# Unidentified Gas

## Solution Options Overview

22nd November 2017

# Approach for high level impact assessments



- High level requirements captured at Industry meeting on 13th November
- Internal meetings held between Xoserve and our partner to ensure joint understanding of requirements
- Challenge and review sessions held to understand if timescale or complexity of an option could be reduced if some change to the original requirements could be applied/descoped
- These will be presented today for discussion

# Objectives



- Xoserve to present the high level impact assessment for each of the options and all participants to gain an understanding of the system impacts
- Where Xoserve has identified alternatives, gain a consensus on which is the preferred option (if no consensus is reached the proposer's preference should prevail)
- Perform "SWOT" analysis for each of the options
  - What do we like (how can we make this work)
  - What don't we like (what would we change)

With a view to gaining agreement on a preferred option that works for everyone

# Ground Rules



- Keep the pace of the day to ensure that all proposals are given sufficient time for discussion
- Discuss the merits of each option being respectful of all views from within the industry
- No question is a “stupid” question
- Each proposed solution will be time boxed to a maximum of 1 hour
- Xoserve will move the discussion on and capture any questions that can’t be answered immediately to ensure the pace of the day is maintained

# Not considered during Impact Assessment



- Funding of the proposed solutions
- Other known changes within UK-Link SAP platform or Gemini
- Consequential impacts on other industry parties' systems
- Commercial or legislative implications
- Complete lifecycle timescales (from inception to delivery)
  - E.g. Industry governance processes
  - Whether Industry testing is required
  - Whether independent assurance is required

# Workshop Approach



- Xoserve will present the high level impact assessment for option 1 inviting interactive questions (40 mins)
- Each table will work together to complete “SWOT” analysis on the proposed solution on yellow post it notes for Xoserve to capture (10 mins)
- Move onto the next option and repeat the above steps (50 mins per option in total)
- Discussion on how reconciliation will work across the options (30 mins)
- Xoserve to play back the collective pros and cons for all the options
- Collective discussion over mitigating actions, where possible, for the cons identified
- Is there an obvious preferred option?

# Glossary of Abbreviations



- ALP Annual Load Profile
- AQ Annual Quantity
- AUGE Allocation of Unidentified Gas Expert
- CWV Composite Weather Variable (measure of daily weather)
- DAF Daily Adjustment Factor
- DM Daily Metered
- D+5 Gas Allocation Exit Close-out (5th following day)
- EUC End User Category
- ICoSS I&C (Industrial & Commercial) only Shippers and Suppliers
- LDZ Local Distribution Zone
- LSP Larger Supply Point (AQ> 73,200 kWh)
- NDM Non-Daily Metered
- Nexus Gas Industry's new Gas Settlement arrangements (from 1 June 2017)
- OCM On-th-day Commodity Market
- OTC Over-the-Counter (gas trades)
- SNCWv Seasonal Normal CWV
- SSP Smaller Supply Point (i.e. not LSP)
- UIG Unidentified Gas
- WAR Winter:Annual Ratio
- WCF Weather Correction Factor

# Summary of Alternative Proposals



| No. | Brief Description | Raised by |
|---|---|---|
| 1 | Modification of parameters used in the existing algorithm | E.on |
| 2 | UIG is fixed at the level identified by the AUGE in its latest statement and allocation error is smeared using scaling factors. | ICoSS |
| ~~3~~ | ~~Roll back the allocation model to the old method. "Real UIG" transferred from SSP to LSP market~~ | DESCOPED |
| 4 | An existing industry body (or new 3rd party) becomes the balancer for the industry (they take all UIG volumes and then balance the market through wholesale transactions). | ICoSS |

# Summary of delivery options

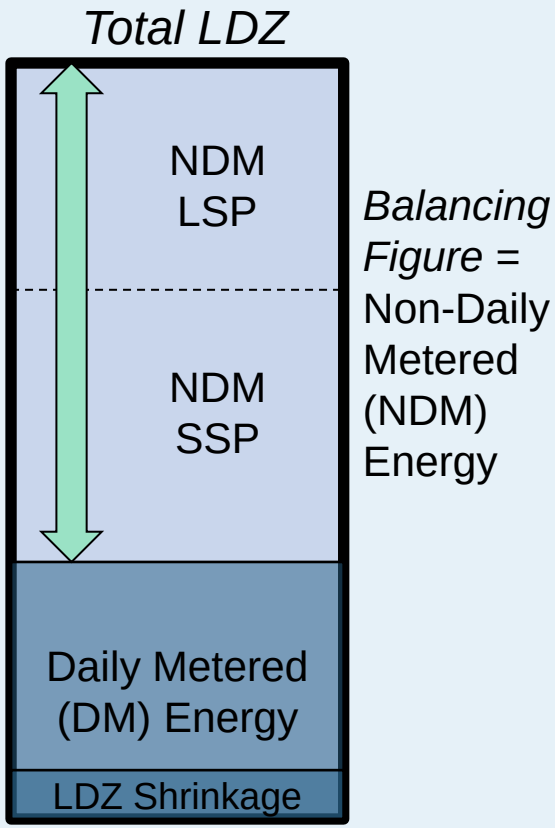


| No. | Brief Description |
|---|---|
| 1a | Code fix the modification of the parameters used in the existing algorithm |
| 1b | Data fix the parameters used in the existing algorithm |
| 2a | Introduce fixed UIG percentage and UIG Reconciliation across non-reconciled meter points |
| 2b | Introduce fixed UIG percentage and UIG Reconciliation across all meter points |
| 4a | Introduce central body to act as UIG balancer by utilising existing Shipper access role functionality, no change to UIG reconciliation |
| 4b | Introduce central body to act as UIG balancer by defining a new security role and receive UIG reconciliation charges |

