

# INVESTING IN EUROPEAN ELECTRICITY MARKETS TODAY: CHALLENGES AND OPPORTUNITIES


## “The Perfect Storm Hitting Combined Cycle Gas Turbines”

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Paris

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GDF SUEZ

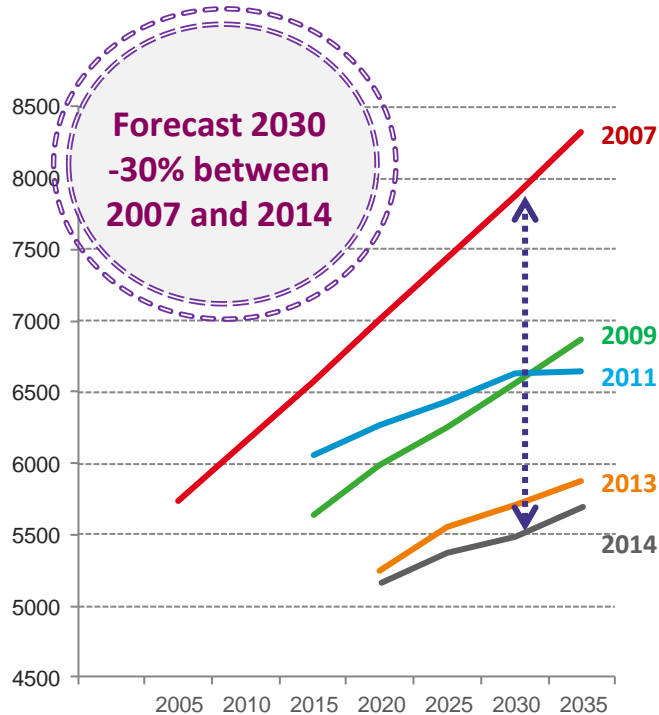
- 
1. A new context
  2. A distressed European market
  3. Consequences
  4. Conclusion

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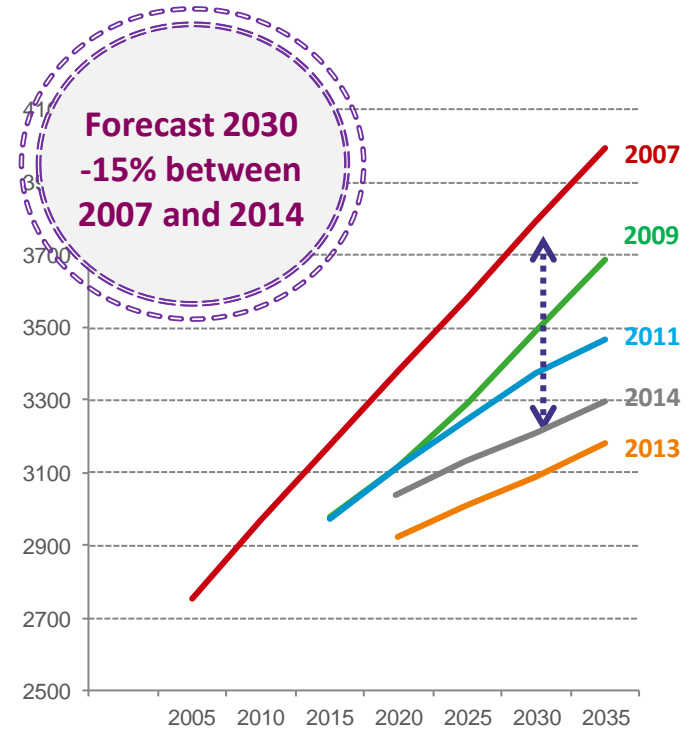
# Decreasing European demand

