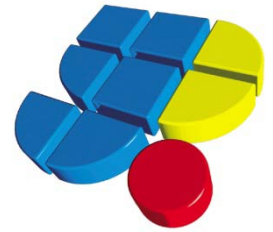


# **APSE.**

## **17<sup>th</sup> November 2010.**

**Flexible purchasing of energy.**

# The Market



- The domestic market supplies the general public and Small Medium Enterprise business. Requires a supplier to give 28 days notice to change the terms of any contract.
- YPO trades in the Industrial and Commercial futures market. Numerous price changes occur within day. Like any traded commodity it is demand lead and therefore price dynamic.
- Once a contract is made the prices and terms and conditions are fixed for a specific period.



# Product portfolio



All dictated by timing to market!



Jet fuel



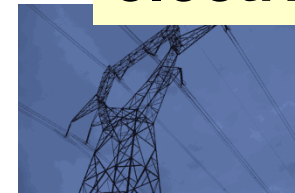
coal



oil

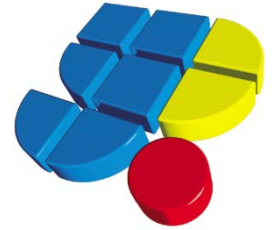


gas



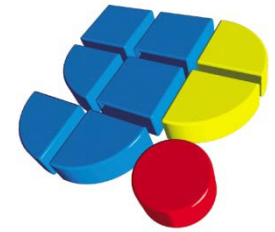
electricity

# Market Drivers



- Due to the lack of investment many electricity generation sets are past their best. Increases in distribution and transmission charges have been approved by OFGEM which will permit the fourteen regional District Network Operators to invest in asset replacement programmes. These charges came in to force on the 1<sup>st</sup> April 2010.
- Geo-political - On going conflict in Iraq, insurgencies in Africa, Venezuela could flare again. The tension between Russia and the Ukraine is a constant threat.
- Global economy –Energy cycle, demand forecast , competing fuel costs, £/\$ as oil is denominated in dollars.
- Import / Export - UK has become increasingly reliant on imports due to the demise of our indigenous North Sea reserves. Inter connector import/export/storage costs.
- Weather - Hot Summer/Cold Winter?
- Speculation - Increased volatility, shortages, less predictability (i.e. once cheap in summer, dearer in winter), banks now trading energy commodities.

# Benefits of Aggregation

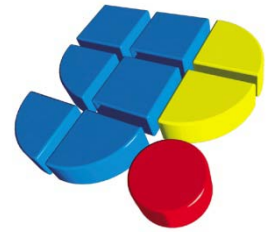


- Smoothing out of unattractive load factor and flat demand. Schools only open ten months of the year enjoy association alongside buildings with high demand many of which have air conditioning. Some examples are Leisure Centres, Abattoirs, Window factories, Transport interchanges, Pumping stations, Police and Fire stations and large public buildings.

YPO exploit the advantages of aggregation which allows a supplier to pass on savings accrued from the ability to better utilise its physical and fiscal resources.

- Ability to complete a single tender for major users with attractive and consistent demand but only deal with a single point of contact re-YPO with a gilt edged guarantee of the payment of all accounts rendered. In the current financial climate suppliers are unable to get a satisfactory credit rating for many private sector companies.
- The Public Contract Regulations 2006 Directive 2004/18/EC permits the award of frameworks. By using flexible purchasing techniques YPO is then able to aggregate demand and buy in clips to fulfil the consortiums requirements instead of using its former technique of fixing volume out in a single day when market conditions may/may not be favourable.

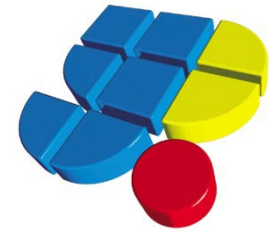
# YPO Energy Portfolio



Major users are drawn from:

- Local Authorities, Universities, Colleges, Large Grammar and Comprehensive Schools, Housing Associations, Leisure Centres, Passenger Transport Executives, Regional Fire & Rescue Services, Police Authorities (including Helicopter Air Support Units), Window Factories, Market Halls, Abattoirs, Pumping Sub-Stations, Town Halls, Primary Schools, OAP and Community sheltered housing , District Heating schemes, Cook chill canteens and food rooms.

