

**Project Nexus Principle Workshop
ALLOCATION – 1ST WORKSHOP
(extract)**

15 January 2010

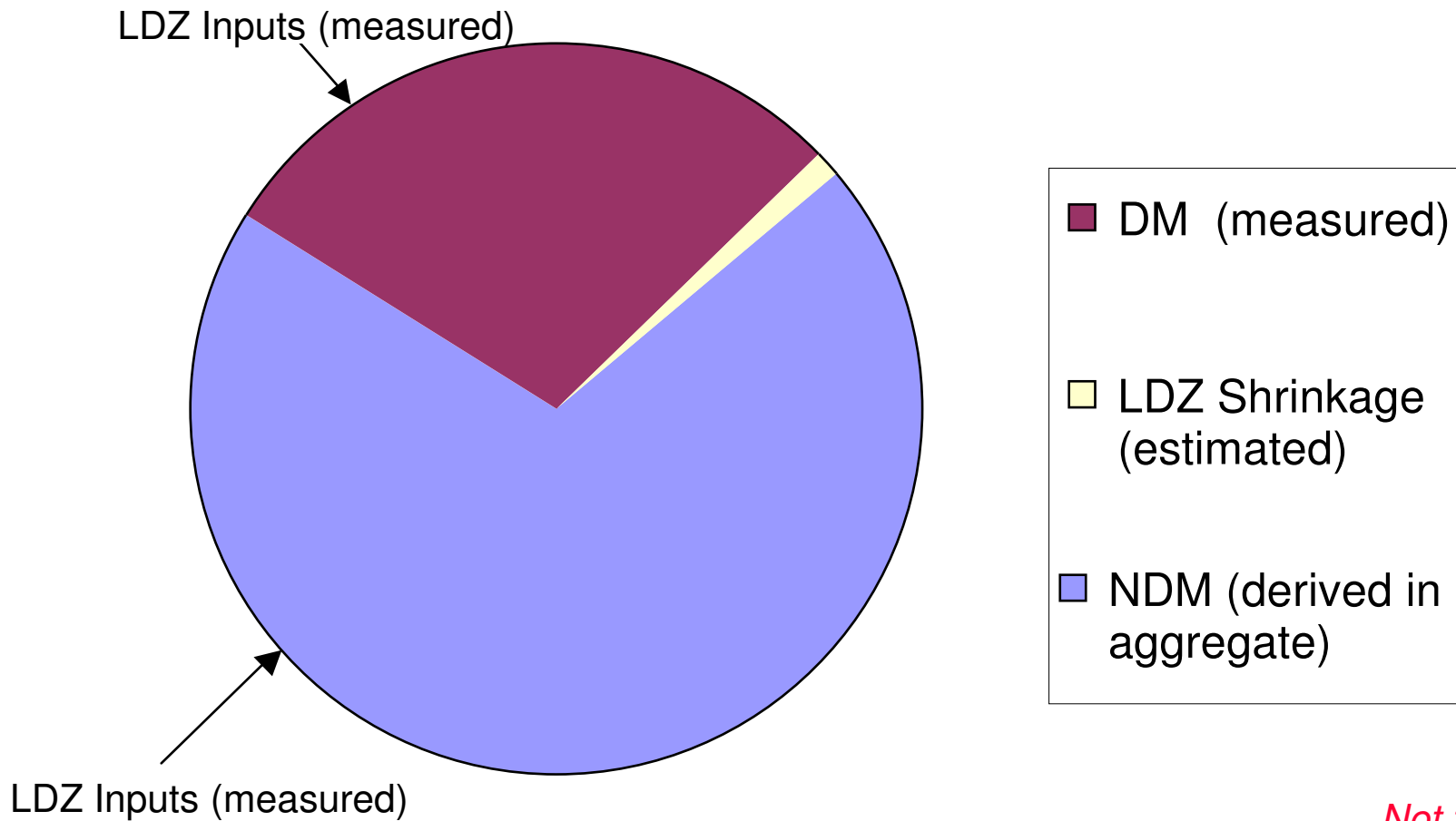
Allocation processes – why are they needed?

- Allocation rules are needed to share out all energy in an LDZ
 - Before the day – Nominations process
 - After the day – Energy balancing and commodity billing processes
- Need to measure or estimate all inputs and outputs
- Currently do not have daily reading equipment on all meter points (21+ million)
- So, need some means of estimating demand for non-daily metered (NDM) meter points

- *Will need to share out energy fairly between remotely and non-remotely read meters until the last dumb meter is upgraded/removed*

