



# Half Year Results

6 Months Ended 30 June 2013

30 July 2013



# Agenda

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## **H1 2013 Business Performance**

**Dorothy Thompson**

Chief Executive

## **H1 2013 Financial Review**

**Tony Quinlan**

Finance Director

## **Business Review**

**Dorothy Thompson**



# H1 2013 Summary

Dorothy Thompson – Chief Executive

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## H1 2013 profits in line with expectations

Increasing cost of carbon  
Good operations - extensive activity at Drax site

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EBITDA

£120m

## Strong near-term hedge

Doubled 2014 hedge in H1

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Underlying Earnings Per Share

17.3p

## Biomass transformation

First converted unit performing to plan  
Capital investments on schedule and budget

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Interim Dividend

8.7p/share (£35m)

# Operational Performance

## Group

### Maintaining world class standards of safety

- > 50% increase in hours worked to 3.4m hours
- 4,200 safety inductions (H1 2012: 2,900)

## Coal

### 82% Availability (H1 2012: 85%)

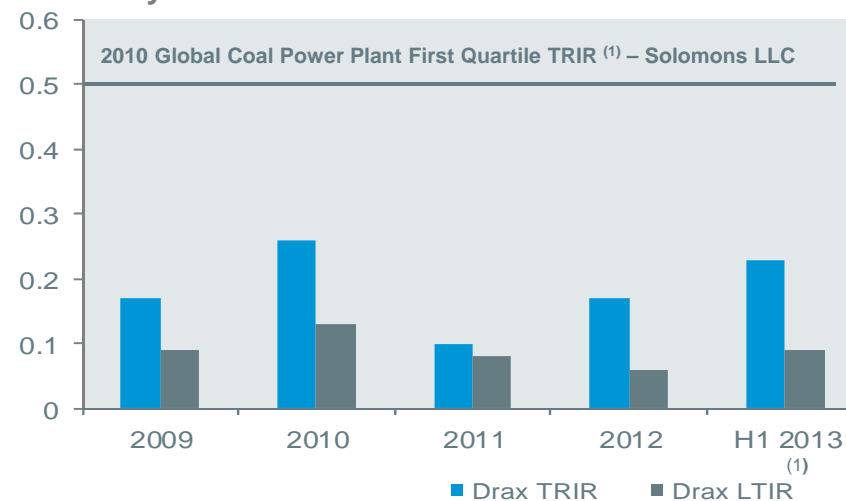
- 7.6% forced outage rate (H1 2012: 4.4%)
  - Impact of ash bridge
- Long-term FOR target remains 5%
- 11.1% planned outage rate (H1 2012: 10.8%)

### 78% Load Factor (H1 2012: 82%)

(2) By heat

(3) H1 2013 includes 0.6% co-firing in Q1 and 6.2% from converted unit in Q2

## Safety Performance



## Fuel Mix

	H1 2013		H1 2012		12m 2012
	Tonnes	Mix% <sup>(2)</sup>	Tonnes	Mix% <sup>(2)</sup>	Mix% <sup>(2)</sup>
Coal	4.3Mt	88%	4.6Mt	87%	90%
Pond Fines	0.3Mt	5%	0.4Mt	4%	4%
Petcoke	-	-	0.1Mt	2%	1%
Biomass <sup>(3)</sup>	0.4Mt	7%	0.1Mt	2%	2%
Biomass R&D	-	-	0.4Mt	5%	3%

# Operational Performance – Biomass

## Technical performance to plan

### Unit fuelled using existing co-firing systems

- Output up to 585MW (c.10% lower than coal) with stable combustion and no loss of flexibility
  - No significant slagging, fouling or corrosion
  - Significant NOx benefit vs. coal demonstrated
  - Efficiency modifications effective

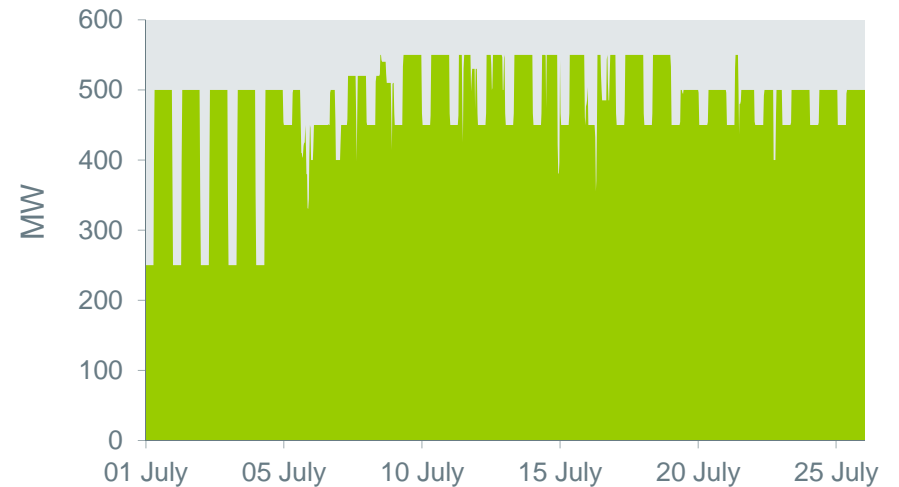
### 76% Availability

- Technical outage rates in line with plan
  - Forced outage rate 13%
  - Planned outage rate 13%

### 57% Load Factor

- Temporary fuel delivery systems

First Converted Unit Output – July 2013



Physical Notifications – July 2013

Source: Drax, Balancing Mechanism Reporting Agent data

# Haven Power

## Credit-efficient route to market

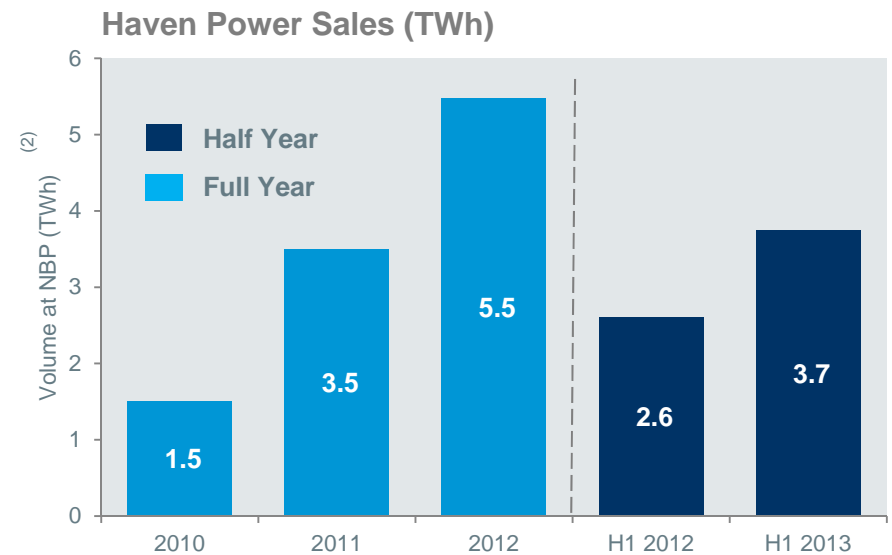
### Targeting 12 - 15TWh by 2015

- Sales growth remains business priority
  - I&C and SME markets <sup>(1)</sup>

### Substantial growth 2013

- Retail sales £323m (H1 2012: £219m)
- 7.3TWh already contracted for next 12 months
- Bad debt experience remains low

### Significant customer wins



- 1) I&C = Industrial and Commercial,  
SME = Small and Medium Enterprises  
2) NBP = Notional Balancing Point

# Positions Under Contract

Positions Under Contract as at 22 July 2013	2013	2014	2015
<b>Power Sales – TWh</b>	<b>24.4</b>	<b>17.1</b>	<b>5.1</b>
<b>Comprising:</b>			
▪ Fixed price TWh at average achieved price £ per MWh	23.1 @ 51.4	14.5 @ 53.5	3.2 @ 56.1
▪ Fixed margin and structured contracts TWh	1.3	2.6	1.9
<b>Carbon – TWh equivalent</b>			
Emissions allowances hedged (market purchases and structured contracts)	<b>23.2</b>	<b>14.5</b>	<b>4.5</b>
<b>Solid Fuel – TWh equivalent</b>			
At fixed price / hedged (including structured contracts)	<b>25.6</b>	<b>22.6</b>	<b>13.1</b>

**Almost fully hedged for 2013; more than doubled 2014 hedge in H1**

## Framework for hedging

- Coal business – shorter term margin hedge
  - Power market liquidity generally limited to 4 seasons forward
- Biomass business – long-term fuel hedge
- Sub-investment grade
  - Credit access and collateral exposure management

**Going forward will disclose only power sales position for current year and year +1**

# H1 2013 Financial Review

Tony Quinlan – Finance Director

EBITDA

£120m

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

£245m

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

17.3p

Interim Dividend

8.7p/share (£35m)

