The IEA Electricity Security Action Plan

Laszlo Varro
Head of Gas, Coal and Power Markets
Oil: The good old tradition of a geopolitical risk

Libya, 2011
Russian empire, 1905
“Keeping the lights on”
Electricity is the energy source of industry and modernization
Its importance increases every day
So its recent growth is just a taste of things to come

*Incremental global power generation till 2035, twh*
1890-1990: a remarkably stable technological and management paradigm
Electricity is the key battlefield

**CO2 emissions in the main sectors**

![Bar chart showing CO2 emissions in power and transport sectors for 2010, 2035 NPS, and 2035 450ppm scenarios.](chart)

- **Power**: 2010 - [Value], 2035 NPS - [Value], 2035 450ppm - [Value]
- **Transport**: 2010 - [Value], 2035 NPS - [Value], 2035 450ppm - [Value]
What was the last time you heard good news about nuclear or CCS?

- A meaningful carbon price
- A policy/social acceptance
- A financing framework keeping WACC down
- Management of tail risks
Renewables are on track

But they lead to new system operation challenges
Competition and electricity security: the Master Yoda principle

“Do. Or don’t do. There is no try.”

It is not competition, but half hearted, half finished market opening with bad regulation that causes blackouts.
Electricity security: building blocks

**Fuel Security**
- Ensure continued fuel supply of gas, coal and uranium

**Adequacy**
- Generation capacity
- Network infrastructure

**System Security**
- Network operations
- Emergency protocols
Electricity Security Action Plan (ESAP): a two-years work programme
Who killed EU gas fired power generation?

Decomposition of European gas fired power generation: 2007 and current IEA expectations for 2015
Gas is used for system balancing: less power from more capacity
The network will remain a scarce resource
“Grid parity” Who pays for whom?

<table>
<thead>
<tr>
<th>EUR ct/kWh</th>
<th>Household electricity price</th>
<th>Full costs of PV in Germany</th>
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<tbody>
<tr>
<td></td>
<td>28.7</td>
<td>13-22</td>
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Efficient use of network infrastructure

Adverse Flows on IFA (Jan.-June 2010)

Source: Booz, 2012
Demand response: overcoming my laziness
http://www.iea.org/topics/electricity/