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DESC Action DE0201

5th March 2012

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- DESC Action: "Project Nexus New Allocation Algorithm – Options: Xoserve to summarise its view of the data items required and circulate for comment"
  - (Shippers to have 10 days to comment)

Project Nexus New Allocation Algorithm - Principles

- The following represents a draft set of principles, as discussed at the December 2012 DESC meeting, which should be applied by DESC when considering options for a new allocation algorithm
- Final methodology selected should….
  - be transparent to all Users and Transporters
  - be future-proof – i.e. calculation is as robust during roll-out as it is in a fully smart world
  - be evidence-based using statistical measures agreed by DESC
  - still require the need for a 'Scaling Factor' of some description to ensure all parties contribute to 'unaccounted for' gas
  - aim to ensure all sectors are treated equally and not unfairly disadvantaged
  - ensure outcomes from Nominations and Allocations process are consistent or more consistent with each other
  - be efficient in terms of costs and benefits realised

Project Nexus New Allocation Algorithm – Principles – Success Criteria

- The following represents a set of updated success criteria to be referred to by DESC when finalising views on a new allocation algorithm
  - Allocation process results in the same or better accuracy in apportionment of energy across sectors thus reducing levels of reconciliation compared to current regime
  - Day ahead gas Nominations are as accurate or more accurate for NDM sector
  - Supported by majority of Users and Transporters within the industry
  - Solution developed within a reasonable time scale to support Project Nexus
  - New process still supports other industry processes, e.g. AQ and SOQ derivation

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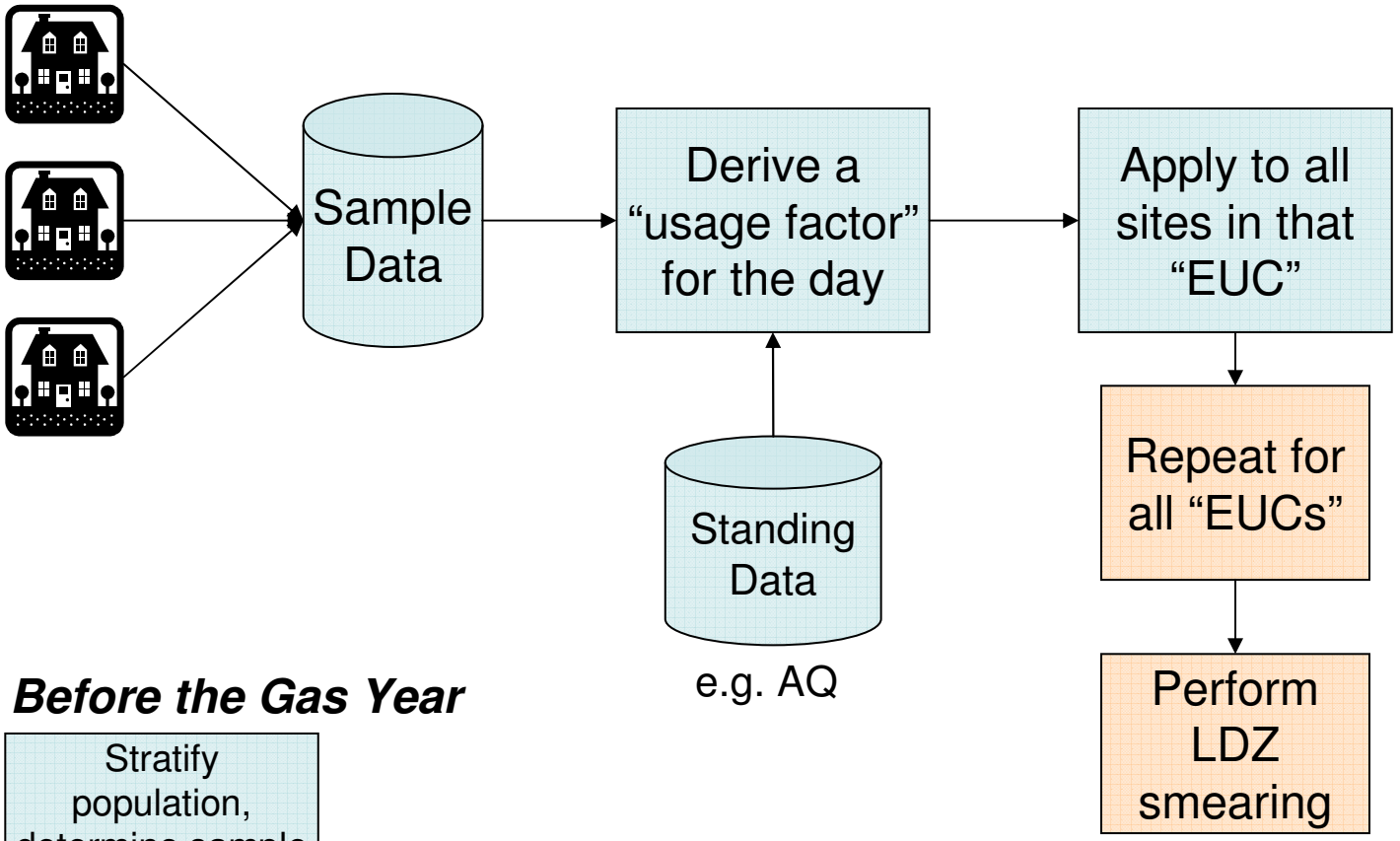
Updated Strawmen for each Option

