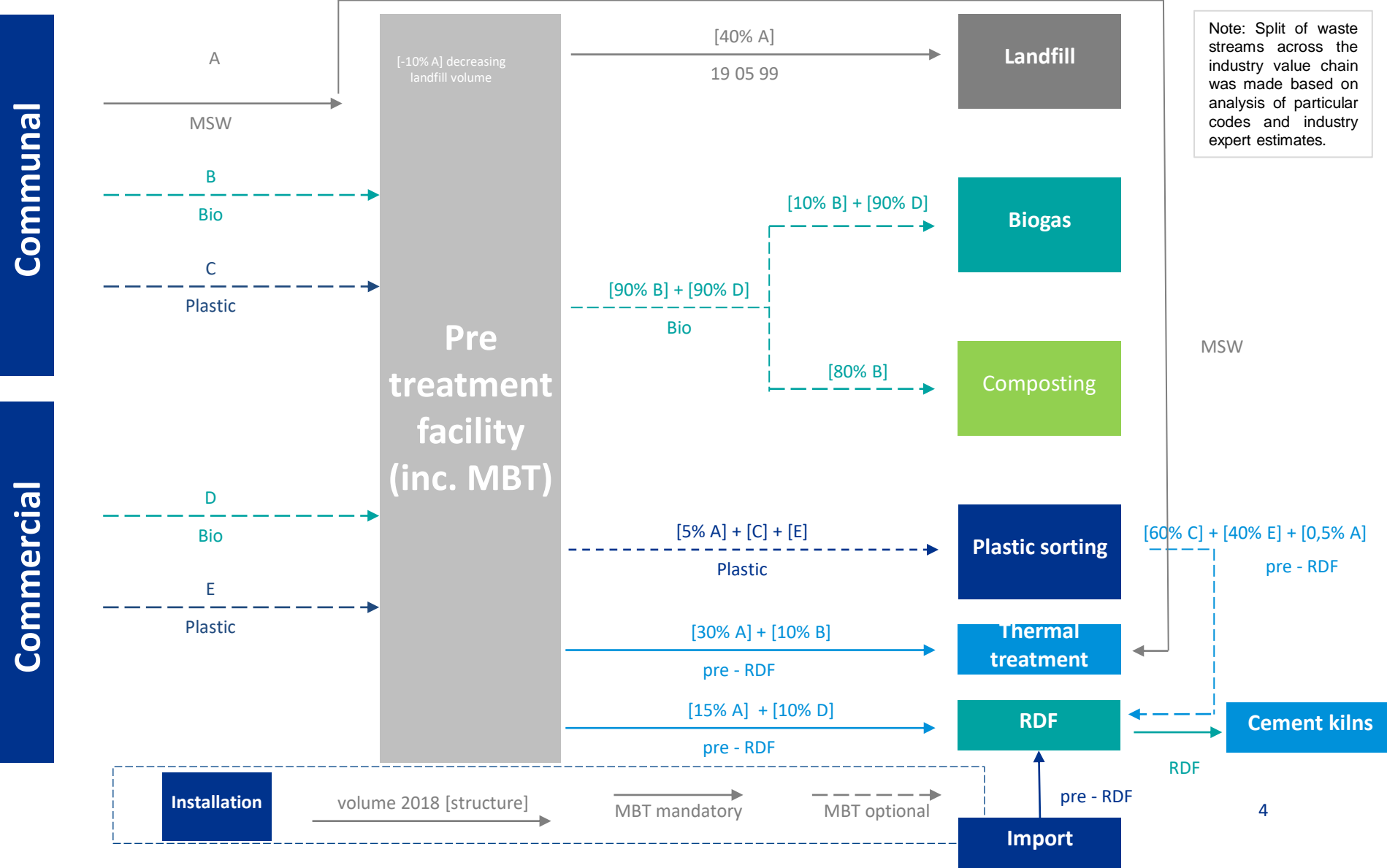
This includes codes selected by FBSerwis:

- 20 01 08,
- 20 01 25,
- 20 03 02
- 20 02 01,

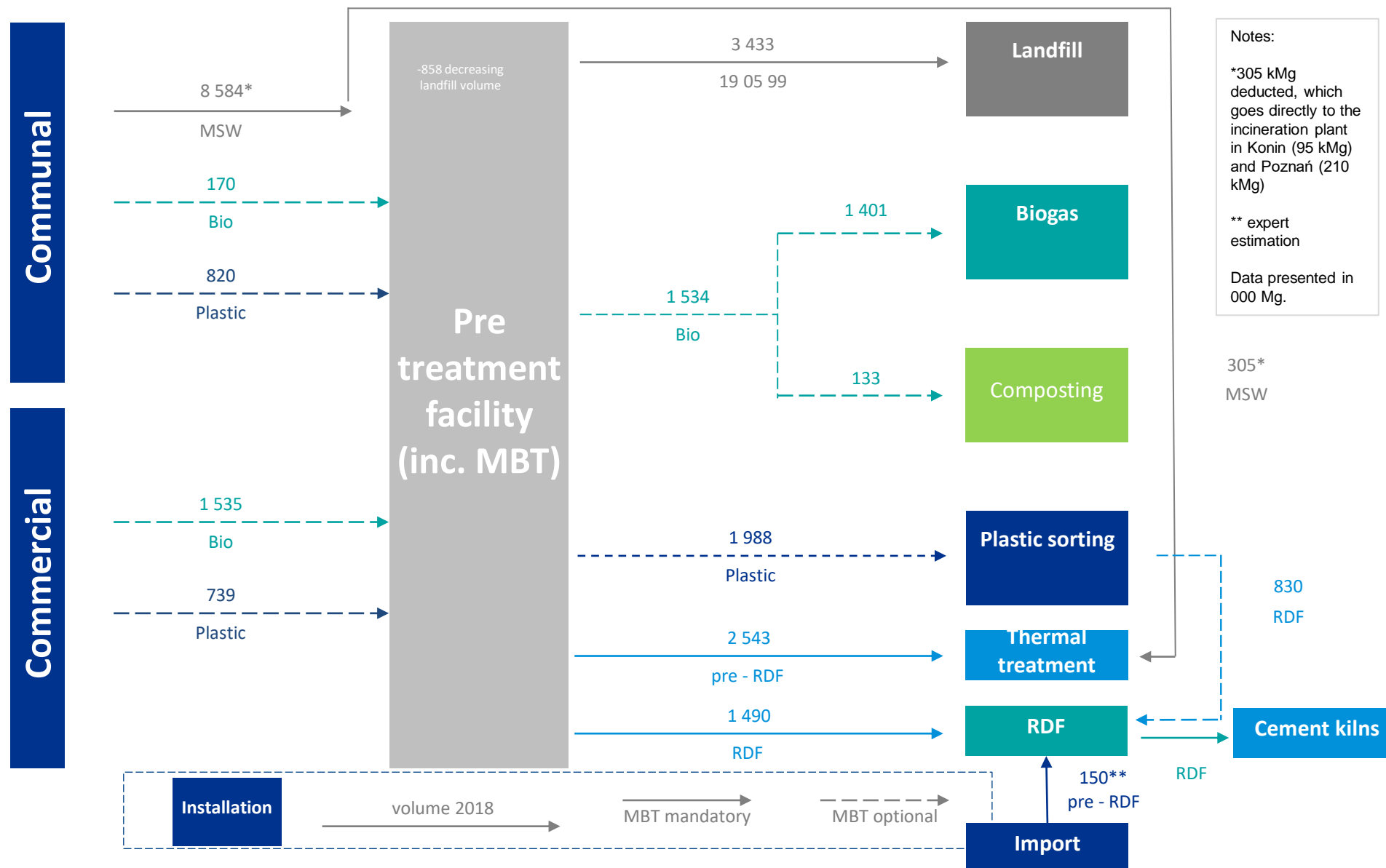
This includes codes selected waste from industrial sector:

- | | |
|------------|------------|
| • 02 03 81 | • 02 06 03 |
| • 02 03 82 | • 02 06 80 |
| • 02 04 01 | • 02 07 01 |
| • 02 04 03 | • 02 07 02 |
| • 02 04 80 | • 02 07 04 |
| • 02 05 01 | • 02 07 05 |
| • 02 05 02 | • 02 07 80 |
| • 02 05 80 | • 16 03 05 |
| • 02 06 01 | • 16 03 06 |
| • 02 06 02 | • 16 03 80 |

Selected parts of value chain



Selected parts of value chain - 2018



Waste forecast – Methodology

Waste volumes forecast

- The volumes forecast has been developed with the consideration for the 4 key areas:
 - Economy development impact (indicators of GDP, average salary, etc.),
 - Cross independence between waste streams,
 - Regulatory impact,
 - Market trends impact.
- Due to the reporting dates and its impact on availability of the current data, volumes for 2019 were also forecasted.

Baseline volume forecast

- Economy development indicators were analyzed and used for forecasting the baseline volumes. Indicators were divided into 3 groups: general, bio and plastic (see the tables „Indicators (CAGR 2020-2025)“ for the assumed values, detailed values are presented in „Appendix – Indicators“):
 - General: GDP, average salary, population
 - Bio: fresh food sales, catering industry market value
 - Plastic: industrial production sales, plastic packaging volume sold

Waste forecast – Methodology

MSW baseline volumes were forecast with application of the average CAGR of general indicators.

Bio baseline volumes were forecast with application of the average CAGR of general and bio indicators.

Plastic baseline volumes were forecast with application of the average CAGR of general and plastic indicators.

See „Impact on volume dynamics” for the values of the combined impact for particular fractions.

Scenarios

Two scenarios were developed. Scenario 1 assumes a more favorable economy development, which translates subsequently to higher consumption and production levels.

Additionally, scenarios have been differentiated in terms of assumptions for development of the streams for thermal treatment and cement kilns. In case of Scenario 1, in 2018 a maximum possible level of mixing commercial plastic with MSW was assumed for the stream dedicated to cement kilns (assuming the proportion of MSW to commercial plastic at 75:25 and the use of all commercial plastic volume for this mix) In 2025 it is assumed that RDF producers will mix MSW only necessary to reach cement kilns demand (about additional 5% from MSW). In case of Scenario 2 it was assumed that all commercial plastic volume is used for the stream dedicated to cement kilns with no mixing with MSW. Subsequently, the proposed scenarios present the opposite possible extremes.

Waste forecast – Methodology

Indicators (CAGR 2020-2025)		
	Scenario 1	Scenario 2
GDP	3,0%	2,3%
Average salary	3,0%	2,3%
Population	-0,03%	-0,03%
Fresh Food sales	2,1%	2,1%
Value of catering industry	3,3%	0,9%
Sold production of industry	6,0%	5,3%
Plastic total	3,5%	3,5%

Source: GUS, Moodys, Euromonitor, PMG, PFR, KPMG calculations

Impact on volume dynamics			
Indicator	2020-2025		
Stream	Bio	Plastic	MSW
Scenario 1	2,3%	3,1%	2,0%
Scenario 2	1,5%	2,7%	1,6%

Source: KPMG calculations

Waste forecast - Ratios

Cross independence						
Stream Scenario	Communal			Scenario 2		
	Scenario 1					
Stream	MSW	Bio	Plastic	MSW	Bio	Plastic
2019	0%	0%	0%	0%	0%	0%
2020	-0,5%	1%	3%	-1%	0%	3%
2021	-2,6%	63%	3%	-3%	62%	3%
2022	-2,8%	39%	3%	-3%	38%	3%
2023	-3,0%	28%	3%	-4%	28%	3%
2024	-3,3%	22%	3%	-4%	21%	3%
2025	-3,6%	18%	3%	-4%	18%	3%

Source: KPMG calculations

Trends and regulations impact (S1)					
Year	MSW	Bio	Plastic	Bio	Plastic
2019	-0,10%	-0,10%	-0,40%	0%	0%
2020	-0,10%	-0,10%	-0,50%	0%	0,00%
2021	-0,10%	-0,10%	-1,80%	0%	-0,40%
2022	-0,10%	-0,10%	-2,30%	0%	-0,65%
2023	-0,10%	-0,10%	-1,70%	0%	-0,45%
2024	-0,10%	-0,10%	-0,60%	0%	-0,25%
2025	-0,10%	-0,10%	-0,35%	0%	-0,13%

Source: KPMG calculations

Trends and regulations impact (S2)					
Year	MSW	Bio	Plastic	Bio	Plastic
2019	-0,05%	-0,05%	-0,35%	0%	0%
2020	-0,05%	-0,05%	-0,40%	0%	0,00%
2021	-0,05%	-0,05%	-0,95%	0%	-0,20%
2022	-0,05%	-0,05%	-0,90%	0%	-0,33%
2023	-0,05%	-0,05%	-0,65%	0%	-0,23%
2024	-0,05%	-0,05%	-0,30%	0%	-0,13%
2025	-0,05%	-0,05%	-0,18%	0%	-0,06%

Source: KPMG calculations

Cross independence assumptions for the communal streams

MSW baseline volumes were adjusted to account for the increased share of „PPMS” (paper, plastic, metal, glass) and bio streams that will be selectively collected in further years (and need to be subsequently subtracted from the MSW baseline volumes).

Plastic baseline volumes were adjusted with the additional volume that was subtracted from the MSW baseline volumes. The share of plastic volumes in MSW baseline volumes was estimated based on data on MSW morphology. The pace of growth of selective collection of plastic was estimated based on historical CAGR.

