

# Half Year Results

Six Months Ended 30 June 2012

31 July 2012



# Agenda

**Regulation and Biomass**  
**H1 2012 Business and Market Review**  
**Dorothy Thompson**  
Chief Executive

**H1 2012 Financial Review**  
**Tony Quinlan**  
Finance Director



# H1 2012 Summary

Dorothy Thompson - Chief Executive

Biomass R&D – very encouraging engineering progress

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Government decisions support transformation to predominantly biomass-fuelled generator

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H1 2012 profits in line with expectations – continued strength in operations

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Strong hedge – doubled 2013 forward sales at good margins

EBITDA

**£154m**

Underlying Earnings Per Share

**28.9p**

Interim Dividend

**14.4p/share** (£53m)



# Regulation

## Unit Conversion – the Context

January 2010 – conversion strategy

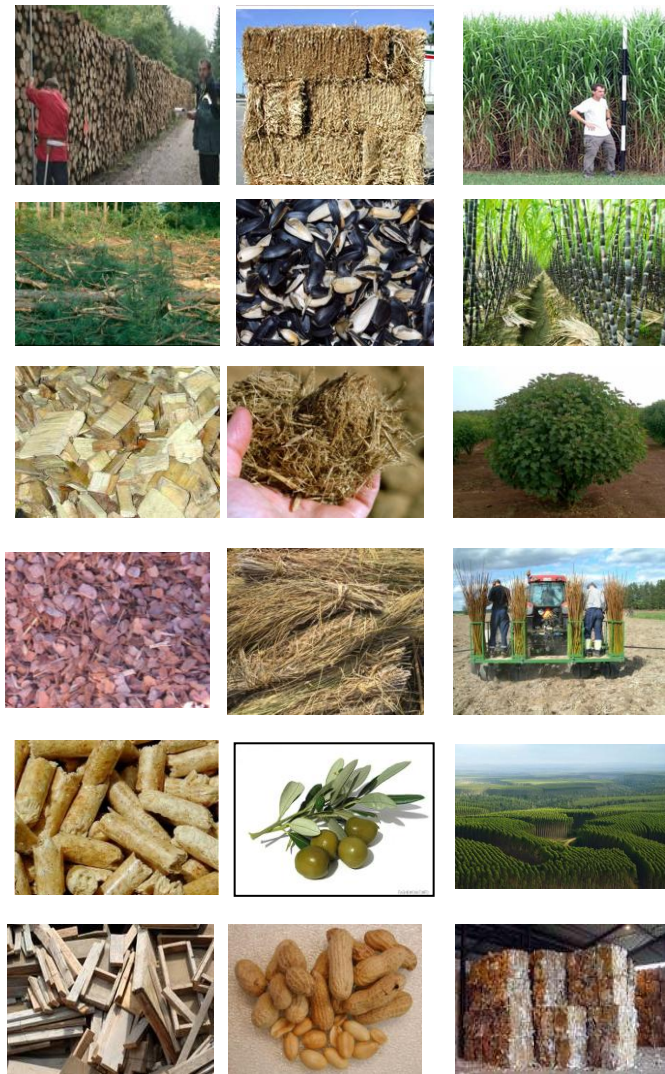
October 2011 – Banding Review Consultation

October 2011 to July 2012

- Government support for biomass
- Tilbury demonstration
- Wide generator enthusiasm for co-firing / conversion
- Further information requests

25 July – Banding Review decision

Attractions of conversion



# Regulation

## ROC Banding Review Decision

### Consultation conclusions

1.0 ROC awarded for units fully converted to biomass

10% additives allowed in converted units

First unit conversions permitted in April 2013

Sustainability criteria grandfathered to 2020

- Subject to no EU restrictions

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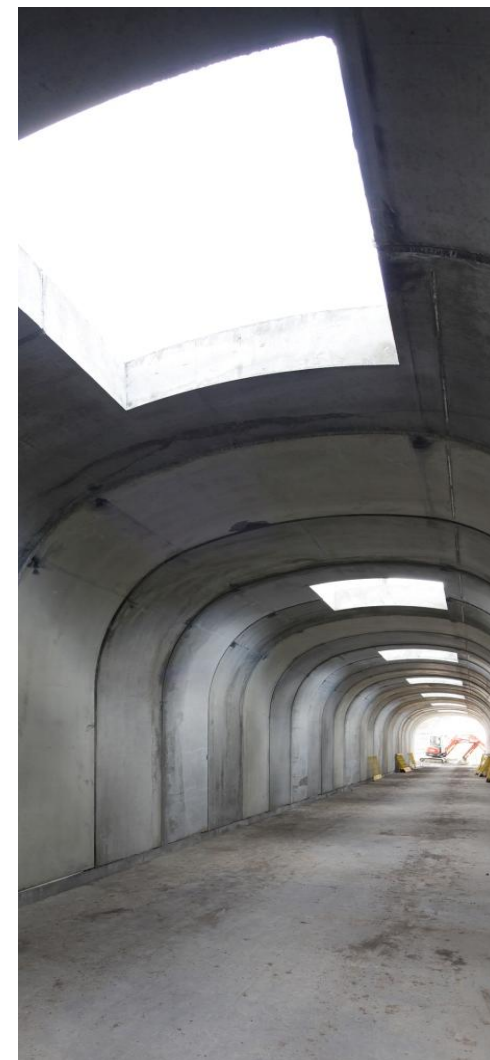
### Other Consultation points

Low / uneconomic support for co-firing below 50%

- Avoids 'gaming' by restricting biomass generation at low levels of investment

Develop tools to manage 2014+ co-firing and conversion

- Protection against a 'dash' to biomass



# Biomass R&D Work

## Combustion Trials

Proven technical feasibility of unit conversion

- High availability at 90% biomass

Trialled range of additives to:

- Enable high availability
- Contribute to efficiency and output performance

Analysing test results for efficiency and load ranges

- Unmodified unit – adverse impact on efficiency and output
- Optimised unit – very encouraging progress
  - Achieved through plant re-engineering and additives
- Work on-going, alongside reviews of:
  - Corrosion test results
  - Optimisation of NOx performance

Successful trials underpin confidence that first converted unit will be available in Q2 2013

Boiler Tubes –  
Front End of Unit



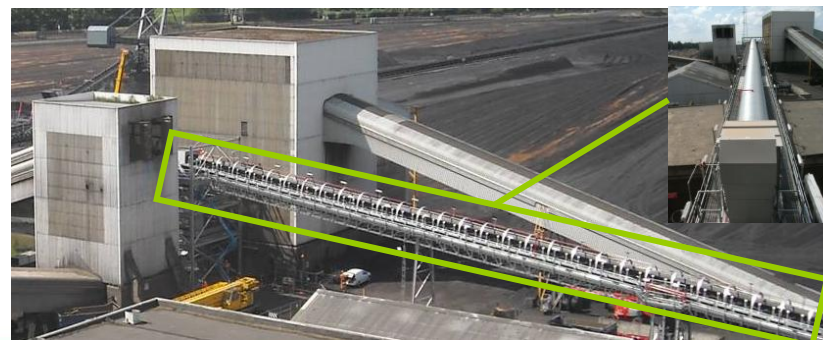
Superheater –  
Back End of Unit



Modified Existing Direct Injection Systems for Unit Trials



New Conveyor for Unit Trials



# Biomass Sourcing

## Supply Chain Update



Fibre

Harvesting

Pellet plant

Overseas  
rail

Overseas  
port

Shipping

UK port

UK rail

### Further progress in fuel contracting

- Secured rights to 2Mt biomass for 2013 ROC year
- Progressed term contracts for 2013 and beyond
- Advanced strategic partnerships for forestry sources
- Momentum will increase following Banding Review decisions

### Advancing port, shipping and rail arrangements

- Facilities and assets under development with key agreements progressed

### Development of pellet plants

- Sites identified and first planning / permit applications submitted
- First investment decisions targeted end 2012
- Phased to support second unit conversion

Sustainable biomass supply chain developed for 3 converted units within 5 years



# H1 2012 Business Review

## Operational Performance

Maintaining world class standards of safety and availability

85% Availability (H1 2011: 86%)

4.4% Forced Outage Rate (H1 2011: 4.2%)

- 10.8% Planned Outage Rate (H1 2011: 9.8%)
- Net generation 13.6TWh (H1 2011: 13.1TWh)
- Long-term FOR target of 5%

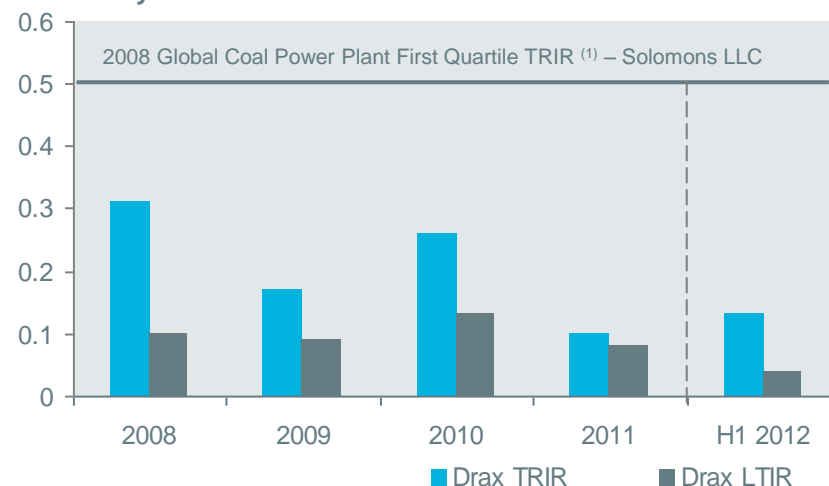
82% Load Factor (H1 2011: 80%)

Turbine upgrade completed – efficiency c. 40%

### Estimated UK Plant Load Factors

Plant	Average H1 2012 Load Factor <sup>(2)</sup>
Drax	82%
Large nuclear	74%
Coal (excl. Drax)	55%
Gas	28%