E.On Option A – Dynamic Daily Sampling

After the Gas Day



Before the Gas Year

Stratify population, determine sample size, select sample

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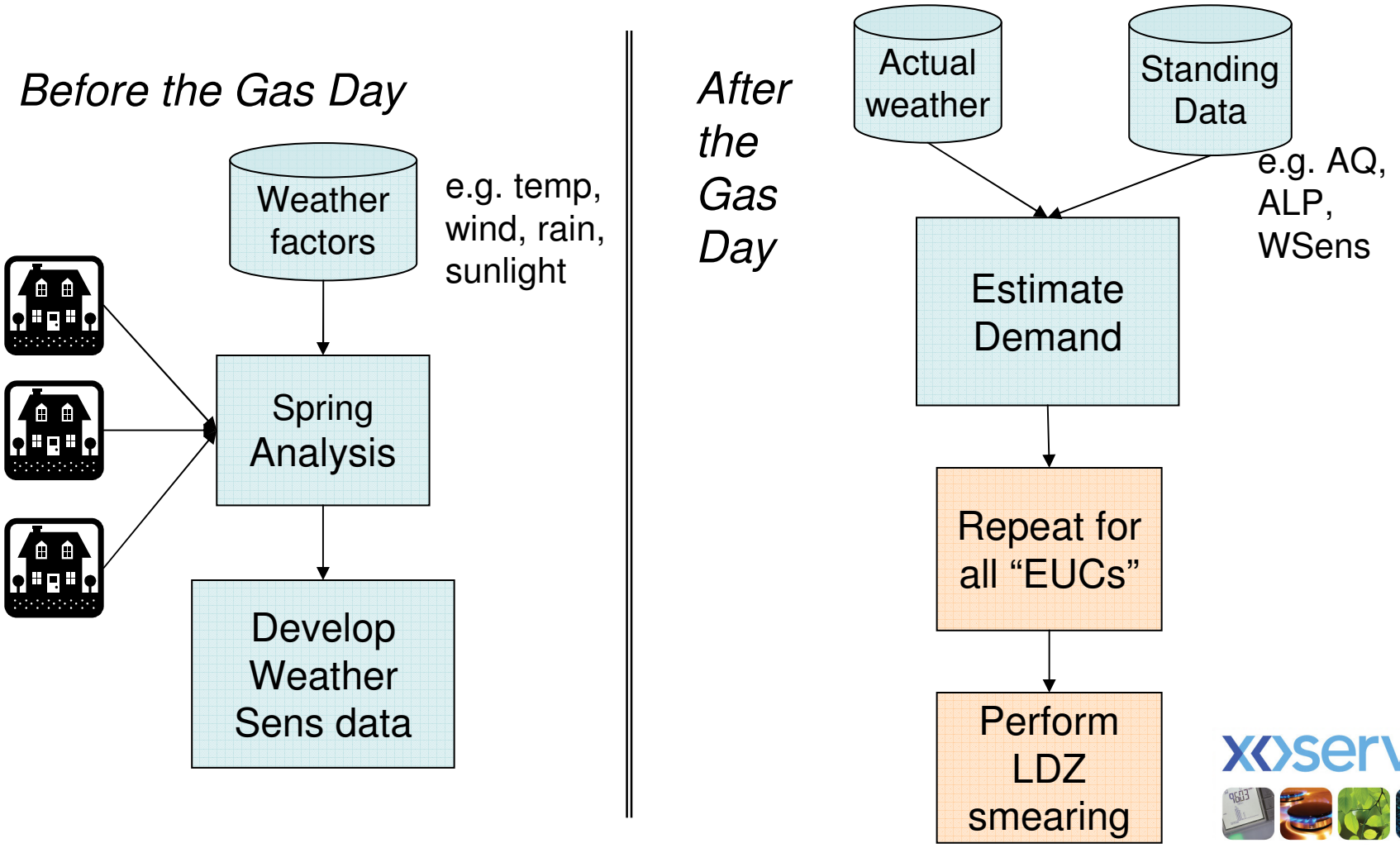
E.On Option A – Dynamic Daily Sampling

