

TECHNICAL SAFETY AT GRUPA AZOTY



PRESENTATION PLAN

- 1. GRUPA AZOTY**
- 2. OPERATIONAL HAZARDS**
- 3. LAW AND MARKET REQUIREMENTS**
- 4. OPERATIONAL EXCELLENCE**
- 5. TECHNICAL MAINTANACE STRATEGY**
- 6. TECHNICAL SAFETY**
- 7. RISK MANAGEMENT AS PART OF TECHNICAL
MAINTENANCE STRATEGY IN GRUPA AZOTY**

PRESENTATION PLAN

**We are one of the largest chemical
company in Europe**

We produce:

- **fertilizers**
- **polimers and caprolactame**
- **melamine**
- **OXO alcohols**
- **plasticizers**
- **modern technological solutions are
used on each continent**



CORE BUSINESS

Grupa Azoty POLICE

- Urea
- NPK, NP, NS
- Ammonia
- TiO_2

BBM

- Cargo handling and storage terminal

Fosfory

- NPK, P

Navitrans

- Logistics

Grupa Azoty PUŁAWY

- AN, UAN,
- Urea
- Melamine
- CPL

Siarkopol S.A.

- Sulfur

Grupa Azoty S.A.

- AN, CAN
- ASN, AS
- CPL, PA 6, POM
- Compounding

Grupa Azoty ATT Polymers

- PA 6

Grupa Azoty ZAK S.A.

- AN, CAN
- Urea
- OXO alcohols
- Plasticisers

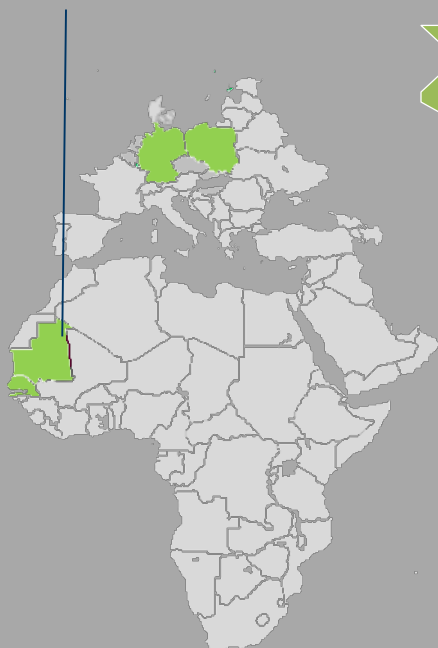
Z.A. Chorzów S.A.

- NPK, N, P, K

- Logistics
- Production



African Investment Group S.A.



MARKET LEADING POSITION IN POLAND AND EUROPE

DOMESTIC MARKET FERTILIZERS

- ✓ No 1 multicomponent fertilizers
- ✓ No 1 fertilizers
- ✓ No 1 fertilizers with sulphur
- ✓ No 1 nitrogen fertilizers