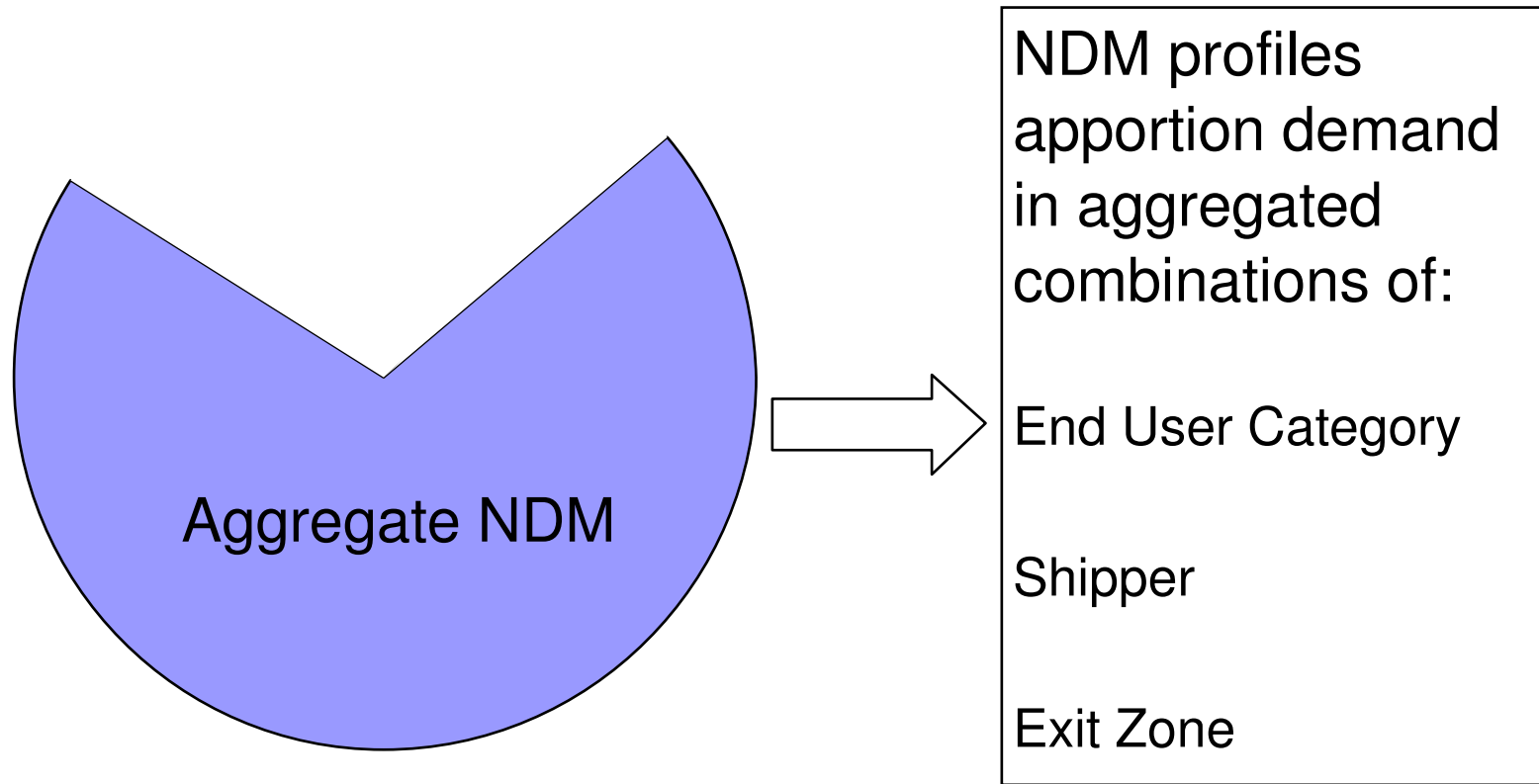
Energy in the LDZ

$$\text{NDM Consumption} = \text{LDZ Demand} - \text{LDZ Shrinkage} - \text{DM Consumption}$$

