Cost/Benefits analysis of infrastructure projects

L’activité
Le contexte

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Some KPI’s

T&D Manufacturers
- Ready to provide State of art technologies
- For Innovative electricity transmission grids
- With a prospective view

Eg. : KPI’s for Replacement / refurbishment of Power Components
## UHV DC Energy efficiency

2500 MW, final distribution -1000 km - Line availability: 97% by time

<table>
<thead>
<tr>
<th>Type of Power production</th>
<th>Type of line</th>
<th>Power to be produced (MW)</th>
<th>Total electric energy to be produced in one year (TWh)</th>
<th>Total CO₂-equivalent emitted (t/year)</th>
<th>CO₂-eq. emitted (kg/received kWh)</th>
<th>Avoided CO₂-eq. by ±800 kV DC, compared with 500 kV AC</th>
<th>Avoided CO₂-eq. by ±800 kV DC, compared with 1100 kV AC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation - mix (0.5 t CO₂-eq./MWh)</td>
<td>500 kV AC</td>
<td>3049</td>
<td>26.7</td>
<td>1.34×10⁷</td>
<td>0.61</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1100 kV AC</td>
<td>2848</td>
<td>24.9</td>
<td>1.25×10⁷</td>
<td>0.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>±800 kV DC</td>
<td>2622</td>
<td>23.0</td>
<td>1.15×10⁷</td>
<td>0.524</td>
<td>1.87 Mt/year</td>
<td>0.986 Mt/year</td>
</tr>
</tbody>
</table>

UHV transmission line improves energy efficiency, & decreases CO₂-equivalent emissions compared with 500 kV AC line.

±800 kV DC shows even better energy efficiency
The UHV transmission line improves energy efficiency, and decreases CO2-equivalent emissions compared with 500 kV AC line.

±800 kV DC shows even better energy efficiency.

Comparing the different power generation, hydro and nuclear offer the lowest CO2-equivalent emissions.