



LIFETIME ENGINEERING

of Buildings and Civil Infrastructures



Objectives of NATIONAL DISSEMINATION GROUPS in Thematic Network Lifetime:
National information, demonstration, education and training of lifetime engineering

Demonstration project of lifetime engineering in POLAND :

LIFE CYCLE ASSESSMENT in the Polish mining industry

Introduction

- ❖ Increasing number of companies in Poland try to assess how their products influence environment and what are the possibilities of technology improvement at the existing production process.
- ❖ Life Cycle Assessment (LCA) is an environmental management tool that gains increasing importance in minimisation of the environmental impact.

Polish metal mining industry

- ❖ 5% share of the sold production of the industry.
- ❖ The export of metals and metal articles contributed about 15% of export revenue in the last ten years.
- ❖ Copper and its various by-products (silver, gold, platinum and palladium, cobalt), lead, and zinc are the main commodity produced.
- ❖ Non-ferrous metal mining carries threat to the environment, mainly by generating a large amount of solid waste.

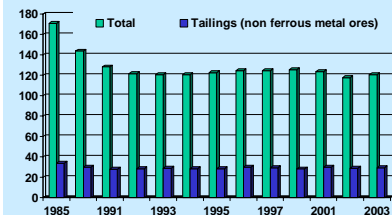
Problem for mining industry

- ❖ Non-ferrous ores contain only a few percent of metals.
- ❖ The rest of extracted mineral has to be gradually eliminated in the successive stages of production.
- ❖ In Poland the waste from extractive industries is a substantial problem since its share remains ~50% of total industrial waste produced yearly, (tailings itself remain 25%).
- ❖ For any mining project there is a growing need to identify economically feasible and environmentally compatible solutions, which not only minimise waste or pollutants but also maximise resource productivity.

Solution for mining industry Life Cycle Assessment

- ❖ The structure created in LCA study allows the observation and estimation of the environmental impact of product, process or service during its entire life cycle.
- ❖ It creates the basis for assessment of environmental impact (systematised in the impact categories) and indication which phase carries the largest environmental load.
- ❖ The wide scope of LCA study allows for achieving valuable results in environmental management, as the analysed process and its phases is presented in the global perspective LCA is an important tool for efficient environmental protection.
- ❖ Since LCA is based on the analysis of actual input and output data of analysed industrial process, it makes possible the evaluation of the real threat for environment as well as reduction of negative impact.
- ❖ Polish mining producers can expect that implementation of LCA (including economic aspects – LCNPV – Life Cycle Net Present Value) will lead not only to improvement of the environmental impact, but also to more effective environmental management.
- ❖ It means not only cost-savings by reducing wastes emissions, and reducing fees and fines but also improvement of companies' image on the world market.

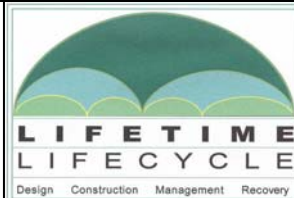
The share of tailings in the total industrial waste stored in Poland



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- Taylor Woodrow Construction Ltd, UK
- CSTB Centre Scientifique et Technique du Bâtiment, FR
- Imperial College of Science Technology and Medicine, UK
- Universität Karlsruhe, DE



Thematic Network LIFETIME in figures:

- Working period: 1/6/2002 - 31/5/2005
- Participation: 96 partners from 28 countries
- Plenary workshops: 2002 Norway, 2003 Finland and 2005 France
- 25 National Dissemination Groups
- Funding from 5th Framework Programme:
Competitive And Sustainable Growth (GROWTH) Programme