## Primary gas demand (EU) (TWh)



Source : IEA, World Energy Outlook

## Final power demand (EU) (TWh)

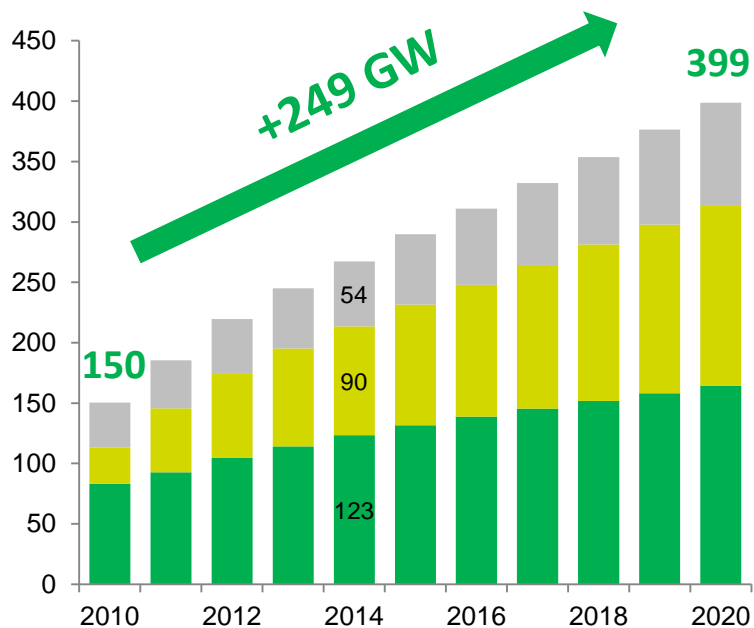


Source : IEA, World Energy Outlook

**Structural changes worsened by the crisis**

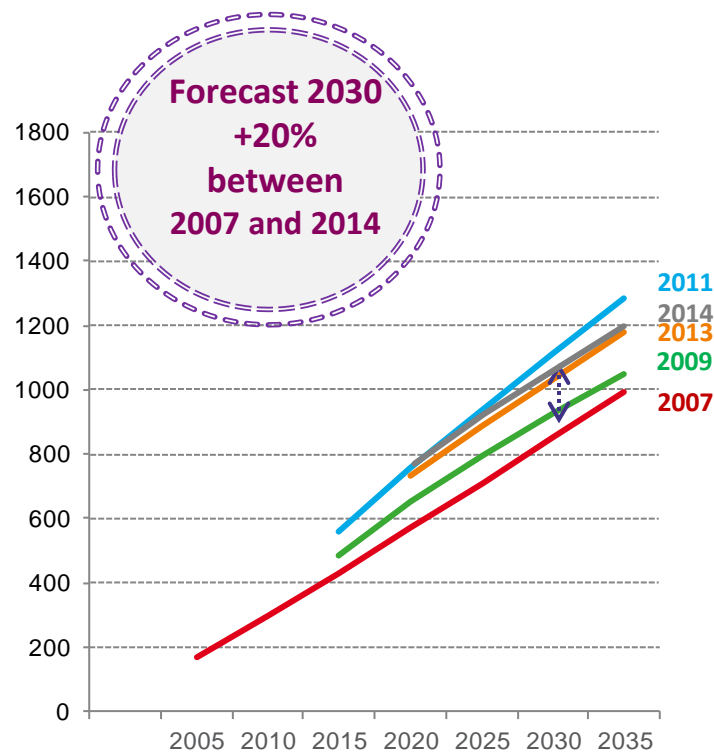
