



EIA INTERNATIONAL NATURAL GAS WORKSHOP

EUROPEAN GAS OUTLOOK

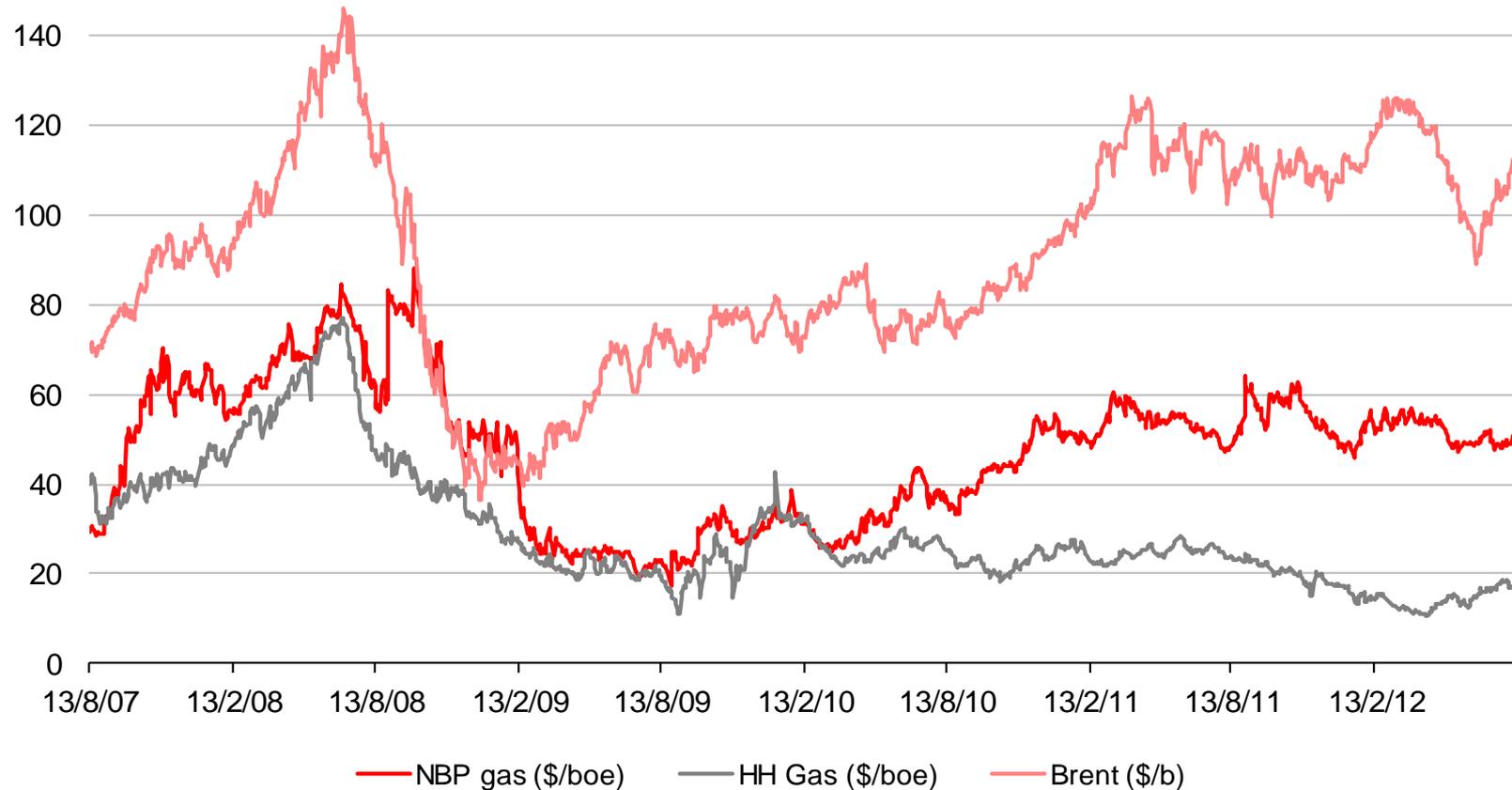
23 August 2012

Dr Thierry Bros

Phone: 33 (0)1 58 98 11 70

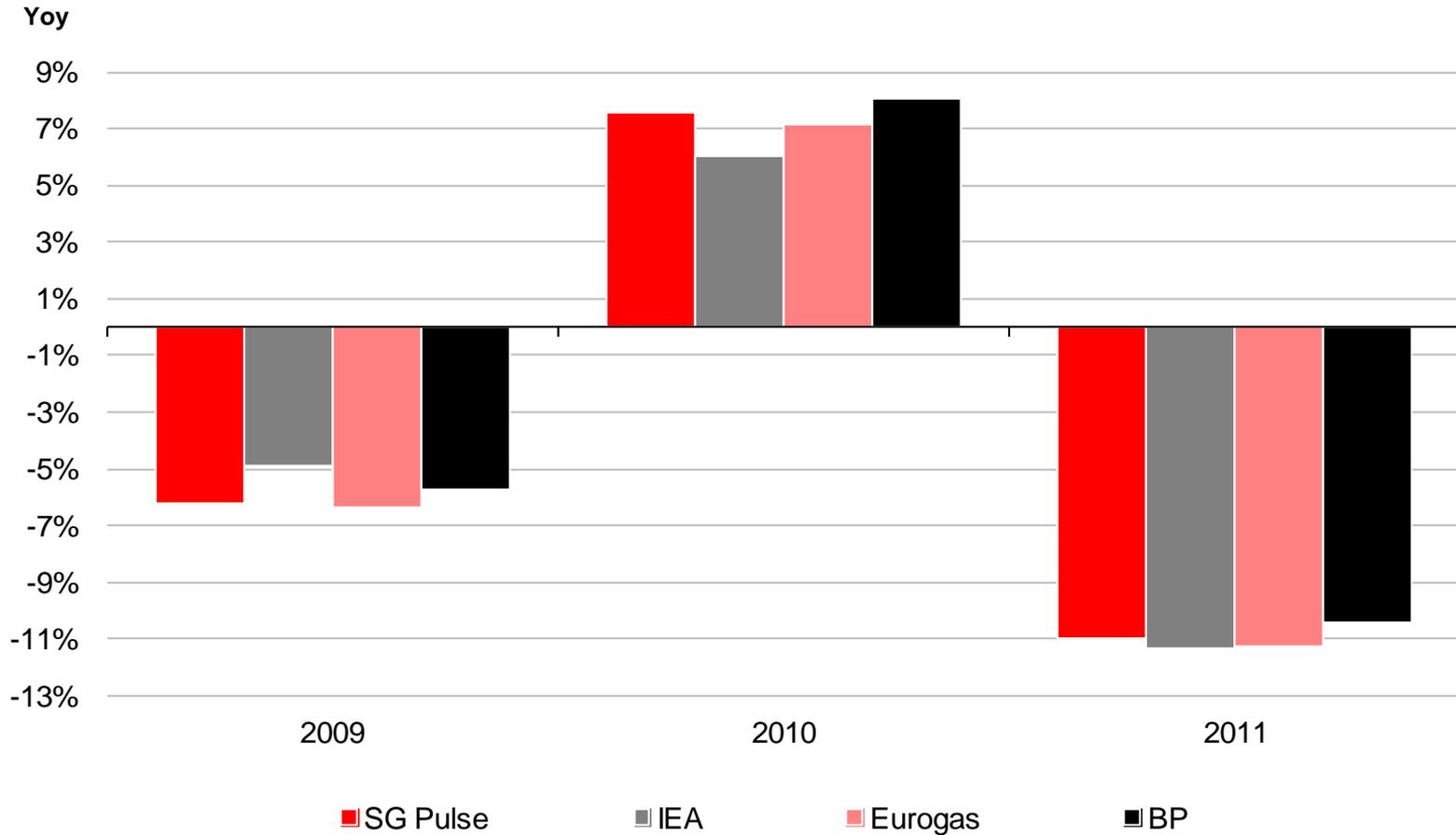
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OVERVIEW OF PRICES



