CO₂ in CBAs
the Dutch practice

Hans Nijland (PBL)
Decision making process on infrastructure in the Netherlands

CBA: usefulness and necessity

CBA: best alternative
Application of CBA in Dutch decision-making practice (1)

Most CBAs negative or neutral
Most decisions positive

Source: Rienstra, 2008
Application of CBA in Dutch decision-making practice (2)

Outcome of CBA

Rail and waterways always negative or neutral

Source: Rienstra, 2008
Application of CBA in Dutch decision-making practice (4)

Decision in most mega-projects in line with CBA

CBA leading

go

Decision in most mega-projects in line with CBA

Noot Hoog = >€1 mld, middelhoog = €100 mln - €1 mld, laag = <€100 mln.
Outcome more often positive in later phase
Projects only stopped in initial phase
<table>
<thead>
<tr>
<th></th>
<th>Noise and emissions ((CO_2, NOx, PM10))</th>
<th>Nature and landscape</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transport</strong> (37)</td>
<td>35, often monetized</td>
<td>18, hardly ever monetized</td>
</tr>
<tr>
<td><strong>Spatial development</strong> (10)</td>
<td>0</td>
<td>8, monetized in 6</td>
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*Source: Annema and Koopmans, 2008*
Total yearly average external costs

Transport sector (37 billion/yr) (excl. aviation and maritime)

Aviation and maritime (6 billion/yr)

Source: CEDelft, in press
Method used to calculate climate costs

Emissions CO$_2$-aeq
(emission weight factor aviation = 2)

CO$_2$-price
10 – 78 -155 euro/tonne

Climate costs
Method used to calculate CO$_2$-price

- Direct damage costs:
  preferred method, but....uncertainty high
  uncertain impacts, small risks + high damage;
  discount rate under discussion (2.5% + project specific 3% - 1.5%) 

- Prevention costs:
  related to policy goals
  minimum costs 10 euro/tonne (EU 2020 20 % reduction target)
  maximum costs 44 – 155 euro/tonne (EU 2050 2 ° goal, 445ppm)
  (Kuijken et al., 2009)
  average costs 78 euro/tonne
  based on economy-wide, not transport-specific, mitigation costs