# What is Pro5?



- Group of five local authority consortia
  - CBC (Central Buying Consortium): South East
  - ESPO (Eastern Shires Purchasing Organisation): Leicester
  - NEPO (North East Purchasing Organisation): Gateshead
  - WMS (West Mercia Suppliers): Shrewsbury
  - YPO (Yorkshire Purchasing Organisation): Wakefield
- Fully endorsed by the Office of Government Commerce
- Fully compliant procurement route



**Central  
Buying  
consortium**

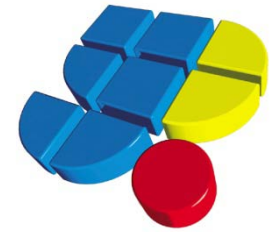
**ESPO**  
EASTERN SHIRES PURCHASING ORGANISATION

**ne  
po**  
North Eastern  
Purchasing Organisation

**WMS**

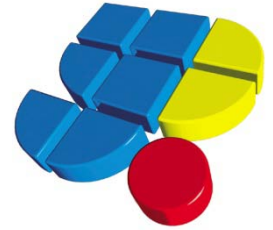
**Yorkshire Purchasing**

# Aggregated Purchases



- Able to remove volatility via flexible purchasing, using a robust risk management strategy and overarching Governance protocol which has been agreed by all energy framework participants.
- YPO are involved in the Transforming Government Procurement work stream and now sit on the OGC/MOD sponsored Energy Strategy Team which meets regularly at Her Majesty's Treasury Offices in London.

# Transforming Government Procurement



- Independent office of The Treasury.
- Established in 2000 as part of Peter Gershon's Transforming Government Procurement Report.
- Made up of a number of departments within the Treasury.
- OGC tasked with:
  - Helping Government deliver best value from its spending (£175bn per annum).
  - Driving major change creating best practice in procurement across Government.

# The efficiencies will be achieved

- using 9 common procurement categories:



# Who's involved?



## Local Government:

- Eastern Shires Purchasing Organisation
- Laser
- North Eastern Purchasing Organisation
- West Mercia Supplies
- Yorkshire Purchasing Organisation
- London Energy Project
- Regional Improvement and Efficiency Partnerships

## Education

- The Energy Consortium
- Department for Children, Schools and Families
- Department for Innovation, Universities & Skills

**Represents  
>90% of  
public  
sector  
volumes**

## Central Government:

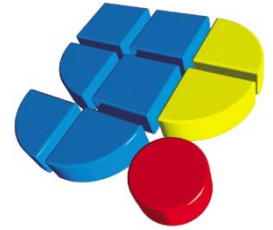
- Office of Government Commerce
- Buying Solutions (but cover all sectors)
- Ministry of Defence
- Department of Energy and Climate Change
- Department for Work and Pensions
- Department for Business, Enterprise and Regulatory Reform
- HM Revenue & Customs

