

# Gas SO Incentives 2012/13 Proposals Workshop



Ofgem  
12 October 2011

# Agenda

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- Shrinkage
  - Volume Targets
  - Reference Prices
  - Environmental Adjusters and Costs
- Demand Forecasting
- Residual Balancing
- Data Publication
- Unaccounted for Gas (UAG)

## Volume Targets (1)

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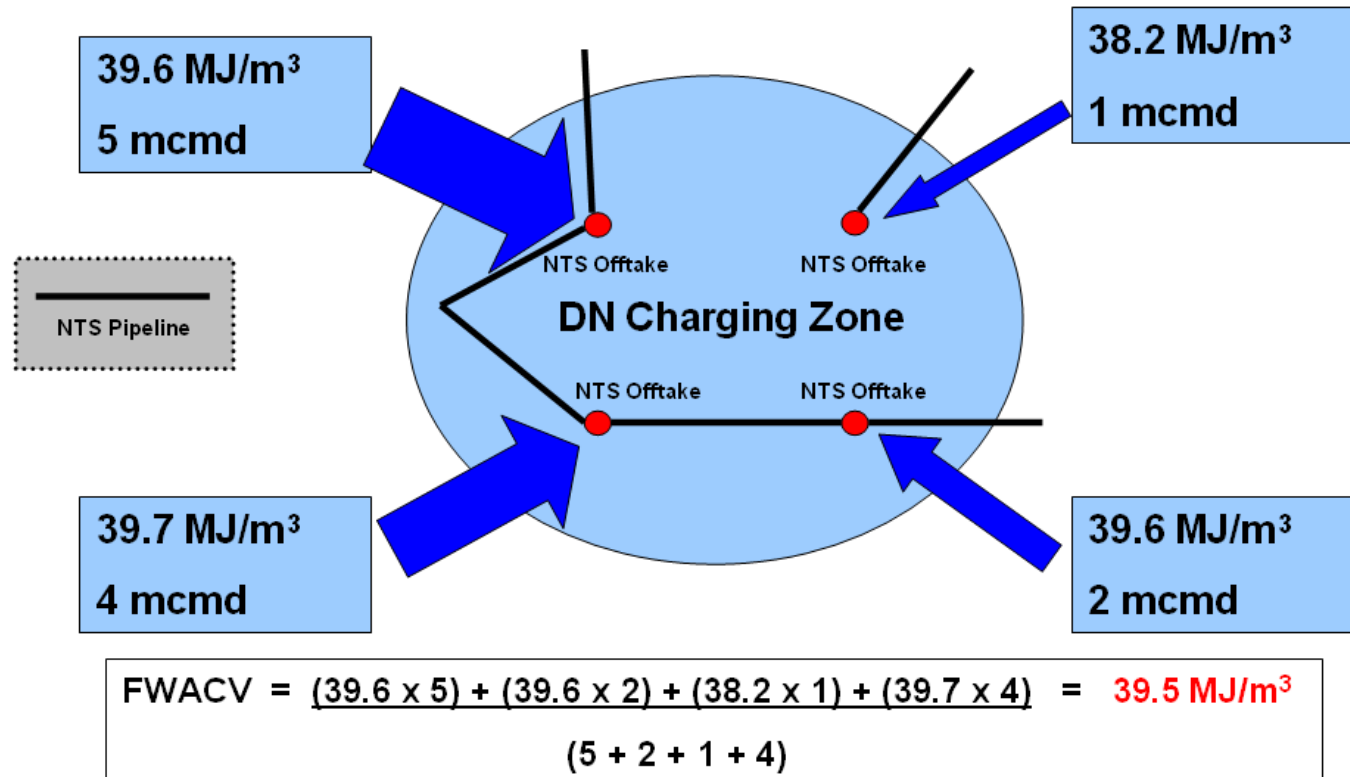
- We broadly agree with Ofgem's Shrinkage volume proposals
  
