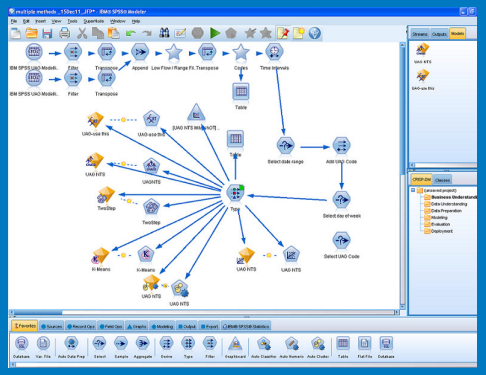
Overview of Gas Operations UAG analysis activity



Technical Requirements Team
John Passey

17th October 2012

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Purpose of today

- To explain our role
- To talk about UAG and it's trending
- To give an overview of some of our analysis methods

Our Role

- National Grid is the Shrinkage Provider working on behalf of the gas community
- We have incentives to minimise and/or understand causes of shrinkage
- Shrinkage Gas = OUG + UAG + CV shrinkage

- UAG ~ 0.5% of throughput
- Shrinkage costs the community ~ £100m pa

Our Obligations

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Transmission Licence (from 1 April 2012) : -

- Modification of Special Condition C8F – SO external incentives.
- Special Condition C29
  - Investigate the causes of UAG
  - Report on UAG and our ongoing investigations/work activities to Ofgem via regular report.:
    - http://www.nationalgrid.com/NR/rdonlyres/DA20FC28-F348-4F9B-882B-A36048F62203/55319/UAGReportJuly2012.pdf

