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# European gas demand and pricing

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**Center for Energy Economics, BEG, UT  
Houston, 4 December 2013**

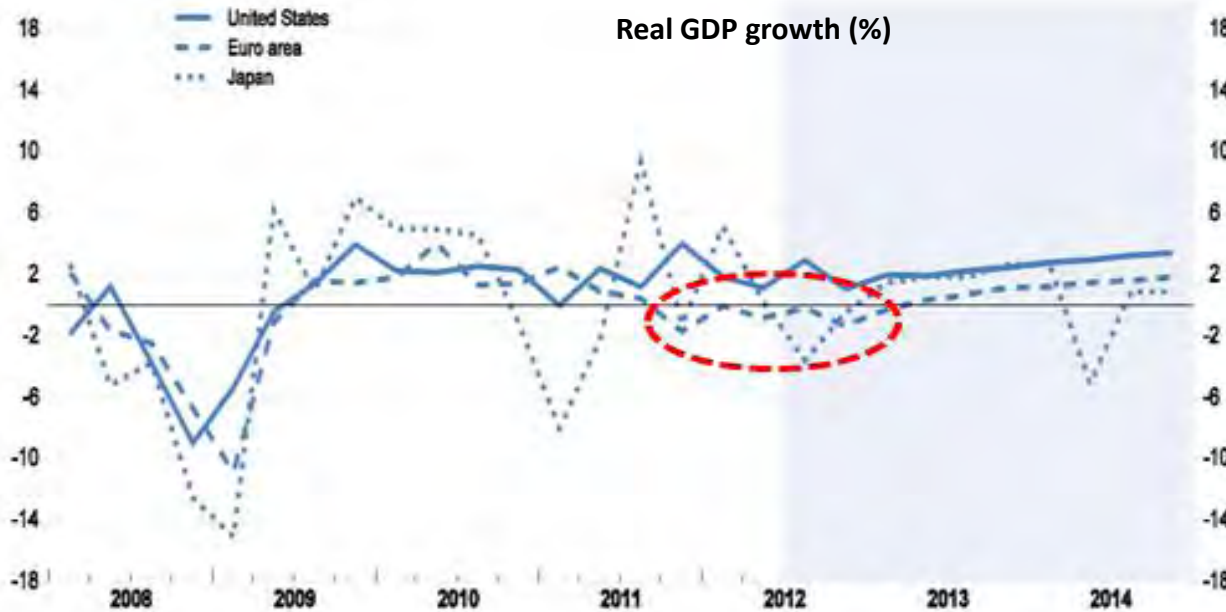


# **GAS DEMAND**

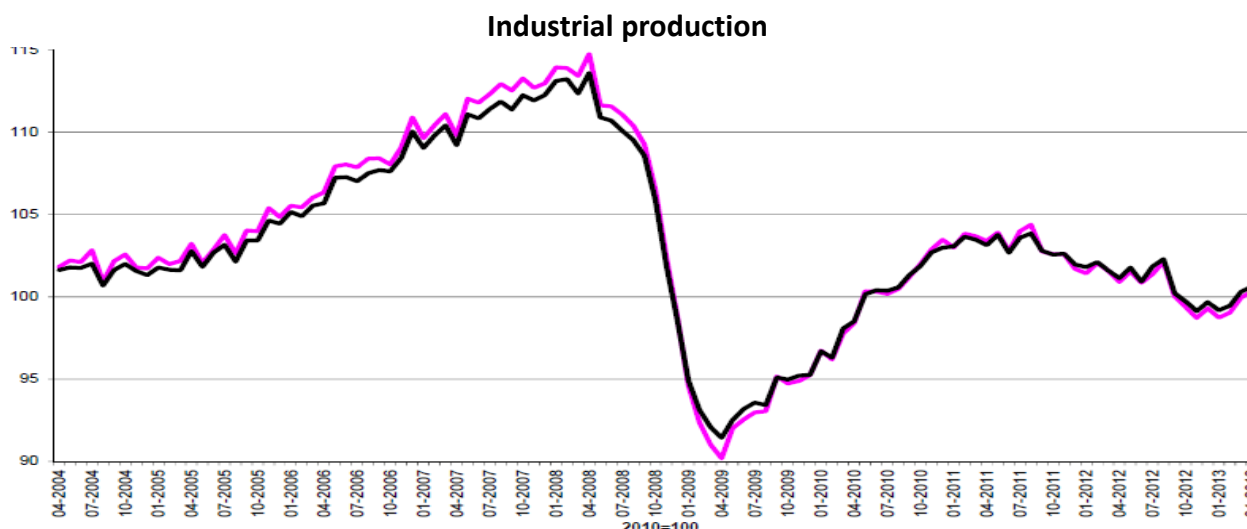
**Back to the levels of the early 2000s  
and little light at the end of the  
tunnel**



# Economic Recovery??



- General level of energy demand is low and is not growing
- Downward revisions are succeeded by downward revisions !
- Now out of the tunnel by 2014... ???

