Keys to transmission grid investments

Evolution of the electricity grid in energy transition

Confrontations Europe – 08/02/2017
RES induce larger, more distant and volatile power flows

Three multiplying scaling effects

- Magnitude $\times 10$
- Impacted perimeter $\times 10$
- Variability $\times 10$

<table>
<thead>
<tr>
<th>Year</th>
<th>Power</th>
<th>Distance</th>
<th>Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>$1\text{ GW}$</td>
<td>$100\text{-}200\text{ km}$</td>
<td>$5\text{-}10\text{ GW/h}$</td>
</tr>
<tr>
<td>2010</td>
<td>$\approx 1\text{ GW}$</td>
<td>$\approx 1000\text{-}2000\text{ km}$</td>
<td>$\approx 1\text{ GW/minute}$</td>
</tr>
<tr>
<td>2020</td>
<td>$\approx 10\text{ GW}$</td>
<td>$\approx 10\text{ GW}$</td>
<td>$\approx 1000\text{-}2000\text{ km}$</td>
</tr>
<tr>
<td>2030</td>
<td>$\approx 10\text{ GW}$</td>
<td>$\approx 10\text{ GW}$</td>
<td>$\approx 1000\text{-}2000\text{ km}$</td>
</tr>
</tbody>
</table>
Public acceptance
Permitting
Secured business case
(Engineering issues)
Keys to power grid investments

- Develop local ownership/appropriation

Especially:
- First ensure optimal use of existing infrastructure (market design + smart tools)
- Create local political and public support (empowerment) [with PCI a “strong” label/passport]
- Reflect the costs entailed by the local population’s expectations
- Keep incentives aligned, i.e. keep the bridge between congestion revenues and tariffs
- Keep business cases simple and robust
Thank you for your attention!