

# Learning session: Finance

## **Cost estimations**

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# Cost estimations

- Definition of total costs of the RI
  - Differences from country to country  $\Rightarrow$  what is included?
  - Design/preparation, construction, commissioning, operation, D&D
- Currency, exchange rates, inflation, VAT
- Contingency
- FTE values, overhead
- Cost book, cost sharing

# Total costs: what is included? (I)

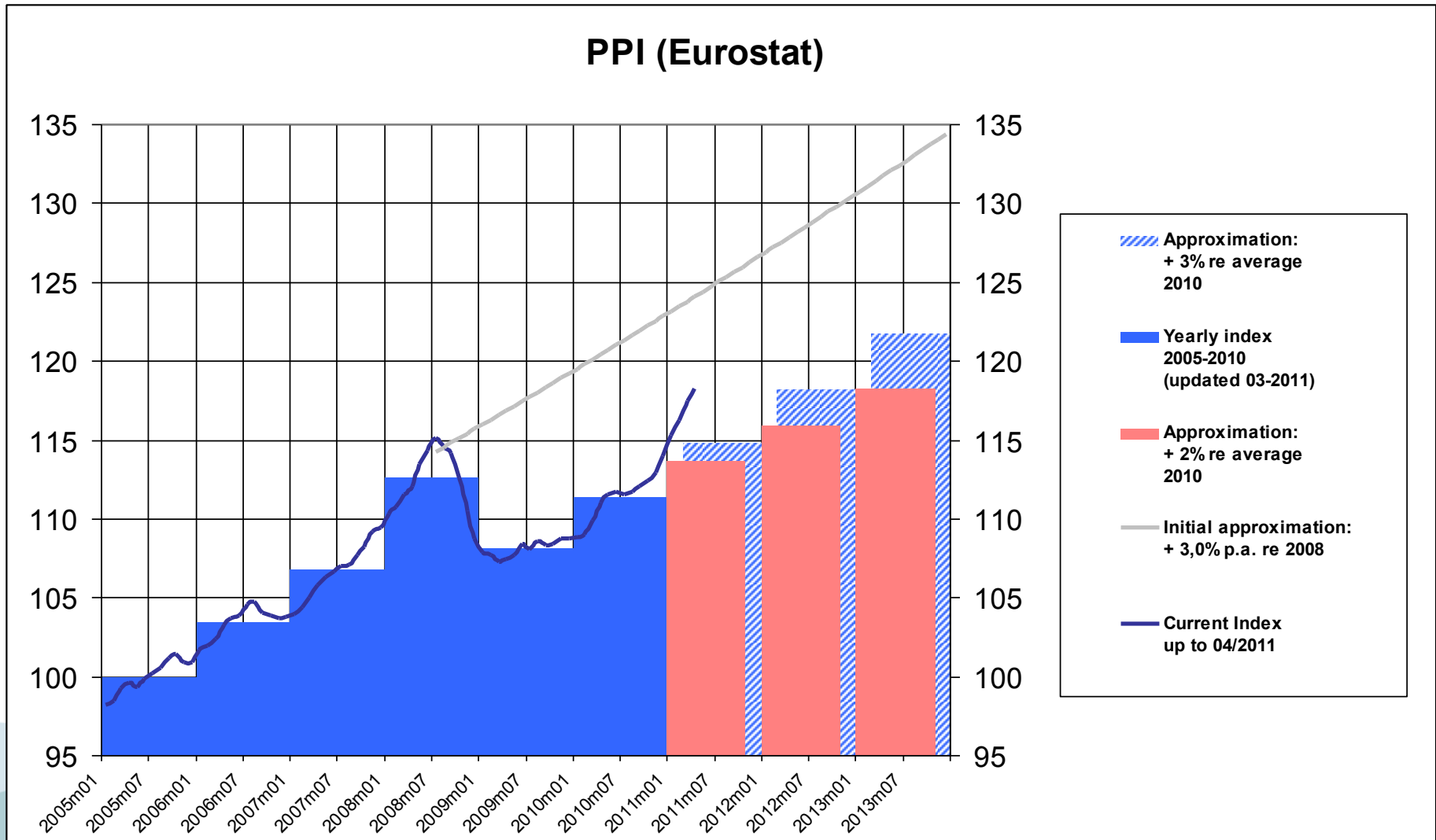
- Design and R&D, preparatory phase
  - Sometimes outside project costs, e.g. for ESRF: ESF, MoU Budget (five partners)
  - Sometimes counted as part of construction costs, e.g. for XFEL.EU
- Construction, commissioning
  - Commissioning as part of construction (or rather of operation)?
  - Only investments? Or also labour costs?
  - Value of pre-existing equipment brought in as in-kind contribution
- Operation
  - Rule of thumb for single sited user facility: 10% of construction costs per year
  - Impact of volatile prices (e.g. electricity, licenses, ...)

# Total costs: what is included? (II)

- Decontamination and decommissioning (D&D)
  - Legislation on handling contaminated material more and more strict
- Currency
  - Choice of currency for construction cost estimates
  - How to deal with exchange rate variations?
- Inflation: how to deal with price increases?
  - Different approaches indifferent countries
    - In DE to be built in from the outset
    - In FR indexation not admissible; however, deflation with known price indices to initial price level possible
  - Costs at ESRF and XFEL.EU based 1987 or 2005 price level, respectively, foresight nevertheless required

# Total costs: what is included? (III)

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# Total costs: what is included? (IV)

- Value added tax, corporate tax, ...
  - General principle: no benefit for participating governments due to levy of taxes
  - Cash contributions from shareholders to their own Company not taxable (at least in Germany)
  - Problem: In-kind contributor without status of entrepreneur and thus not able to recuperate VAT paid to suppliers
  - Non-profit status: change of regulations
- FTE values
  - Personnel costs experienced in host country?
  - Overhead for administration and work-place-related expenditure
  - Warning: Do not underestimate costs for building up new Company (recruitment costs, additional accommodation and office equipment)

# Total costs: what is included? (V)

- Contingency (to cover not anticipated expenditure)
  - Accepted in BE, FR, UK, and US, but not in DE and not by the European Commission
  - Different amounts, for example
    - ESRF: 10% of investment costs
    - LCLS upgrade: 30% of investment costs
  - Integral part of construction costs or to be released case by case?
  - Higher tender prices than assumed: case for drawing from the contingency reserve?

# Cost book, cost sharing

- Cost book
  - Appropriate degree of detail
    - too detailed: follow-up difficult in the event of technical changes
    - too global: justification problems at the outset
  - Yearly slices (for each item?) required for expenditure profile and financial planning
- Cost sharing
  - Might be different for construction and operation
  - Percentage or absolute amounts? (Equal, GDP, user potential, negotiated)
  - Site premium

**Thank you for  
your attention**