

HORIZON 2020

Innovations for waste management and resource efficiency in Poland
- potential for development and demonstration of technological and non-technological solutions under H2020 -

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INWSTWTKO SPÓŁKA AKCYJNA

INWSTWTKO S.A. began operations in 1999, focusing its activities in the field of environmental protection. Through the years of our activity we have been continuously performing services on the scope of environmental protection, designing and related fields.

Currently, we have an experienced staff of professionals and colleagues from all areas of environmental engineering.

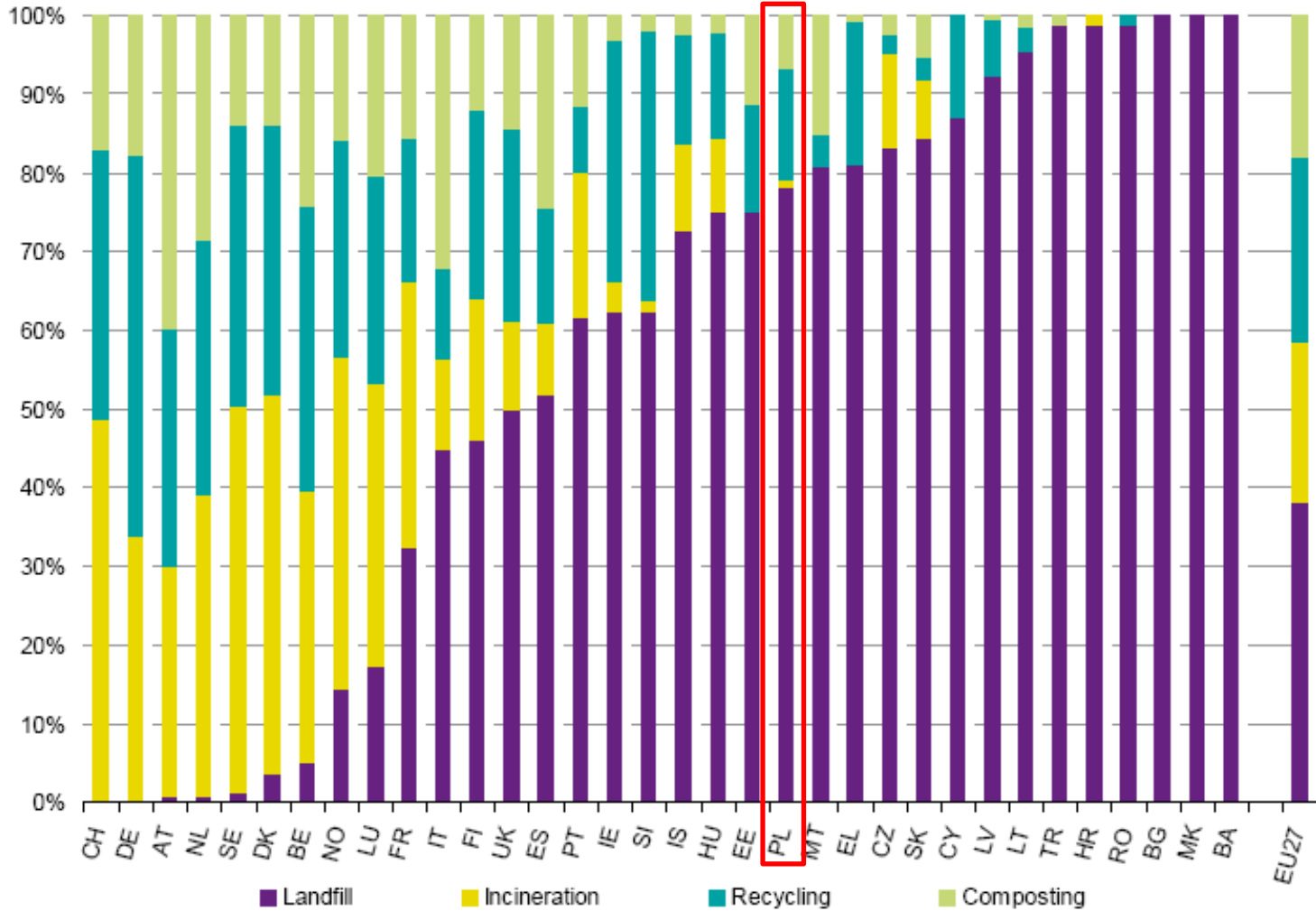




Waste management system in Poland



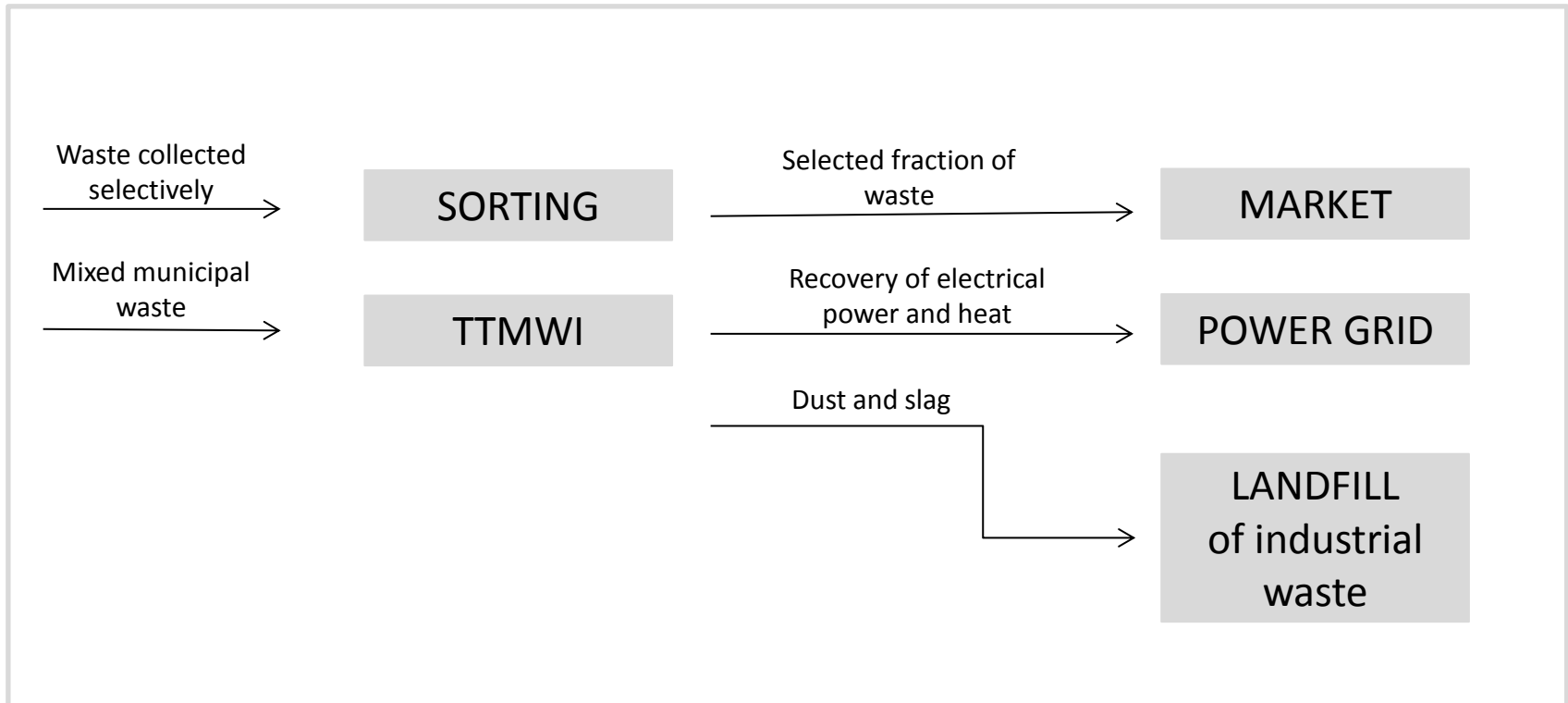
Municipal waste treatment categories sorted by country, 2011



http://epp.eurostat.ec.europa.eu/statistics_explained/index.php?title=File:Municipal_waste_treated_in_by_country_and_treatment_category,_sorted_by_percentageof_landfilling_%28kg_per_capita%29,2011.PNG&filetimestamp=20110708153726