POLYMERS, OXO, PIGMENTS, MELAMINE

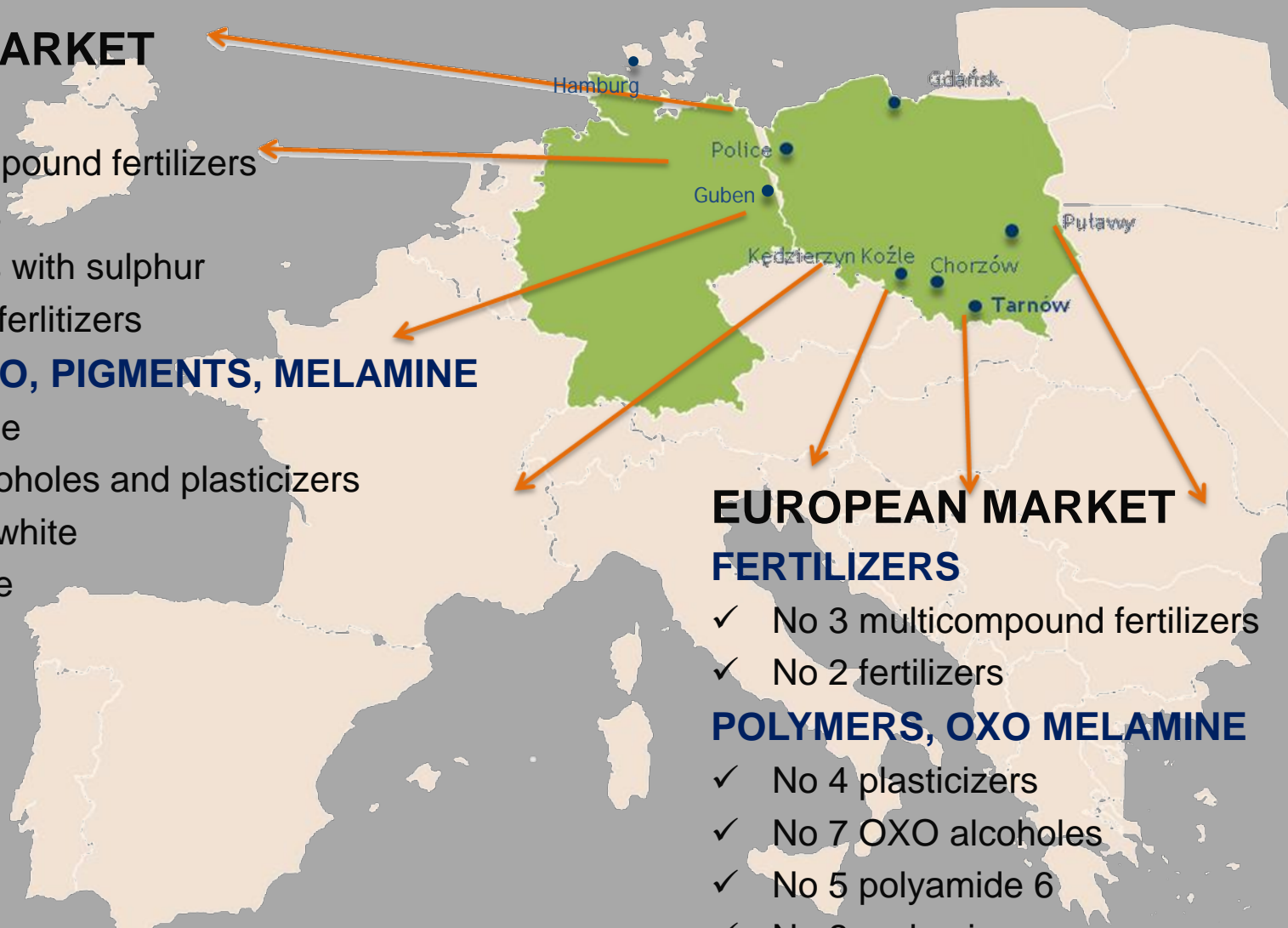
- ✓ No 1 polyamide
- ✓ No 1 OXO alcohols and plasticizers
- ✓ No 1 titanium white
- ✓ No 1 melamine

EUROPEAN MARKET FERTILIZERS

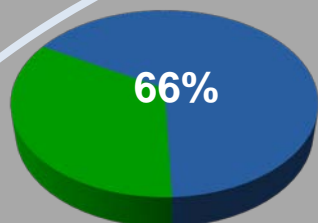
- ✓ No 3 multicomponent fertilizers
- ✓ No 2 fertilizers

POLYMERS, OXO MELAMINE

- ✓ No 4 plasticizers
- ✓ No 7 OXO alcohols
- ✓ No 5 polyamide 6
- ✓ No 2 melamine



GRUPA AZOTY



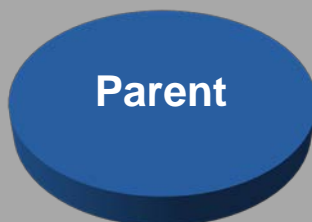
Grupa Azoty POLICE



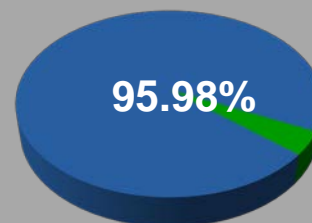
Grupa Azoty
ATT
Polymers
GmbH



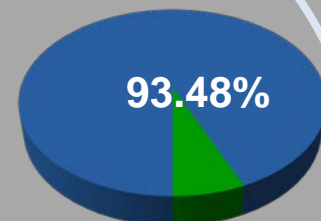
Grupa Azoty
KOLTAR
Sp. z o.o.



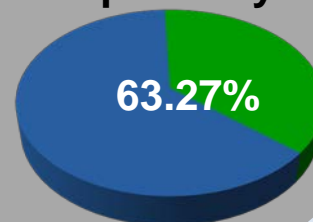
Grupa Azoty
S.A.



Grupa Azoty
PUŁAWY



Grupa Azoty ZAK S.A.



Grupa Azoty
PKCh
Sp. z o.o.

Shares of Grupa Azoty S.A.