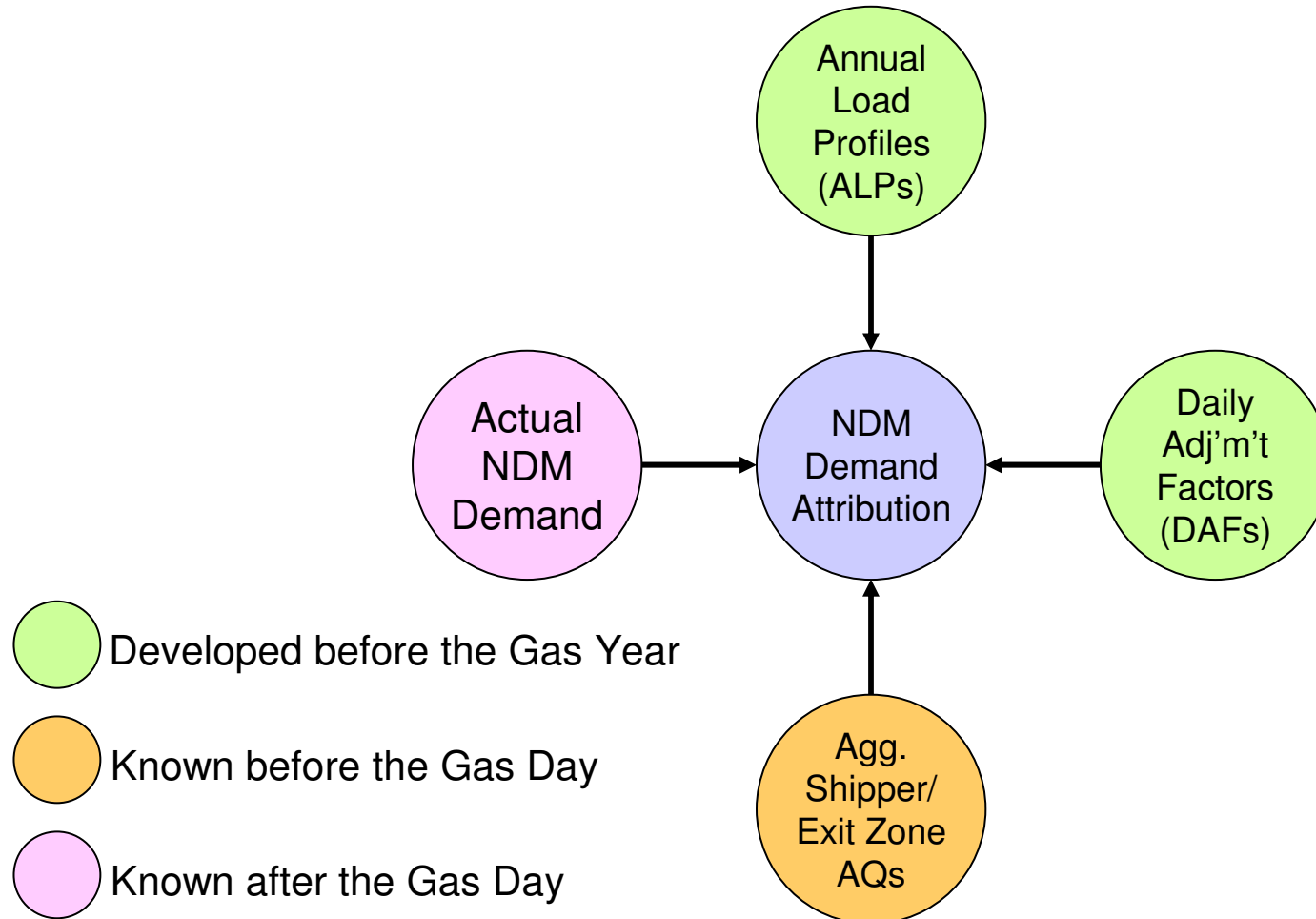


Not to scale

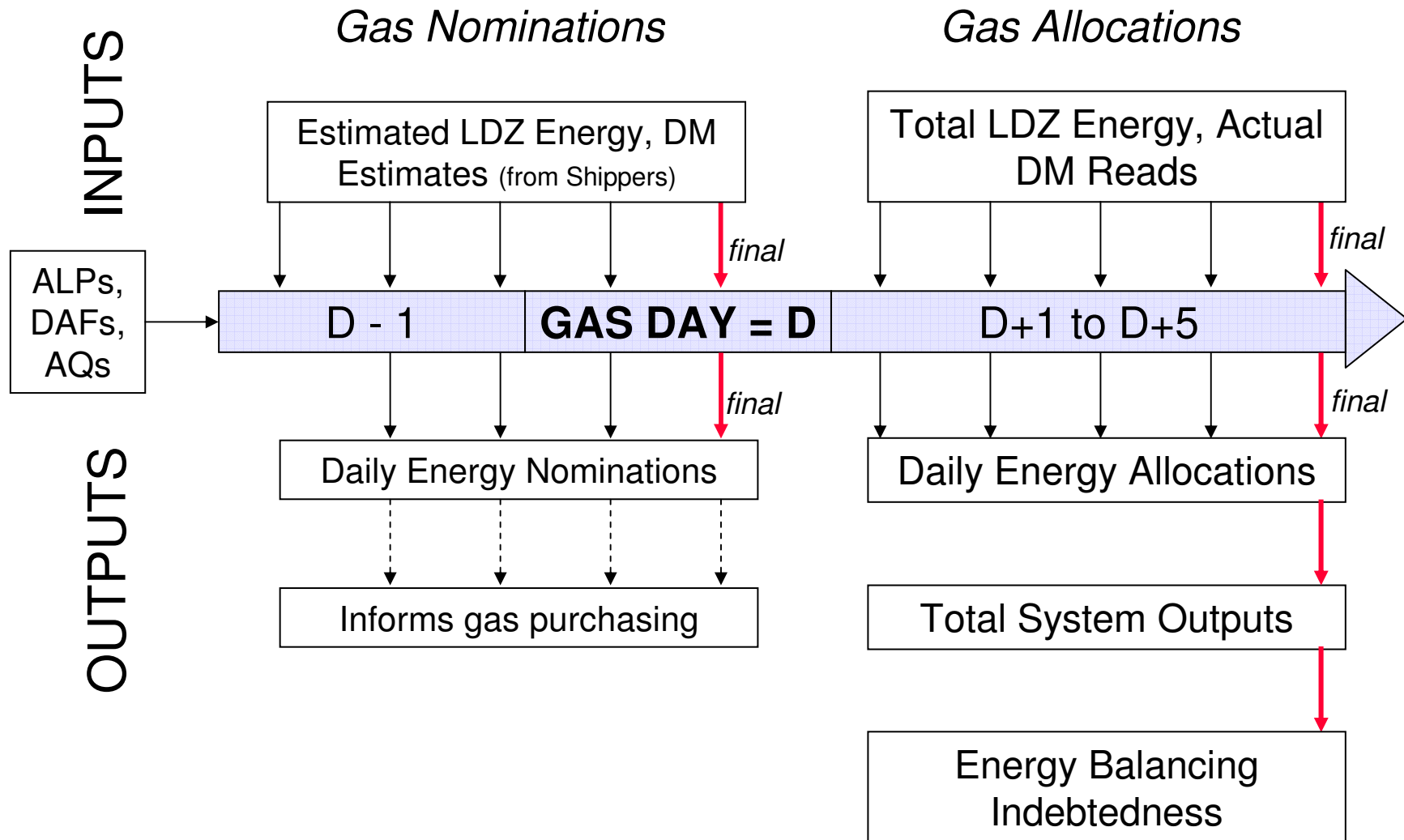
NDM Demand Attribution



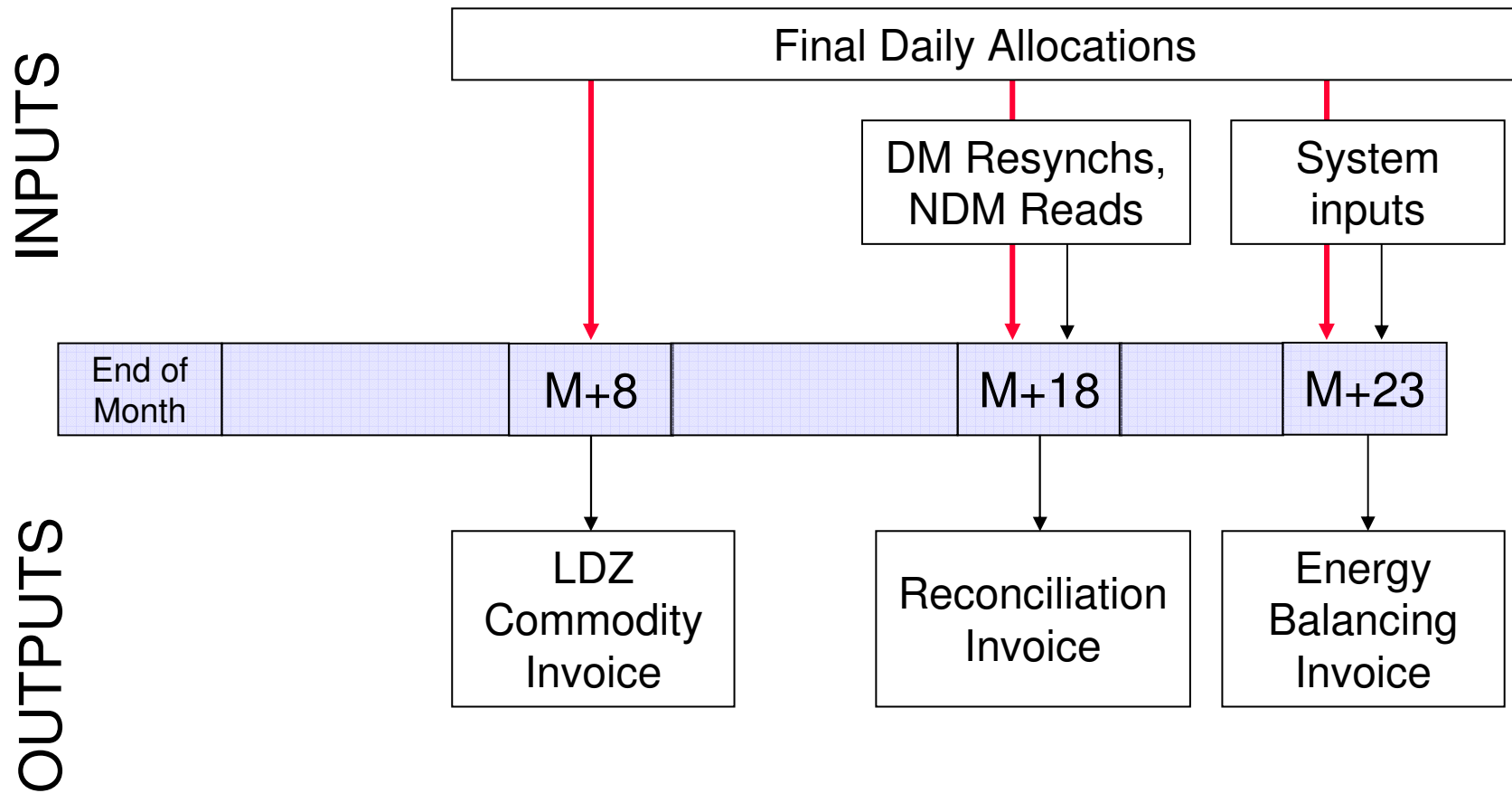
Inputs to NDM Demand Attribution



Allocation processes – Timelines (1)



Allocation processes – Timelines (2)



NDM Apportionment Formula

AQ = annual consumption of meter/supply point under conditions of average weather

$$\text{S.P. Demand} = (\text{AQ}/365) * \text{ALP} * (1 + [\text{WCF} * \text{DAFI}]) * \text{SF}$$

average daily consumption over the year

Profiled daily consumption under average weather

Adjustment to daily consumption to take account of prevailing weather and sensitivity to deviation from average weather