# Recap: Pre-Nexus Allocation and Reconciliation

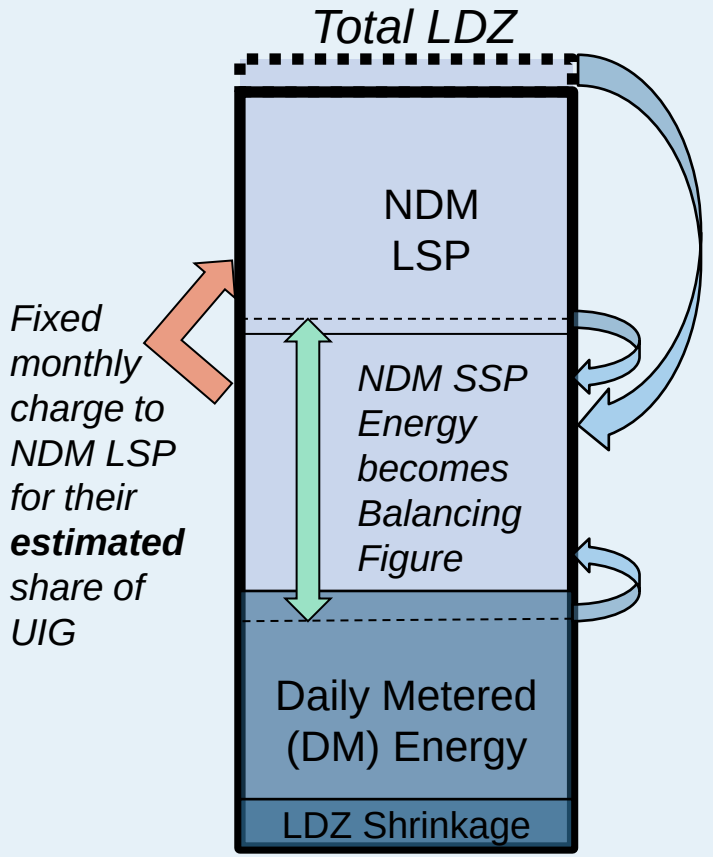


## DAILY ALLOCATION




- NDM SSP and LSP allocated using same Algorithm
- Weather Correction Factor calculated at LDZ level
- NDM energy is the Balancing Figure each day in the LDZ

## POST D+5 RECONCILIATION

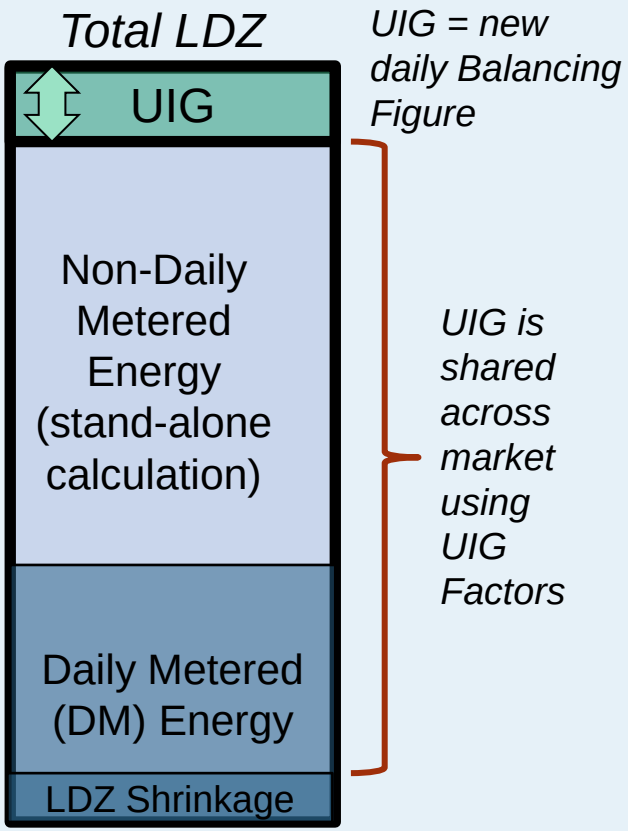



- No meter point reconciliation for SSP Market
- Equal and opposite of all DM, NDM LSP and LDZ input reconciliation is applied to SSP market in proportion to AQ
- NDM SSP becomes the balancing figure over time