- PROS
  - Based on actual data and actual weather experience
  - Could use historical data for WAALPs
  - Can track success via Allocation Scaling Factor and Reconciliation levels
    - but other aspects of performance are harder to isolate?
  - Sample is scalable as the Smart population grows
- CONS
  - No closely aligned approach for day ahead Nominations
  - Smart metered sites may behave differently to dumb
    - different samples could be used
  - Reliant on timely data from smart meters
  - No time for data validation?
  - No EUC modelling from which to calculate Load Factors

E.On Option A – Dynamic Daily Sampling

- Data Items Required – possible source
  - Before the day
    - AQ breakdown of the UK population – UKLink
    - List of available sample sites – DCC?
  - After the day
    - Daily reads from sample sites – DCC?
    - Meter asset data to derive consumption – UKLink
    - Target population of sites for allocation – UKLink
    - Total LDZ throughput and DM consumptions – UKLink

E.On Option B – Variation on Xoserve Proposal



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E.On Option B – Variation on Xoserve Proposal

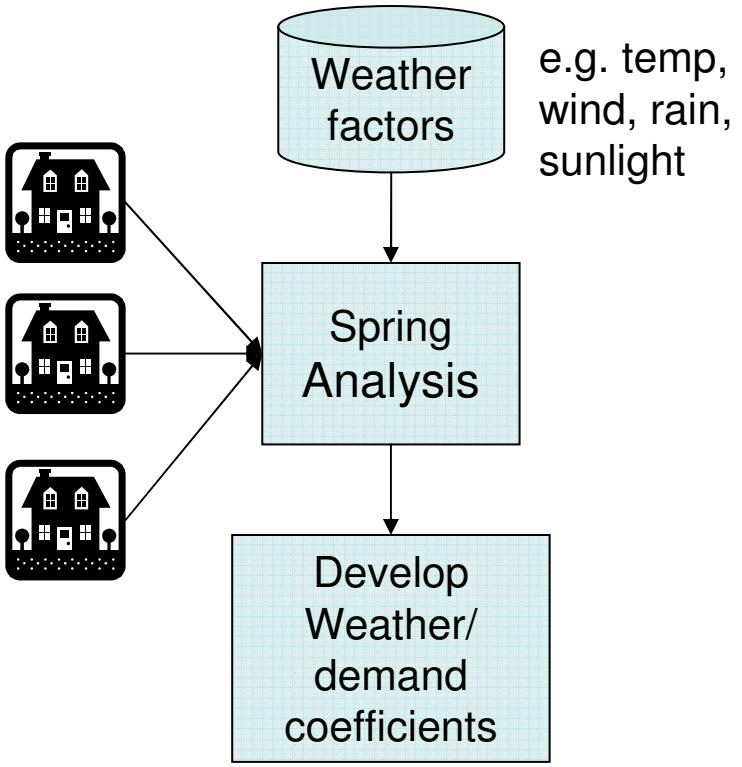
- PROS
  - Can also be used for day-ahead Noms (using forecast weather and LDZ Demand)
  - No reliance on daily sample data
  - Could have separate profiles for Smart and dumb
  - Can use actual outcomes for WAALPs
  - Can track success via Allocation Scaling Factor and Reconciliation levels
  - Weather correction is based on measurable weather variables
  - Model smoothing would give stable Load Factors
- CONS
  - Peak of work for Spring Analysis
  - Assumes all demand changes are day/time of year or weather related
  - Historic and forecast data needed for all weather variables