RISK MANAGEMENT



Czechowice-Dziedzice, 1971



Flixborough, 1974

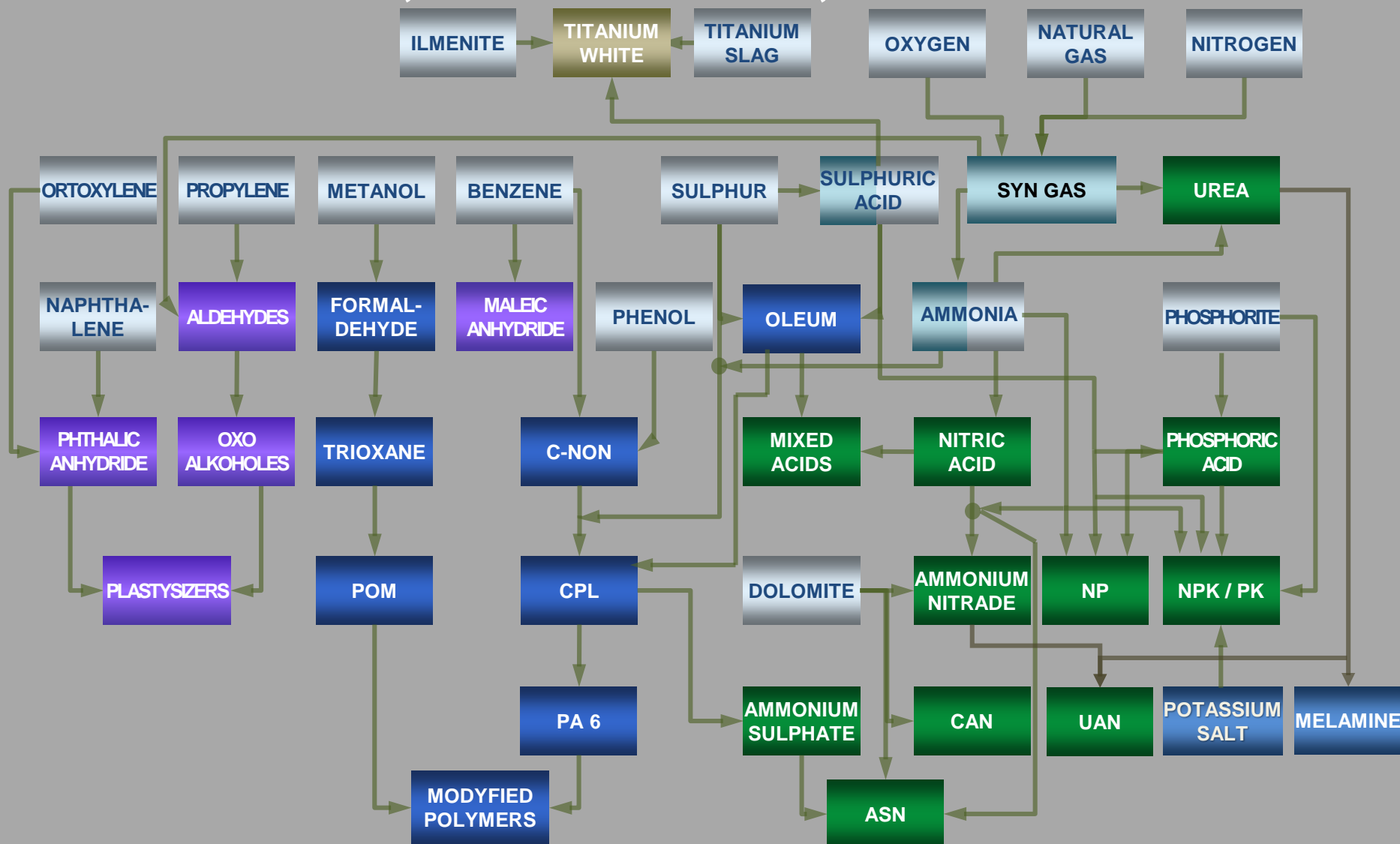


Seveso, 1976

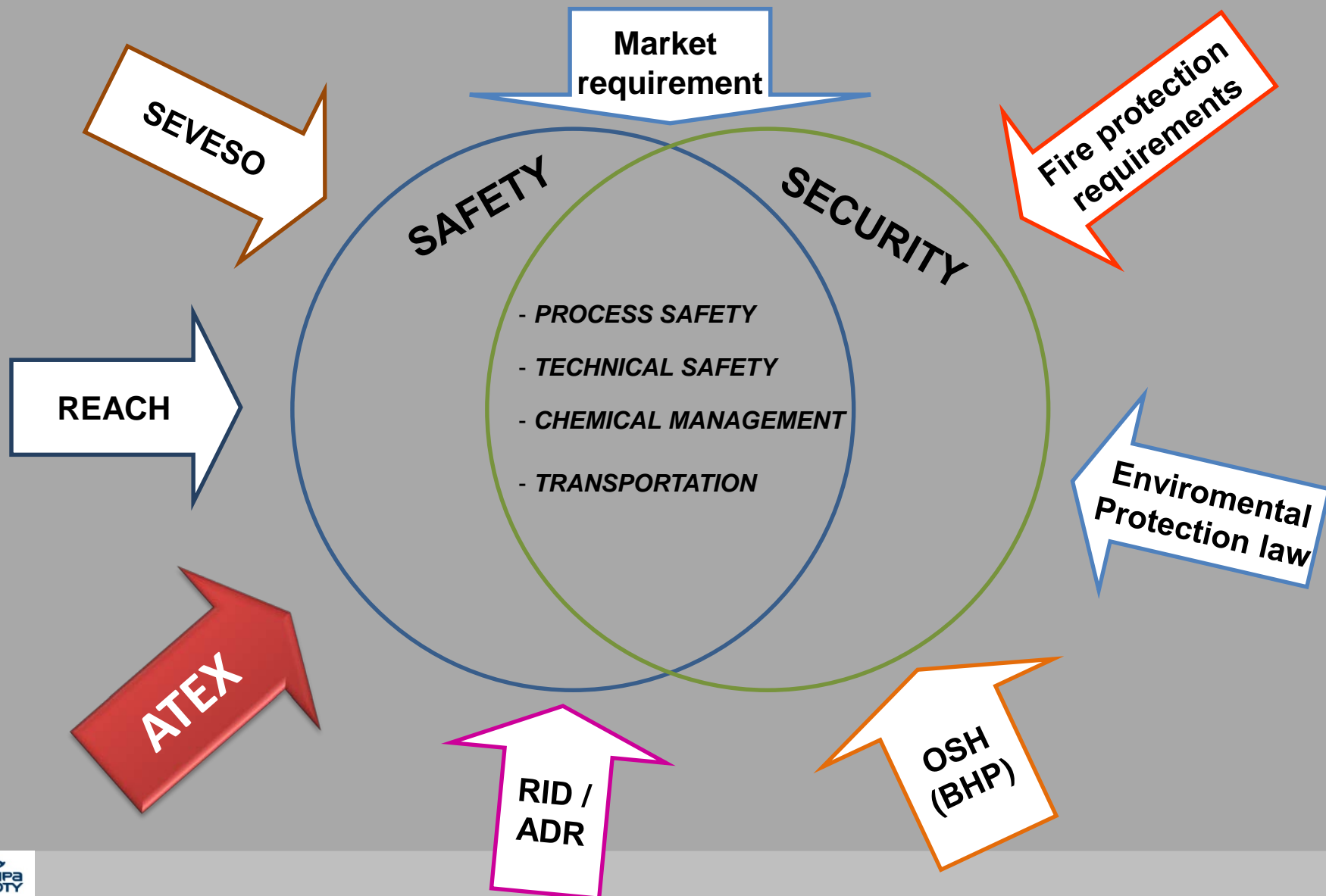


Toulouse, 2001

RAW MATERIALS, INTERMEDIATES, PRODUCTS



RISK MANAGEMENT – MARKET AND LEGAL REQUIREMENTS



OPERATIONAL STRATEGY

Operational Strategy of Grupa Azoty is focused on optimal production capacity and benefits from synergy potential among companies of Grupa Azoty.

Strategic goals in this area are:

- effects of production processes maximalisation by ensuring the best standards for production assets,
- optimal utilisation of assets,
- policy of maximal safety level of employees and production plants,
- implementation of Operational Excellence.

The criteria of sustainable development are being employed in Grupa Azoty to ensure fulfilment of the requirements of the best available techniques and environmental protection.

Strategy of technical maintenance and production assets life-cycle management is based on Operational Excellence Strategy in Grupa Azoty S.A.

Technical maintenance strategy was worked out for 3-year period and it is updated once-a-year in order to perform time horizon longer than 3 years.