- Changing supply patterns affect the influence of individual supply sources on Compressor Fuel Use (CFU) volumes
  - Rebase the linear (St Fergus) CFU Adjuster
  - TBE central supply scenario 58mcm/d from St Fergus
  - 9.3GWh CFU per 1mcm/d change in average St Fergus supplies (per quarter)
  
- Gas (OUG) and Electric (ECE) volume targets updated to be based on latest electric drive programme dates

## Volume Targets (2)

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- Calorific Value (CV) Shrinkage volume exclusions are still appropriate
  - NGG agree that there should be no change to CV Shrinkage target including current exclusions
  
- The outturn UAG volumes continue to be variable
  - Maintain outturn UAG volume target

# CV Shrinkage



- A cap is applied to the average CV of not greater than 1 MJ/m<sup>3</sup> greater than the lowest source
  - In the above example, this would be 39.2 MJ/m<sup>3</sup>

## CV Shrinkage

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- For the current incentive, certain exclusions are allowed
  - Cowpen Bewley
  - Dyffryn Clydach
  - Ross
  - Direct DN entry points
  
- This reflects the inability of National Grid to mitigate for CV shrinkage at these sites by the operation of the NTS

# CV Exclusions: National Grid's View

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- No significant change to network design at specific DN Offtakes
- DN embedded entry connections expected to increase (UNC Mod 0391 proposes to introduce bespoke charging arrangements)
- Low probability but high material risk
- No economic method for the NTS to mitigate the CV risk at specific offtakes and DN Entry
- Propose maintenance of existing exclusions for 2012/13