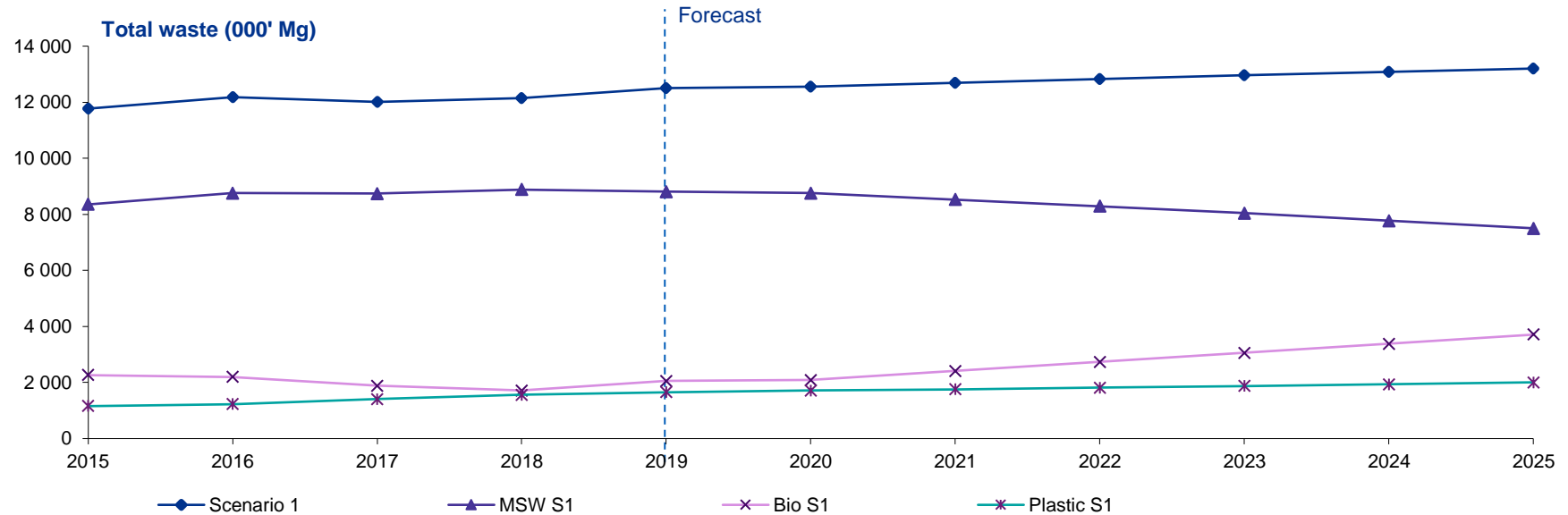
Bio baseline volumes were adjusted with the additional volume that was subtracted from the MSW baseline volumes. The share of bio volumes in MSW baseline volumes was estimated based on data on MSW morphology. The pace of growth of selective collection of bio was estimated based on industry expert market knowledge.

In the last stage impact of regulatory and market trends was applied

13 trends were taken into account, however 7 of them concerned cross independence and were not included again. Regulations/trends that were considered cover:

- Packaging waste regulation
- 2019/904 EU plastic directive
- 2018/851 EU waste Directive
- Plastic shopping bag fee regulation
- Ecological awareness in Poland
- Plastic waste tax

Waste forecast – All fractions

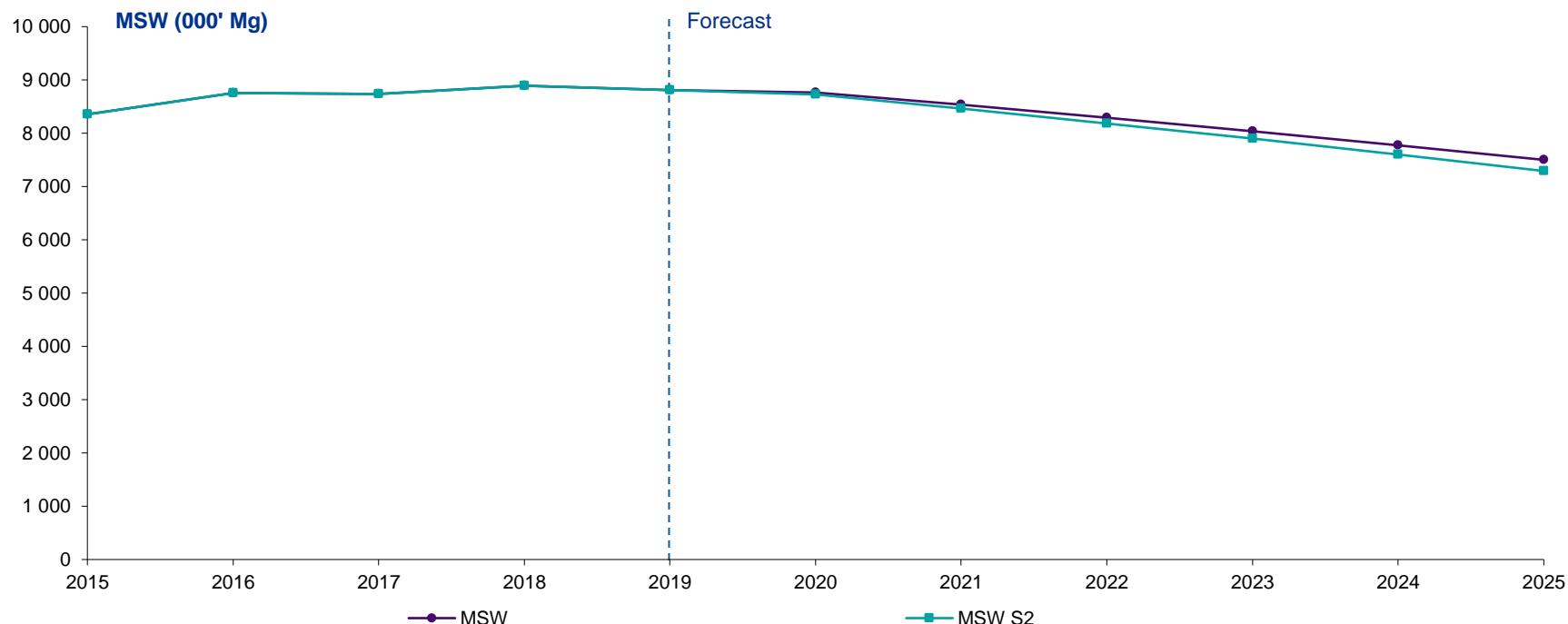


Total (000' Mg)												
	CAGR 2020-2025	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Scenario 1	1,0%	11 775	12 179	12 022	12 152	12 506	12 553	12 693	12 833	12 966	13 091	13 207
MSW	-3,1%	8 359	8 759	8 741	8 889	8 806	8 761	8 533	8 293	8 040	7 776	7 498
Bio	12,2%	2 259	2 195	1 877	1 705	2 047	2 086	2 405	2 728	3 054	3 382	3 711
Plastic	3,2%	1 156	1 226	1 404	1 559	1 653	1 706	1 755	1 812	1 872	1 934	1 998
Scenario 2	0,5%	11 775	12 179	12 022	12 152	12 511	12 499	12 582	12 659	12 726	12 782	12 827
MSW	-3,5%	8 359	8 759	8 741	8 889	8 811	8 727	8 462	8 186	7 899	7 601	7 292
Bio	11,6%	2 259	2 195	1 877	1 705	2 047	2 072	2 374	2 677	2 979	3 281	3 580
Plastic	2,8%	1 156	1 226	1 404	1 559	1 653	1 700	1 746	1 795	1 847	1 900	1 955

Comment

The total volume of analyzed fractions increases. It is influenced by growing consumption resulting from rising wages and GDP, whose dynamics was reduced due to lockdown in the global economy in 2020.