Scale to ensure everything adds up

UNC H2.2.1

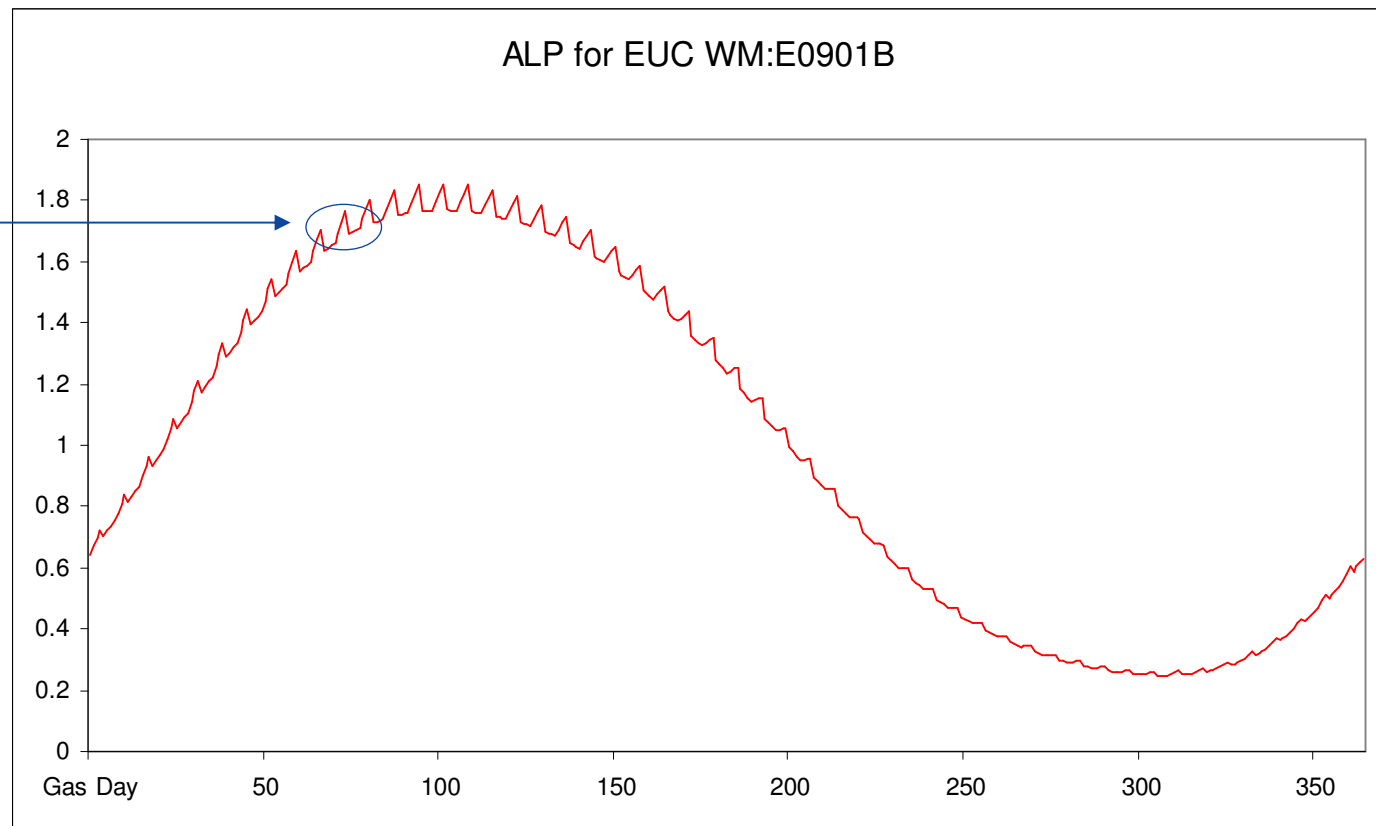
End User Categories

- NDM Energy currently allocated by End User Category – “EUC”
- All NDM sites in an EUC treated identically for nomination and allocation
- Assigned to an EUC based on LDZ and supply point AQ
- Each EUC has its own Annual Load Profile and Daily Adjustment factor
- ALPs and DAFs created using daily read data from the NDM Sample
- 429 EUCs – 33 per LDZ

Annual Load Profile

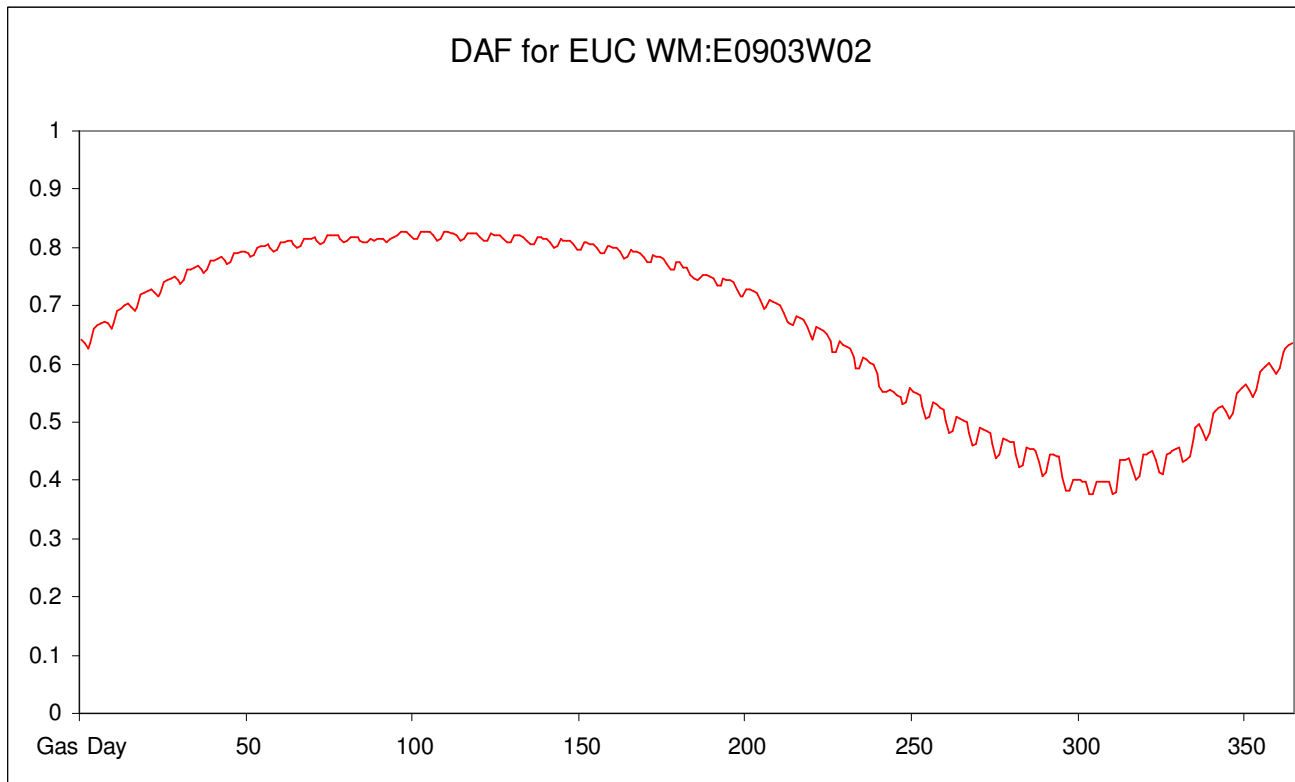
- ALP : ratio of seasonal normal daily consumption in EUC to average daily seasonal normal consumption in that EUC over the year
- Example of 365 ALPs for a Smaller Supply point EUC (weather-sensitive):