## Health

- NHS Purchasing and Supply Agency

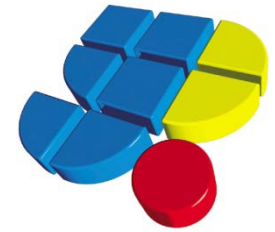
## Devolved Administrations

- Procurement Scotland
- Value Wales

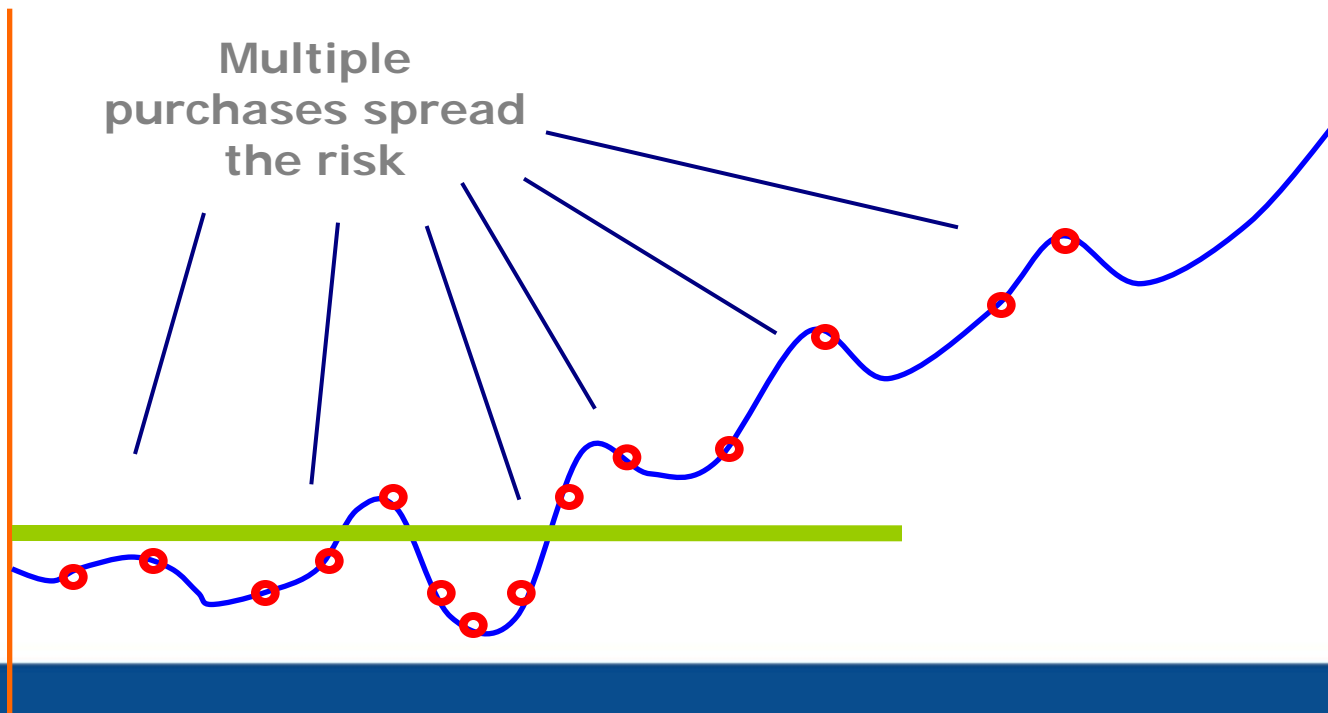


- Collaborative Procurement Mark awarded to contracts which meet the Transforming Government Procurement standards as defined by the OGC.
- YPO has been steadily working towards this for 18 months and has now been awarded the CP Mark on the following YPO energy contracts:
  - Firm Gas
  - Electricity
  - Liquid Fuels