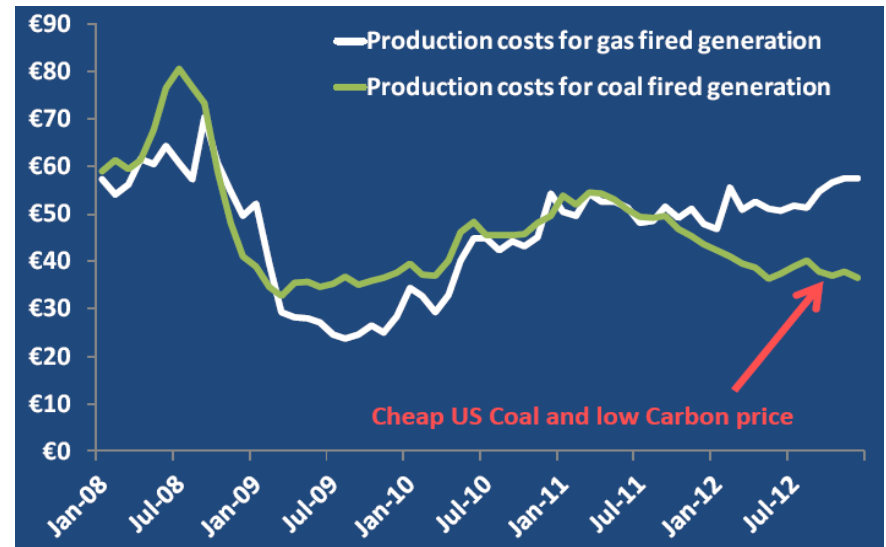
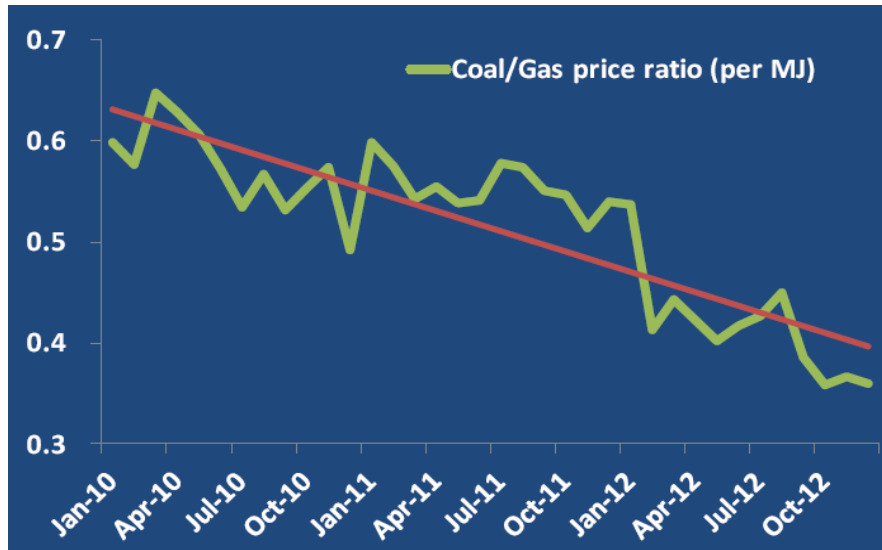


Sources: OECD and Eurostat



# Since mid 2011: Coal vs Gas

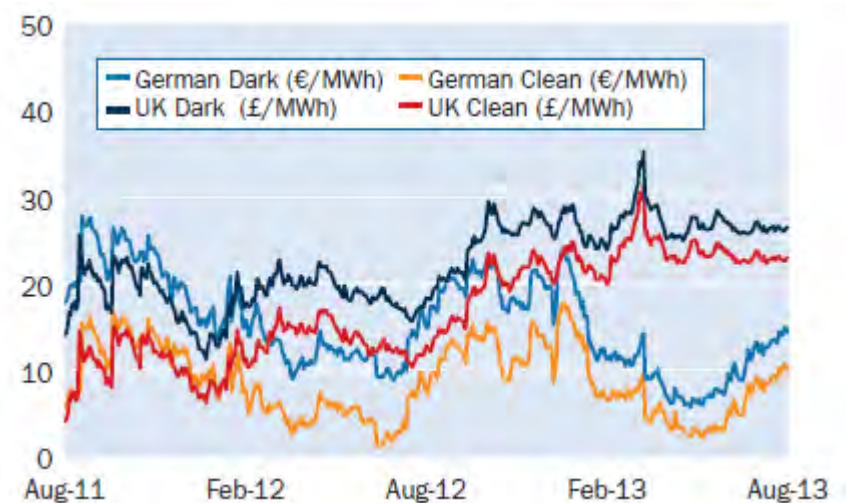
Sources: IEA – Platts



Day Ahead Base Spark Spread (€/MWh)