# Gas Cost Reference Price (GCRP)

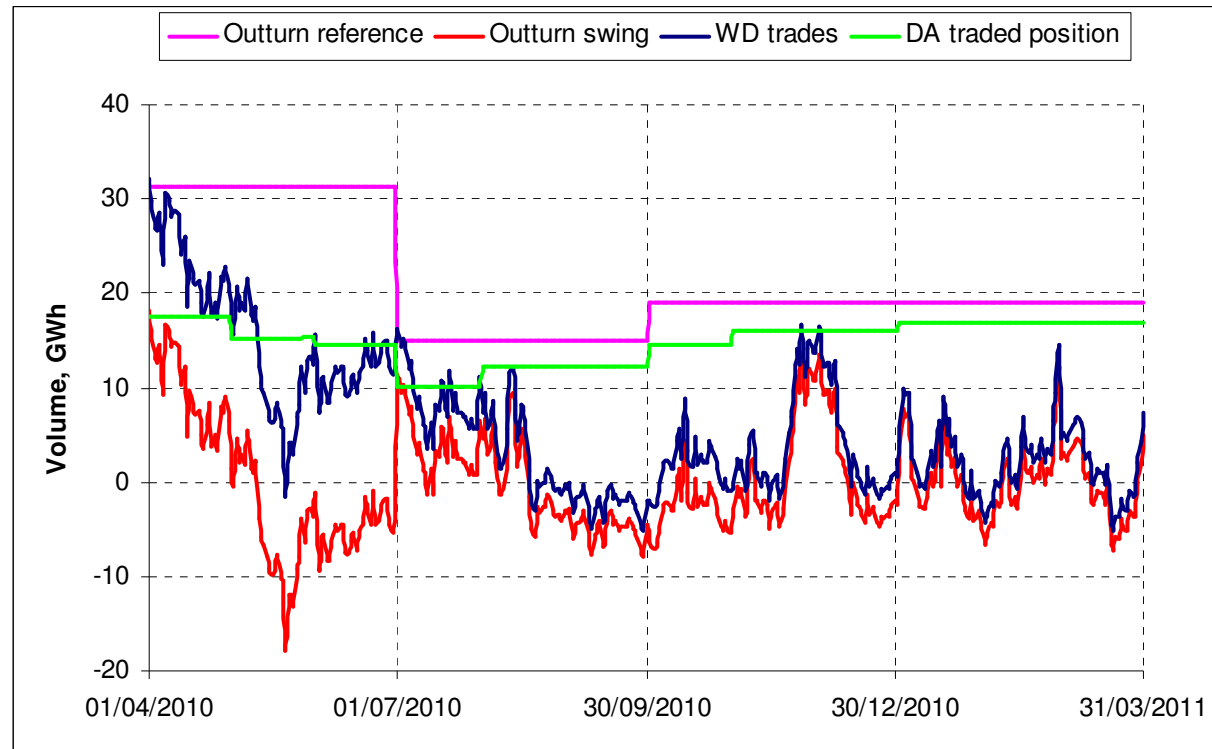
## Swing allowance

- The appropriateness of an allowance for the fine tuning of the procurement position to meet the daily shrinkage allocation ('swing allowance')
- Expect historic levels of swing to continue – 3 year average peak is 22.1GWh

| Variance from Quarterly Average Daily Shrinkage Volume | 2008/09   | 2009/10   | 2010/11   | Average   |
|--|-----------|-----------|-----------|-----------|
| High (Prompt buy required)                             | 29.2 GWh  | 18.9 GWh  | 18.1 GWh  | 22.1 GWh  |
| Low (Prompt sell required)                             | -33.8 GWh | -50.6 GWh | -18.9 GWh | -34.5 GWh |

- An ex-ante market benchmark (Rough Storage) still appropriate
- Total Rough Storage Cost (as at 2 Sep 2011)
  - $37.372\text{p/kWh/d deliverability} * 22.1\text{GWh} = \text{£}8.25\text{m}$
- 2012/13 Forecast Shrinkage Volume = 5,228GWh
- $\text{£}8.25\text{m} / 5,228 \text{ GWh} = 0.158\text{p/kWh}$  (currently 0.237p/kWh)

# ‘Swing Volumes’ 2010/11



- The difference between outturn reference and forward traded position is driven by strategy and forecast error (UAG) risk
- Q2 2010 demonstrates impact of swing volumes on ‘over/under procurement risk’

# Electricity Cost Reference Price (ECRP) Retail Uplift

- Consider adequacy of the current allowance for retail contract costs
- Competitive Tender, Summer 2010
  - Changing supplier assessment of risk for NTS compressor load profile and installation uncertainty
  - Index settled (half hourly) contracts
  - Now face greater exposure to load profile uncertainty and volatility of half hourly settlement prices

## HH Flex Contract

- Must trade reference volume by default date
- Ex-ante shape cost
- 10% annual volume tolerance – SMP cashout if exceed tolerance
- Trading flexibility - all contracts up to month ahead

## Index Settled Contract

- Bv day ahead must trade to within [ x MW] of daily reference volume
- Ex-post shape cost
  - APX HH Settlement Costs + /- 1%
- Trading flexibility - all contracts up to Day Ahead

# 'Retail Uplift' - Updated Assessment

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- Retail Uplift
  - Supplier (management fee, risk premium) £ 1.7/MWh
  - Market (BSUOS, Renewables etc) £ 8.5/MWh
  - Shape related £ 0.8 to 5.3/MWh
  - Uplift Total £ 11.0 to 15.5/MWh
- Retail Uplift = 19% to 31% at £50/MWh ECRP (current 18%)
  - Market costs increased 42%
  - Supplier costs increased 31%
- Volatility of shape cost