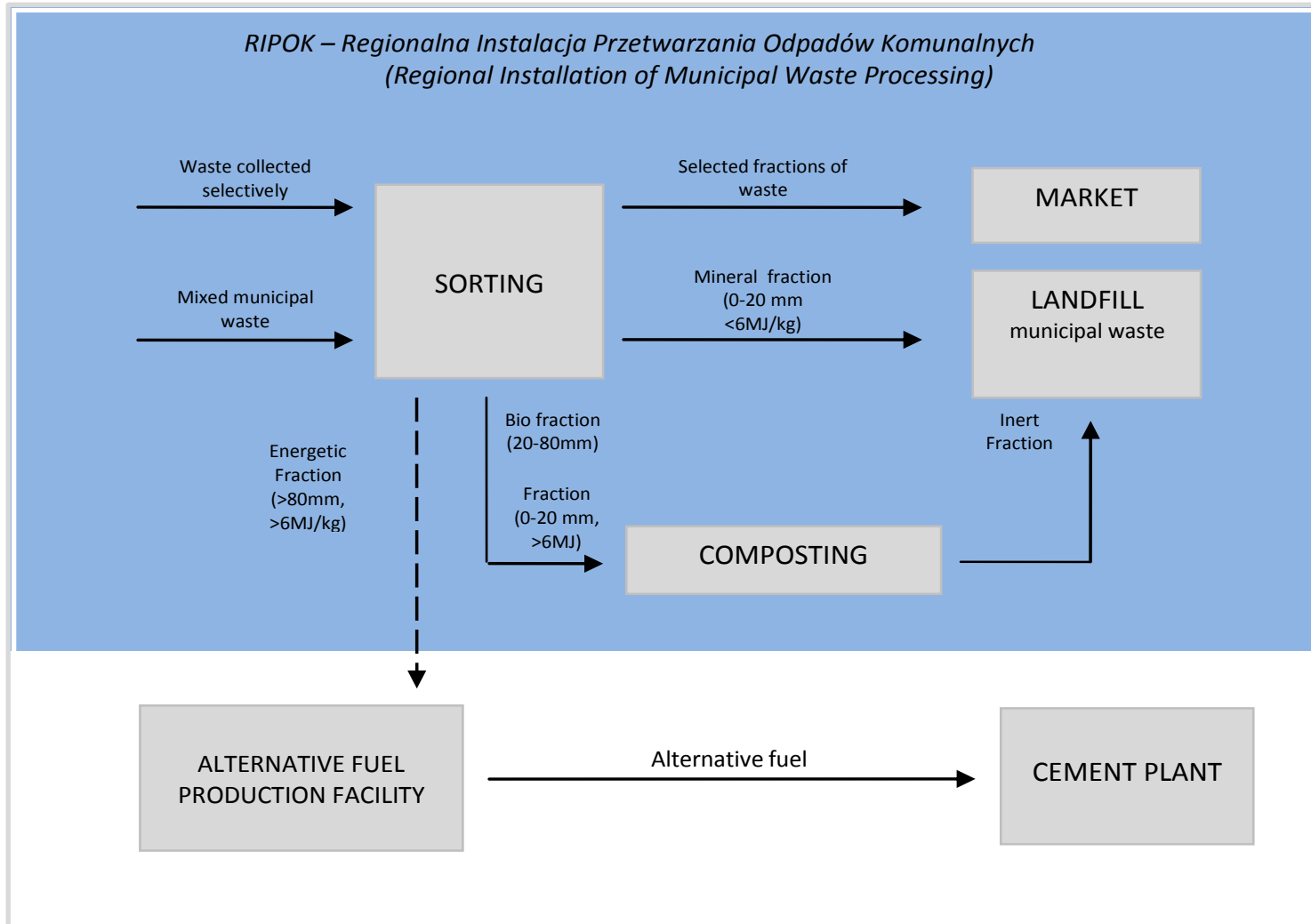
Waste management system for agglomerations > 300 000 inhabitants



