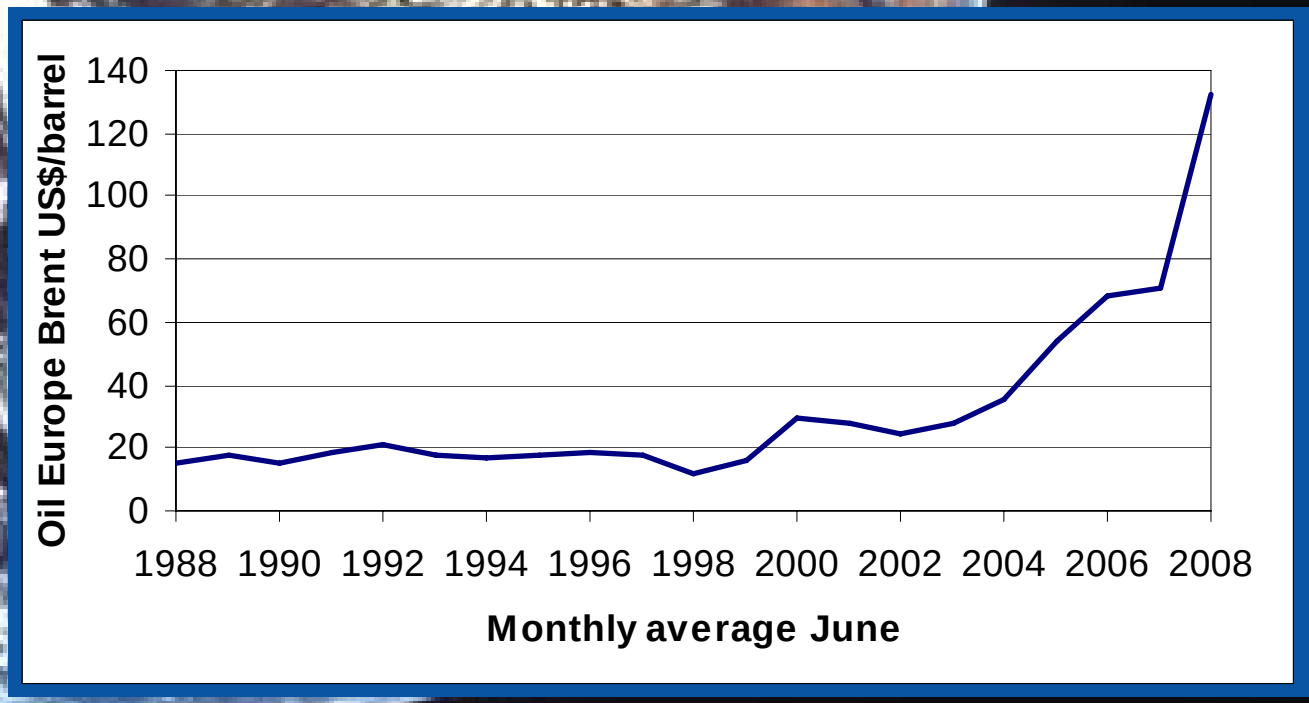
Sustainable Production by Cleaner Technologies

Boosting Environmental Technologies by Verification

15 September 2008



Technology verification for sustainable production

- Environmental technology verification:
  - boost environmental technology implementation
  - boost cleaner technology implementation
  - support sustainable production
- Verification:
  - Performance and benefits of technology
  - Verification of a technology in a production context
    →*comprehensive view to be taken into account*
  - Often specific cases