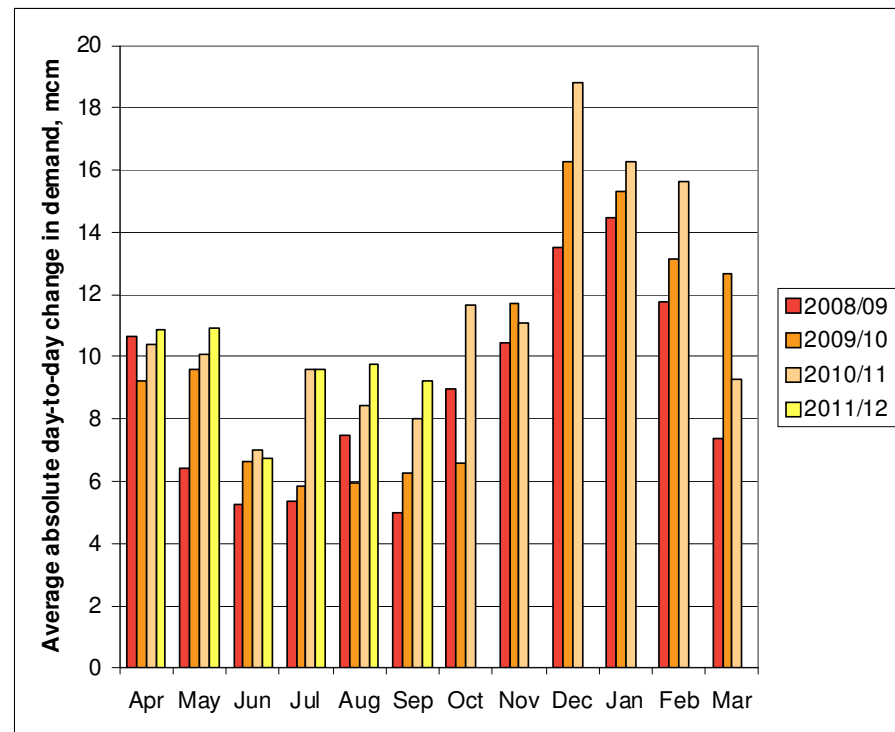
# Environmental Costs

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- CFU Carbon Cost
  - Update to latest government carbon prices
    - Replace Shadow price of Carbon (0.621p/kWh in 2011/12) with DECC's Traded Price of Carbon (0.268p/kWh in 2012/13).
- Carbon Reduction Commitment Energy Efficiency Scheme (CRCEES)
  - New cost for operation of electric compressors
  - Propose cost pass-through:
    - Mitigate duplication of incentive through the carbon price adjustment
    - Neutral impact on incentive performance
  - Expected cost ~£1.01m for 2012/13 ECE volume target

# Increasing Challenges of Demand Forecasting

- Demand Volatility
  - Day to day variability in demand is increasing
    - 5 out of 6 months in 2011/12 show highest variability
  - Growth in price responsive load
- Demand Volatility in following slides measured by:
  - Standard deviation of daily changes, as a % of average daily demand level, for that component in year to 31<sup>st</sup> July 2011



