

# Grid development: A prerequisite for a sustainable future?

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DG Energy

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# Overview

- **1. The energy system of the future**
  - Many views
  - Some common grounds
  - No-regret options
  
- **2. Grid development –  
A prerequisite for a sustainable future?**
  - Why do we need them and why do we need more?
  - Concrete actions
  - Remaining issues and how to solve them

# 1. The energy system of the future



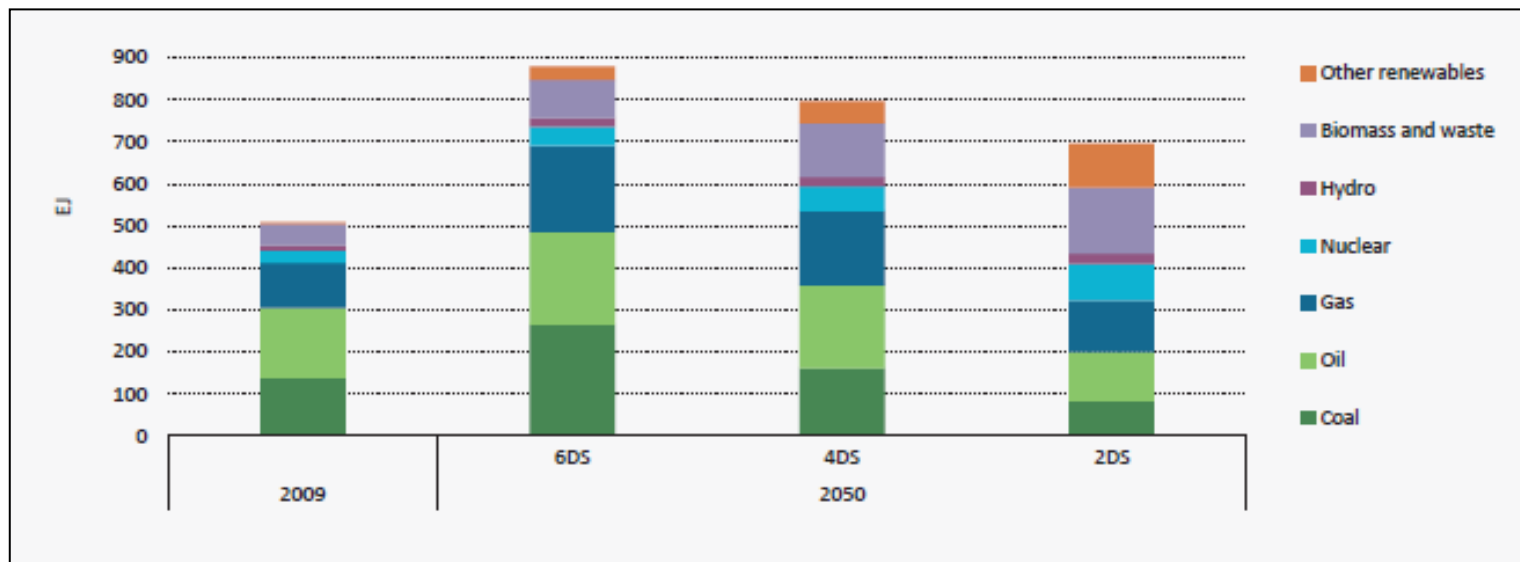
# 1.1 Many views

- European Commission – Energy Roadmap 2050
- Federal Planning Bureau – Energy perspectives 2030
- CFDD – Long term vision sustainable development 2050
- ENOVER – Back-casting study
- ...



# 1.2 Some common grounds?

- The consumption of energy is expected to rise;
- Electrification of society;
- The energy system will play a pivotal role in the transition towards a low-carbon society;



**“The 2DS reflects a concerted effort to reduce overall consumption and replace fossil fuels with a mix of renewable and nuclear energy sources”**

Source: IEA (2012), Energy Technology perspectives.