Domestic usage – increases at weekends



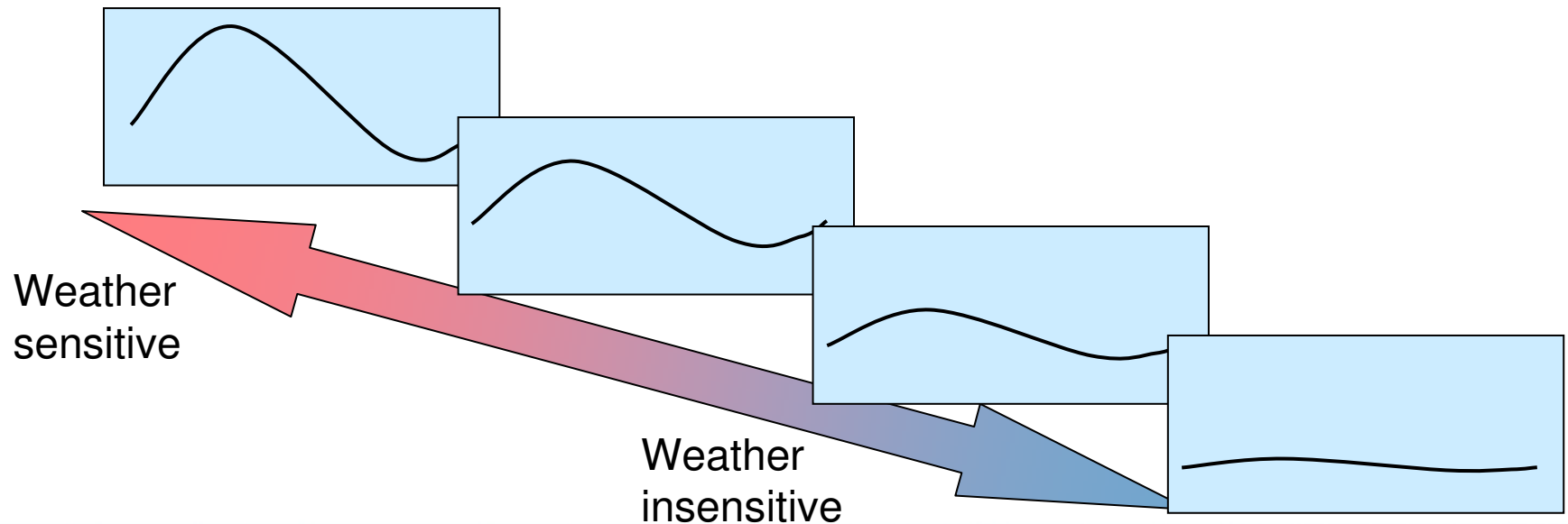
Daily Adjustment Factor

- DAF : ratio of percentage weather sensitivity of EUC to percentage weather sensitivity of total LDZ demand
- Example of a DAF for a Larger Supply point EUC (slightly below average weather-sensitivity):