TTMWI – Thermal Treatment of Municipal Waste Installation

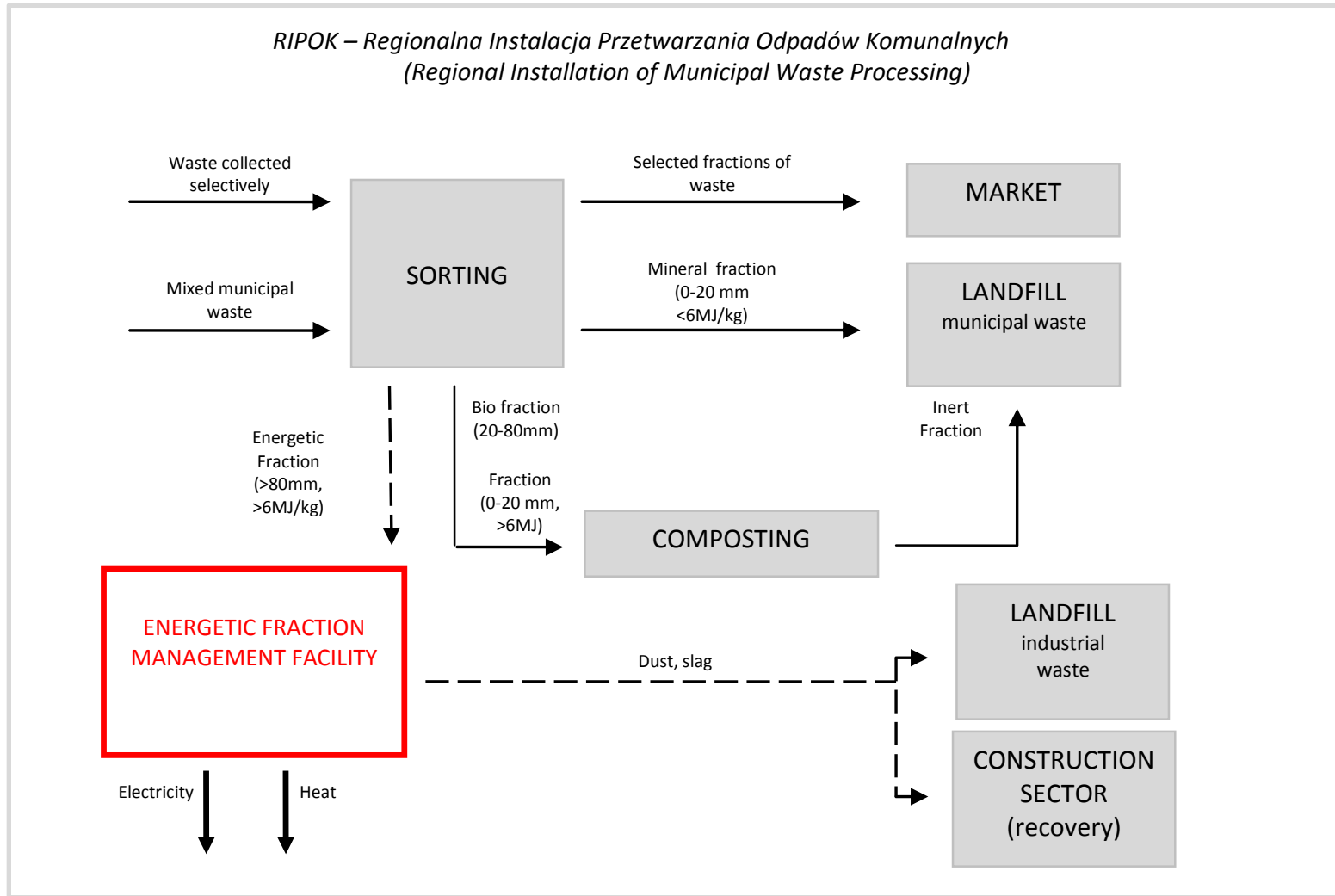


Current waste management system for regions with 150 - 300 000 inhabitants