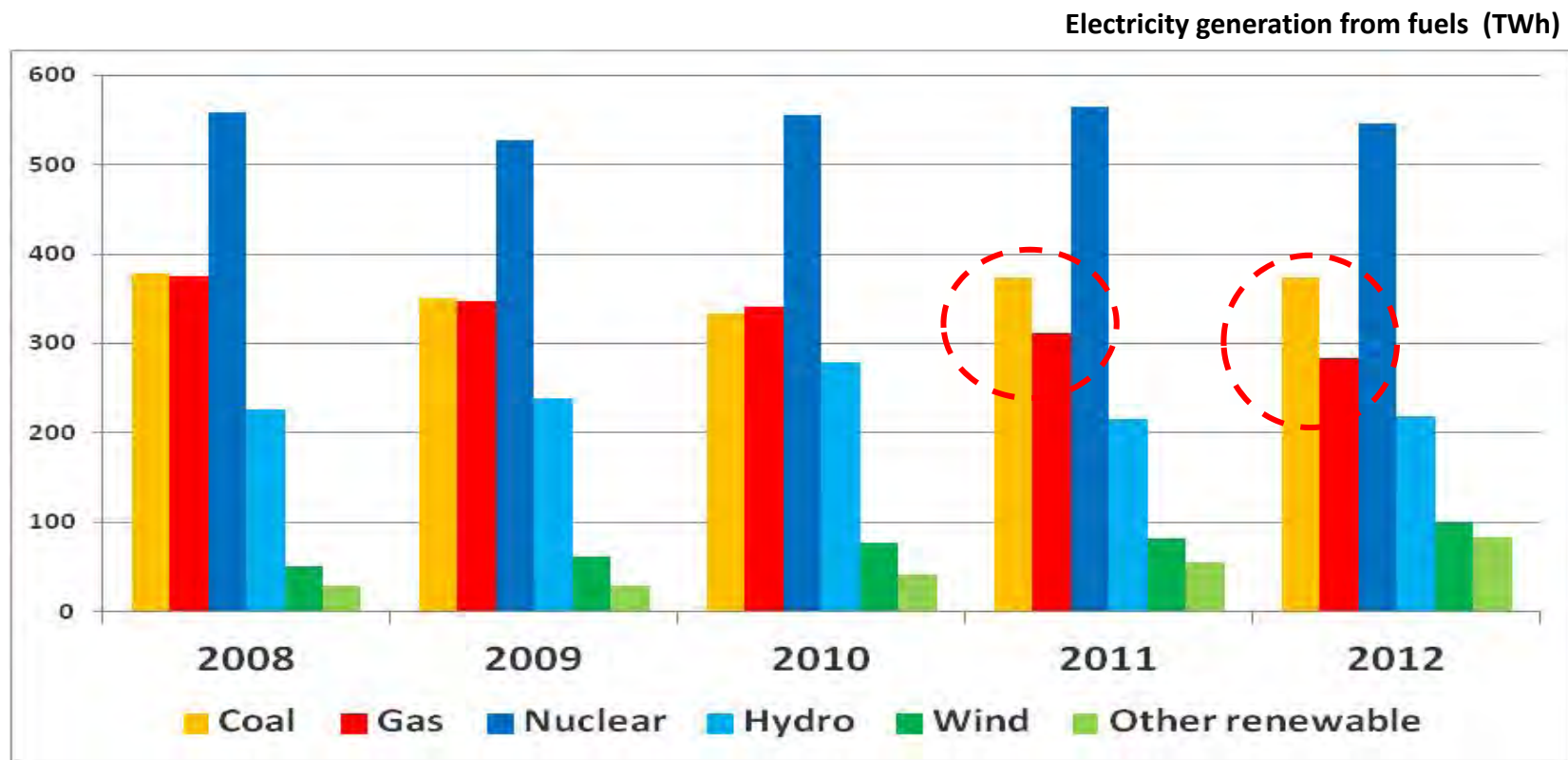
Dark/clean dark spreads (month ahead)





# Electricity generation from gas is declining

- Squeeze out of conventional generation
- Reduced hours of production
- The power sector, “the former key driver for additional demand”, is now the key driver for demand decline!



Source: A. Honore (Forthcoming 2014)



## CO2 price on the EUETS does not help gas!



- The EU ETS are ‘technically’ working... EC just hadn’t planned for the impacts of the economic recession !
- Down from 20 euros/t in early 2011 !

- IEA: \$67/t needed to switch back to gas, and every \$1/MMBtu increases the prices of CO2 needed by \$15/t
- “Switching price” differs from one market to another depending on the energy mix
- => BUT general conclusion: it needs to be a lot higher !!!



