Lonza

waste solvent management at Lonza Visp

27th LCA Discussion Forum
November 17, 2005
ETH Zürich

Lonza Brief Description

- Predominantly life science driven company headquartered in Basel (Switzerland)
- Sales of CHF 2.18 billion in 2004
- Lonza operates 18 production and R&D facilities in eight countries and employs 5670 people worldwide
- Leading custom manufacturer of chemical intermediates, active ingredients and biopharmaceuticals for the main application areas of pharmaceuticals, animal health medicine and agrochemicals
- Lonza offers organic intermediates for a wide range of applications, antimicrobial and associated products as well as polymer intermediates and compounds
- For more information please visit the company's website at www.lonza.com

Lonza Ltd Visp

- Area 90 ha
- Employees 2500
- Plants
  - Naphtha cracker
  - Single product, multi-product and multipurpose facilities
  - Fully integrated waste management
- products
  - Exclusive products (API‘s intermediates, biopharmaceuticals)
  - Vitamines, food and feed additives
  - Diketene derivatives
  - Hydrocyanic acid derivatives
  - Metaldehyde
  - Peptides and oligonucleotides
  - Crop protection products

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Figures I (2004)

Plants / Products	
Operations	28
Plants	108
Products	250

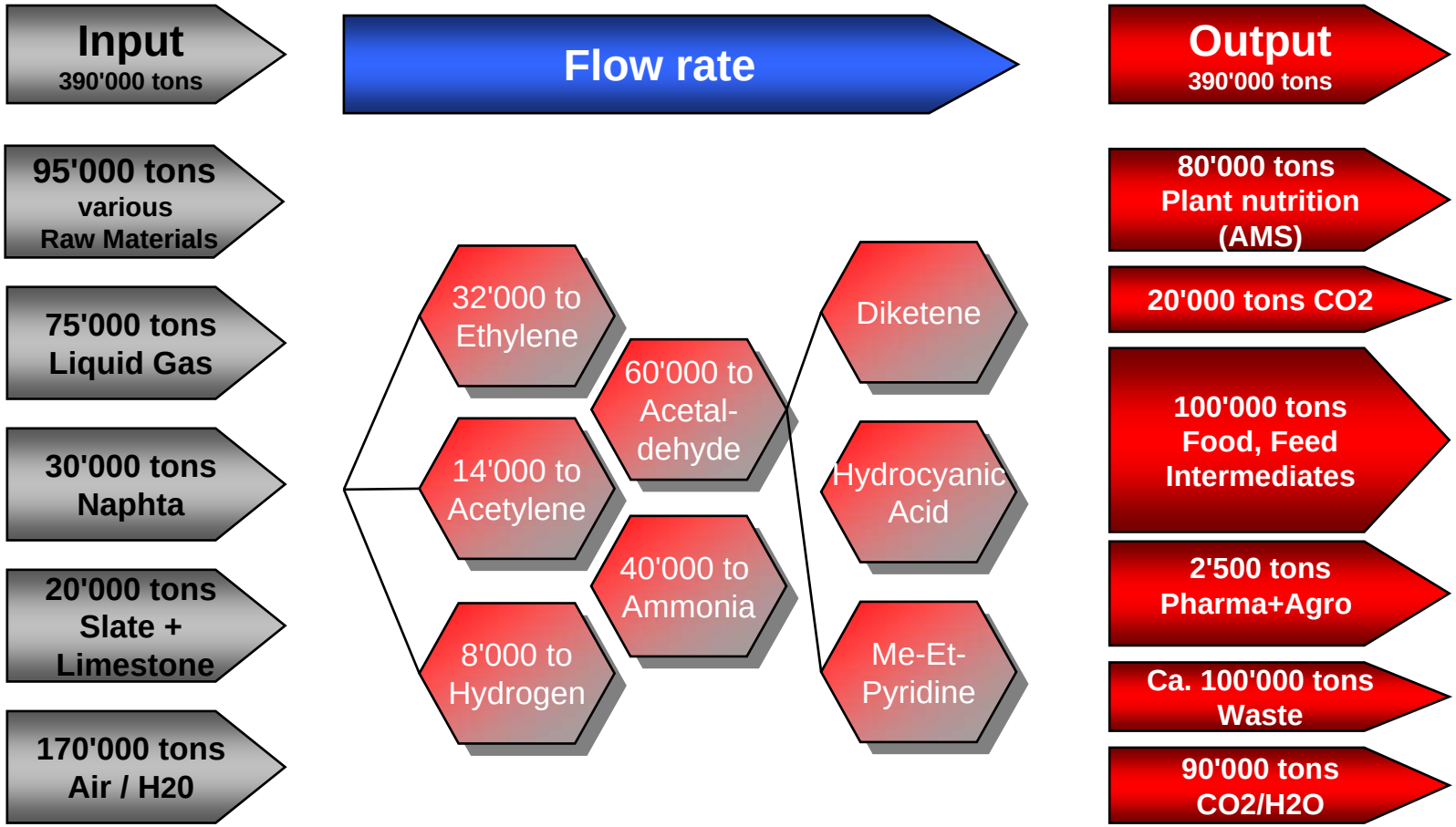
Employees	
31.12.04:	2‘491
Personnel costs:	275 Mio CHF