### Safety Performance



### Drax Fuel Mix (with %'s based on burn by heat)

	H1 2012		H1 2011		12m 2011
	Tonnes	Mix%	Tonnes	Mix%	Mix%
Coal	4.6Mt	87%	4.6Mt	88%	87%
Pond Fines	0.4Mt	4%	0.3Mt	3%	3%
Petcoke	0.1Mt	2%	0.0Mt	1%	1%
Biomass	0.1Mt	2%	0.6Mt	8%	5%
Biomass R&D	0.4Mt	5%	-	-	4%

(1) TRIR = Total Recordable Injury Rate, LTIR = Lost Time Injury Rate

TRIR first quartile benchmark worsened to 1.2 in 2009 Solomon study

(2) Drax estimate of average load factor for January to May 2012 based on settlement data



# H1 2012 Business Review

## Haven Power Update

### Credit efficient route to market

- Credit risk more controllable than collateral risk

### Targeting 10 - 15TWh business

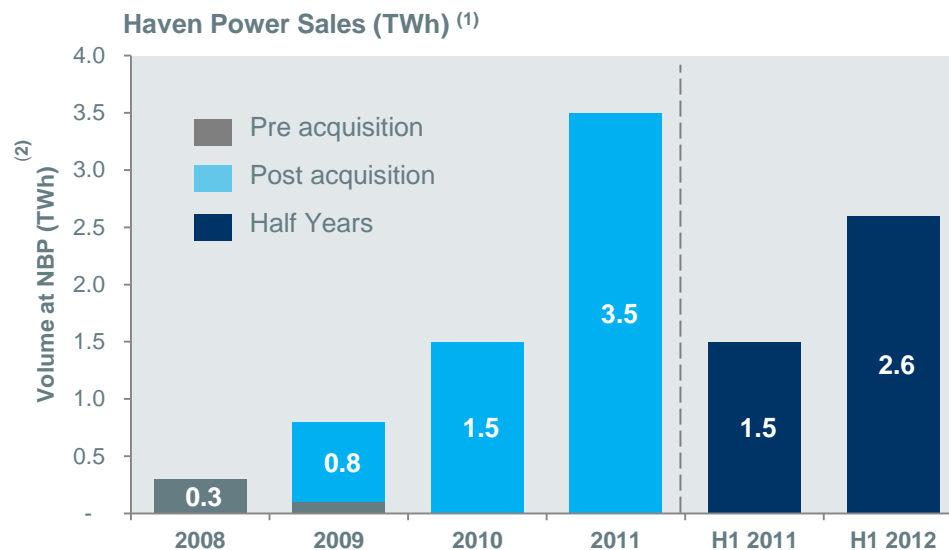
- Industrial & Commercial (“I&C”) and Small & Medium Enterprises (“SME”) markets
- I&C contracts mainly flexible price beyond first year

### Substantial growth delivered

- H1 2012 retail sales £219m (H1 2011: £115m)
- 4.4TWh fixed price contracted for next 12 months
- Bad debt experience remains low

### Increased competition across business market – sales growth remains business priority

- Now expect modest loss 2012 – 2015



(1) Haven acquisition date: March 2009

(2) NBP = Notional Balancing Point

# H1 2012 Business Review

## Trading

Positions Under Contract as at 23 July 2012	2012	2013	2014
<b>Power Sales - TWh</b>	<b>26.3</b>	<b>16.8</b>	<b>4.4</b>
Comprising:			
▪ Fixed price TWh at average achieved price £ per MWh	22.7 @ 51.9	14.2 @ 51.8	1.8 @ 54.9
▪ Fixed margin and structured contracts TWh	3.6	2.6	2.6
<b>Carbon – TWh equivalent</b>			
Emissions allowances hedged (including UK NAP allocation, market purchases, structured contracts and benefit of biomass co-firing)	<b>26.0</b>	<b>16.5</b>	<b>4.3</b>
<b>Solid Fuel – TWh equivalent</b>			
At fixed price / hedged (including structured contracts)	<b>27.1</b>	<b>18.6</b>	<b>11.3</b>

Almost fully hedged for 2012; more than doubled 2013 hedge since 31 Dec 2011

Alternative trading strategy will be implemented alongside biomass expansion

- Two generation businesses – biomass and coal

# Market Review: Power

## UK power market

- Power prices continue to be driven by gas market

## Despatch dynamics

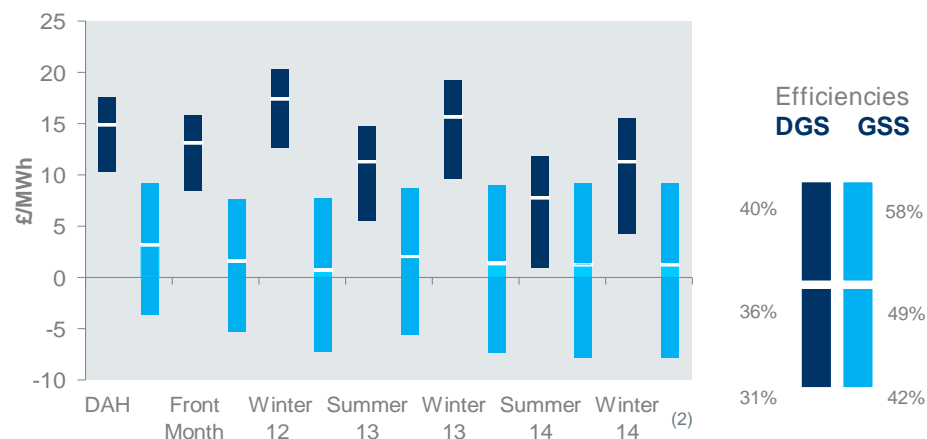
- Plant efficiencies significant factor in load profiles
  - Different load factors for same fuel plant
  - Low GSS resulted in gas plant capacity withdrawn / considered for closure
  - Closure date announced for several opted-out coal plants

## System balancing support

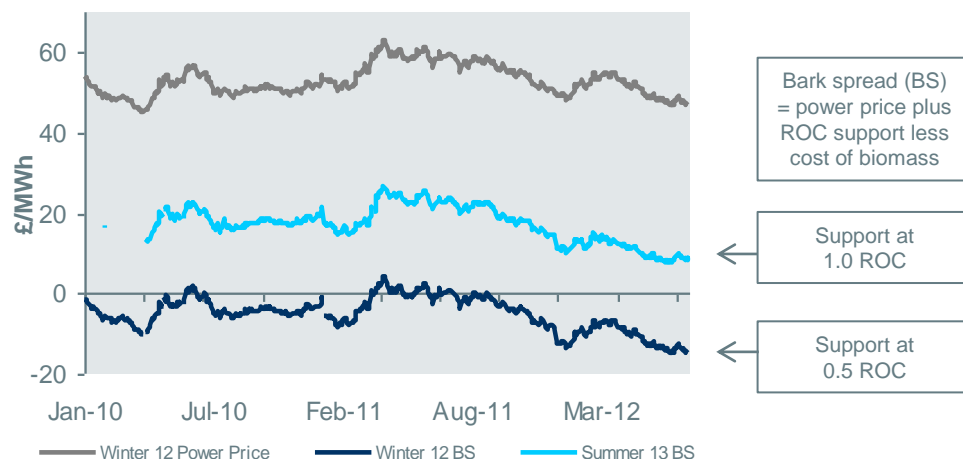
- Drax will continue to play a significant role
- Wind output now ranges from nil – 6GW
  - Summer / Winter low demand is c. 20GW / 32GW

Bark spread weakened on lower power price

Range of Market DGS and GSS <sup>(1)</sup> by Efficiency (Baseload)



Power Price and Indicative Market Bark Spread (Baseload)



(1) DGS = dark green spread, GSS = green spark spread

(2) DGS / GSS includes carbon price support for Summer and Winter 2013 and 2014

Sources: Brokered Data, Drax assumptions, and based on market prices on 20 July 2012  
Biomass costs based on UK and Global Bioenergy Resource – Final Report, AEA, March 2011

# Market Review: Gas

## Fukushima impact on global LNG market continues

- Japanese nuclear constrained
  - 2 of 54 reactors in operation
- Increased Asian LNG prices limits UK spot market attractiveness
  - Reduced LNG imports

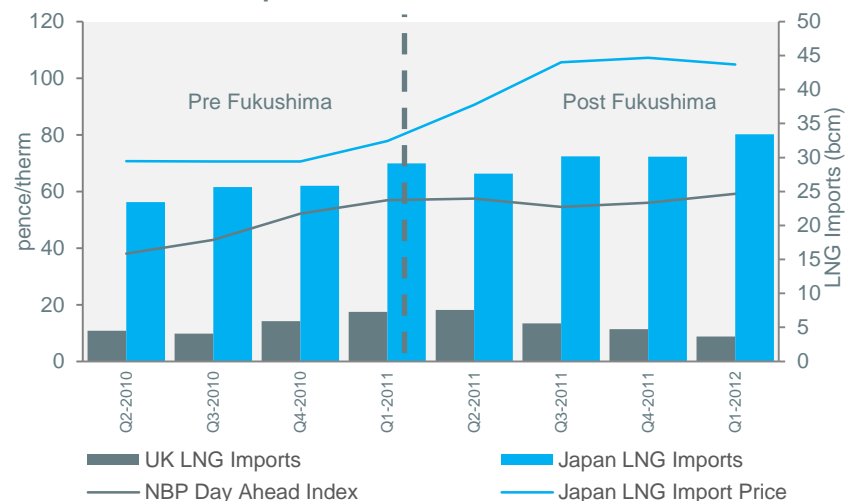
## UK spot gas prices remain strong

- Prices pulled towards oil indexed European prices to attract imports
- Prices remain at a premium to US prices