# RES development higher than expected

## RES capacities (EU)



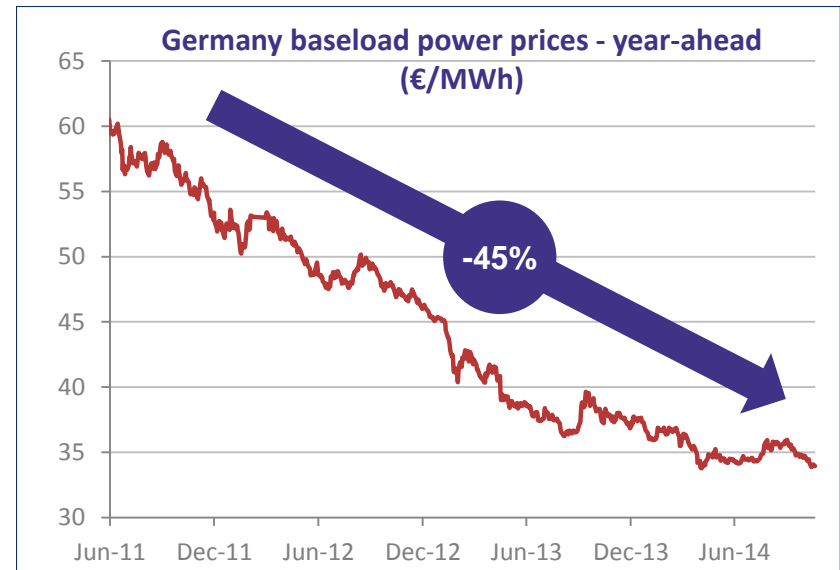
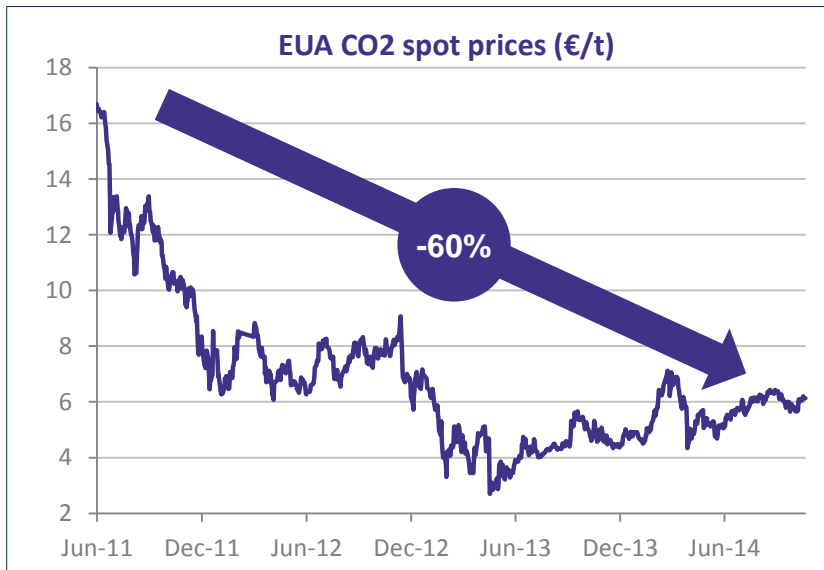
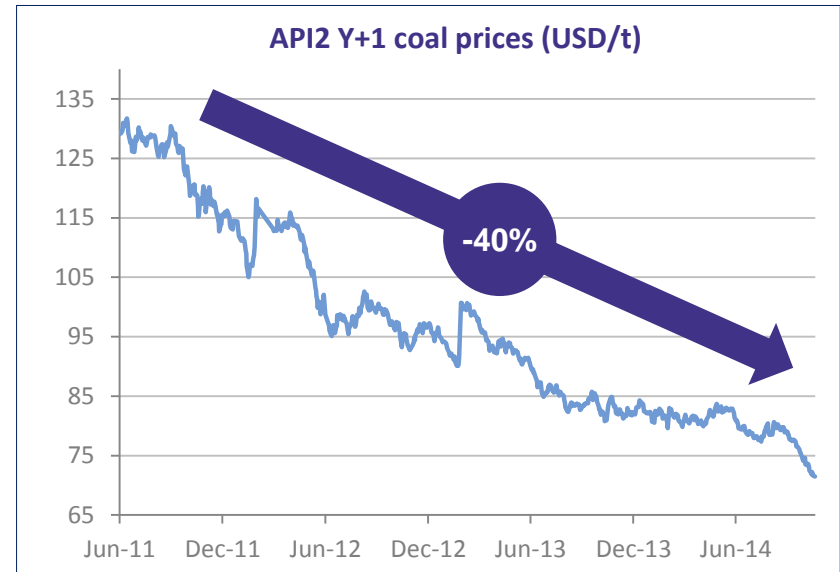
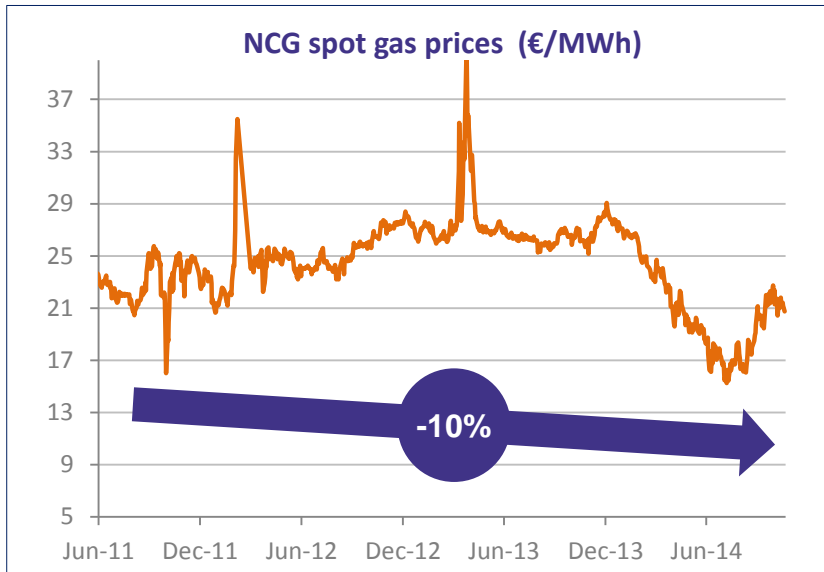
Source : IHS CERA, October 2014, Europe