- H1 2013 profits – in line with expectations
- Year on year reduction – increasing cost of carbon

- Strong balance sheet
- Strong hedge – doubled 2014 forward sales in H1

1) Excl. unrealised gains on derivative contracts of £123m (less tax effect)

2) Cash of £460m (incl. short-term investments of £20m) less borrowings of £215m



# Income Statement – Summary

	H1 2013	H1 2012	% Year-on-Year
Revenue	919	868	
Cost of Sales	(703)	(613)	
<b>Gross Margin</b>	<b>216</b>	<b>255</b>	
Operating Costs	(96)	(101)	
<b>EBITDA</b>	<b>120</b>	<b>154</b>	<b>-22%</b>
IAS39 Unrealised Gains / (Losses) on Derivative Contracts	123	21	
Depreciation	(29)	(28)	
<b>Operating Profit</b>	<b>214</b>	<b>147</b>	
Net Finance Costs	(8)	(6)	
<b>Profit Before Tax</b>	<b>206</b>	<b>141</b>	
Tax Charge	(42)	(20)	
<b>Reported Earnings</b>	<b>164</b>	<b>121</b>	
<b>Underlying Earnings</b>	<b>70</b>	<b>106</b>	<b>-34%</b>
<b>Reported Basic Earnings Per Share (pence)</b>	<b>40.8</b>	<b>33.1</b>	
<b>Underlying Basic Earnings Per Share (pence)</b>	<b>17.3</b>	<b>28.9</b>	<b>-40%</b>
<b>Interim Dividend Per Share (pence)</b>	<b>8.7</b>	<b>14.4</b>	<b>-40%</b>

# Income Statement – Tax

## Corporation Tax (CT) rates

- 23.25% for 2013 and 24.5% for 2012

## Adjustments to prior year taxes now agreed with HMRC

- R&D tax relief and capital allowance claims

## Impact of reduction in CT rate on deferred taxes

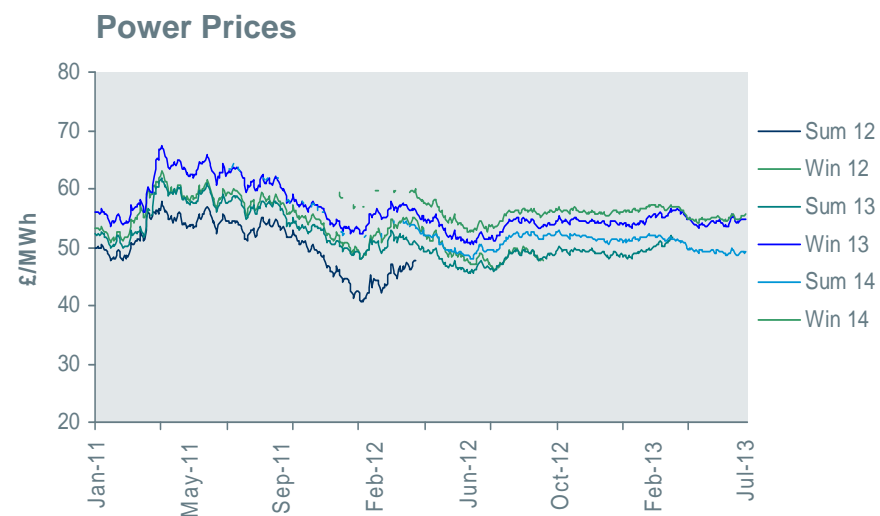
- Revaluation of deferred tax liability
- H1 2012: 1% reduction in CT rate
- H2 2013: 3% reduction in CT rate, to be recognised when legislation enacted (July)
  - Results in underlying deferred tax credit c.£20m

## H1 2013 Tax

In £m (unless otherwise stated)	H1 2013	H1 2012
Profit Before Tax	206	141
Tax at CT Rate	48	35
Adjustment to Prior Year Taxes	(6)	(8)
Impact of Reduction in CT rate on Deferred Tax	-	(7)
<b>Tax Charge</b>	<b>42</b>	<b>20</b>
<b>Effective Tax Rate – on Profit Before Tax</b>	<b>20%</b>	<b>14%</b>
<b>Effective Tax Rate – on Underlying Profit Before Tax</b>	<b>16%</b>	<b>12%</b>

# Income Statement – Revenue

In £m (unless otherwise stated)	H1 2013	H1 2012
<b>Total Revenue</b>	<b>919</b>	<b>868</b>
Wholesale Power Sales	582	627
Retail Power Sales	323	219
Other Revenues	14	22
<b>Electrical Output (Net Sales) (TWh)</b>	<b>12.6</b>	<b>13.6</b>
<b>Average Achieved Price (£ per MWh)</b>	<b>50.1</b>	<b>52.0</b>



Sources: Brokered Trades, Spectron

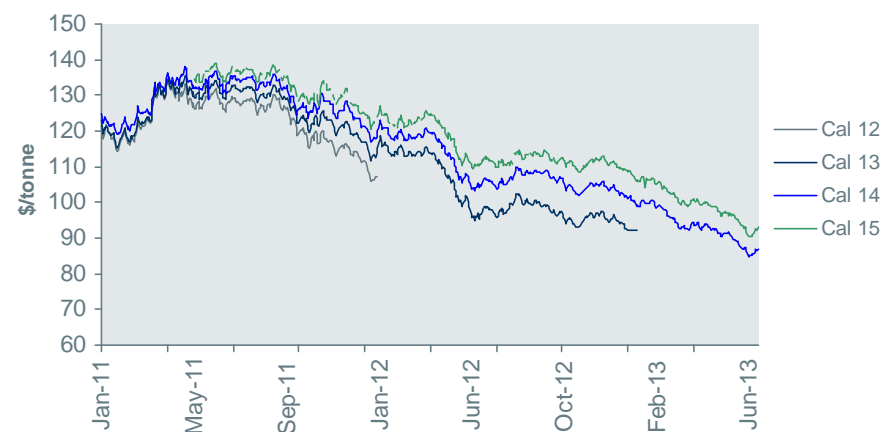
# Income Statement – Cost of Sales

	H1 2013	H1 2012
<b>Total Cost of Sales</b>	<b>£703m</b>	<b>£613m</b>
Fuel Costs <sup>(1)</sup>	£325m	£417m
Carbon Tax	£14m	-
Cost of Carbon Allowances	£70m	£38m
Cost of Power Purchases	£146m	£58m
Grid Charges and Other Retail Cost of Sales	£148m	£100m
<b>Average Fuel Cost (excl. CO<sub>2</sub> costs) <sup>(2)</sup></b>	<b>£26.9/MWh</b>	<b>£30.7/MWh</b>
<b>Number of Purchased CO<sub>2</sub> Allowances Expensed</b>	<b>10.2m</b>	<b>6.5m</b>
<b>Average Cost of Purchased CO<sub>2</sub> Allowances</b>	<b>£6.9/tonne</b>	<b>£5.9/tonne</b>

(1) H1 2012 includes £15m additional biomass R&D costs

(2) Incl. carbon tax (charged on coal deliveries and recognised as fuel cost on burn)

### Coal Prices (API 2)



Source: McCloskeys, Brokered Trades

### Carbon Prices



Source: ICE ECX

# Fuel and ROC Accounting

## Income statement and balance sheet include value of ROCs / LECs generated

### Income statement – cost of fuel

- H1 2013 £339m (£26.9/MWh), comprising:
  - Cost of coal, carbon tax and biomass
  - Less estimate ROC / LEC value generated

### Balance sheet - ROC / LEC assets

- £60m at 30 June 2013, comprising:
  - Estimate of cumulative ROC / LEC value generated not sold

### Subsequent sale of ROCs / LECs

- Sales value in revenue and receivables
- Original estimate balance sheet value charged to cost of sales

### ROC receivable cash flows

- Options to accelerate ROC cash flows

## H1 2013 Income Statement – Fuel Costs

Net Fuel Costs Comprises:	£m	£/MWh
Coal, Carbon Tax and Biomass	380	30.2
ROC / LEC Value Generated	(41)	(48.0)

## H1 2013 Balance Sheet – ROC and LEC Assets

ROC and LEC Assets	£m
At 31 December 2012	19
ROCs / LECs Generated	41
Sold or Utilised	-
At 30 June 2013	60