## Increased UK import dependency

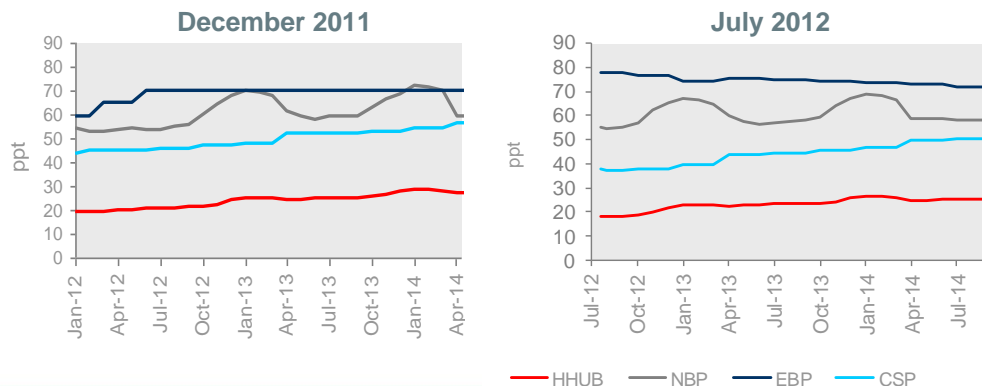
- Continued decline of UKCS

Fukushima Impact on LNG



Source: Bloomberg, DECC, Brokered Trades

NBP, Henry Hub and EBP™ Index Forward Curves



Source: European Benchmark Price (EBP™ Index): Eclipse Energy Group, NBP and Henry Hub: Bloomberg and Brokered Trades. EBP is a trademark owned by Eclipse Energy Group



# Market Review: Steam Coal

Weak global prompt market – excess supply

Low US gas prices drive US coal exports

- US exports to EU up > 70% YoY
- Switching from coal to gas generation
- High stocks at US coal generators

Colombian and Australian Q1 exports up c. 20% YoY

Chinese imports remain strong but not enough to absorb over supply

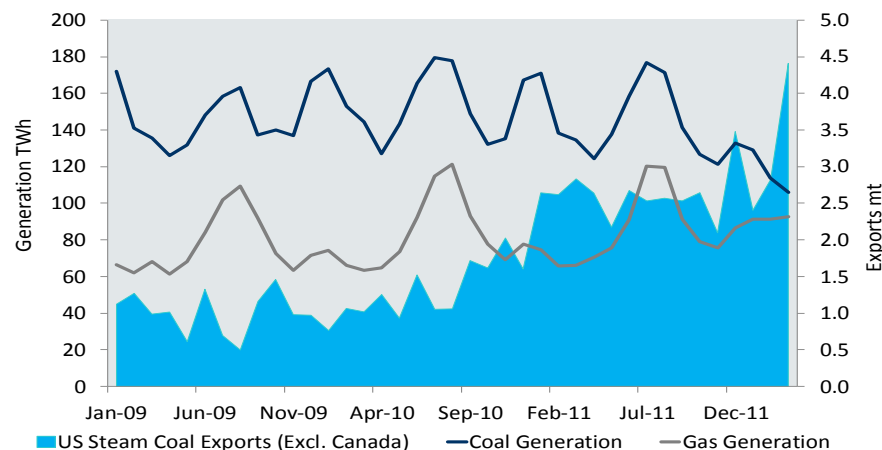
- Lower than expected demand – record high stocks in China

API2 prompt prices down 20% in 2012

- Low international prices
- High stocks in Europe
- US and Colombian cargos now targeting Pacific market

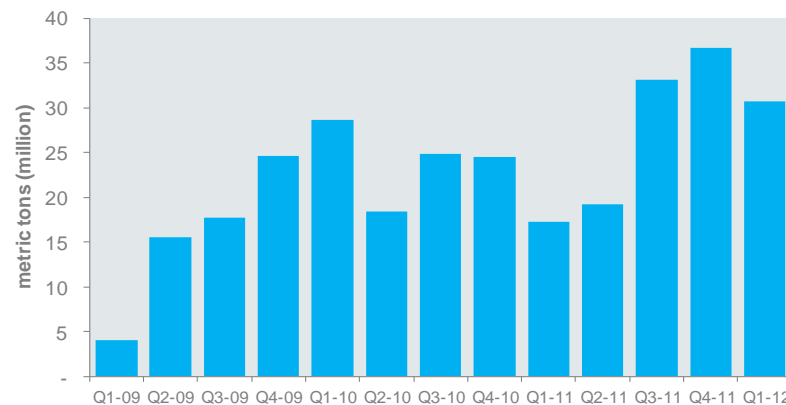
UK domestic coal producers under pressure

USA: Coal Exports and Gas / Coal Generation



Source: EIA and IHS CERA's Global Steam Coal Advisory Service

Chinese Seaborne Coal Imports



Source: IHS CERA's Global Steam Coal Advisory Service

# H1 2012 Financial Review - Highlights

Tony Quinlan - Finance Director

EBITDA

£154m

Net Cash <sup>(2)</sup>

£233m

Underlying Earnings Per Share <sup>(1)</sup>

28.9p

Interim Dividends

14.4p/share (£53m)

- ✓ H1 2012 profits – in line with expectations
- ✓ After additional biomass costs
- ✓ Continued strength in operations

- ✓ Strong hedge – doubled 2013 forward sales at good margins
- ✓ Strong balance sheet
- ✓ Funding – initial steps taken for biomass transformation

(1) Excludes unrealised gains on derivative contracts totalling £21m (less tax effect)

(2) Cash of £241m (comprising cash of £231m and short term investments £10m) less borrowings of £8m

# H1 2012 Financial Review

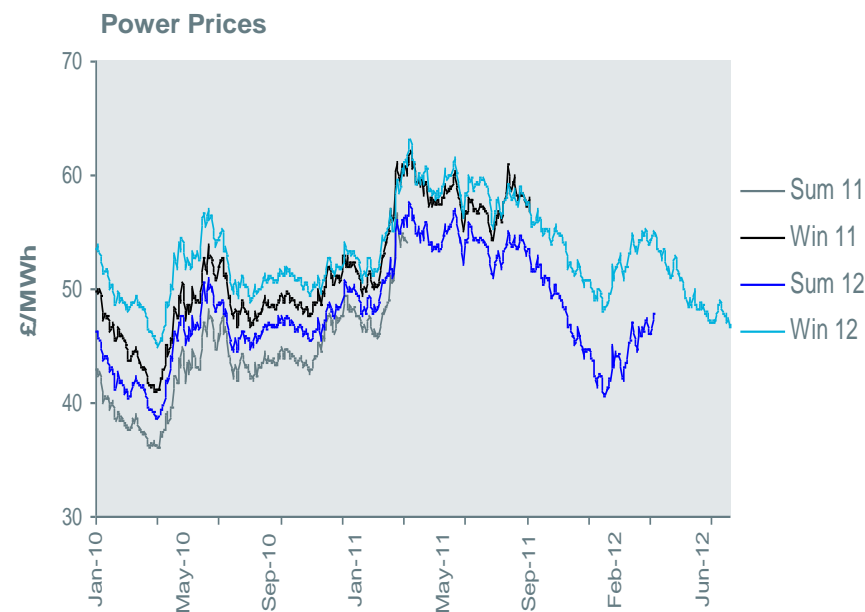
## Income Statement - Summary

	H1 2012	H1 2011	% Year-on-Year
Revenue	868	866	L
Cost of Sales	(613)	(585)	5%
<b>Gross Margin</b>	<b>255</b>	<b>281</b>	<b>-9%</b>
Operating Costs	(101)	(91)	11%
<b>EBITDA</b>	<b>154</b>	<b>190</b>	<b>-19%</b>
IAS39 Unrealised Gains on Derivative Contracts	21	25	
Depreciation	(28)	(28)	
<b>Operating Profit</b>	<b>147</b>	<b>187</b>	
Net Finance Costs	(6)	(18)	
<b>Profit Before Tax</b>	<b>141</b>	<b>169</b>	
Tax Charge – Before Exceptional Items	(20)	(35)	
Exceptional Tax Credit	-	198	
<b>Reported Earnings</b>	<b>121</b>	<b>332</b>	
<b>Underlying Earnings</b>	<b>106</b>	<b>117</b>	<b>-9%</b>
<b>Reported Earnings Per Share (pence)</b>	<b>33</b>	<b>91</b>	
<b>Underlying Earnings Per Share (pence)</b>	<b>28.9</b>	<b>31.9</b>	<b>-9%</b>
<b>Total Dividends Per Share (pence)</b>	<b>14.4</b>	<b>16.0</b>	<b>-10%</b>

# H1 2012 Financial Review

## Income Statement – Revenue

In £m (unless otherwise stated)	H1 2012	H1 2011
<b>Total Revenue</b>	<b>868</b>	<b>866</b>
Wholesale Power Sales	627	733
Retail Power Sales	219	115
<b>Electrical Output (Net Sales) (TWh)</b>	<b>13.6</b>	<b>13.1</b>
<b>Average Achieved Price (£ per MWh)</b>	<b>52.0</b>	<b>55.3</b>
ROC/LEC Sales	11	6
Ancillary Services	6	8
Other Revenues	5	4
<b>Total Other Revenues</b>	<b>22</b>	<b>18</b>