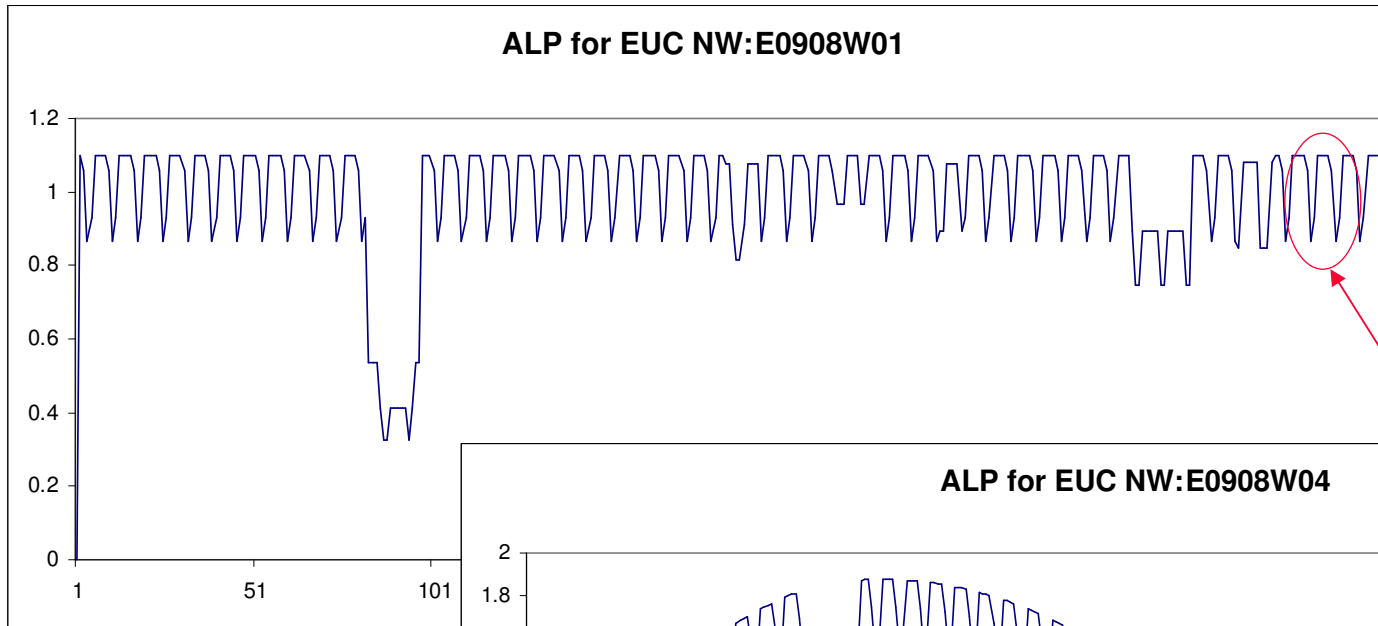


Winter:Annual Ratio (WAR) Bands

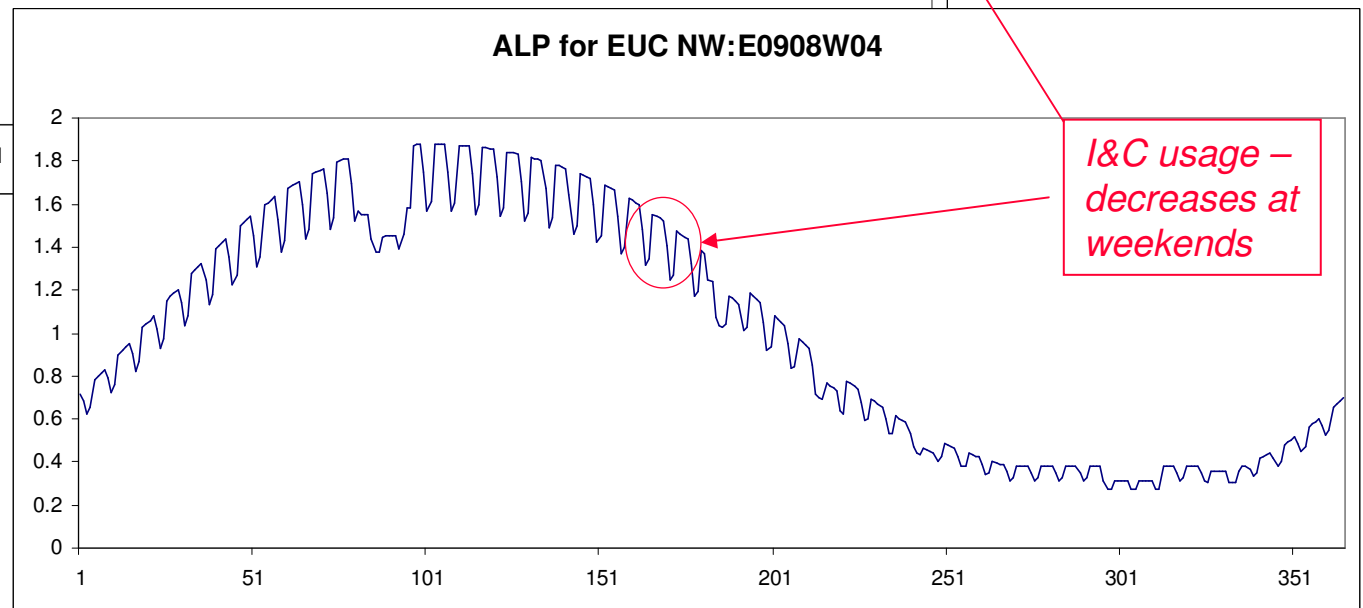
- Higher AQ Bands have a standard EUC plus 4 differential EUCs based on ratio of winter consumption to total annual consumption
- Monthly read sites with adequate read history allocated automatically to a WAR Band based on system calculation during AQ review