Communal waste forecast (1/2)

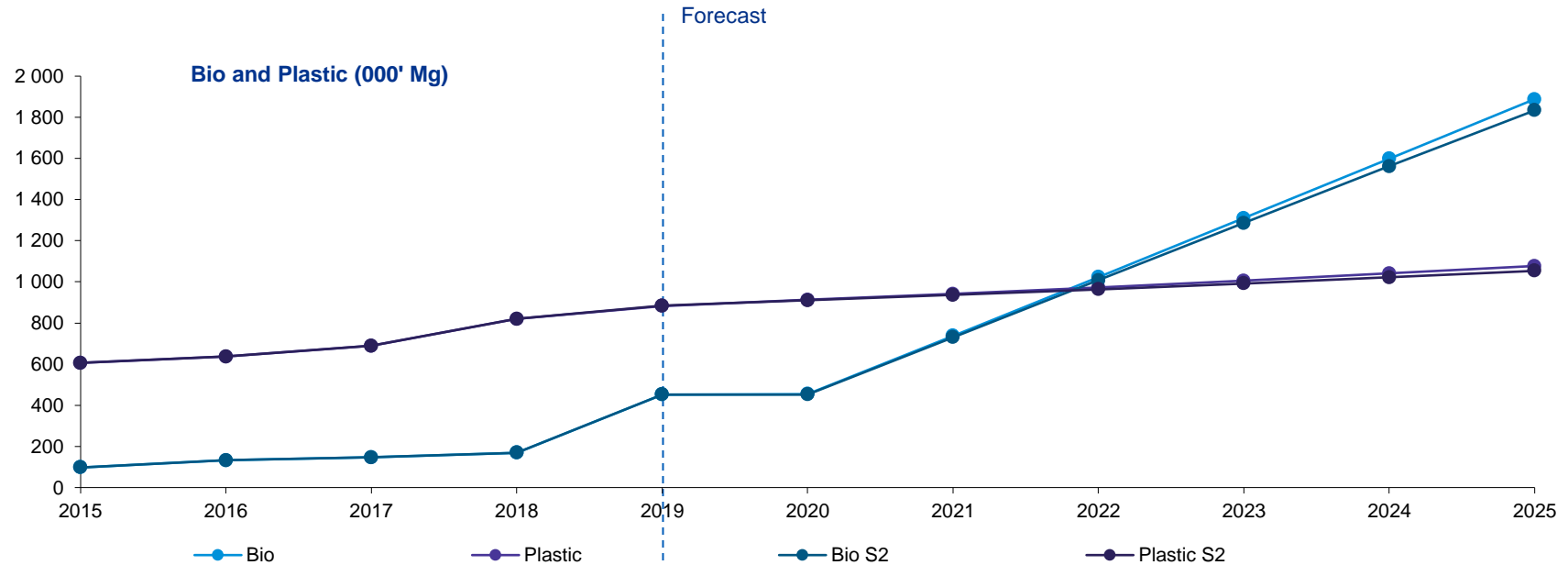


MSW (000' Mg)												
	CAGR 2020-2025	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Scenario 1	-3.1%	8 359	8 759	8 741	8 889	8 806	8 761	8 533	8 293	8 040	7 776	7 498
Scenario 2	-3.5%	8 359	8 759	8 741	8 889	8 811	8 727	8 462	8 186	7 899	7 601	7 292

Comment

Over 2015-2019, MSW volume increased, including minor fluctuations. From 2020, a decrease is expected resulting from the implementation of regulations regarding selective collection, which will result in a lower share of glass, plastic, paper and metal in the morphological composition of mixed waste. Had implication of selective collection impact been not considered, the value of the MSW would increase depending on scenario by CAGR 1.6% or 2% in 2020-2025.

Communal waste forecast (2/2)

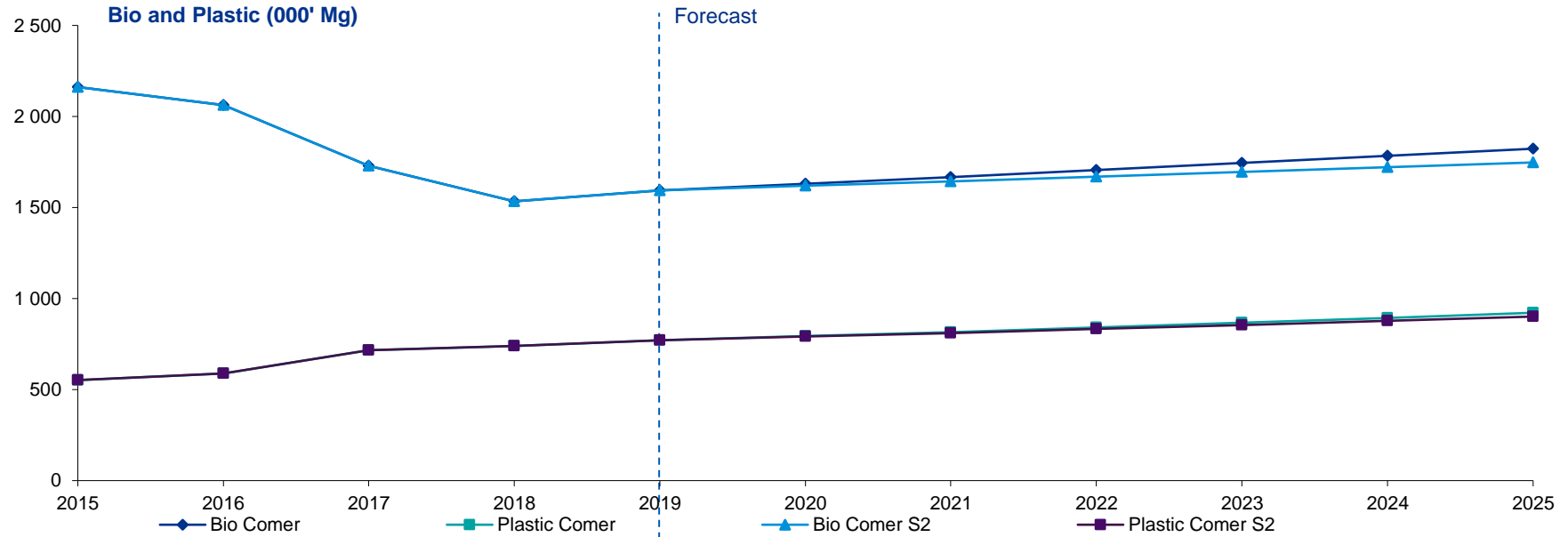


Bio and Plastic (000' Mg)												
	CAGR 2020-2025	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Bio												
Scenario 1	32,9%	98	132	147	170	452	455	737	1 022	1 310	1 598	1 887
Scenario 2	32,3%	98	132	147	170	452	453	730	1 008	1 285	1 561	1 833
Plastic												
Scenario 1	3,4%	606	637	689	820	883	912	941	972	1 005	1 040	1 076
Scenario 2	3,0%	606	637	689	820	883	909	936	963	992	1 022	1 053

Comment

Over 2015 - 2018, the bio fraction was at a low level due to the lack of selective collection. Due to the regulations on selective collection, high mass compared to plastic or paper, and also due to the change in the formula for calculating the level of recycling, a significant increase in the bio fraction is expected. A similar relationship applies to plastic, however, although it accounts for a large bulk of waste, its weight is low. Hence, the increase in plastic volume is much lower.