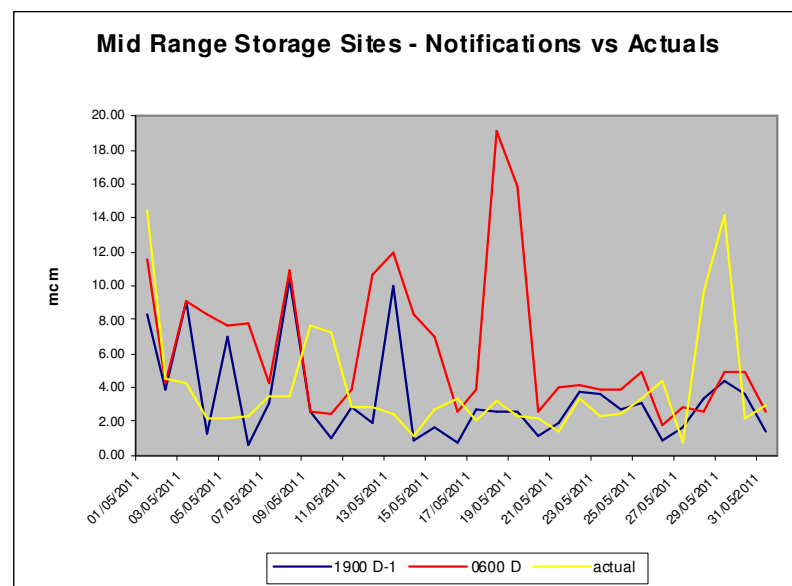
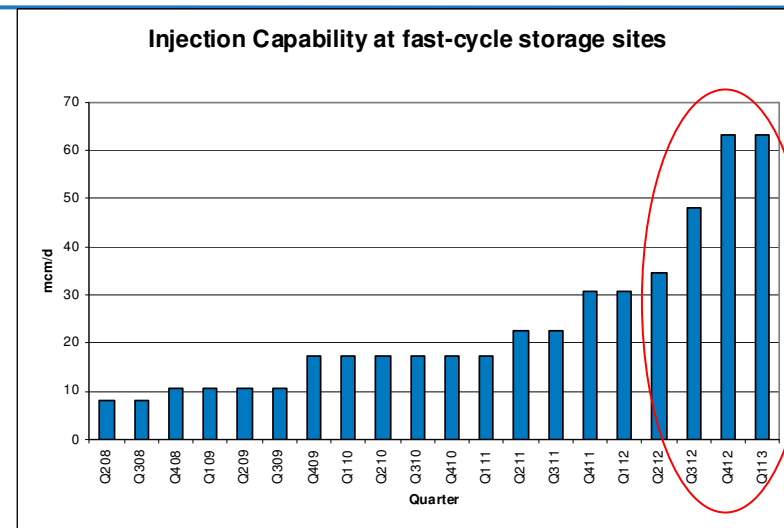
# Demand Forecasting - Storage

- **Storage demand volatility**  
~ 41%

- Fast cycle storage capacity scheduled to increase by >2.5 times by the end of March 2013 (from current levels), leading to greater forecasting difficulty

- Accuracy of day ahead OPNs from Medium Range Storage (excluding Rough)

- May 2011: Absolute difference between outturn demand and forecast was between 63% and 110%

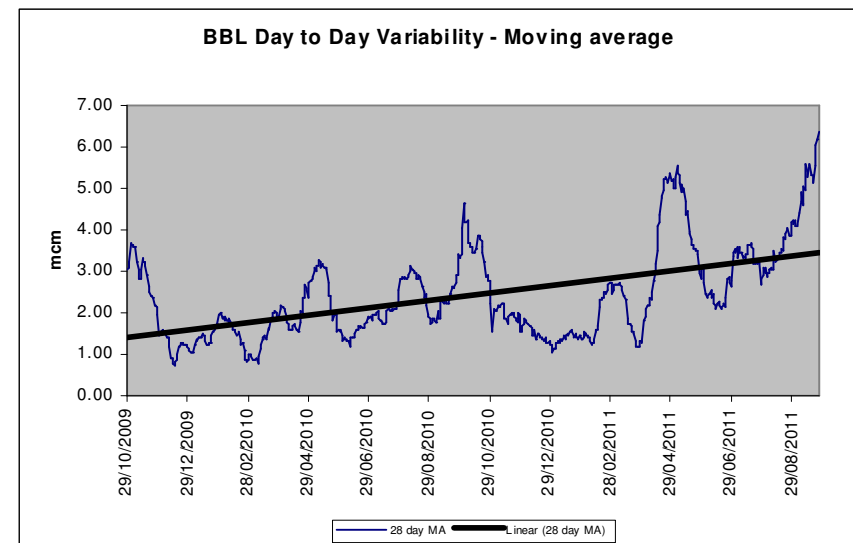
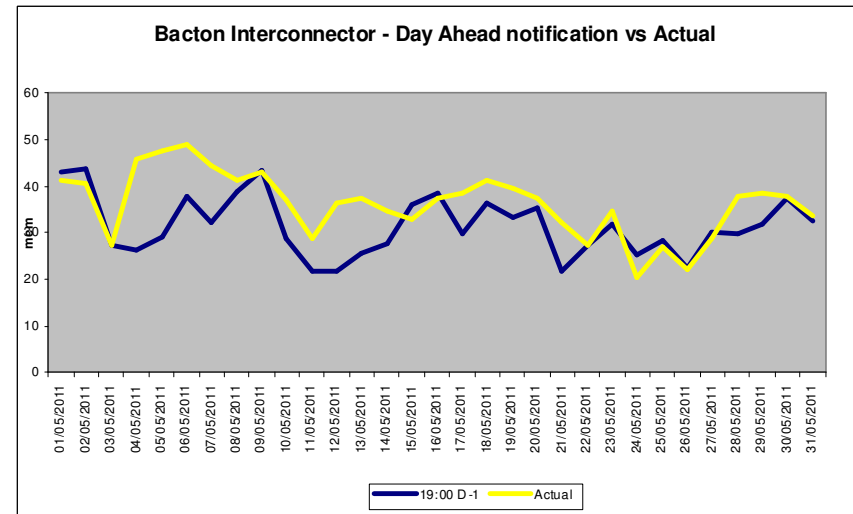