Investments (Mio CHF, 2004)	
Production	67.3
Infrastructure	19.7
Environment	14.3
R&D	6.8

Figures II (2004)

Area	90 ha	
Reactor volumes (only MPF‘s)	850 m^3	
Pipe network	10 km	
Electricity transmission grid	480 km	
Rail network	18,5 km,	incl. container terminal
Raw material input	276,045 mtpa	
Product output	228,264 mtpa	
Energy consumption	1,469 GWH p.a.	

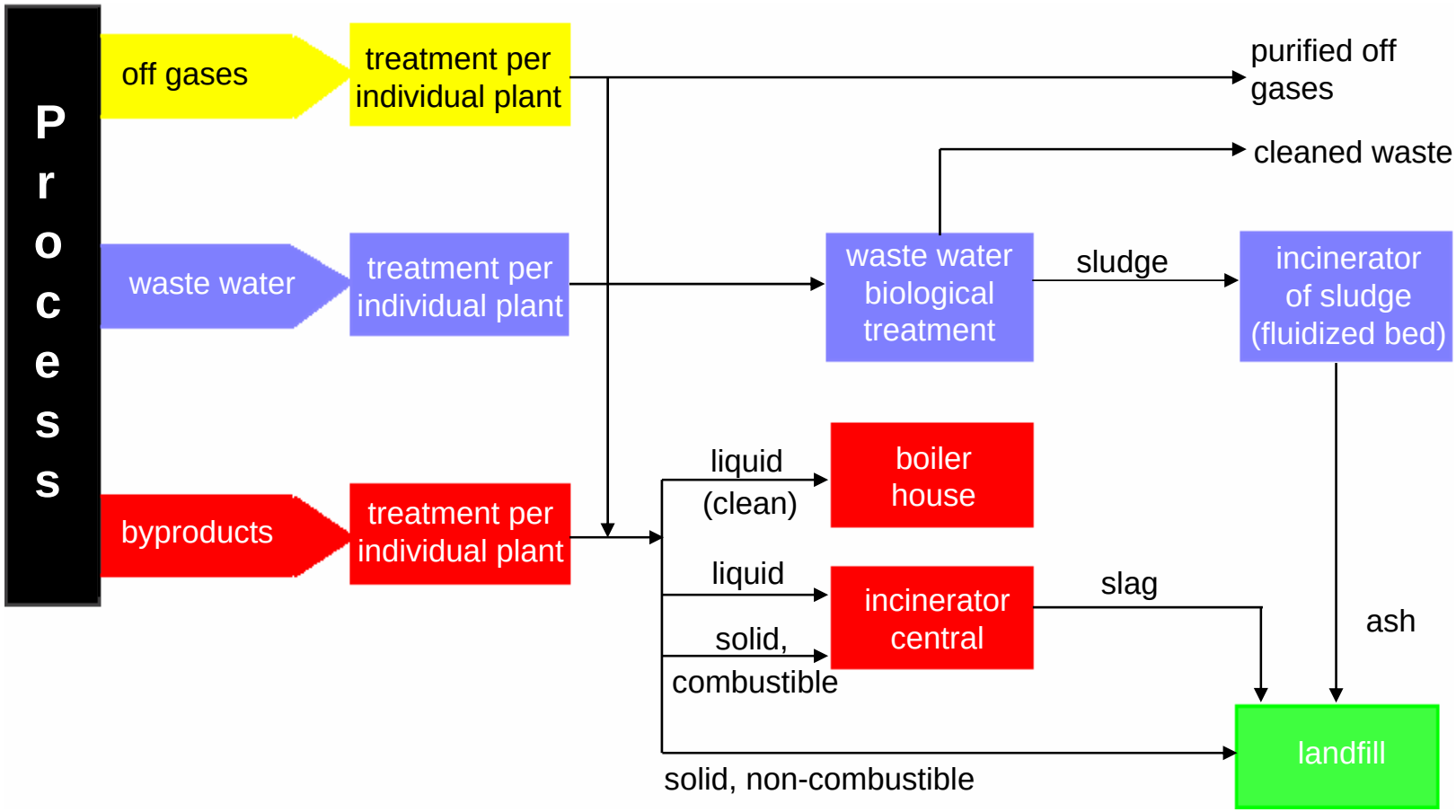
Annual Flow of Materials



VOC-Input (2004)

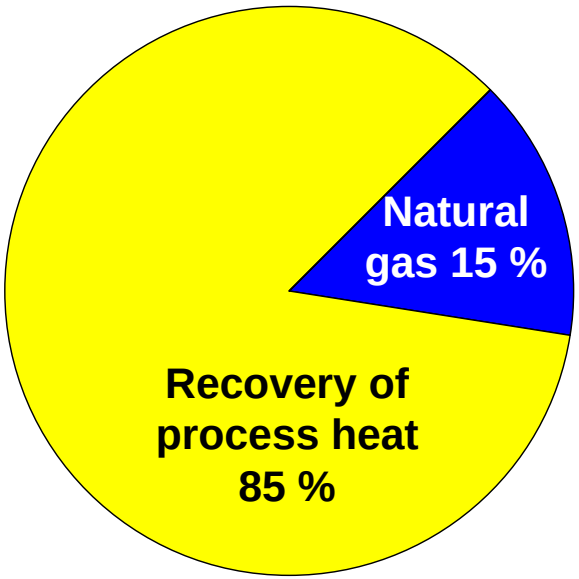
Total VOC	**166‘000 t**
VOC used as solvent	**50‘000 t**
Difference:	**LPG and Benzine for the cracker**

Waste elimination concept



Recovery of heat

Independence of waste management



Allows optimal energy recovery through the unrestricted choice of waste management technology

Reduces dependance on primary energy and its suppliers

The Valais works satisfy its heat requirement mainly through recovery of process heat

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Work up for solvents

Solvent work up - plant

	column		
m^3	plates	D, mm	h, mm
6.3	24	800	7470
6.3	40	810	7080
10.0	38	870	7000
5.0	40	680	5260
2.5	37	500	500
kont.	60	1000	6000