# Operating Costs

## Operating costs – £96m in H1 2013

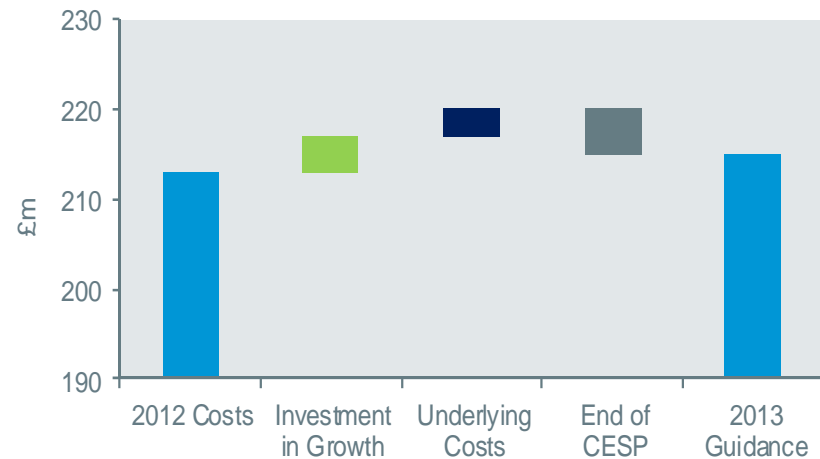
### H1 2013 total operating cost decrease £5m

- End of CESP <sup>(1)</sup> -£3m

### Full year 2013 operating cost guidance unchanged at £215m (2012: £213m)

- Double outage year
- Investment in growth: Haven and US business +£4m
- Underlying cost inflation +£3m (1%)
- End of CESP <sup>(1)</sup> -£5m

2013 Full Year Operating Cost Guidance



(1) CESP = Community Energy Saving Programme

# Capital Expenditure

## Biomass transformation capex on schedule and on budget

### H1 2013 total capex £138m

- Inc. £106m for biomass transformation

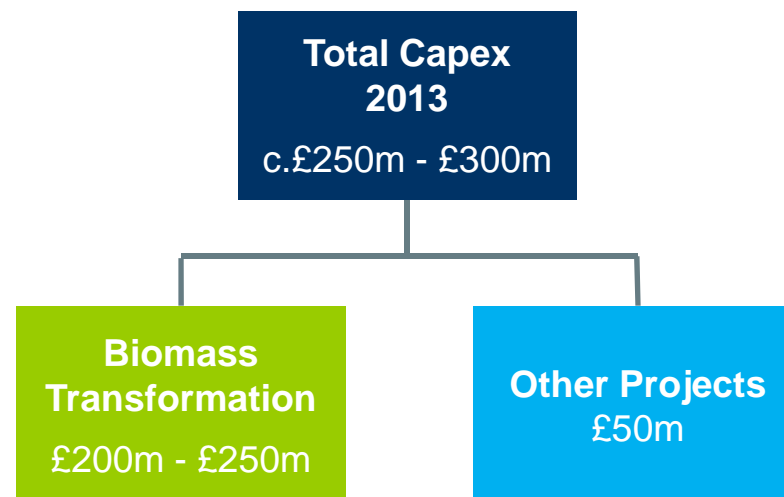
### Full year 2013 total capex guidance unchanged at c.£250m – £300m

- Incl. £50m for plant efficiency and other projects (non-biomass)

### End 2014 expect:

- Drax site biomass investment largely complete
- US investments very well advanced

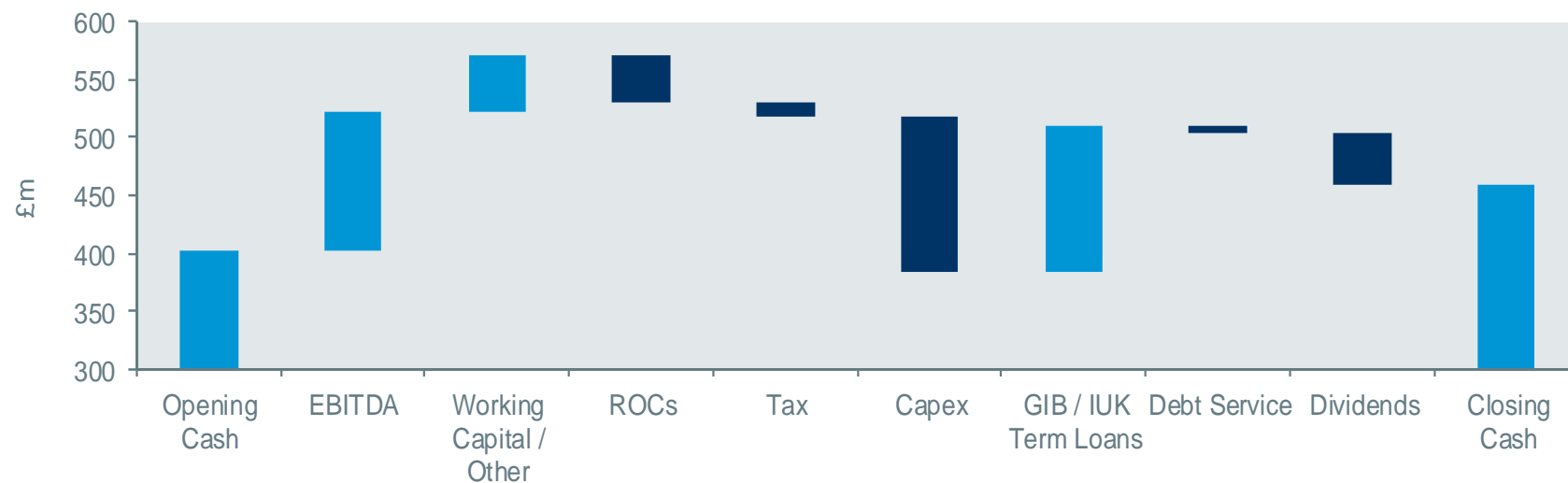
### 2013 Total Capex Guidance



### Biomass Transformation Capex

Drax (excl. IED) and US Supply Chain	£m
Previous Years	185
2013	200 – 250
2014	150 – 200
<b>Total to end 2014</b>	<b>550 – 600</b>

# Cash Flow



Working Capital / Other	ROCs / LECs	Tax	Capex	Dividends	Closing Cash
<b>£50m</b>	<b>(£41m)</b>	<b>(£13m)</b>	<b>(£133m)</b>	<b>(£44m)</b>	<b>£460m</b>
Biomass stocks outflow (£7m) Stocks of 0.4Mt	Increase in ROCs / LECs	Settlement 2012 liability	Cash payments for capex	Final 2012 dividend of 10.9p/share	Net cash after borrowings £245m
Coal stocks outflow (£44m) 0.8Mt increase to 2.4Mt					
Other net inflow £101m Largely seasonal					



# Funding and Debt Facilities

## Financing structure enhanced in 2013

### £75m Friends Life term loan (4-5 year maturity)

- Underpinned by guarantee from Infrastructure UK
- Replaced £50m of £100m UK Green Investment Bank term loan

### Commodity trading line – capacity extended

## Biomass funding secured in 2012

### New equity: £190m<sup>(1)</sup>

### New debt

- £100m M&G term loan facility (6-8 year maturity)
- £50m UK Green Investment Bank term loan (6-8 year maturity)

### £400m working capital and LC<sup>(2)</sup> facility

- 225 basis points margin over LIBOR
- Matures April 2016

### Credit rating BB+

- Robust sub investment grade business model
- Negligible additional collateral calls

**New Equity**  
£190m<sup>(1)</sup>

**New Debt**  
M&G £100m  
UK GIB £50m  
Friends Life £75m

**Working Capital  
and LC Facility**  
£400m

**Commodity  
Trading Line**

(1) Gross proceeds

(2) LC = Letter of Credit

# Financial Review – Summary

Strong balance sheet –  
biomass financing enhanced

Biomass transformation investments –  
on schedule and on budget

2013 EBITDA impacted by  
increasing cost of carbon

Potential for substantial EBITDA  
growth from 2015 and beyond



# Biomass Sustainability

Dorothy Thompson – Chief Executive

## All Drax biomass procured against well established sustainability policy

- Sustainable sourcing
  - No depletion of carbon stock at source
- Low GHG<sup>(1)</sup> emissions compared to coal and gas
  - 5th year of life cycle carbon foot-printing
- Independent audit of supply chain

## DECC working closely with industry to develop appropriate and robust mandatory standards

- No change expected in policy direction
- Publication of DECC decisions imminent

## Large biomass users working together on common procurement provisions for sustainability

(1) GHG = greenhouse gas



*“These proposals make clear our commitment to ensuring that the use of biomass is sustainable, both for the environment, and for the consumer”*

**Rt Hon Ed Davey MP**

**Biomass Electricity and CHP Heat –  
Ensuring Sustainability and  
Affordability**

**(Sept 2012)**

# Electricity Market Reform (EMR)

## CFDs

### Consultation in progress

- Strike prices, some key terms, process for CFDs including early (FID) CFDs

### Timetable

- December 2013 final prices published
- April 2014 CFD FID awards
- Contract effectiveness subject to EU state aid approval
- Normal CFD on later timetable