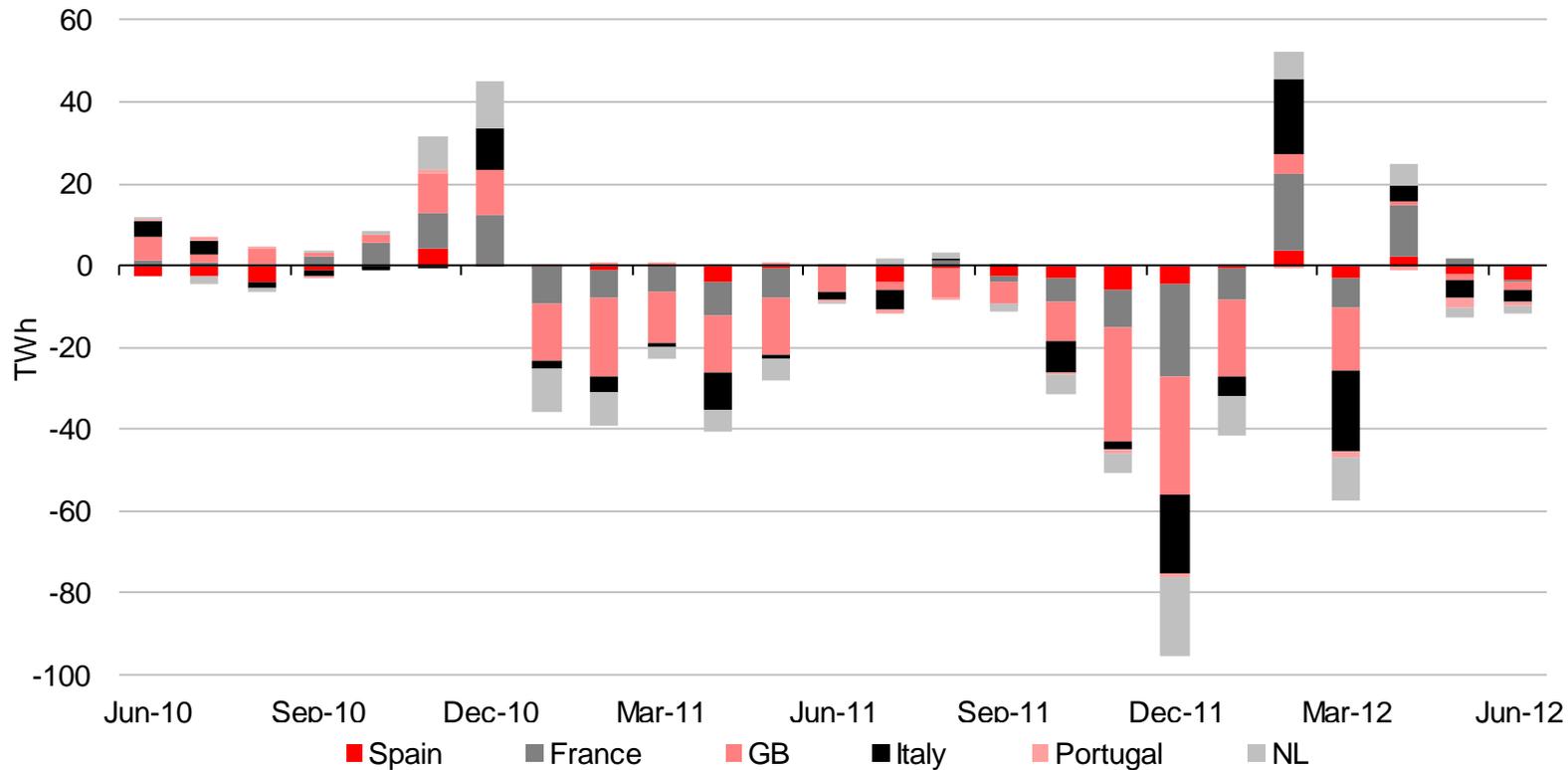
Source: Datastream, SG Cross Asset Research

SG GAS PULSE, A LEADING INDICATOR FOR EUROPE



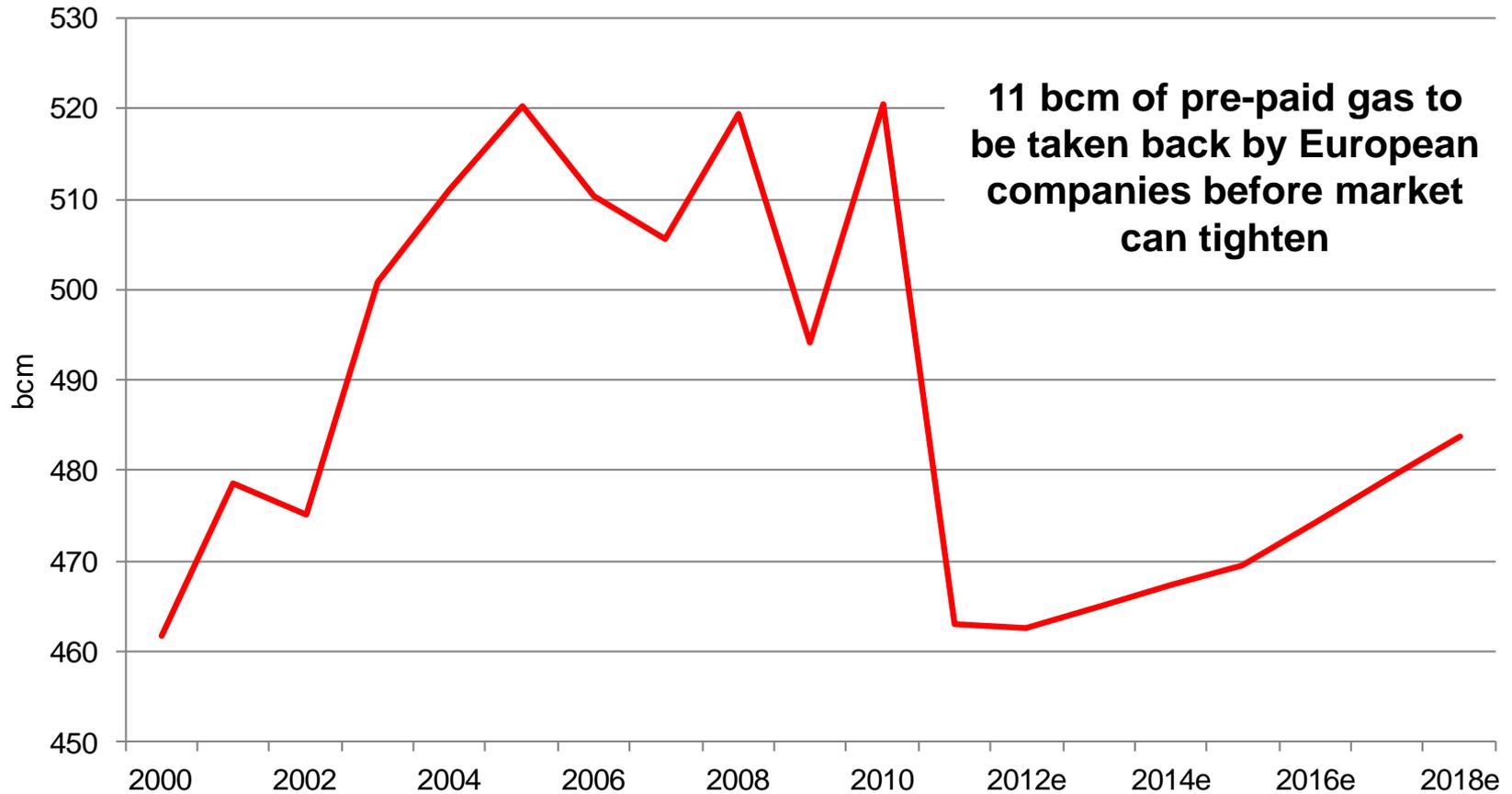
Source: SG Cross Asset Research, IEA, Eurogas, BP Statistical Review

