Policy and market guidelines for Europe by 2030 and beyond

WORLD ENERGY COUNCIL
CONSEIL MONDIAL DE L'ÉNERGIE
For sustainable energy.

Dr. Leonhard Birnbaum

European Energy Forum

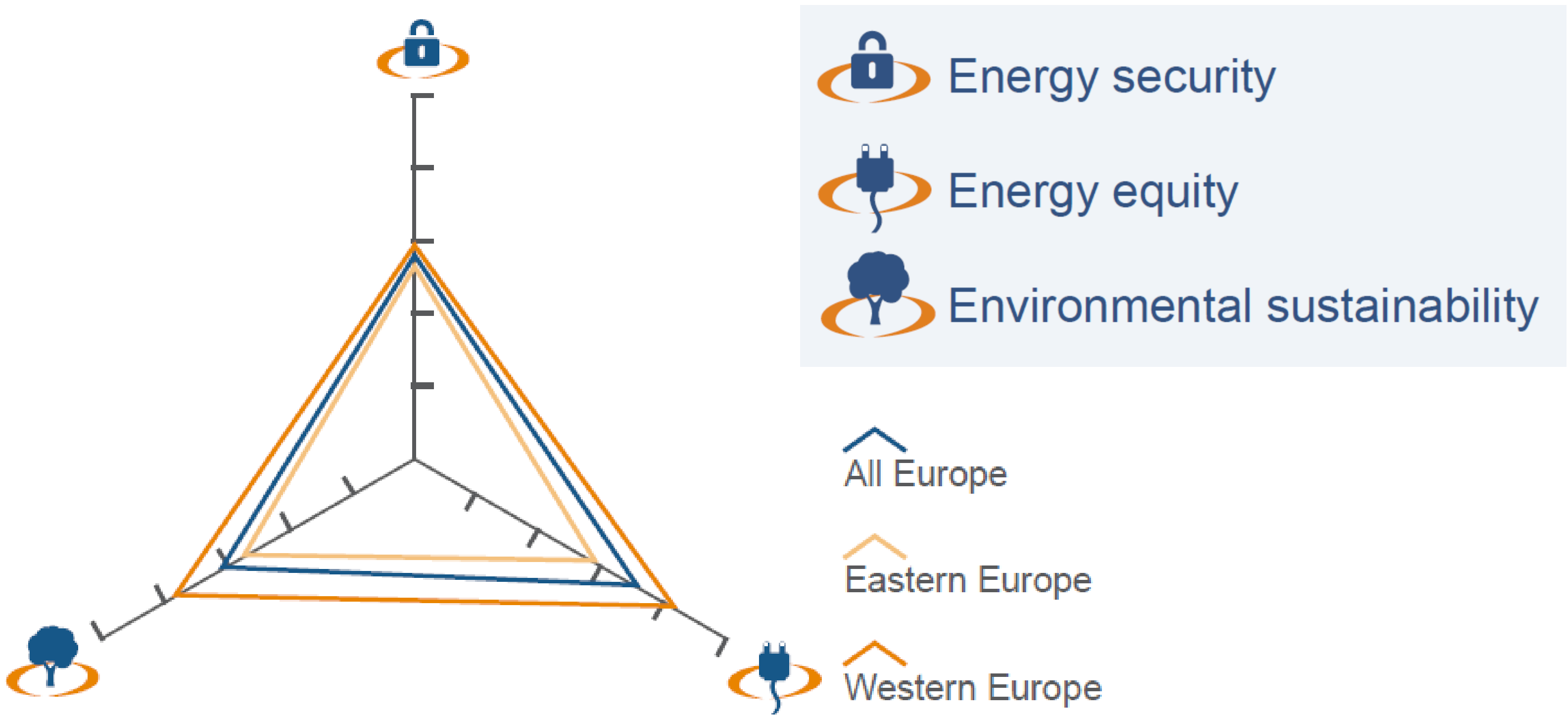
What policy measures for energy transition in Europe?

Paris

25th April 2014

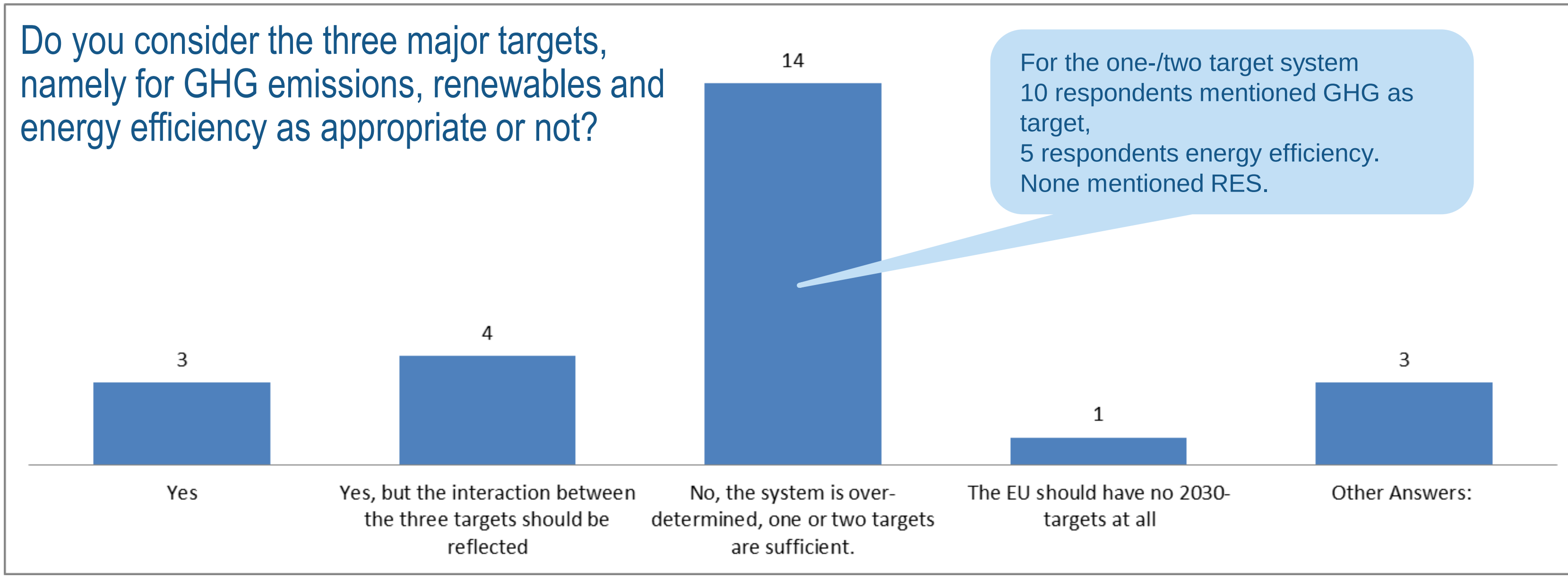
The Context of the EU-Framework: Energy Trilemma

- Balancing the Energy Trilemma is European policymakers' key challenge to secure sustainable energy systems



Source: World Energy Trilemma - Sustainable Energy Index 2013

The Context of the EU-Framework: WEC Europe Survey



- **Questionnaires collected by 15th July 2013, 25 European countries responded**
- **Key messages:**