Commercial waste forecast

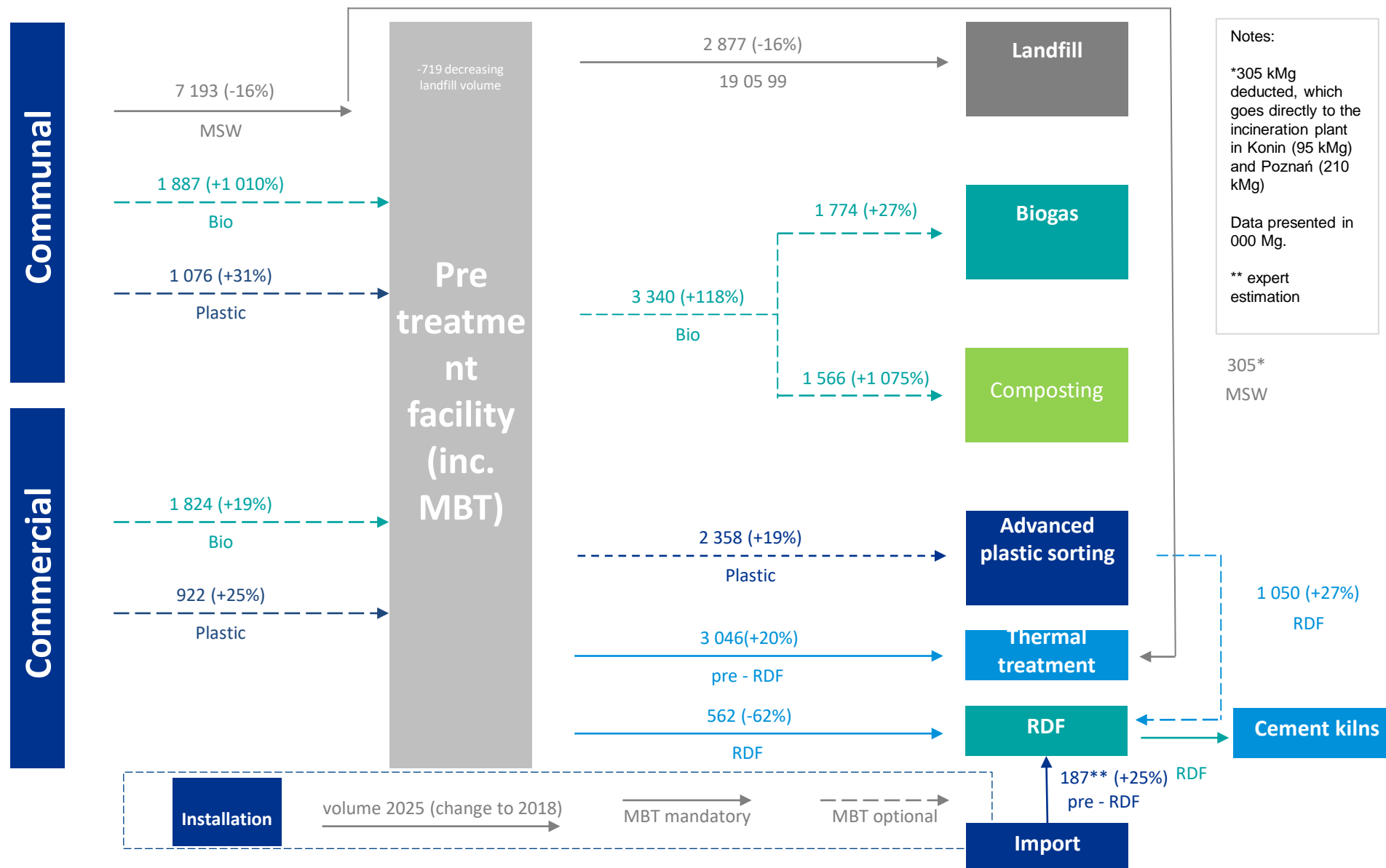


Bio and Plastic (000' Mg)												
	CAGR 2020-2025	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Bio												
Scenario 1	2.3%	2 161	2 063	1 730	1 535	1 595	1 631	1 668	1 705	1 744	1 784	1 824
Scenario 2	1.5%	2 161	2 063	1 730	1 535	1 595	1 619	1 644	1 669	1 694	1 720	1 747
Plastic												
Scenario 1	3.0%	550	589	716	739	770	793	815	840	867	893	922
Scenario 2	2.7%	550	589	716	739	770	790	810	832	855	878	902

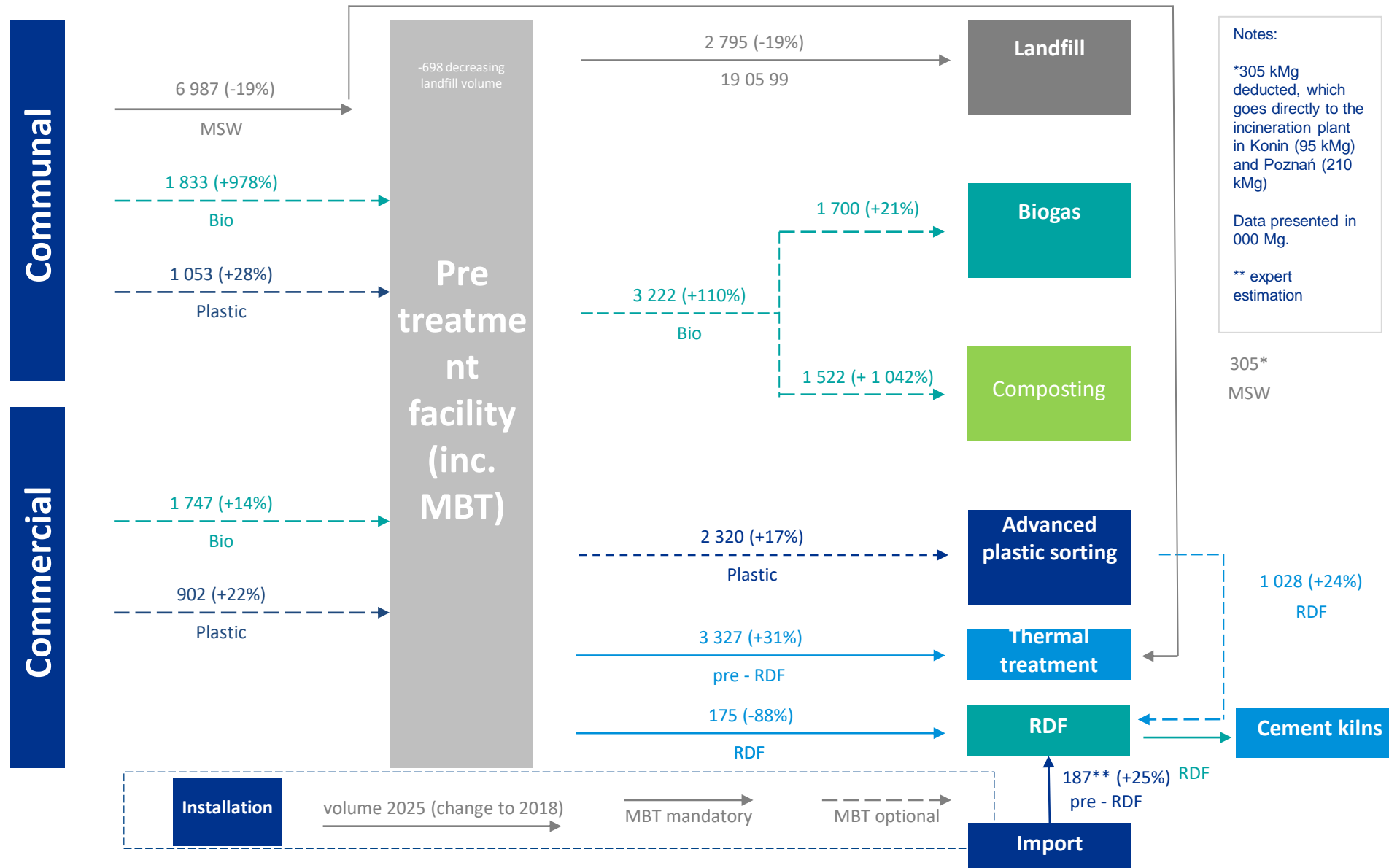
KPMG comment

Decrease in the volume of bio in the years 2015 - 2018 results from improvements in quality of recording of the individual waste codes. Both the bio and plastic fractions will grow in the forecast years. The increase is linear and results from a strong link with economic growth. In the commercial stream there is no upside effect resulting from an increase in selective collection (as observed in communal stream) due to the fact that selective collection has been historically there in this stream at a much higher level than in communal stream.