SG GAS PULSE: -2.7% IN JAN-JUN 2012 VS JAN-JUN 2011



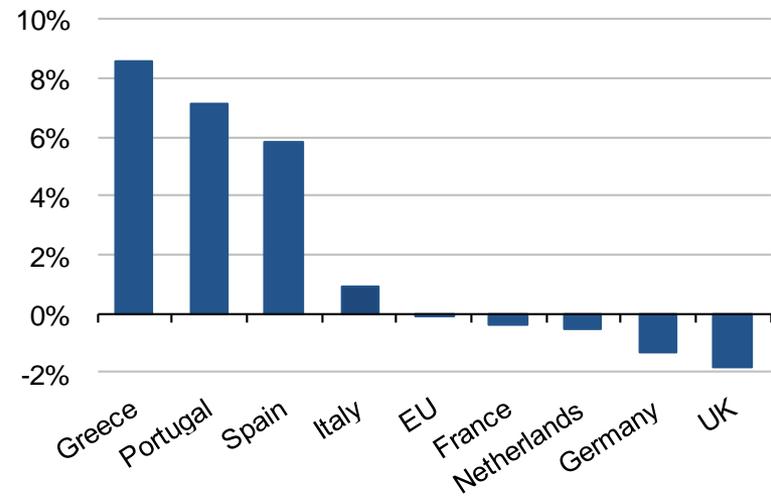
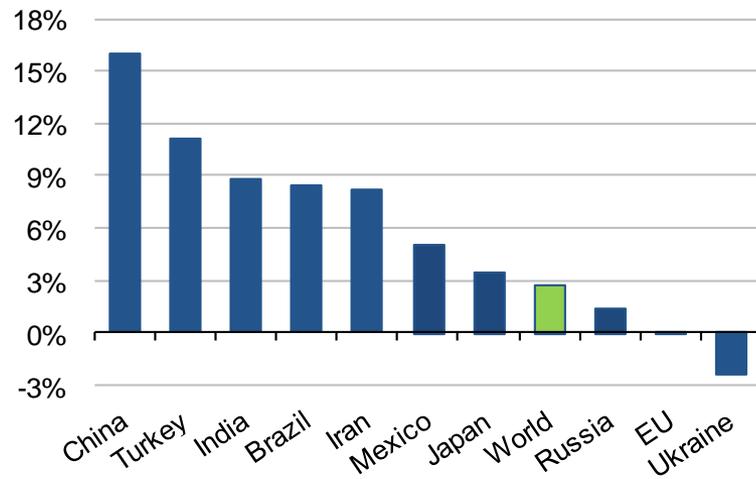
Source: SG Cross Asset Research, GRT Gaz, TIGF, National Grid, Enagas, REN, Snam Rete Gas, GTS Netherlands

TEPID EUROPEAN GAS DEMAND



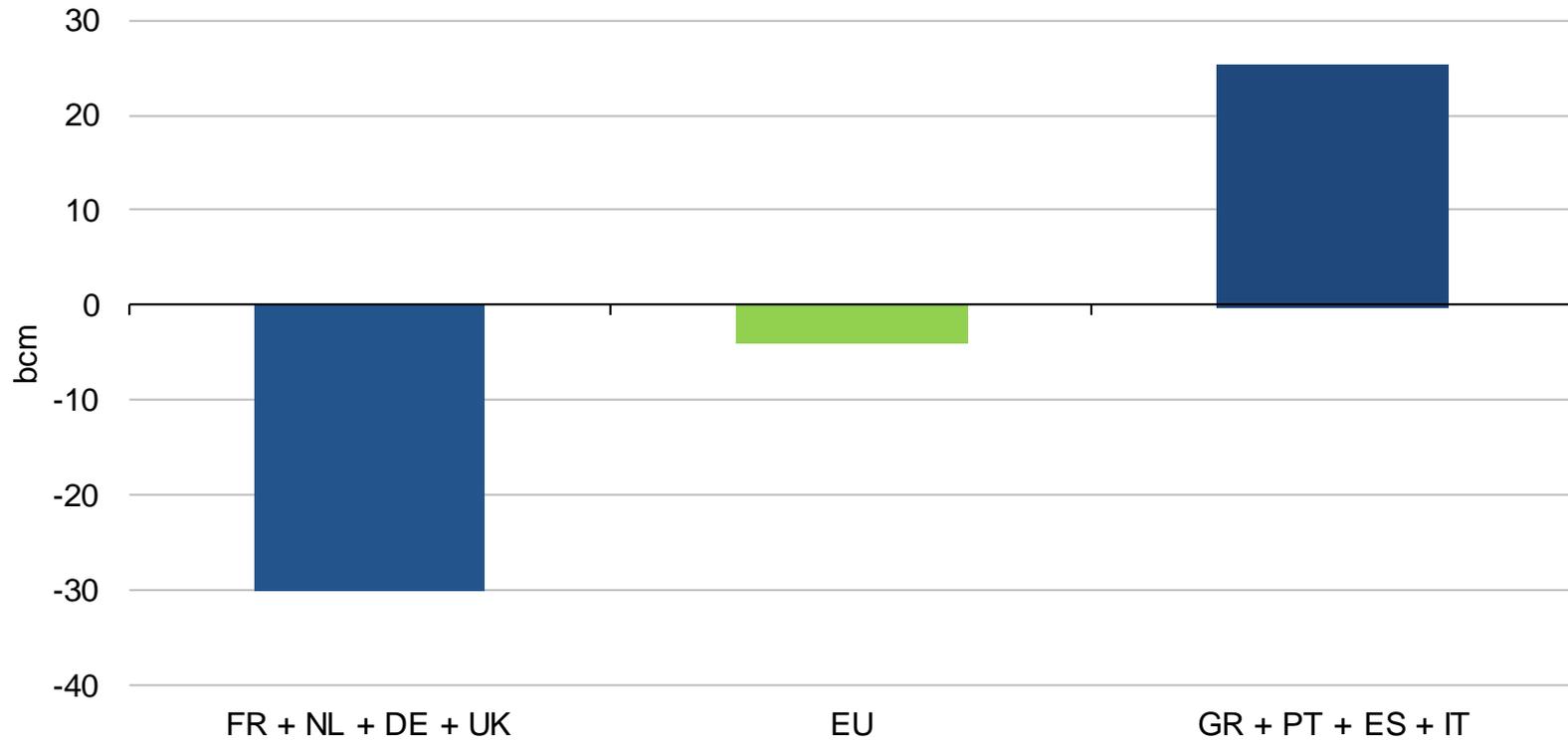
Source: IEA for historical data, SG Cross Asset Research estimates

2001-2011 CAGR GAS DEMAND



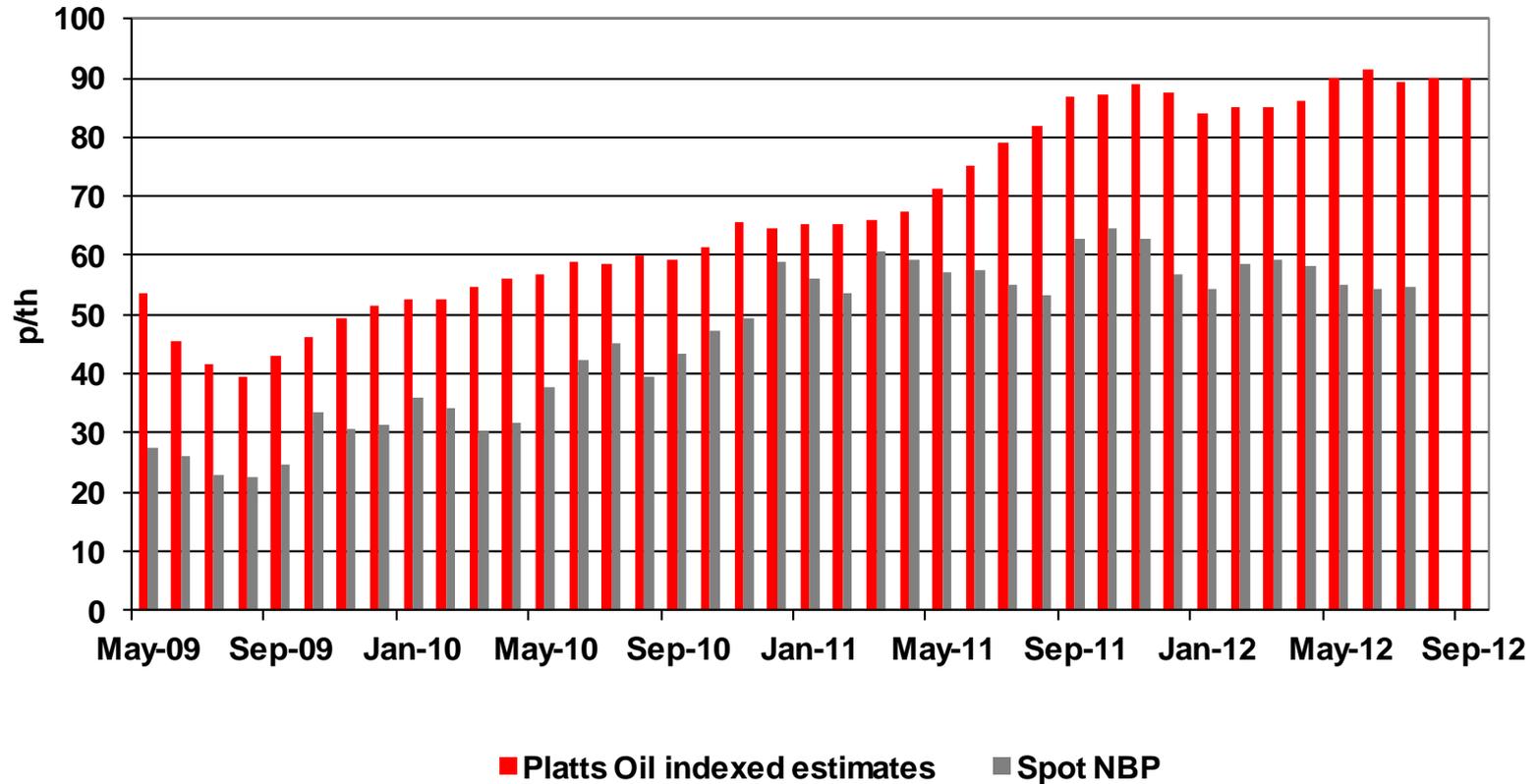
Source: SG Cross Asset Research / BP 2011 Statistical Review