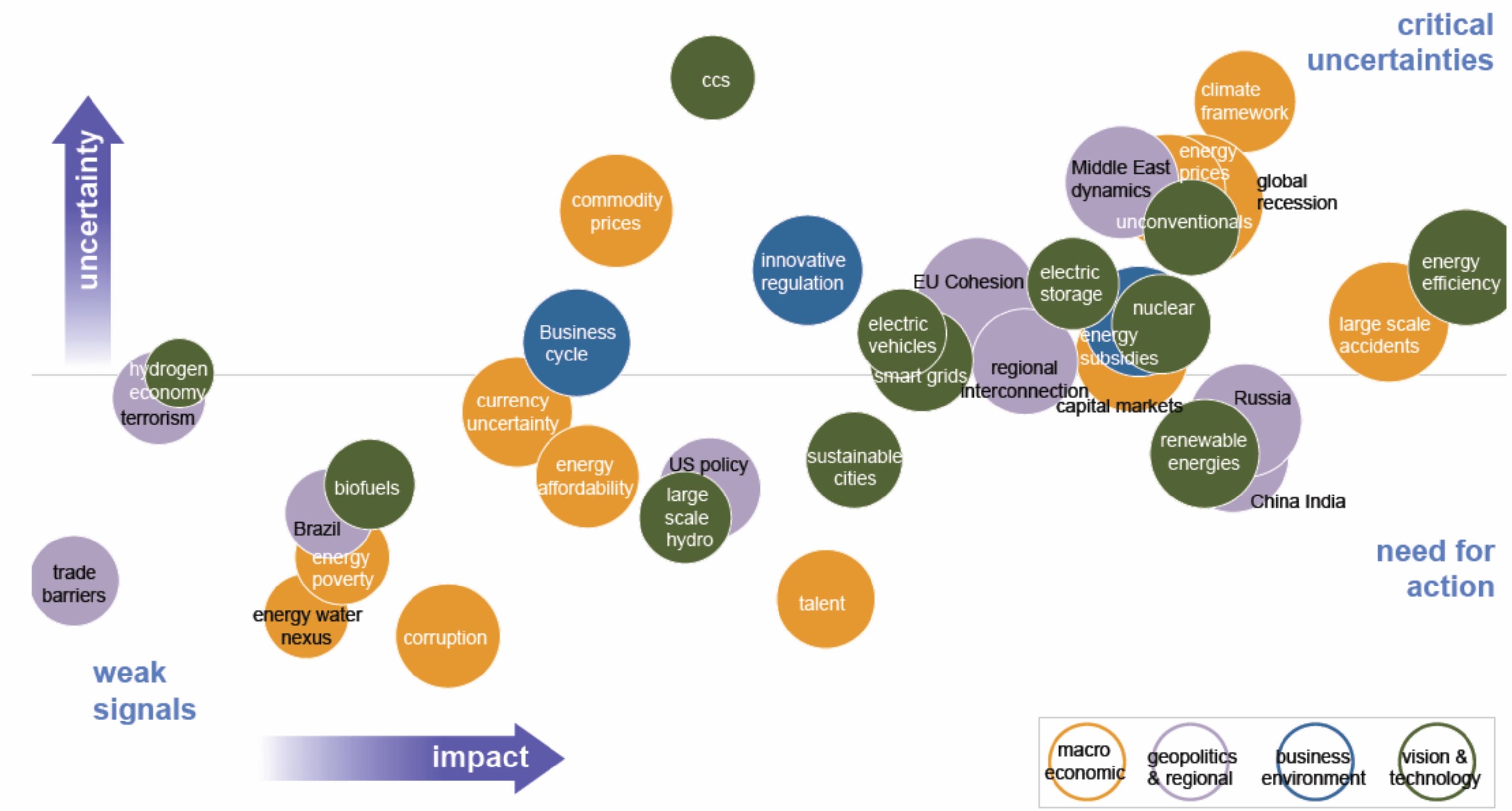
(1) **The majority views a three-target-system as over-determined and prefers a system with at most two targets**

(2) **A majority prefers a GHG-target. Energy efficiency seen as a possible second target. Renewable targets are least preferred.**

(3) **Quantitative answers to the target range indicate, that a thorough discussion of three targets including their correlations will become extremely time-consuming.**

The Context of the EU-Framework: WEC Issues Monitor 2013

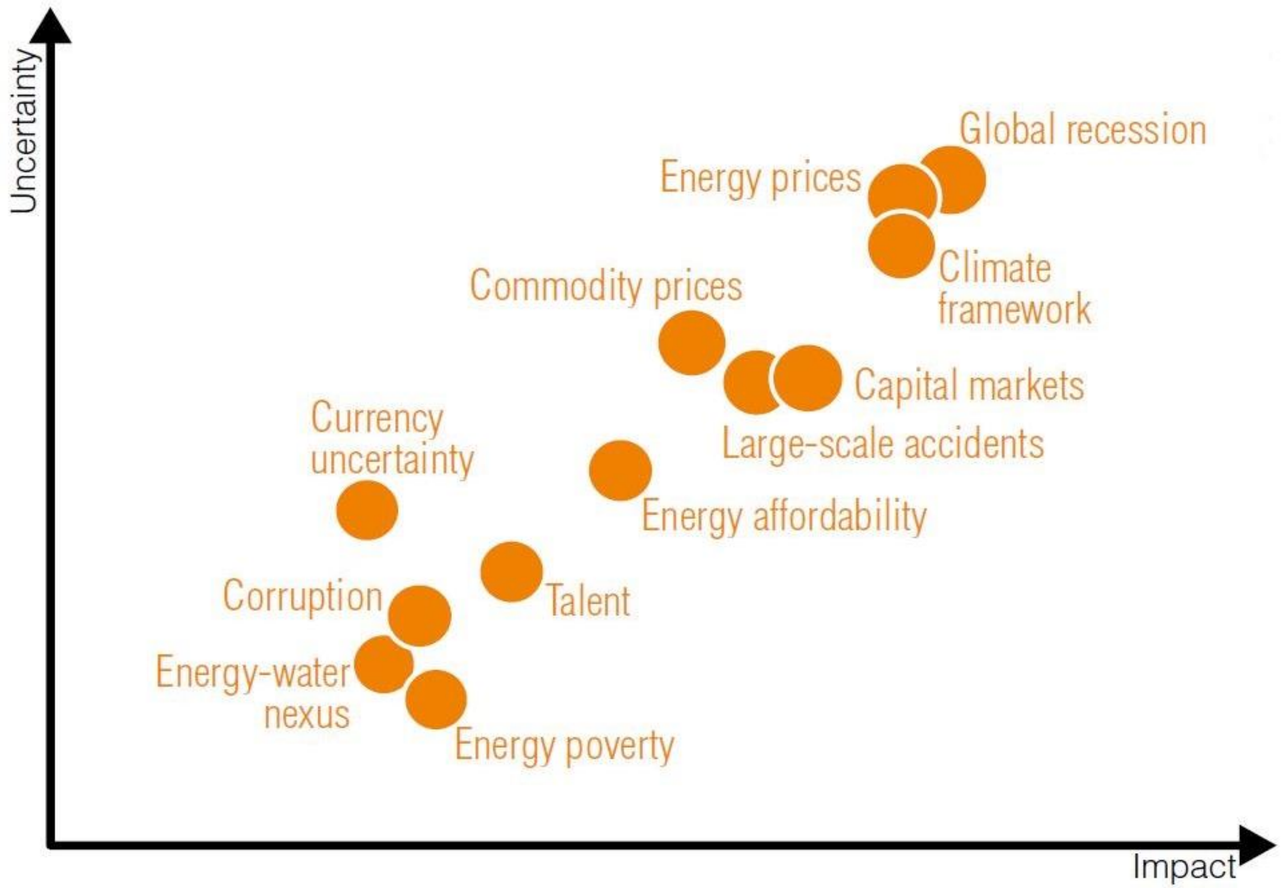
- Critical uncertainties in Europe in 2013: climate, energy prices, recession
- Conclusion: focus on climate & competitiveness



