



HOW TO BE A 'GREEN' METRO - WARSAW METRO'S SUSTAINABILITY PROGRAMME

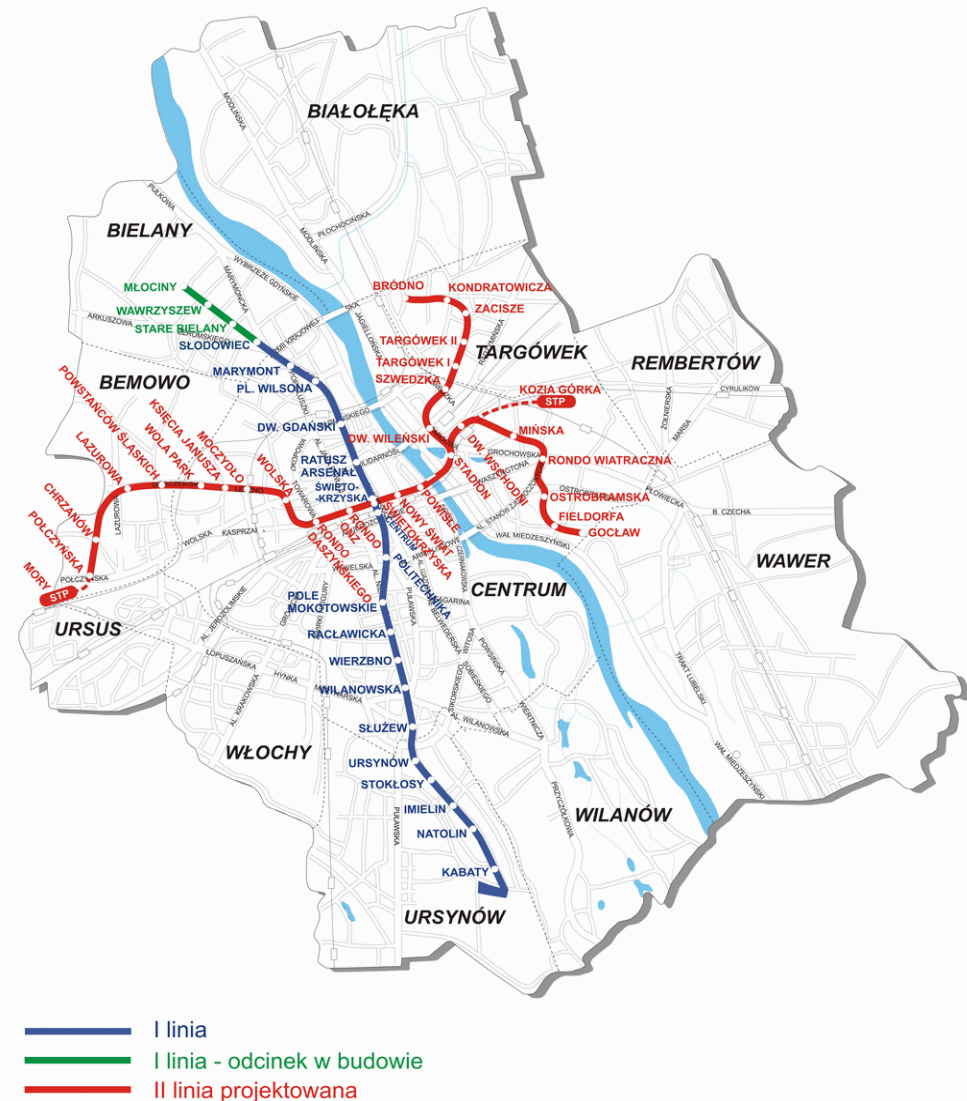


London, 28 March, 2012



- Length – **23 km**
- Stations – **21**
- No. of passengers
500 000 / per day

- Length - **32 km**
- Stations – **27**
- No. of passengers
500 000 / per day





MANAGEMENT VIA ENVIRONMENT

✓ Compliance with the requirements and implementation of environmental laws (permissions, declarations)

✓ Requirements according to:

PN-EN ISO 9001:2009

PN-EN ISO 14001:2005

PN-N-18001:2004

Certificates of integrated management system

✓ Education at all levels:

employees training (initial and recurrent)

trainees and apprentices training

training of external companies providing services at metro line or depo

✓ 'green' public procurement

✓ 'clean technologies' – minimization of impact on environment

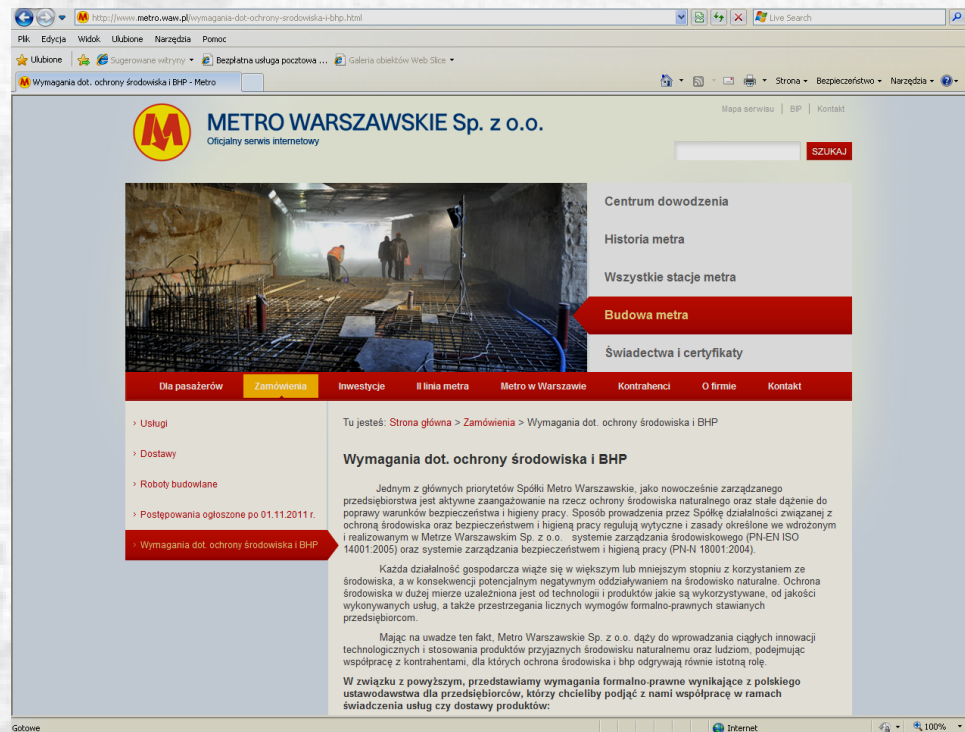
✓ taking part in ecological competition





„ECO-ing” PUBLIC ORDERS

- ✓ Environmentally friendly products and services,
- ✓ Minimization of environmental impact,
- ✓ Efficient use of resources at every stage of business,
- ✓ Development of environmentally friendly technologies,
- ✓ Cost minimization