# Recap: Post-Nexus Allocation and Reconciliation

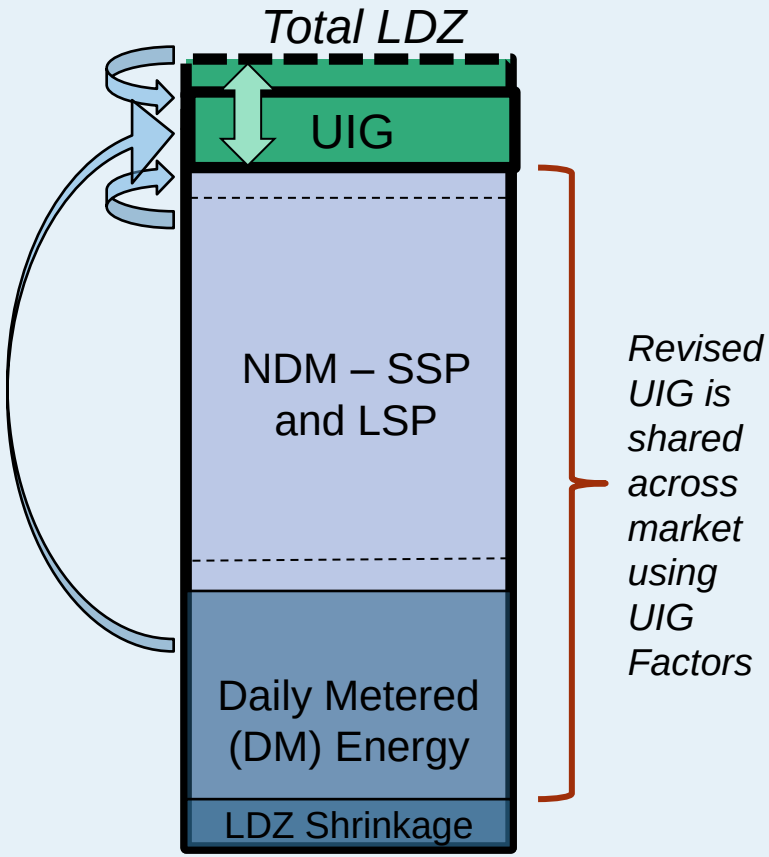


## DAILY ALLOCATION




- AUGE determines Weighting Factors each year for sharing UIG
- UIG shared on basis of daily Throughput and Weighting Factors

## POST D+5 RECONCILIATION




- All meter points are subject to individual reconciliation
- Equal and opposite of all individual reconciliations is applied to UIG and shared in line with latest measurements and Weighting Factors

# Option 1 – Solution Overview

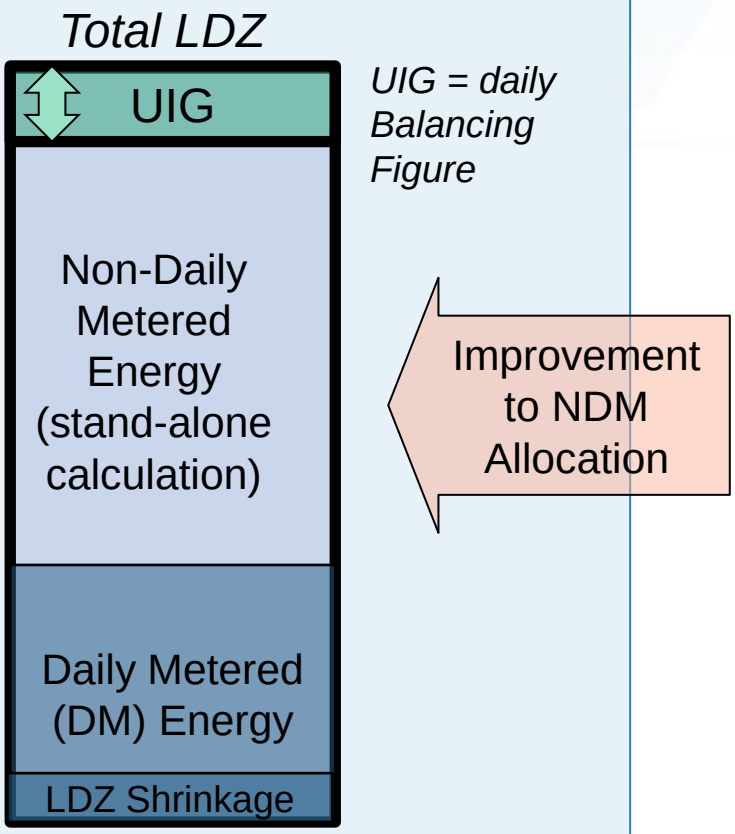


- High Level Solution Overview
  - Change in frequency – In order for Gemini to accept multiple changes (ALPs, DAFs or SNCWV) for the same gas year, it requires a data or code fix
  - EUC Change - The EUC bands are received in Gemini via the internal S03 file, Gemini will be able to load the new EUC bands, however, may need a code change or data fix to modify the cut-off values for the existing EUC bands
  - Changes to UKLINK – Introduction of new WAR BAND and EUC's in system, revisit EUC allocation, winter consumption and EUC. File formats need to be validated in terms of ranges allocated.
  - Solution Specific Assumptions
  - Values are calculated for the whole gas year
  - There will be no new parameters introduced within the algorithm
  - The existing interfaces will remain AS-IS
  - Parameters will be determined outside the Gemini system
  - The WCF is not required to be calculated using the pre-Nexus formula
  - Changes to WAR band, EUC introduction and AQ range changes should be aligned to gas year start