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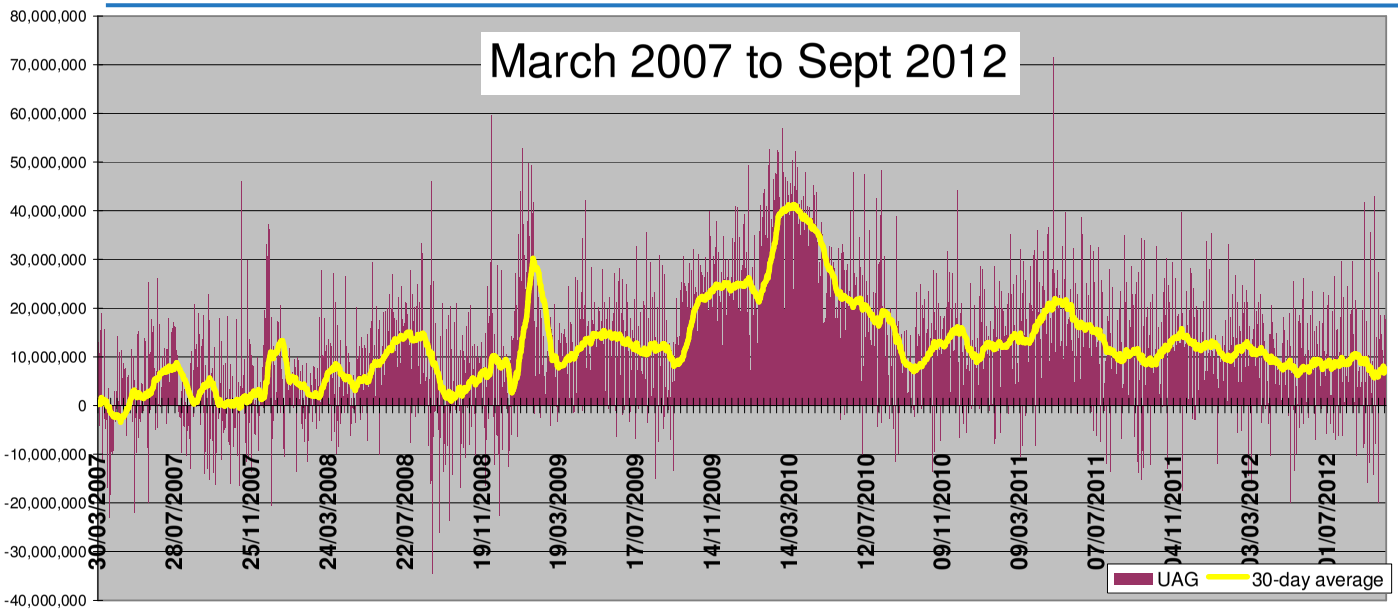
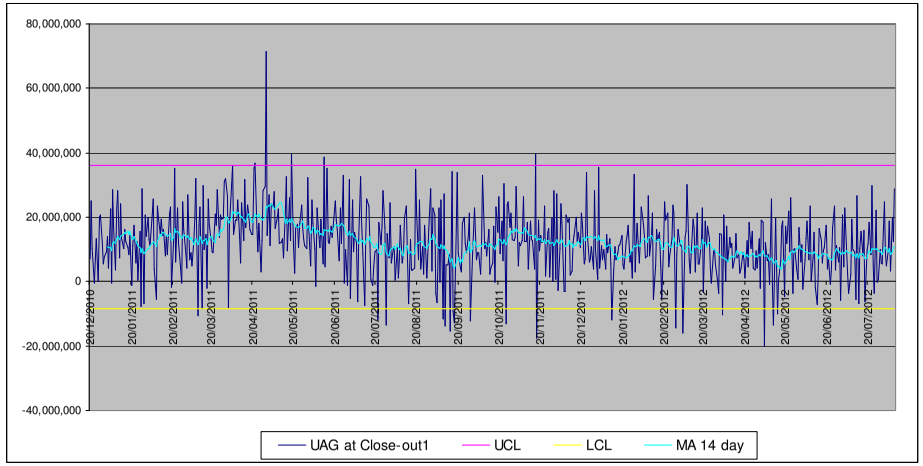
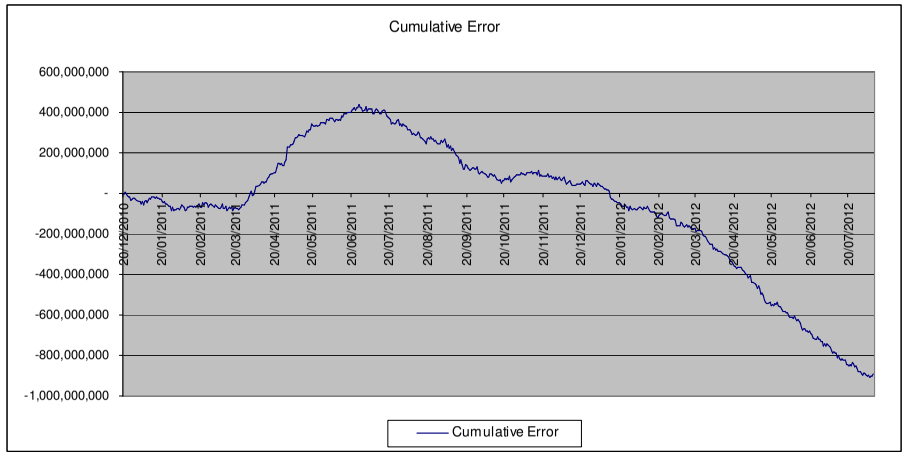
UAG Trending