Sources: Brokered Trades, Spectron

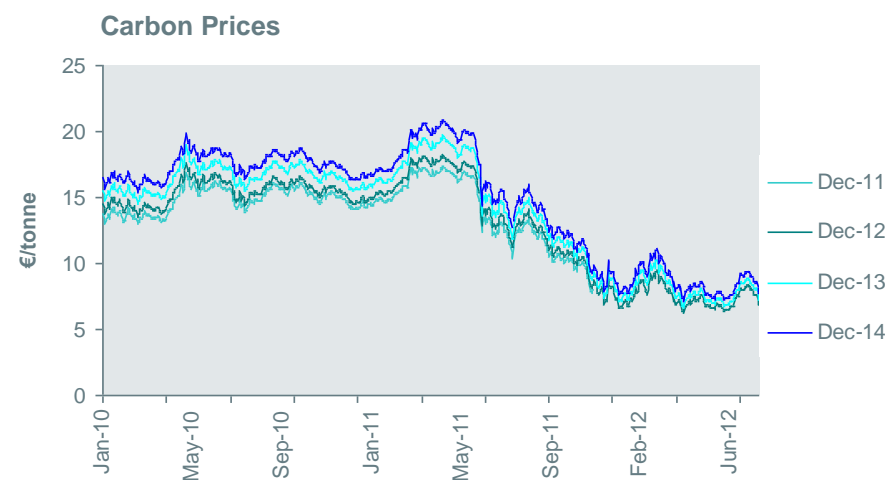
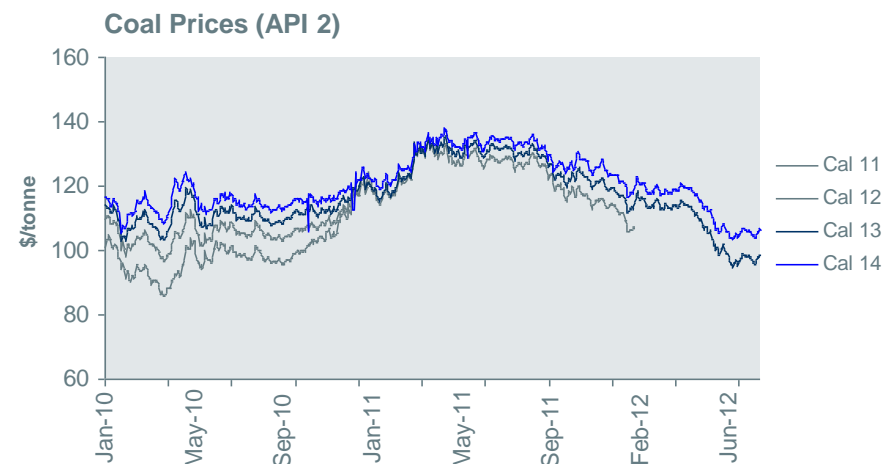


# H1 2012 Financial Review

## Income Statement – Cost of Sales

	H1 2012	H1 2011
<b>Total Cost of Sales</b>	<b>£613m</b>	<b>£585m</b>
Fuel and Carbon Costs <sup>(1)</sup>	£455m	£445m
Cost of Power Purchases	£58m	£78m
Grid Charges and Other Retail Cost of Sales	£100m	£62m
<b>Average Fuel Cost (excl. CO<sub>2</sub> costs)</b>	<b>£30.7/MWh</b>	<b>£29.8/MWh</b>
<b>Average Fuel Cost (incl. CO<sub>2</sub> costs)</b>	<b>£33.5/MWh</b>	<b>£34.1/MWh</b>
<b>Average Cost of Purchased CO<sub>2</sub> Allowances</b>	<b>£5.9/tonne</b>	<b>£13.0/tonne</b>

(1) H1 2012 Includes £15m additional biomass research and development costs (full year impact c. £20m)



# H1 2012 Financial Review

## Income Statement – Operating Costs

### Operating Costs – £101m in H1 2012

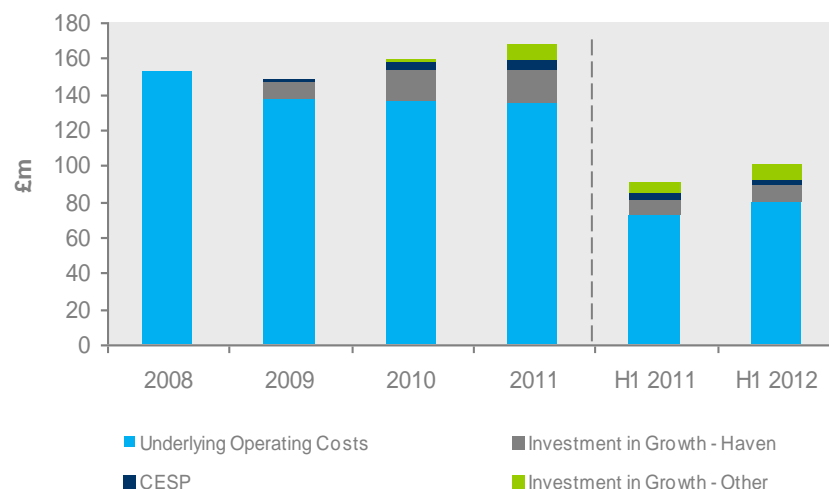
H1 2012 total operating cost increase £10m

- Underlying costs + £7m
- Investment in growth +£3m  
Haven, biomass R&D

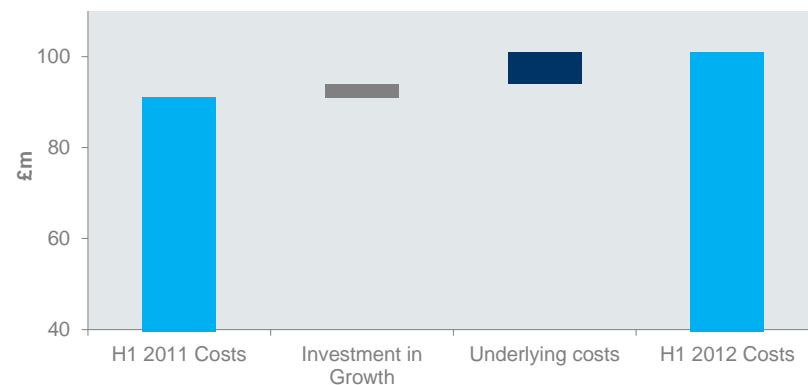
Full year 2012 operating cost guidance unchanged at £205m

- Double outage and business rates +£20m (12%)
- Underlying cost inflation: +£8m (5%)
- Investment in growth: +£10m (6%)

Operating Cost History (normalised for outages)



H1 2012 Operating Cost Bridge



# H1 2012 Financial Review

## Capital Investment

### Capital Investment – £90m in H1 2012

- Includes £70m for biomass project

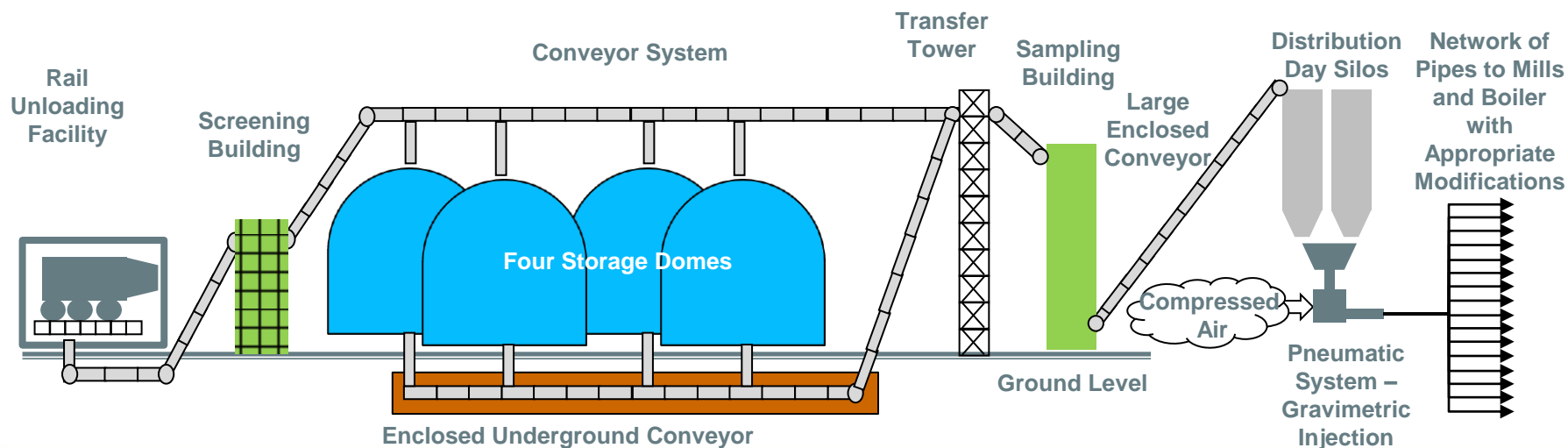
Capex guidance for 2012: £200m

- Includes c.£170m for biomass project
- Substantial equipment installations and modifications at Drax site
  - Biomass delivery, storage and distribution systems

Refining details of previously announced £650m – £700m capital investment plan

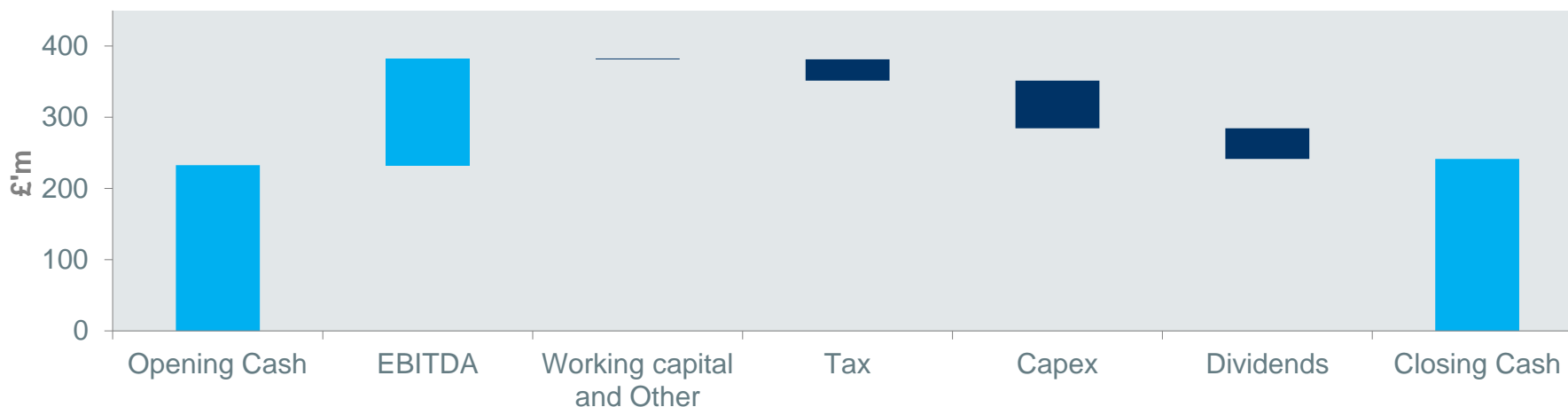
- Remain confident of the overall scale

### New Biomass Delivery and Storage Systems



# H1 2012 Financial Review

## Cash Flow



Working Capital and Other  
**£4m**

Tax  
**(£30m)**

Capex  
**(£77m)**

Dividends  
**(£43m)**

Closing Cash  
**£241m**

Coal stocks (£22m)  
0.6Mt increase to 2.0Mt  
Other net inflow (+£26m)