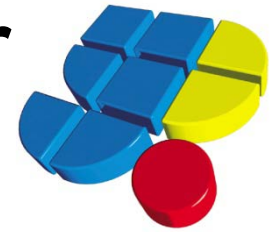
# Flexible purchasing



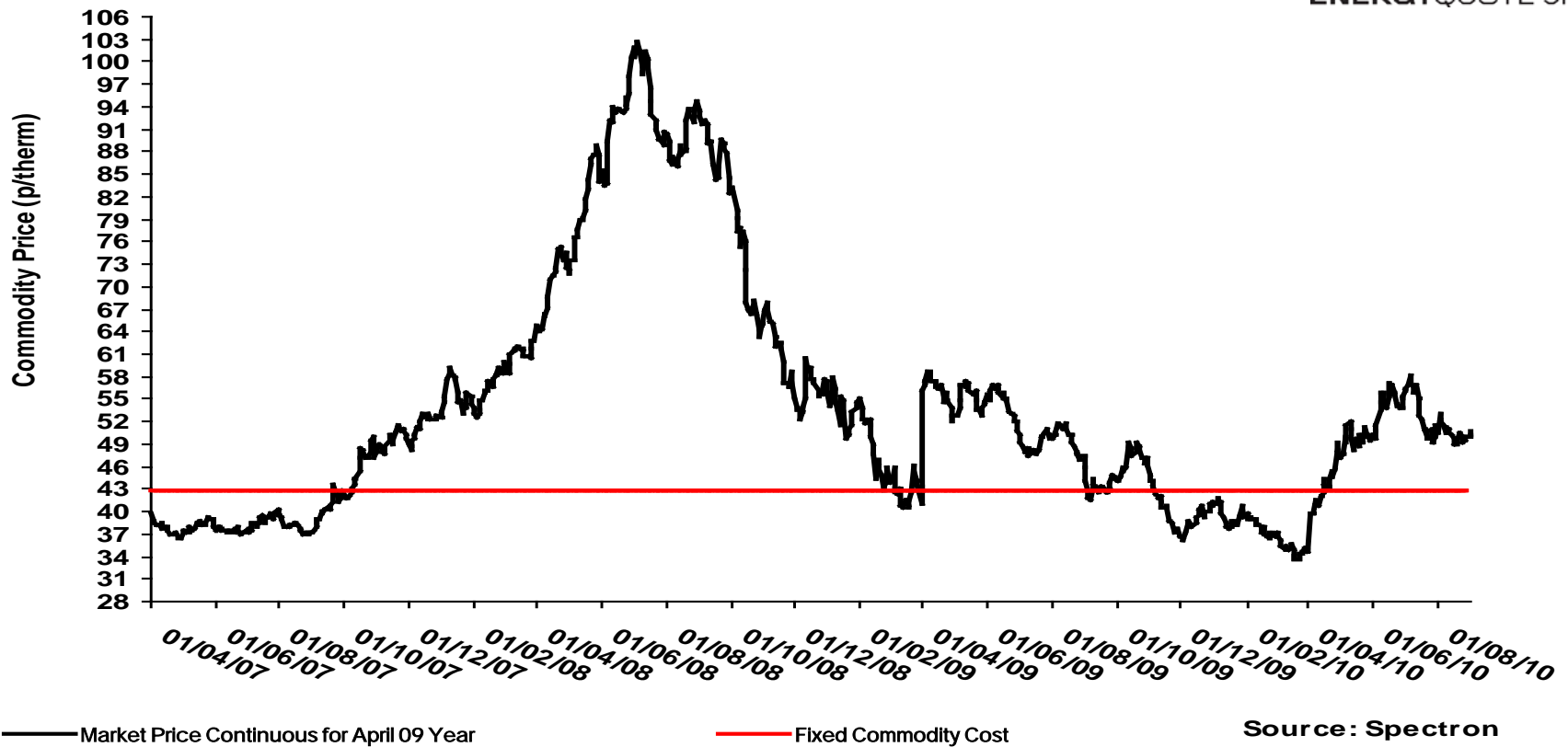
- YPO Members strategy is that all purchases are to be made before contract start.
- Members then have fixed price for the entire contract year.



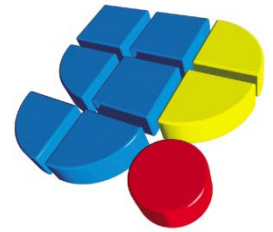
# Wholesale Gas Tracker



ENERGYQUOTE JHA



# Gas Trading



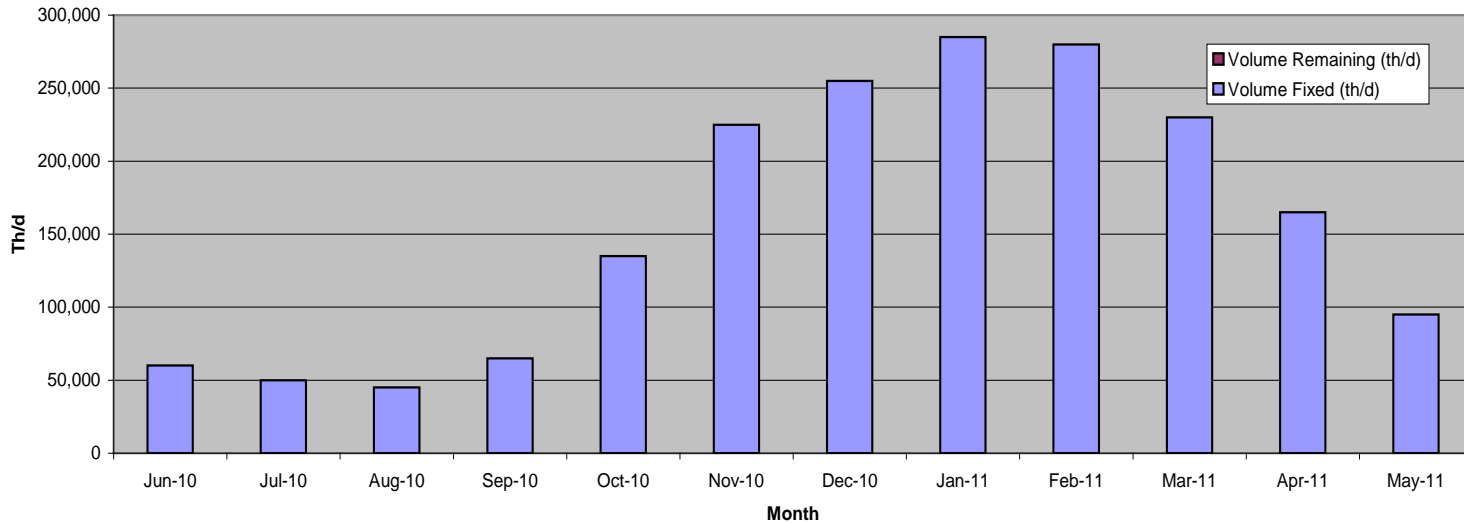
- All gas is purchased prior to contract year.
- Purchased in clips of 5,000 or 25,000 units per day.
- All calls to BG traders are made on a recorded telephone line and can be verified. The contract actually states “that the spoken word will rule”.
- All prospective purchases are discussed and agreed by a minimum of two YPO staff and a conference call with broker advisors at a TPI Energy Quote. The YPO risk strategy involves buying to pre-agreed cover plans. Purchases are confirmed by e-mail after which a purchase position report is produced and remitted by BG to YPO. This document is then sent to the clients on a monthly basis.