# Solution Option 1 – Modify NDM Algorithm Parameters

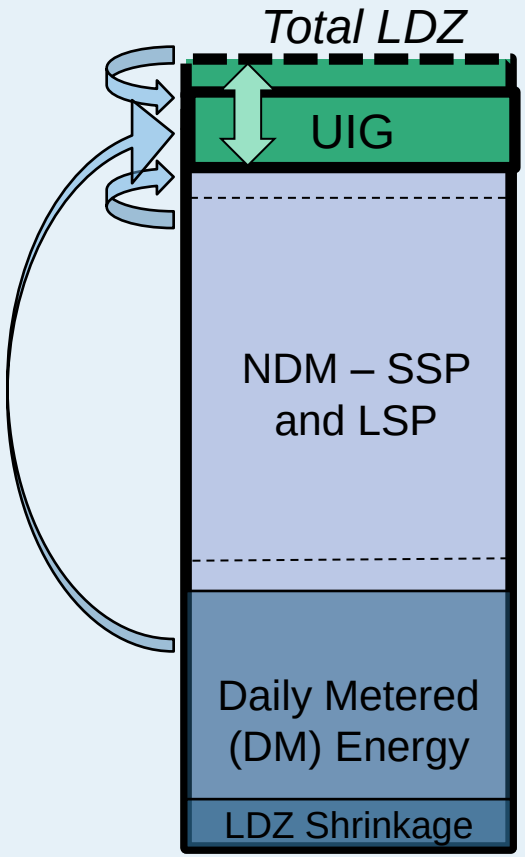


## DAILY ALLOCATION




- Suggested areas for improvement include:
- Annual Load Profiles & Daily Adjustment Factors (ALPs and DAFs)
- End User Category (EUC) Definitions
- Weather Correction Factor (WCF) formula

## POST D+5 RECONCILIATION




No change to post D+5 Reconciliation rules or processes
Improved NDM Allocation should reduce the size/scale of individual NDM Reconciliations

# Option 1a – Impacted Components – Code fix



| Impacted Application | Impacted System Component | Development Type | End User Impacted? | New / Existing Build? | High level description of change | Complexity | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Change Complexity | Test | Industry Test |
| Gemini | S02 File | Interface | Xoserve/ Shippers | Existing | Code change or data fix required to load multiple ALPs/DAFs for the same gas day | | | ✘ |
| | S11 File | Interface | Xoserve/ Shippers | Existing | Code change or data fix required to load multiple SNCWV for the same gas day | | | ✘ |
| | S03 File | Interface | Xoserve/ Shippers | Existing | Regression testing to load the new EUC bands | | | ✘ |
| | Accepted SNCWV Values Report – S11 | Online Report | Xoserve | Existing | May need code change to display effective start date and end date | | | ✘ |
| | ALP and DAF flow to BW | Interface | Xoserve | Existing | May need new columns to account for start date and end date | | | ✘ |
| | EUC flow to BW | Interface | Xoserve | Existing | May need new columns to account for start date and end date | | | ✘ |
| UKLINK | New WAR Band and EUC configuration | Configuration | Xoserve | New | Configuration of new WAR Bands and EUC's in SAP IS-U | | | ✓ |
| | Changes to ALP, WAALP, annual EUC process | Batch Job | Xoserve | Existing | Technical changes in these code objects to cater new bands | | | ✘ |

Estimated Delivery timescales: 14 to 18 weeks

Note - abbreviations refer to internal Xoserve file flows

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# Option 1b – Impacted Components – Data fix



| Impacted Application | Impacted System Component | Development Type | End User Impacted? | New / Existing Build? | High level description of change | Complexity | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Data Fix | Test | Industry Test |
| Gemini | S02 File | Interface | Xoserve/ Shippers | Existing | Code change or data fix required to load multiple ALPs/DAFs for the same gas day | | | ✘ |
| | S11 File | Interface | Xoserve/ Shippers | Existing | Code change or data fix required to load multiple SNCWV for the same gas day | | | ✘ |
| | S03 File | Interface | Xoserve/ Shippers | Existing | Regression testing to load the new EUC bands | NA | NA | ✘ |
| | Accepted SNCWV Values Report – S11 | Online Report | Xoserve | Existing | May need code change to display effective start date and end date | NA | NA | ✘ |
| | ALP and DAF flow to BW | Interface | Xoserve | Existing | May need new columns to account for start date and end date | NA | NA | ✘ |
| | EUC flow to BW | Interface | Xoserve | Existing | May need new columns to account for start date and end date | NA | NA | ✘ |
| UKLINK | ALP & DAF value change – Only a prospective change | Batch Job | Xoserve | Existing | This could also impact AQ calculations. | | | ✘ |