Settlement of  
2011 liability

Includes payments  
for biomass project £55m

Final 2011 dividend  
of 11.8p/share

Cash (£231m)  
and short term  
deposits (£10m)



# H1 2012 Financial Review

## Debt Facilities and Funding

Core facilities mature 30 April 2014

- **£310m Revolving Credit Facility**
  - Margin 200bps
  - Available for LCs or working capital
- **£135m Trading Facility**
- **Rating: BBB- stable**

### **Initial steps taken towards funding biomass transformation**

New £100m amortising term loan facility commitment agreed in July

- **M&G UK Companies Financing Fund**
- **Competitive pricing**
- **6 to 8 year maturity**

Strong balance sheet provides solid foundation for remaining funding requirements

- **Net cash June 2012: £233m**

Other important considerations for funding

- **Working capital, foreign exchange, credit rating**
- **Trading strategy**

# H1 2012 Financial Review

## Summary

H1 2012 profits in line with expectations

- Continued strength in operations

Strong hedge – doubled 2013 forward sales at good margins

Initial steps taken towards funding biomass transformation

- £100m amortising term loan facility commitment
- Strong balance sheet; net cash £233m

Interim dividend for 2012 of 14.4p / share (£53m)

- 50% underlying earnings for the period



# Conclusion



Biomass R&D – very encouraging engineering progress

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Government decisions support transformation to predominantly biomass-fuelled generator

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H1 2012 profits in line with expectations  
– continued strength in operations

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Strong hedge – doubled 2013 forward sales at good margins



# Questions





# Appendices

1. Definitions
2. Financial Calendar
3. IAS39 Treatment
4. Commodity Markets
5. Gas Market
6. Coal Market
7. Carbon Market
8. Carbon Price Support
9. UK Generation Capacity
10. Biomass Fuels
11. ROC Banding Review – Final Bands
12. ROC Mechanics
13. CCS Update



# Appendix 1: Definitions

<b>API2/4/6</b>		API2 is the main reference price (including cost, freight and insurance) for steam coal to be delivered to Amsterdam, Rotterdam and Antwerp. API4 is the reference price for steam coal to be delivered free on board ("FOB") to Richards Bay, South Africa. API6 is the reference price for steam coal to be delivered FOB to Newcastle, Australia.
	<b>AVERAGE ACHIEVED PRICE</b>	Power revenues divided by volume of net sales (includes imbalance charges).
<b>BM</b>	<b>BALANCING MECHANISM</b>	The mechanism through which the System Operator can call upon additional generation/consumption or reduce generation/consumption, through market participants' bids and offers, in order to balance the system minute by minute.
<b>CESP</b>	<b>COMMUNITY ENERGY SAVING PROGRAMME</b>	CESP has been created as part of the Government's Home Energy Saving Programme. It requires gas and electricity suppliers and electricity generators to deliver energy saving measures to domestic consumers in specific low income areas of Great Britain. CESP came into force on 1 September 2009. The CESP obligation period will run from 1 October 2009 to 31 December 2012.
<b>DECC</b>	<b>DEPARTMENT FOR ENERGY AND CLIMATE CHANGE</b>	
	<b>DIRECT INJECTION</b>	A process whereby biomass is fed directly (i.e. avoiding the pulverising mills) to the burners situated in the boiler walls.
<b>EBITDA</b>		Profit before interest, tax, depreciation, amortisation, gain/(loss) on disposal of fixed assets and unrealised gains/(losses) on derivative contracts.
<b>ELV</b>	<b>EMISSION LIMIT VALUES</b>	One of the mechanisms available to implement the LCPD. This sets annual limits on the emissions of NO <sub>x</sub> , SO <sub>2</sub> and particulate which will be incorporated into the forthcoming PPC permit.
<b>EUA</b>	<b>EU ALLOWANCE</b>	European Union Allowances, the tradable unit under the EU ETS. Equals 1 tonne of CO <sub>2</sub> .
<b>EU ETS</b>	<b>EU EMISSIONS TRADING SCHEME</b>	Trading Scheme within the European Union. The first compliance phase is from 2005-07, the second compliance phase continues from 2008-12 and the third phase is proposed to run from 2013-2020.
<b>IUK</b>	<b>INTERCONNECTOR UK</b>	Sub sea gas pipeline and terminal facilities providing a bi-directional link between the UK and continental European energy markets.
<b>LCPD</b>	<b>LARGE COMBUSTION PLANT DIRECTIVE</b>	European Union Large Combustion Plant Directive sets emission standards for NO <sub>x</sub> , SO <sub>2</sub> and particulate from all Large Combustion Plant (>50MW).
<b>LEC</b>	<b>LEVY EXEMPTION CERTIFICATE</b>	Evidence of Climate Change Levy exempt electricity supplies generated from qualifying renewable sources.

# Appendix 1: Definitions

<b>LNG</b>	<b>LIQUIFIED NATURAL GAS</b>	
<b>LTIR</b>	<b>LOST TIME INJURY RATE</b>	The frequency rate calculated on the following basis (number of accidents/hours worked * 100,000). Accidents are defined as occurrences where the injured party is absent from work for more than 24 hours.
<b>NERP</b>	<b>NATIONAL EMISSIONS REDUCTION PLAN</b>	One of the mechanisms available to implement the LCPD and the one selected by Drax. This sets annual limits on the emissions of NO <sub>x</sub> , SO <sub>2</sub> and particulate which will be incorporated into the forthcoming PPC permit.
<b>NO<sub>x</sub></b>		Nitrogen oxides, emissions of which are regulated under the LCPD.
<b>OFGEM</b>	<b>OFFICE FOR GAS AND ELECTRICITY MARKETS</b>	
	<b>OPTED-IN / OPTED-OUT</b>	An opted-in plant is a power station that has elected to comply with the LCPD emissions standards. Opted-out plant has not elected to comply and is therefore only permitted to run for 20,000 hours and must in any event close by the end of 2015.
	<b>POND FINES</b>	Coal dust and waste coal from the cleaning and screening process which can be used for coal-fired power generation.
<b>RO</b>	<b>RENEWABLES OBLIGATION</b>	The obligation placed on licensed electricity suppliers to deliver a specified amount of their electricity from eligible renewable sources.
<b>ROC</b>	<b>RENEWABLES OBLIGATION CERTIFICATE</b>	The obligation requires licensed electricity suppliers to ensure that specified and increasing amounts of the electricity they supply are from renewable sources. Eligible generators of electricity using renewable energy sources receive a pre-specified number of ROCs per MWh of renewable power generation dependant on date of commission and technology. These certificates can then be traded.
<b>ROSPA</b>	<b>ROYAL SOCIETY FOR THE PREVENTION OF ACCIDENTS</b>	
<b>SCR</b>	<b>SELECTIVE CATALYTIC REDUCTION</b>	Converting nitrogen oxides with the aid of a catalyst into diatomic nitrogen and water. A gaseous reductant, typically anhydrous ammonia, is added to a stream of flue gas and absorbed onto a catalyst.
<b>SO<sub>2</sub></b>		Sulphur dioxide, emissions of which are regulated under the LCPD.
<b>TRIR</b>	<b>TOTAL RECORDABLE INJURY RATE</b>	TRIR is calculated on the following basis (lost time injuries + worse than first aid injuries)/ hours worked * 100,000.
<b>UKCS</b>	<b>UK CONTINENTAL SHELF</b>	Gas reserves found off shore in UK waters.
<b>UK NAP</b>	<b>UK NATIONAL ALLOCATION PLAN</b>	Allocation of UK emissions allowances at the national level to individual sites under EU ETS.

