RECYCLING OF TYRES IN SWEDEN

Presentation of the Swedish approach towards a ”voluntary” solution, under producer responsibility

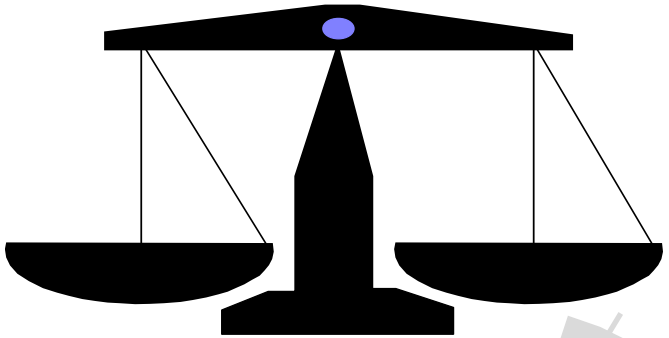
TALLINN 2006-04-26

BACKGROUND

- TYRES TO LANDFILLS
- A WASTE OF AN IMPORTANT SOURCE OF RAW MATERIAL
- THE SUSTAINABLE DEVELOPMENT PROPOSITION 1993
- ORDINANCE OCT. 1994
- RECYCLING-SYSTEM STARTING JAN. 1995

THE ORDINANCE

- FRAMEWORK FOR THE PRODUCER RESPONSIBILITY
- GIVES THE TYRE-SUPPLIERS FULL RESPONSIBILITY TO MANAGE TYRE-RECYCLING WITHIN SET FRAMEWORK



TARGETS

- ESTABLISH A NATIONWIDE SYSTEM IN 1995
- RECOVER 60 % -96
- RECOVER 80 % -98
- TARGET TODAY 100 %

PRIORITIES:

  - REUSE
  - RECYCLE
  - USE AS FUEL

THE SWEDISH TYRE-RECYCLING COMPANY

- CALLED SDAB IN SWEDISH
- A NON-PROFIT COMPANY
- ADMINISTRATOR
- OWNED BY THE TYRE-SUPPLIERS
- RAGN-SELLS AB (A MAJOR WASTE MANAGEMENT COMPANY) MAIN CONTRACTOR FOR ALL OPERATIONS

THE ROLE OF SDAB

- FINANCING
- ADMINISTRATION
- CONTROLLING OPERATIONS
- REPORTING TO THE SWEDISH EPA
- SUPPORT TO R & D
- SPOKESMAN TOWARDS AUTHORITIES