Estimated Delivery timescales: 4 to 6 weeks

Note - abbreviations refer to internal Xoserve file flows

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# Option 1

Strengths

Weaknesses

Opportunities

Threats

# Option 2 – Solution Overview

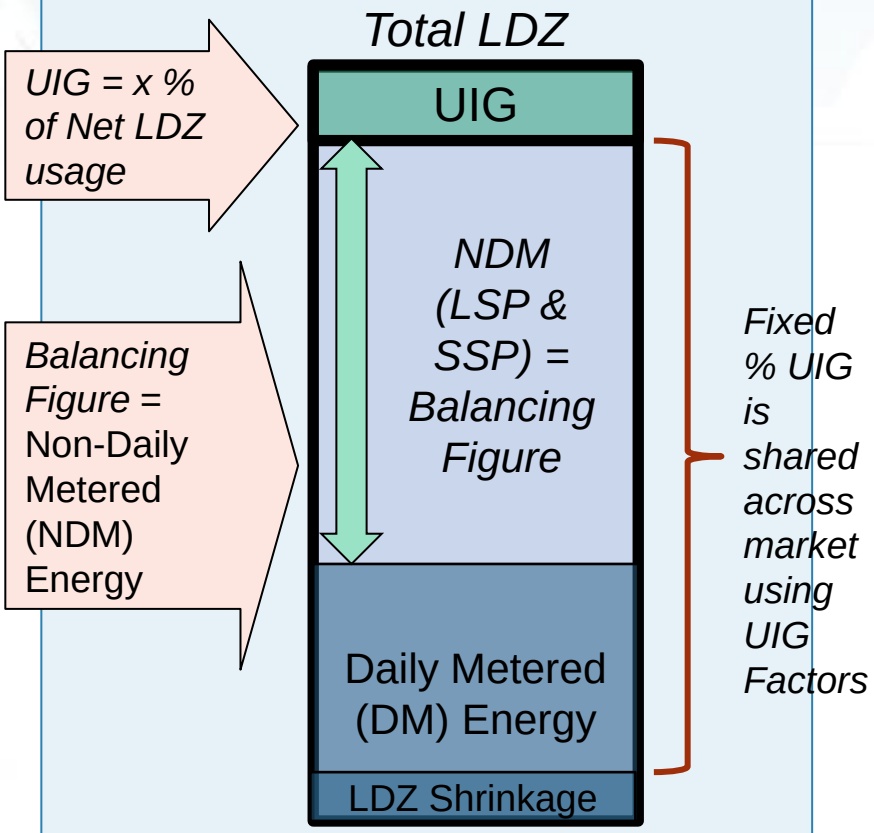


- High Level Solution Overview
  - New mechanism to parameterise the fixed UIG percentage
  - Calculate the daily UIG as a fixed percentage of throughput
  - NDM nomination and allocation to follow top down approach
  - Calculate WCF using the pre-Nexus calculation, this may require the internal S04 file which was de-commissioned as part of Nexus
  - The existing interfaces on CWV and SNCWV will have to be de-commissioned
  - The CWV and SNCWV data flow from Gemini to Data warehouse will have to be de-commissioned
  - Changes to charge calculation to put a flag at MPRN level if read or not
  - Changes to smearing process post reconciliation process in UKLINK to smear the unallocated gas volumes against unread meter points
  - UIG % to be re-assessed by the Expert each year
- Solution Specific Assumption
  - The UIG will be shared using the weighted scaling factor

# Solution Option 2 – Fixed Daily UIG Percentage

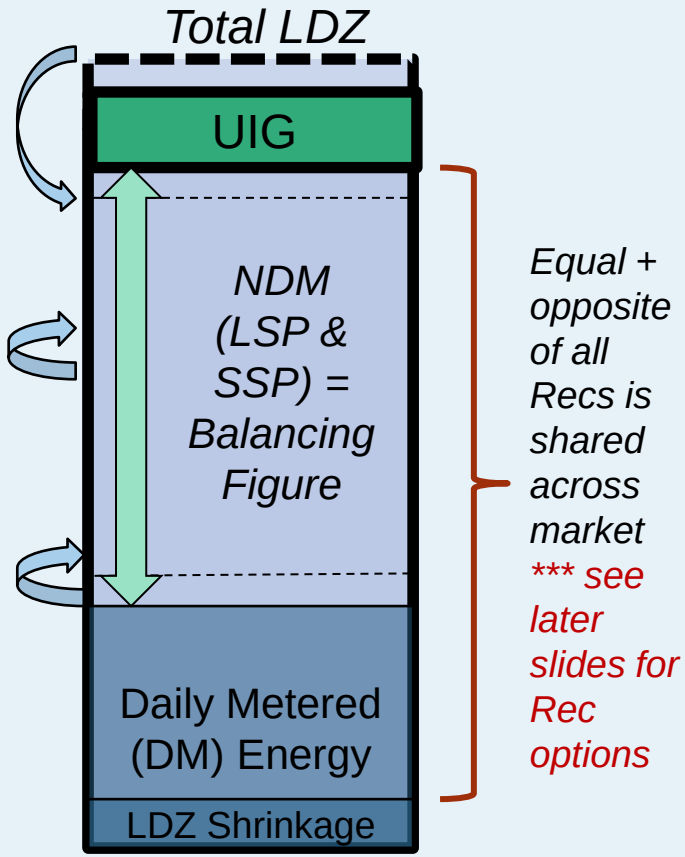


## DAILY ALLOCATION




- AUGE determines a fixed percentage for UIG each year
- Applied to net Throughput (after Shrinkage)
- Shared out using Weighting Factors (as current rules)

## POST D+5 RECONCILIATION




- Universal Meter Point rec still applies
- UIG allocation is not re-opened by Rec
- Several options for UIG Rec