## RES production (EU) (TWh) *Exc. hydro*



Source: AIE, World Energy Outlook

# Power, Coal, and CO<sub>2</sub> prices decreasing, while Gas prices remain high

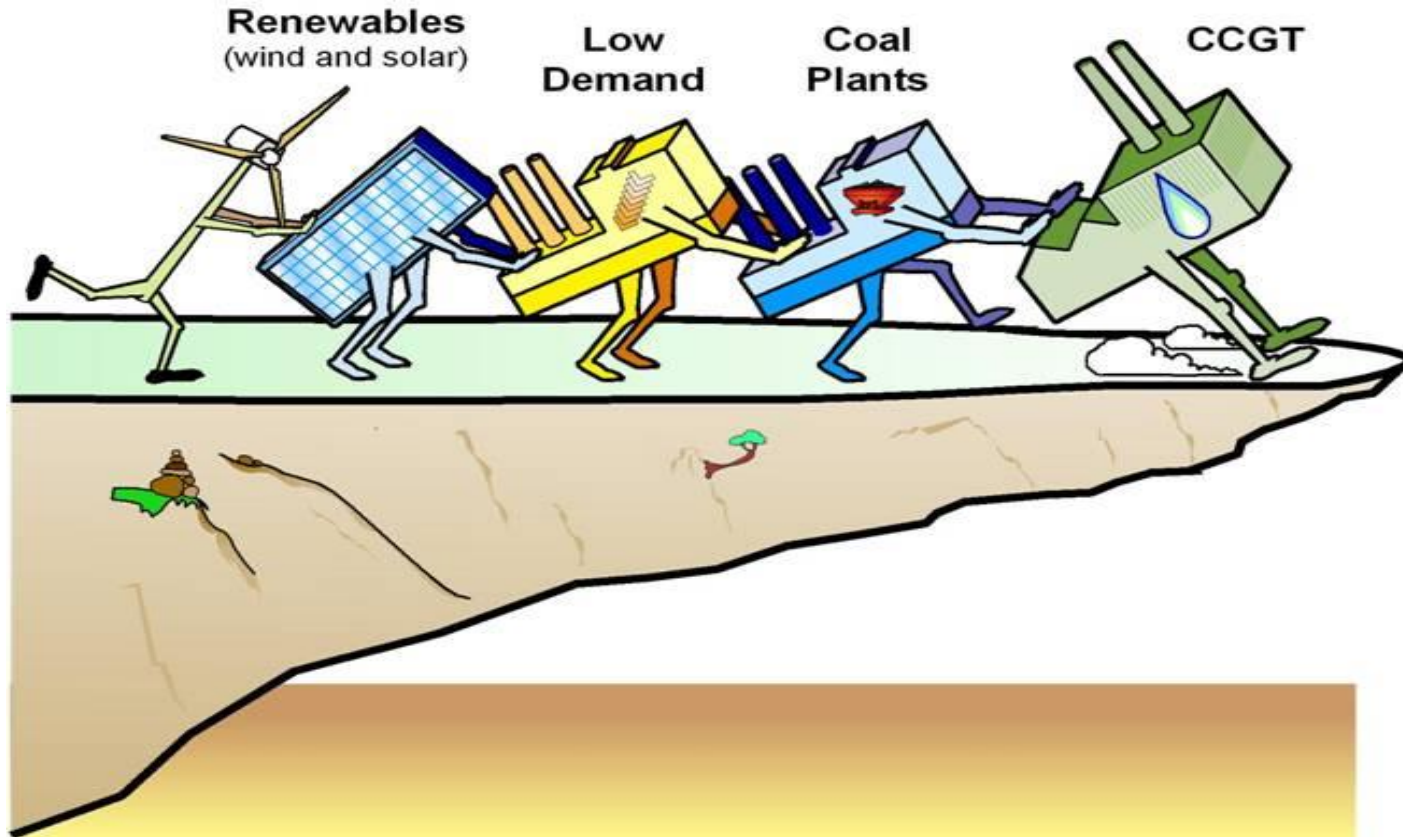


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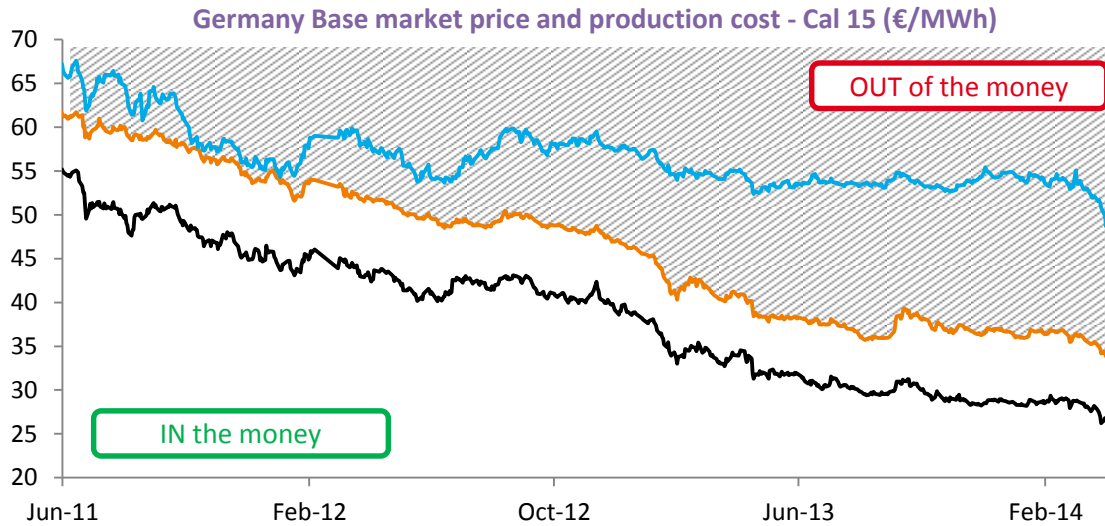
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# Thermal assets shifted to the right of the merit order



