

SMART SPP Life-cycle Costing and CO₂ assessment tool

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LCC and innovation

Drive the market

Public procurement is the biggest single customer-side driver

SMART SPP guidance



- A practical guide how to drive innovation through sustainable procurement, available in English, Danish, Portuguese, Spanish (print + online pdf)



Driving energy efficient innovation
through procurement
A practical guide for public authorities

www.smart-spp.eu



Market engagement key principles



Consider the following:

- Identify & communicate your needs in terms of performance & function
- Engage with the market to identify what's possible (respecting confidentiality & ensuring transparency)
- Give the market sufficient warning, e.g. 6-12 months in advance of actual tendering

Life Cycle Costing (LCC) - areas



LCC is most commonly used for:

- option evaluation when procuring new assets,
- decision-making to minimise whole-life costs throughout the life of an asset,
- comparison of actual costs for similar asset types,
- as feedback into future design and acquisition decisions.



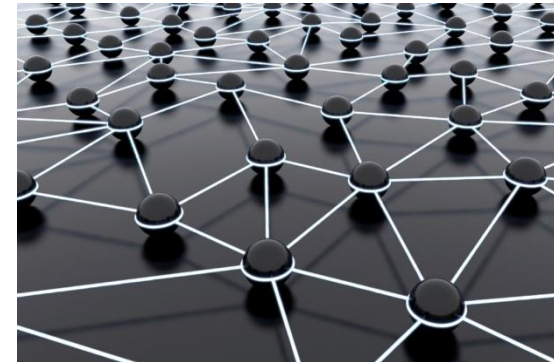
In summary



Taking an LCC approach allows **comparative cost assessments** to be made over a specific **period of time**, taking into account relevant economic factors both in terms of initial capital costs and future operational and asset replacement costs.

Typical benefits can include:

- Greater transparency of future costs
- Improved awareness of total costs
- Evaluation of competing options
- Better forecasting



Case studies I



Savings on energy

A case from Denmark (Municipality of Kolding)

- Use as award criteria in light bulbs tender (200 different bulbs)
- Discount rate and the inflation rate from Danske Nationalbank's and Statistics Denmark's
- Prices and CO₂ emission factors for electricity consumption from the Municipality's electricity supplier



Kolding
Kommune

Case studies I – cont.

A case from Denmark (Municipality of Kolding) – cont.

→ Using weighted lifetime calculations:

<i>Replacement light source for</i>	<i>W</i>	<i>Base</i>	<i>Weighted number</i>	<i>Lifetime Hours (L70)</i>	<i>Weighted lifetime</i>
10w 12v G4 clear or matt	10	G4	34	20000	680000
20w 12v GU5.3 Titan Ø50	20	GU5	24	35000	840000
20w 12v Ø50	20	G4	15	40000	600000
20w 12v G4 clear	20	GU5,3	15	35000	525000
35w 12v GU5,3 Titan Ø50	35	GU5	12	35000	420000
TOTAL			100		3065000
<i>Weighted value</i>					30650

→ Evaluation and allocation:

<i>Evaluation</i>	<i>Supp, 1</i>	<i>Supp, 2</i>	<i>Supp, 3</i>	<i>Supp, 4</i>	<i>Supp, 5</i>	<i>Supp, 6</i>	<i>Supp, 7</i>	<i>Supp, 8</i>
<i>Procurement price</i>	604,434	775,304	770,236	535,077	675,316	464,766	517,291	361,102
<i>Weighted Lifetime</i>	25,400	27,650	30,550	27,650	22,400	37,050	34,250	37,450
<i>Weighted Watts</i>	4,000	4,204	3,700	3,604	4,510	3,428	2,850	3,735
<i>Operating costs (25 years)</i>	1,369,635	1,439,487	1,266,913	1,234,041	1,544,264	1,173,778	975,865	1,278,897
<i>Weighted Lm/W</i>	50	66	76	47	40	66	52	60
<i>Weighted RA</i>	82	85	80	85	81	82	82	83