### 57 applications for CFD FID comprising 18GW across technologies

- No automatic right

## Capacity Market

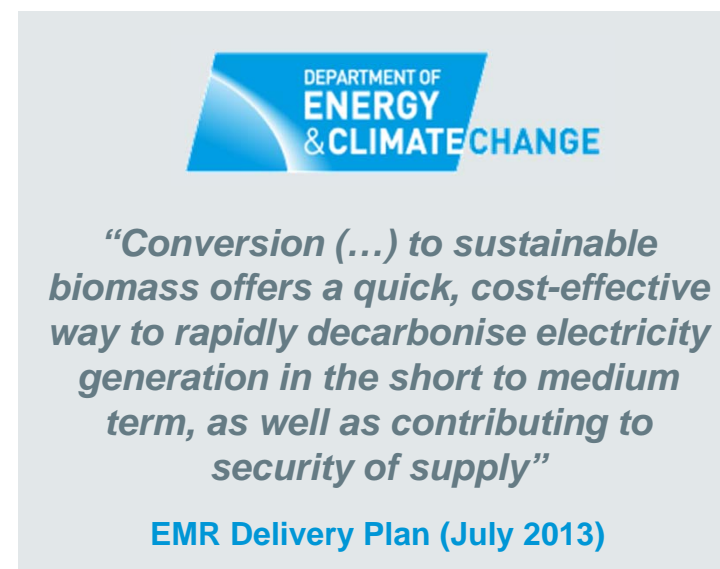
### Development progressing

- First auction in 2014 for 2018 delivery

### Potential option for coal units only

### National Grid consulting on provisions pre-2018

- Interim measures for demand and supply response



### Draft CFD Strike Prices

£/MWh <sup>(1)</sup>	2014-15	2015-16	2016-17	2017-18	2018-19
Onshore Wind	100	100	100	95	95
Offshore Wind	155	155	150	140	135
Biomass Conversion	105	105	105	105	105

(1) In 2012 prices and subject to consultation

# Biomass Fuel Purchasing and Supply Chain

## Fuel contracting

### Secured rights to fuel for first unit

- c.2Mt for 2013/14 ROC year

### Good progress with subsequent units

- > 3Mt for 2014/15 ROC year
- Continue negotiations for the third unit
- Key suppliers: Enviva, Green Circle, Pinnacle, Rentech, Plum Creek

## Ports and shipping

### Agreements in place for expansion of UK port capability

- Tyne – existing 2Mtpa capacity
- Hull – building 1Mtpa capacity
- Immingham – 3Mtpa capacity under construction
- Further capacity under negotiation

## New biomass rail wagons

### First 50 well advanced

- Fully operational Q1 2014
- Efficient load / unload with full weather protection
- Carry up to 50% more than current trains



# US Gulf Pellet Operations

## Construction contracts concluded

### 2 pellet plants – combined capacity 900kt pa

- Amite (Mississippi) and Morehouse (Louisiana)

### Port facility – export capacity up to 3Mt pa

- Baton Rouge (Louisiana)

### Lead contractors: Haskell (pellet plants) and Gray (port)

## Total capex c.£225m

### Summer 2013 construction start

### Targeting commercial operations:

- Amite, Baton Rouge – Q1 2015
- Morehouse – Q2 2015
- 6 months further to reach full capacity

Amite Pellet Plant – Site Layout



Amite Site – Ground Clearing (July 2013)



# Transition to Permanent Biomass Facilities

## Transition of 1st converted unit

### Q4 2013 phased commissioning of new on-site facilities

- Fuel delivery and distribution
- Storage – 1 dome in service
- Unit modifications

On schedule to be complete by year end

## 2014 – schedule

End Q1 first 50 bespoke wagons in service

### Storage:

- Q1 – 2 domes in service
- Q3 – all 4 domes in service

Summer 2014 conversion of 2nd unit

### Optimisation work continuing

- Efficiency management, fuel envelope, NOx

Timeline for First Unit Transition

September 2013	Start Commissioning	Fully Operational
	Fuel Distribution	
	Rail Delivery	
	Hull Port Facility	
	50 Rail Wagons	Mill Conversions
	First Dome	Fuel Distribution
December 2013		Hull Port Facility
		Rail Delivery
		First Dome

# Low Cost Options for the Future

## 4th unit conversion

- Engineering design underway
- Design focus – fuel optionality across converted units
- Fuel strategy based on sources outside North America

## Carbon capture and storage (CCS) – Demonstration

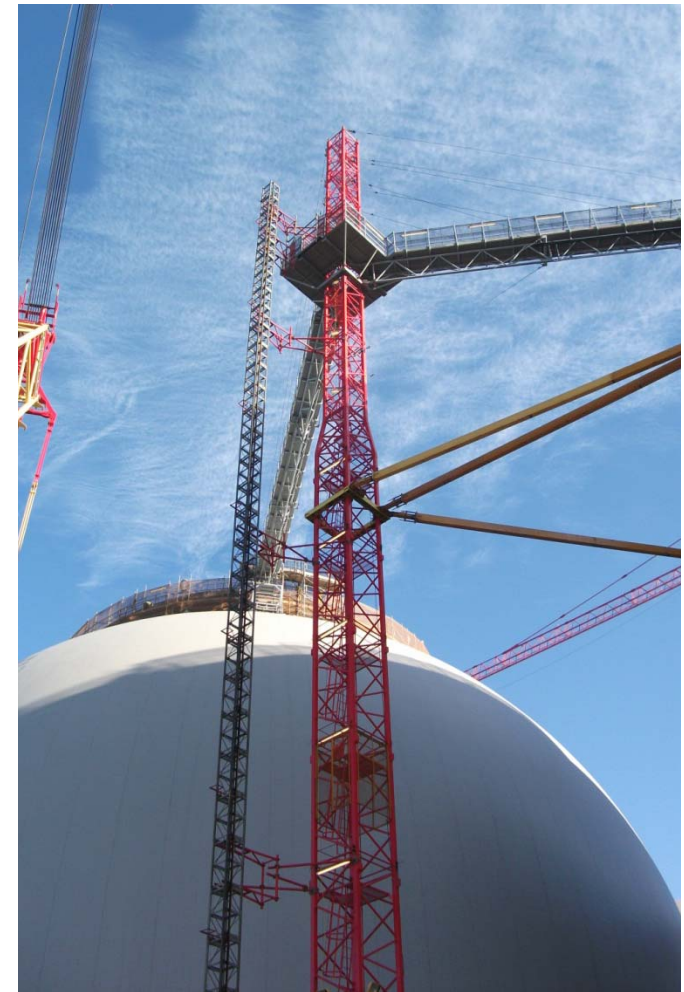
- New 426MW oxy-fired plant
- One of two lead projects in UK competition
- Sole CCS project in EU NER 300 competition
- Negotiations underway for start of 2-year feasibility study

## Further pellet plant and port facilities

- Site options under development
- USA : Gulf expansion and South East
- Latin America: exploring longer term options

## Capacity options

- UK Capacity Market could create value opportunity
- Evaluating options to benefit from core Drax competencies





# Conclusion

## Transformation Milestones

Biomass Sourcing	Sustainable Fuel Secured	2Mt for 2013/14 ROC year <sup>(1)</sup>	✓
		4Mt for 2014/15 ROC year	On Track
		6Mt by 2016/17 ROC year	On Track
US Investments	Pellet Plants & Port	COD <sup>(2)</sup> Amite pellet plant and Baton Rouge port Q1 2015	Schedule Finalised
		COD Morehouse pellet plant Q2 2015	
		Full capacity 6 months after COD	
UK Infrastructure	Port Throughput	2Mtpa for 2013/14 ROC year	✓
		4Mtpa for 2014/15 ROC year	On Track
		6Mtpa for 2015/16 ROC year	On Track
	Rail Wagons	50 wagons operational Q1 2014	On Track
		100 wagons operational Q3 2014	
		150 wagons operational Q1 2015	
Drax Site	New Biomass Systems	Fuel distribution fully operational Nov 2013	On Track
		Delivery and storage for 1 unit fully operational Dec 2013	
		Storage for 2 units fully operational Mar 2014	
		Storage for 3 units fully operational Q3 2014	
	IED	Define IED solution by end 2013	



H1 2013 profits in line with expectations – Increasing cost of carbon

Biomass transformation – On track with converted unit performing to plan

Capital Markets Day – Drax: 17 October 2013

(1) ROC year = 1 April to 31 March

(2) COD = commercial operations date

# Questions



# Appendices

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1. Definitions
2. Financial Calendar
3. IAS39 Treatment
4. Power Market
5. Gas Market
6. Coal Market
7. Carbon Market
8. Carbon Tax
9. Forward Spread Movements
10. Commodity Price Movements
11. Ofgem Capacity Assessment
12. LCPD
13. Biomass Fuels
14. ROC Banding Review Conclusions
15. ROC Mechanics
16. Drax Site Development Schematic



# 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 ran 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 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 ran from 2005-07, the second compliance phase continued 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 (cont.)