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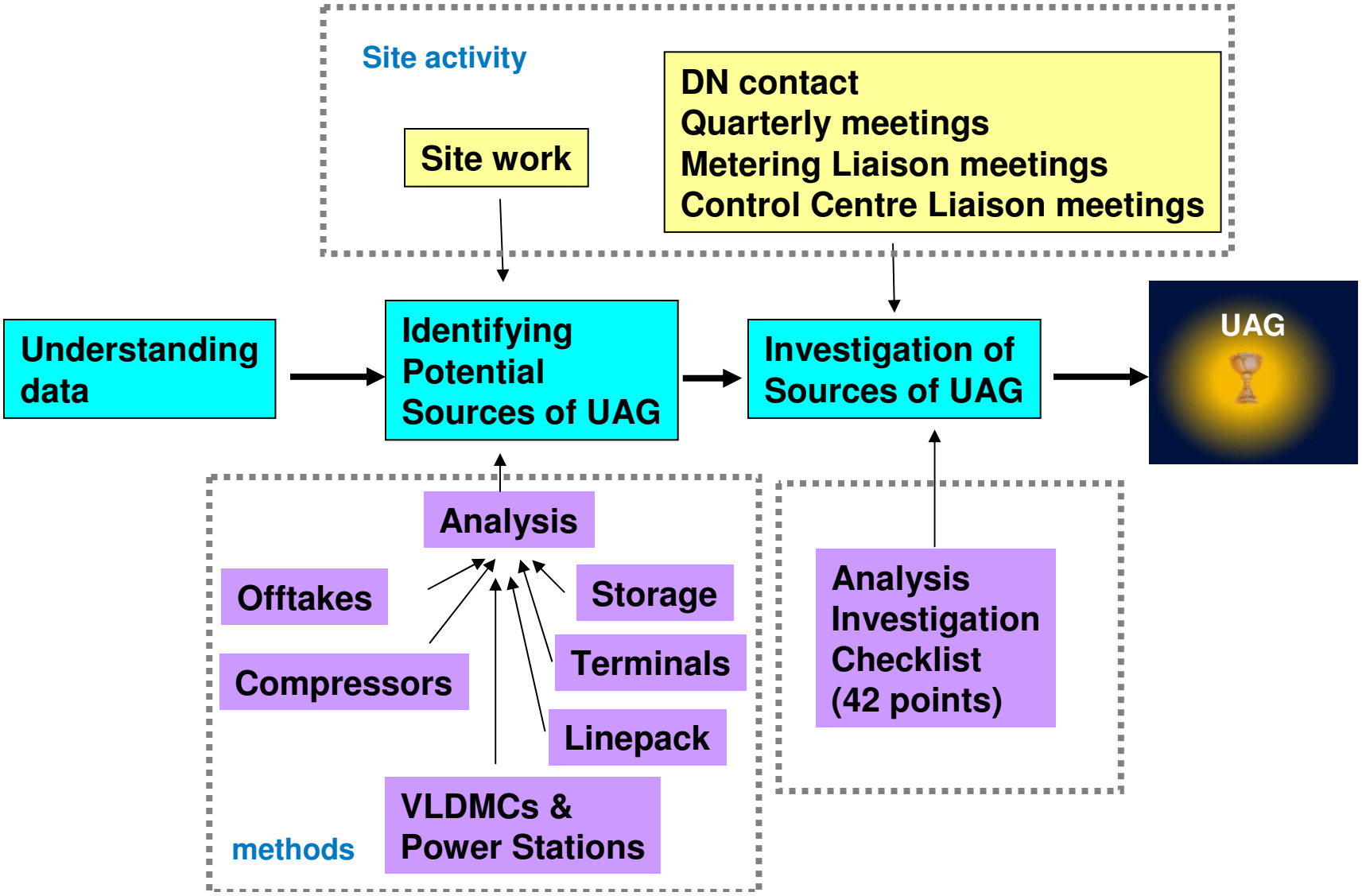
Systematic approach to UAG investigation



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Our Activities

Analysis

Rapid response (5day)

6yr trending

Power Station Efficiency (PSET)

Data Mining

Uncertainty Analysis

Understanding Data

CWV

Site work

Site Witnessing

Liaison meetings

(S)MERs

IFI work

6yr Trending spreadsheet – Bad data/UAG ???