# Solution Option 2 – Approaches for Treatment of Reconciliation Energy



- Approach A – Equal and Opposite of all individual reconciliations is shared to all meter points which have **not** had a meter reconciliation [in that Billing Month] in line with latest actual throughout and UIG Weighting Factors
  - Loading a meter read in the month (i.e. read passes validation tolerances) exempts the site from a share of UIG Rec (whether positive or negative)

***Approach A would require additional performance testing to determine whether there is an impact to reconciliation processes***

- Approach B – Equal and Opposite of all individual reconciliations is shared to all meter points in line with latest actual throughput and UIG Weighting Factors

***Post-meeting note – there was discussion that this option might also include a further re-distribution of UIG once [98%] of meters had been reconciled – awaiting any UNC Modifications to understand the Proposer(s) intentions***

# Option 2a – Impacted Components – UIG Rec across Non-reconciled meter points



| Impacted Application | Impacted System Component | Development Type | End User Impacted? | New / Existing Build? | High level description of change | Complexity | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Build | Test | Industry Test |
| Gemini | NDM Nomination | Batch Job | Xoserve/ Shippers | Existing | Code change to calculate fixed percentage of UIG and follow top-down approach | | | ✘ |
| | NDM Allocation | Batch Job | Xoserve/ Shippers | Existing | Code change to calculate fixed percentage of UIG and follow top-down approach | | | ✘ |
| | Parameter Screen | Online Screen | Xoserve | Existing | Change to parameterize the UIG percentage | | | ✘ |
| | CWF, AIA and S11 | Interfaces | Xoserve/ Shippers | Existing | Files to be de-commissioned | | | ✘ |
| | S04 | Interfaces | Xoserve/ Shippers | Existing | Re-instate the file | | | ✘ |
| | Accepted SNCWV Values Report – S11 | Online Report | Xoserve | Existing | To be de-commissioned | | | ✘ |
| UKLINK | Identified at MPRN level if the meter has read or not | Batch Job | Xoserve | New | Post Charge calculation job that runs daily, identify the MPRN's and mark them as read or not | | | ✓ |
| | UG Smearing across unread meter points | Batch Job | Xoserve | Existing | Change to be made in the smearing function to smear the gas across unread meter points | | | ✓ |

Estimated Delivery timescales: 19 to 25 weeks

Note - abbreviations refer to internal Xoserve file flows

# Option 2b – Impacted Components – UIG Rec across all Meter points



| Impacted Application | Impacted System Component | Development Type | End User Impacted? | New / Existing Build? | High level description of change | Complexity | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Change Complexity | Test | Industry Test |
| Gemini | NDM Nomination | Batch Job | Xoserve/ Shippers | Existing | Code change to calculate fixed percentage of UIG and follow top-down approach | | | ✘ |
| | NDM Allocation | Batch Job | Xoserve/ Shippers | Existing | Code change to calculate fixed percentage of UIG and follow top-down approach | | | ✘ |
| | Parameter Screen | Online Screen | Xoserve | Existing | Change to parameterize the UIG percentage | | | ✘ |
| | CWF, AIA and S11 | Interfaces | Xoserve/ Shippers | Existing | Files to be de-commissioned | | | ✘ |
| | S04 | Interfaces | Xoserve/ Shippers | Existing | Re-instate the file | | | ✘ |
| | Accepted SNCWV Values Report – S11 | Online Report | Xoserve | Existing | To be de-commissioned | | | ✘ |
| UKLINK | UIG Smearing across non-reconciled meter points | Batch Job | Xoserve | Existing | Change to be made in the smearing function to smear the gas across all meterpoints in LDZ with UIG% | | | ✓ |

Estimated Delivery timescales: 19 to 25 weeks

Note - abbreviations refer to internal Xoserve file flows

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# Option 2

Strengths

Weaknesses

Opportunities

Threats

# Option 4 – Solution Overview



**Option 4A – Setup as Shipper with all UIG rec happening outside system**

1. The central body can participate in OTC trades and view its own position
2. This does not require a change in Gemini
3. Using an existing prohibits the Central body from viewing the Shippers balances, unless they are set up as a User Agent.

**Option 4B – Setup as a new role**

1. The central body in addition to participating in OTC trades and viewing its own positions, can also view the Shippers balances who have opted in for this service
2. There will be a new security role required in Gemini each time a Shipper opts in or out of this service