# Demand Forecasting - Interconnectors

- **IUK demand volatility ~ 27%**

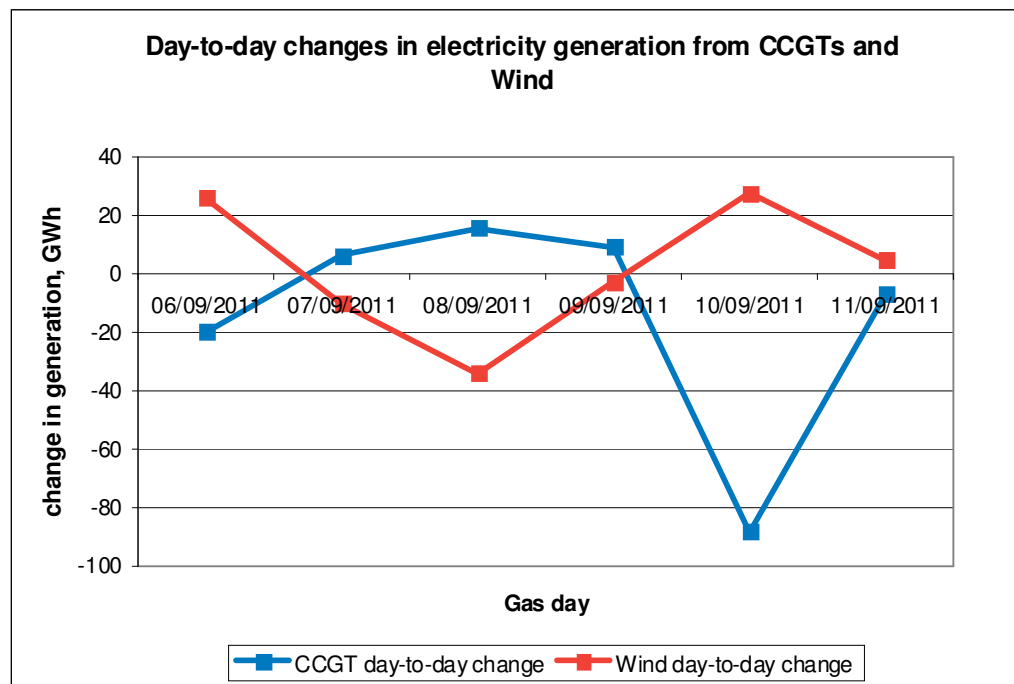
- Accuracy of day ahead OPNs from IUK (in May 2011 absolute difference between outturn demand and forecast was ~19% of demand)