Source: World Energy Council, 2013 World Energy Issues Monitor

The Context of the EU-Framework: WEC Issues Monitor 2014

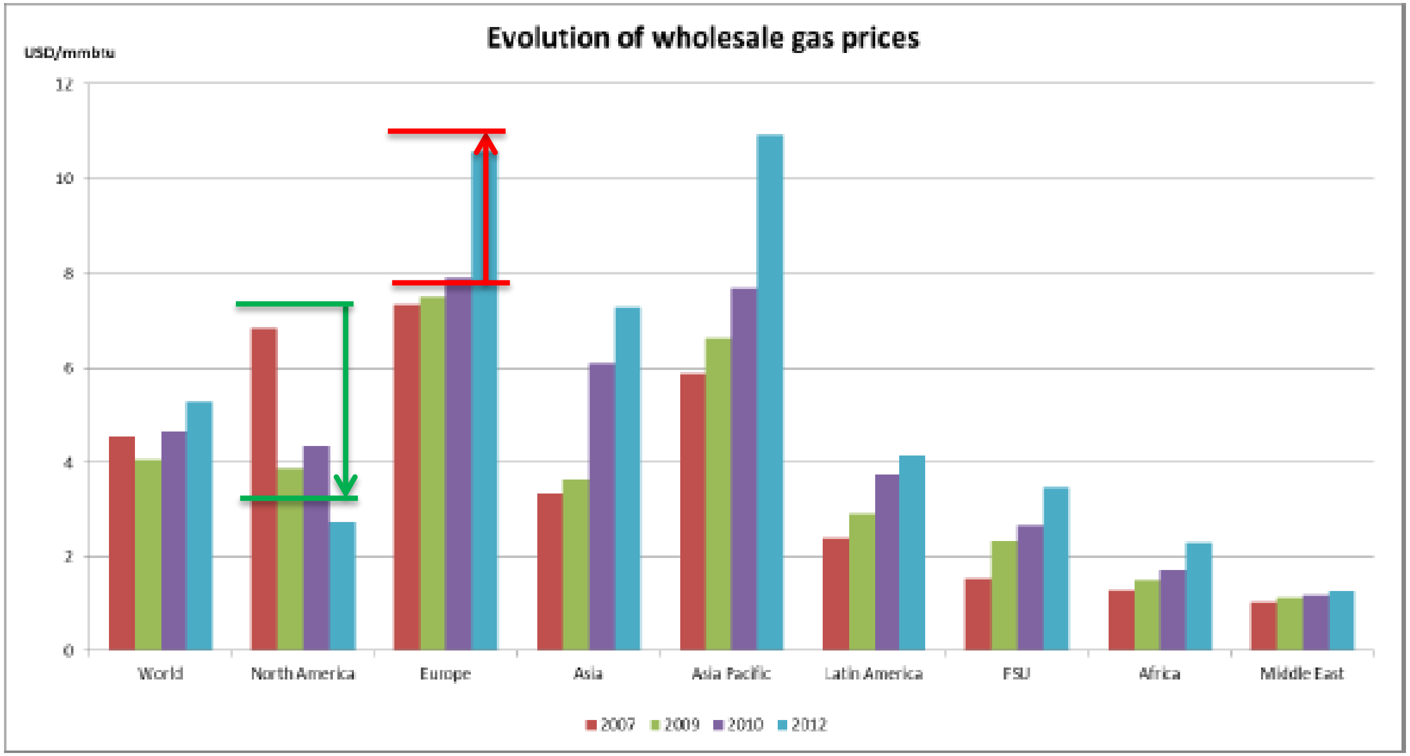
- Critical macroeconomic uncertainties in Europe in 2014… remain climate, energy prices, recession



The Context of the EU-Framework: Global development

- Since the 20-20-20 package the global situation has changed
  - Price increase EU vs. price decrease US
  - Price increase in non-EU regions, but price level (except Asia) considerably below EU-levels

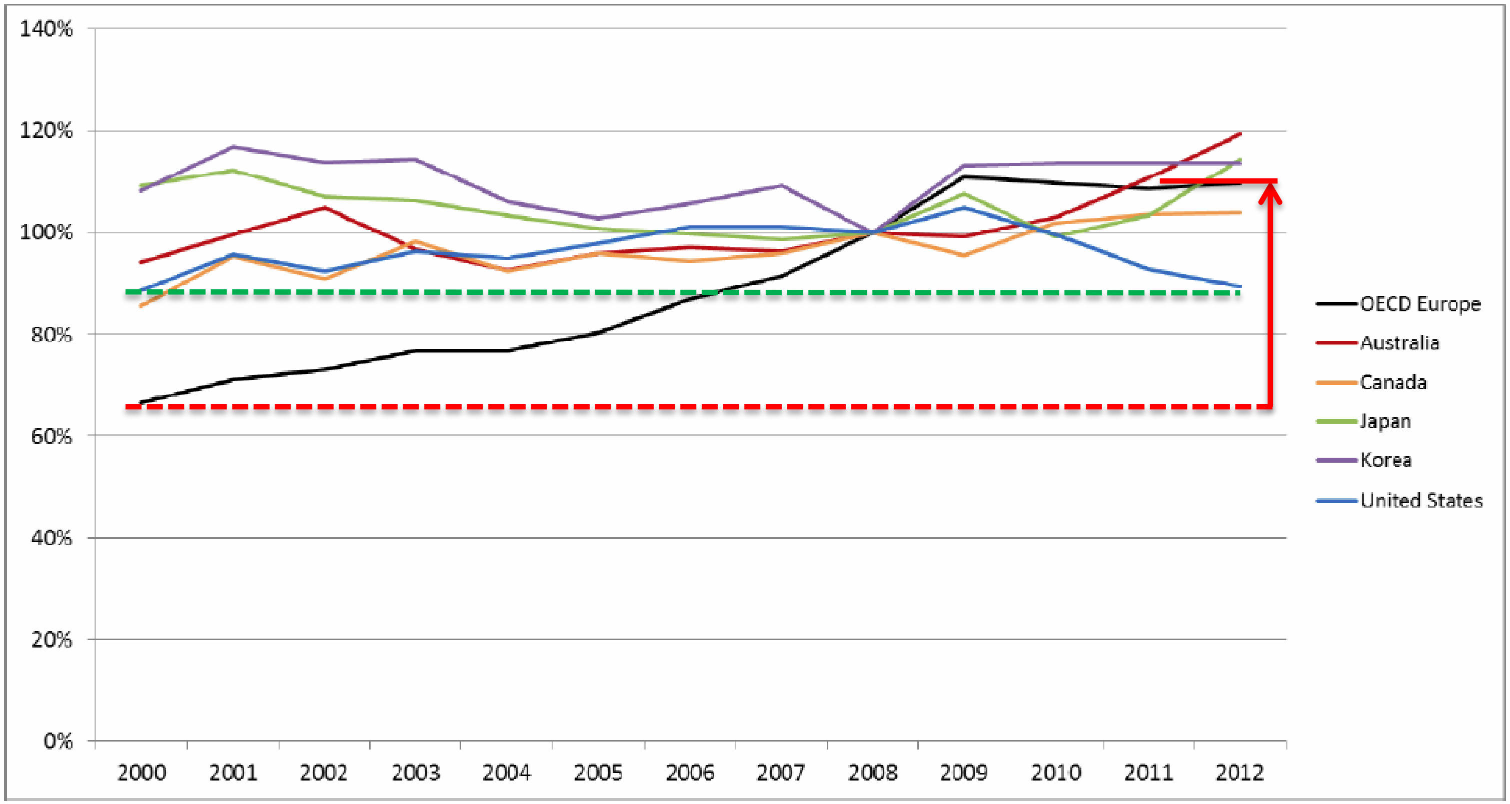
Figure 109. Evolution of wholesale price levels by world region (2007-2012)