## 1.3 No-regret options



Energy efficiency measures;

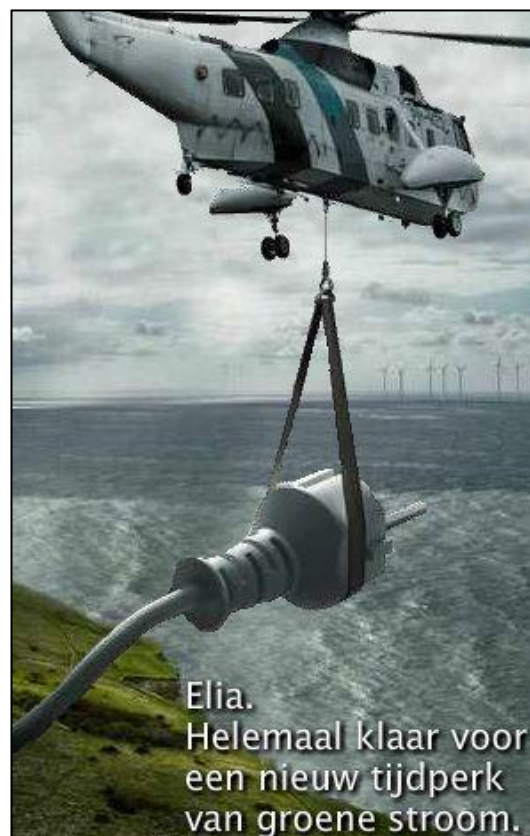


Investment in RES;



**Deployment of (smart)  
grids.**

## 2. Grid development – A prerequisite for a sustainable future?



## 2.1 (smart) Grids

Why do we need them?

- Bring energy (electricity, natural gas and petrol) to the consumer;
- Guide the energy transition.



Why do we need more and more efficient grids?

- Enabling the integration of local renewable energy production in network
- Transport large volumes of energy from renewable – often distributed- sources to consumption centers;
- Increase our security of supply and ensuring system stability;
- Market integration;



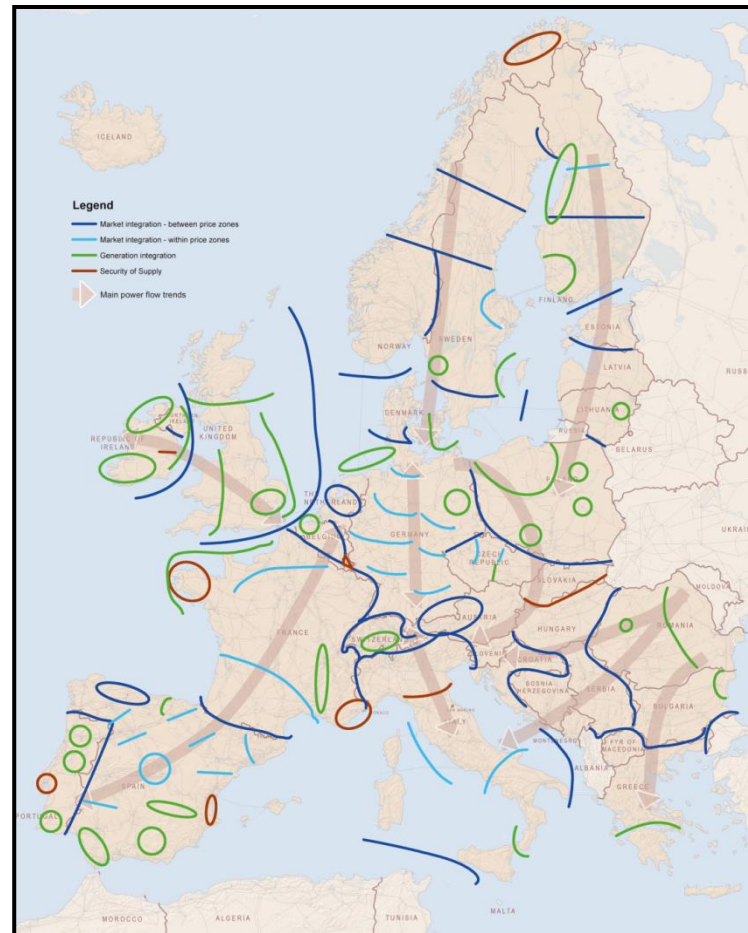
## 2.2 The contribution of the gas sector