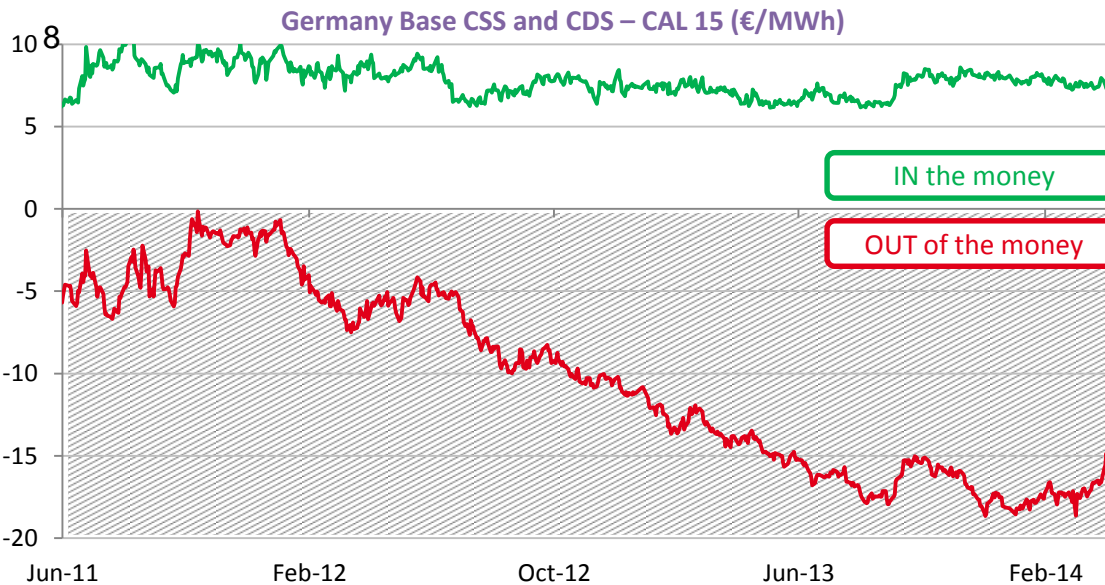
# Out of the money



Cost of Power produced with Gas  
**53 €/MWh**

Power market price  
**35 €/MWh**

Cost of Power produced with Coal  
**28 €/MWh**



Clean Dark Spread  
**~ 7 € / MWh in Q2 2014**



Clean Spark Spread  
**~ -18 € / MWh in Q2 2014**

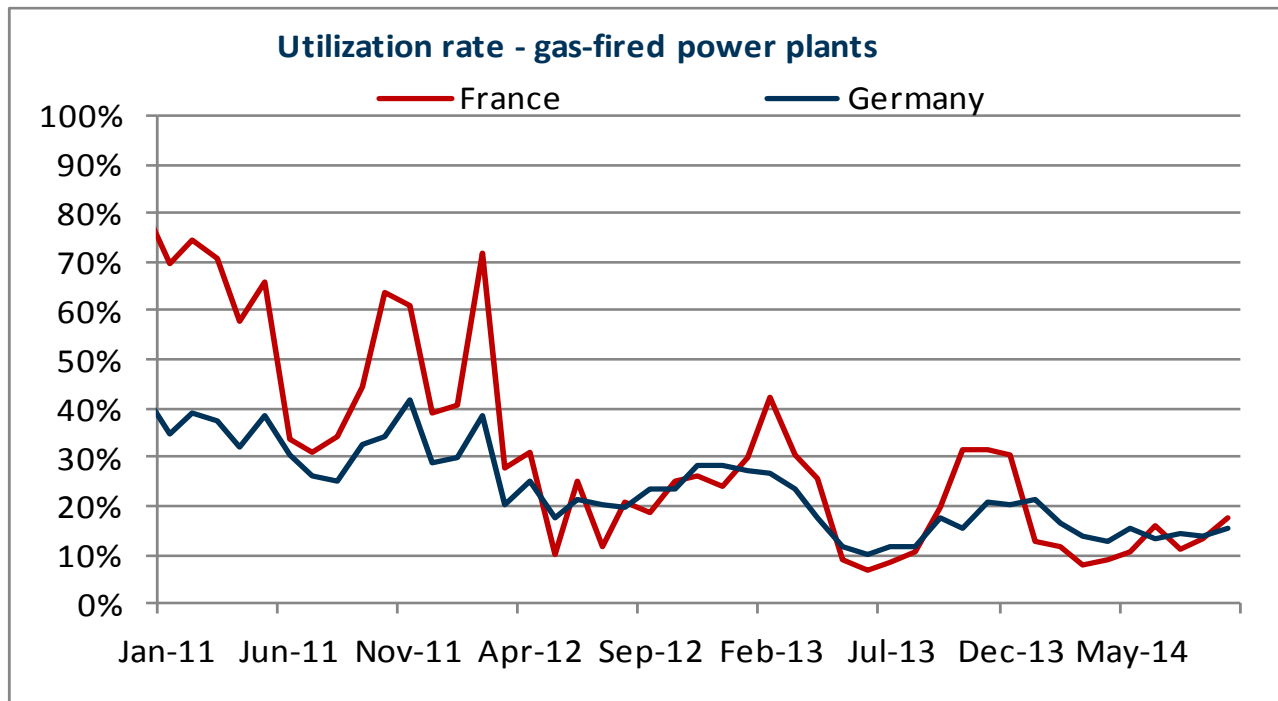




# Switch gas-to-coal

⇒ Load factors (EU 28) evolved dramatically

Gas		<u>2009</u> : 41%	→	<u>2011</u> : ↘ 35%	→	<u>2012</u> : ↘ 28%	→	2013 : ↘ 25%
Coal		<u>2009</u> : 42%	→	<u>2011</u> : → 42%	→	<u>2012</u> : ↗ 47%	→	2013 : ↗ 48%