Source: COMMISSION STAFF WORKING DOCUMENT, Energy prices and costs report

The Context of the EU-Framework: Global development

- …not only for gas, but consequently also for electricity: US stable
- OECD Europe had lower prices in 2000 than US – since 2008 the order has changed



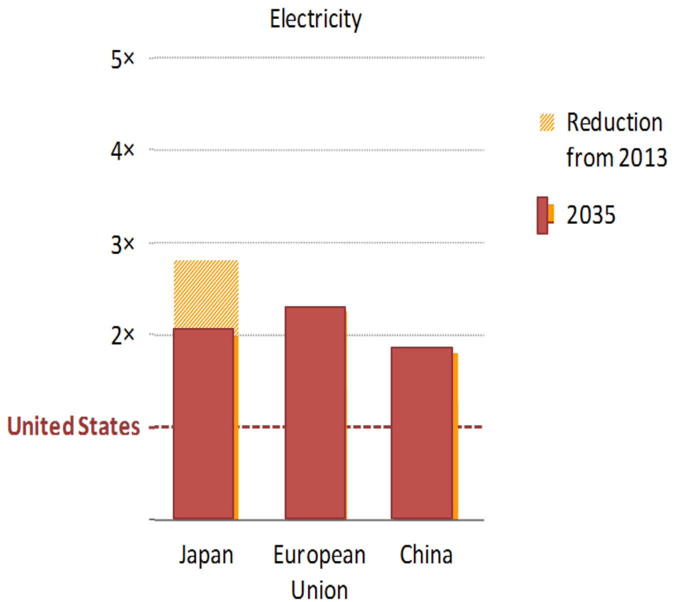
Source: COMMISSION STAFF WORKING DOCUMENT, Energy prices and costs report

Outlook for future wholesale prices

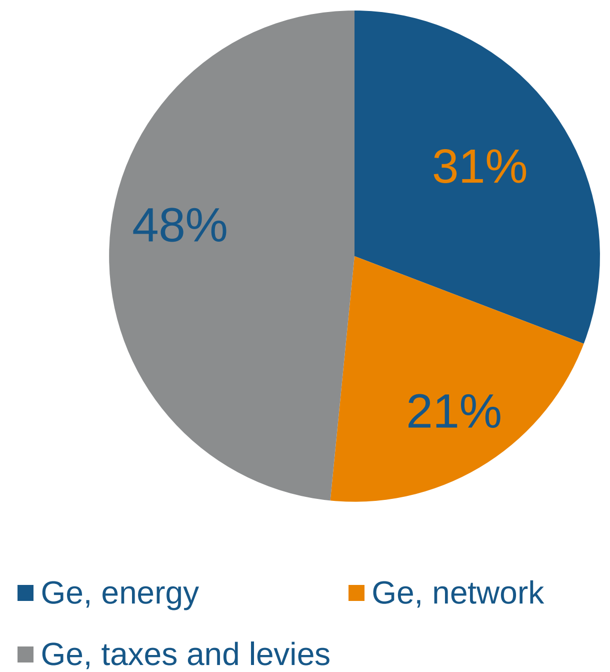
US-Wholesale prices are comparable but EU industrial energy prices are twofold

Nearly half of household electricity bill in Germany is taxes & levies

Ratio of industrial energy prices relative to the US

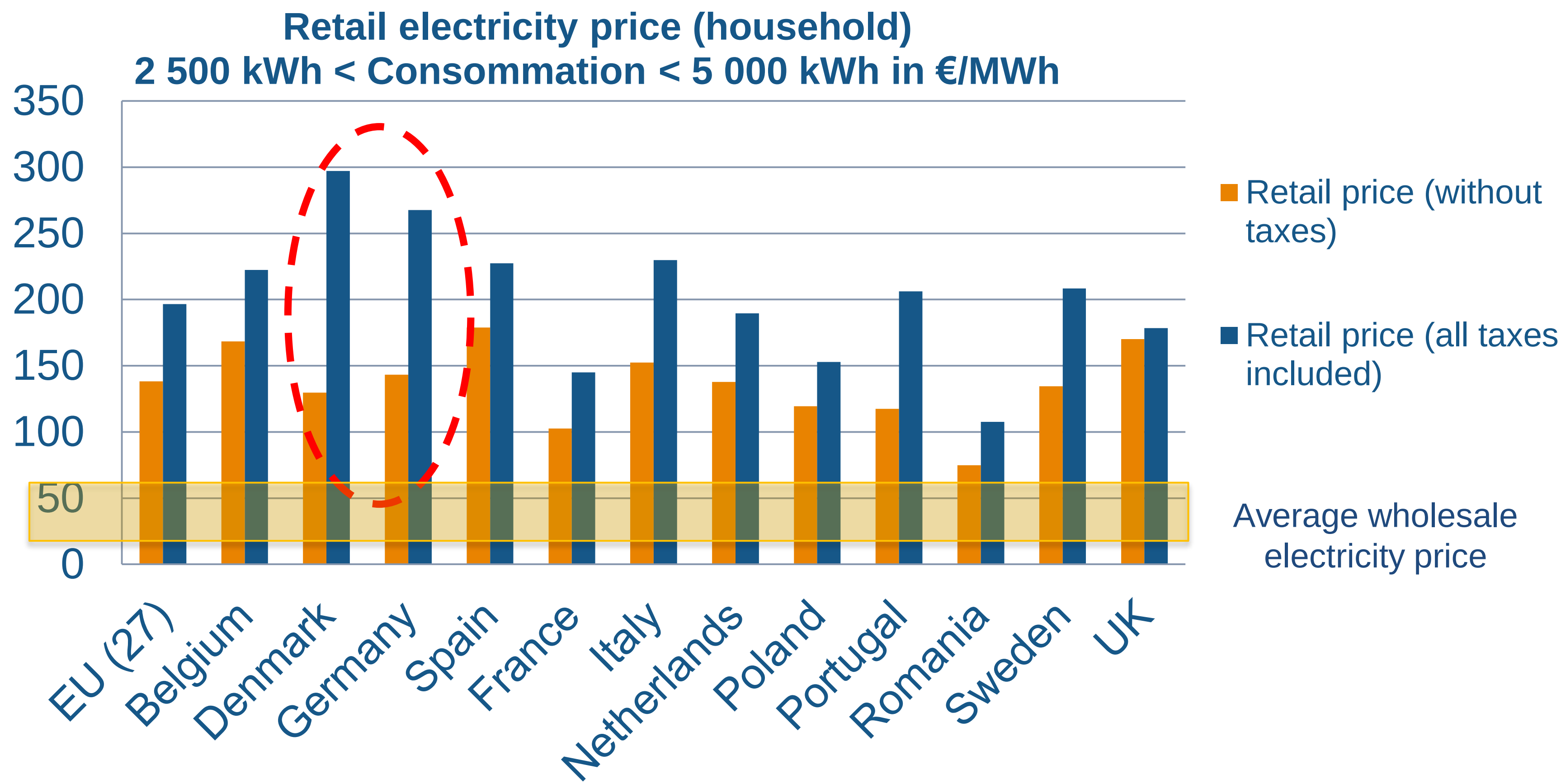


Source: World Energy Outlook 2013, International Energy Agency.