<b>KOLEN</b>	1518 wagons (69 treinen)	± 3 treinen/u 
<b>STOOK-OLIE</b>	1465 tankwagens	± 60 tankwagens/u 
<b>AARDGAS</b>	1 ondergrondse pijpleiding	1 ondergrondse pijpleiding 

« To transport the same amount of energy as 1 natural gas pipeline (2,3 GJ/diem) we would have 1465 additional petrol tankers on our roads or 69 trains filled with coal crossing our territory »

Source: Fetrapl

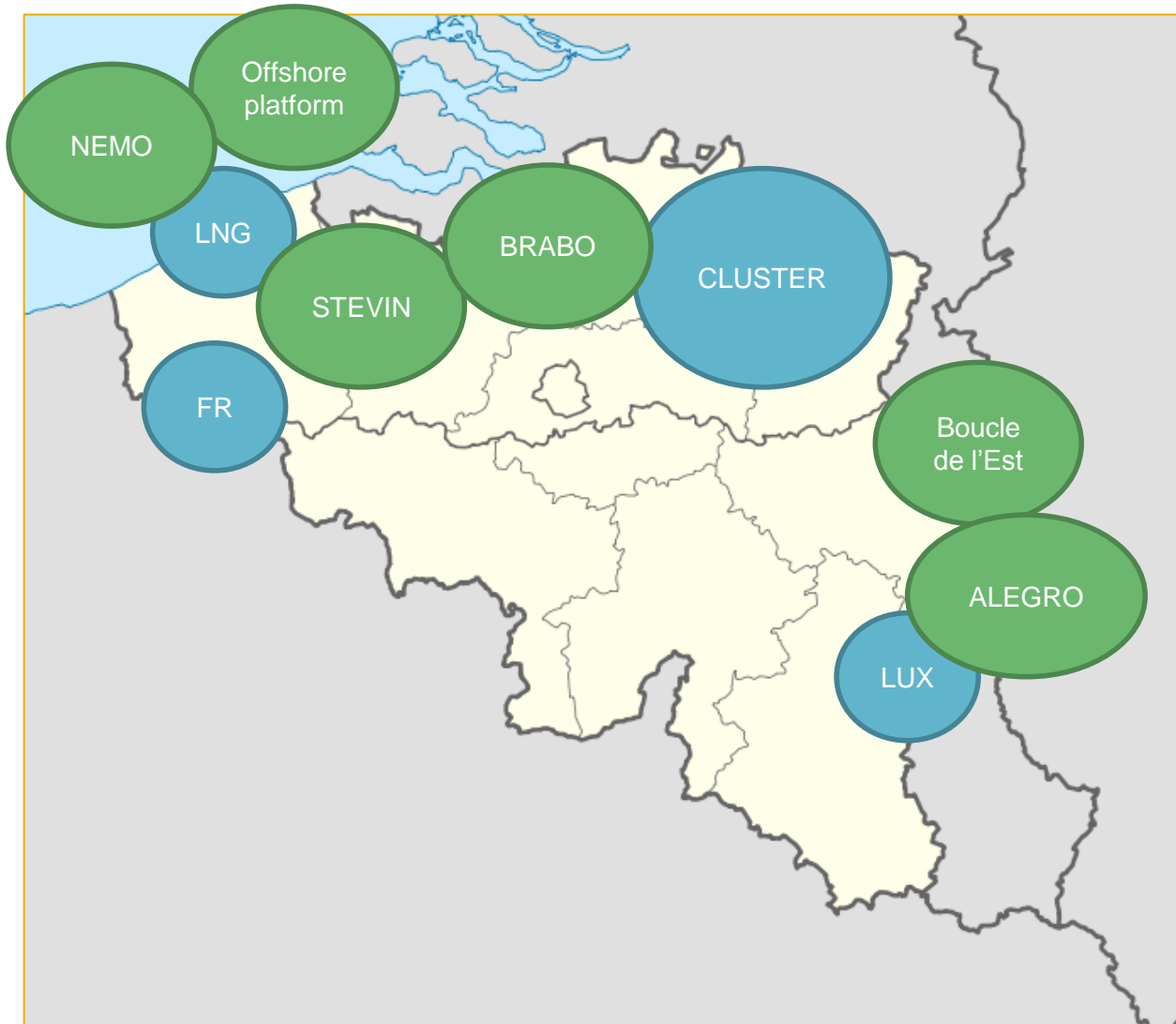
## 2.3 The views in the electricity sector