Collection of formal and legal requirements posted on company's website



Selection of the contractor in the tender process is subject to the number of the environmental protection requirements

Directly related to the contractor/supplier:

formal legal requirements (standards must have the appropriate decisions and permits, board reporting, contributions to the hardware registers such as electrical and electronic equipment), certificates, etc.

Related to the manner of performance realisation by the contractor/ supplier:

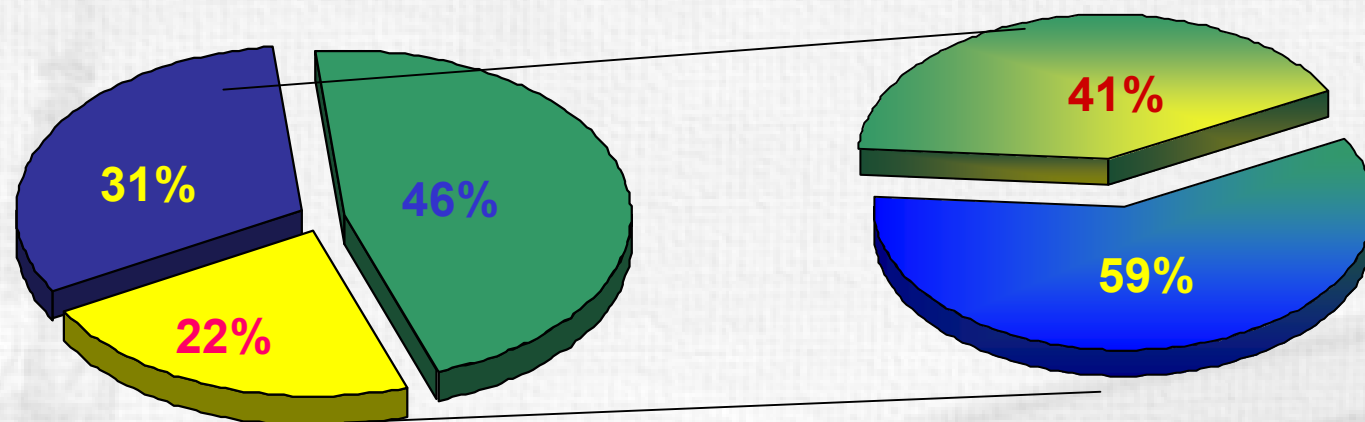
need for training of integrated health and safety, the case of fire and environmental protection prior to the service in the Warsaw Metro, a selective collection of waste generated during the performance of services, how to carry out warranty service, etc.

Directly related to the product:

certificate related to service, safety data sheet, susceptibility to recycling, extended durability, energy efficiency, water saving, low waste, lack of harmful substances, etc.