THE SYSTEM

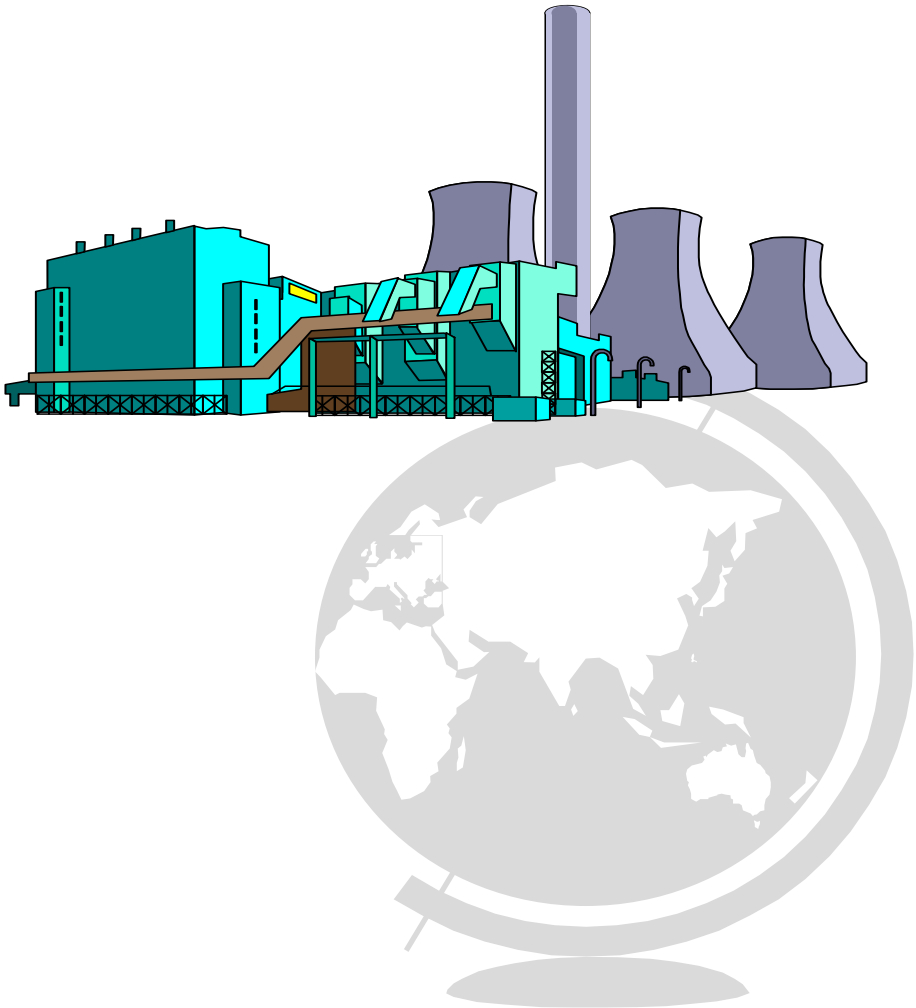
- ✓ USED TYRES COLLECTED FROM POINT-OF-SALE
- ✓ CONTRACTOR SORTS, SHREDS AND ARE RESPONSIBLE FOR FINAL RECOVERY
- ✓ CONTRACTOR GETS PAID BASED ON RECOVERED TONNAGE

FINANCING

- CONTRACT BETWEEN SDAB AND TYRESUPPLIERS
- TYRESUPPLIER REPORTS SALES TO SDAB
- SALESFIGURES USED FOR STATISTICS AND CHARGE FROM SDAB TO TYRESUPPLIER
- 1.5 € / CAR TYRE + VAT