Taxes and levies in Europe a substantial part of the consumer bill

European consumers do not benefit from competitive wholesale prices



Market and system integration of renewable energies

Draft State Aid Guidelines define the framework for RES-E promotion

Current scheme

- Technology-specific feed-in-tariff
- Optional technology-specific (floating) feed-in-premium

➔ Not in line with (draft) EEAG:
  - Feed-in-tariffs for deployed technologies
  - Technology-specific scheme

Planned scheme ("EEG-Reform"), August 2014

- Mandatory (floating) feed-in-premium for installations > 500 kW…100 kW
- Technology-specific scheme
- Strike price of the feed-in-premium scheme: administrative setting based on LCOE
- Auctioning the strike price to be mandatory from 2017 on

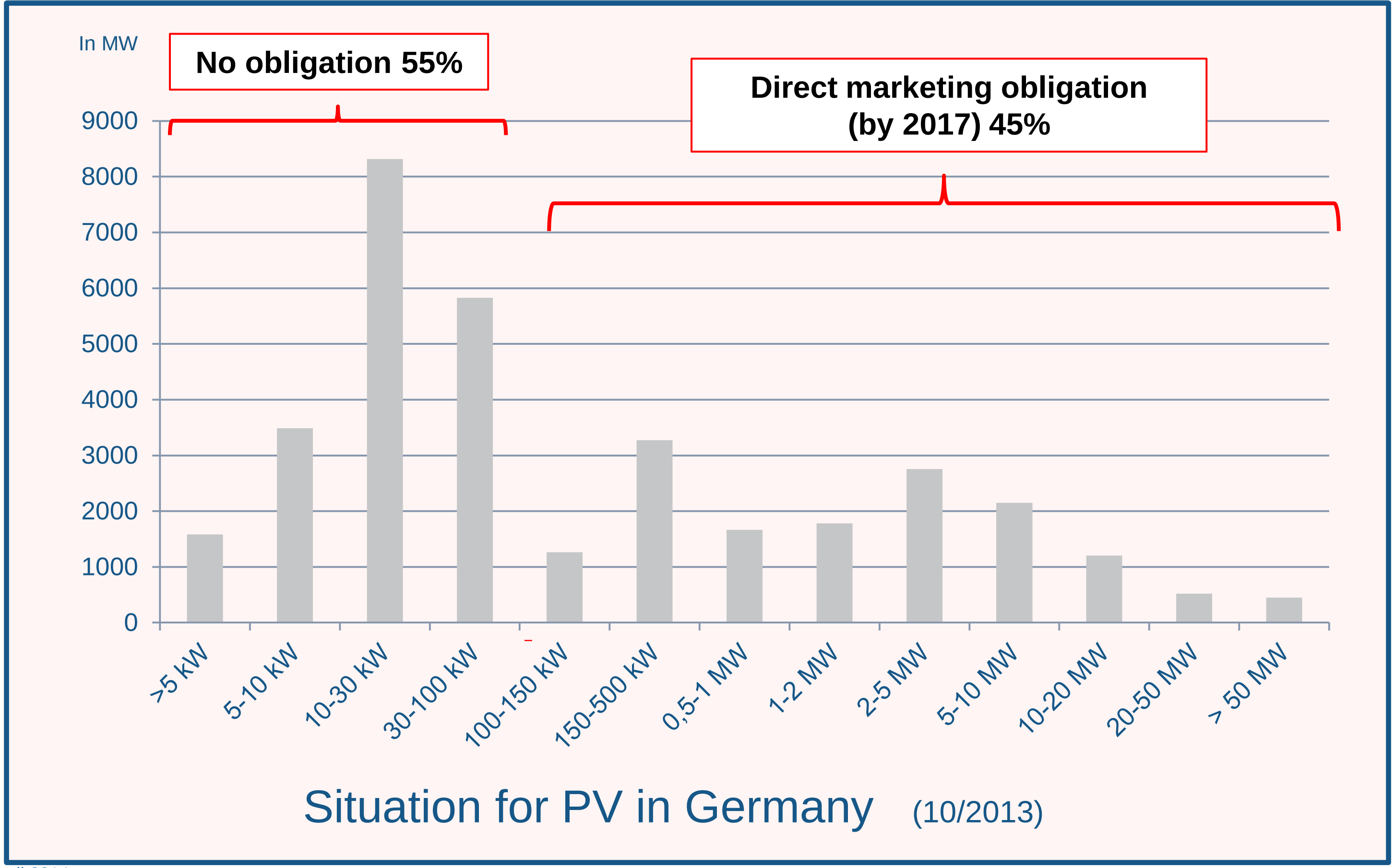
➔ Signs of rapprochement but still not in line with (draft) EEAG

Retroactive changes are numerous in Europe

Source: EURELECTRIC 2013

Market and system integration of renewable energies

Direct marketing exemptions for small RES installations make reform ineffective



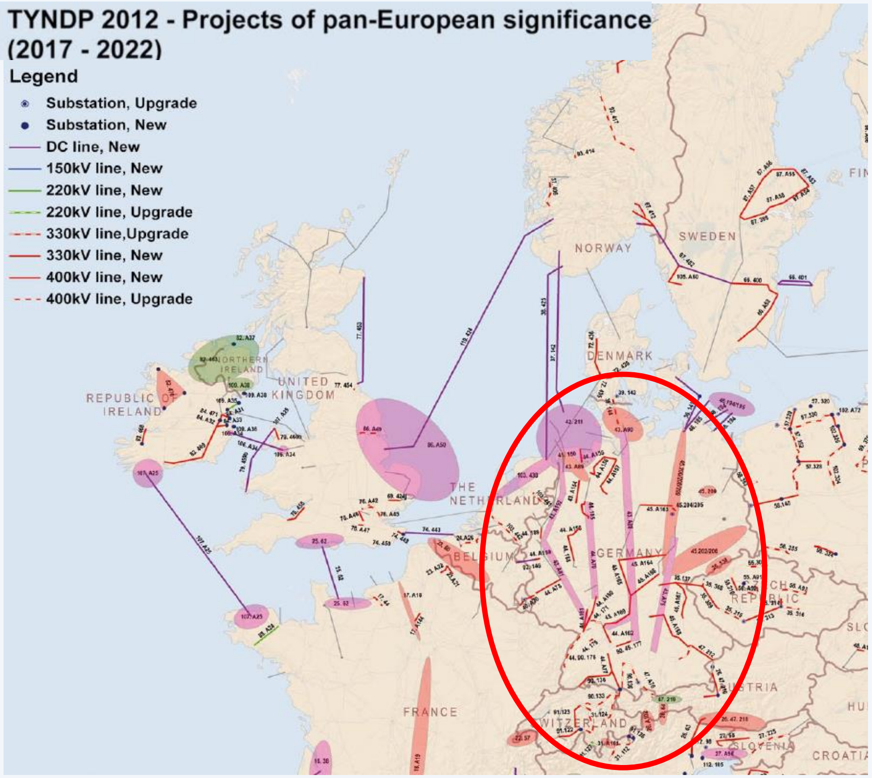
Electricity infrastructure

Germany is crucial for European grid expansion

Infrastructure development:

Germany is the **most important** hub in Electricity grid development in the years to come. If **just one of line in the expansion plan is delayed** the Renewable development in all Europe will harmed significantly. – ENTSO-E (2014)

In the last 4 Months **ca. 200 times the TSOs** were ordering plants to run to avoid sever supply bottlenecks. This non-marked based approach leads to severe inefficiencies.