Selected parts of value chain – 2025 S1



Selected parts of value chain – 2025 S2



Capacities of waste treatment plants

Capacities of waste treatment plants

MBT

MBT capacity (000'Mg/year)						
	Mechanical			Biological		
	2016	Additional*	Total	2016	Additional	Total
Poland	10 625	370	10 995	4 666	648	5 314
Dolnośląskie	1 134	0	1 134	525	18	543
Kujawsko-Pomorskie	762	0	762	295	28	323
Lubelskie	533	0	533	186	46	232
Lubuskie	396	5	401	203	0	203
Łódzkie	404	150	554	222	108	330
Małopolskie	823	0	823	448	0	448
Mazowieckie	1 263	109	1 372	548	69	617
Opolskie	426	0	426	169	32	201
Podkarpackie	405	43	447	104	95	199
Podlaskie	457	17	474	133	84	217
Pomorskie	713	15	728	228	63	290
Śląskie	1 168	0	1 168	573	0	573
Świętokrzyskie	201	0	201	77	41	118
Warmińsko-Mazurskie	483	7	490	231	0	231
Wielkopolskie	686	25	711	360	65	425
Zachodniopomorskie	773	0	773	364	0	364

Source: VVMP 2016-2022, KPMG research

Note: Additional capacity means installations / landfills that were created after December 31, 2016 or are under construction and are highly likely to be put into service.

KPMG comment

MBT installations included in the analysis are consistent with the lists of Marshals of individual voivodships in accordance with the amendment to the Act on U.p.c.g. (Dz. U. of 2019, item. 1579), which present municipal installations for mechanical-biological treatment MSW waste operating in voivodships. MBT installations are the dominant technology in Poland for processing MSW waste. At the end of 2016, MBT installations had a capacity over 10 500 thousands Mg/year for the mechanical part and over 4 500 thousands Mg/year for the biological part. Thus, companies operating on the market focus on improving the efficiency of individual installations and not on building new ones. In accordance to Circular Economy Package announced by EC, MBT installations will need to change their purpose, thus serving for cleaning of selectively collected waste, and the biological part will be used for green and other biodegradable waste. This might allow to achieve a 65% recycling rate of municipal waste. until 2030. Therefore, many of the investments in MBT are not focused on increasing capacity, but on the transformation of mechanical part of MBT into MRF.

Capacities of waste treatment plants

Biogas

Biogas capacity						
	Capacity (MWe)			Waste capacity (000' Mg)		
	03.2020	Additional	2025	03.2020	Additional	Total
Poland	109	145	254	1 089	1 450	2 539
Dolnośląskie	11	14	25	105	141	246
Kujawsko-Pomorskie	8	11	19	84	108	192
Lubelskie	11	14	25	109	139	248
Lubuskie	3	4	6	28	36	64
Łódzkie	5	6	12	51	65	116
Małopolskie	1	1	3	11	15	26
Mazowieckie	6	8	13	59	76	135
Opolskie	2	3	5	20	26	46
Podkarpackie	2	3	6	25	32	57
Podlaskie	8	10	18	77	99	175
Pomorskie	12	19	31	125	186	311
Śląskie	2	2	4	16	20	36
Świętokrzyskie	1	1	2	8	10	18
Warmińsko-Mazurskie	12	15	27	118	152	271
Wielkopolskie	13	18	31	127	182	308
Zachodniopomorskie	13	16	29	127	163	290

Source: KOWR

KPMG comment

The table above presents agricultural biogas plants, which are dominating biogas plant type at the Polish market. Current trend to create biogas plants in Poland is based due to the relatively low investment costs and easy permits obtaining process. Based on expert knowledge, it has been assumed that in 2020 biogas plants capacity will increase by 30%, in 2021 by 20% and in subsequent years by 10%. The adopted assumptions indicate that the capacity of the biogas plants will be doubled by 2025. It is important that agricultural biogas plants in the coming years can be transformed into waste fed biogas plants without significant financial investments. The current functioning in the form of agricultural biogas plants is mainly due to restrictions caused by EU funding, which enforces functioning within a certain scope for 5 years from receiving funds. Currently about 20% of biogas plants (by number of plants) have permit to operate on waste. Additional 20% (by number of plants) are in the process of obtaining such permit. In accordance to European Green Deal, impact of biofuels in Energy mix should be extended, which creates an opportunity to develop this direction also in Poland.

Currently, the development of the Biogas plants to the definition of agricultural biogas. This definition limits the possibility of accepting biowaste from Communal stream (code „20”). A plant that receives the waste under code „20” losses privileges related to reference price of the Energy produced. Meanwhile there is an advanced discussion about changes in this definition. Also, with over 3mio tones of Communal biowaste, this stream could replace crops like corn to feed the AD plants with better economical result (crops are cost for the plant, when biowaste is a stream that is paid to the plant). Those arguments aloud to deduce that in new projects of AD plants, most of them will analyze the possibility to obtain a status of waste treatment facility even if it conducted to the Lost of privileged price of produced Energy.

Moreover the current business model in which biogas is used at CHP can be replaced in future by direct production of purified biomethane which can be injected into the heating network. This would lead to reduction of CAPEX thanks to elimination of costs of CHP module.

Gap analysis



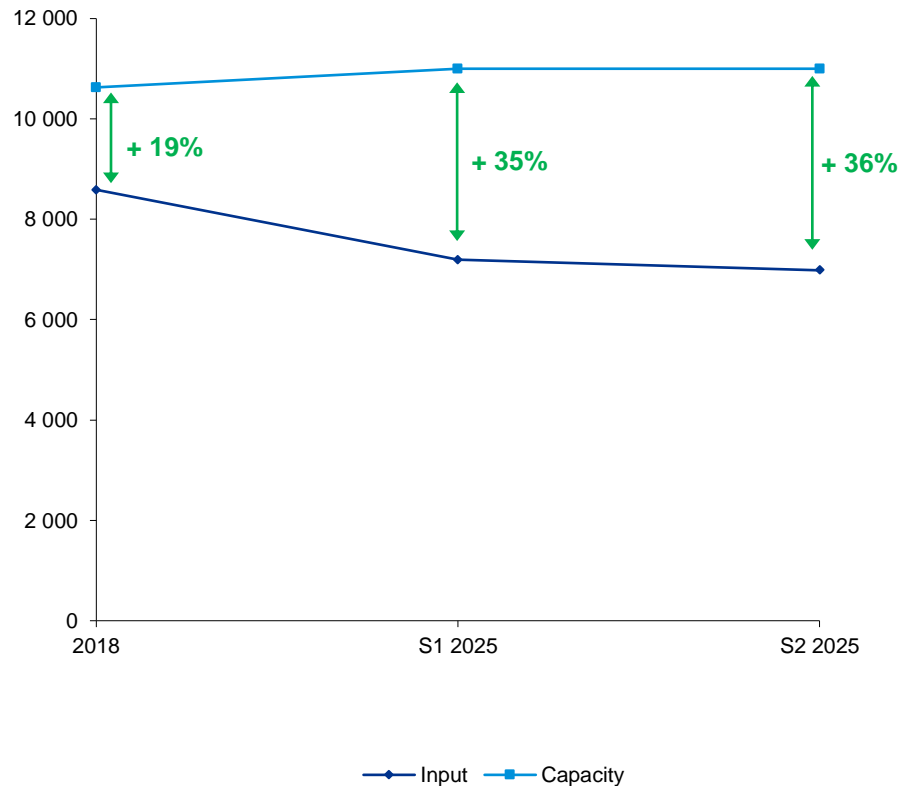
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Gap analysis