Position Report		BGB Trading Contacts		
Customer:	YPO	Mark Burridge	07874401330	<a href="mailto:bqbgashedging@centrica.com">bqbgashedging@centrica.com</a>
Current Date	08/09/2010	Phil Dennis		
Last Updated	06/07/2010	Mike Maddox		

Current Weighted Average Price for Year	
42.89	p/th
1.463	p/kWh



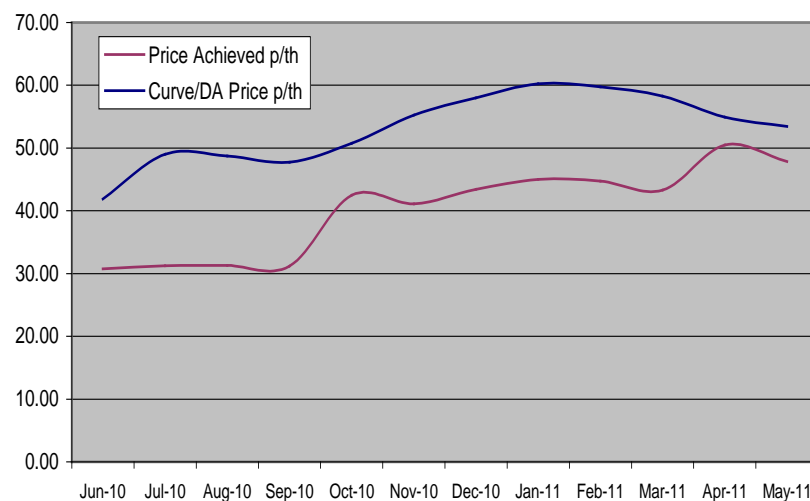
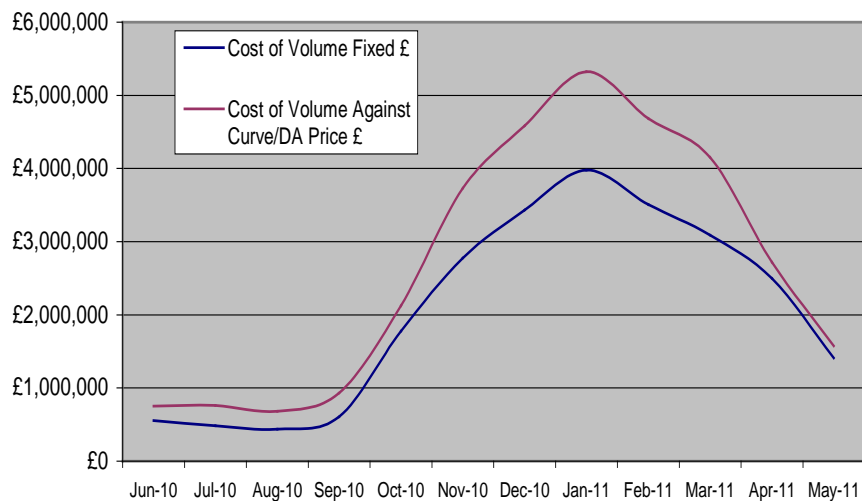
Month Text	Days in month	Curve/DA Price (p/th)	Forecast Volume (th)	Fixed Volume (th)	Volume remaining (th)	Forecast Volume (th/d)	Volume Fixed (th/d)	Volume Remaining (th/d)	Cost of Volume Fixed (£)	Forecast Cost of Remaining Volume (£)	Forecast Total Cost (£)
Jun-10	30	41.88	1,800,000	1,800,000	0	60,000	60,000	0	£553,500	£0	£553,500
Jul-10	31	49.00	1,550,000	1,550,000	0	50,000	50,000	0	£484,298	£0	£484,298
Aug-10	31	48.75	1,395,000	1,395,000	0	45,000	45,000	0	£436,635	£0	£436,635
Sep-10	30	47.75	1,950,000	1,950,000	0	65,000	65,000	0	£607,950	£0	£607,950
Oct-10	31	50.75	4,185,000	4,185,000	0	135,000	135,000	0	£1,778,625	£0	£1,778,625
Nov-10	30	55.25	6,750,000	6,750,000	0	225,000	225,000	0	£2,774,625	£0	£2,774,625
Dec-10	31	58.00	7,905,000	7,905,000	0	255,000	255,000	0	£3,430,615	£0	£3,430,615
Jan-11	31	60.25	8,835,000	8,835,000	0	285,000	285,000	0	£3,976,525	£0	£3,976,525
Feb-11	28	59.75	7,840,000	7,840,000	0	280,000	280,000	0	£3,506,860	£0	£3,506,860
Mar-11	31	58.25	7,130,000	7,130,000	0	230,000	230,000	0	£3,088,220	£0	£3,088,220
Apr-11	30	54.90	4,950,000	4,950,000	0	165,000	165,000	0	£2,499,000	£0	£2,499,000
May-11	31	53.45	2,945,000	2,945,000	0	95,000	95,000	0	£1,409,880	£0	£1,409,880
			<b>57,235,000</b>	<b>57,235,000</b>	<b>0</b>	<b>1,890,000</b>	<b>1,890,000</b>	<b>0</b>	<b>£24,546,733</b>	<b>£0</b>	<b>£24,546,733</b>