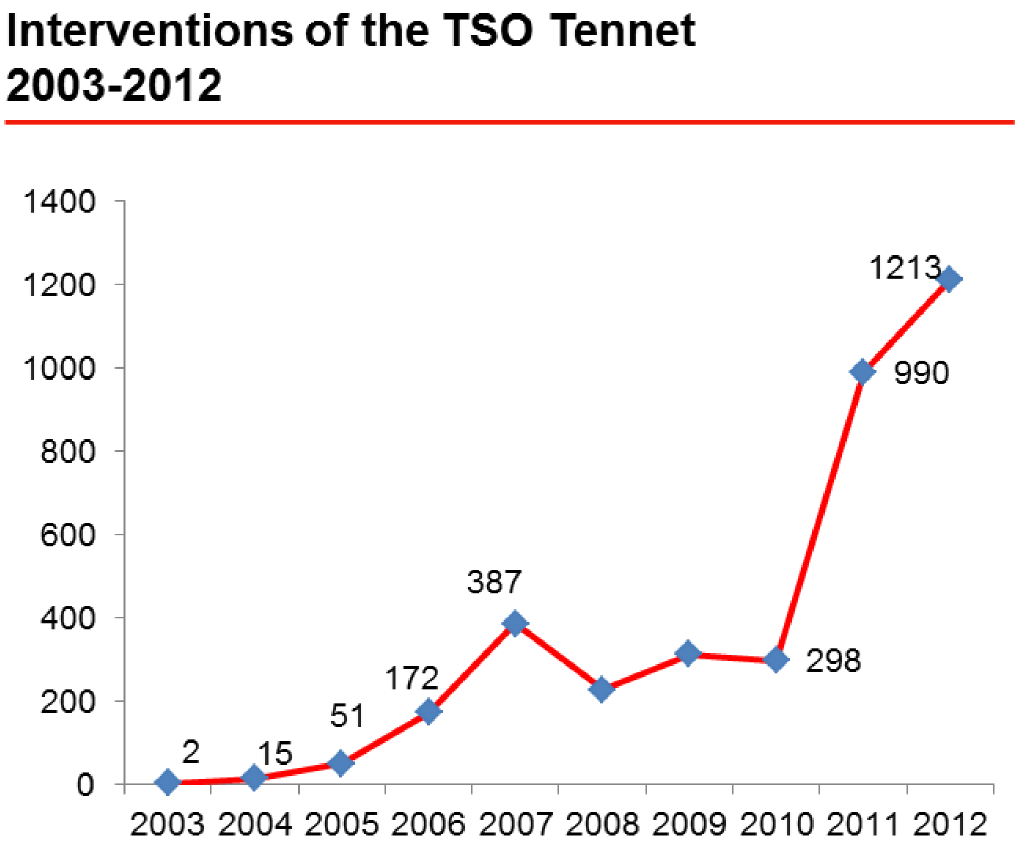


Electricity infrastructure

Interventions by Network operators are rather the rule than the exception

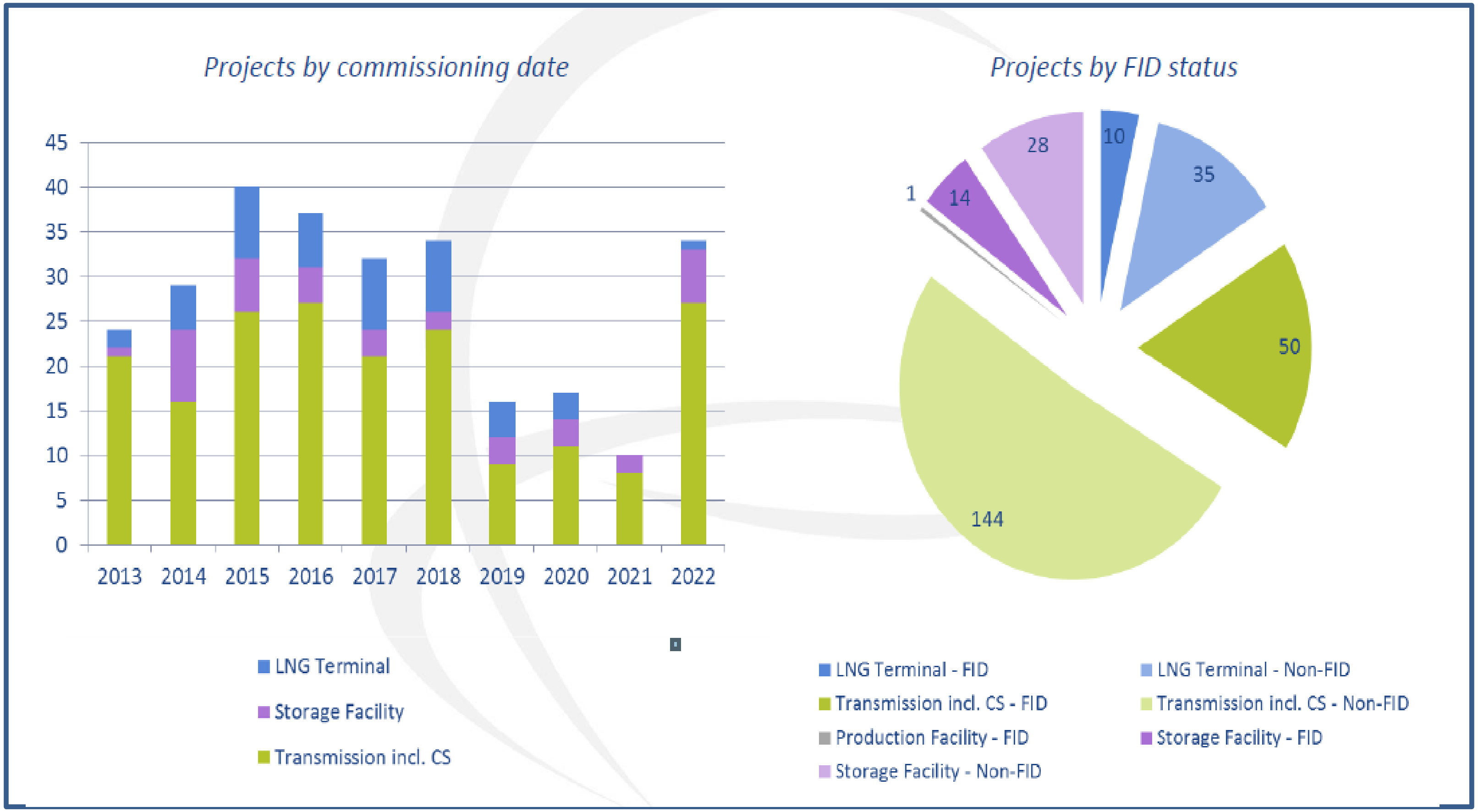
Last 4 Months: ca. 1000 Redispatches in Germany & 21 times the frequency dropped below 49,9Hz (without special cause)

Tennet is responsible for 30% of the consumers and 40% of the area in Germany



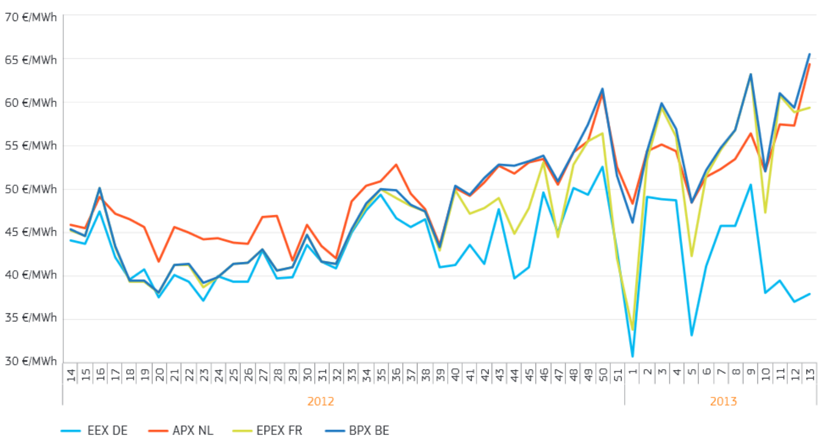
Gas infrastructure & Network Codes

Most gas infrastructure projects did not yet reach the stage of Final Investment Decisions (data: ENTSO-G)



