



PowerMinerals

Member of



# Evonik Power Minerals Ltd

## By-Product Management

**The German Experience: Strategies to ensure economically efficient utilisation of coal combustion by-products (CCP)**

**by Thomas Duve**



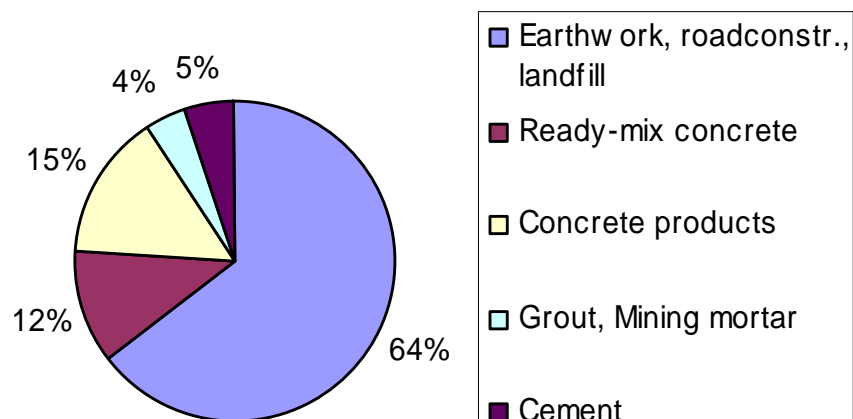
## Two ways of by-product management:

### Sustainable CCP management versus landfilling

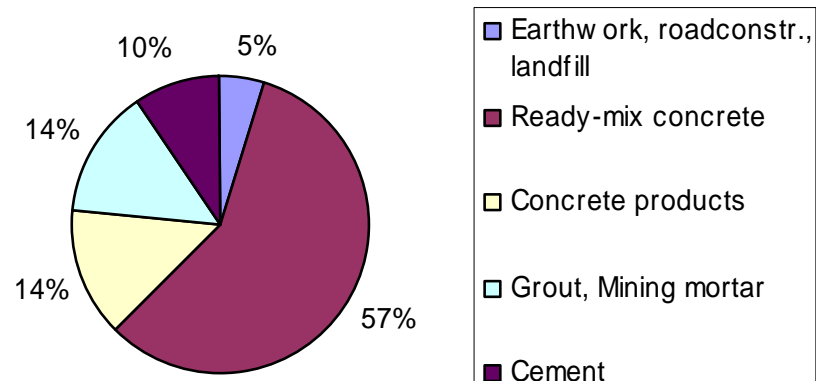


## Context and strategies: Comparison UK - Germany

UK 2003 (approx. 7 Mio. t)



Germany 2003 (approx. 4.2 Mio. t)