<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

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Event	2013
Capital Markets Day	17 October
Interim Management Statement	Mid-November
Financial Year End	31 December

## Appendix 3: IAS 39 Treatment

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Financial Instrument	Location of Gains and Losses in the 2013 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
Carbon	Hedge Reserve

# Appendix 4: Power Market

## UK power market

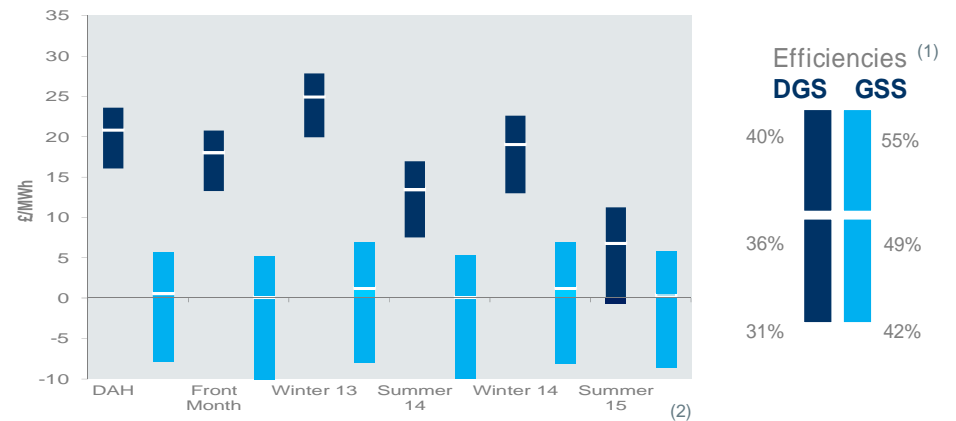
Power prices continue to be driven by gas market

## Despatch dynamics

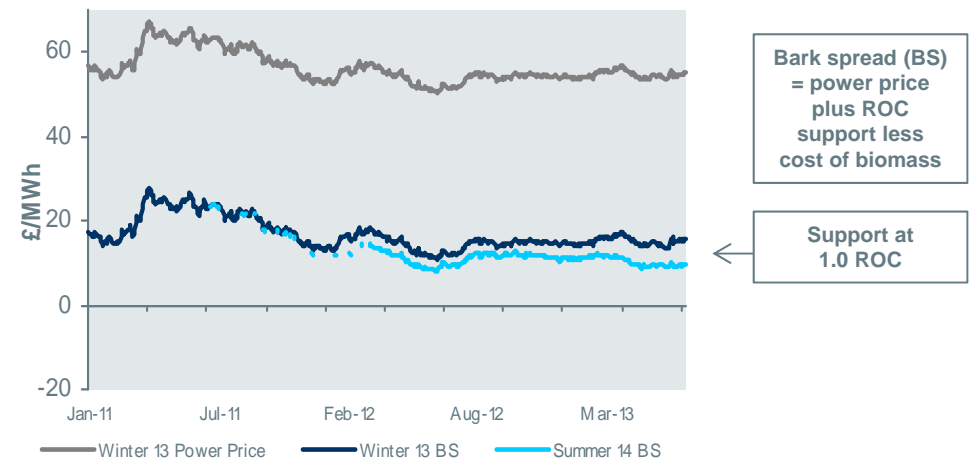
Plant efficiencies significant factor in load profiles

- Different load factors for same fuel plant
- Low GSS resulted in gas plant capacity withdrawn / considered for closure
- Majority of opted out coal plants due for closure this year
- Load factors have increased for opted in coal plant
- Oil-fired plant closing prior to full utilisation of running hours

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



# Appendix 5: Gas Market

## 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
  - LNG import uncertainty

## Extended winter across Europe – gas storage heavily depleted

- Rough storage (UK) record low in April
  - Expect high summer demand to replenish storage reserves
  - Rough injecting at record highs

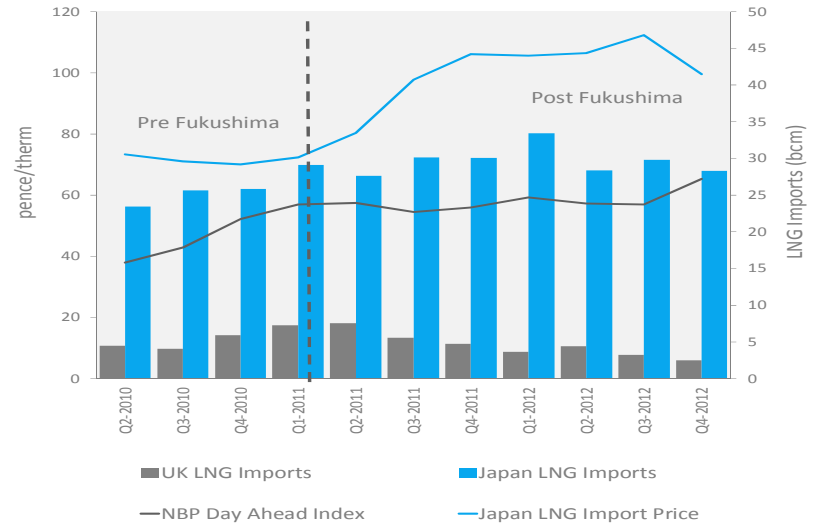
## UK gas prices remain strong

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

## Increased UK import dependency

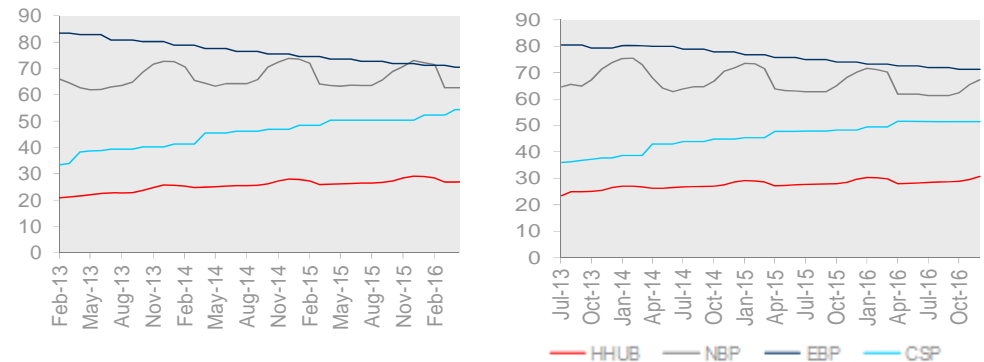
- Continued decline of UKCS

Fukushima Impact on LNG



Source: Bloomberg, DECC, Brokered Trades

NBP, Henry Hub and EBP™ Index Forward Curves  
January 2013      July 2013



# Appendix 6: Coal Market

## Continued supply driven weakness in global prompt market

- Prompt API2 prices c.\$75/t
- UK domestic coal producers under pressure

## Chinese seaborne imports up 8% in H1 2013

- Imports up 41% in 2012
- Stock levels remain high
- Strong hydro production reduced thermal requirement

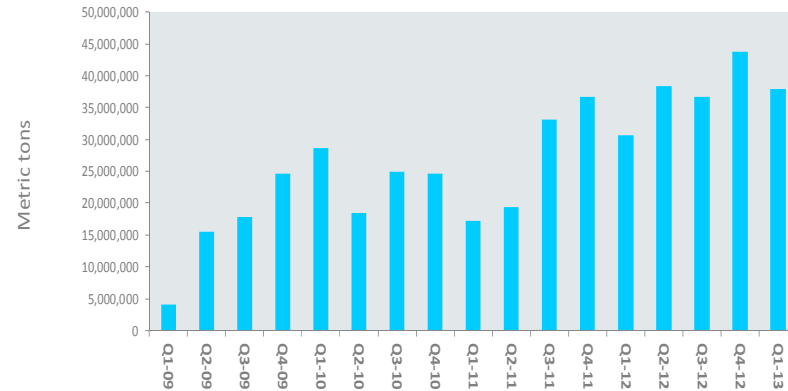
## US exports to EU up 67% in 2012

- Low demand – producers look to export market
- Q1 2013 exports +21%
- Low demand / low prices – production cuts