OPERATION EXCELLENCE PROGRAMME



PROGRAM DOSKONAŁOŚCI OPERACYJNEJ W GRUPIE AZOTY

ANALYTICAL APPROACH TO MAXIMUM EFFICIENCY



PRODUCTION

- Optimization of ammonia plants
- The product of the process
- Optimization of H_2SO_4 management
- Optimization of the c-non management in Grupa Azoty S.A.
- Improving the efficiency of the testing process quality
- Improving the efficiency of the organization
- Production management optimization



MAINTENANCE

- Best practices in the Group maintenance
- TPM and Preventive Maintenance
- Effective management of maintenance companies



SUPPORT FUNCTIONS

- Effective administration
- Sales of non-core assets
- Reducing taxes for closed installations
- Utilisation of products and services
- Effective planning
- Uniform rules for the costs generation
- Uniform rules for employees motivation based on efficiency
- Increase of the involvement of employees in the Group
- Flexible working time
- Innovation in the Group
- KPI monitoring and benchmarking



ENERGY EFFICIENCY

- Implementation of energy audits (White Energy)



PURCHASES AND LOGISTICS

- Comprehensive application of procurement optimization tools
- Effective management of coal in storages
- Reduction of natural gas costs
- Efficient process of purchases
- Effective logistics

GRUPA
AZOTY

STATUS
PLANNED
FOR
2014 YEAR

STATUS
PLANNED
FOR
2015 YEAR

STATUS
PLANNED
FOR
2016 YEAR

STATUS
PLANNED
FOR
2017 YEAR

CEL: WIĘCEJ NIŻ 300 MLN ZŁ KORZYŚCI ROCZNIE

TECHNICAL MAINTANANCE STRATEGY – STANDARDS UNIFICATION

- **PN-EN ISO 14224** – Petroleum, petrochemical and natural gas industries
- Collection and exchange of reliability and maintenance data for equipment,
- **PN-EN 13306** – Maintenance – Maintenance terminology,
- **PN-EN 15341** – Maintenance – Maintenance key performance indicators,
- **DIN-EN 31051** – Die Instandhaltungsstrategien.

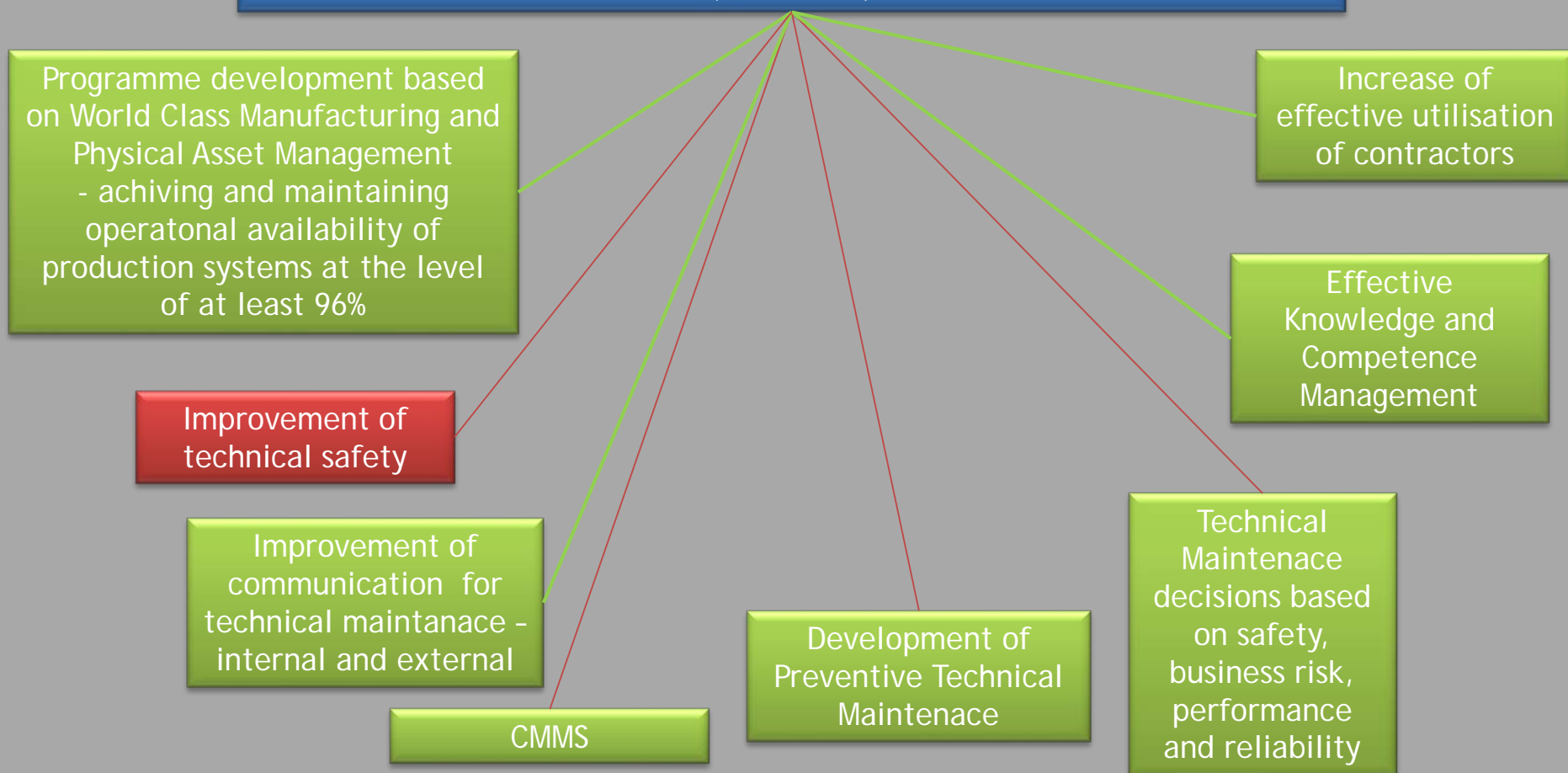
MAJOR ACCIDENT PREVENTION - OPERATIONAL ACTIVITY