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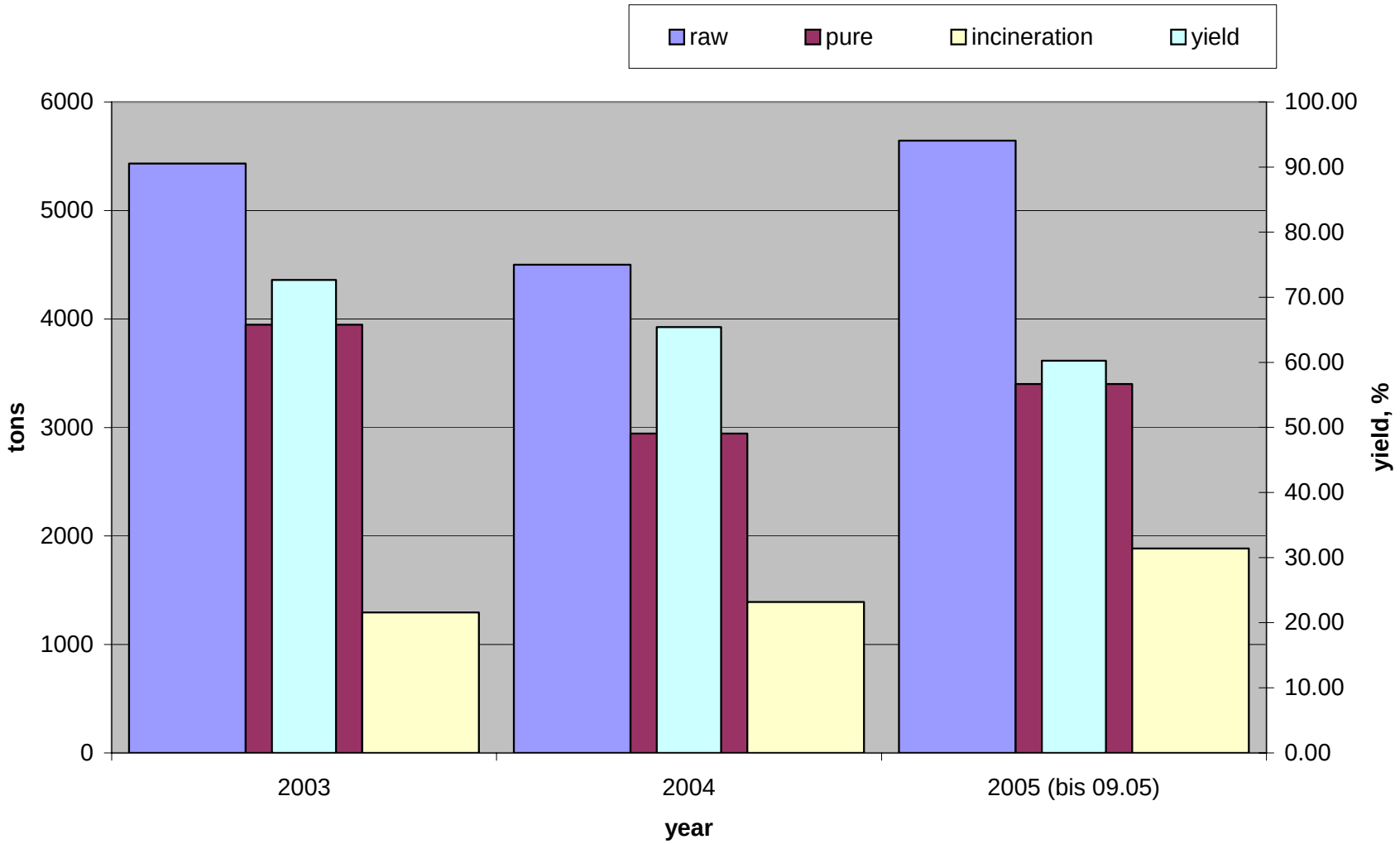
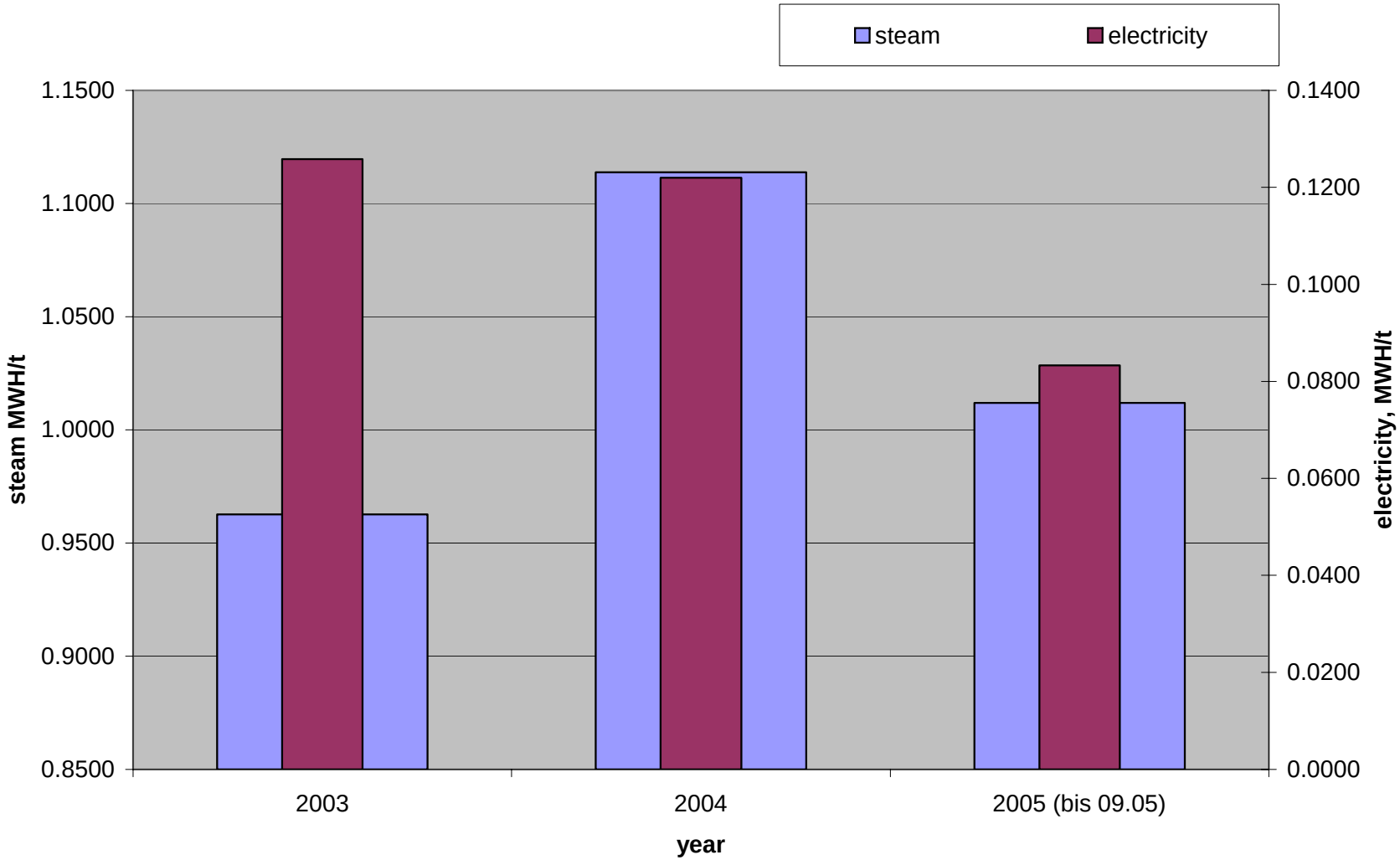