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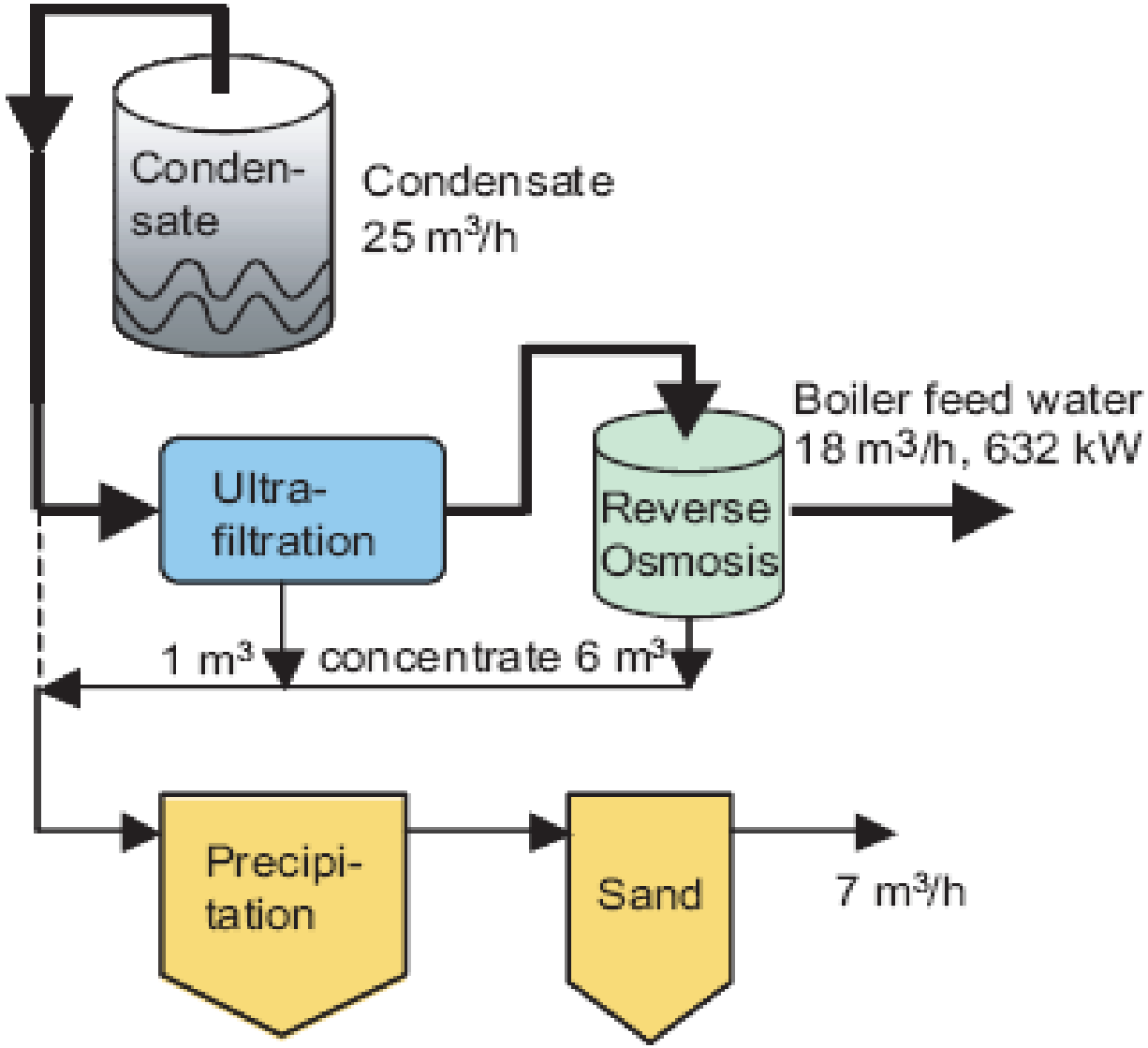
Why ETV for Cleaner production technologies?

- independent testing ->trust (for customer)
- better market access (i.e. reference, for supplier)
- comprehensive testing:
  - customer gets tested what is needed
  - supplier can show additional advantages
- product improvement (supplier)
- increased implementation of innovative technology (ETAP, Commission)

Examples and case studies

- Covering a range of complexity, maturity and techniques
- Cases from TESTNET (EU) and NOWATECH (Nordic Innovation Centre)
  - Flue gas condensate recovery (responsible IVL)
  - Membranes for hydrocarbons (resp. NCRSD)
  - Waste treatment (resp. INASMET)
  - Cleaner pipe production (resp. GIG)
  - Degreasing bath and cutting oil treatment (resp. IVL)

Flue gas condensate recovery



Kinds of parameters considered

- Establishment of the performance (conductivity, hardness, Si, Na)
- Consumption and use of:
  - Chemicals
  - City water
  - Energy
  - Consumables (IX, membranes)
- Requirements to the user manual
- Waste generated
- Man power