Source : RTE, EEX, Enerdata & GDF SUEZ Trading based on TSO data.

# Far from coal-to-gas parity!

- Would need<sup>1</sup>:


CO<sub>2</sub> price    x 9

or    Gas price    ÷ 1,5

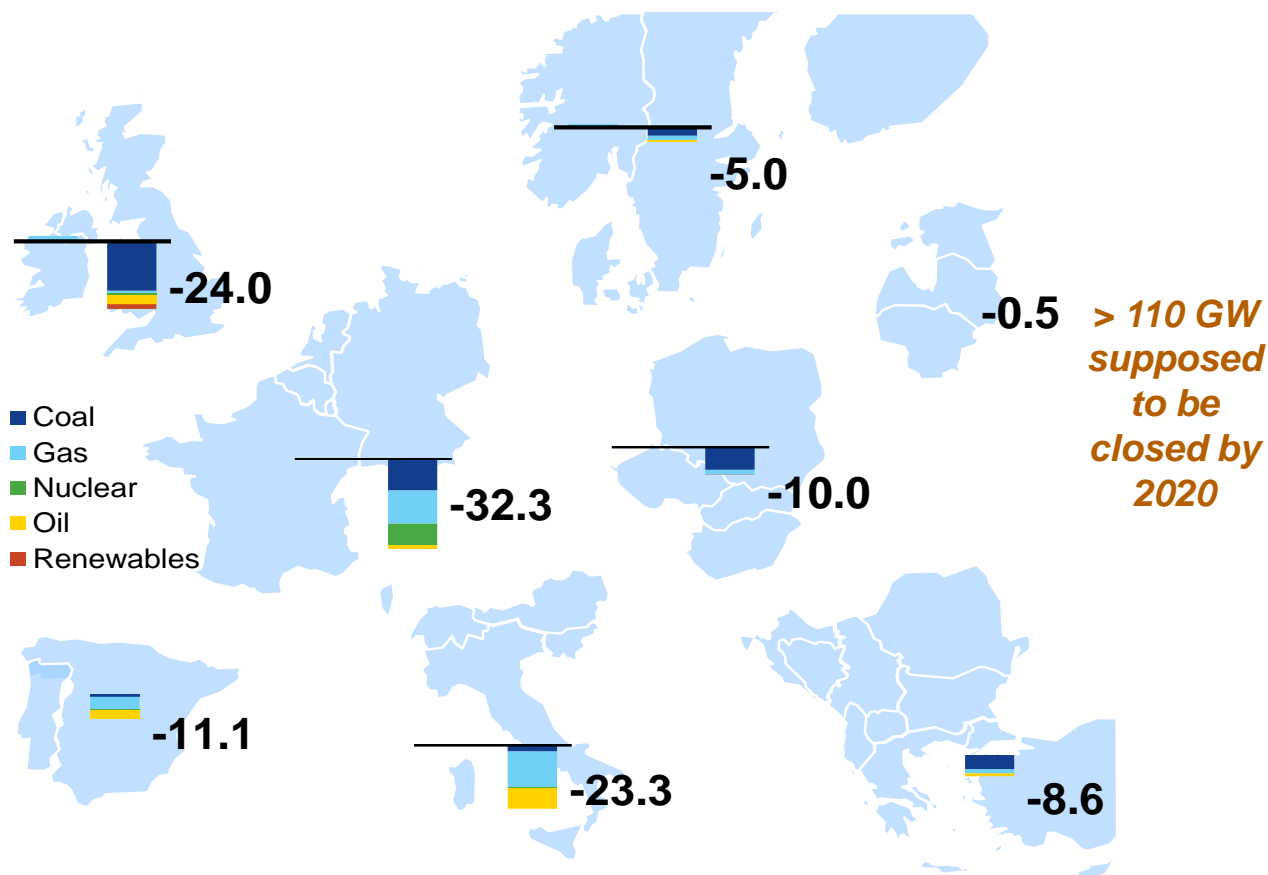
or    Coal price    x 2

(1) France, October 2014

Source : EEX, Argus

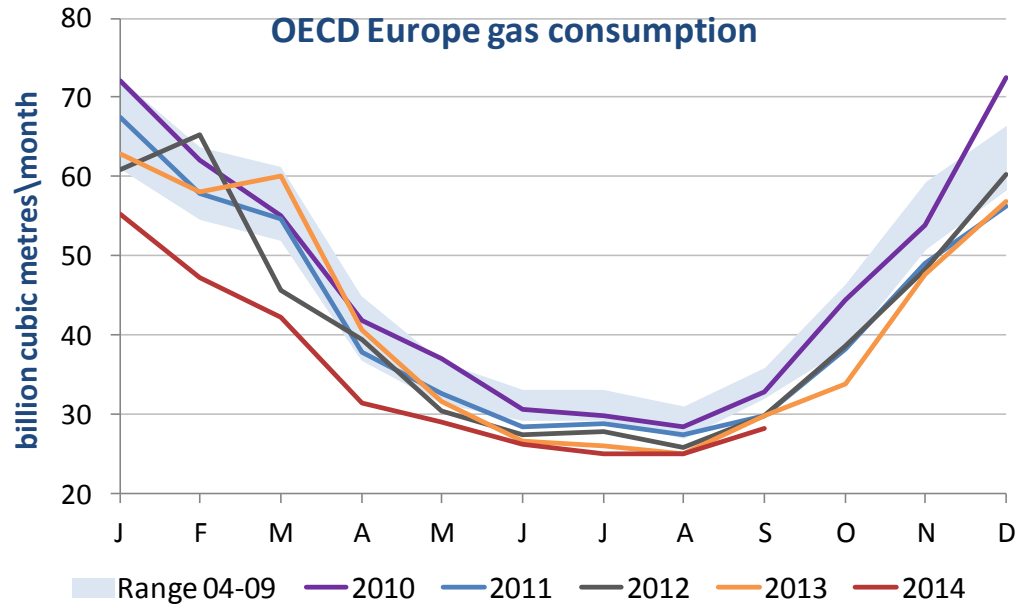
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# Huge decommissioning and mothballing