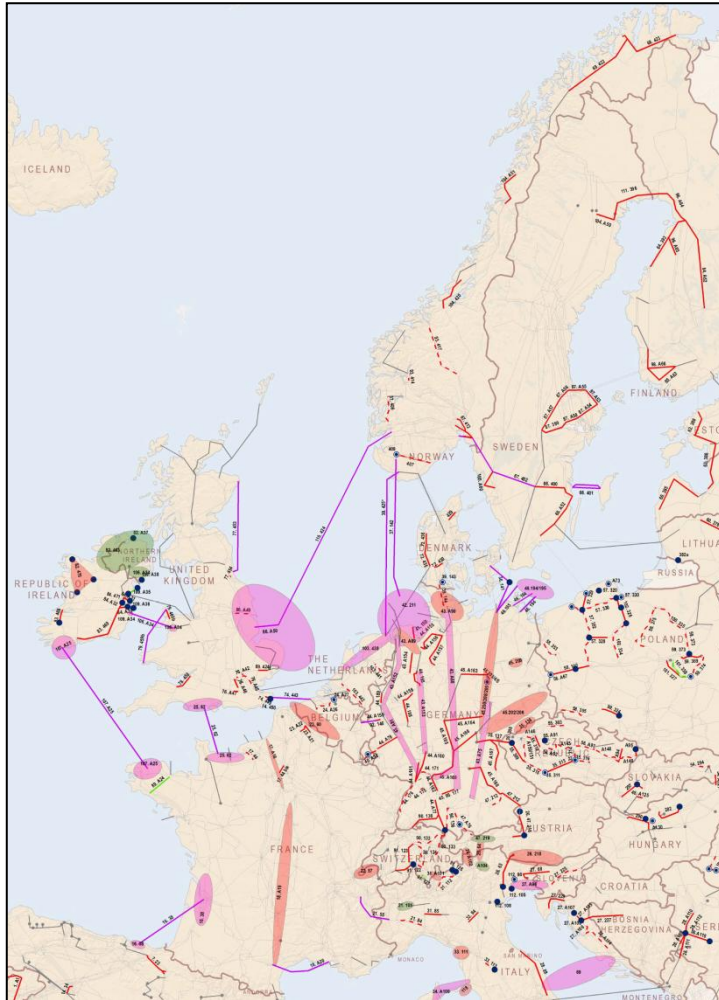
**“80 % of the bottlenecks are related to RES integration”**

Source: ENTSO-E (2012), Ten-year network development plan,

## 2.4 ...and in Belgium



## 2.5 NSCOGI



- Intergovernmental initiative of 10 countries, in collaboration with TSO's and NRA's;
- The goal is to determine whether a meshed offshore grid is a cost-efficient method to improve SoS and integrate RES.
- How to make this reality?
  - Determine of costs-benefits
  - Tackle regulatory barriers
  - Facilitate permit granting

## 2.6 Remaining issues and solutions

### Remaining issues

- Clear political guidance
- Massive financing needs;
- Permit granting:
  - Complexity of procedures;
  - NIMBY
- Technological challenges

### Solutions

- Completion of the internal market:
  - Market integration – price signals
  - Framework guidelines and network codes,
- Infrastructure regulation
  - Stimulating investments
  - Facilitating permit granting
- European Electricity Grid Initiative – Smart Grids

# Questions?



I will be happy to answer them:

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