MBT

MBT (000' Mg)



KPMG Comment

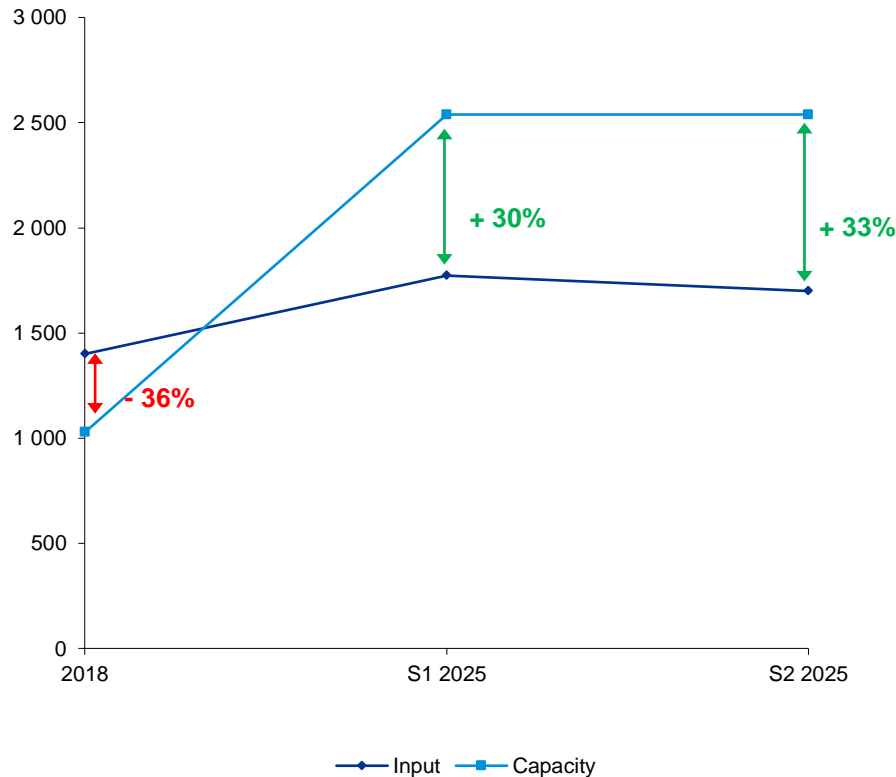
In 2018, the installation capacity at country level was higher than generated waste volume by 2 041 thousand Mg (19%). In 2025, capacity will also exceed generated waste volume and the disproportion will increase to about 35-36%. Increase of difference results from decrease of MSW volume caused by higher selective waste collection rate.

Key conclusions

- Processing capacity is sufficient for MSW waste treatment with:
 - over 10,5 mMg/year in mechanical part (national level)
 - over 4,5 mMg/year in biological part (national level)
- In terms of EU regulations, MBT might need to change their purpose in the future:
 - the mechanical part of these installations can be used for effective sorting of raw material waste and cleaning of waste separated at source,
 - the biological part can be used for composting or fermentation of bio-waste and green waste.
- Note: data regarding the capacity level is forecast based on the levels as declared in the administrative decisions. The actual capacity might be lower.
- Note: The presented gap refers to the national level. MBT capacity presented as 2018 refers to capacity for 2016

Biogas

Biogas (000' Mg)



KPMG Comment

In 2018, the capacity of the biogas plant was lower than the available volume of the bio fraction. Due to the dynamic increase in the number of biogas plants, caused, among others, by the low CAPEX needed to implement the investment, in 2025 the capacity of the biogas plant will be higher than the available bio volume.

Key conclusions

- Capacity of biogas plants is expected to increase in the following years:
 - in 2020 by 30%,
 - in 2021 by 20%
 - in subsequent years by 10%.
- The increased capacity of biogas installations is forecast based on the assumption that the current agricultural biogas plants in Poland (that are now processing by-products of agricultural production) would be able to transform to collect waste streams.

Appendix - pricing

Appendix

Pricing (1/2)

Gate fees (PLN/Mg)									
	MSW			Bio Biogas			Bio Composting		
	Min	Median	Max	Min	Median	Max	Min	Median	Max
Poland	268	438	607	131	309	1 413	122	247	408
Dolnośląskie	350	405	530	184	327	2 300	140	331	500
Kujawsko-Pomorskie	60	392	700	50	210	520	15	250	338
Lubelskie	211	564	800	171	246	1 000	199	300	402
Lubuskie	312	449	700	206	245	1 178	80	235	330
Łódzkie	479	479	479	280	420	450	265	265	265
Małopolskie	270	445	500	200	360	650	320	425	490
Mazowieckie	446	618	700	225	350	450	220	265	350
Opolskie	295	379	568	155	190	568	121	187	440
Podkarpackie	388	388	388	482	482	482	0	0	0
Podlaskie	230	395	495	130	230	500	150	190	300
Pomorskie	137	415	600	5	266	512	80	170	350
Śląskie	225	461	675	0	521	1 850	170	325	465
Świętokrzyskie	200	322	480	0	248	480	50	300	550
Warmińsko-Mazurskie	275	396	534	0	432	6 000	35	296	360
Wielkopolskie	206	510	770	0	215	5 000	0	265	850
Zachodniopomorskie	199	385	800	0	197	660	110	150	534

Source: KPMG research and interviews with market players (Prices from 107 installations)

Comment

The table above summarizes the prices (PLN/Mg) from 107 price lists that were obtained and groups them according to three categories containing the listed waste codes.

I. MSW: 20 03 01, 20 03 99

II. Bio Composting: 20 02 01

III. Bio Biogas: 02 03 81, 02 03 82, 02 04 01, 02 04 03, 02 04 80, 02 05 01, 02 05 02, 02 05 80, 02 06 01, 02 06 02, 02 06 03, 02 06 80, 02 07 01, 02 07 02, 02 07 04, 02 07 05, 02 07 80, 16 03 05, 16 03 06, 16 03 80, 20 01 08, 20 01 25, 20 03 02

As shown in the table, prices in individual voivodships may differ significantly. The maximum price at the national level for Bio Biogas category is inflated due to 6 voivodships in which particularly high prices were recorded for codes 20 01 25, 16 03 05 and 16 03 06 (higher than 1 000 PLN / Mg). In the case of Bio Composting category, no prices were obtained from installations operating in the Podkarpackie voivodship.