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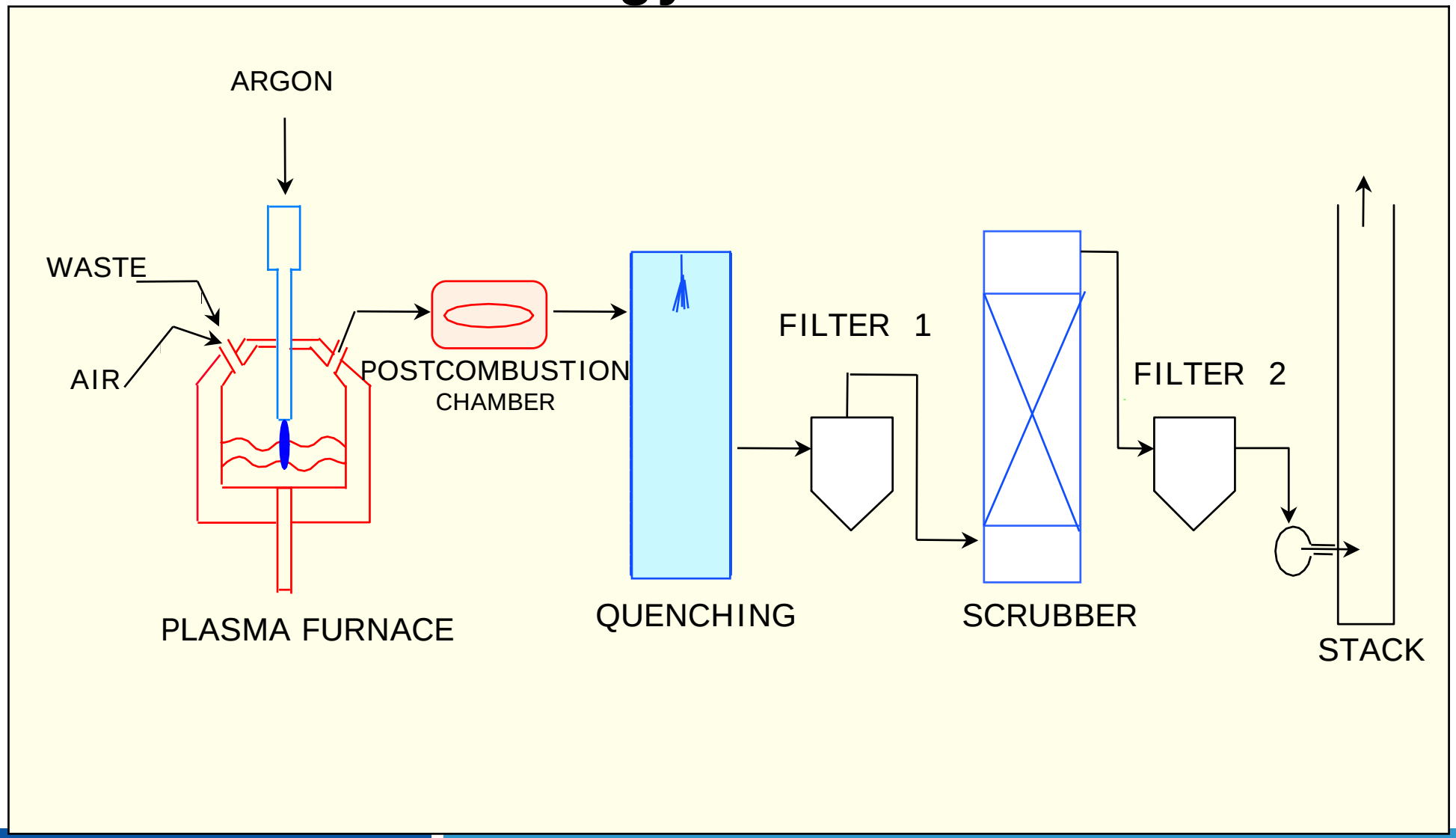