**Security of Supply potentially at risk if nothing is done to restore profitability of assets necessary as “back up” to intermittent and unforeseeable RES**

# Decreasing Gas consumption



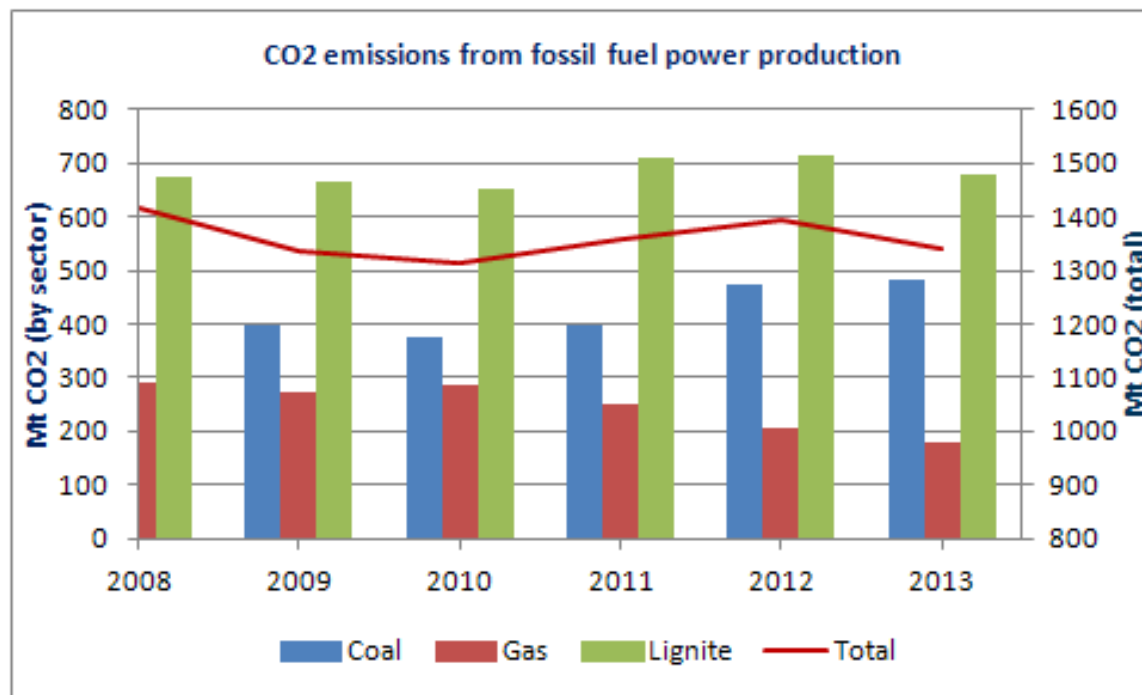
## OECD Europe gas consumption:

- **-5%** in 2009
- **+6%** in 2010
- **-9%** in 2011
- **-2%** in 2012
- **-1%** in 2013

## Drop particularly strong in generation:

- **UK:** **-43%** in 2012      **-8%** in 2013
- **Italy:** **-13%** in 2012      **-17%** in 2013
- **Spain:** **-22%** in 2012      **-28%** in 2013