## Appendix 2: Financial Calendar

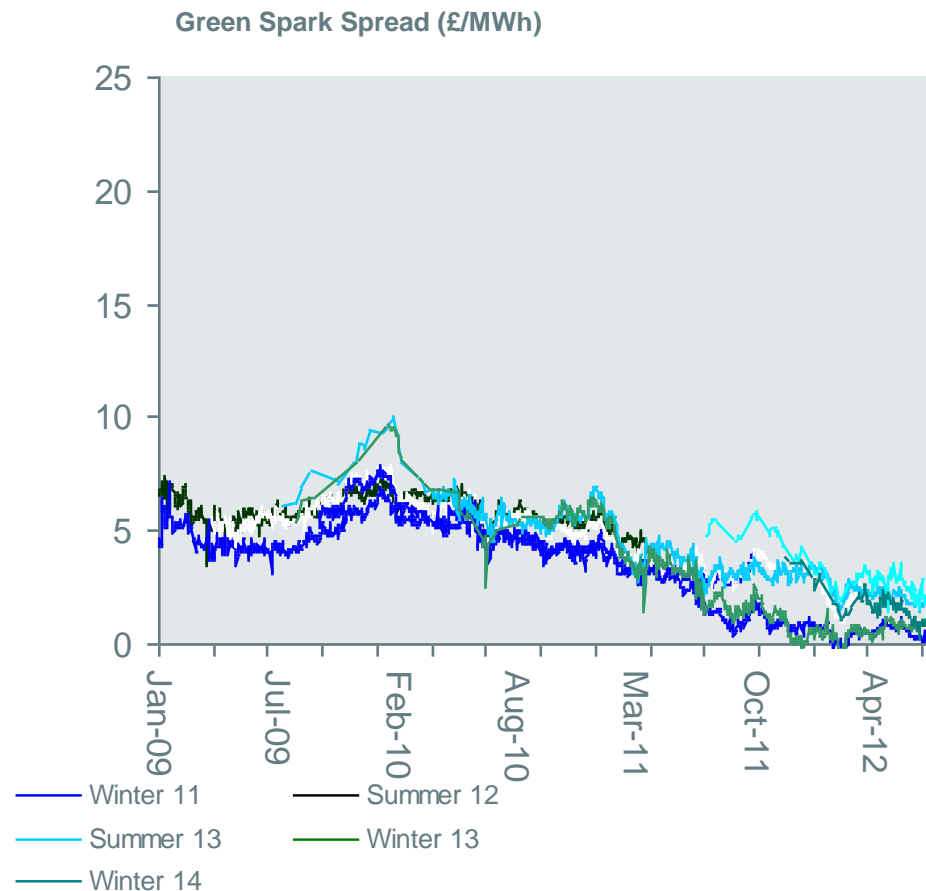
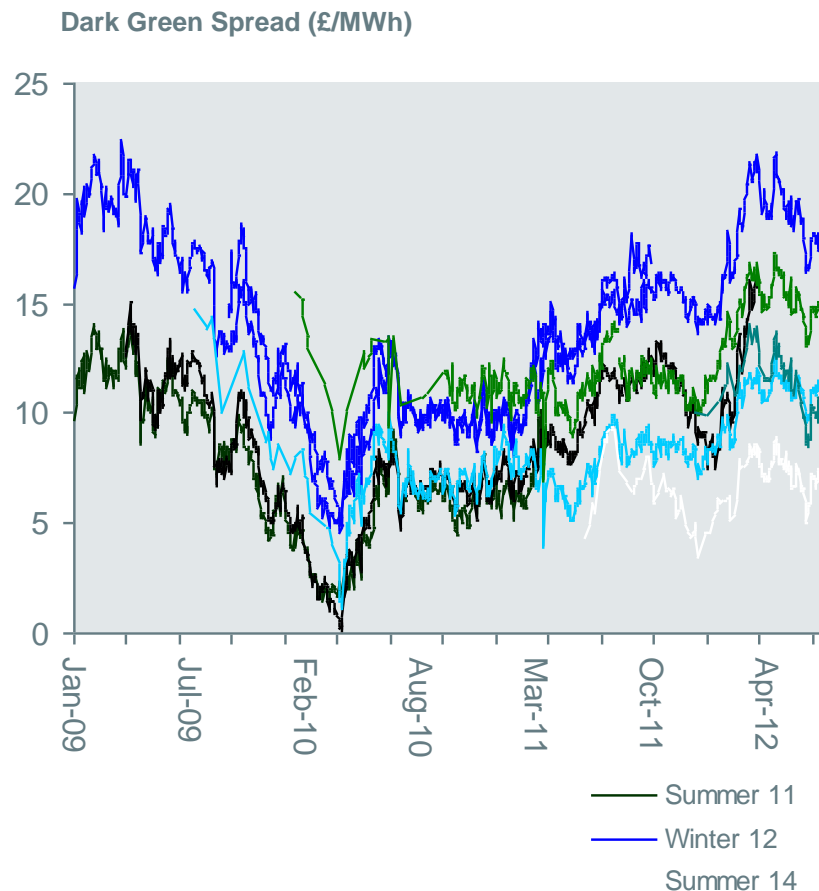
Event	2012
Ordinary shares marked ex-interim dividend	26 September
Record date for interim dividend	28 September
Payment date for interim dividend	12 October 2012
Interim Management Statement	13 November
Financial year end	31 December

## Appendix 3: IAS39 Treatment

Financial Instrument	Location of gains and losses in the 2012 Half Year Report
Power	Hedge Reserve
International Coal	Hedge Reserve and Income Statement
Financial Coal	Largely Income Statement
Foreign Exchange	Hedge Reserve and Income Statement
Interest Rate Swaps	Largely Income Statement
Carbon	Hedge Reserve

# Appendix 4: Commodity Markets

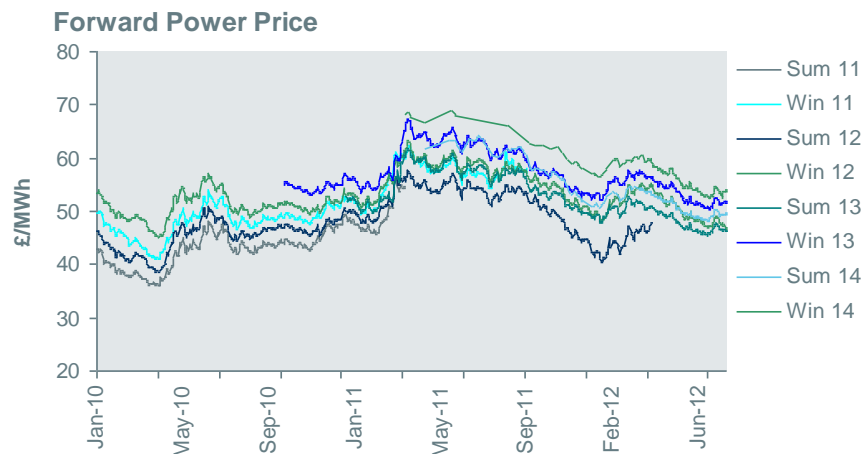
## UK Forward Spread Movements – to 20 July 2012



Source: Drax. Assumed typical efficiencies: Dark Spread - 36%, Spark Spread - 49%

# Appendix 4: Commodity Markets

## Commodity Price Movements – to 20 July 2012



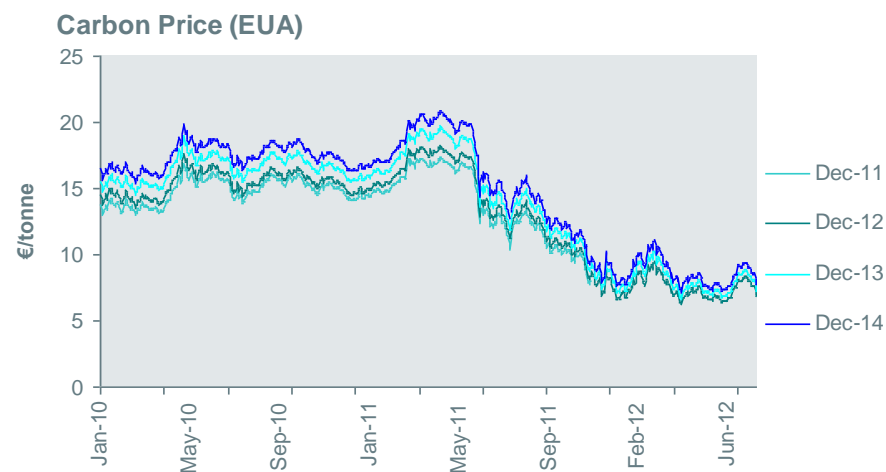
Sources: Brokered Trades, Prebon, Spectron, ICAP, GFI