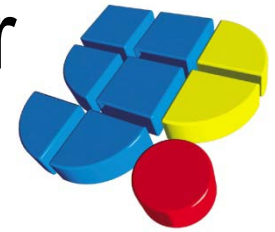
Trading Performance		BGB Trading Contacts		
Customer:	YPO	Mark Burridge	07874401330	<a href="mailto:bqbgashedging@centrica.com">bqbgashedging@centrica.com</a>
Current Date	08/09/2010	Phil Dennis		
Last Updated	06/07/2010	Mike Maddox		



Month Text	Days in month	Curve/DA Price (p/th)	Monthly Volume Fixed	Cost of Volume Fixed £	Cost of Volume Against Curve/DA Price £	Performance £	Price Achieved p/th	Curve/DA Price p/th	Performance p/th
Jun-10	30	41.88	1,800,000	£553,500	£753,840	£200,340	30.75	41.88	11.13
Jul-10	31	49.00	1,550,000	£484,298	£759,500	£275,203	31.25	49.00	17.76
Aug-10	31	48.75	1,395,000	£436,635	£680,063	£243,428	31.30	48.75	17.45
Sep-10	30	47.75	1,950,000	£607,950	£931,125	£323,175	31.18	47.75	16.57
Oct-10	31	50.75	4,185,000	£1,778,625	£2,123,888	£345,263	42.50	50.75	8.25
Nov-10	30	55.25	6,750,000	£2,774,625	£3,729,375	£954,750	41.11	55.25	14.14
Dec-10	31	58.00	7,905,000	£3,430,615	£4,584,900	£1,154,285	43.40	58.00	14.60
Jan-11	31	60.25	8,835,000	£3,976,525	£5,323,088	£1,346,563	45.01	60.25	15.24
Feb-11	28	59.75	7,840,000	£3,506,860	£4,684,400	£1,177,540	44.73	59.75	15.02
Mar-11	31	58.25	7,130,000	£3,088,220	£4,153,225	£1,065,005	43.31	58.25	14.94
Apr-11	30	54.90	4,950,000	£2,499,000	£2,717,550	£218,550	50.48	54.90	4.42
May-11	31	53.45	2,945,000	£1,409,880	£1,574,103	£164,223	47.87	53.45	5.58
			<b>57,235,000</b>	<b>£24,546,733</b>	<b>£32,015,055</b>	<b>£7,468,323</b>	<b>42.89</b>	<b>55.94</b>	<b>13.05</b>