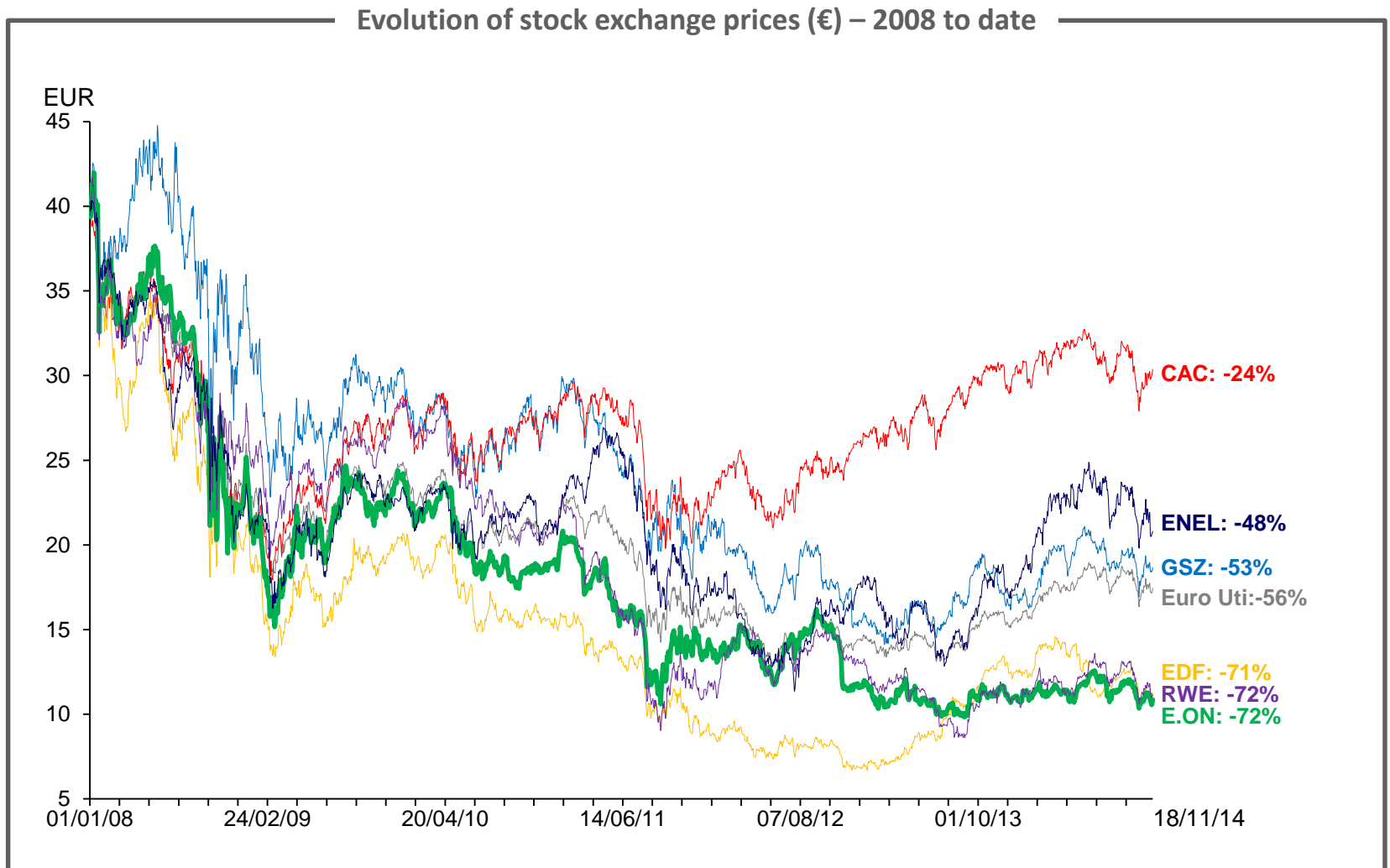
# Rebound of CO<sub>2</sub> emissions



- ❑ Emissions from CCGTs have clearly decreased in recent years.
- ❑ **But compensated by higher emissions from coal-fired power stations**
- ❑ All in all, emissions flat to slightly down.


*As a reminder, emissions in the power sector make up around 75% of all emissions in the EU ETS scheme.*

# Huge value destruction for utilities



Source : GDF SUEZ Investor Relations, based on Bloomberg, as of 19/11/2014

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1. **Gas is key** to reach EU energy policy targets:  
**Sustainability, Reliability, Affordability**

2. It is vital to **adapt market design**

- ❑ **Implementation of CRM** to take into account contribution of all assets to SoS
- ❑ **Reform of ETS**
- ❑ **Monitor RES development** (auctions and market integration)



### 3. Current evolutions

□ are positive:

- Reform ETS and MSR introduction
- Adjustment of RES support mechanisms
- National initiatives on CRM

□ but insufficient:

- On ETS (volumes MSR and agenda)
- Risk for internal market integration if CRM implemented on a national basis