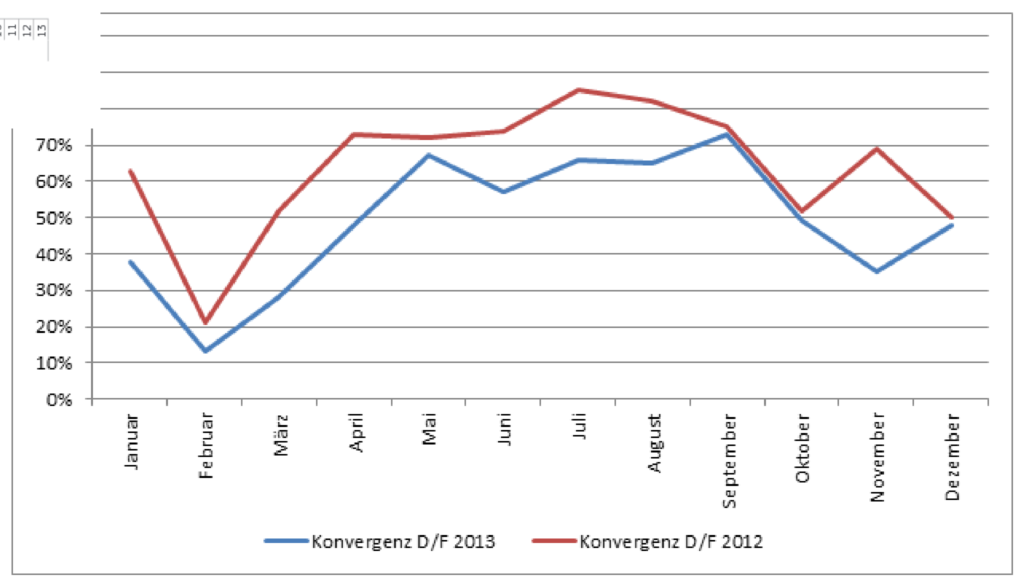
Internal Energy Market

Price differences in the CEW region increased



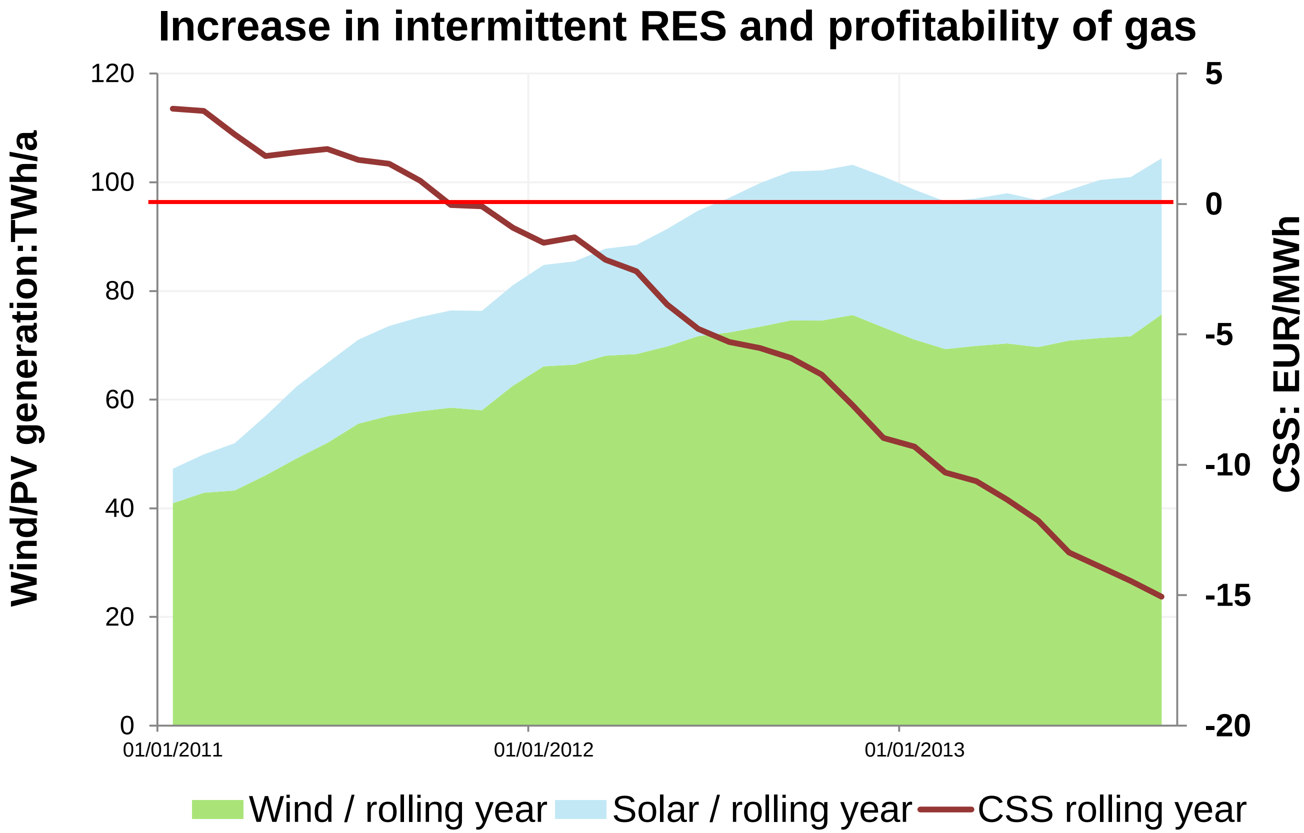
Source: Platts

Price convergence in the CEW region decreased, e.g. between France and Germany



Capacity Mechanisms

Since 2011 no profitability of gas generation.
Highly efficient CCGT plants need to be mothballed