# Wholesale Electricity Tracker

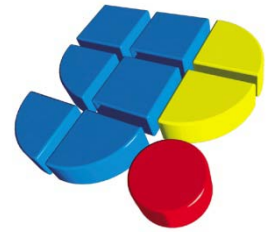


ENERGYQUOTE JHA



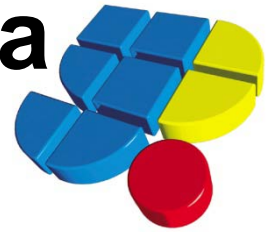
— November 2009 Electricity Commodity Price

# Electricity Supply



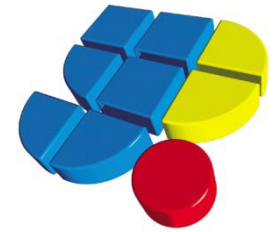
- The consortiums Electricity requirements will from November 2010 be supplied by n power / RWE Group.
- n Power also supply to three other Principal Buying Organisation's within Pro 5.
- Under the principles of transforming Government Procurement Central and Local Government undertakings need the ability to trade Electricity on a totally aggregated basis (Half Hourly + Non Half Hourly + Street lighting)
- The pricing element is divided into 3 distinct segments:
  - Tendered – Administration / risk, added value elements with costs being agreed for the entire duration of the agreement.
  - Wholesale – Base, Peak and Residual load traded in the open market in accordance with risk strategy, rolling cover programme
  - Published – Pass through charges such as Distribution and Transmission use of systems network charges, Reactive Power, CCL and VAT.

# Compliance and PPA criteria

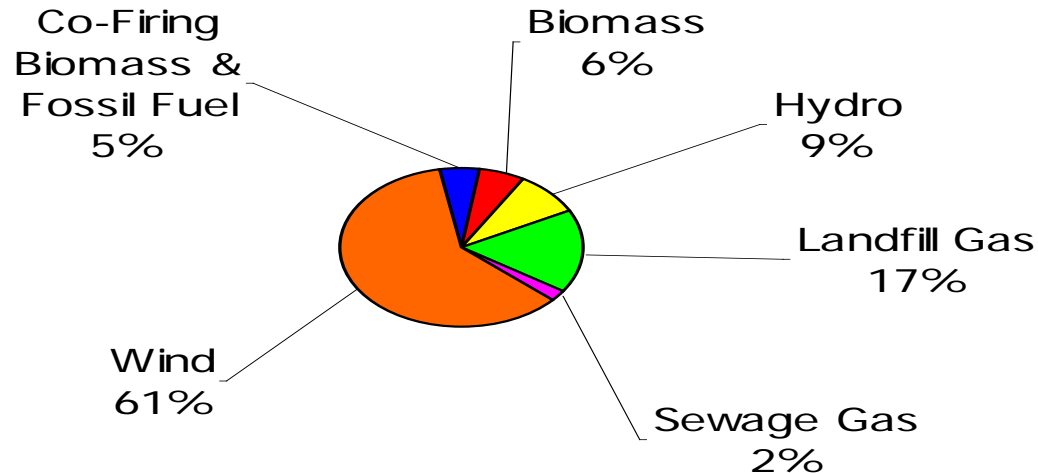


- For a PBO to be fully compliant under TGP it must use a contract with the ability to deliver Levy Exemption Certificates and Renewable Obligation Certificates as well as having an ability to deliver a PPA (Power Purchase Agreement) through a Grid trade master agreement. The YPO Contract has the ability to use a PPA.
- A PPA involves using a 3<sup>rd</sup> Party generator via a grid trade master supply agreement satisfactory to the appointed supplier (npower) to meet all or some of the Base and Peak load profile.
- The mechanisms agreed must permit the delivery of a LEC directly or via a nominated 3<sup>rd</sup> Party and an option to deliver a ROC directly or via a 3<sup>rd</sup> Party to meet some of the renewable obligation value. In such circumstance an RO fee would not apply.

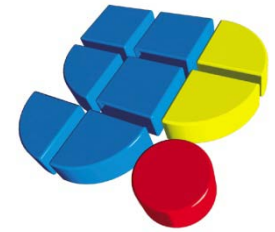
# Green Electricity Generation Mix



YPO has 100% green on its UMS contract and 25% on its contracts for the HH and NHH buildings. In total electricity from various sustainable source accounts for circa 450 million Kilowatt hours.