## Steam coal exports up in 2012

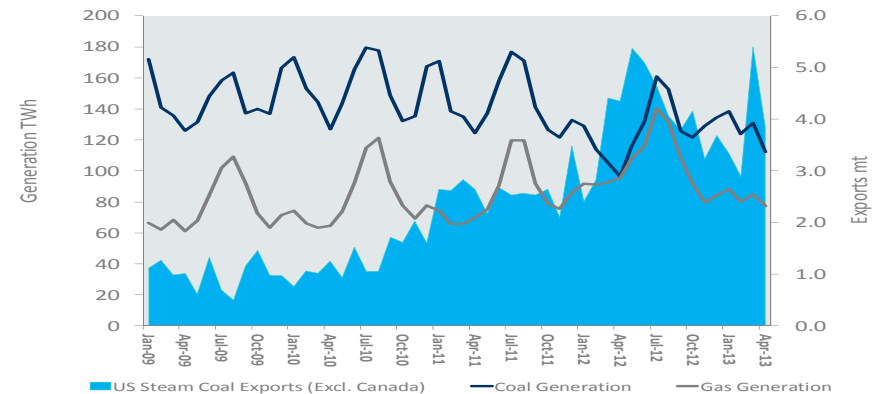
- Australia +16%
- South Africa +9%
- Indonesia +7%
- Colombia +4%

Chinese Seaborne Coal Imports



Source: IHS CERA's Global Steam Coal Advisory Service

USA: Coal Exports and Gas / Coal Generation



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

# Appendix 7: Carbon Market

## Phase III EUAs – new lows in 2013

Driven by Phase II over-supply and weak European economies

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

## Backloading debate on-going

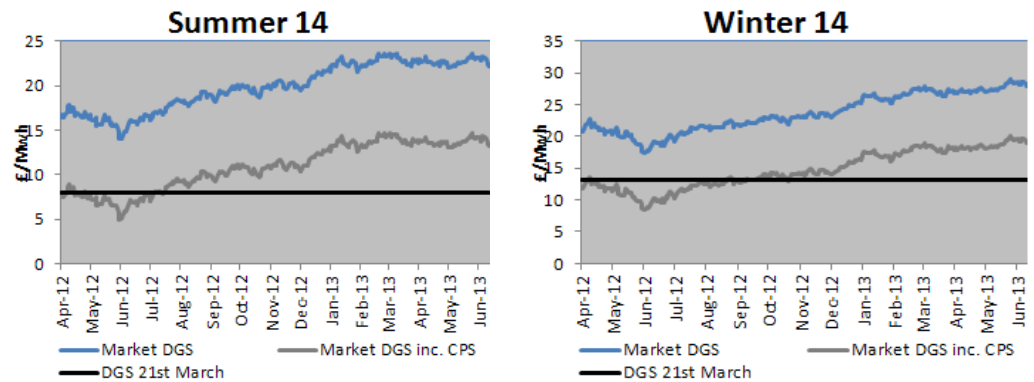
- Plans to temporarily remove allowances passed by the European Parliament
- Requires European Council approval

## Introduction of UK carbon tax

EUA movements since January 2010



Carbon Tax Impact on DGS



Sources: Drax Assumptions, Brokered Trades

# Appendix 8: Carbon Tax

## Introduced in Budget 2011 – effective April 2013

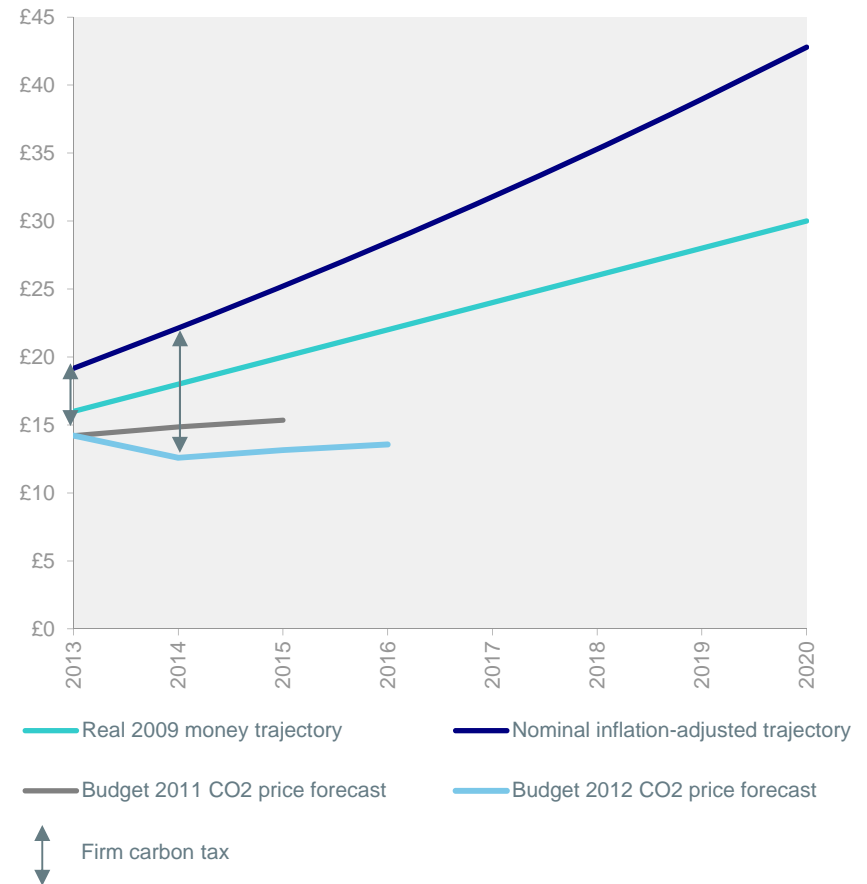
### Climate Change Levy (CCL) amended to indirectly supplement EU ETS carbon price

- Based on fuel (coal) consumption

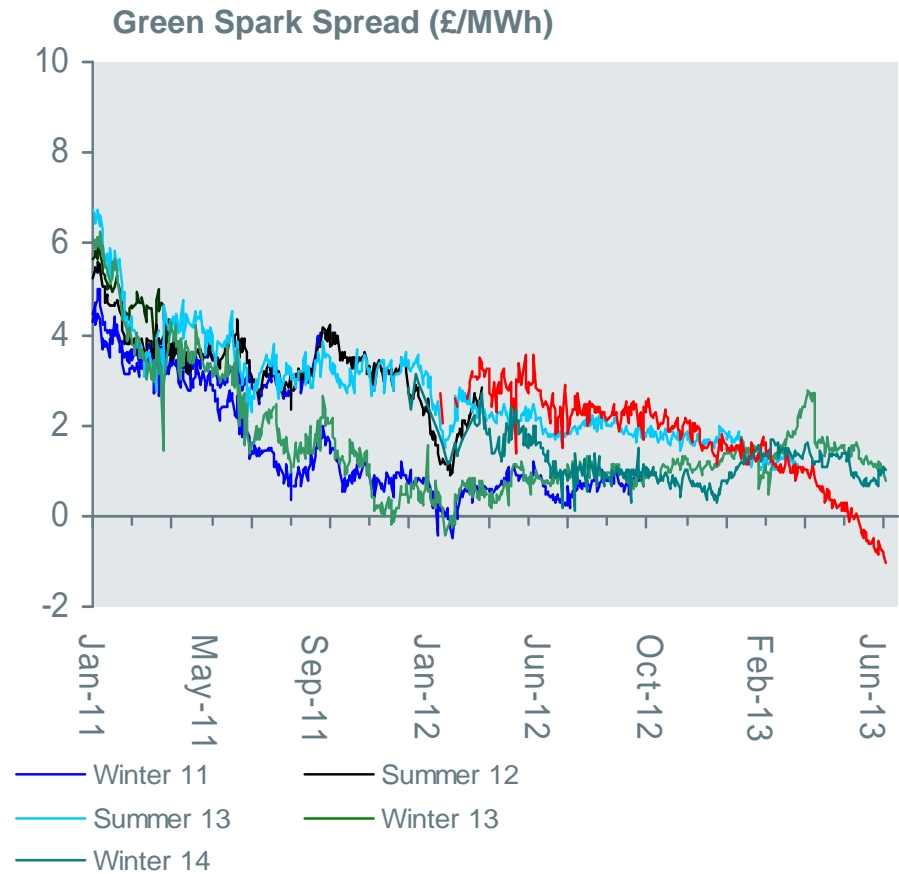
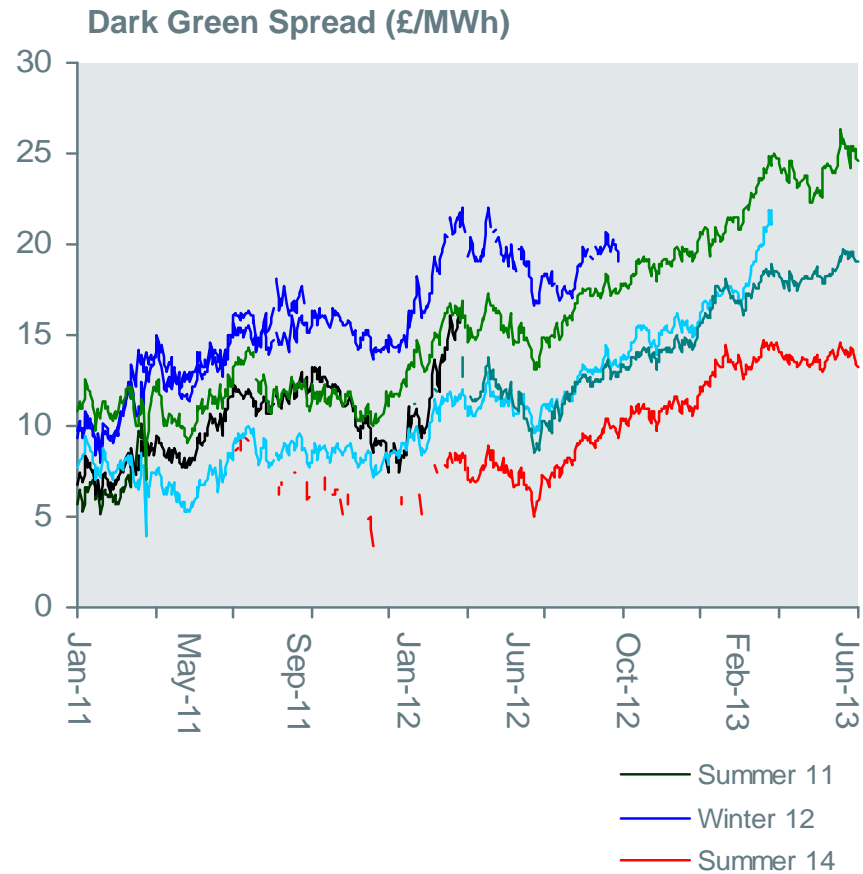
### Tax per tonne CO<sub>2</sub> set annually – 2 years in advance