In order to ensure high quality and safety at Grupa Azoty there are used management systems and restrictive procedures.

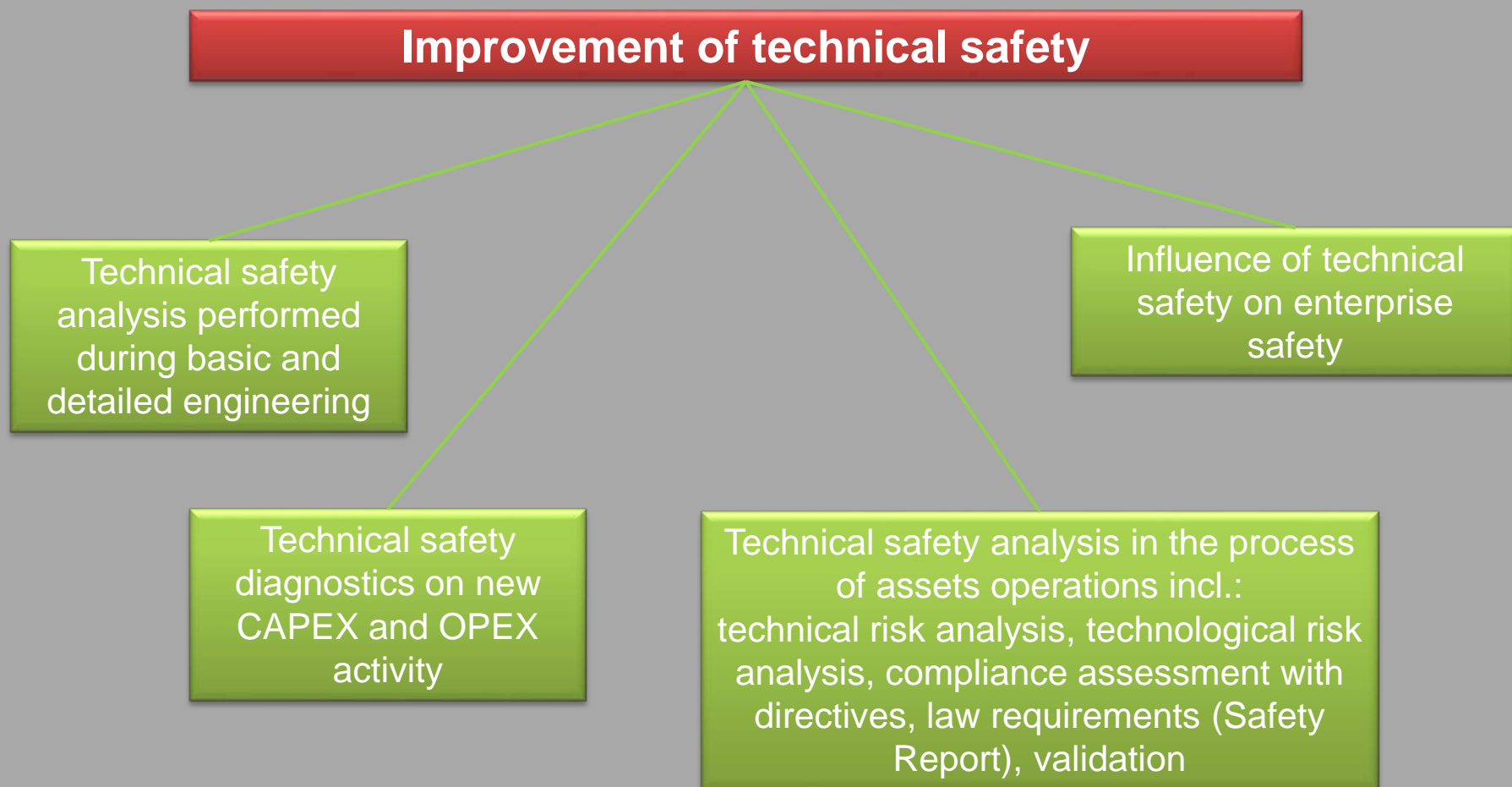
- Quality Management Systems compliant with ISO 9001:2008,
- Environmental Management Systems compliant with ISO 14001:2004,
- Occupational Health And Safety compliant with PN-N-18001:2004 and BS OHSAS 18001:2007,
- General requirements for the competence of testing and calibration laboratories PN-EN ISO/IEC 17025:2005,
- Food safety management systems compliant with ISO 22000:2005,
- Quality management systems - automotive production – implementation based on ISO/TS16949:2009,
- Responsible Care,
- Product Stewardship,
- Risk management - PN-ISO 31000,
- Directive 94/9/EC on equipment and protective systems intended for use in potentially explosive atmospheres (ATEX),
- Directive 2006/42/EC – machinery,
- Directive 2010/75/EU – industrial emissions,
- Directive 2009/104/EC – use of work equipment,
- Directive 2012/18/EU – Seveso.