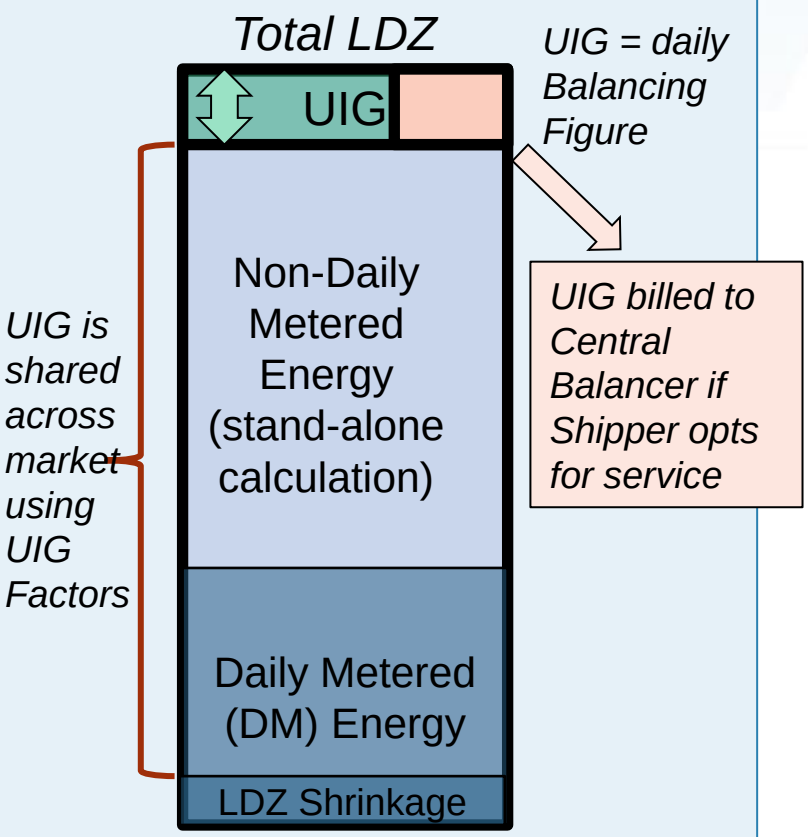
## Solution Specific Assumptions

- The Xoserve customer life cycle process will be followed to setup the central body as a Shipper in Gemini
- Facility for Shippers to opt in and out of the central body service, this will be outside Gemini
- Central body will be registered in the OCM platform to participate in the wholesale trading
- The current NDM/UIG calculation in Gemini will remain AS-IS
- The Central body will be taken into account for the Energy balancing charges
- There may be a new interface required from Gemini to the central body
- Central body will generate invoice to Shippers
- Automatic allocation of UIG to the central body could be delivered in an enduring solution, but has not been considered as a short term fix.

# Solution Option 4 – Optional Third Party UIG Balancer

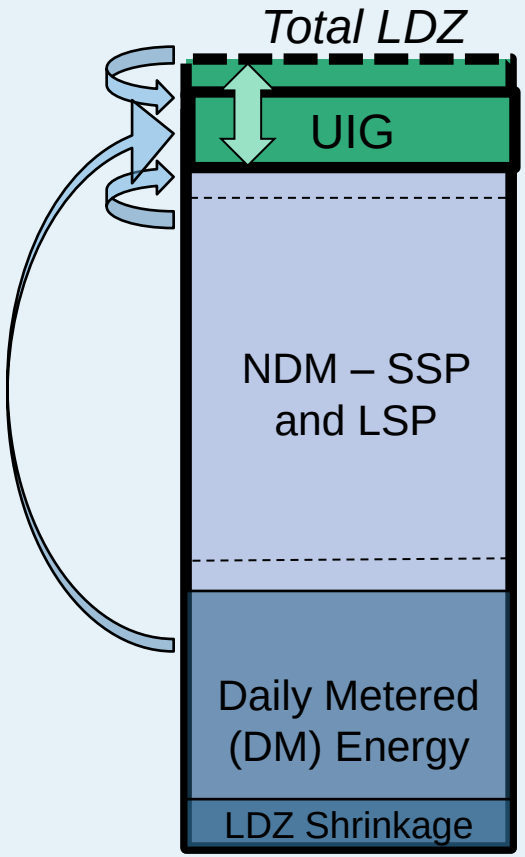


## DAILY ALLOCATION




- No change to daily calculation of NDM or UIG energy
- All Shippers can opt to use a central balancer to buy their UIG quantity
- **Central Balancer bills fixed monthly charge to Shipper**

## POST D+5 RECONCILIATION




No change to post D+5 Reconciliation rules or processes

# Solution Option 4 – Approaches for Treatment of Reconciliation Energy



- All approaches: **No change to current UIG rec process or Amendment invoice – UIG shared out using Weighting Factors**
  - Options relate to where/how the UIG Reconciliation is billed

- Approach 4.1 – No change to current UIG billing process – UIG rec is billed to Shippers – those Shippers who use the central body make an equal payment/credit to the central body

- Approach 4.2 – UIG Rec energy for Shippers who use the central body is billed to the Shipper via Amendment invoice but then credited & rebilled to the central body by Xoserve via an off-line process

NOTE: In all cases Amendment invoice is unchanged for Shippers who do not use the central body

# Option 4a – Impacted Components



- In this option, stakeholder need to be setup as per the BAU process (by customer lifecycle team)
- UIG reconciliation will be sent to Shippers as per current process and be managed between shippers and the central body outside of UK Link systems
- No change to Gemini and UKLINK system in this option

Estimated Delivery timescales: No system development

# Option 4b – Impacted Components



| Impacted Application | Impacted System Component | Development Type | End User Impacted? | New / Existing Build? | High level description of change | Complexity | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | Build | Test | Industry Test |
| Gemini | Security | Online | Central Body | New | Security change required to provide specific access to Central body | | | ✘ |
| | New Interface | Interface | Central Body | New | File based interface to enable Central body to generate invoices | | | ✘ |
| UKLINK | New Interface | Interface | Central Body | New | File based interface to send rec details to central body | | | ✘ |