- UNC Modification 0352: Moffat reverse flow - may lead to increased volatility



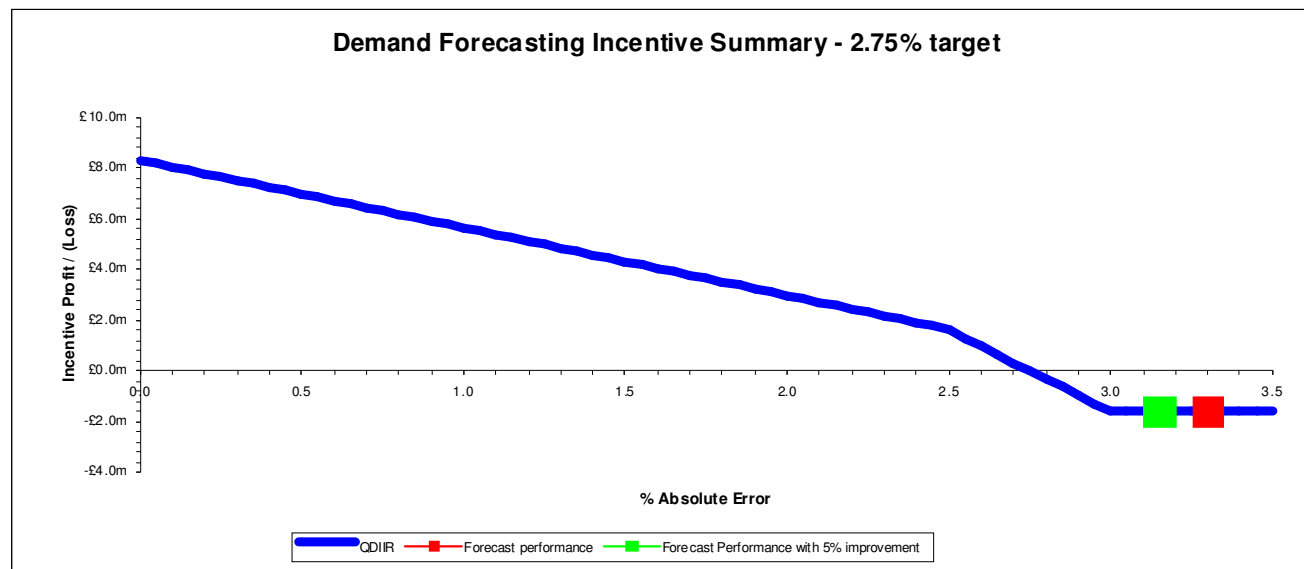
# Demand Forecasting - Power

- Power Stations demand volatility ~ 9%
  - CCGT backup for wind generation
  - Wind expected to take greater role in generation mix in 2012/13 (+3GW)
  - Beginning to see some impact on CCGT load