Source: Brokered Trades, McCloskey



Source: Brokered Trades, Spectron

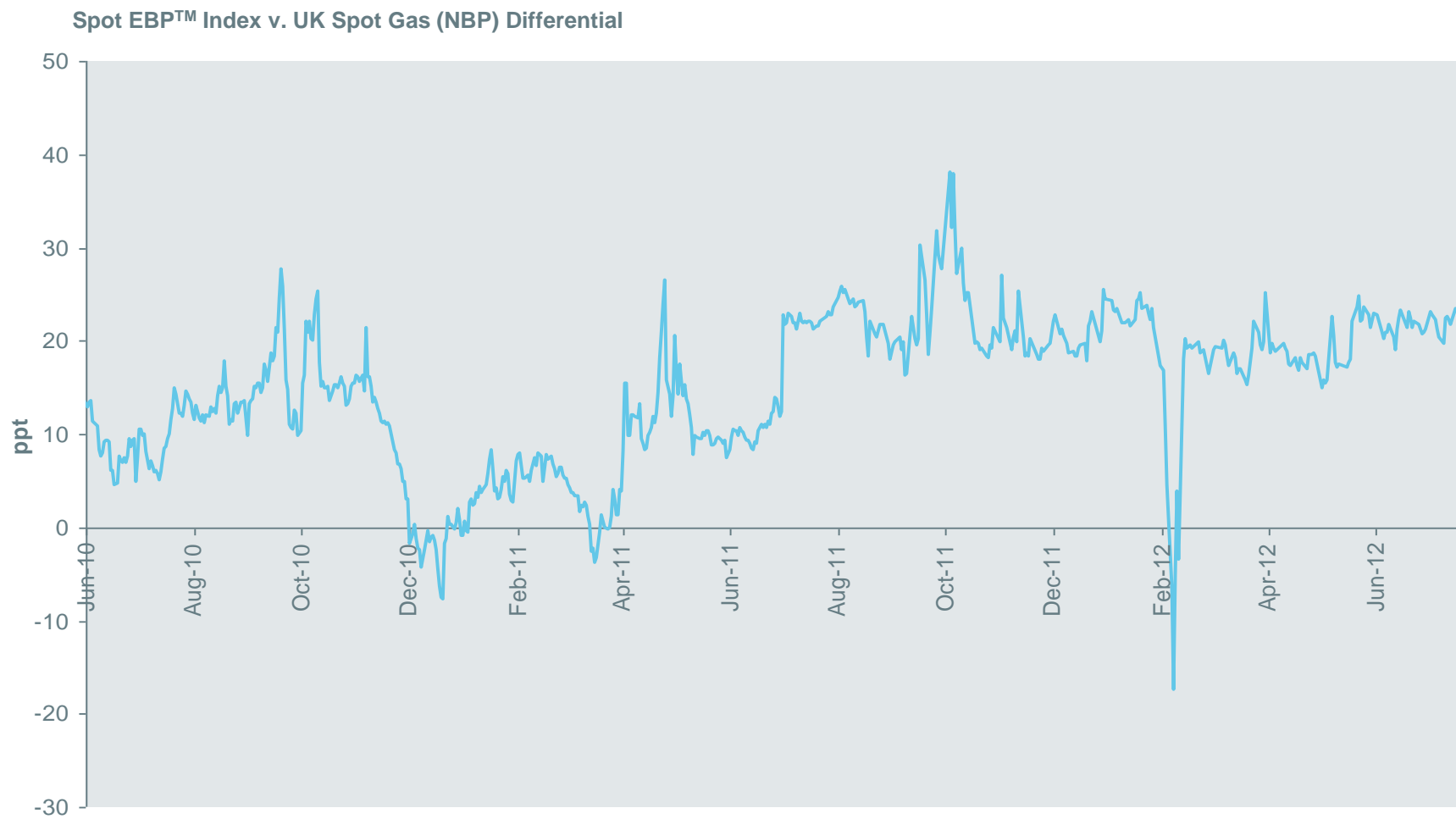


Source: ICE ECX



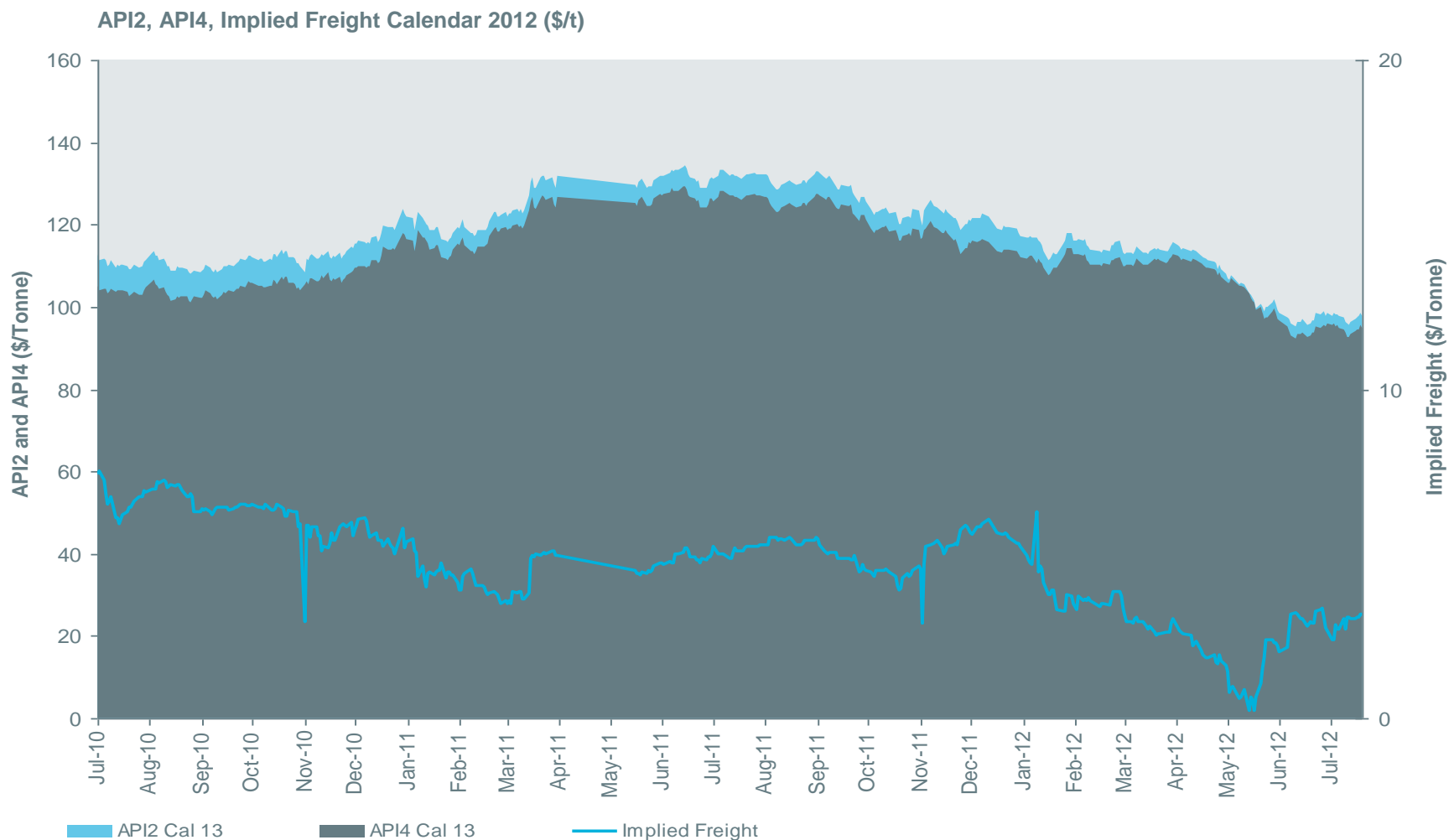
# Appendix 5: Gas Market

## European to UK Gas Price Differentials



Sources: European Benchmark Price (EBP™ Index): Eclipse Energy Group  
NBP Brokered Trades. EBP is a trademark owned by Eclipse Energy Group

# Appendix 6: Coal Market



Source: Brokered Trades & McCloskey

# Appendix 7: Carbon Market

Lowest EUA price for over 2 years

Driven by expected Phase II over supply

- Fear over European economies
- New Entrant Reserve (300Mt) now coming to market
- Continued high CER issuance
- Forecast growth in Emission Reduction Units (ERU) issuance

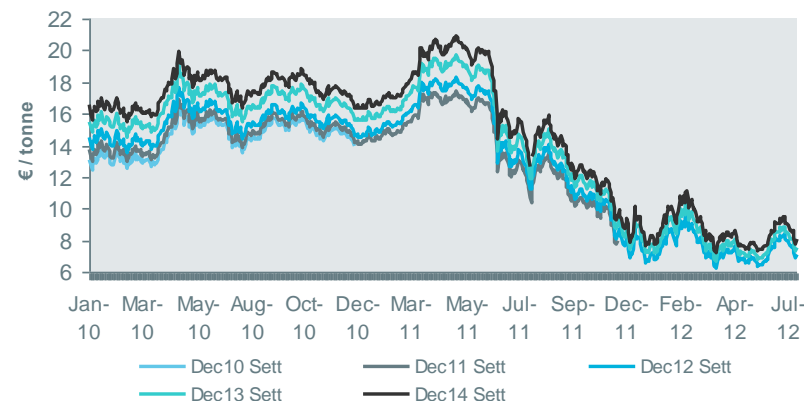
Phase II surplus bankable into Phase III (2013 to 2020)

Considerable opposition across Europe to attempt to increase Phase III ambition beyond 20%

Possible withdrawal of EUAs

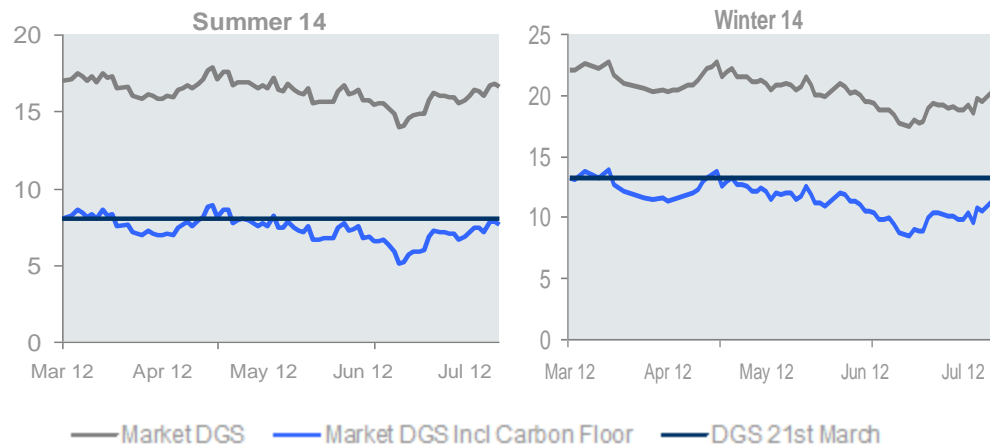
Introduction of UK CO<sub>2</sub> price support

EUA movements since January 2010



Source: ICE

Carbon Price Support Impact on DGS



Sources: Drax Assumptions, Brokered Trades

# Appendix 8: Carbon Price Support

Introduced in Budget 2011  
– effective April 2013

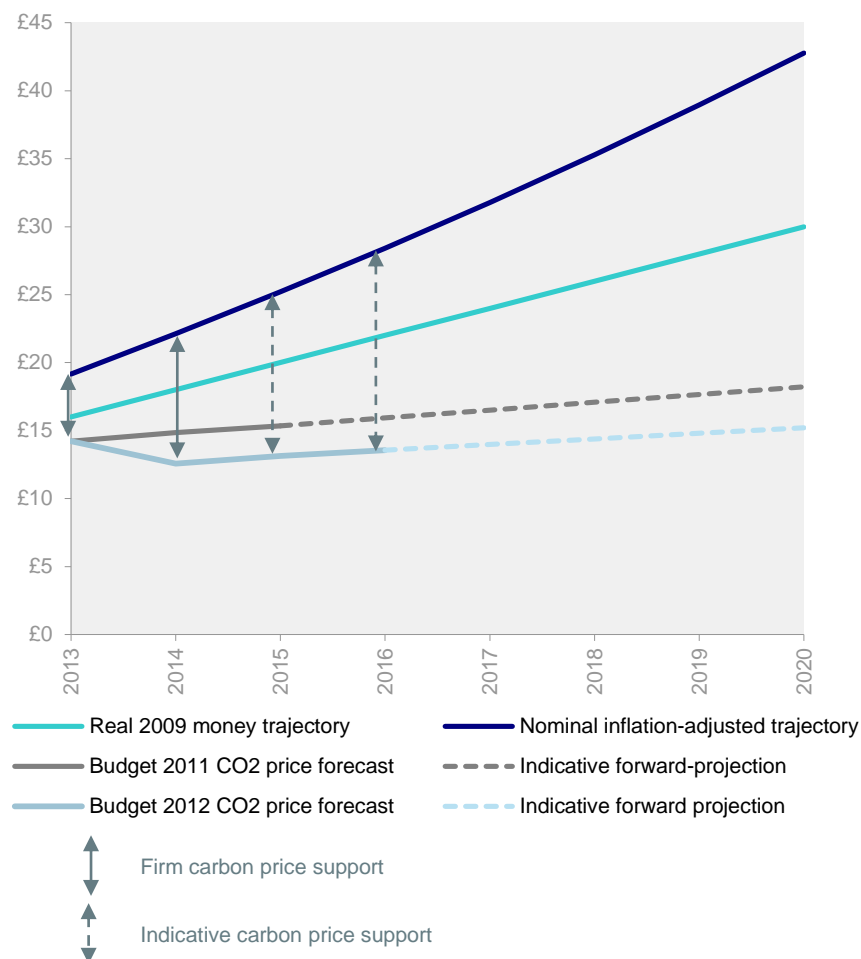
Climate Change Levy (CCL) amended to indirectly supplement EU ETS carbon price