Case studies II



Savings on maintenance and replacement

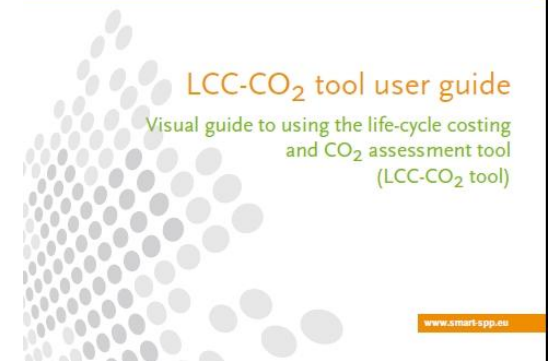
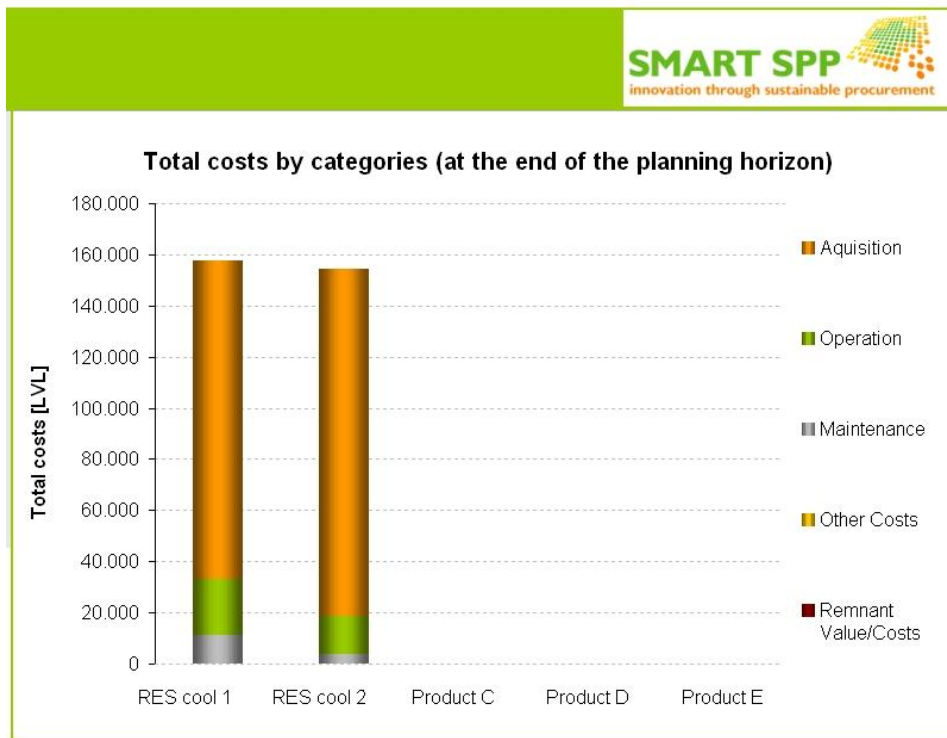
A case from the Swedish Road Administration

- Road lighting: LCC analysis is easier to conduct - the budget is centralised and they have experience, knowledge and the relevant data for LCC (energy consumption, lamp and luminary life span, time needed for lamp replacement and luminary cleaning, etc.)
- Main challenge: to know the exact life span of new lamps, as data from providers may not be reliable.

SMART SPP LCC-CO₂ Tool



- Microsoft Excel[®] Tool (html-version: www.lcc-tool.eu)
- Supports procurers in calculating life-cycle costs and CO₂ emissions of innovative products and services
- Graphical display of results and tender evaluation





Purpose of the Tool

- Supports procurement decision-making, e.g. by tender evaluation
- Can be applied for all products and services relevant in public procurement
- Can also be used for assessment of current solutions and for monitoring purposes
- Enables public communication of reduced cost and CO₂ emissions

Color-coded features of the sheets



LCC & CO2 - Calculation for Procurement Activities
 A user guide has been developed to help you use this tool. You can download it at www.smart-spp.eu.

SMART SPP
 Innovation through sustainable procurement

General Information

Tender ID

Information to be specified by the procurer

Your location [country] Currency
 Planning horizon [years]
 Discount rate (nominal) [%]
 Inflation rate [%]
 CO₂eq emission factors

Information to be specified by the supplier

Product Offers	Product A	Product B	Product C	Product D	Product E
Personal offer ID					
Number of units to be purchased/leased [#]					
Lifespan [years]					

Life-cycle Costing (LCC) Information

Discount rate [%]
 Inflation rate [%]

Acquisition Costs

Purchase price [0/unit]

or Specify annual investment costs >>

	Product A	Product B	Product C	Product D	Product E
Installation costs for all units	[Click to specify]	[Click to specify]	[Click to specify]	[Click to specify]	[Click to specify]
Initial one-off costs					
Purchase costs [after 25 years]	0,00	0,00	0,00	0,00	0,00
Installation costs [after 25 years]	0,00	0,00	0,00	0,00	0,00
Initial one-off cost [after 25 years]	0,00	0,00	0,00	0,00	0,00

Comments of the Procurement Coordinator

For more product columns click on the expansion button [+] at the top

Introduction | General | LCC_Diagrams | CO2_Diagrams | Tenders Evaluation | Conversion Factors | Glossary | Emission Factor:

Text/Calculations.

Input data cells

Links to other sheets (and back).

Helpful Comments (move your cursor over it to view them)

Dropdown menu

Outlook on LCC



- Revision of the Procurement Directives: draft includes reference to LCC in the Directives, but unsure of scope yet
- Working towards reliable data: LCC needs a transparent and trustworthy environment. Early market engagement is key to obtain tangible results.
- Test it: Online version of the SMART SPP LCC-CO₂ tool at www.lcc-tool.eu



Let's work with the Tool!



Download the LCC-CO₂-Tool and User Guide at <http://www.smart-spp.eu/guidance>

Available in English, Spanish, Portuguese, Danish, French and Dutch

Coming back to work next week and having another question on the SMART SPP LCC-CO₂ Tool?

Do not hesitate to contact me:

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