Elements of Europe's Energy Union
State of affairs – Energy and Climate package

**Issues 2008:**
- decarbonisation
- peak oil
- rising import dependency
- green growth

**Issues 2014:**
- competitiveness
- supply security
- decarbonisation

**Targets for 2020**
- 20% renewables
- 20% reduct. of GHG
- 20% incr. in energy efficiency

**Targets for 2030 (COM)**
- 27% renewables
- 40% reduct. of GHG
- 30% incr. in energy efficiency
Reaching the targets but failing the objectives?

- Security of Supply?
- Competitiveness?
- Sustainability?

-> Wrong targets?

Figure 1: Share of renewable energy in gross final energy consumption (% left scale); EU energy efficiency (right scale)

Source: Bruegel based on Eurostat. The target value of 1.078 Mtoe for final energy consumption was set by Directive 2012/27/EU. Both target and actual consumption refer to EU27 (thus excluding Croatia). Dotted line for renewables = projection.

Figure 2: EU emissions

Source: Bruegel based on data from EEA (2013).
EU Energy and Climate Policy beyond 2020(20)

- Need a comprehensive strategy, not just extrapolating the 2020 targets
- Maroš Šefčovič: “The time for a European Energy Union has clearly come”
- Five key elements:
Core element: Internal energy market
Wish vs. Reality

Status Quo:
- Re-nationalisation
- Ad hoc incentives
- Harmonisation of short-term market stuck

-> Maroš Šefčovič: “A completed internal market will represent the backbone of the new European Energy Union.”

Efficient solution:
- EU-wide solution
- Long-term framework
Our proposal

- Comprehensive (‘deep’) single European market design
- Governance structure to continually fine-tune market design

Requires major changes, curtailing the role of national energy policy making
- Big intergovernmental ‘horse trading’
- Only negative fuel-mix preferences

Otherwise: back to the 1980s
Reducing greenhouse-gas emissions

EU emission allowance market

Internal energy market
The existing ETS implies high prices

- System tightens constantly – moving to 40% a sensible compromise
- But neither the 40% nor the market stability reserve address the credibility issue
Our proposal

- We need long-term carbon price signals
  -> need to bind the hand of current and future; national and EU policy-makers
- EIB shall sell guarantees on the 2030+ EUA price
- Each guarantee guarantees that one EUA can be sold to the EIB at a fixed price (e.g., €40)
  -> More low-carbon investments by hedged investors, today
  -> income to the EIB
  -> exposure of the EIB increases overall credibility of the EU ETS
  -> higher carbon prices today
  -> more low-carbon investments
Ensuring security of supply

- EU emission allowance market
- Internal energy market
- EU market for security of supply
The largest supplier must be allowed to fail for an undetermined period of time

Two approaches:
1) Public investments into SoS
   - you get the diversification done
   - But, Crowed-out private investments
   - A myriad of options -> govt's unlikely to chose the best portfolios

2) Leave it to the market
   - good rationing mechanism
   - cheapest available sources -> no diversification
Our proposal

- **Short-term:**
  - Functioning market as rationing tool

- **Long term: Requires overbuilding the system**
  - Each supplier has a ‘reserve requirement’
  - Including volumes (storage, interruptible contracts, LNG options, pipeline options, …) and infrastructure to bring it from the source to the respective customer

  -> ensures cheapest possible reserves (insurance can have high variable, low fix cost)
Bringing down the cost of low-carbon technologies

EU emission allowance market

Internal energy market

EU support for innovation in low carbon technologies

EU market for security of supply
Renewables target

- In the past focus on deployment (20% by 2020)
  - No impact on emissions
  - Limited impact on innovation
  - High cost

- Current proposal: an insignificant target

- Renewables are crucial to keep ‘Chinese coal underground’

- strategic innovation policy
  - Deployment and R&D
  - Technology specific

![Deployment vs. R&D expenditure - Wind](chart)
Increasing energy efficiency

- EU emission allowance market
- EU scheme for evaluating energy efficiency policies
- EU support for innovation in low carbon technologies
- EU market for security of supply
Energy Efficiency

- **Price signals still underutilised**
  - Should not use energy prices for social and industrial policy purposes
  - Protecting energy-intensive industry is wrong

- **Preferred European tool, performance standards**
  - Rebound effect (need to get prices right)
  - Distortion for rarely-used items (light-bulb in basement)
  - Profile of usage sometimes more important than volume
  - Needs to be benchmarked against alternative policies

- **Question of subsidiarity**
  - It depends (EU: standards, prices; MS: investment incentives, …)
### Target in terms of additional energy savings and the associated cost

<table>
<thead>
<tr>
<th>Measure</th>
<th>Total cost</th>
<th>Net savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>German energy efficiency programmes in the buildings sector</td>
<td>€ 14 bn</td>
<td>0.18 Mtoe/y</td>
</tr>
<tr>
<td>German subsidised loans for insolation and heating system replacement</td>
<td>€ 3.9 bn</td>
<td>0.14 Mtoe/y</td>
</tr>
<tr>
<td>81,000 new flats with insolation systems in Germany</td>
<td>€14.5 bn</td>
<td>0.03 Mtoe/y</td>
</tr>
<tr>
<td>EU light-bulb regulation</td>
<td>€ 0.5943 bn</td>
<td>3.33 Mtoe/y</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>€ 32.99 bn</strong></td>
<td><strong>3.68 Mtoe/y</strong></td>
</tr>
</tbody>
</table>
Conclusion

- EU emission allowance market
- EU scheme for evaluating energy efficiency policies
- EU support for innovation in low carbon technologies
- EU market for security of supply

Internal energy market

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*Diagram shows relationships between different aspects of the EU energy market and policies.*
Conclusion

- **Targets should fit the long-term objectives**
  - Sustainability goes beyond 2030
  - Security of Supply goes beyond mitigating Russian market power
  - Competitiveness goes beyond energy-intensive industry
- **Instruments equally important as quantitative targets**
- **Deep reform and new vision necessary** -> distributive effects -> high-level commitment - > ‘Energy Union‘

- **Alternative:**
  - MS ‘backseat-drive’ all relevant investment decisions
  - While, having to comply with European rules (that have nothing to do with the actual national energy sectors)
Thank You
Back-up
Benefits increase with the RES share

**Current RES**
- No trade: 100
- Limited transmission capacity: 99
- Unlimited transmission capacity: 98.4

**Double RES**
- No trade: 100
- Limited transmission capacity: 95.1
- Unlimited transmission capacity: 93.5

Case: DE-ES; optimisation of dispatch and plant park
Driving innovation in RES

- By deployment
- Be RD&D
- By a combination of policies

- But which timing and balance?
Both, RD&D and deployment are needed

Improve balance timing and coordination of research and deployment for more innovation
Sectors that prefer high price countries, are more productive

![Box plot showing manufacturing sectors value added over sector production](image)

- **Green Box**: Sectors, high price countries specialise in
- **Blue Box**: All other sectors
- **Red Box**: Sectors, low price countries specialise in