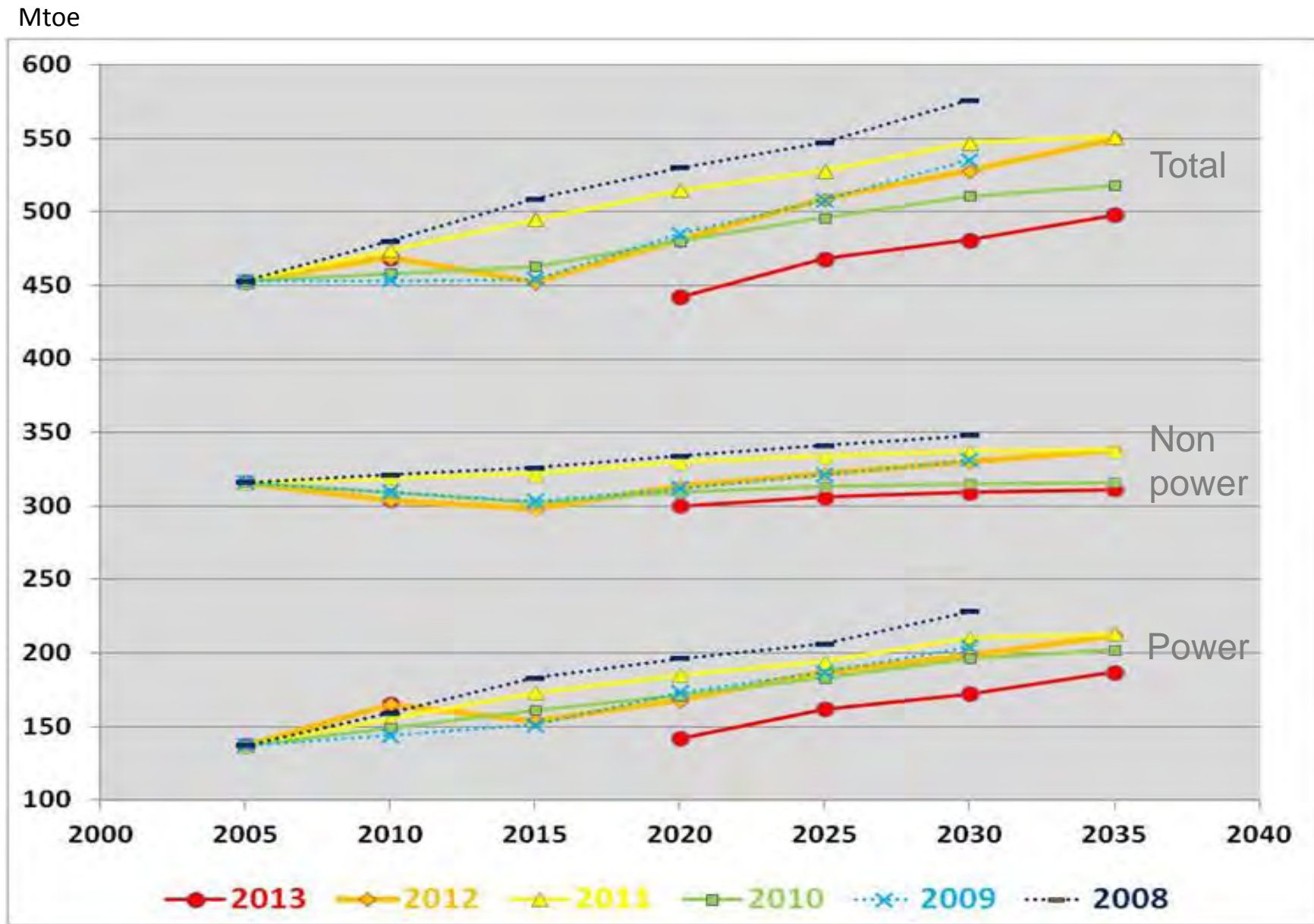
# European Gas Demand: IEA WEO “New Policies” Scenario: differences 2012/13 (Bcm)

	2010	2011	2020	2025	2030	2035
WEO 2012*	569		585	619	643	669
WEO 2013**		525	537	568	584	605
2013 cf 2012			-48	-51	-59	-64

\* WEO 2012, Table 4.2, p. 128; \*\*WEO 2013, Table 3.2, p.103

**In a single year, the IEA have downgraded their central scenario projection of European gas demand by 50-65 Bcm or by 8-10% up to 2035; the 2013 WEO does not see European gas demand returning to 2010 levels until after 2025!!**

# WEO – changes in OECD gas demand scenarios



Sources: IEA, OECD Europe, reference scenario in WEO 2008, WEO 2009, and new policies scenario in WEO 2010, WEO 2011, WEO 2012 & WEO 2013