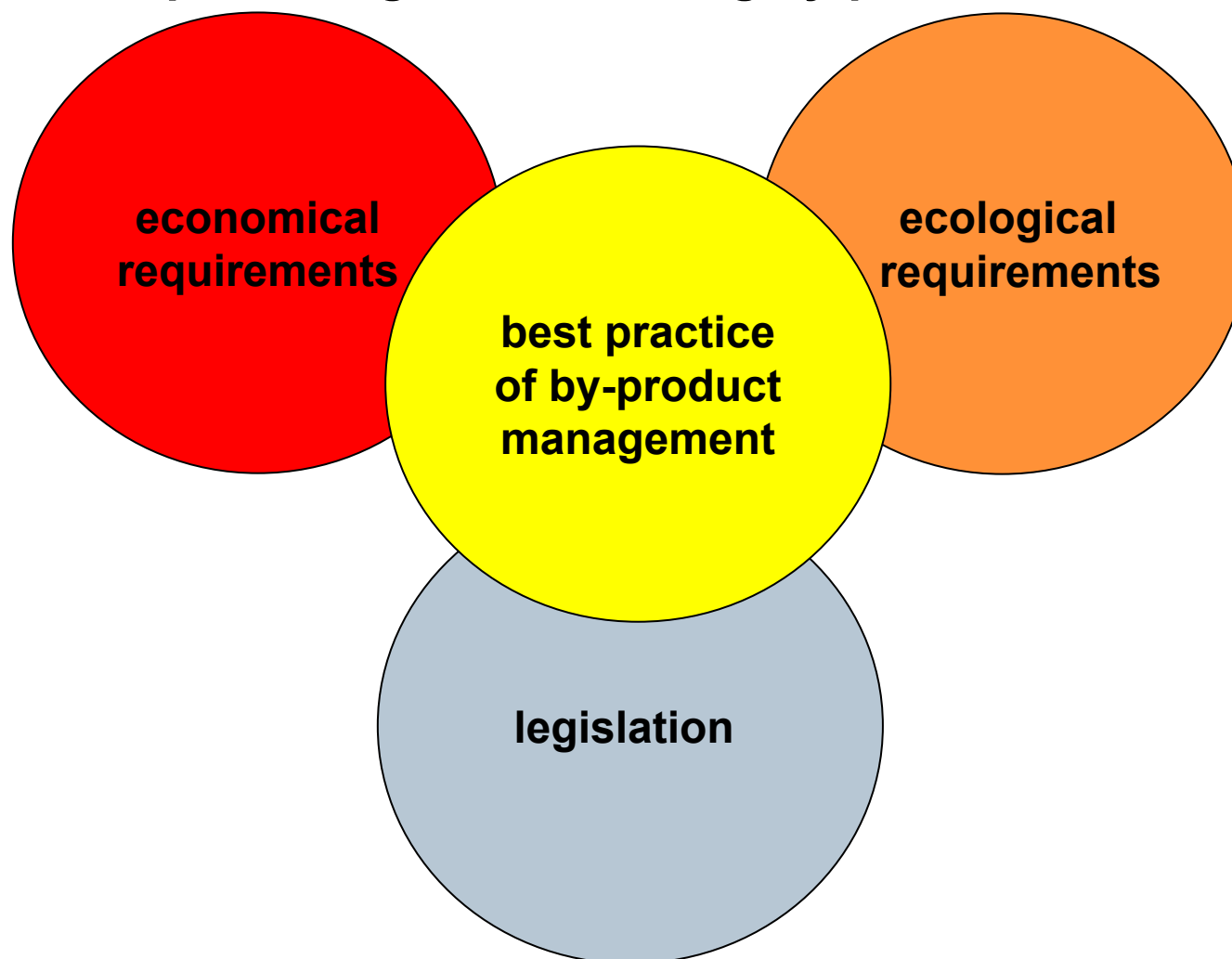


### Conclusion:

In the UK about 64 % (=> approx. 4,48 mio t) of the PFA-quantity is applied in low-value utilisations

In Germany about 5% (=> approx. 0.21 mio t) of the PFA-quantity is applied in low-value utilisations