TECHNICAL MAINTENANCE STRATEGY

TECHNICAL MAINTENANCE VISION FOR GRUPA AZOTY S.A. (3 YEARS)

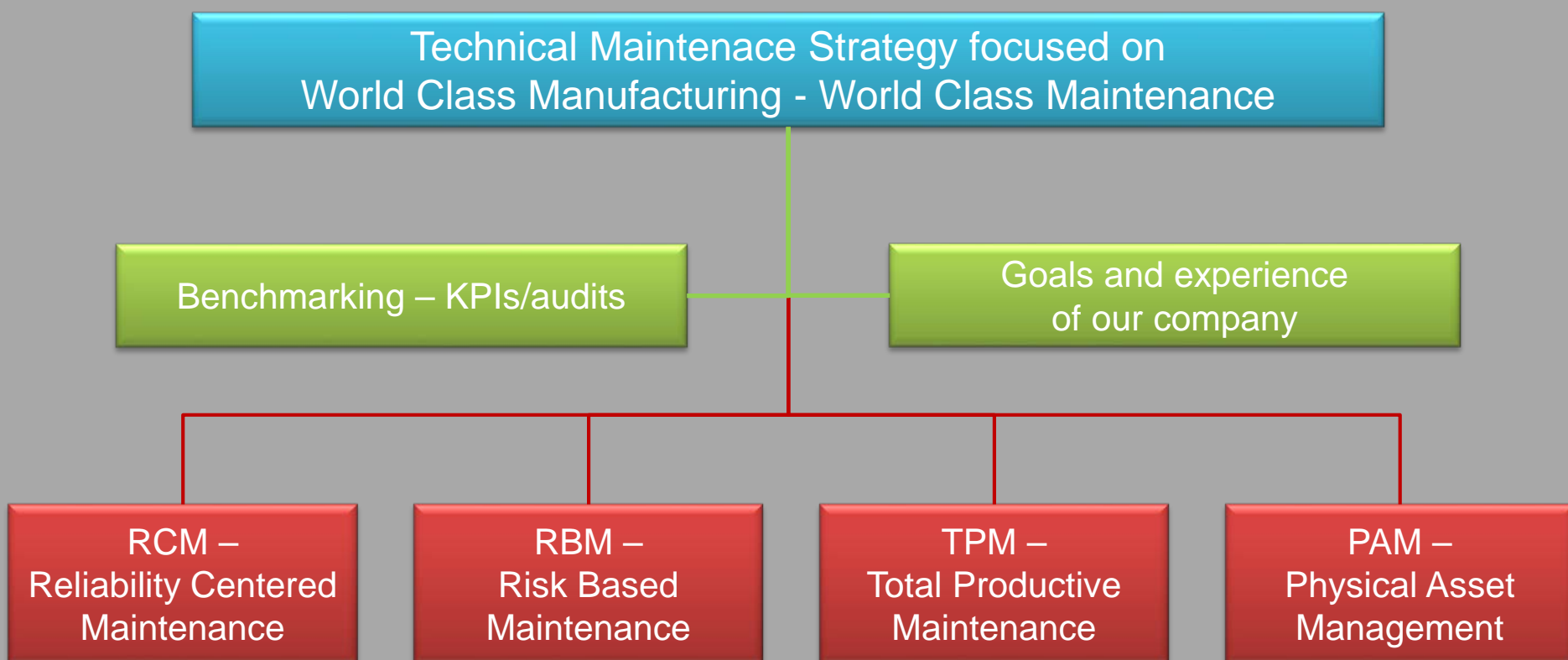


IMPROVEMENT OF TECHNICAL SAFETY



IMPLEMENTATION STRUCTURE OF TECHNICAL MAINTENANCE

The guideline is based on our experience and best engineering practice.



DECISIONS BASED ON SAFETY, RISK, EFFICIENCY, RELIABILITY

Decisions based on safety, business risk, efficiency, reliability – 50% of highest-value decisions based on all 4 parameters

Active participation of Technical Maintenance in operations of modernization, investment process by new equipment purchase

Guidelines development for insurance policy in field of technical assets

Development and implementation of cost supporting tools for Technical Maintenance and modernisations

RTA – Reliability Target Analysis

Increase of efficiency for Technical Maintenance Material Strategy

CATEGORY OF RISK IN BUSINESS ACTIVITY



RISK MANAGEMENT AT GRUPA AZOTY

Grupa Azoty implements integrated approach to Enterprise Risk Management – ERM.

The work to design and implement the the risk management at Grupa Azoty begun in 2013.

Enterprise Risk Management was based on the following activities:

- identification and assessment of risks,
- implementation of response and reaction plans for risks,
- risk monitoring,
- risk reporting,
- monitoring and evaluation of integrated enterprise risk management process.