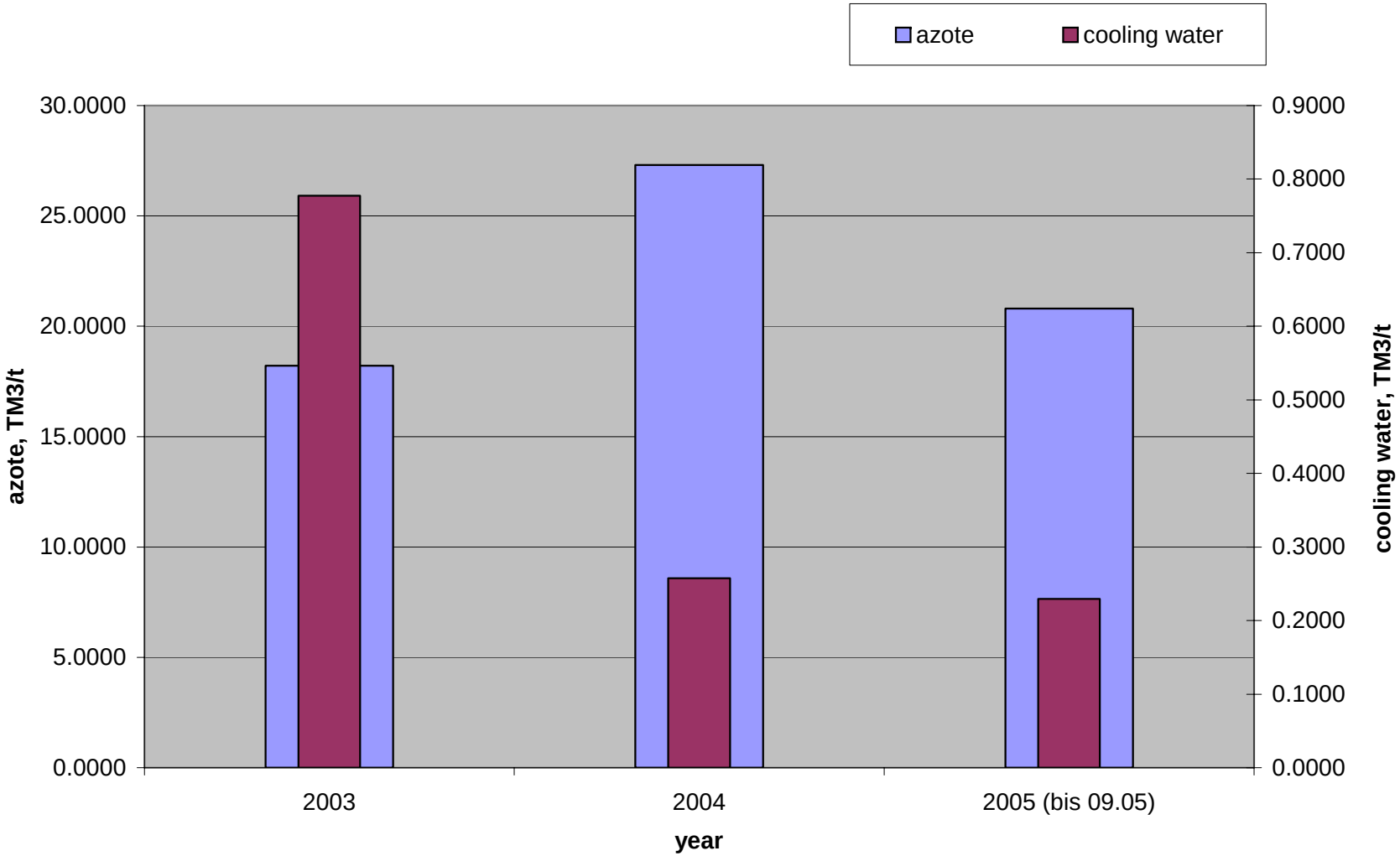
Solvent work up, LSM



Energy consumption, steam, electricity



Energy consumption, azote, cooling water



Criteria to decide between work up or direct incineration

today

- price / costs
- capacity of incineration
- use for reworked solvent

tomorrow

- as above
- ecosolvent