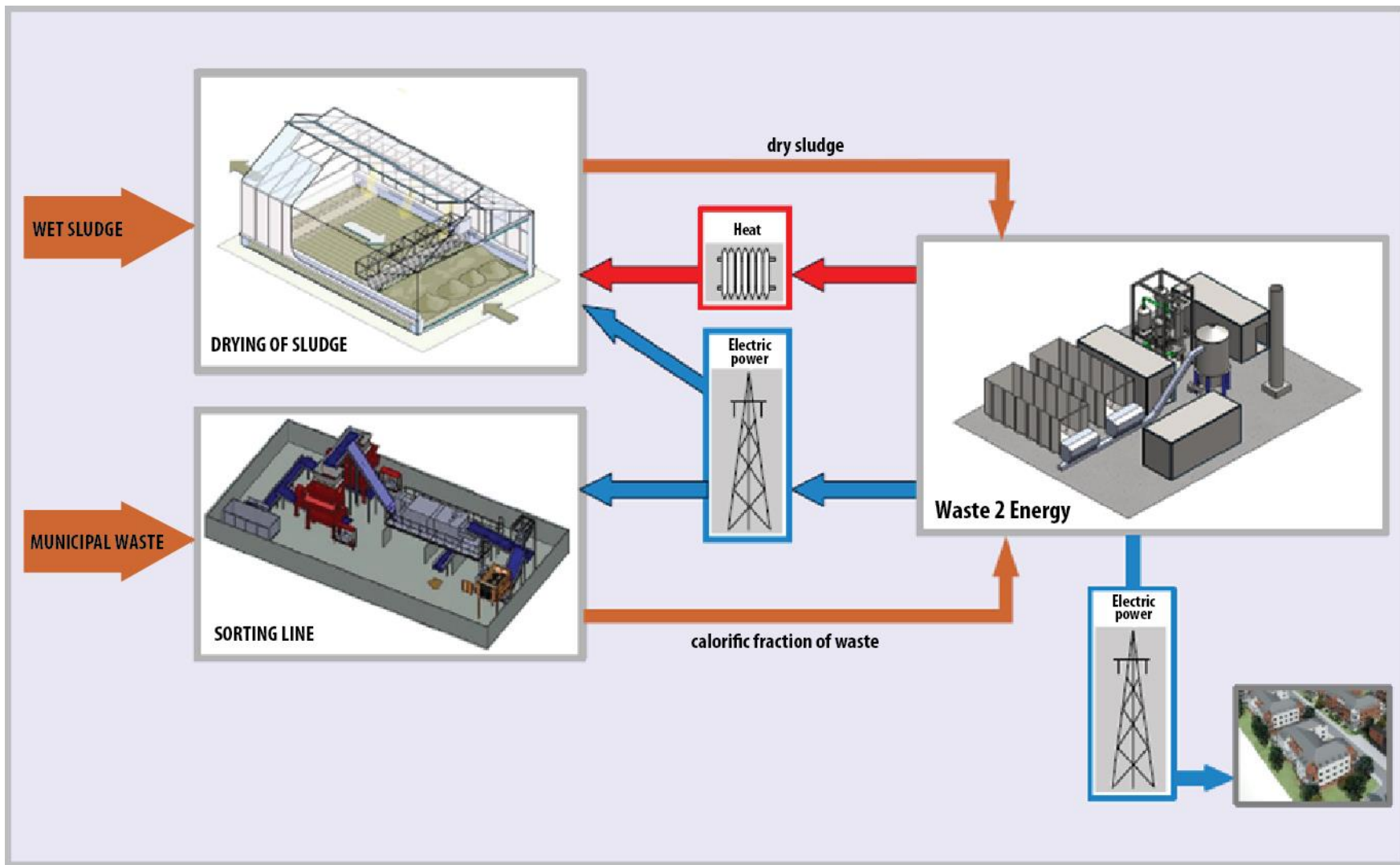


Integrated waste management system for regions with 150 - 300 000 inhabitants





Management of electric power and heat produced in W2E installation