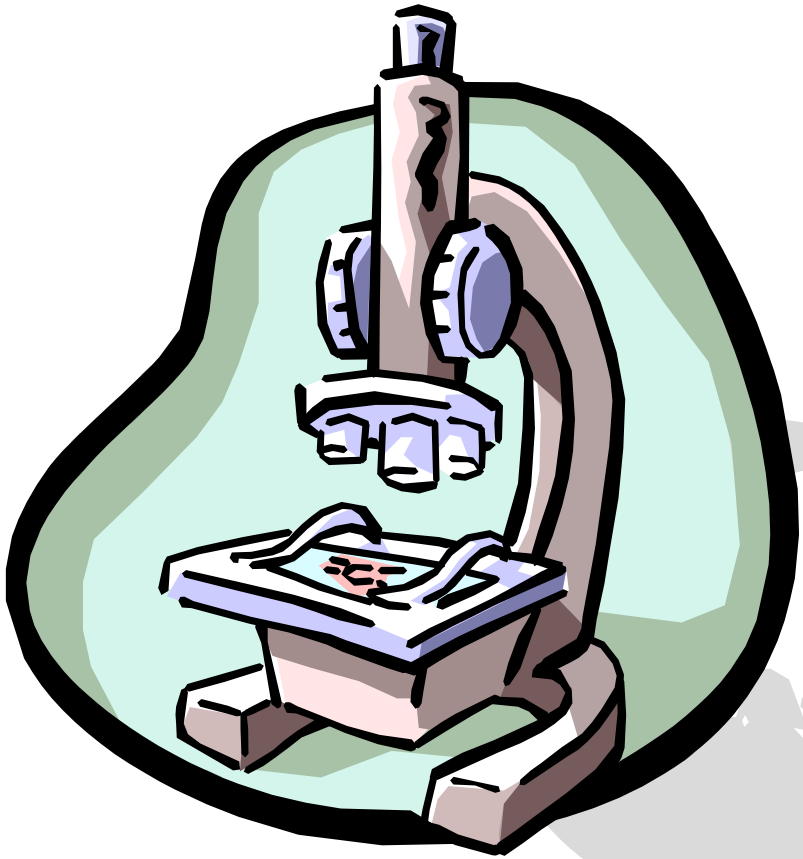
RESULTS FROM 2005

- 70 000 TONS OF SCRAP TYRES HANDLED
- RECOVERY NEAR 100 %
- 6 % REUSED
- 8 % POWDER/ GRANULES
- 30 % CIVILENGINEERING APPLICATIONS
- 50 % AS FUEL, MAINLY IN THE CEMENTINDUSTRY
- 6 % MISCELLANEOUS USE



Environmental effects of ELT:s

- Study performed by IVL Swedish Environmental Research Institute Ltd
- Financed by SDAB & Ragn-Sells AB
- Recovered materials/fuels compared to ”virgin” ones
- Six scenarios studied:
  - Cement kilns
  - Artificial football fields
  - + four others

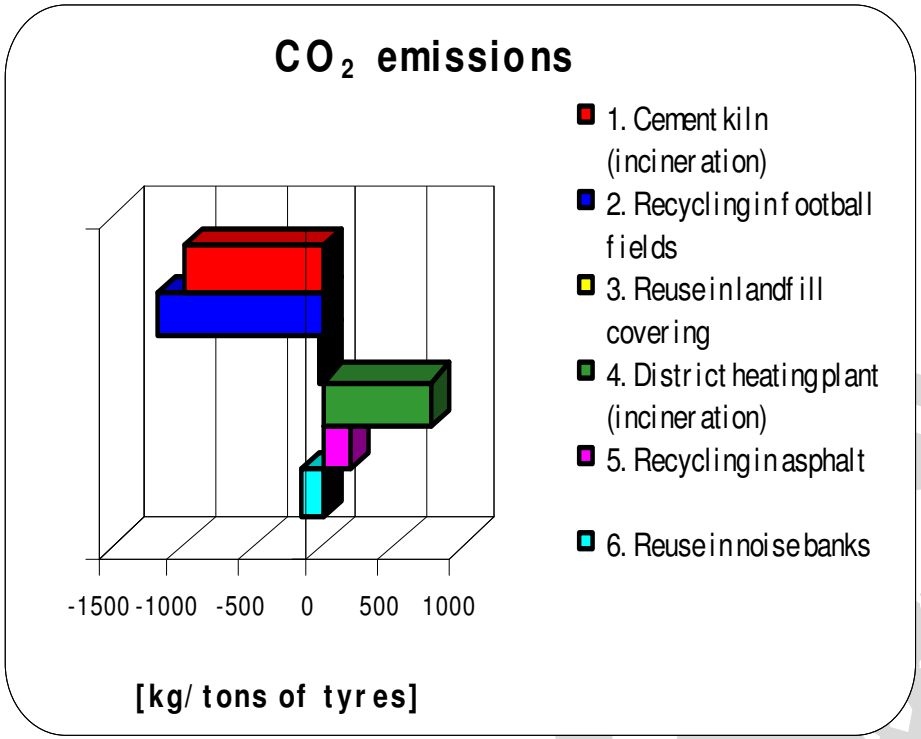


Limitations and parameters

- Study starts with transport from retailer
- Virgin materials/ fuel etc from the cradle
- Carbon dioxide, sulphur dioxide, nitrogen oxides, methane, heavy metals, hydrocarbons etc studied

Brief conclusions

- Positive environmental result from most scenarios
- Example: Smaller overall environmental impact from tyregranulate in a football field than from EPDM
- Graf shows carbondioxide emissions from all studied scenarios (Negative numbers means less impact than from ”virgin” material/fuel)



How favourable?

- Assuming a retailer disposing 20 tons/year
- Recovery: Equal shares of the studied scenarios
- Amounts to a saving of fuel corresponding to heating two private houses one year **and** a reduction of carbon-dioxide equalling a drive by car a ¾ turn around the world
- More info in english at
  www.sdab.se