2001-2011 DROP IN MATURE COUNTRIES WAS NOT MITIGATED



Source: SG Cross Asset Research / BP 2011 Statistical Review

TOP OBLIGATIONS & PREPAID GAS CAP SPOT PRICE

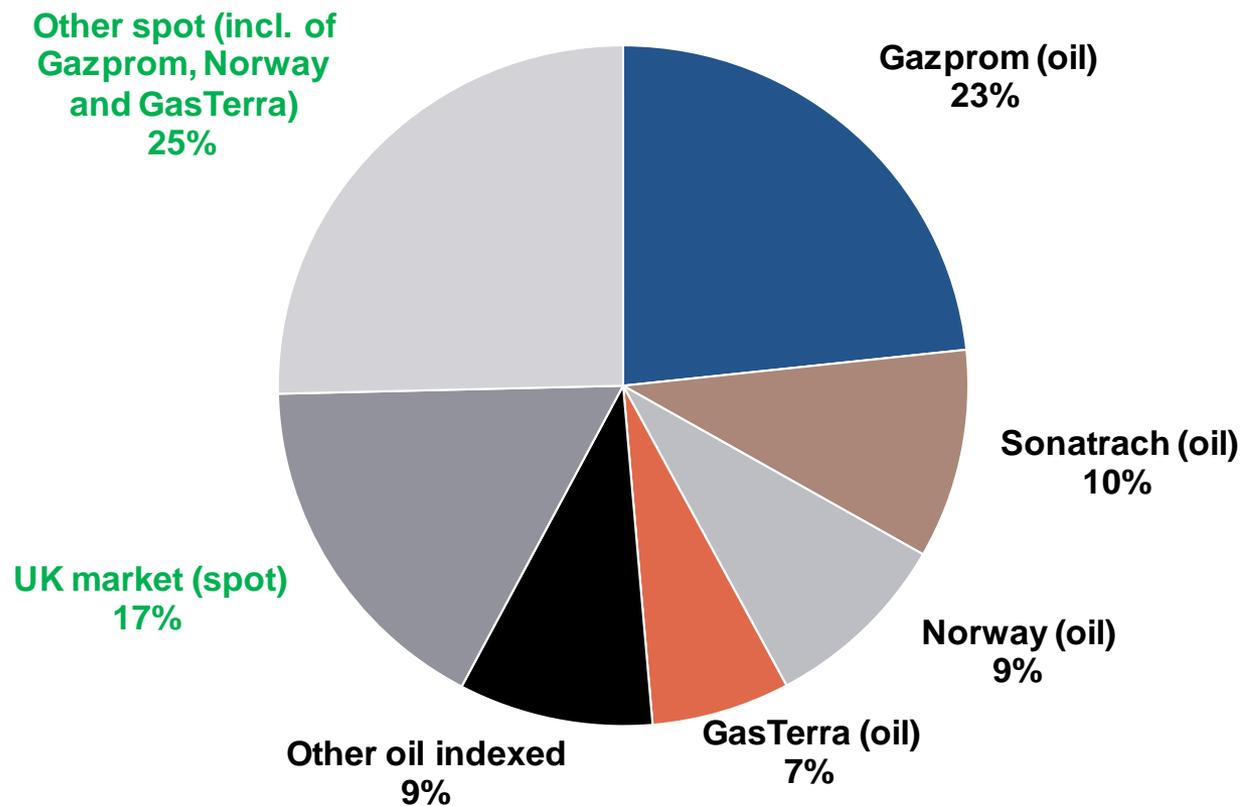


Source: SG Cross Asset Research, Platts, Reuters

EUROPEAN SUPPLY: ON THE VERGE OF BEING MOSTLY SPOT-INDEXED...