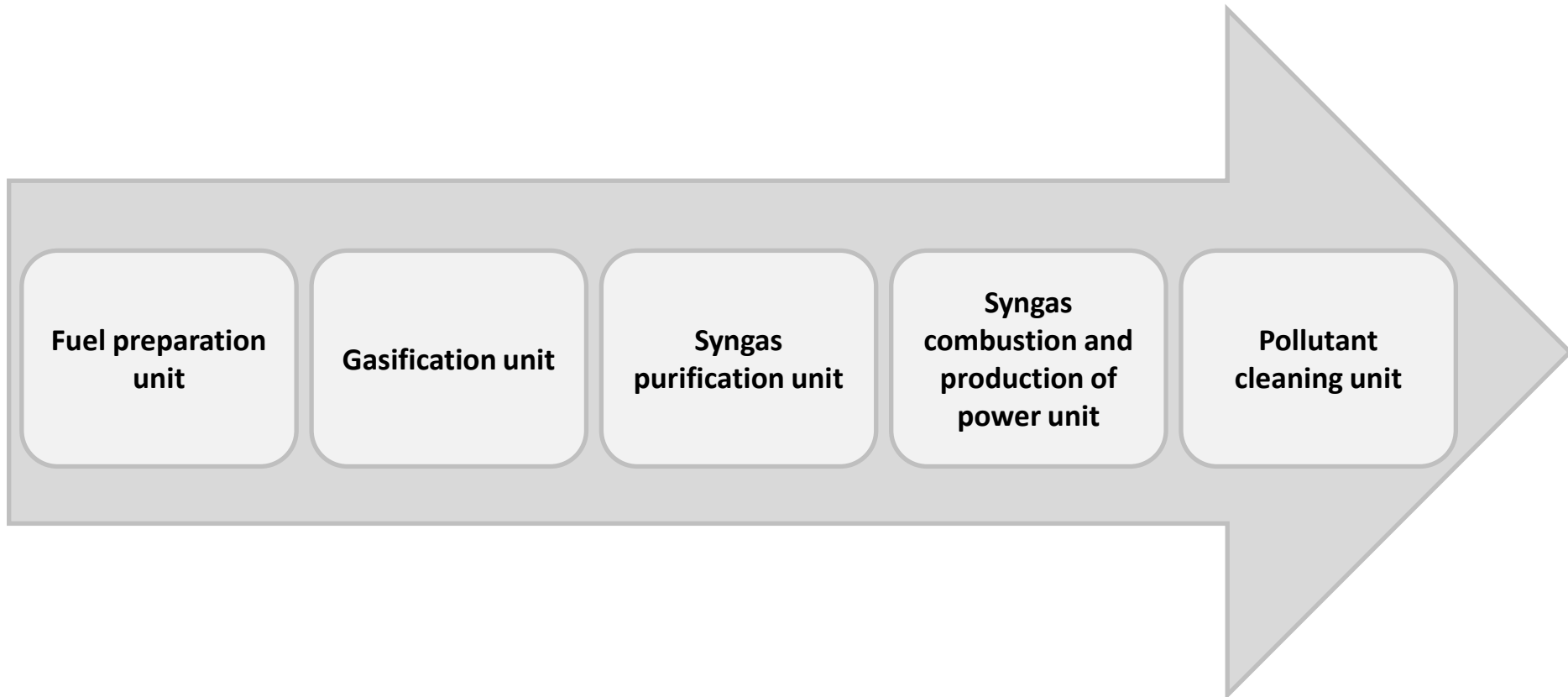




The technology for the management of waste fuel properties using gasification process and highly effective production of electricity and heat in cogeneration