## Context and strategies: The system of producing and marketing by-products



## Key to the solution - from production to marketing

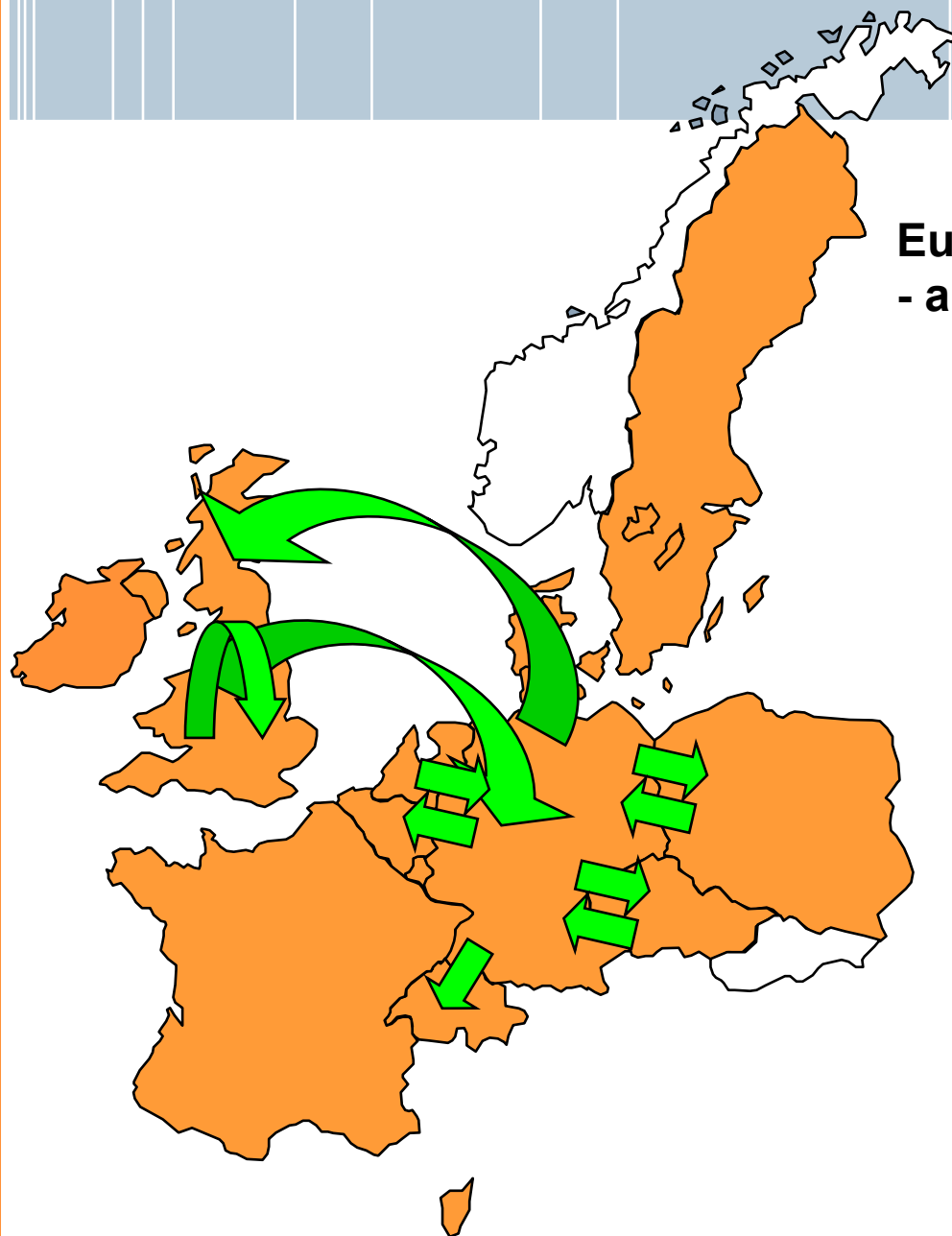
### Objective

### Measure

### Operational Experience

- |                                     |                                    |                               |
|-------------------------------------|------------------------------------|-------------------------------|
| ■ quality improvement               | → station's process control system | → LOI online measuring        |
| ■ reserve capacity, reliable supply | → stockpiling, redrying            | → silos, redrying plant Lünen |
| ■ quality improvement               | → blending of A and C to quality B | → blending plant Gladbeck     |
| ■ extend the range of application   | → product development, R & D       | → "comparable performance"    |
| ■ reserve capacity, reliable supply | → multi-source model               | → European network            |

## European network - a phase model



- opening up of new markets with imported ash
- utilisation of British PFA on the Continent
- quality improvement of British Ash
- ash utilisation on the local market
- operating experience in this field
- Benelux, Poland, Czech Rep., Switzerland

## Summary

- The British situation shows enormous development potential
- Approach to the problem is a European business
  - the marketing of high quality PFA is a very specialised business for specialist companies
  - a cross-border network of fly ash sources is required
  - an exchange of European know-how is required
  - satisfying demand for PFA across borders