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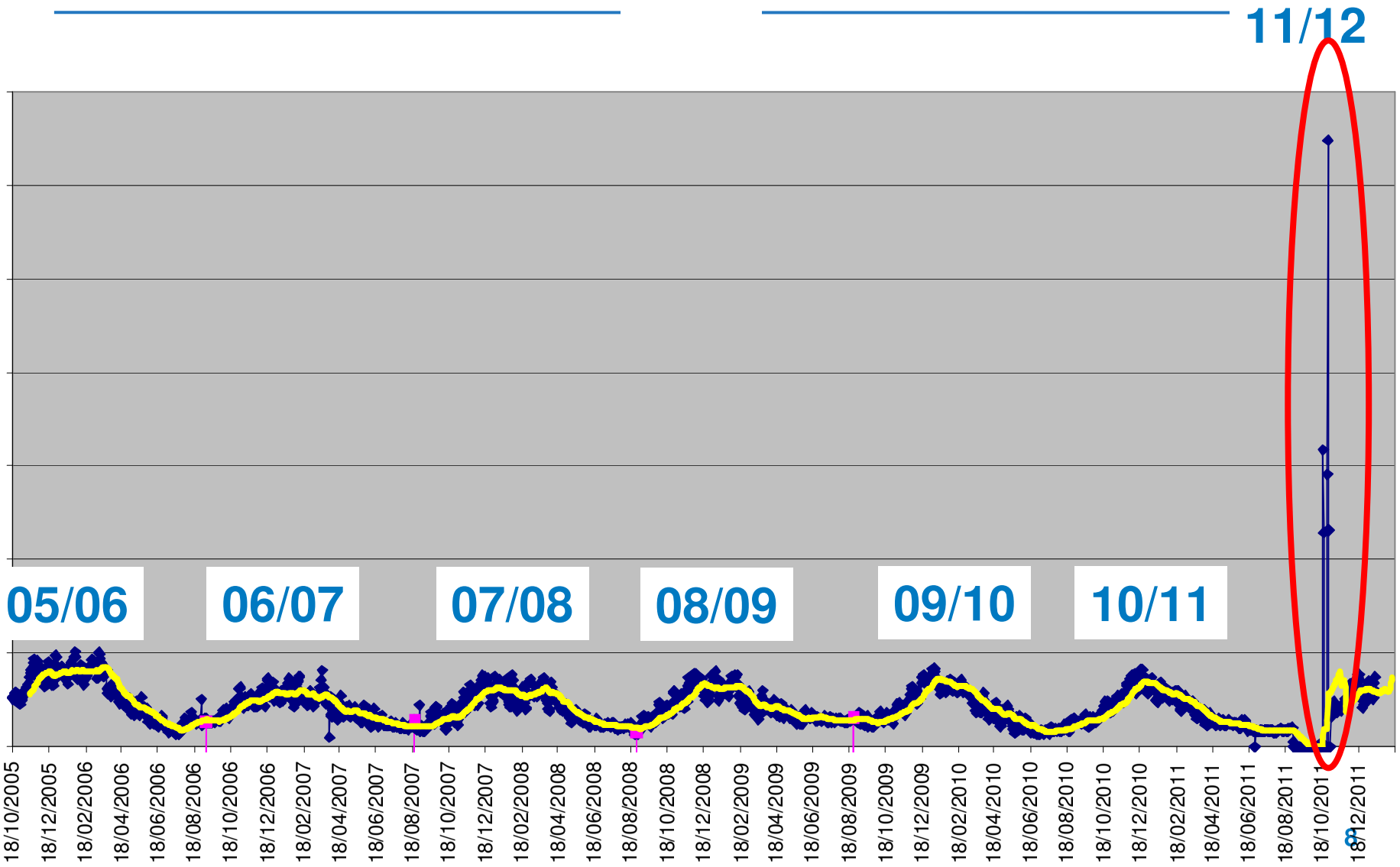
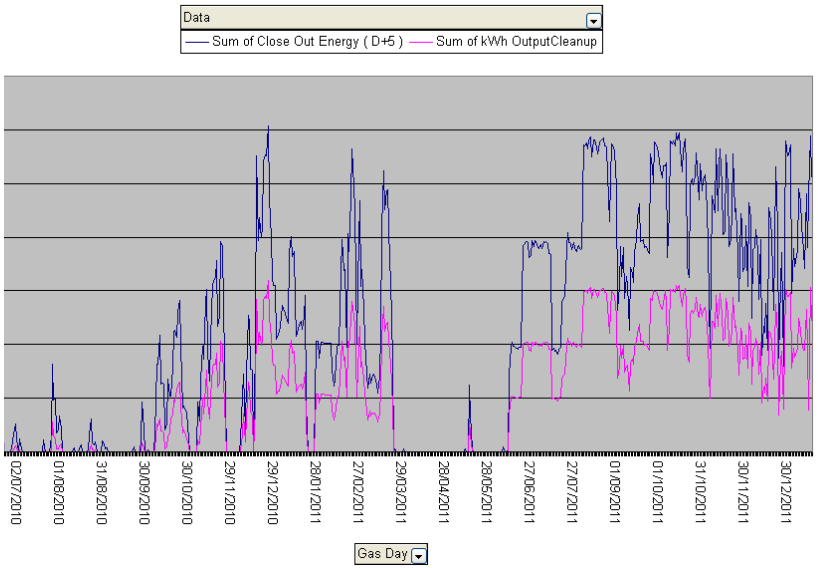
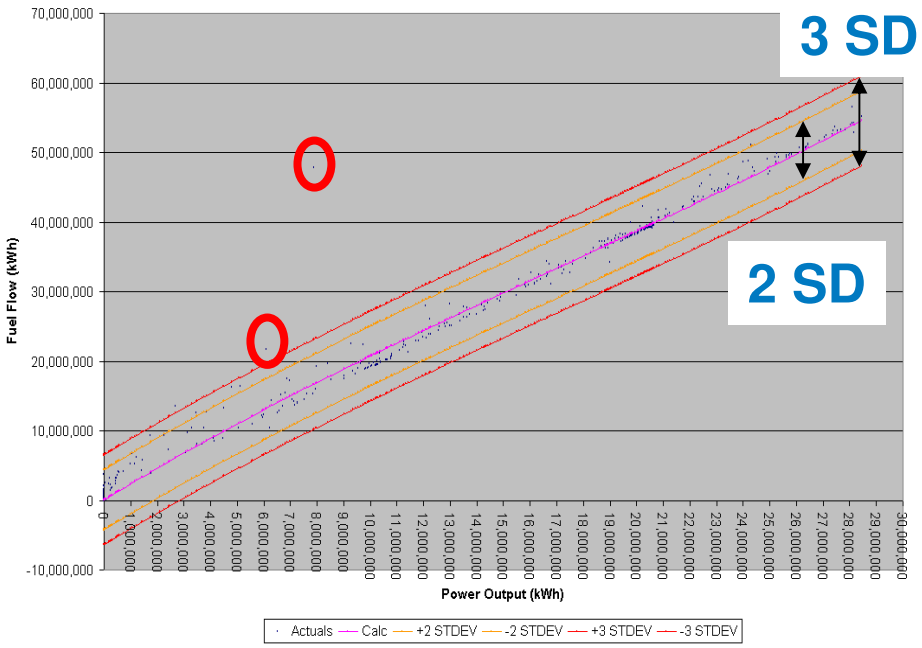