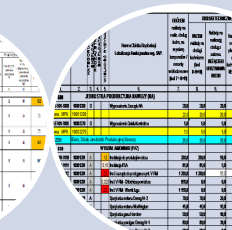
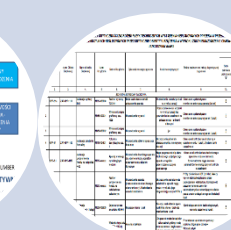
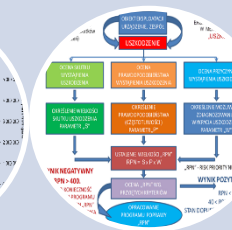
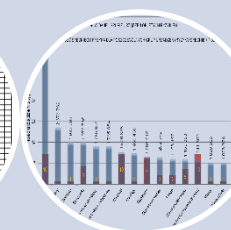
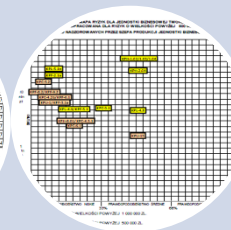
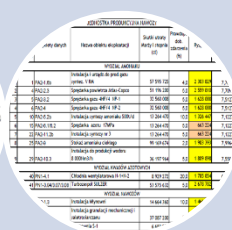
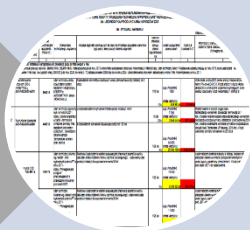
TECHNICAL RISK MANAGEMENT

Technical risk analysis - worksheet for production facility

Risk map for production unit

FMEA analysis

Physical Assets Management



Summary for critical objects in production facility

Risk summary for each equipment group

FMEA analysis report

RISK MANAGEMENT AT GRUPA AZOTY

*maximal safety for
employees and
production assets*



Analiza Ryzyk Technicznych
w Obszarze Eksploatacji Majątku Produkcyjnego
w Grupie Azoty S.A. w roku 2013.

Tarnów, dn. 14.01.2014 r.

Grupa Azoty S.A.
Departament Korporacyjny Koordynacji Produkcji i Bezpieczeństwa

Strategia utrzymania technicznego i zarządzania cyklem życia majątku produkcyjnego Grupy Azoty S.A.



**Strategia utrzymania technicznego i zarządzania
cyklem życia majątku produkcyjnego
Grupy Azoty S.A.**



Grupa Azoty S.A.

Właściciel dokumentu:
Wiceprezes Zarządu Grupy Azoty SA
Witold Szczypiński

Data opracowania:
Styczeń 2014 r.

*implementation of
Operational Excellence
Programme*



azoty PRO
wzór na efektywność

Thank you

GRUPA AZOTY S.A.
Piotr Gurgul