Life-Cycle Costing
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The award of public procurement contract

• How to organize the award of public procurement contracts?
• Should we focus on price only with open auctions?
• Should we introduce other criteria?
• Shouldn’t we then fear public authorities’ discretionary power?
LCC: what are we talking about?

- New objectives assigned to public procurers
- But whatever the award procedures
  - The initial purchase cost is often one of the most influential factors determining the award of a public procurement contract.
- A more rational approach would be to consider all of the costs that will be incurred during the life span of the supplies, services or works in order to establish which offer is truly the “least expensive”.
  - If we can measure them properly, no discretionary power anymore!
**Price**

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LCC: « Think outside the (price) box »
LCC: a tool which evaluates the costs of an asset throughout its life-cycle
Price and Internal costs

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![Graph showing price and internal costs for Project A and Project B. The graph includes categories such as End-of-life costs, Maintenance costs, Operating costs, and Purchase price.]
Price, Internal and External costs

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Life-cycle Costing in few words

• LCC is mainly a way to balance, more explicitly and more rigorously, the economic considerations of public procurement with policy choices

• A methodology to assess the whole cost of a project.
  – Directly borne by the contracting authority – *internal costs*
  – Borne by the public at large – *external costs*
What the Directive says about LCC?

• The 2014 Public Sector Directive placed greater emphasis on the evaluation of criteria other than simply the price.
  – Article 67 (1) states that "contracting authorities shall base the award of public contracts on the most economically advantageous tender".
  – Article 67 (2): "The MEAT from the point of view of the contracting authority shall be identified on the basis of price or cost, using a cost-effectiveness approach, such as life-cycle costing... and may include the best price-quality ratio, which shall be assessed on the basis of criteria, including qualitative, environmental and/or social aspects linked to the subject matter of the public contract in question...".

• **Relevant** and **verifiable** criteria that do not confer unrestricted freedom of choice to contracting authorities
• To allow for effective verification, environmental costs must be quantified and expressed in monetary terms
Potential advantages

• Easy to choose the best offer on objective criteria
• Easy to follow other objectives than only minimizing price
  – GPP, Social objectives, ..
• Restrict the discretion power of purchasing authorities by replacing qualitative/subjective criteria by objective measures
• Reduces the “incompleteness” of the award procedure
How to apply LCC?

• Article 68(3) of the Directive requires that “whenever a common method for the calculation of life-cycle costs has been made mandatory by a legislative act of the Union, that common method shall be applied for the assessment of life-cycle costs”.

- The list of common methods is included in Annex XIII of the Directive. The list currently provides only one common method concerning certain types of road transport vehicles.

LCC: Good for theory. Bad for practice?
LCC in practice (1)

• **Technical specifications:** The contracting authority should define the technical specifications in terms of performance characteristics, focusing mainly on the desired outcome ("what to obtain") rather than on the means to achieve that outcome ("how to do").
  
  – Who will be in charge of evaluating internal and external costs?
  
  – Can a public authority acquire the capabilities to evaluate internal and external costs with propositions that may differ widely on proposed technologies?
LCC in practice (2)

• What about potential costs? With low confidence on probability of occurrence?
• Accuracy of future cost assumptions?
  – Cost of 1Kwh of electricity in 2040?
• Period of analysis?
• Discount rate?
• Contract management?

• What about costs of procurement with a data demanding LCC methodology? Beware of **transaction costs**!
Beware of transaction costs

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LCC in practice (3) another minor issue

- LCC efficient alternatives are not always the most environmentally and socially sustainable ones!

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LCC in practice (4)

• The contracting authorities should create a « task force » that will acquire the necessary expertise
  – What data to collect?
  – Method of economic evaluation of future costs
  – ...

• Should LCC be done by a higher (central/federal/European) authority, or should it be left to the decision of contracting authorities?
  – Result will depend on many questionable assumptions made by the purchasing authority.
Main obstacles for the use of LCC

– LCC good for thinking outside the (price) box » and to take into account costs of an asset throughout its life-cycle

– LCC to generate at best « reasonable » approximation of the costs rather than a perfect measure

– If yes, what is new ? Still a trade off between **ex ante complete award procedure** (no discretion for public purchasers) **and ex post transparency and control**

– Shouldn’t environmental issues be solved when possible at the national level with States taking their responsibilities through **taxes and subsidies**
Annex
ANNEX XIII

LIST OF UNION LEGAL ACTS REFERRED TO IN ARTICLE 68(3)

Member States shall ensure that, all contracting authorities purchasing road transport Vehicles, take into account the operational lifetime energy and environmental impacts
Directive 2009/33/EC

Data for the calculation of operational lifetime costs of road transport vehicles

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Energy content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diesel</td>
<td>36 MJ/litre</td>
</tr>
<tr>
<td>Petrol</td>
<td>32 MJ/litre</td>
</tr>
<tr>
<td>Natural Gas/Biogas</td>
<td>33-38 MJ/Nm³</td>
</tr>
<tr>
<td>Liquefied Petroleum Gas (LPG)</td>
<td>24 MJ/litre</td>
</tr>
<tr>
<td>Ethanol</td>
<td>21 MJ/litre</td>
</tr>
<tr>
<td>Biodiesel</td>
<td>33 MJ/litre</td>
</tr>
<tr>
<td>Emulsion fuel</td>
<td>32 MJ/litre</td>
</tr>
<tr>
<td>Hydrogen</td>
<td>11 MJ/Nm³</td>
</tr>
</tbody>
</table>

Table 2: Cost for emissions in road transport (in 2007 prices)

<table>
<thead>
<tr>
<th>CO₂</th>
<th>NOₓ</th>
<th>NMHC</th>
<th>Particulate matter</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.03-0.04 EUR/kg</td>
<td>0.0044 EUR/g</td>
<td>0.001 EUR/g</td>
<td>0.087 EUR/g</td>
</tr>
</tbody>
</table>
Table 3: Lifetime mileage of road transport vehicles

<table>
<thead>
<tr>
<th>Vehicle category</th>
<th>Lifetime mileage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger cars (M₁)</td>
<td>200 000 km</td>
</tr>
<tr>
<td>Light commercial vehicles (N₁)</td>
<td>250 000 km</td>
</tr>
<tr>
<td>Heavy goods vehicles (N₂, N₃)</td>
<td>1 000 000 km</td>
</tr>
<tr>
<td>Buses (M₂, M₃)</td>
<td>800 000 km</td>
</tr>
</tbody>
</table>
Source: The uptake of green public procurement in the EU27 (Centre for European Policy Studies and College of Europe, 2012).