Power Station Efficiency Tool (SPC chart)



Energy Input

Power



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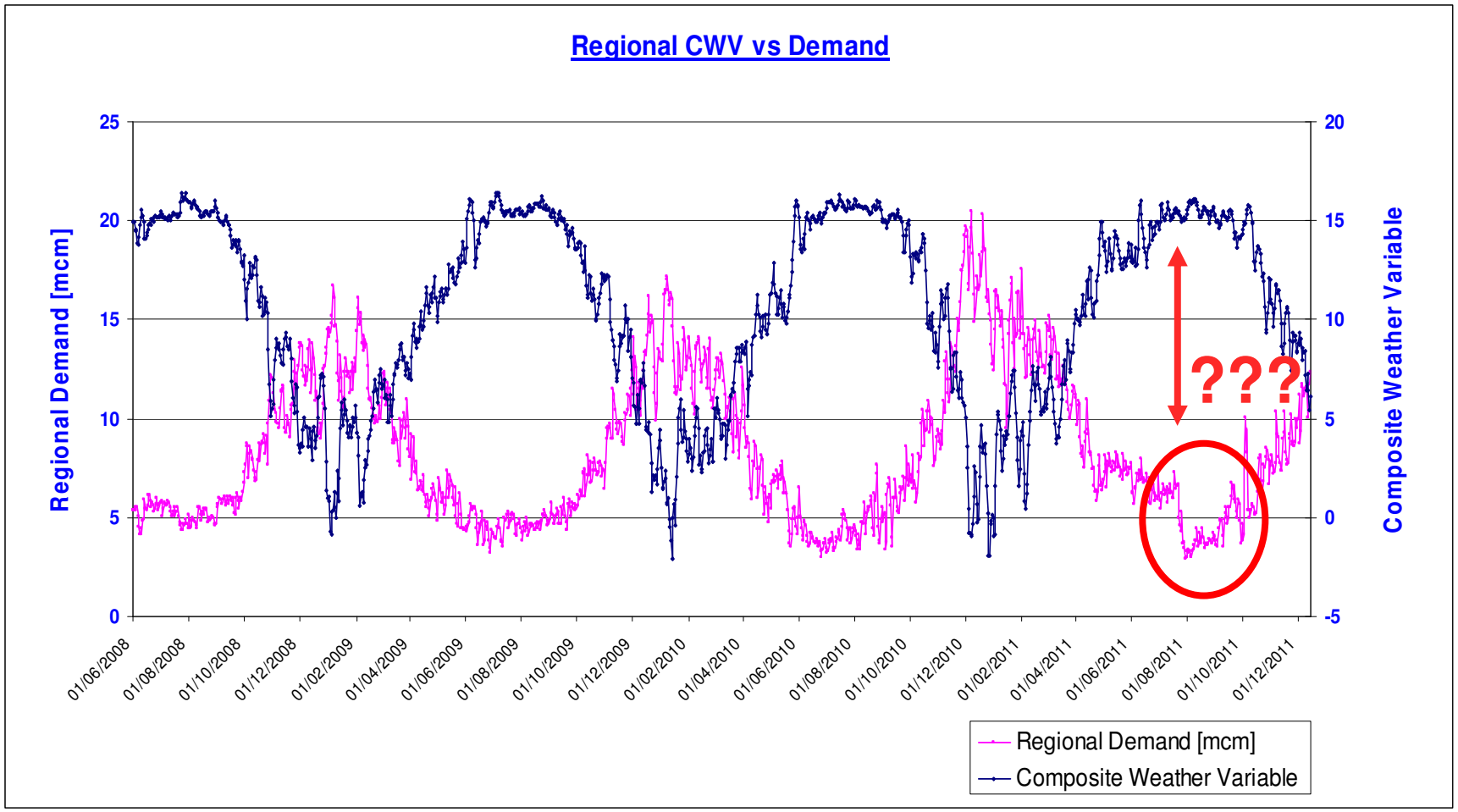
CWV Time series plot