'ECO' CONTRACT SHARE IN ALL TENDERS REALIZED IN 2011



■ "Green" PROCUREMENT

■ NON-PROCUREMENT RECORDS OF ENVIRONMENTAL PROTECTION

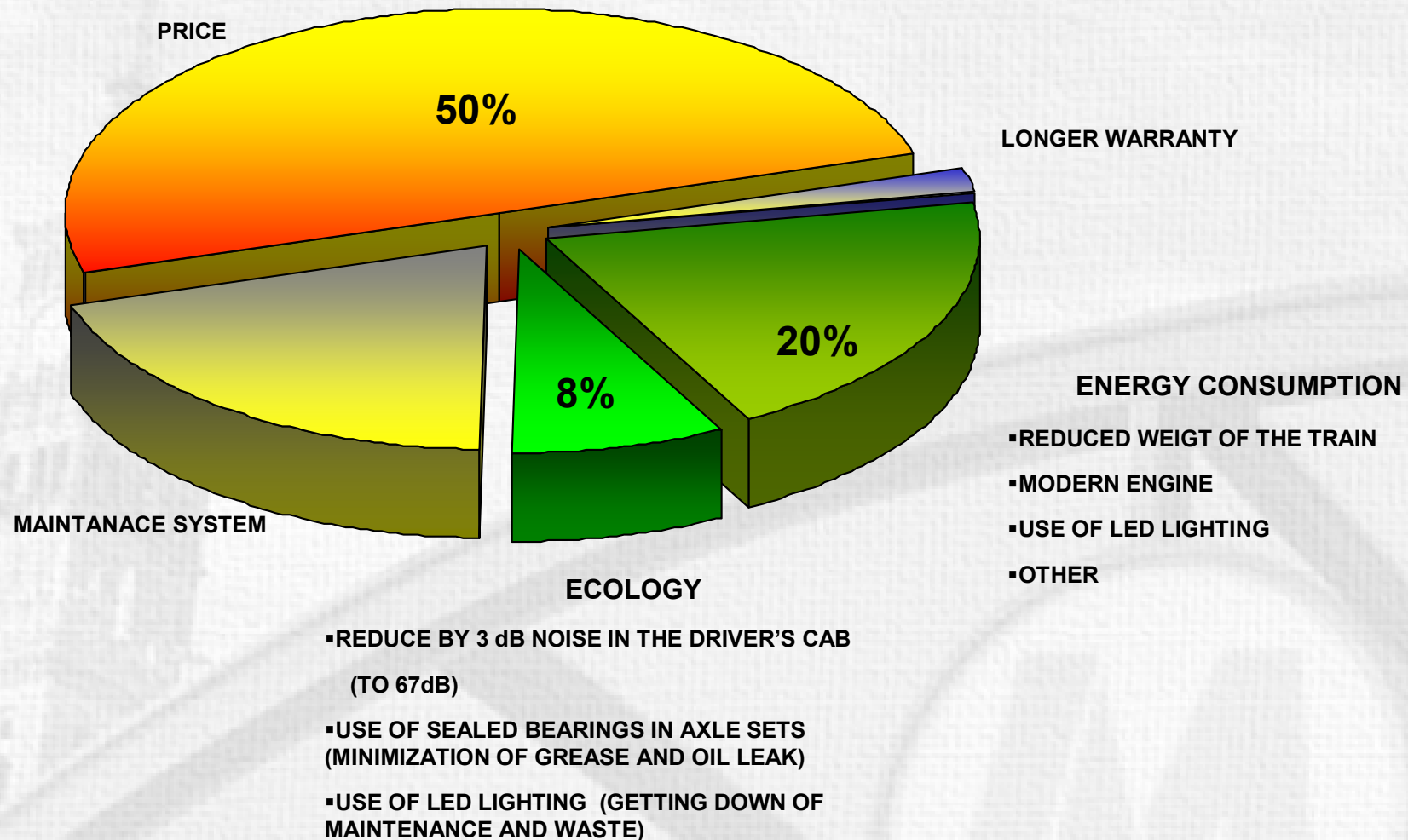
■ OTHER CONTRACT

■ The requirement of a decision approving a waste management program -
SERVICES EXECUTED IN MW

■ OTHER REQUIREMENTS OF ENVIRONMENTAL PROTECTION

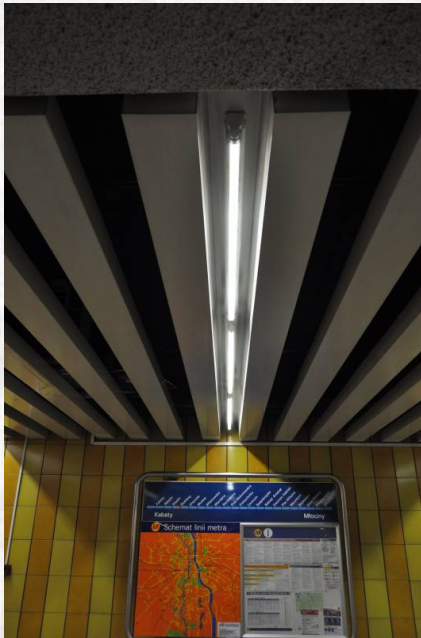


SELECTION CRITERIA SETTING TENDERERS IN THE TENDER FOR NEW TRAINS





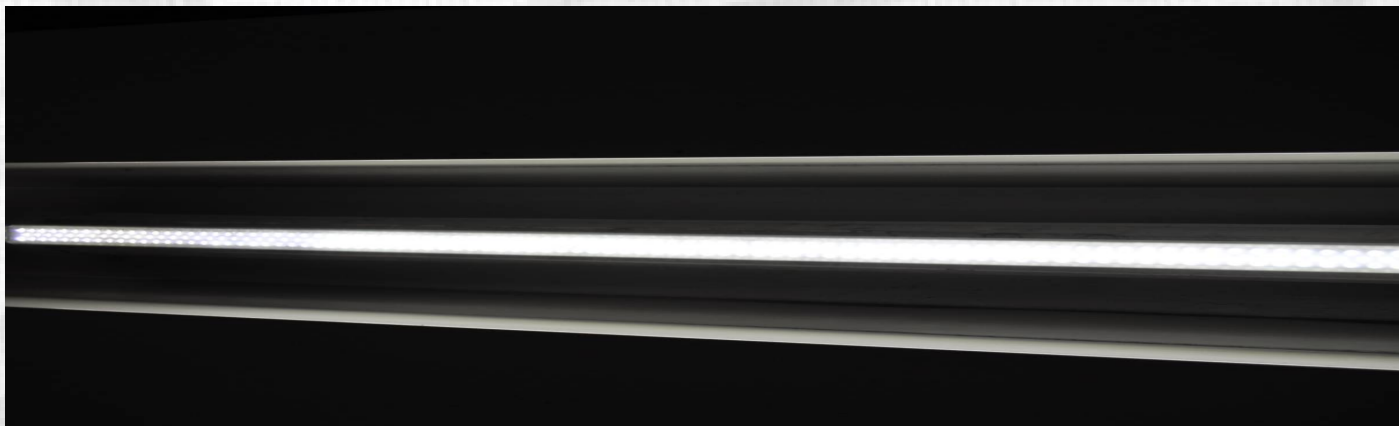
CLEAN TECHNOLOGIES – minimizing the impact



Upgrading of
lighting in all
buildings, eg LED,
motion sensor,
zonal lighting



Purchase of 35 energy-efficient modern
trains





PUBLIC ADVICES & GUIDANCES

OSZCZĘDZAJ ENERGIĘ



WYCHODZĄC Z POMIESZCZENIA GAŚ ŚWIATŁO

OSZCZĘDZAJ WODĘ



ZAWSZE DOKRĘCAJ KRAN

OSZCZĘDZANIE ENERGII

METRO WARSZAWSKIE Sp. z o.o.
W 2011 r. ZAPŁACIŁO ZA ENERGIĘ ELEKTRYCZNĄ
ZUŻYTĄ NA UTRZYMANIE OBIEKTÓW METRA
(STP ORAZ POMIESZCZENIA NA STACJACH)
8 965 563 PLN

DLATEGO:

- LATEM NIE USTAWIAJ KLIMATYZACJI NA MNIEJ NIŻ 22°C
- W ZIMIE NIE OGRZEWAJ POMIESZCZEŃ DO TEMP. WYŻSZEJ NIŻ 24°C
- GDY WYCHODZISZ Z POKOJU LUB WŁĄCZASZ KLIMATYZACJĘ ZAMKNIJ OKNO
- POMIESZCZENIA WIETRZ KRÓTKO
- WYCHODZĄC Z POMIESZCZEŃ GAŚ ŚWIATŁO
- NIE ZOSTAWIAJ WŁĄCZONYCH DO SIECI URZĄDZEŃ ELEKTRYCZNYCH
- TAM GDZIE MOŻLIWE USTAWIAJ URZĄDZENIA NA TRYB CZUWANIA



OSTATNIA OSOBA

WYCHODZĄCA Z BIURA POWINNA UPEWNIĆ SIĘ ŻE:

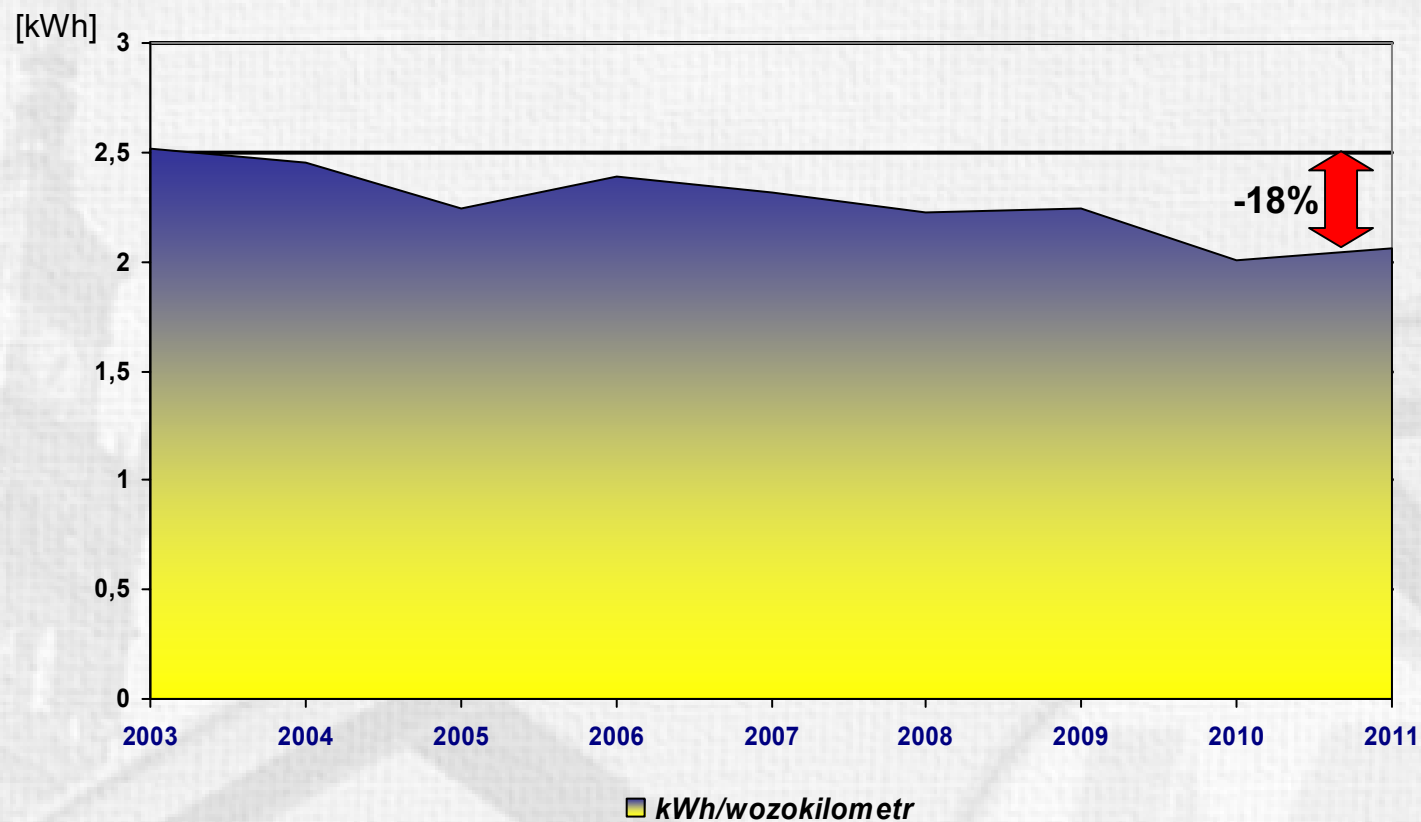
- WYŁĄCZONO KLIMATYZACJĘ
- WYŁĄCZONO ŚWIATŁO
- OKNA SĄ ZAMKNIĘTE
- WYŁĄCZONO WSZYSTKIE KOMPUTERY I URZĄDZENIA BIUROWE