- 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 £23/tonne coal
- For 2015 this is £18/tonne CO<sub>2</sub>; equivalent to £43/tonne coal

HMT Projected Carbon Tax to 2020

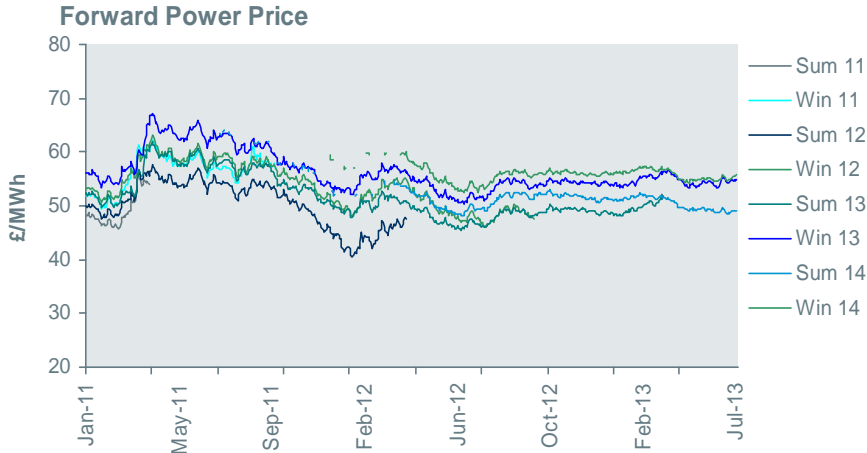


# Appendix 9: Forward Spread Movements

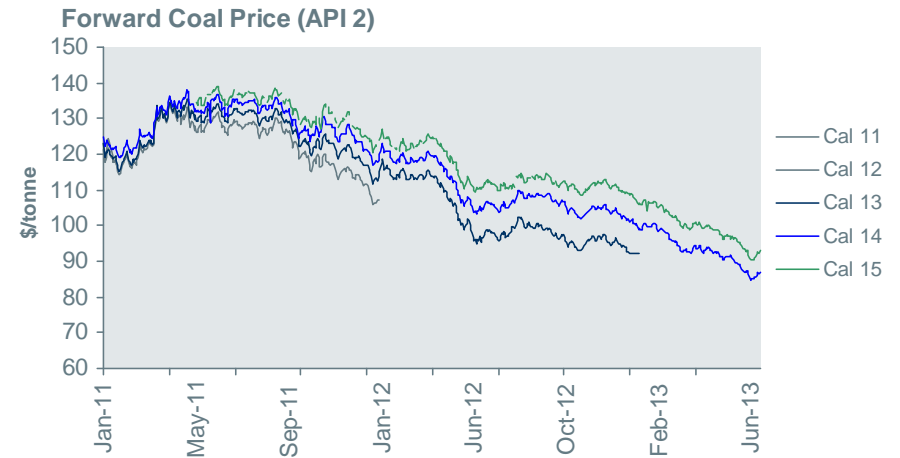


Source: Drax. Assumed typical efficiencies: Dark Spread - 36%, Spark Spread - 49%

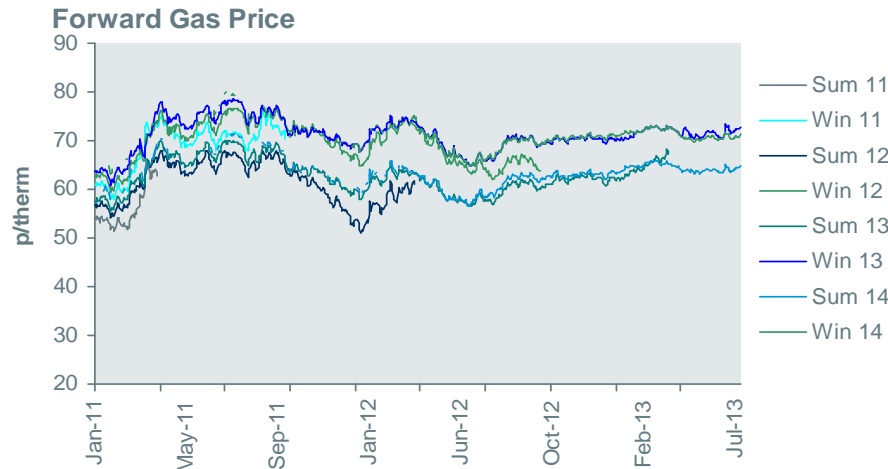
# Appendix 10: Commodity Price Movements



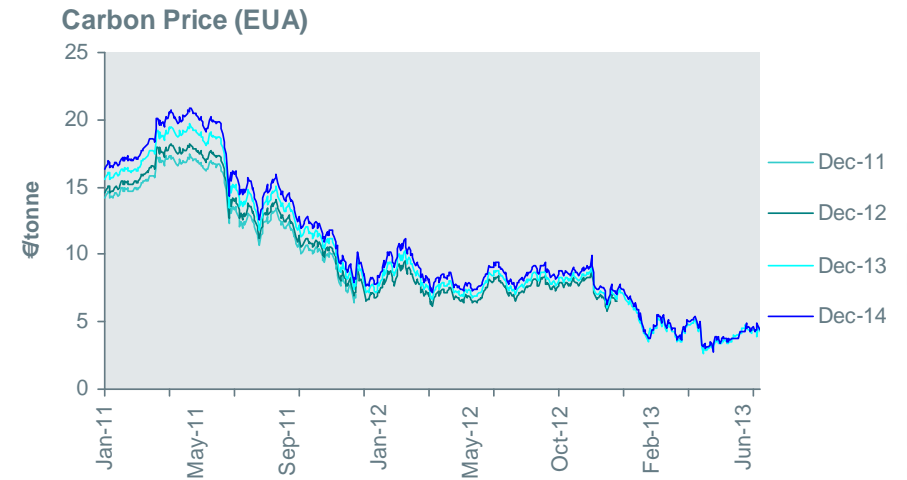
Sources: Brokered Trades, Prebon, Spectron, ICAP, GFI



Source: Brokered Trades, McCloskey



Source: Brokered Trades, Spectron



Source: ICE ECX

# Appendix 11: Ofgem Capacity Assessment

## Significant uncertainty

- Key drivers:
  - Gas plant closures
  - Gas plant new build
  - Interconnector flows

## Ofgem capacity assessment conclusions:

- Base case de-rated margin decline to 4% by 2016
- Wide range of possible outcomes

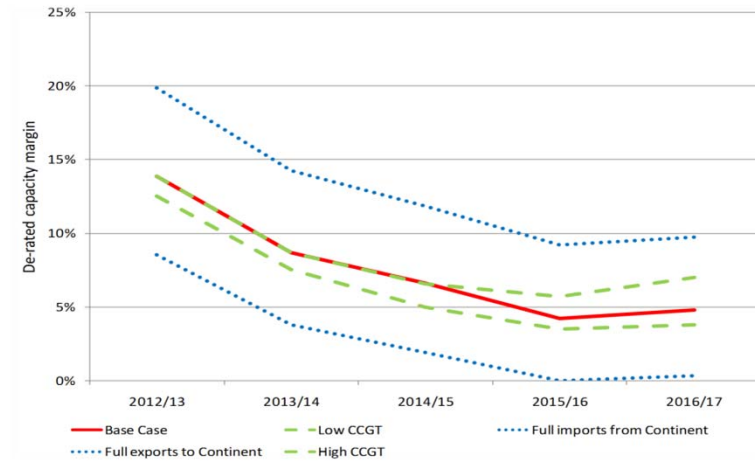
## Key Ofgem generation supply assumptions