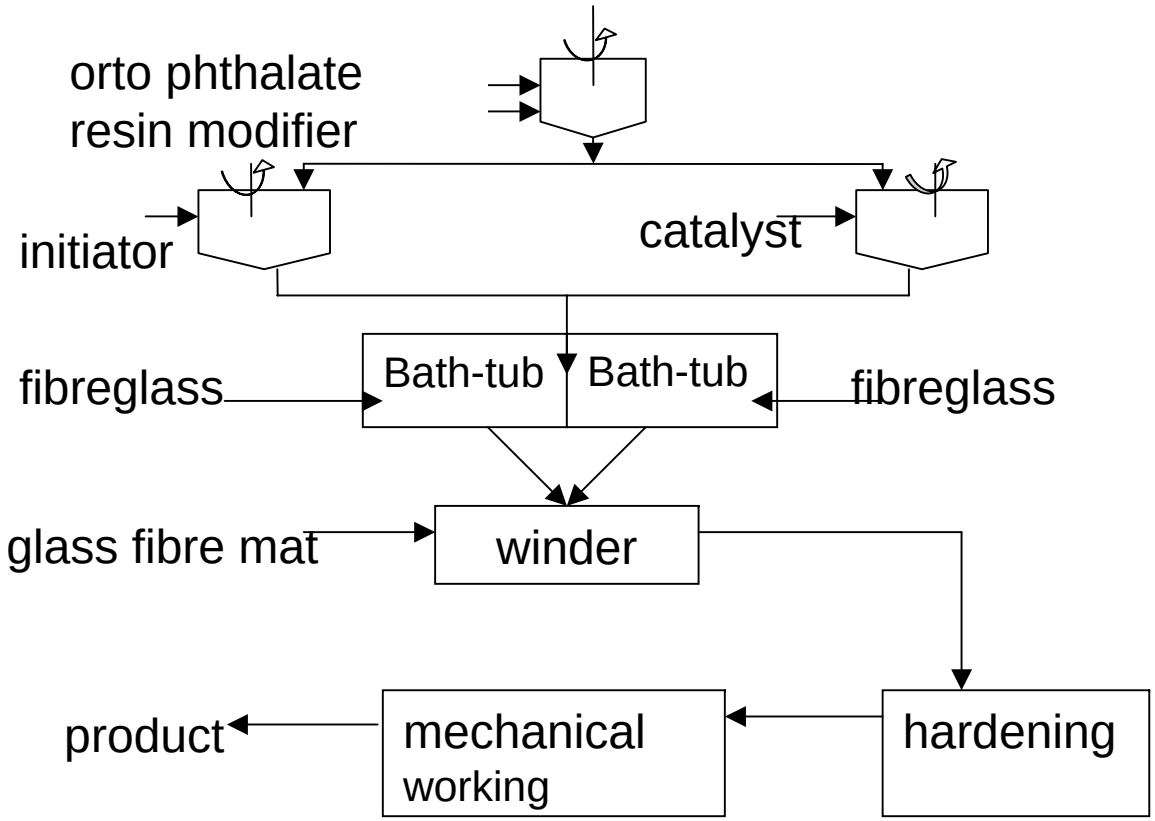
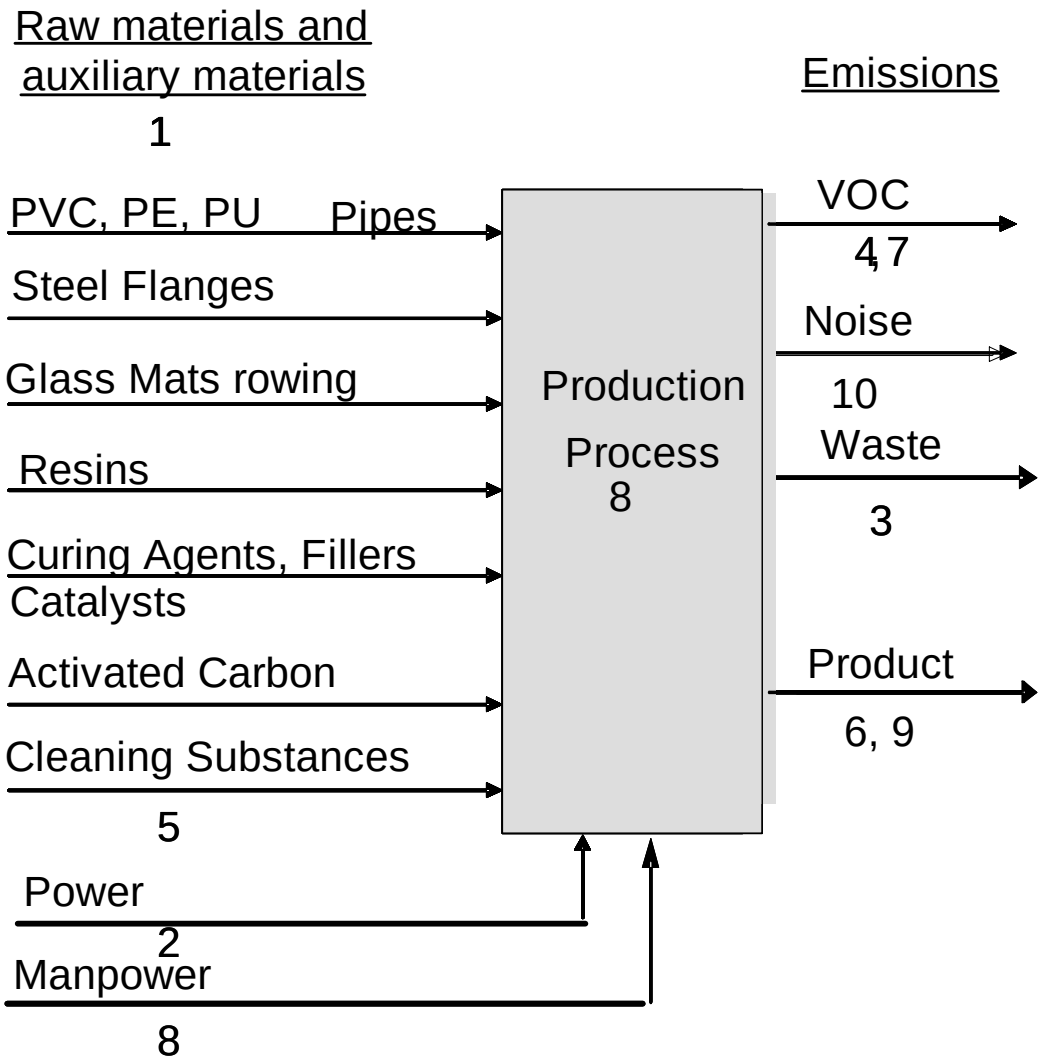
Plasma technology for waste treatment