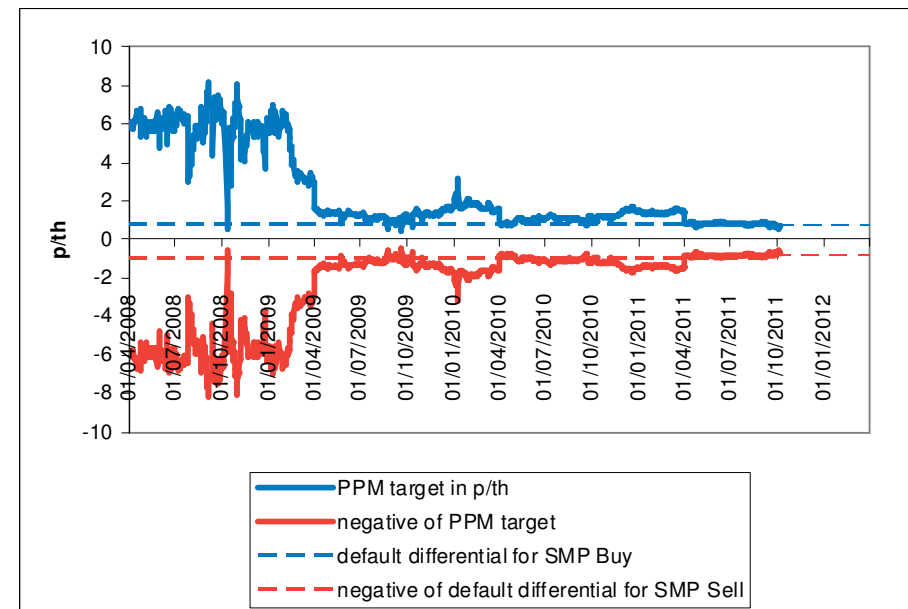
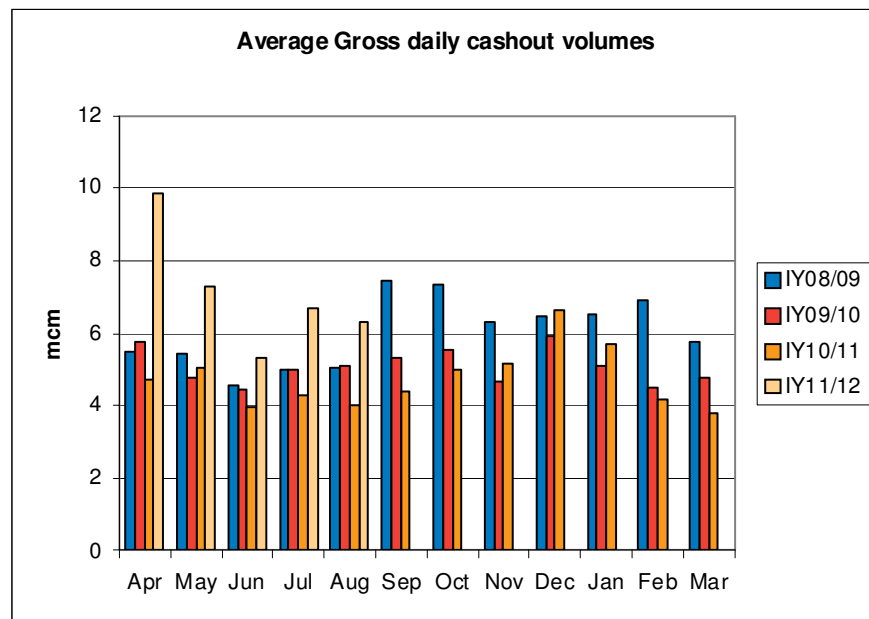
## Demand Forecasting: Target & Incentive

- NGG proposes a 3.25% target
  - 1 year (to 31 Jul 2011) outturn error = 2.87%
    - (12 month rolling to 9 Oct 2011 currently at 2.9%)
  - Additional short cycle storage error = 0.37%
  - Additional CCGT error (wind intermittency) = 0.05%
  - Total 3.29%
  - -0.04% continual performance improvement
- The following chart illustrates projected performance in the event that a 2.75% target is retained



# Residual Balancing

- Broadly agree with rollover proposal, however:
- Residual balancing environment becoming more challenging
  - Increasing imbalance volume through cashout
  - Impact of Mod 333A (System Marginal Prices) – still uncertain at this time



## Data Publication

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- Industry responses indicated that National Grid's data publication is of value
- Therefore we support roll over of the incentive in its current form for 2012/13
- National Grid incurs costs for monitoring and providing additional 24/7 support for Data Publication systems

## UAG: non-incentive options

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- National Grid has incurred additional costs and delivered benefits without incentive reward
  - Costs incurred from April 2009 in the region of £0.5m
  - In 2010, NGG's actions led to the identification of meter errors totalling 1,258GWh (~£17m)
  - Gross UAG was reduced from 6,314GWh to 4,631GWh in 2010/11 when adjusted for known meter errors
  
- Cost recovery for any increased witnessing & continued data mining is appropriate because:
  - Not already funded
  - Activity to deliver UAG services to industry with potential to reduce socialised costs

# Meter Errors at VLDMCs and Storage Injection

- The following is provided in response to a request raised at the July 2011 workshop
- The graph illustrates the quantity (and associated GWh volume) of Meter Errors identified for VLDMCs and Storage Injection between January 2008 and June 2011