Estimated split of European gas supply in 2011

58% still oil-indexed



Source: SG Cross Asset Research

... BEFORE 2014E

Estimated split of European gas supply in 2012
55% still oil-indexed

Other spot (incl. of
Gazprom, Norway
and GasTerra)
28%

Gazprom (oil)
23%

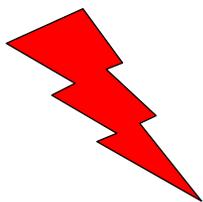
Sonatrach (oil)
10%

Norway (oil)
7%

GasTerra (oil)
6%

Other oil indexed
9%

UK market (spot)
17%

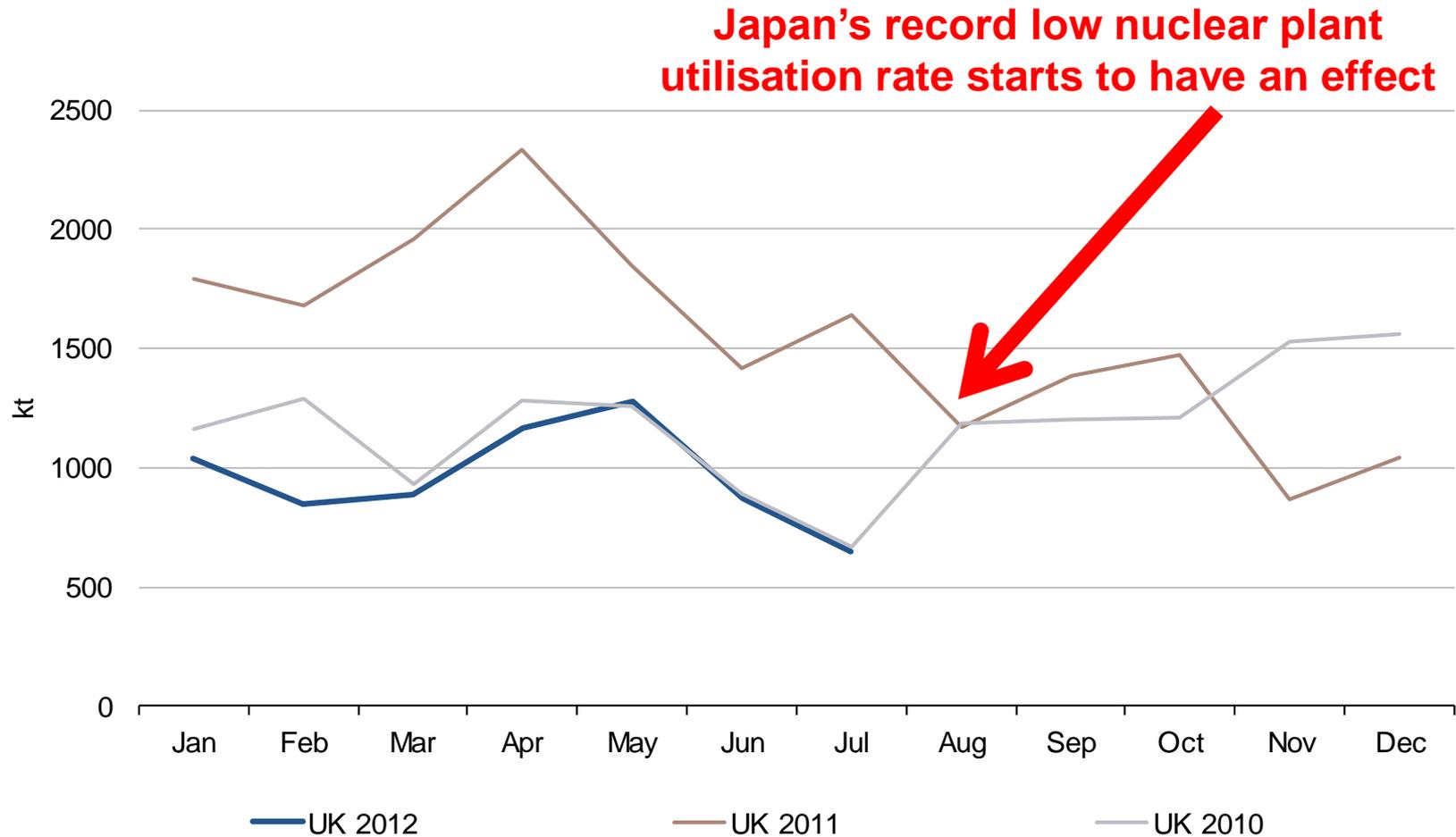


**PGNiG and RWE
arbitrations,
Statoil
renegotiations
and new
contracts could
reduce oil
indexation to
below 50%**



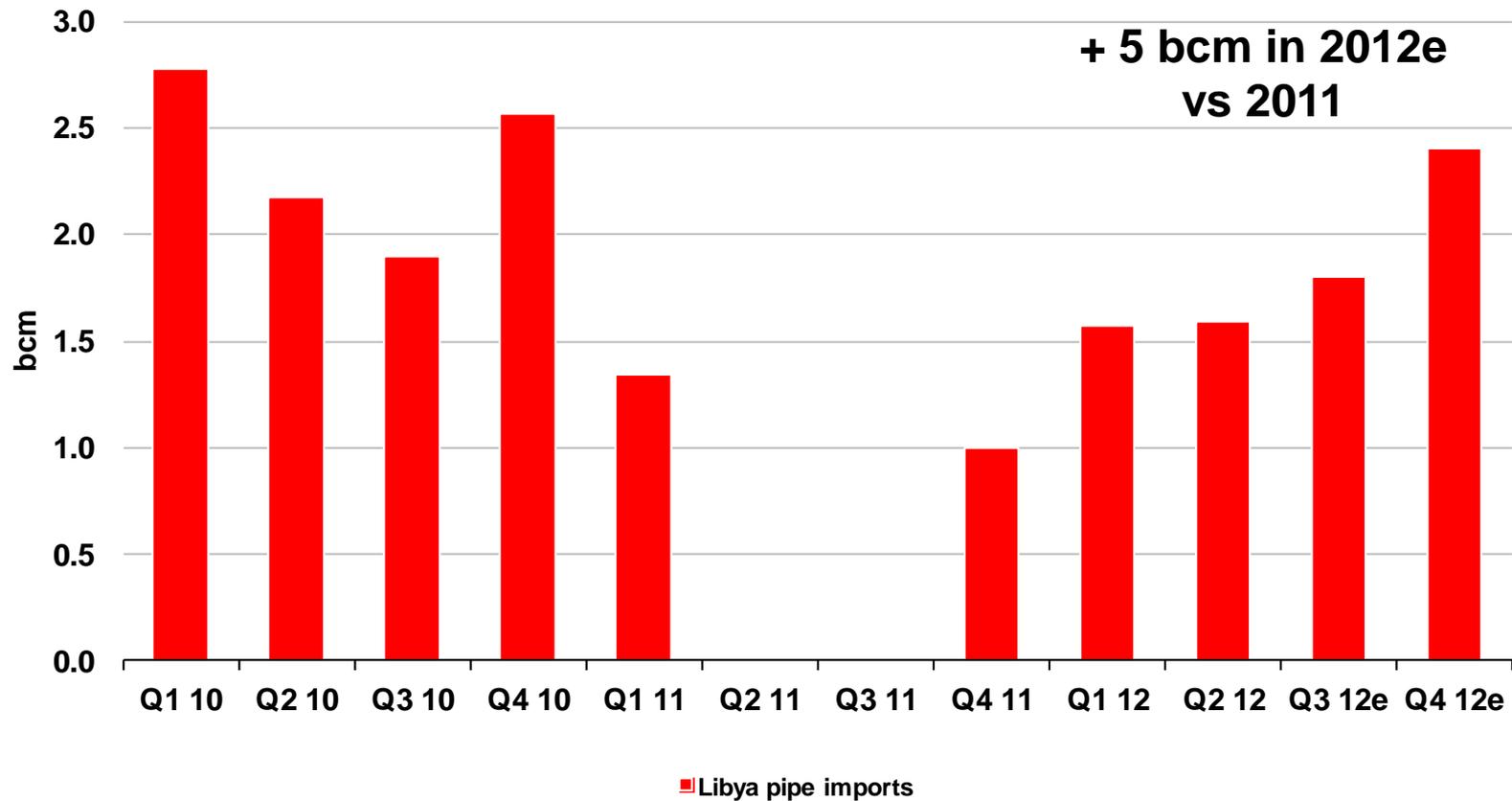
Source: SG Cross Asset Research

UK LNG IMPORTS



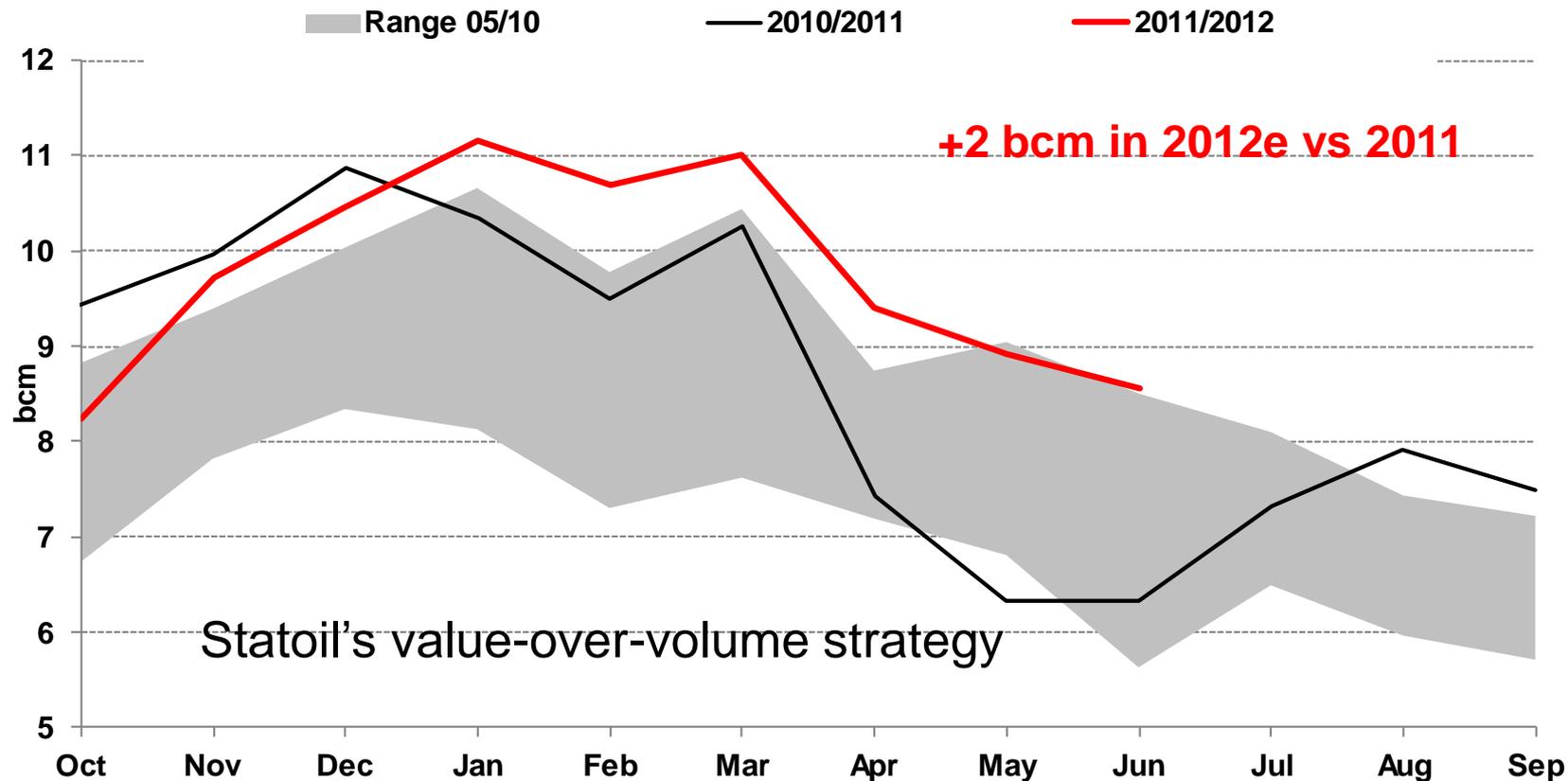
Source: SG Cross Asset Research, Waterborne