Cleaner technology for pipe production





Membranes for gas separation

- Using membranes for separation of olefins and paraffin
  – Continuous separation of propylene from refinery streams
- Membranes compete with distillation:
  – potentially lower costs and energy consumption
- Membrane properties are crucial
- Silica membranes tested

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Degreasing bath and cutting oil treatment (NOWATECH)

– Using existing installations, basis also for future protocols

- One Evaporation for degreasing bath and one for oil emulsion, treatment of condensate with ultrafiltration and activated carbon
- Ultrafiltration for prolonging life-time of degreasing bath
- Ultrafiltration and evaporation for treatment of degreasing bath and cutting oil emulsions
- Evaporation treating oil emulsions, re-using condensate for emulsions

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Some recommendations from the case studies

- Early integration important
  - less additional testing needed
  - ideas for improvement
  - less costly
- Need to adapt/create protocol due to specific cases within Cleaner Prod.
- Important with an EU wide recognised system
- Important with connection to BAT (IPPC documents)

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Further recommendations from the case studies

- Make the system as simple as possible (still ensuring quality) e.g.:
  - Provide shorter verification path when a similar protocol already exists
  - Develop protocol and test plan in parallel
  - Close contact with the producer/vendor during the process
  - Some groups in the proposed schemes might be combined e.g. Board of experts and Task group.
- Content of the verification, e.g.:
  - Take into account the rules of specific target markets,
  - Include parameters for benefit of technology as well as resource use (environmental and operational costs).
- Costs of the verification:
  - The costs should be roughly known in beforehand.
  - Measures to simplify the system will help to reduce costs.
  - Some support will be needed especially for SME.
  - A public inquiry might not be necessary when experts are available

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