DOTYCZY NAS WSZYSTKICH



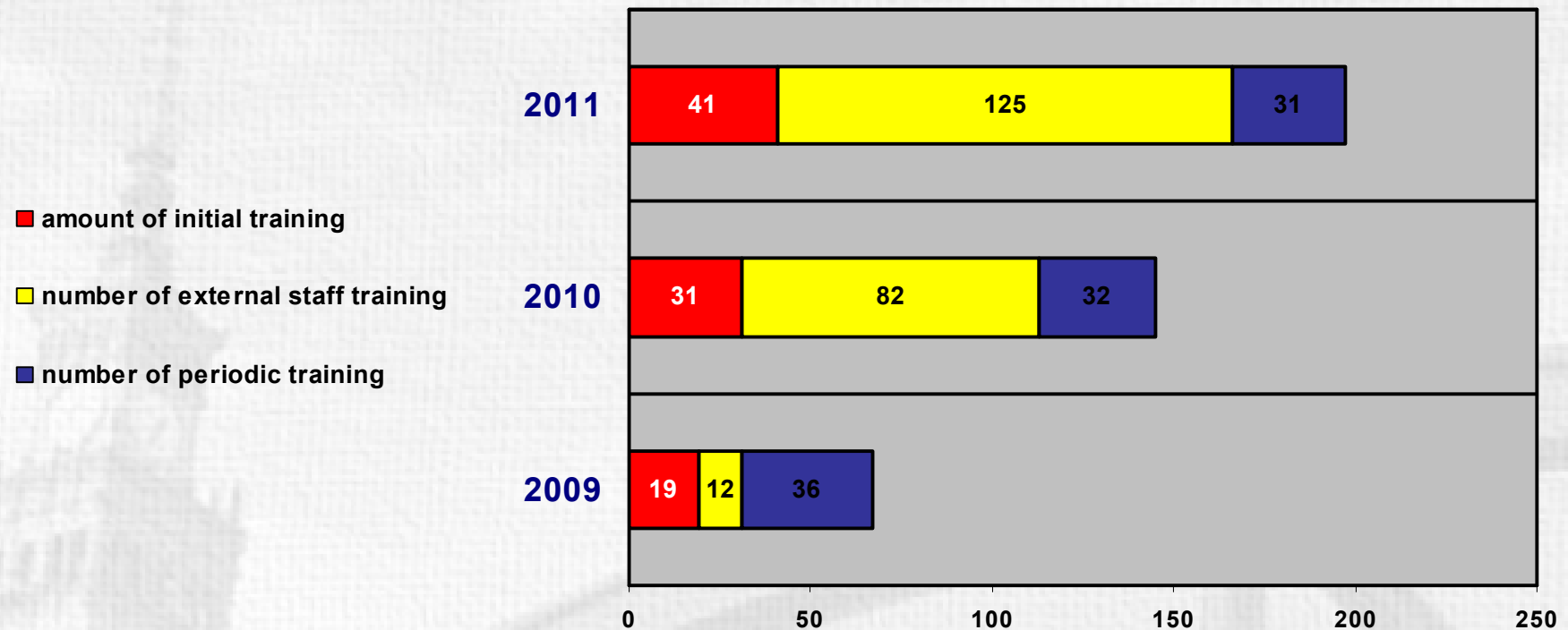
MINIMIZATION OF ENERGY CONSUMPTION

TRACTION ELECTRICITY CONSPUMPTION PER 1 CAR- KILOMETER





TRAINING OF EMPLOYEES



According to the legal requirements the health and safety training shall be carried out not less than:

- every 6 years for administrative and office workers,
- every 3 years for manual workers



SHAPING THE ATTITUDES OF ECOLOGICAL AND BEHAVIORAL CHANGE AMONG EMPLOYEES

~ SELECTIVE WASTE COLLECTION ~



CONTAINERS FOR RECYCLED
MATERIALS AND & BATTERIES



HAZARDOUS WASTE
CONTAINERS



NOISE BARRIERS AT THE DEPO STATION



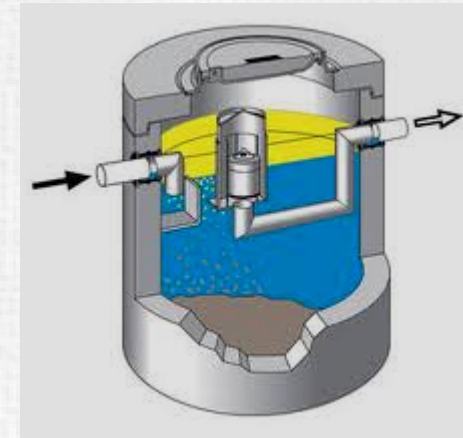
NORTH SIDE



SOUTH SIDE



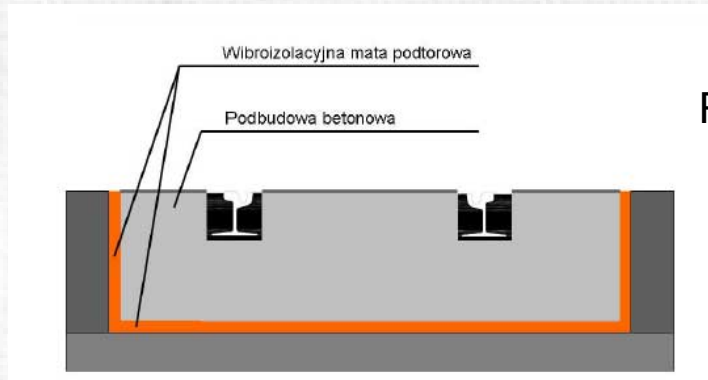
WASTE WATER SEWAGE FROM TRAIN WASH - PASSIVE TREATMENT PLANT