GREENSTREAM FLOWS



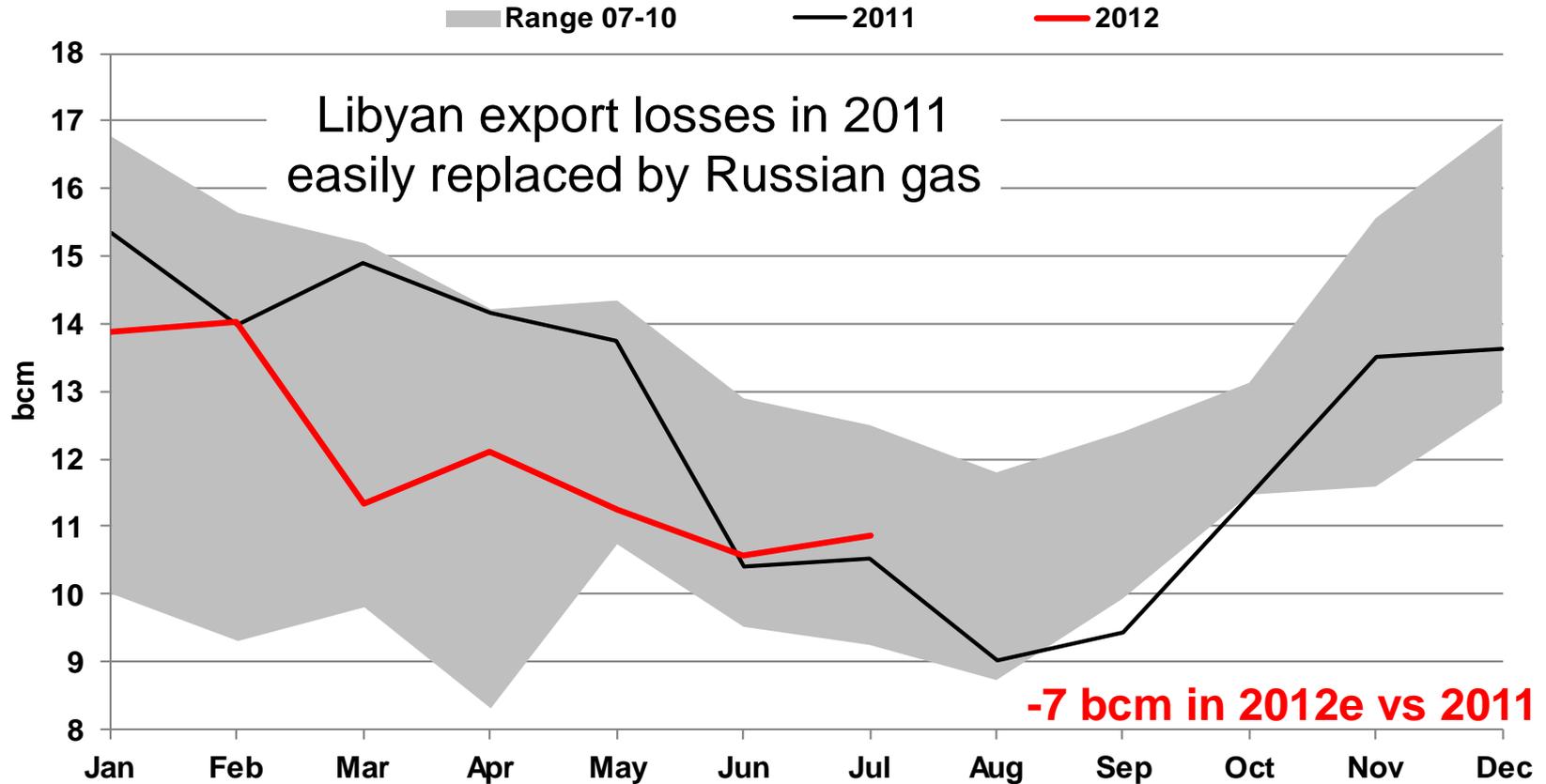
Source: SG Cross Asset Research, Snam Rete Gas

NORWAY MONTHLY PRODUCTION



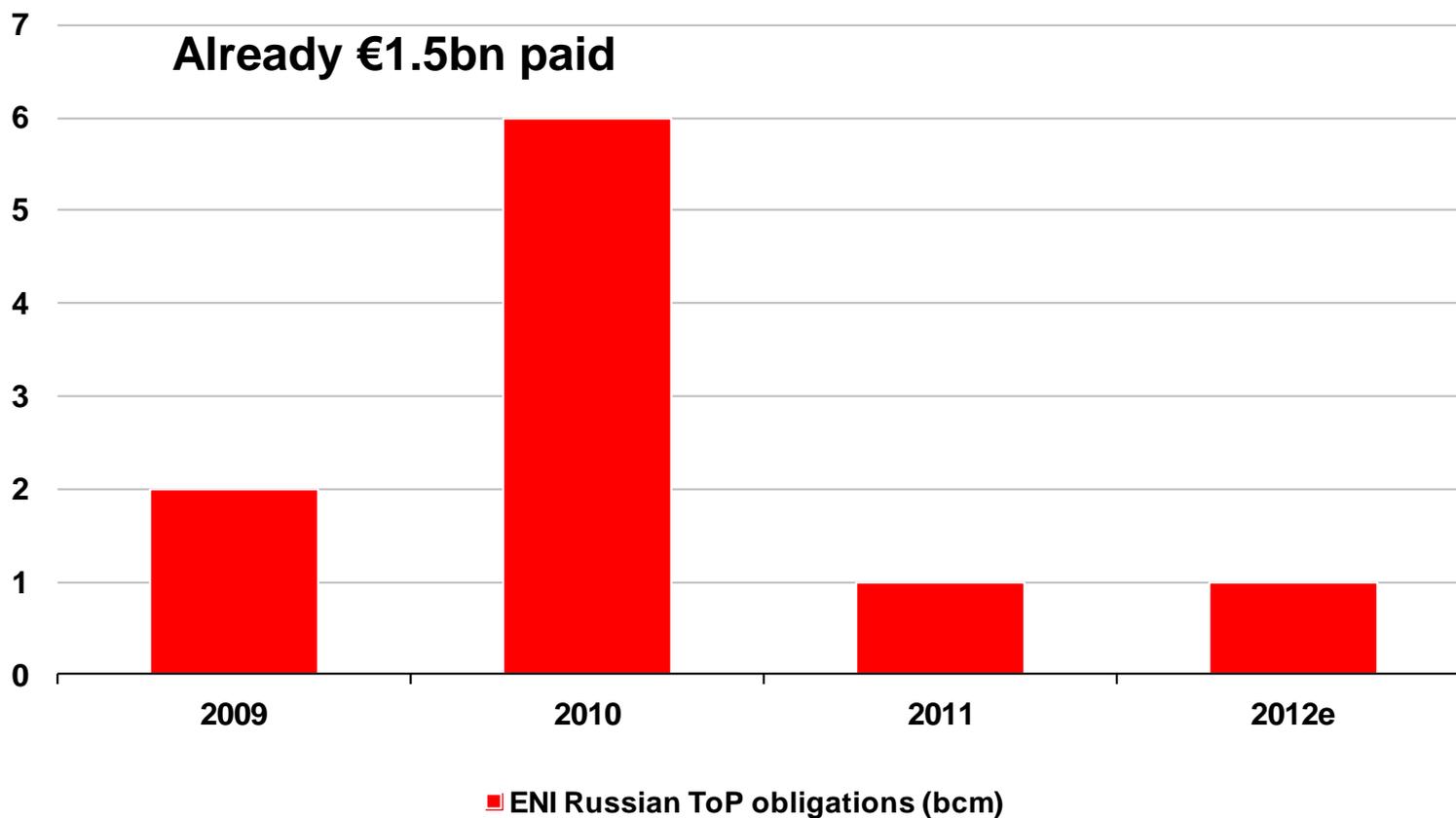
Source: Norwegian Petroleum Directorate, SG Cross Asset Research