E.On Option B – Variation on Xoserve Proposal

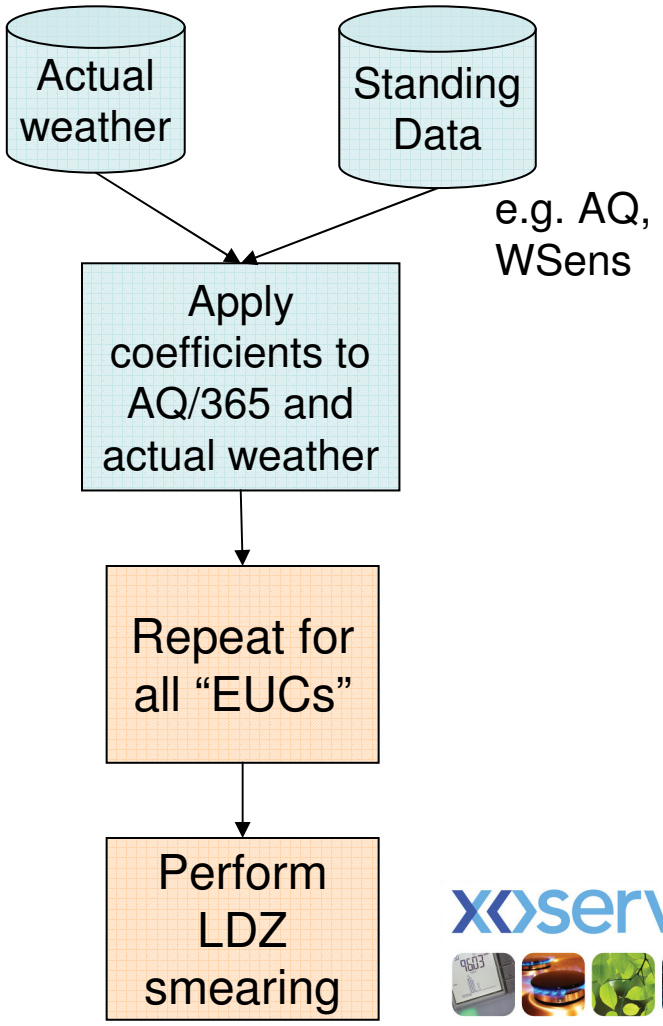
- Data Items Required – possible source
  - Before the day
    - Daily read data from sample sites – Xoserve/DCC?
    - Meter asset data to derive consumption – UKLink
    - Historic weather data: long history – weather provider
    - Forecast weather data for Nominations process – weather provider
  - After the day
    - Actual weather data – weather provider
    - Target population of sites for allocation – UKLink
    - Total LDZ throughput and DM consumptions – UKLink