BEFORE REFERRING THE WASTEWATER TO THE MUNICIPAL
SEWAGE SEPARATORS, NEUTRALIZERS AND GREASE TRAPS
ARE APPLIED



MINIMIZING ACOUSTIC INTERACTION



USE OF ANTIVIBRATION MATS TO
REDUCE THE DYNAMIC INFLUENCE OF
VIBRATION



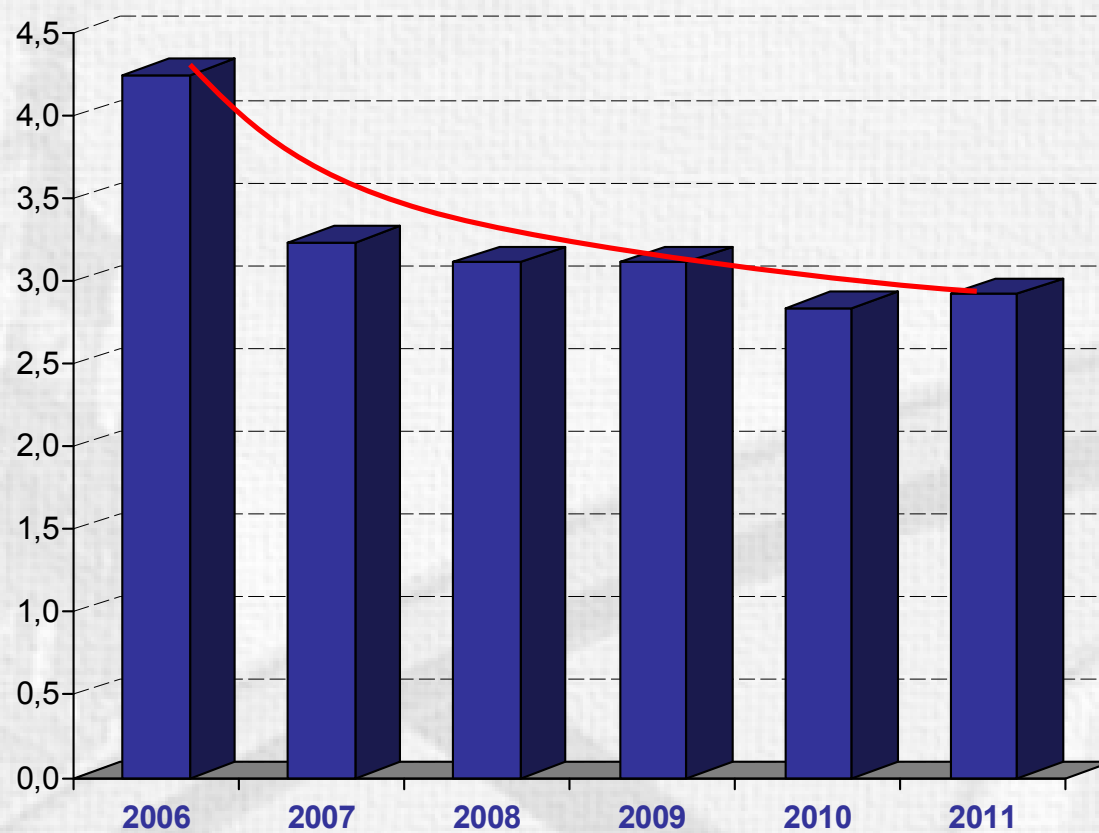
Rail grinding



Wheels turning

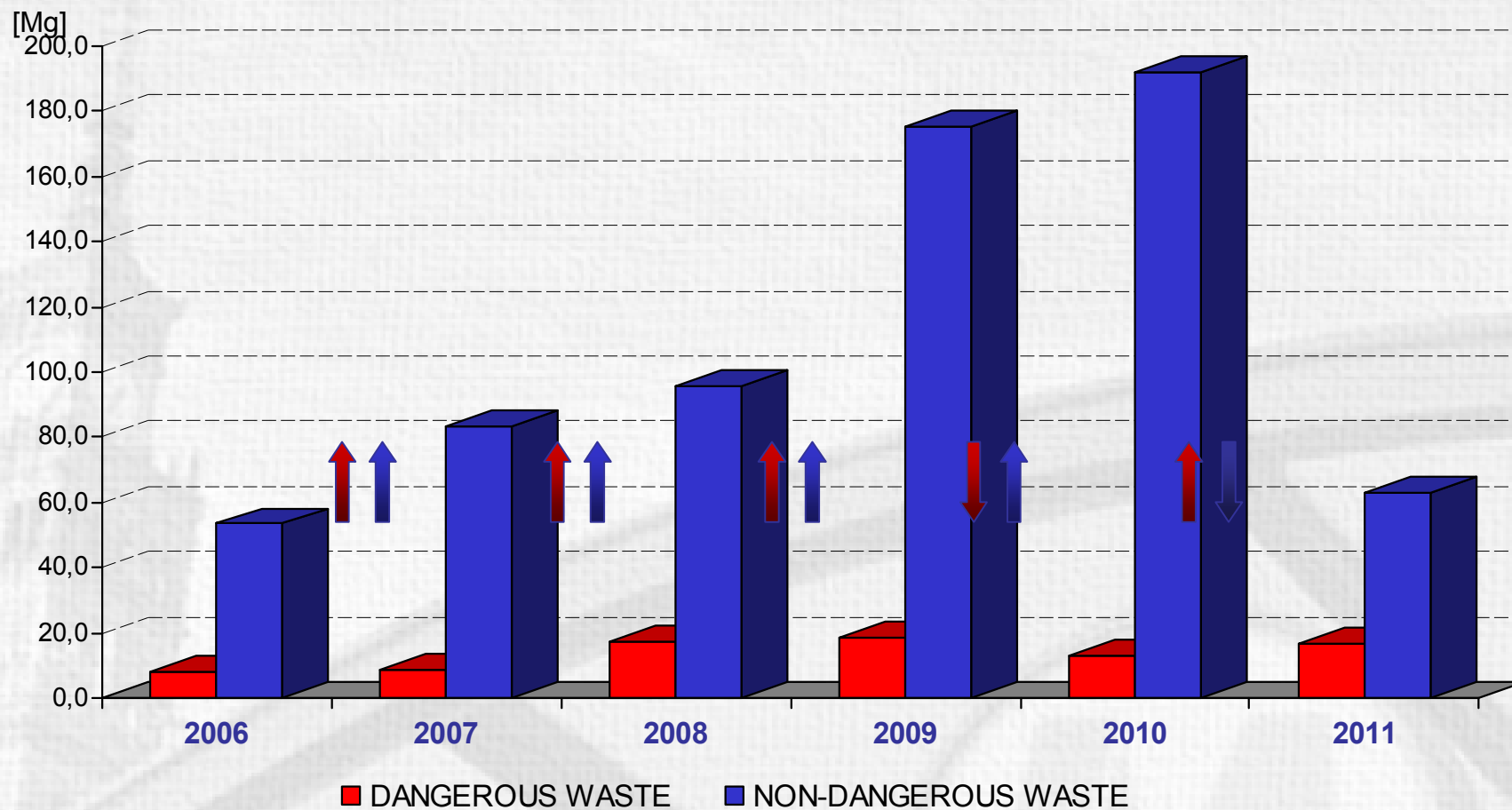