GAZPROM EXPORTS TO WESTERN EUROPE



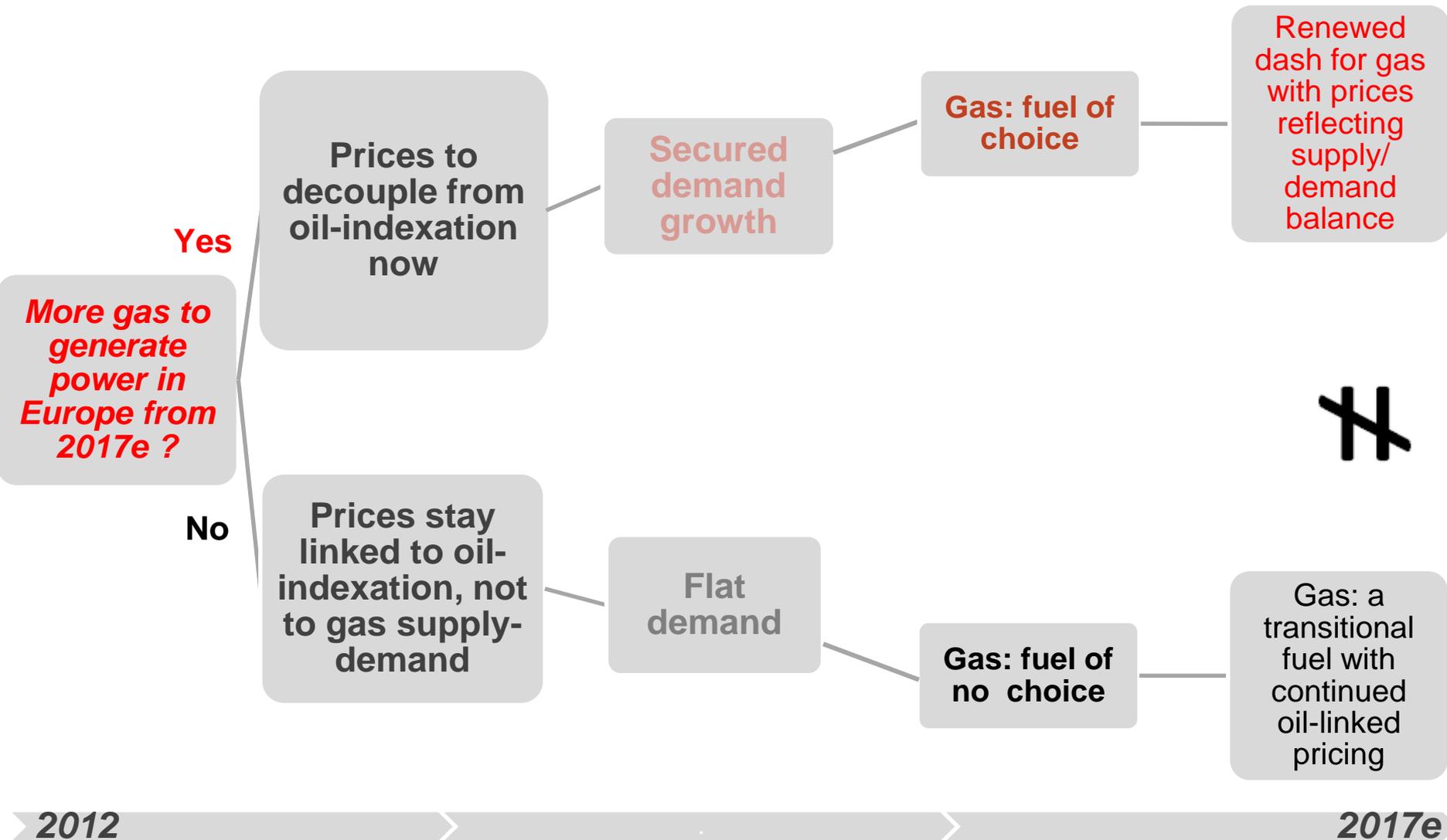
Source: SG Cross Asset Research

NEW ENI RUSSIAN TAKE-OR-PAY OBLIGATIONS IN 2012E?

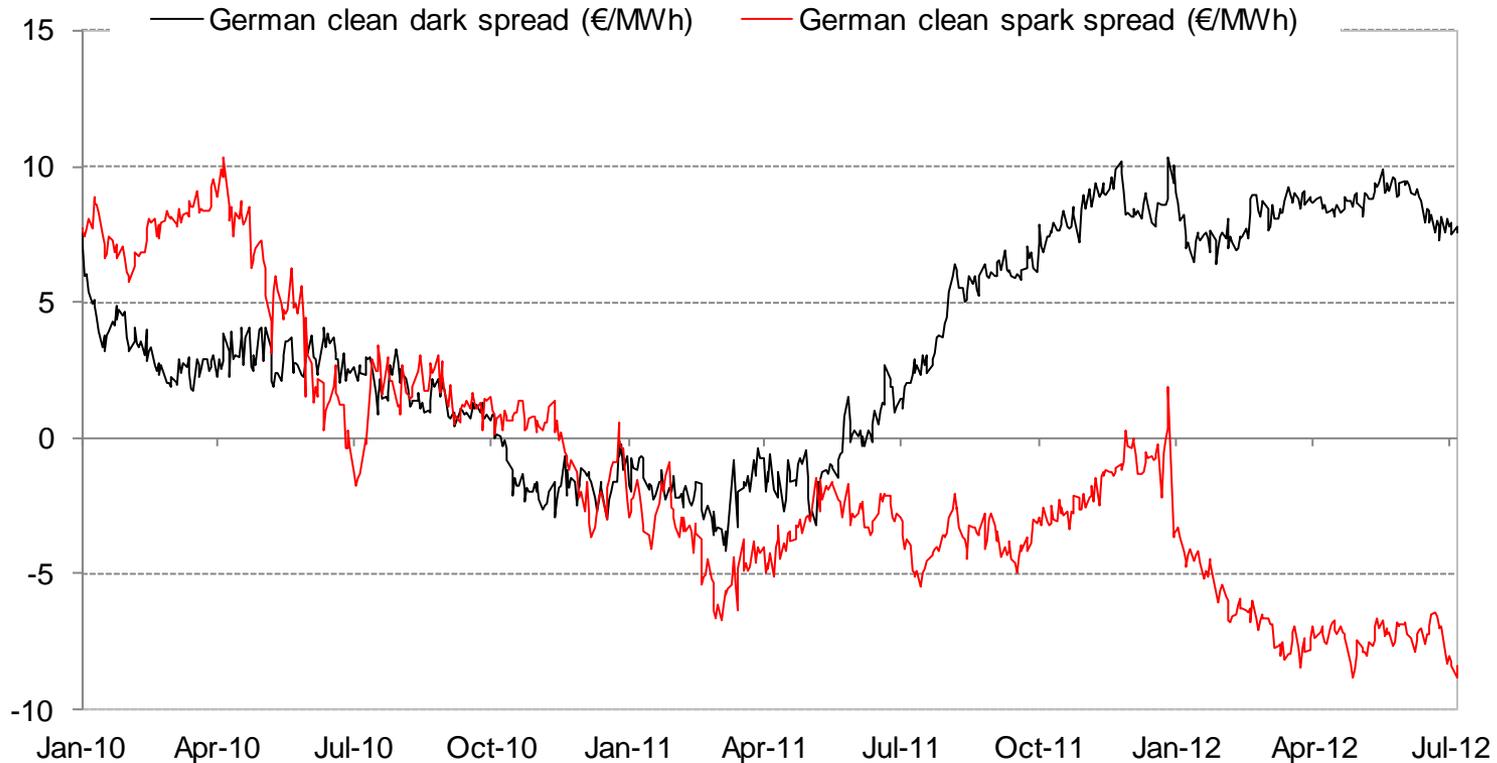


Source: company data, SG Cross Asset Research

OIL-LINKED PRICES OR RENEWED DASH FOR GAS?