LIFE COGENERATION PL





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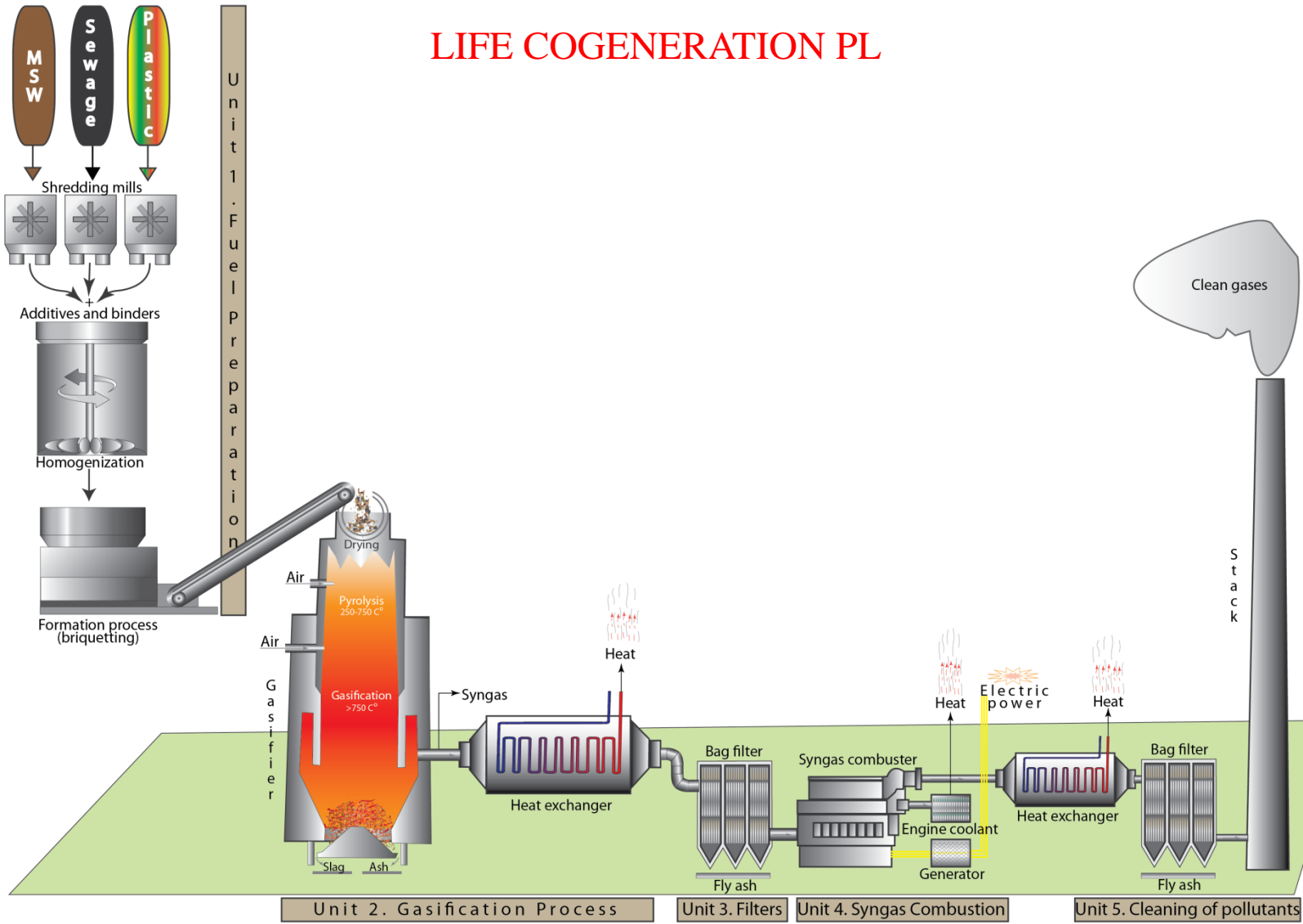
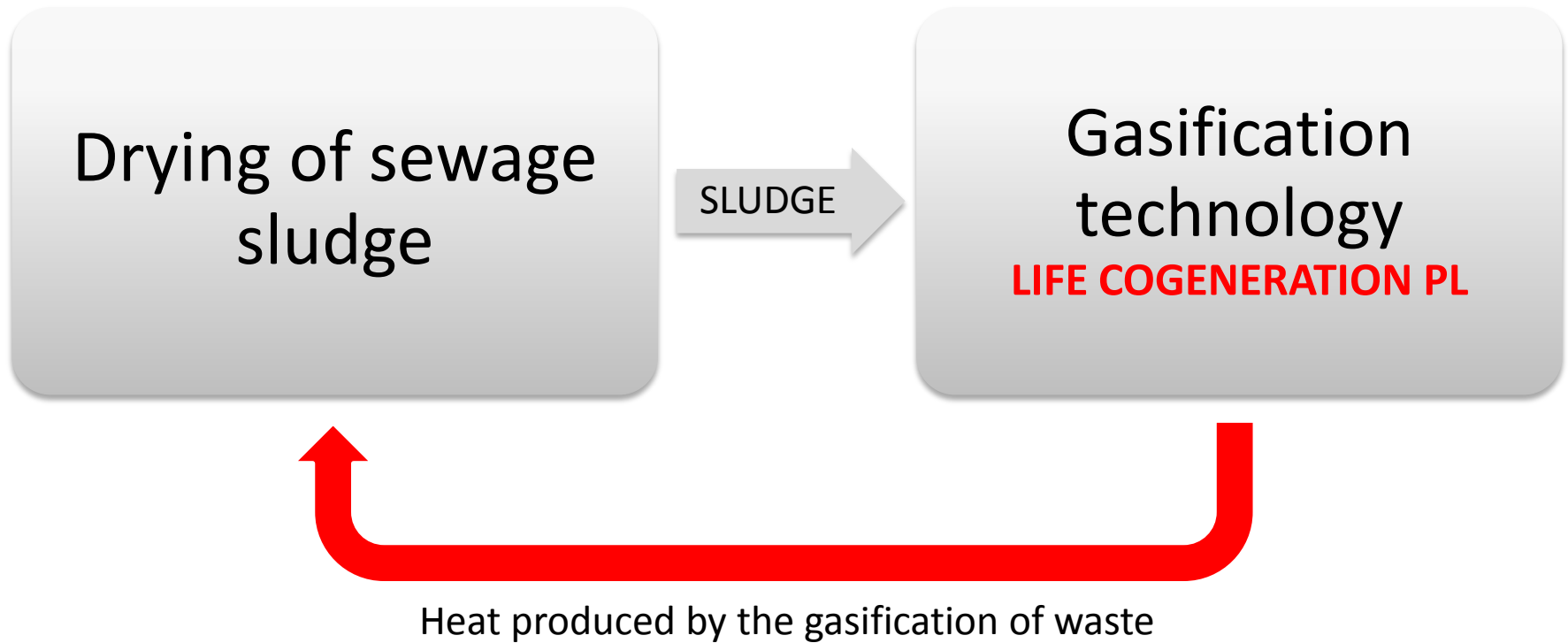