INDIRECT CO2 EMISSION (HEAT + ELECTRICITY) PER 1 CAR-KILOMETER



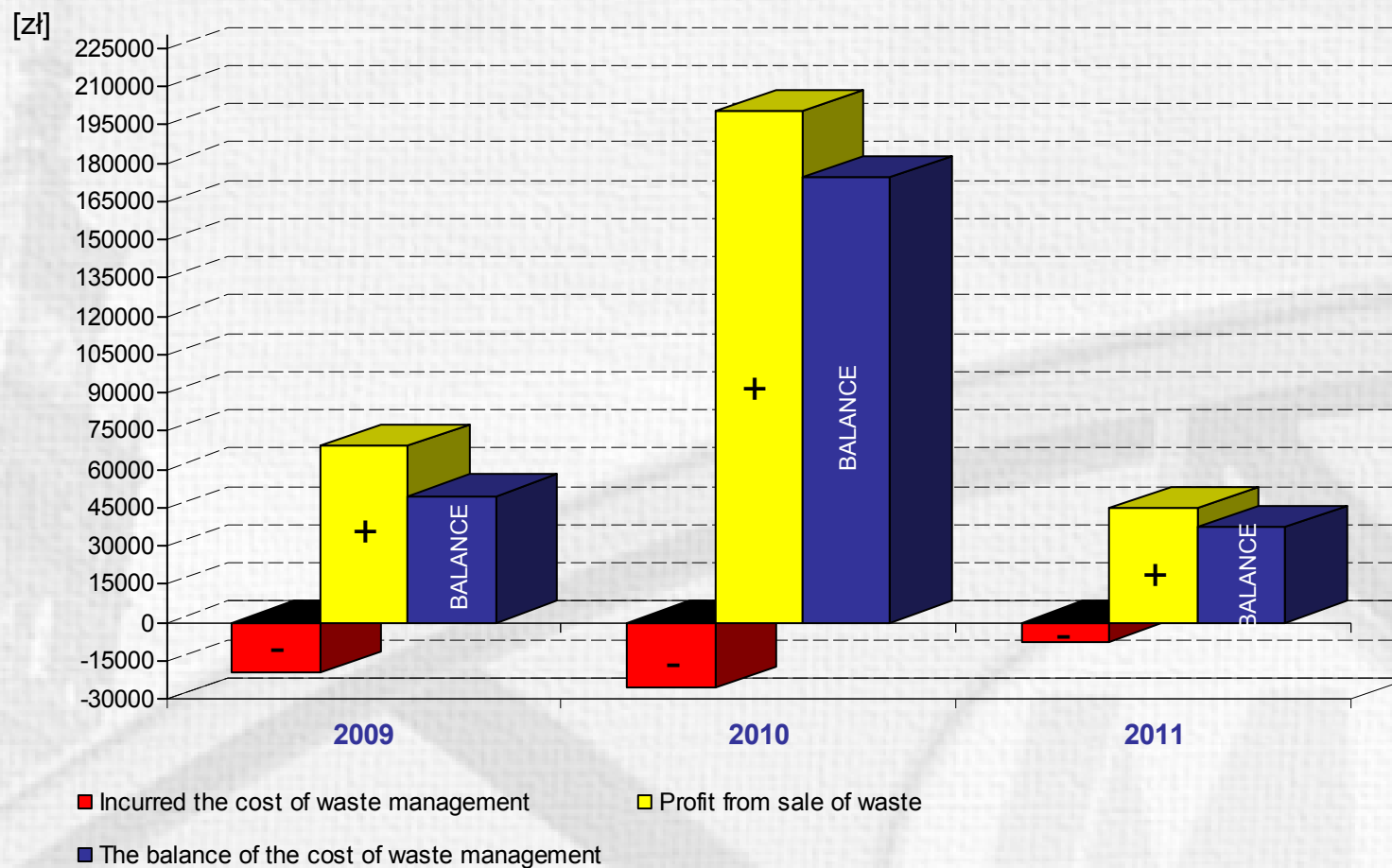


NUMBER OF HAZARDOUS SUBSTANCES AND OTHER WASTE MANUFACTURED ON THE BASIS OF CURRENT DECISIONS



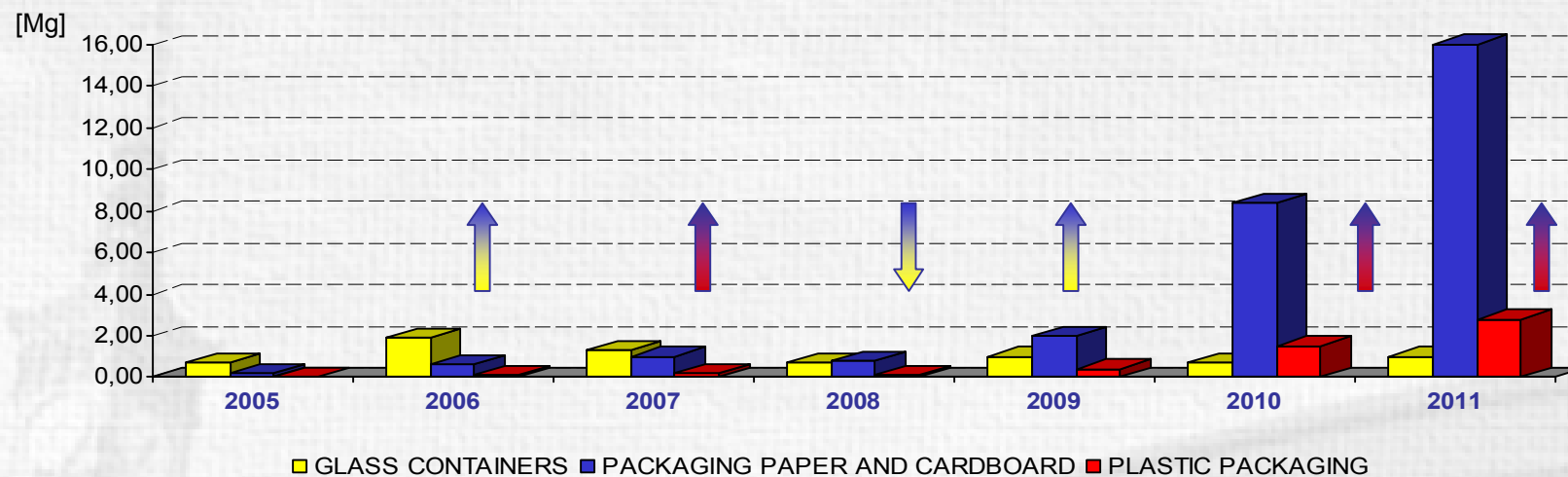


BALANCE SHEET OF THE DANGEROUS AND NON DANGEROUS WASTE MANAGEMENT COSTS (without the waste of raw material)