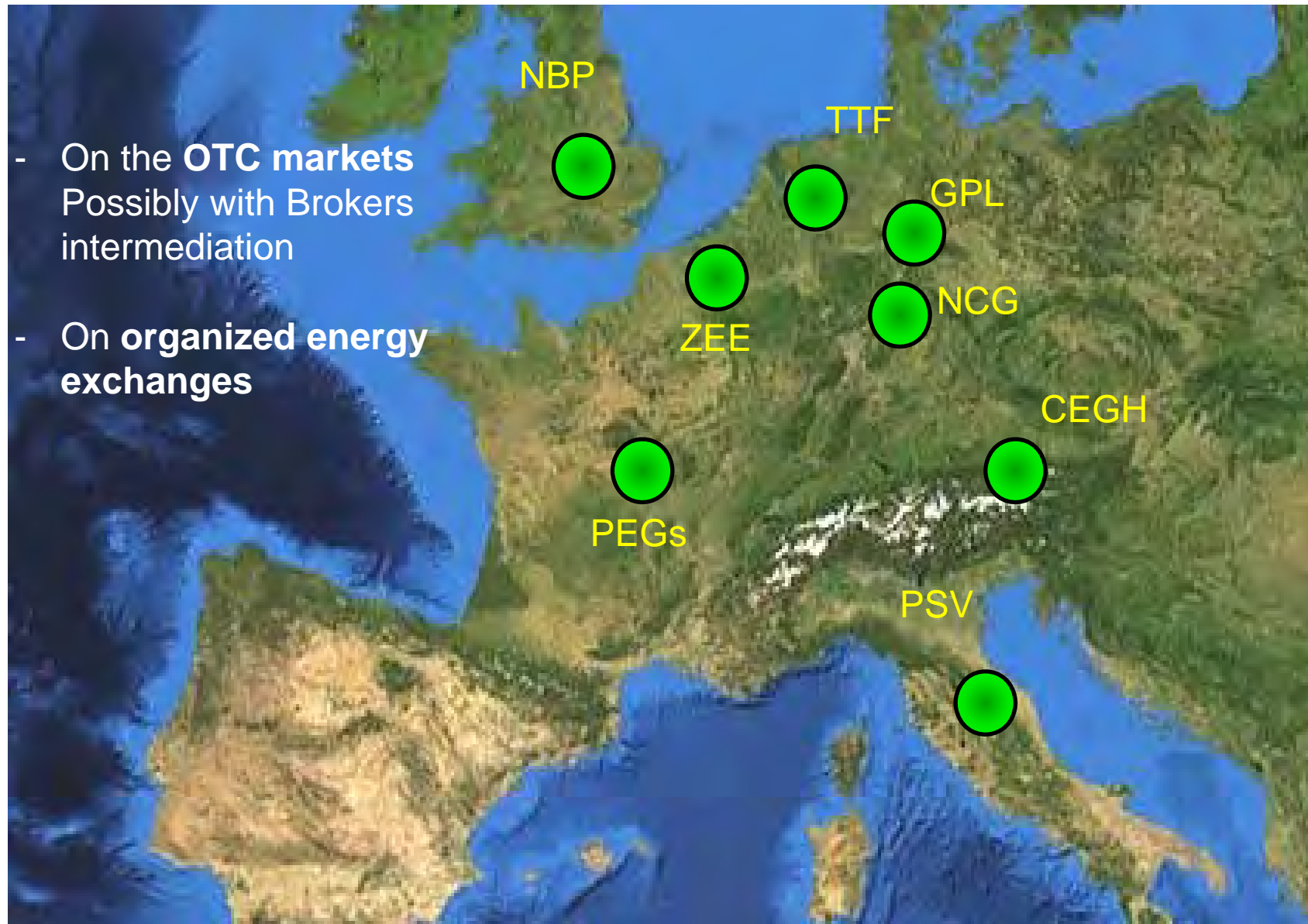
# **GAS PRICING**

**Hub pricing becoming dominant in  
the north and west of the Continent;  
oil-linkage still dominant in the  
south**

## European Gas Hubs

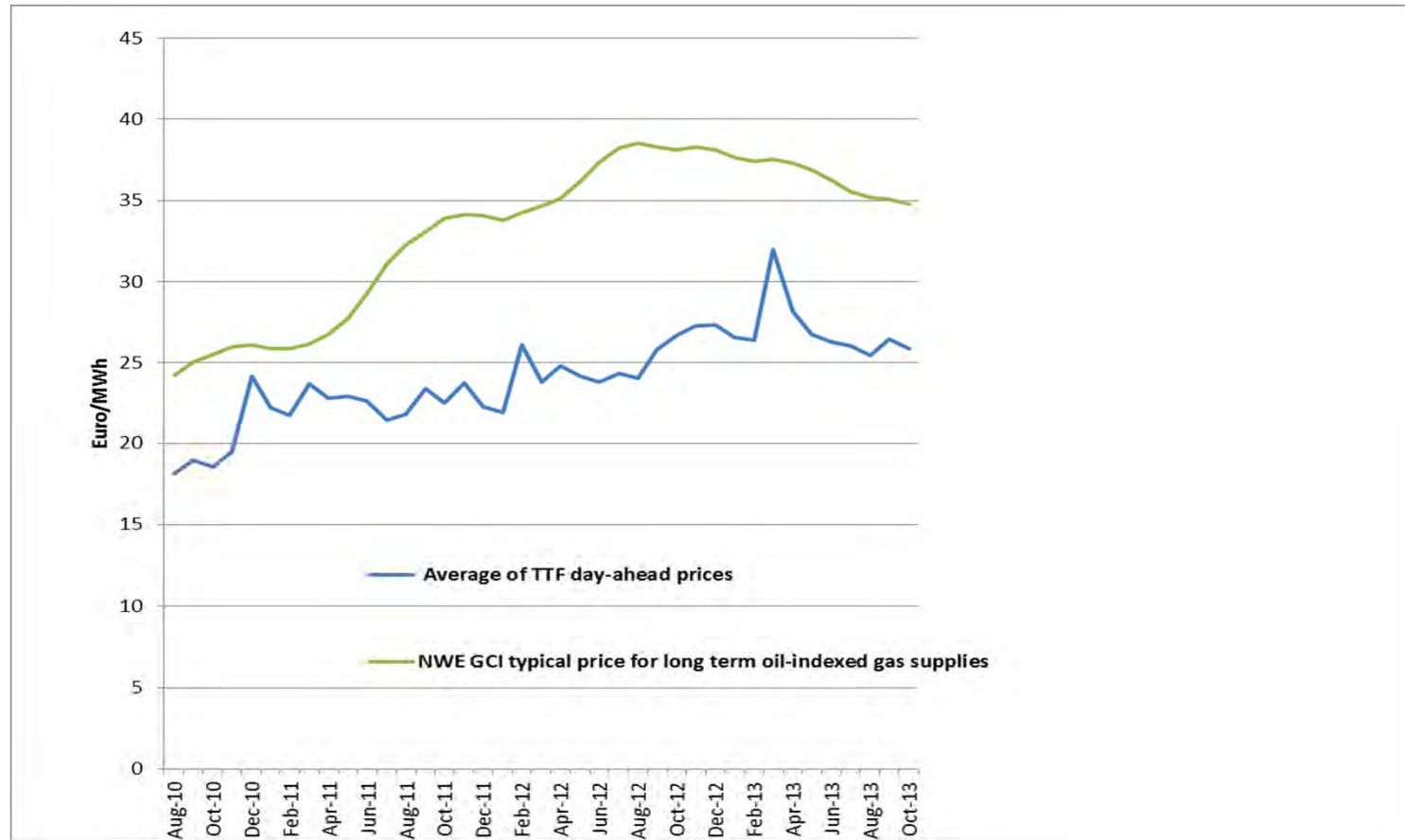
**8 main price areas**, where contracts for delivery of gas are traded:

- On the **OTC markets**  
Possibly with Brokers  
intermediation
- On **organized energy  
exchanges**