### Installed capacity changes by 2016/17 (from 2012/13 base year):

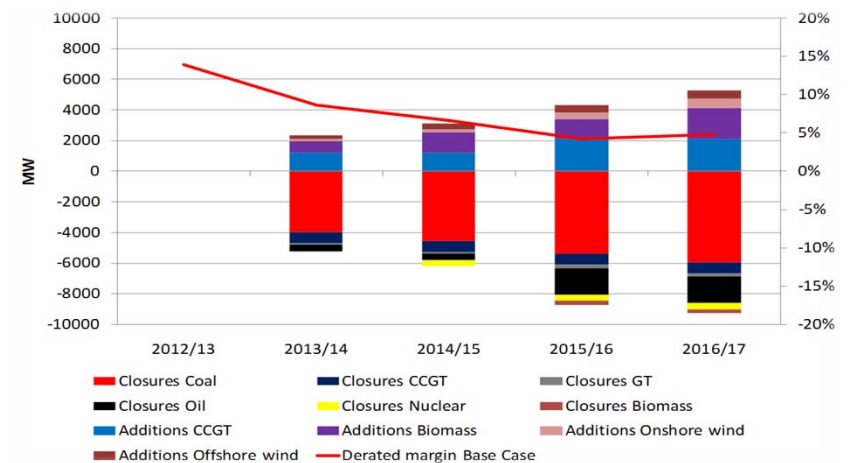
- LCPD: 7GW coal and oil closes
- 1GW gas closes
- 2GW new gas (or return to service)
- 2GW new biomass
- 5GW new wind

(1) Source: Ofgem Electricity Capacity Assessment (October 2012)  
 De-rated margin = excess of available capacity to peak demand expressed as a %  
 De-rating factors estimated by Ofgem based on historical availability

Ofgem De-rated Capacity Margin Projections (1)



Ofgem De-rated Capacity Margin and Changes (1)



## Appendix 12: LCPD

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 – May 2013)
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	Closed
Ratcliffe	E.ON UK	Coal	2000	2000	0	2000	0	
Ironbridge	E.ON UK	Coal	970	0	0	0	970	54%
Rugeley	International Power	Coal	996	996	0	996	0	
Ferrybridge	Scottish & Southern Energy	Coal	1960	980	0	980	980	U1&2 12%
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	Closed
Uskmouth	Scottish & Southern Energy	Coal	393	393	0	393	0	
Didcot A	RWE npower	Coal	1940	0	0	0	1940	Closed
Tilbury*	RWE npower	Coal	1020	0	0	0	1020	BOIL 7&8 6% BOIL 9&10 5%
Aberthaw	RWE npower	Coal	1455	1455	0	1455	0	
Grain	E.ON UK	Oil	c.1300	0	0	0	c.1300	Closed
Littlebrook	RWE npower	Oil	c.1100	0	0	0	c.1100	87%
Fawley	RWE npower	Oil	c.1000	0	0	0	c.1000	Closed
<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 May 2013

\* RWE previously proposed conversion of Tilbury to 100% biomass, but plant may now close



# Appendix 13: Biomass Fuels

## Forestry Residuals



Forestry thinnings



Harvesting residues



Chips/  
Sawdust



Bark



Wood pellets

## Agricultural By-products



Wheat/Oat straw



Sunflower husks



Sugarcane bagasse



Rice straw



Olive pulp



Nut shell

## Energy Crops



Miscanthus & switchgrass



Bamboo



Jatropha



Short Rotation Coppice (e.g. Willow)



Short Rotation Forestry (e.g. Eucalyptus)

# Appendix 14: ROC Banding Conclusions

Technologies	Level of ROCs / MWh	
	Previous Support	DECC Decisions – July 2012
Offshore wind	2.0	2.0 – 1.8
Onshore wind	1.0	0.9
Standard co-firing (< 50%)	0.5	0.3 – 0.5
Enhanced co-firing (51% - 84%)	0.5	0.6
Enhanced co-firing (85% - 99%)	0.5	0.7 (2013 – 2014) 0.9 (2014+)
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

# Appendix 15: ROC Mechanics

**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**

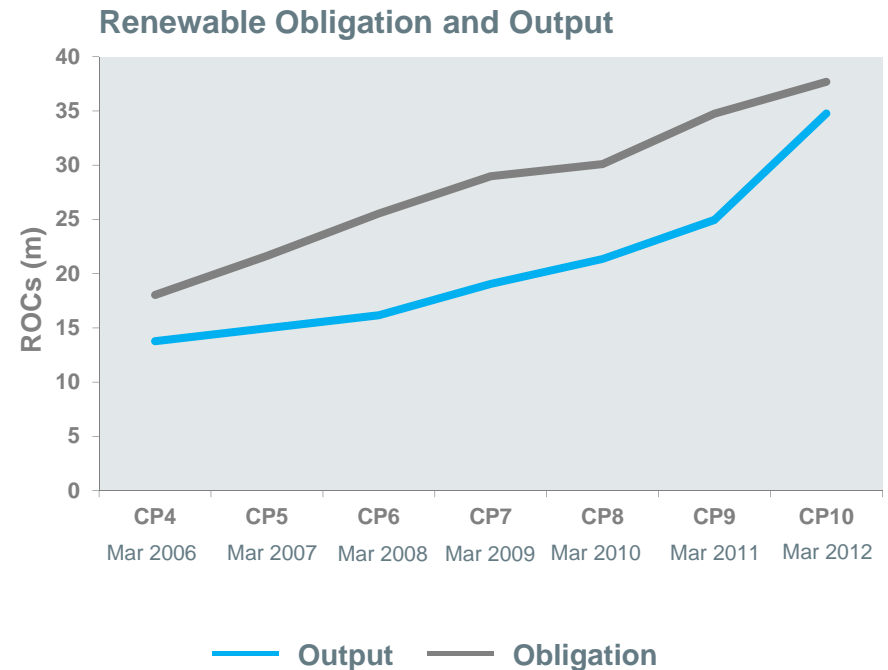
- Buy-out is mandated price with RPI indexation; currently c. £41/MWh

**Mechanism in place to ensure:**

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

**Cash flows**

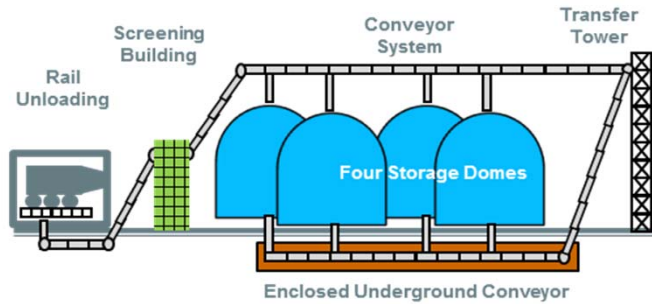
- Obligation is annual (April – March)
- ROCs surrendered or buy-out paid by 1 September following March year end
- Recycled funds paid out in October
- Drax exploring options to accelerate ROC cash flows



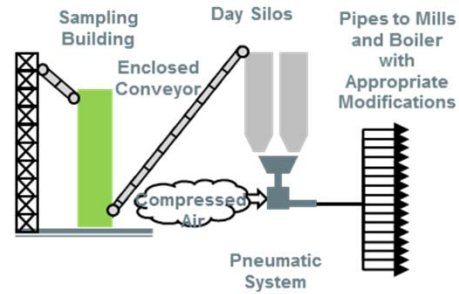
Source: Renewables and CHP Registry, Ofgem Renewables Obligation Annual Reports & Information Notes

# Appendix 16: Drax Site Schematic

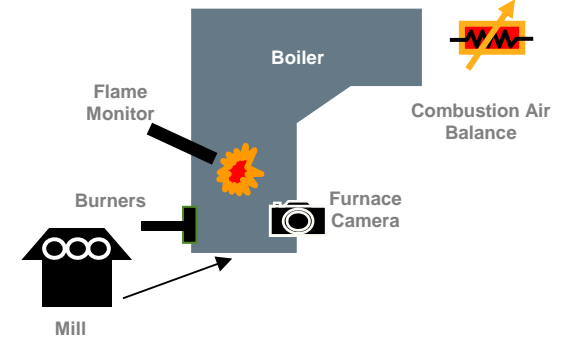
## Rail Unloading and Storage



## Fuel Distribution



## Combustion



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# Half Year Results

6 Months Ended 30 June 2013

30 July 2013