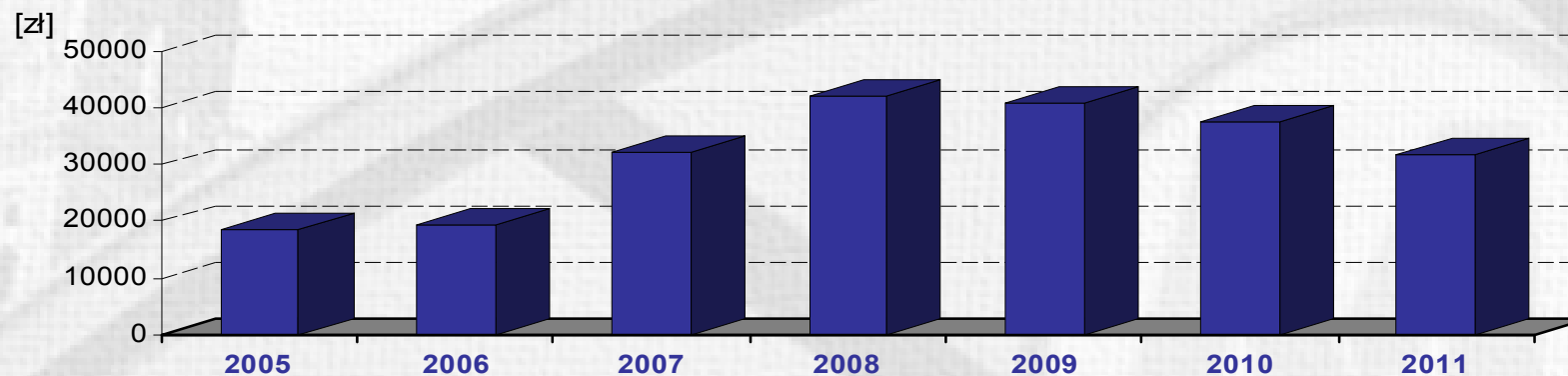




QUANTITY OF MUNICIPAL RAW MATERIAL WASTE COLLECTED IN THE SOURCE OF

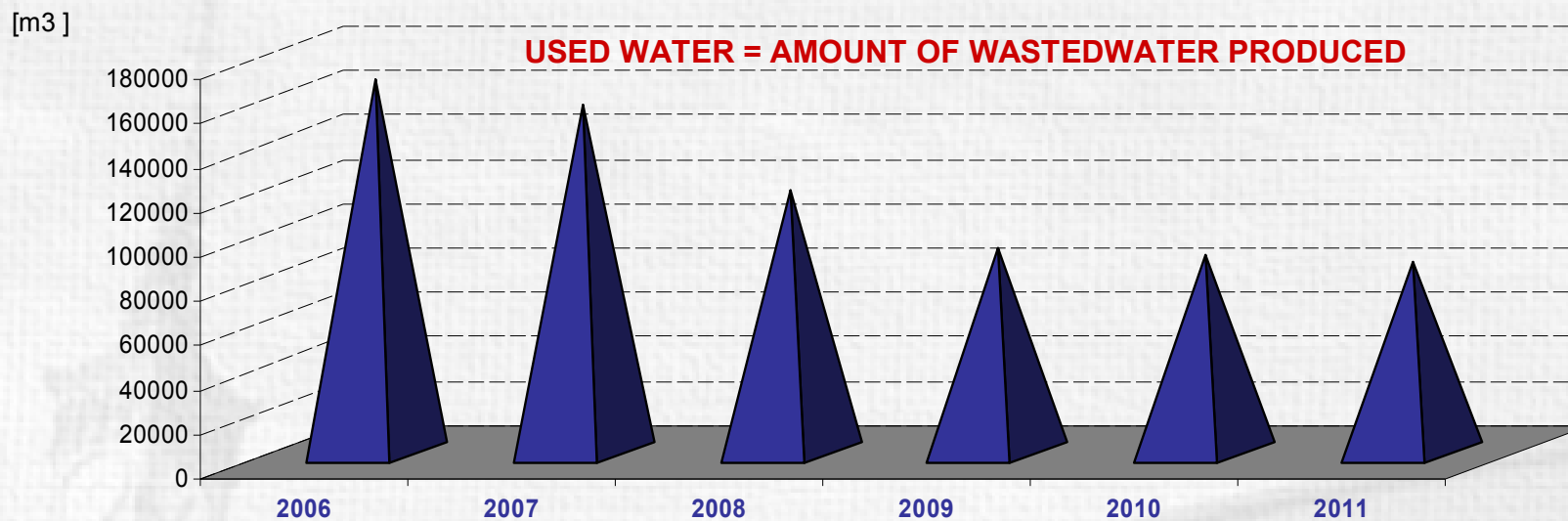


COSTS OF MUNICIPAL WASTE MANAGEMENT (mixed municipal and raw material)

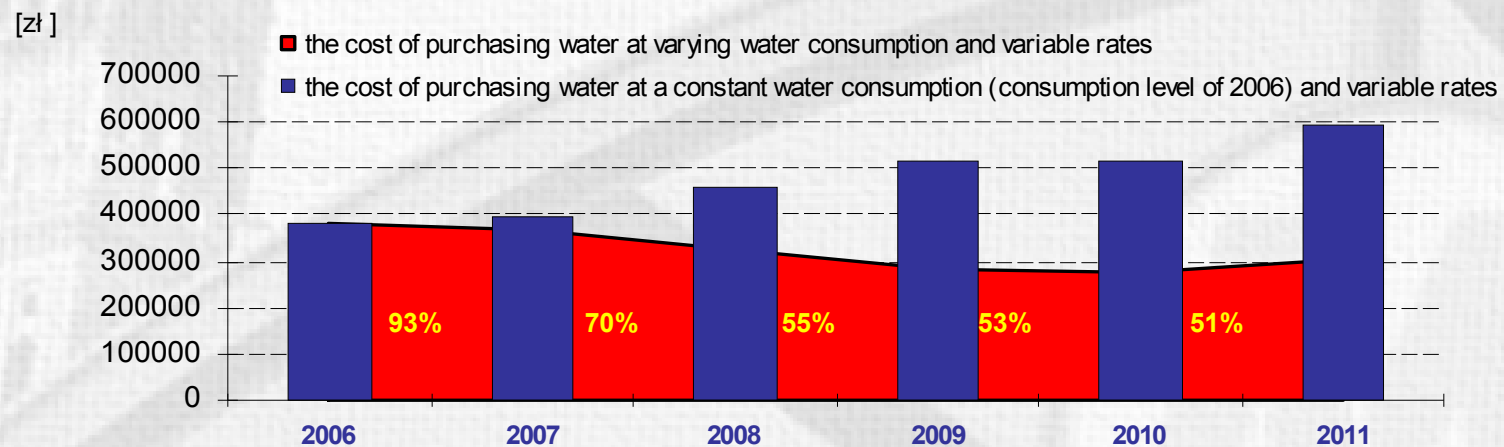




MINIMIZE WATER USE



WATER COSTS





THANK YOU

**FOR YOUR
ATTENTION**

Dorota Popińska
Commercial and Finance Director

www.metro.waw.pl