- Based on fuel (coal) consumption

Tax per tonne CO<sub>2</sub> set annually  
– 2 years in advance

- Based on difference between Government's (HMT) target carbon price trajectory and traded price
- For 2013 this is £19 - £14 = £5/tonne CO<sub>2</sub>; equivalent to £12/tonne coal
- For 2014 this is c. £10/tonne CO<sub>2</sub>; equivalent to £22/tonne coal
- Current HMT estimate of 2015/16 rate is c. £12/tonne CO<sub>2</sub> – will be fixed in Budget 2013

Projected Carbon Price Support to 2020



# Appendix 9: UK Generation Capacity

## Summary of LCPD Elections

Installation	Operator	Fuel	Installed Capacity (MWe)	Capacity Opted In (MW)	Capacity Opted In NERP (MW)	Capacity Opted In ELV (MW)	Capacity Opted Out (MW)	Opted Out Hours Remaining (Elxon – June 2012)
Drax	Drax Power	Coal	3870	3870	3870	0	0	
Eggborough	EPL	Coal	1960	1960	1960	0	0	
Cottam	EDF Energy	Coal	2008	2008	0	2008	0	
West Burton	EDF Energy	Coal	1972	1972	0	1972	0	
Kingsnorth	E.ON UK	Coal	1940	0	0	0	1940	12%
Ratcliffe	E.ON UK	Coal	2000	2000	0	2000	0	
Ironbridge	E.ON UK	Coal	970	0	0	0	970	55%
Rugeley	International Power	Coal	996	996	0	996	0	
Ferrybridge	Scottish & Southern Energy	Coal	1960	980	0	980	980	U1&2 30%
Fiddlers Ferry	Scottish & Southern Energy	Coal	1961	1961	0	1961	0	
Longannet	Scottish Power	Coal	2304	2304	2304	0	0	
Cockenzie	Scottish Power	Coal	1152	0	0	0	1152	U1&2 1% U3&4 10%
Uskmouth	Scottish & Southern Energy	Coal	393	393	0	393	0	
Didcot A	RWE npower	Coal	1940	0	0	0	1940	25%
Tilbury*	RWE npower	Coal	1020	0	0	0	1020	BOIL 7&8 34% BOIL 9&10 32%
Aberthaw	RWE npower	Coal	1455	1455	0	1455	0	
Grain	E.ON UK	Oil	c.1300	0	0	0	c.1300	87%
Littlebrook	RWE npower	Oil	c.1100	0	0	0	c.1100	87%
Fawley	RWE npower	Oil	c.1000	0	0	0	c.1000	90%
<b>Total</b>			<b>31301</b>	<b>19899</b>	<b>8134</b>	<b>11765</b>	<b>11402</b>	

Source: Elxon, Oxera, Drax data as at June 2012

\* RWE has announced conversion of Tilbury to 100% biomass

# Appendix 10: Biomass Fuels

## Forestry Residuals



**Forestry thinnings**



**Harvesting residues**



**Chips/ Sawdust**



**Bark**



**Wood pellets**



**Waste wood**

## Agricultural By-products



**Wheat/Oat straw**



**Sunflower husks**



**Sugarcane bagasse**



**Rice straw**



**Olive pulp**



**Nut shell**

## Energy Crops & Organic Waste



**Miscanthus & switchgrass**



**Bamboo**



**Jatropha**



**Short Rotation Coppice (e.g. Willow)**



**Short Rotation Forestry (e.g. Eucalyptus)**



**Mixed waste paper & other organic materials**

# Appendix 11: ROC Banding Review Decisions

Technologies	Level of ROCs / MWh	
	Current	Support DECC Decision
Offshore wind	2.0	2.0 – 1.8
Onshore wind	1.0	0.9
Standard co-firing <sup>(2)</sup> (< 50%)	0.5	0.3 – 0.5
Enhanced co-firing (51% - 84%) <sup>(1)</sup>	0.5	0.6
Enhanced co-firing (85% - 99%) <sup>(1)</sup>	0.5	0.7 (2013 – 2015) 0.9 (2015+)
Conversion <sup>(1)</sup>	0.5	1.0
Dedicated biomass	1.5	1.5 1.4 (2016+)

(1) Excluding allowance of up to 10% additives

(2) Subject to consultation



# Appendix 12: ROC Mechanism

Renewables Obligation (RO) – suppliers must source increasing volume of renewable power

Obligation can be met in two ways;

- Surrender ROCs or pay a buy-out

All buy-out funds recycled to suppliers that surrender ROCs

- Buy-out is mandated price with RPI indexation; currently c. £40/MWh

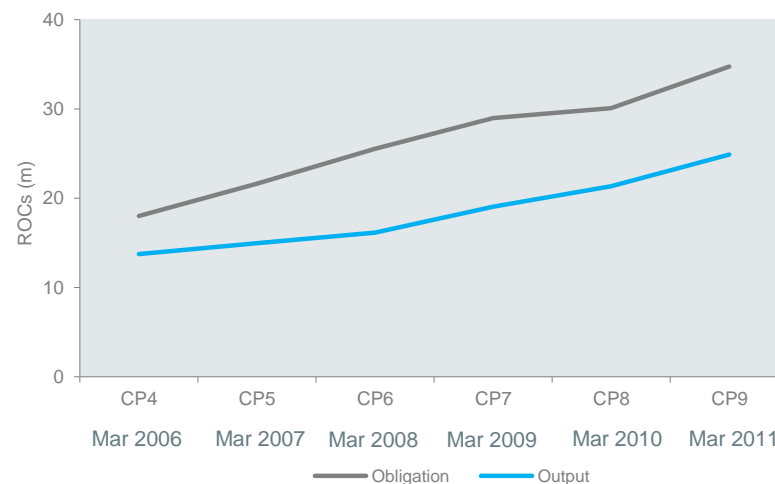
Mechanism in place to ensure:

- Obligation increases annually; and
- Obligation > expected ROC production

Cash flows

- Obligation is annual (April – March)
- ROCs surrendered or buy-out paid by 1 September following March year end
- Recycled funds paid out in October

Renewable Obligation and Output



Source: Renewables and CHP Registry,  
Ofgem Renewables Obligation Annual Reports & Information Notes

# Appendix 12: ROC Mechanics

## Cash Flows and Accounting

ROC generation measured in annual compliance periods (April – March)

ROC cash flows typically 6 months after annual compliance period ends

- Impacts working capital

Drax historically recognised ROC benefit in P&L only at time of ROC sale

- Similar timing to cash flows

Drax accounting change in 2012 – P&L benefit in period of ROC generation

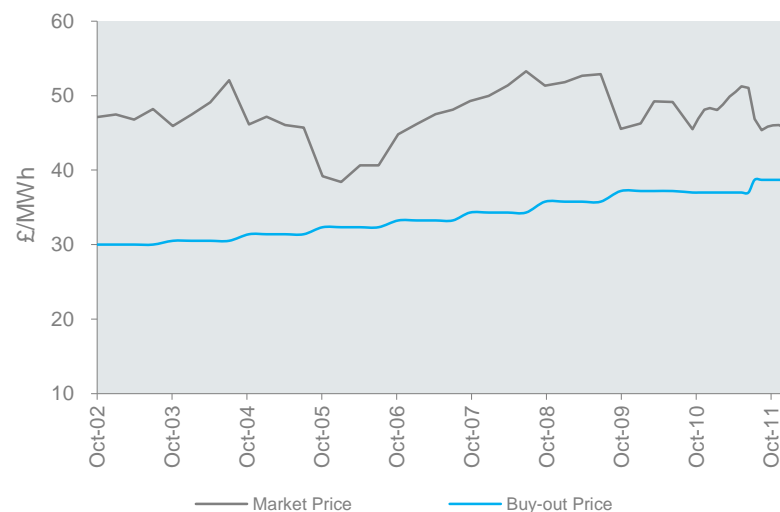
- Matches ROC support with biomass fuel costs
- ROC value estimated based on market price

No significant impact on earnings profile until ROC support increased (April 2013)

Exploring opportunities to accelerate ROC cash flows

- Better match with earnings

ROC Buy-out Price and Market Price



Source: e-ROC auction data, Ofgem Renewables Obligation Annual Reports & Information Notes

# Appendix 13: CCS Update

## Carbon capture and storage (“CCS”)

Drax, Alstom, BOC and National Grid

- Demonstration project – new 426MW oxy-fired CCS plant at Drax site
- 2011 – application submitted for EU funding (NER-300)

2012 – application submitted for funding under UK DECC CCS Commercialisation Programme

Dependent on successful funding and EMR incentive mechanism for low carbon technologies



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# Half Year Results

Six Months Ended 30 June 2012

31 July 2012