Diagram of the flow and use of the heat generated by gasification process





Criteria for the admission of waste with fuel characteristics deposited in the landfill



Parameters	Limit
Total organic carbon (TOC)	5 % of the dry mass
Loss on ignition (LOI)	8 % of the dry mass
Heat of combustion	maximum 6 MJ/kg of the dry mass



utilization of municipal waste fuel properties for energy purposes

utilization of stabilized sewage sludge - mechanically dewatered for energy purposes

production of electricity in a distributed low-power source independent from the power system sources

production of high electric power and heat and also renewable energy simultaneously



- New model of municipal waste management in Poland – Regional Installation of Municipal Waste Processing (RIPOK)
- Guarantee of waste streams
- Separation of waste streams in plants - management in a manner other than landfilling
- Support of the financial mechanisms in the field of renewable energy and energy efficiency (energy certificates: green, yellow, orange)
- The emphasis on the construction of distributed energy resources for low-power and efficient use of primary energy (Energy Efficiency Act)
- Requirements for waste fuel properties management outside the landfill from 1 January 2016.



The composition and streams of the formed fuel - establishment of a plant model

Waste type	Waste quantity	
	Mg/year	kg/h
Waste from sorting of municipal waste with fuel properties – MPGK Katowice	15 000	1 875
Dried sewage sludge - content 80% of dry mass	6 785	860
Plastic waste - mixed	1 000	125
Total:	22 875	2 860



POWER		MW
Power in the formed fuel		12,32
Thermal power waste from the gasification reactor		1,72
Power produced in cogeneration	Electricity	2,15
	Heat	2,80

- efficiency of the gasification reactor: 70%
- Electrical efficiency: 25%
- heat recovery from the exhaust : 70%



- Reception of sewage sludge drying – €12/Mg
- Reception of mixed plastics – €12/Mg
- Sales of electricity - €47/MWh
- Sale of waste heat - €6/MWh

market price of certificates coming from:

- high-energy (red certificate) - €8.5/MWh
 - 60% renewable energy flux (green certificate) - €65/MWh
- Sales of dry sewage sludge – €2.5/Mg



- internal discount rate $r = 5\%$,
- considered time span 2013 - 2028,
- does not include external financing, and any form of subsidy

Preliminary evaluation of investment costs: **€ 8.2 million**

Annual income from the sales: **€ 2.6 million**

Annual operating costs: **€ 0.7 million**

Simple payback period	NPV	IRR
Year	Euro	%
4,5	10096	18,0



CEGIO. Certyfikowana Giełda Odpadów

Certified Waste Market is designed as an auction site for the waste management industry. Its basic functionality is to be able to add and search for offers related to the sale of waste. In addition, this portal is intended as a database of information on waste management market and thus contains statistics and contact details of companies.

Access to the portal will have 3 groups of users:

- A) Sellers of waste
- B) Buyers of waste
- C) Advertisers



CEGIO. Certyfikowana Giełda Odpadów

Zarejestruj się

Zaloguj się

Strona główna

Giełda odpadów

Katalog firm

Strefa transportu

Kontakt

Szukasz firmy,
odpadów lub transportu
w naszej bazie

Zarejestruj się

Tyle zysku ile odzysku

Bądź z natury Eko



Sprzedawaj lub kupuj odpady
z modułem giełdy



Dostarcz lub odbierz odpady
z modułem transportu



Oszczędzaj czas, pieniądze i chroń
środowisko naturalne

Zarejestruj się

By efektywnie i szybko sprzedawać,
kupować, transportować odpady w
jednym miejscu

Ogłaszaj się

Dopuszczalne jest wiele ofert

Wyszukaj firmy

Z naszym ogólnopolskim
katalogiem firmy to jeszcze bardziej
proste i efektywne

Zdobywaj kontakty

Opisujemy firmy, umożliwiając

Dostarcz towar

Z modułem transportu jeszcze
prościej znajdziesz klienta w
dowolnym miejscu Polski

Zaufanie

Każda zarejestrowana firma

Ciesz się życiem

Korzystając z naszych usług
będziesz miał więcej czasu dla
swych najbliższych

Bezpieczeństwo

Każdy nasz klient jest



Thank you

Questions and suggestions are welcome

for the attention