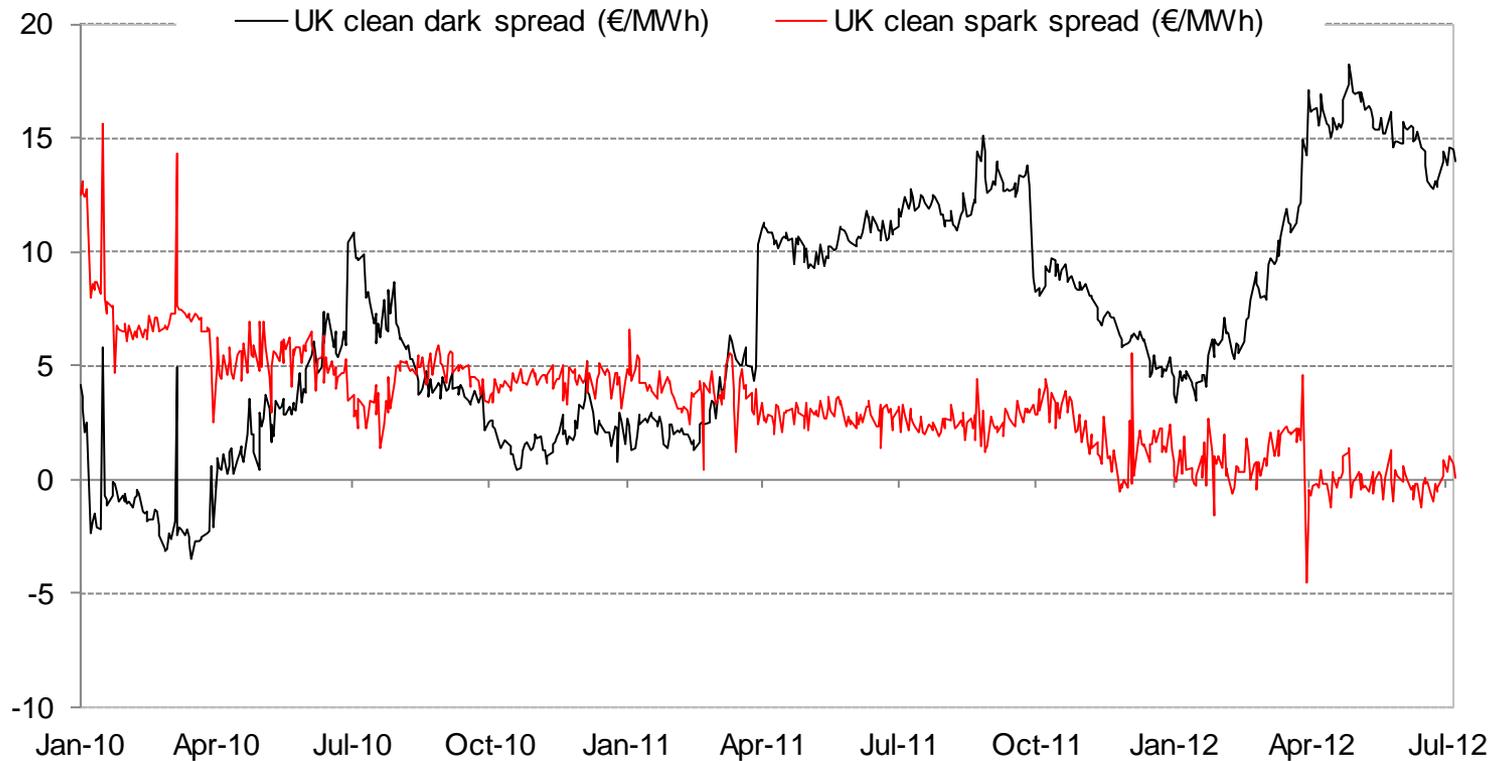


COAL MUCH MORE PROFITABLE THAN GAS IN GERMANY...



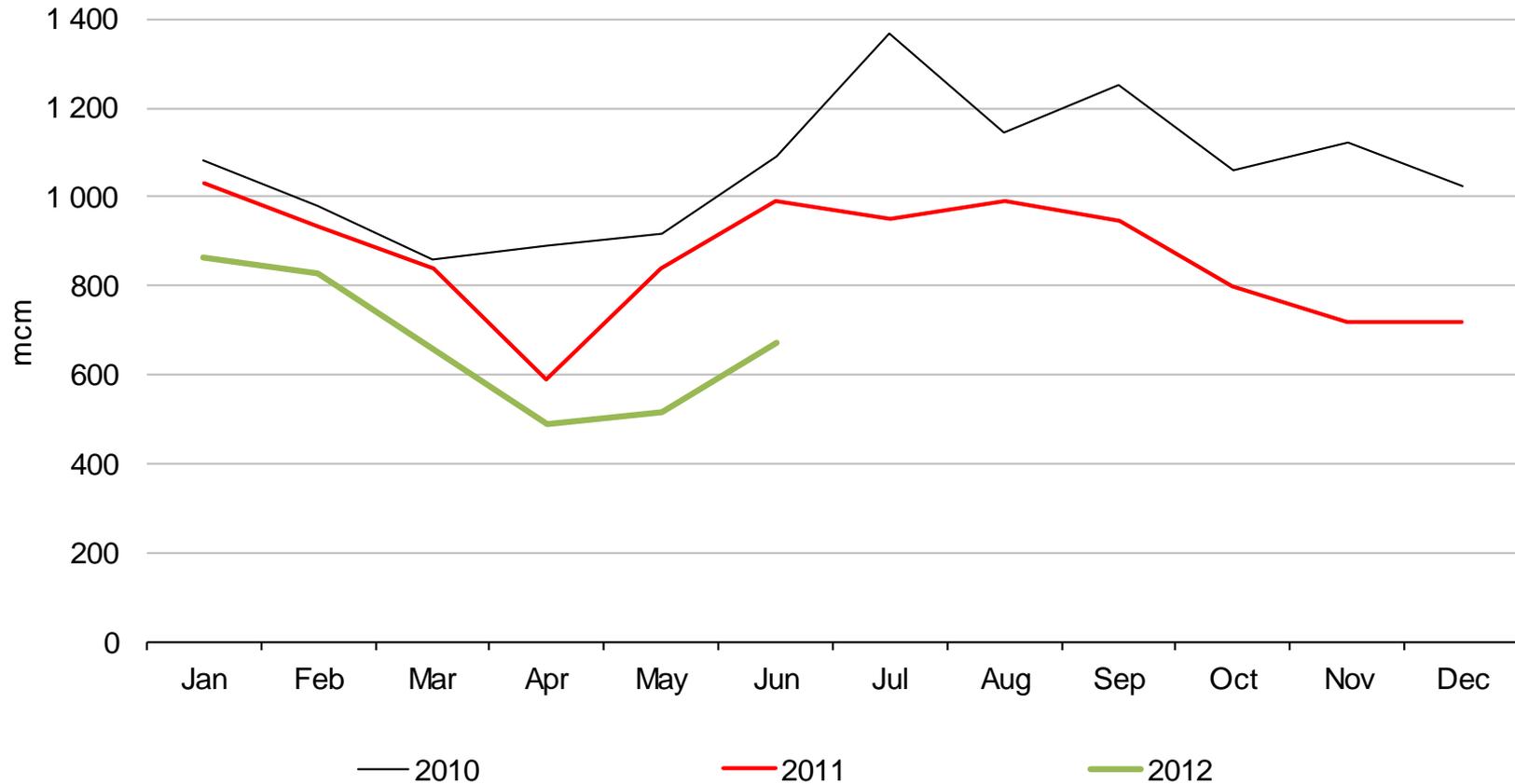
Source: SG Cross Asset Research, Reuters

COAL DISPLACING GAS IN UK...



Source: SG Cross Asset Research, Reuters

COAL IMPACTING GAS BURN IN SPAIN, NEGATIVELY...



Source: SG Cross Asset Research, Enagas

SG EUROPEAN ANNUAL GAS BALANCE (BCM)

	2008	2009	2010	2011	2012e	2013e	2014e	2015e	2016e	2017e
Europe consumption	520	494	521	463	463	465	467	470	474	479
Norway production	100	103	107	103	105	106	107	108	109	110
Netherlands production	86	80	85	81	80	80	80	80	80	80
UK production	73	62	60	47	42	38	35	32	30	27
Other Europe production	47	44	41	39	39	38	38	36	35	36
Russia imports	126	116	118	119	112	114	116	119	122	124
Algeria pipe imports	35	30	35	33	33	33	33	33	33	33
Libya pipe imports	10	9	9	2	7	11	11	11	11	11
LNG net imports	48	56	70	76	52	53	53	55	59	63
Net Effective Storage Injection / (Withdrawal)	0	1	(1)	33	3	2	0	0	(1)	0
NBP (p/th)	62	32	41	58	57	61	63	66	68	68

Source: SG Cross Asset Research / IEA for historical data

GAS VS COAL IN POWER GENERATION

- **Fuel switching in favour of coal, as well as the additional pressure coming from renewable production, could mean a decrease in gas demand for power generation as high as 20 bcm in 2012e for Europe**
- **For gas to become competitive for power generation, one would need either:**
 - Coal to move up to 150 \$/t (about +50% vs actual level)
 - Gas to move down to 40p/th (about -30% vs actual level)
 - Carbon prices to increase to 30 €/t (at least x4 vs actual level)

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