Estimated Delivery timescales: 10 to 13 weeks

# Option 4

Strengths

Weaknesses

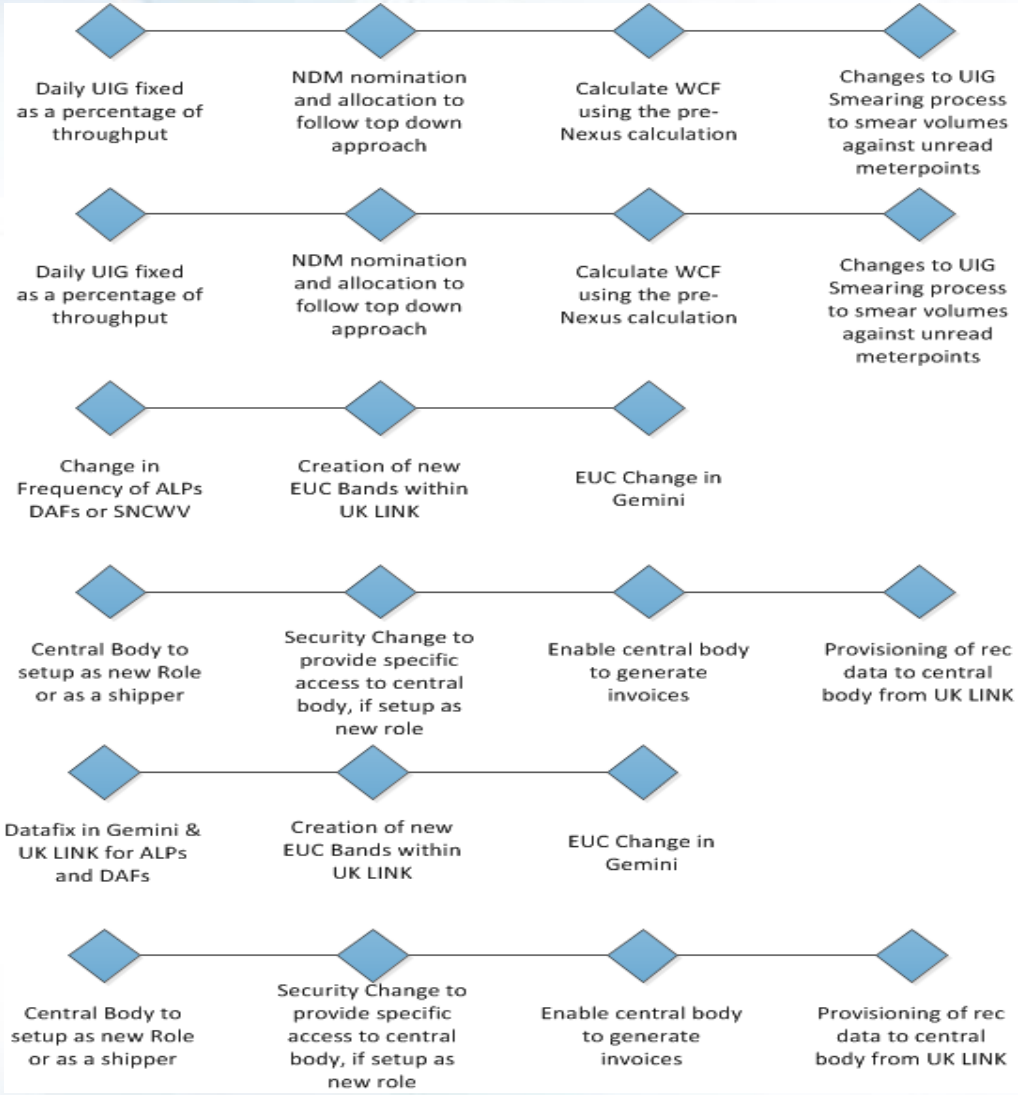
Opportunities

Threats

# Solution Options - Summary



| | |
|---|---|
| Option-2a | 19-25 Weeks |
| Option-2b | 19-25 Weeks |
| Option-1a | 14-18 Weeks |
| Option-4b | 10-13 Weeks |
| Option-1b | 4-6 Weeks |
| Option-4a | BAU SLA |



# Opportunities for expediting Governance



| Actions | Normal Timescales | Opportunities | Days |
|---|---|---|---|
| Submit to Joint Office for critical friend review | 1st Friday of the Month | Special Meeting can be convened at short notice | 0 |
| Include in Mod Panel Paper | 2nd Thursday of the month | 4 working days retained | +4 |
| Mod Panel | 3rd Thursday | 5 working days between paper being produced and Mod panel to be retained. | +5 |
| Refer to work group | 1 month | - No workgroup – met by existing working group<br>- 1 workgroup<br>- Dedicated workgroup – shorten timescales | +25 |
| Mod Panel – consider working group report | 3rd Thursday | Convene at short notice. | +0 |
| Issue for consultation | 15 working days | Could reduce to 10 days minimum. | +10 |

# Opportunities for expediting Governance (2)



| Actions | Normal Timescales | Opportunities | |
|---|---|---|---|
| Mod Panel – consider final mod report and vote | 5 working days | Recommend retain 5 days | +5 |
| Issue to Ofgem decision | Next day | Do the same day | 0 |
| Ofgem decision | 25 working days | Shorten to 5 working days minimum by engaging Ofgem through working group and shorten decision timeline | +5 |
| Mod implementation date TBC | | Often awaiting system solution so can be influenced by Xoserve | ? |