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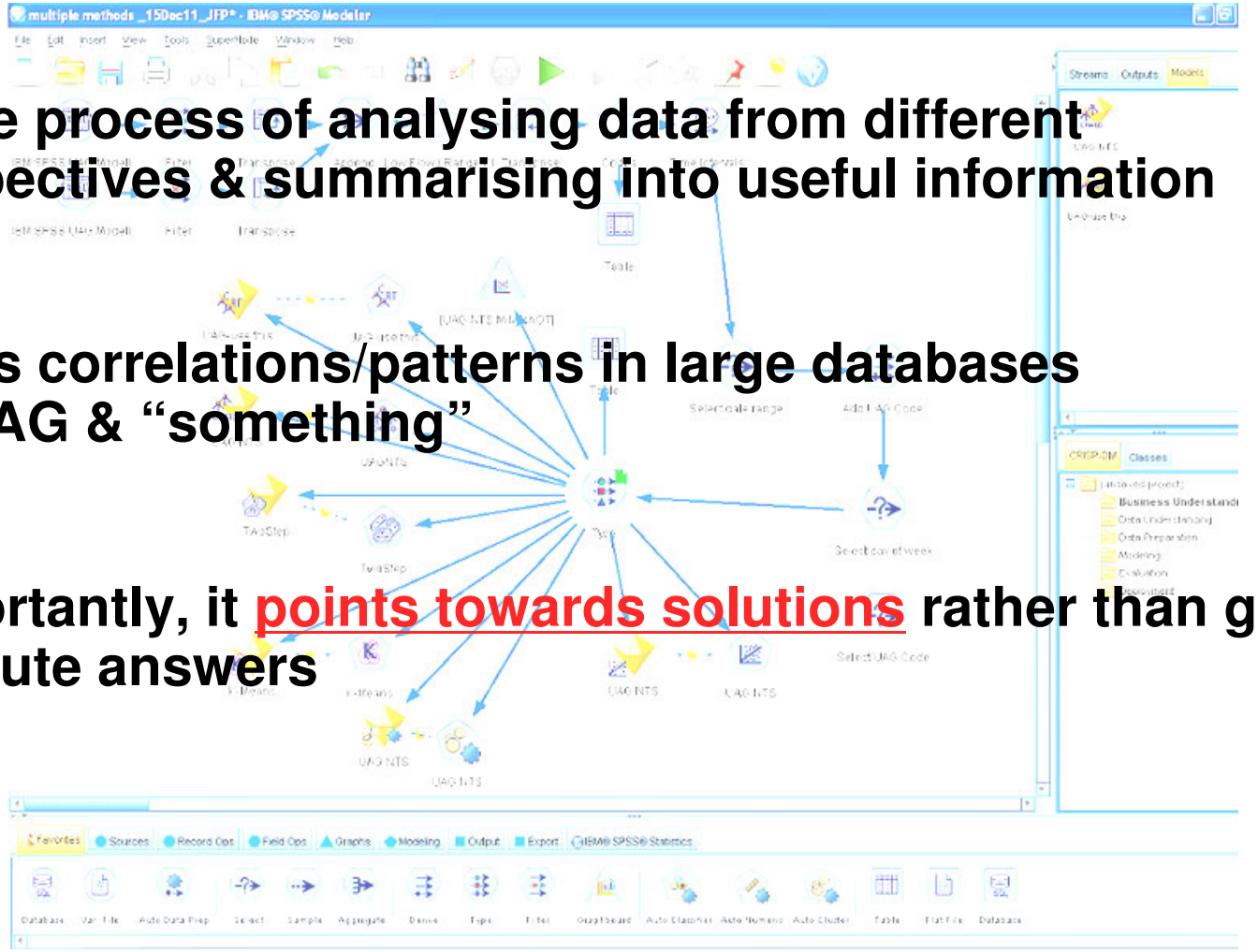
Data mining