Variation in ALPs



- Left : a weather-insensitive Larger Supply Point ALP

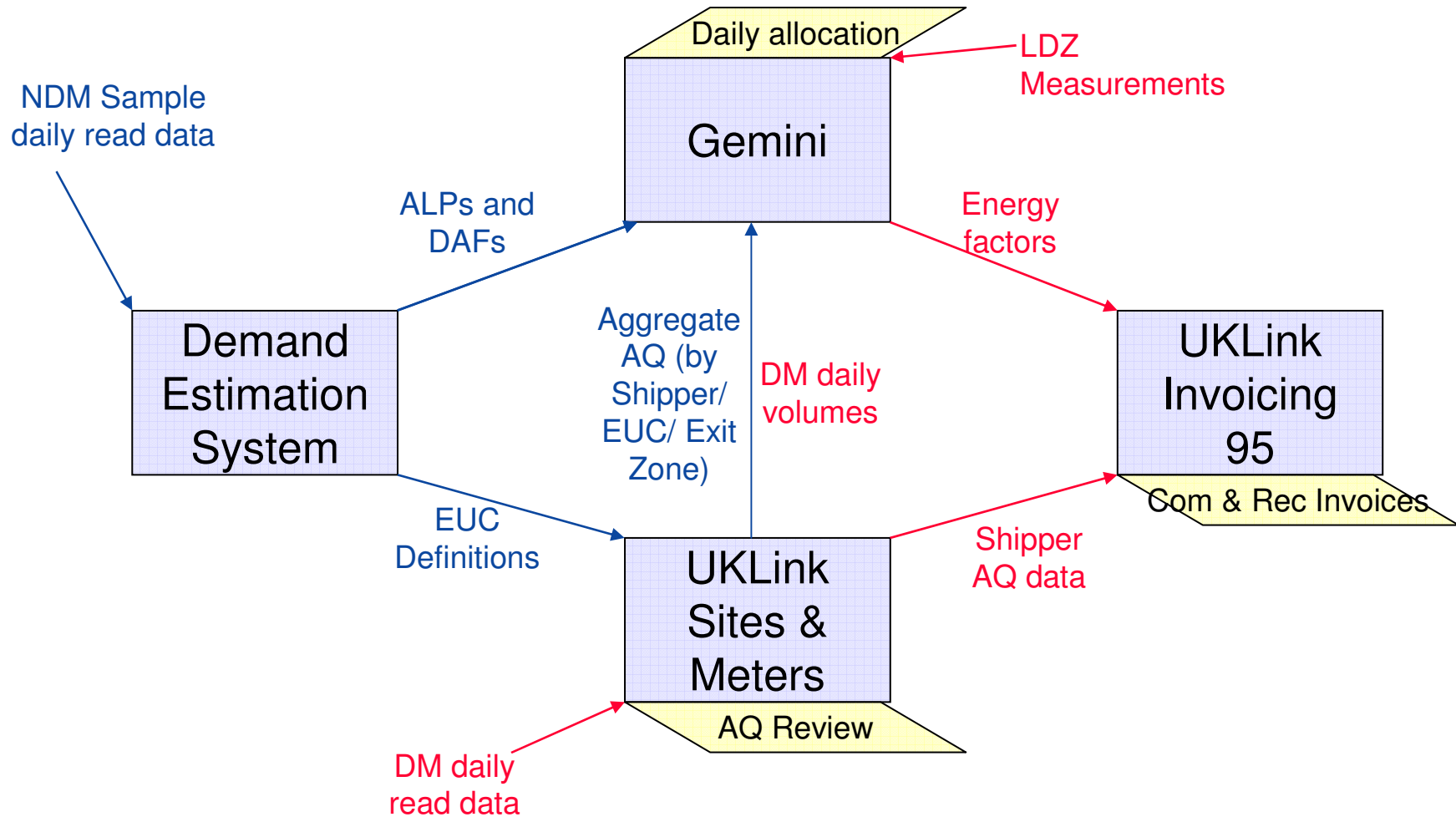


- Right: a highly weather-sensitive Larger Supply Point ALP

xoserve System Context

Before the day

After the day



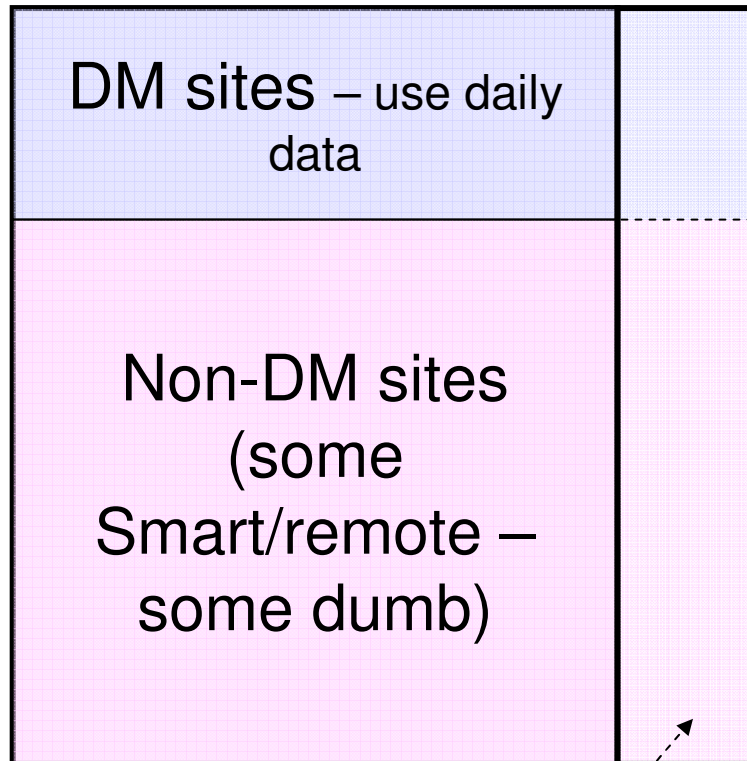
**Project Nexus Principle Workshop
ALLOCATION – 2nd WORKSHOP
(extract)**

29 January 2010

Ensuring completeness of Allocations

- Total metered site consumptions will never add up exactly to total LDZ throughput – could be over or under
- Causes of difference could include:
 - Consumer theft
 - Site metering/measurement errors
 - Missing meters
 - Missing reads
 - LDZ measurement errors, etc.
- Will need to apply a “correction” every day to initial measurements

Allocation Future Principle – Project Nexus



Daily balancing correction to apportion “unaccounted for gas”

- Daily “Balancing Correction” will always be required to ensure that all gas is allocated
- Could be positive or negative
- Could be apportioned based on:
 - Site AQ
 - Daily consumption
 - Other?
- Could be applied to:
 - Domestic only
 - Non-DM only
 - All sites
- Must treat Smart and non-Smart equitably