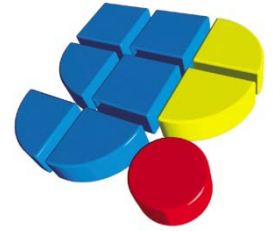


# Street Lighting



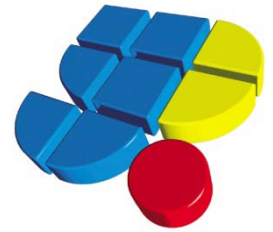
- It is impractical to fit a meter to every street lighting column and so an easier solution is to fit a Photo Electric Control Array (PECU) which acts as a pseudo meter at the Grid Supply Point.
- The PECU Array is populated with cells taken from an Authorities lighting estate.
- An inventory showing the type of lamp / ballast is remitted to the District Network Operator on a monthly basis. The switching regime of the cell is then compared to a published table of each manufacturers guaranteed burning hours applicable to each lamps wattage. A public electricity supplier can then remit an accurate bill based on the profile relating to the amount of power required to operate the various lamps being used within the array.
- An Authority with a PECU Array fitted trades on a Half Hourly basis, which for CRC purposes and pricing is desirable. YPO Authorities with arrays fitted include Bolton, Bury, Calderdale, City of Bradford, Leeds, Rochdale, Sheffield, Wakefield, Doncaster, Kirklees, Oxfordshire, Rotherham, St Helens, Stockport, Tameside, Warrington and Wigan.
- If an array has not been fitted the consumption is estimated and is classed as Non Half Hourly and a higher price is usually charged. Currently Barnsley, City of York, Knowsley, North East Lincolnshire, South Yorkshire Passenger Transport Executive, Walsall and West Yorkshire Passenger Transport Executive all trade Non Half Hourly.

# YALE

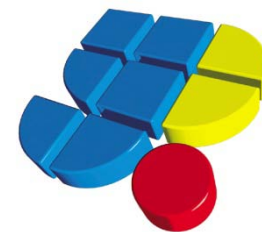


- **YALE – Yorkshire and Lancashire Engineers Environmental discussion paper on Power factor correction drew favourable response from the Carbon Trust, ILE the London Energy project and enquiries from practitioners in the USA, New Zealand, Australia, South Africa, Canada and Gaza.**
- **Because current lags voltage when using wire wound ballasts, a capacitor is fitted to correct any imbalance because the power factor quotient is an integral pre-requisite in any connection agreement with the District Network operator.**
- **YALE invited all manufacturers of street lighting equipment to meetings at YPO. Readily admitted that to remain competitive they fit cheap capacitors. Tests by YPO lighting authorities have shown that these cheap units can fail very quickly.**
- **When this happens there can be an increase in current as well as cost associated to labour and equipment to replace although usually this is done as part of any bulk cleaning and change regime which is usually done on a 6 year cycle.!**
- **YALE measured the loss in current as being 41%. Typically that could equate to the supply to 350,000 domestic properties.**
- **As a result of this wasted energy an additional 500,000 tonnes of carbon dioxide could be emitted – that is equivalent to the tailpipe emission of circa 200,000 vehicles.**
- **The solution- fit a capacitor guaranteed to last 6 years at a cost of around £1 per unit or dispense with wire wound ballasts and move to fully electronic gear.**

# Power Reduction for Street Lighting



- All Authorities are faced with pressures to reduce energy consumption and carbon emissions, enforced through the Climate Change Act 2008.
- The following schemes are being trialled in an attempt to reduce consumption in street lighting:
  - Static Dimming / Power Reduction using Pre-Set Ballasts – An average Authority with 30,000 street lights can save (approximately) 465 tonnes of CO<sub>2</sub> a year.
  - Dynamic Power Reduction using computer linked Central Management Systems An average Authority with 30,000 street lights can save (approximately) 860 tonnes of CO<sub>2</sub> a year.
  - Reflective road studs high visibility road markings.
  - Targeted switch off of some street lights.
  - Trimming (review of switch on and switch off times).



# Any Questions?

Tom James:

[tomj@ypo.co.uk](mailto:tomj@ypo.co.uk) or 01924 834867

Adam Throup:

[adamt@ypo.co.uk](mailto:adamt@ypo.co.uk) or 01924 885932