- Is the process of analysing data from different perspectives & summarising into useful information
- Finds correlations/patterns in large databases i.e. UAG & “something”
- Importantly, it points towards solutions rather than giving absolute answers



Analysis Investigation Checklist (42 points)

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Step	Process
1	Do site flow figures lie within max for the site?
1a	Has flow reached maximum of the instrumentation capability (i.e. is it maxed out – reached Qmax?)
1b	Check behaviour of Offtake outlet temperature (investigate if site is flowing when its not supposed to)
2	Do the dates coincide with an MER for Offtakes or known error reports for Power Stations ?
2a	Did the site under investigation pass ME2, check whether there are any outstanding issues?
2b	Examine meter validation history, does the site in question have trouble with a key piece of instrumentation ?
2c	VLDMCs, use the Power Station efficiency tool to see if there are any obvious errors
3	Was there any site work going on? Have the NG control room logged any activity?
4	Check for amendments by EBT team and has he operator changed (amended) the flows due to say site work, were these done on site?
4a	Should we change to telemeted data?
5	Check F1 profile for anomalies
5a	JFP to see Andy Lees to write a list of sub-tools for 5 – not just looking for spikes in F1
5a	Can we check on the commercial data for this site?
6	Check for alarms in iGMS
6a	Malcolm Macdonald has reports on all alarms (probably), see if a query can be run with how many meter suspect alarms are being produced
6b	Check VLDMC alarms – need to understand more about how these are structured
6c	Check any site alarms – need to understand their structure.
7	Check the behaviour of the Pressure Control Valve PCV and FCV
8	Check GEMINI for consistency
8a	Compare iGMS Dvol vs. GEMINI Dvols (set this up as a Business Objects query)
9a	Look for contamination, have any of the deltaPs got –ve values?
9	Check HPMIS alarms page (need list of what to check)
10	Check HPMIS EOD page (need list of what to check, is following complete)
10a	Compare EOD values in flow computer with GEMINI/iGMS volumes
10b	Check for amendments made by the operator
10c	Check for any missing data
11	Check HPMIS CV Audit page (need list of what to check)
11a	Compare CV values in flow computer with GEMINI/iGMS values
11b	Check HPMIS CV at adjacent sites to that under investigation
11c	Check whether there was any CV capping on the days in question
12	Check HPMIS RBD page (need list of what to check)
12a	Check Linepack calculation (if this is possible)
13	Review MAS visits to site in question
13a	should trend how often sites have a problem & with what, then check site in question against this list to try to indicate where the problem is.
14	Review audit reports
15	Raise issue with site owner, we want them to check the following:
15a	Any issues with low odour
15b	Ask the site/asset owner for assistance
15c	Check the site behaviour with respect to the Pressure Control Valve PCV and FCV
15d	Has the operator masked alarms/check their record of alarms?
16	Perform CWV analysis of the site
17a	Re-constitute 4 min flow data as would be done as part of MER investigation.

EASY & QUICK

COMPLICATED & TIME CONSUMING

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Thank you

Questions?

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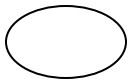

Contact Details

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