E.On Option C – No ALP

Before the Gas Day



After the Gas Day



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E.On Option C – No ALP

- PROS
  - Can also be used for day-ahead Noms
  - Weather coefficients in effect replace the ALP
  - No reliance on daily demand data
  - Could have separate profiles for Smart and dumb
  - Can use actual outcomes for WAALPs
  - Can track success via Allocation Scaling Factor and Reconciliation levels
  - Weather correction is based on measurable weather variables
  - Model smoothing would give stable Load Factors
- CONS
  - Less visibility of the Annual Profile?
  - Peak of work for Spring Analysis
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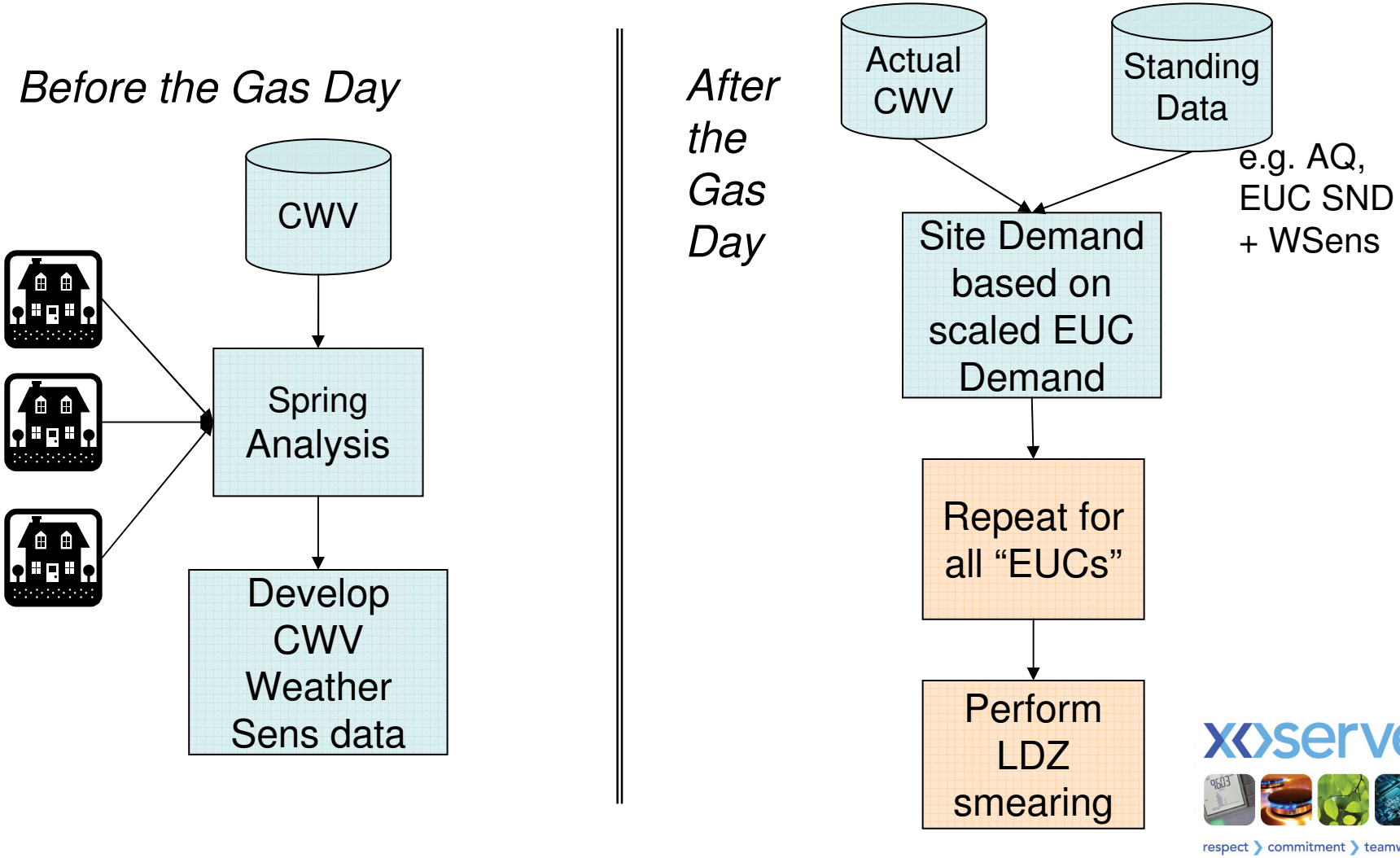
National Grid Option – EUC Model Based