# TTF (Hub) and Oil-Linked Contract Gas Prices, August 2010-October 2013 (Eur/MWh)

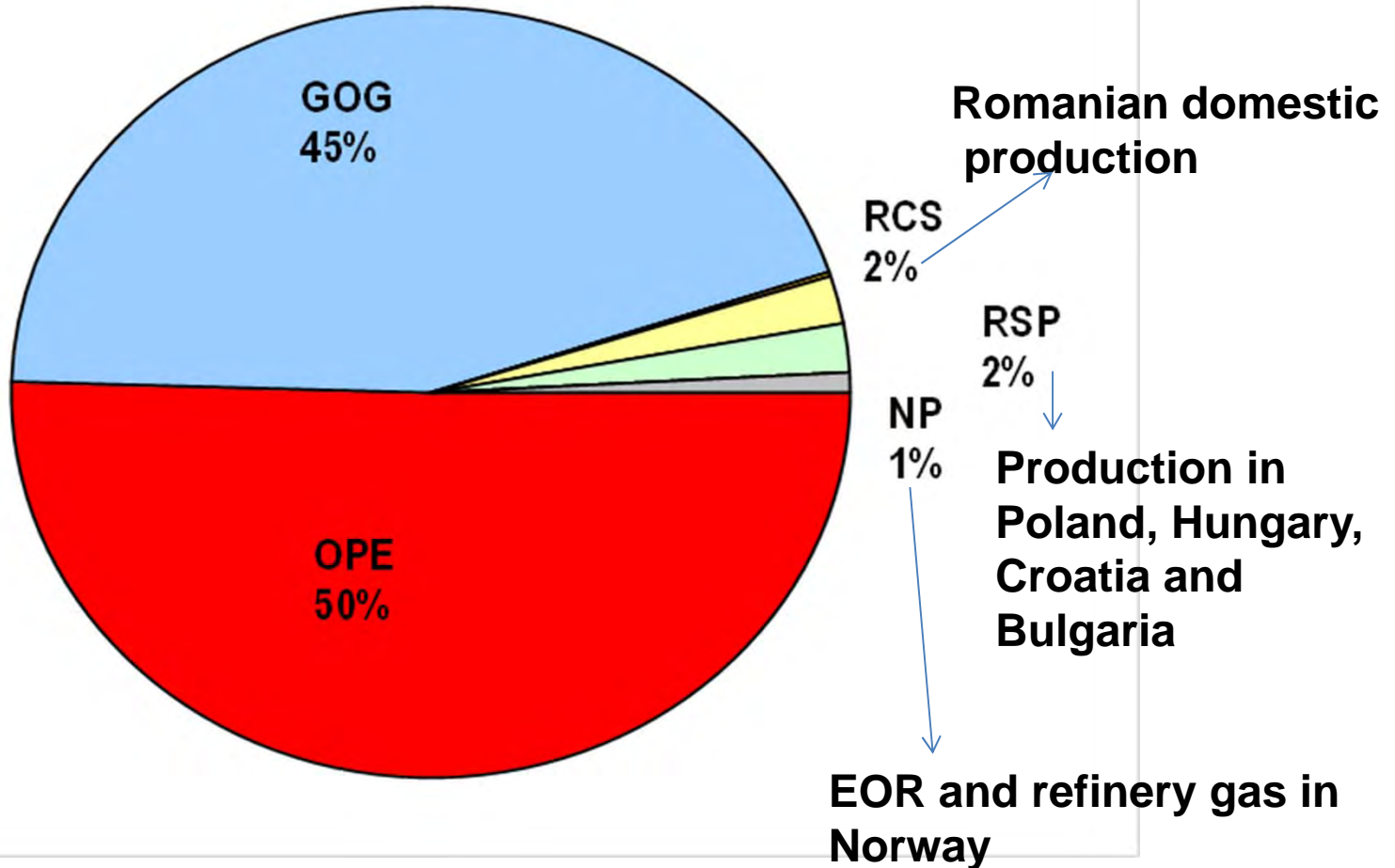


Source: Platts European Gas Daily, Monthly Averages

**For most of 2011-13, monthly hub prices averaged 25-30% below unreformed oil-linked contract prices**

# European Wholesale Gas Pricing 2012

Source: IGU 2012 Wholesale Gas Price Survey 2012, June 2013, p.22.



**OPE: oil-indexed; GOG: gas/gas competition; RCS: regulated cost of service, RSP: regulated social pricing, NP: no price**



# European Wholesale Gas Pricing 2012 (%)

Source: IGU 2012 Wholesale Gas Price Survey 2012, June 2013, pp.41-44

Region and approx % total European demand	OPE (oil)	GOG (hub)	RCS (regulated)	RSP
North West Europe 50%	28	72		
Central Europe 10%	48	37		15
Medit'nean Europe 30%	88	12		
South East Europe 10%	42		46	12

**Up to 2012, the impact of hub-based pricing was limited to north west and central Europe; the southern part of the Continent is still pricing gas on an oil-linked and regulated basis**

## Conclusions on Hubs (Petrovich 2013)

- Price correlation between European Gas Hubs has been very strong since 2007 (regardless of contract type)
- Since late 2012, CEGH and PSV became increasingly aligned to other hubs
- NWE hubs move closely together, TTF leads
- OTC day ahead/month ahead and exchange trading express the same price signal
- NBP – NWE hubs delinking in 2011 is explicable by physical factors

**Most correlations have strengthened year on year, hubs represent market prices at least in NW Europe; no sign of “manipulation”; NBP is the £ hub, TTF is the €hub**





## The Transition from Oil Linked to Hub-Based Pricing in Europe

A secular trend is under way and will not be reversed BUT:

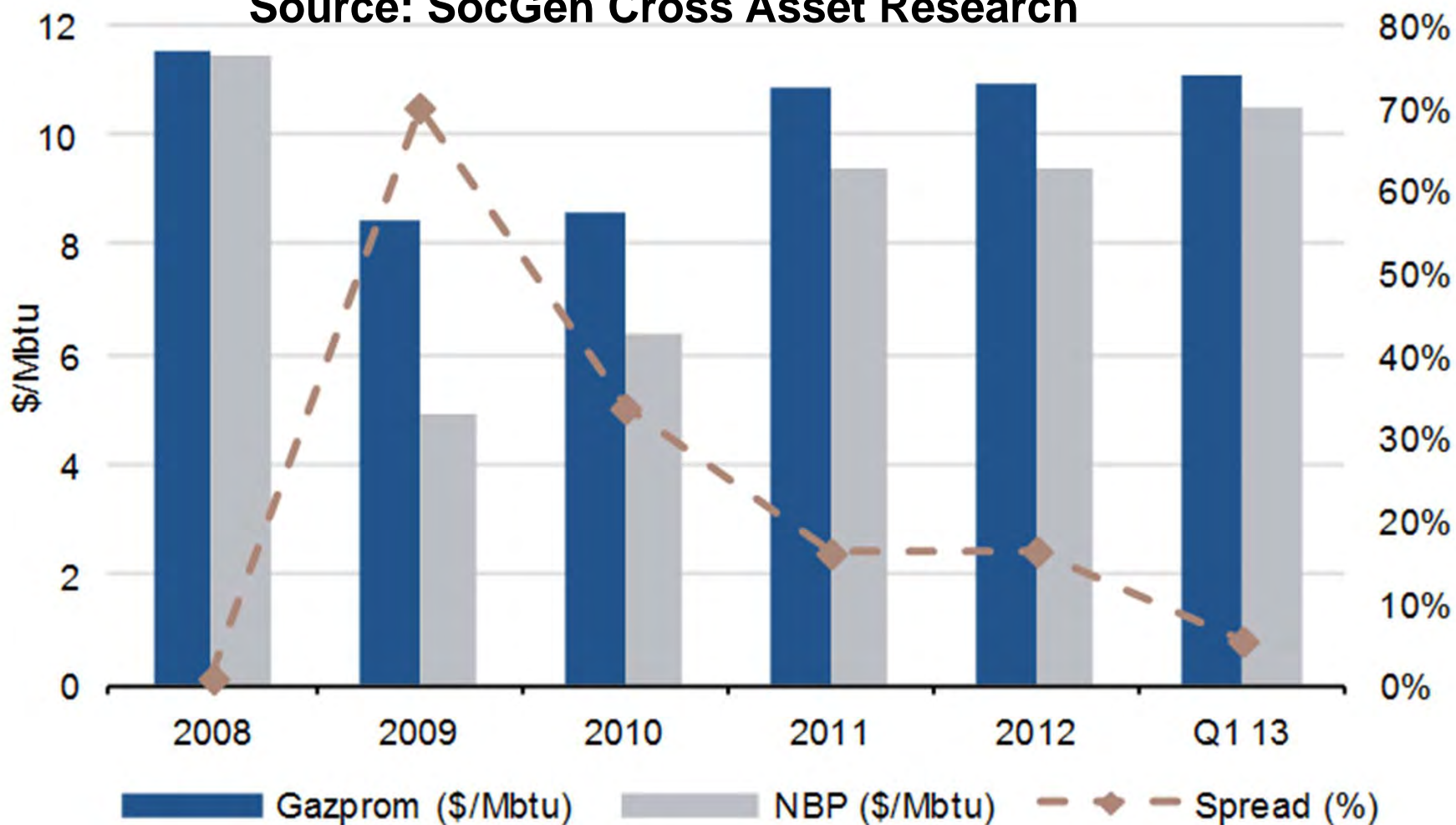
- in some regions (eg South East) this process may not get under way for several years
- this does not mean that oil prices are no longer relevant to gas price formation only that specific contractual linkage is no longer appropriate but a contractual link to oil prices is no longer logical
- hub-based pricing does not mean that gas prices will automatically and always be lower than oil-linked prices

# Pricing in Continental European long term contracts with major exporters

- **Statoil and Gastera: adaptation to hub pricing in north west European markets BUT...**
- **Statoil-ENI arbitration (commenced August 2013) shows that problems continue even in Norwegian contracts**
- **Gazprom has settled most of its arbitration proceedings (except Edison, Lithuania); DG COMP decision on central/east European contracts expected Spring 2014**
- **Sonatrach is resisting the transition to a hub-based pricing index and has many arbitrations running concurrently**

# Gazprom continues to speak against hub prices but...

Source: SocGen Cross Asset Research



**By 2013, Gazprom prices are within 5% of NBP**

**The good news: gas demand may have reached the bottom  
ie the future is up**

**The bad news: even hub prices are still far too high for a sustained recovery of gas demand; for demand to recover in power generation either coal prices need to double or gas prices need to halve (there is no sign of either happening!)**



# Thank You

## Relevant published research:

- **European Gas Hubs: how strong is the price correlation? Beatrice Petrovich**
- **The Pricing of Internationally Traded Gas, ed. Jonathan Stern OUP: 2012**
- **The Impact of a Globalising Market on Future European Gas Supply and Pricing, Howard Rogers**
- **Continental Gas Hubs – Are They Fit For Purpose? Patrick Heather**
- **The Transition to Hub-Based Pricing in Continental Europe: a response to Sergei Komlev of Gazprom Export, Jonathan Stern & Howard Rogers**

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- **The Future of European Gas Demand, Anouk Honore (forthcoming 2014)**

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