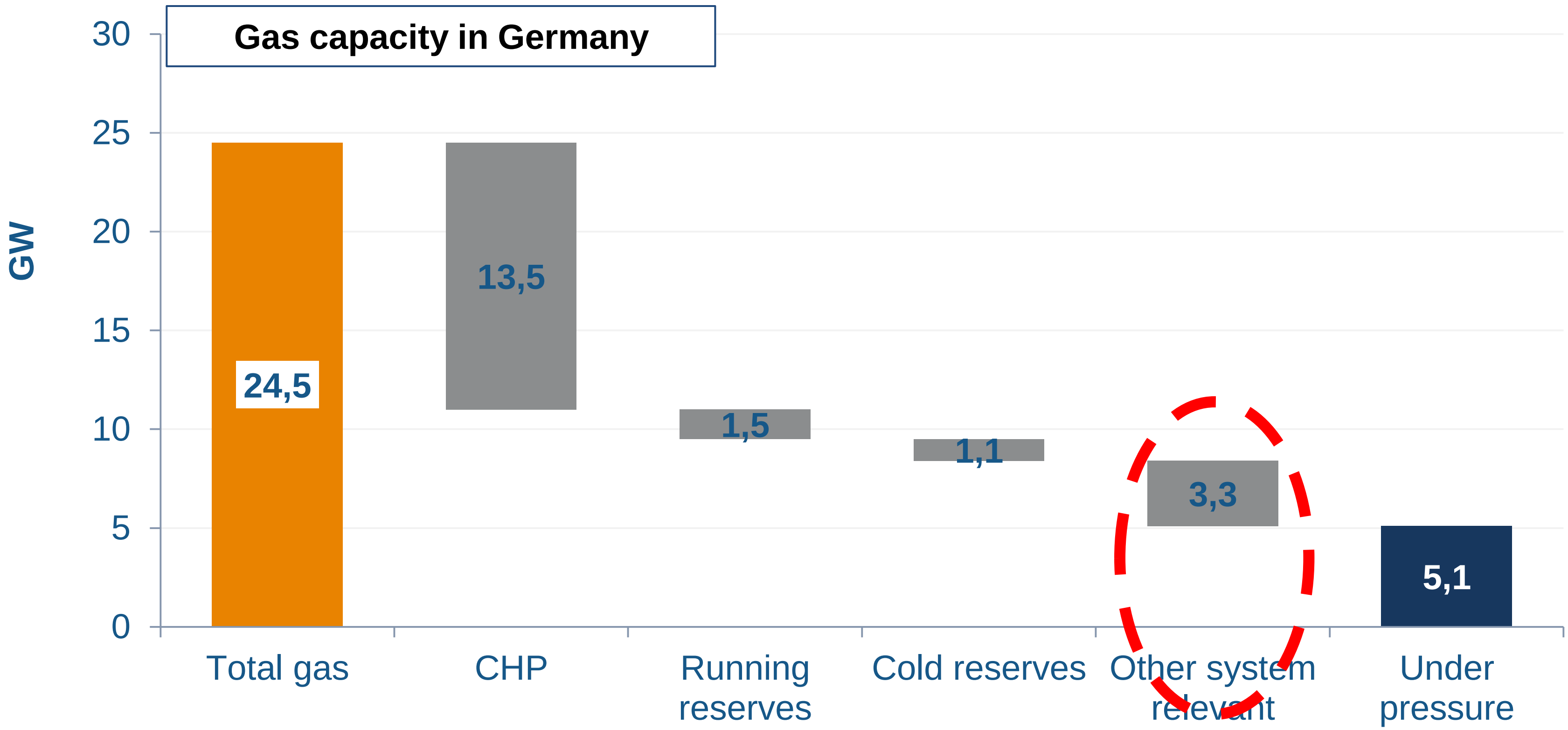


CCS: Clean Spark Spread

– margin between power prices and short run marginal cost of gas condense generation

Internal Energy Market

In Germany one fifth of gas generation is under pressure to be closed down.
Gas generation is needed as a back-up technology.



EU Climate targets and reform of the ETS

The current oversupply of 2bn EUAs is i.a. caused by multiple targets.

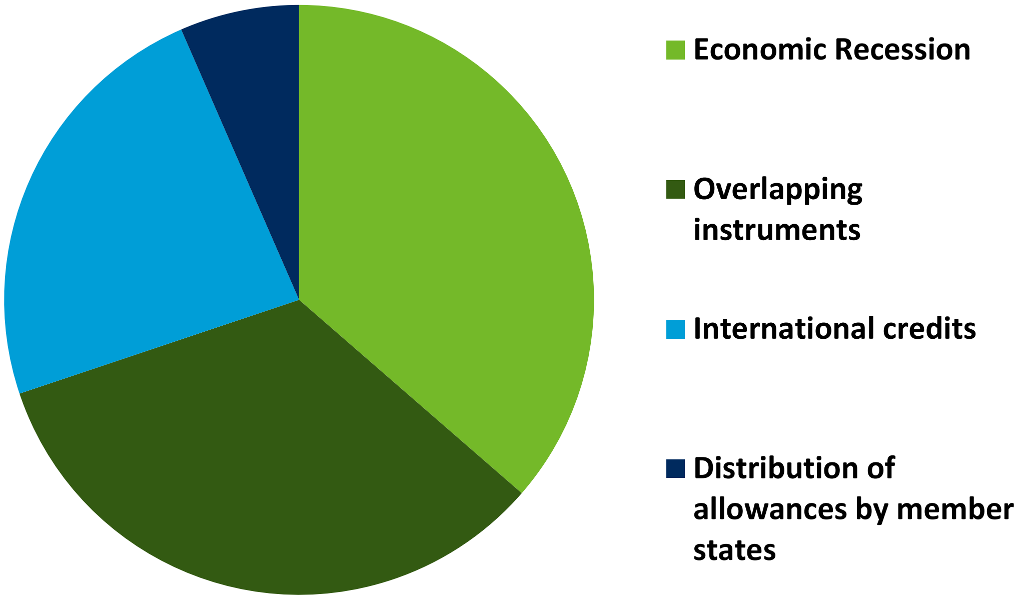
► **Current CO2 EUA prices do not provide incentives for:**

- Low emitting generation to run
- Market based RES investments

Main reasons for oversupply:

► **- In phase 2 (2008-2012):** lack of growth and international credits
- In phase 3 (2013-2020): **overlapping policy instruments**

Share of factors behind the oversupply of EUAs 2008-2020

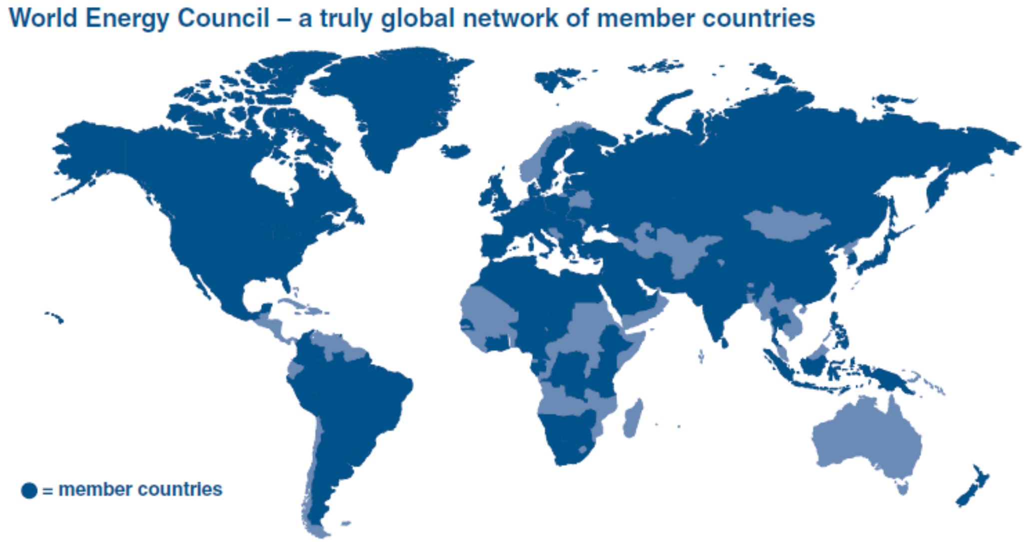


Source: GreenStream: Oversupply and structural measures in the EU ETS, September 24, 2013

WEC Europe Proposals

- Reduce number of binding targets to a GHG-target
- Without a global agreement, it will certainly be difficult to recover the competitiveness of European industry
- Further measures on energy efficiency and renewables: up to member states, but in line with internal market rules
- Conditions:
  - Long-term predictable, stable and favorable climate for investments
  - Access to financing and capital at fair costs
  - Research, development and deployment:
    - entire portfolio of options should be explored
    - More attention on overall system-integration

Our Basis



- ► As the impartial and independent energy leaders network since 1923

- ► 3000 organisations in nearly100 countries

- ► WEC continues to engage with the European Union and policymakers to promote the sustainable supply and use of energy for the greatest benefit of all

- ► Get involved: www.worldenergy.org - @WECouncil