Appendix

Prices – certified compost

Fertilizers		
Product	Producer	Price (PLN/Mg)
Average		48
Eko-kompost	SUEZ POŁUDNIE	120.00
BIOTOP	WODOCIĄGI SŁUPSK	35.00
ULKOMP	"SWARZEWO" w Swarzewie	34.00
ZÓWAN	PWiK Giżycko	0.81
ORGLEB	Miejskie Wodociągi w Chojnicach	7.29
Agro-Felek	ZZO Poznań	150.00
Kompost Braniewski	Wodociągi Miejskie w Braniewo	18.00
Kompost FERTILO	PUK Tarnów	46.30
PRONATURAL	MKUO PRONATURA	23.15

Source: KPMG research

Soil properties improvers		
Product	Producer	Price (PLN/Mg)
Average		19
GLEBOvit	MPGK w Zabrze	0,93
HUM-OS	ZKG "Czyste Miasto, Czysta Gmina"	7,00
Komposad	ZWiK Trzebiatów	3,00
Próchniczek Kutnowski	Tonsmeier Centrum	18,52
GLEKOMP	ZUK w Puławach	25,00
AGROVIT	PWiK w Mińsku Mazowieckim	12,00
OSKAR I	MWiO Grudziądz	46,30
KOMPOL	MZGK w Polanicy Zdroju	5,10
KOMRES	MPGK -Rzeszów	37,04
GRUNTEX LWiK	Lubskie Wodociągi i Kanalizacja	37,04
PGK-uś	PGK Radomsko	40,00
OSKAR III	MWiO Grudziądz	25,00
Środek poprawiający jakość WOL	ZUO Siedlce	5,00
Kompost Adamki	ZZOK w Adamkach	17,00
Kompo Master 1	Master Odpady i Energia	9,26
Organika	Zakład Komunalny w Opolu	20,00
Kompo Master 2	Master Odpady i Energia	9,26
Kompomix	SOK Oświęcim	30,00
Terrawit	ZGO Jarocin	30,00
NOWODWOREK	ZZO Nowy Dwór	20,00
Kompost Brzeziński	ZGK w Morawicy	18,00
MAGNO HORTIS	MZGOK w Koninie	10,00

KPMG comment

Data presented above base on the list from the Ministry of Agriculture and Rural Development, updated on the 15th of March, 2020. The Ministry's list includes Polish producers of: fertilizers and soil properties improvements, whom obtained permits for the production of certified compost. For the purpose of analysis, only producers related to waste management industry were taken into account, for the relevance of result. Certified compost prices vary considerably, depending on the producer. The highest prices for fertilizers have ZZO Poznań and SUEZ Południe, while the lowest price has PWiK Giżycko. For soil properties improvers, the highest price was noted in MWiO Grudziądz and PGK Radomsko, while the lowest price has MPGK in Zabrze.

The high price variation results from differences in the quality and composition of the products, as well as lack of regulations for producers in the price setting process.

Appendix - indicators

Appendix

Indicators

Indicators (Scenario 1)												
	Unit	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
GDP	PLN per person	46 814	48 433	51 776	54 417	56 593	55 461	57 347	59 297	61 313	63 398	65 553
Change (YoY)	%		3,5%	6,9%	5,1%	4,0%	-2,0%	3,4%	3,4%	3,4%	3,4%	3,4%
Average salary	PLN	4 151	4 291	4 528	4 835	5 087	4 985	5 155	5 330	5 511	5 699	5 892
Change (YoY)	%		3,4%	5,5%	6,8%	5,2%	-2,0%	3,4%	3,4%	3,4%	3,4%	3,4%
Population	Person	38 437 239	38 432 992	38 433 558	38 411 148	38 402 455	38 393 764	38 385 075	38 376 388	38 367 702	38 359 019	38 350 338
Change (YoY)	%		-0,01%	0,00%	-0,06%	-0,02%	-0,02%	-0,02%	-0,02%	-0,02%	-0,02%	-0,02%
Fresh food sales	000' Tone	13 610	13 965	14 292	14 520	14 828	15 069	15 338	15 593	15 841	16 087	16 435
Change (YoY)	%		2,6%	2,3%	1,6%	2,1%	1,6%	1,8%	1,7%	1,6%	1,6%	2,2%
Gastronomy market	PLN million	25 132	26 957	28 908	30 931	32 864	29 578	30 583	31 623	33 816	36 162	38 670
Change (YoY)	%		7,26%	7,24%	7,00%	6,25%	-10,00%	3,40%	3,40%	6,94%	6,94%	6,94%
Sold industry production	PLN million	1 197 029	1 236 375	1 352 955	1 459 502	1 533 710	1 503 036	1 599 113	1 701 331	1 810 083	1 925 787	2 048 886
Change (YoY)	%		3,3%	9,4%	7,9%	5,1%	-2,0%	6,4%	6,4%	6,4%	6,4%	6,4%
Packaging plastic sold	mIn Unit	12 190	12 547	12 982	13 873	14 308	14 685	15 071	15 471	15 899	16 286	16 969
Change (YoY)	%		2,9%	3,5%	6,9%	3,1%	2,6%	2,6%	2,7%	2,8%	2,4%	4,2%

Indicators (Scenario 2)												
	Unit	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
GDP	PLN per person	46 814	48 433	51 776	54 417	56 593	53 764	55 592	57 482	59 436	61 457	63 546
Change (YoY)	%		3,5%	6,9%	5,1%	4,0%	-5,0%	3,4%	3,4%	3,4%	3,4%	3,4%
Average salary	PLN	4 151	4 291	4 528	4 835	5 087	4 833	4 997	5 167	5 342	5 524	5 712
Change (YoY)	%		3,4%	5,5%	6,8%	5,2%	-5,0%	3,4%	3,4%	3,4%	3,4%	3,4%
Population	Person	38 437 239	38 432 992	38 433 558	38 411 148	38 402 455	38 393 764	38 385 075	38 376 388	38 367 702	38 359 019	38 350 338
Change (YoY)	%		-0,01%	0,00%	-0,06%	-0,02%	-0,02%	-0,02%	-0,02%	-0,02%	-0,02%	-0,02%
Fresh food sales	000' Tone	13 610	13 965	14 292	14 520	14 828	15 069	15 338	15 593	15 841	16 087	16 435
Change (YoY)	%		2,6%	2,3%	1,6%	2,1%	1,6%	1,8%	1,7%	1,6%	1,6%	2,2%
Gastronomy market	PLN million	25 132	26 957	28 908	30 931	32 864	26 291	27 185	28 109	30 059	32 144	34 373
Change (YoY)	%		7,26%	7,24%	7,00%	6,25%	-20,00%	3,40%	3,40%	6,94%	6,94%	6,94%
Sold industry production	PLN million	1 197 029	1 236 375	1 352 955	1 459 502	1 533 710	1 457 025	1 550 160	1 649 249	1 754 672	1 866 834	1 986 165
Change (YoY)	%		3,3%	9,4%	7,9%	5,1%	-5,0%	6,4%	6,4%	6,4%	6,4%	6,4%
Packaging plastic sold	mIn Unit	12 190	12 547	12 982	13 873	14 308	14 685	15 071	15 471	15 899	16 286	16 969
Change (YoY)	%		2,9%	3,5%	6,9%	3,1%	2,6%	2,6%	2,7%	2,8%	2,4%	4,2%

Source: GUS, Moodys, Euromonitor, PMG, PFR, KPMG calculations

Zapraszamy do współpracy!



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Krajowego Rejestru
Sądowego

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