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Xoserve Proposal

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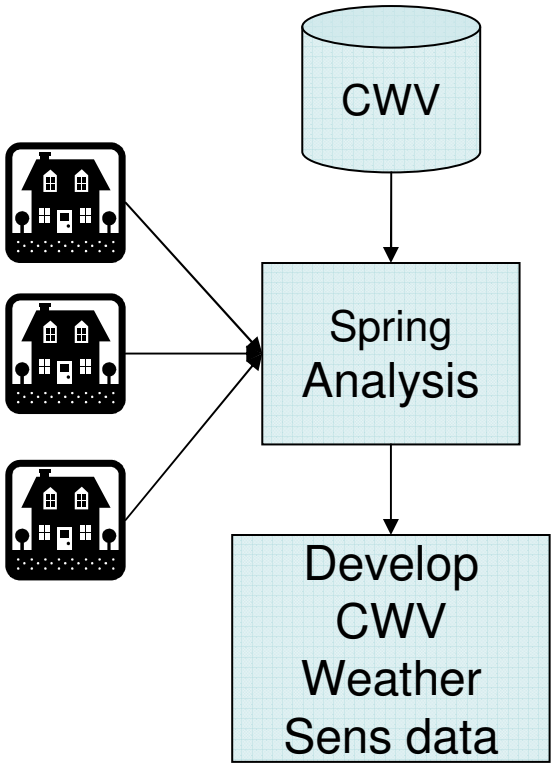
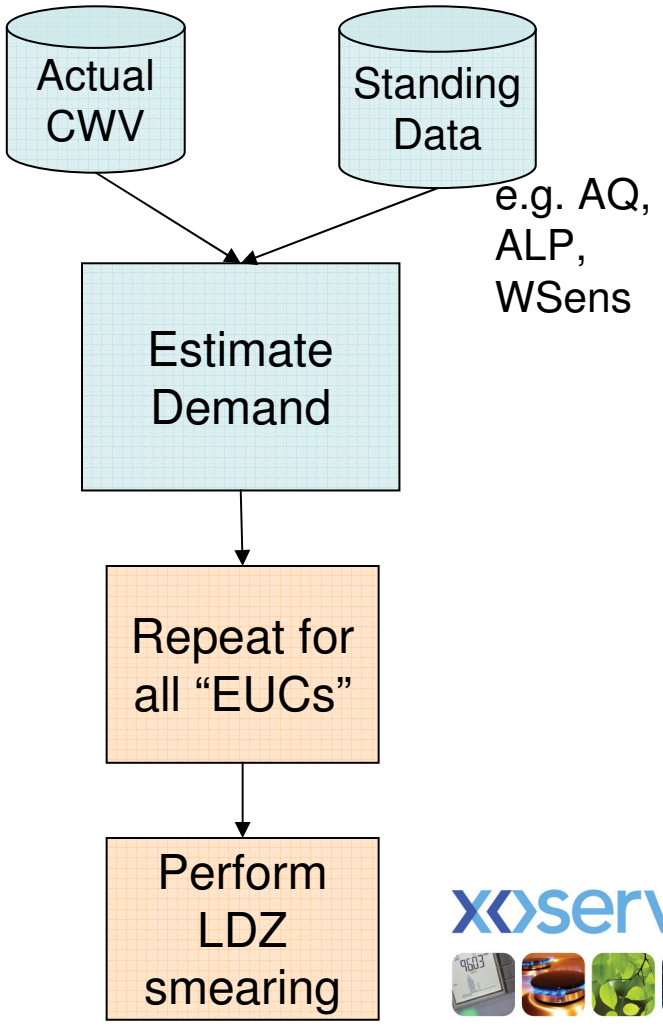


After the Gas Day



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Weather data - Notes

- Xoserve currently has access to the following weather data
  - 2-hourly temperatures (c. 15 months actual history only)
  - 4-hourly wind speeds (c. 15 months actual history only)
  - Forecast values for both
- Other weather items suggested at DESC
  - Wind direction
  - Precipitation
  - Humidity
  - Hours of sunlight
  - Cloud cover – hours/density?
  - Solar radiation
- For each item a long history would be required, to determine historic relationships to demand, plus a reliable source of forecast data for Nominations and timely actuals for Allocation