UNMETERED SUPPLIES VOLUMES

This document outlines the methodology used to assess the Settlement Risk related to the calculation of UMS volumes. We are not seeking to exhaustively outline all aspects considered during this assessment; our aim is to draw out the main data items considered and any key assumptions when estimating a future impact range.

The risk that... Unmetered Supplies volumes are calculated incorrectly or not at all, **resulting in...** erroneous or missing data in Settlement.

Category: Data retrieval and processing

Sub category: Unmetered Supplies

Covers: Quality of data (e.g. Charge Codes and Switch Regimes) held and processed by UMSOs and MAs, Central Management Systems (CMS)

Does not cover: UMS default EAC volumes from the NHH DA aggregation logs (L0038)

Estimated impact in 2020/21

Market	Lower	Middle	Upper
HH	£2.9m	£4.6m	£13.6m
NHH	£2.1m	£3.1m	£4.4m

Please note: Unmetered Supplies are estimated volumes, although data received through Central Management Systems (CMS) can infer usage, so it is difficult to provide exact volumes. Settlement Data used in the scoring for this risk has been based on volumes associated with UMS related Consumption Component Class (CCC) IDs. Due to the nature of installation of unmetered equipment, there is no reasonable way to guarantee that what is being declared on a customer's inventory is reflective of what is actually connected to the Distribution Network.

At risk population

As part of this assessment, we seek to understand the population at risk in the upcoming period, i.e. how many times the underlying process will occur where the risk can manifest.

In order to assess the population ELEXON has utilised Data Transfer Network (DTN) data flows to extract information on the volumes associated with CCC Ids. The at-risk population for this risk is all energy volumes associated with the following UMS CCC IDs:
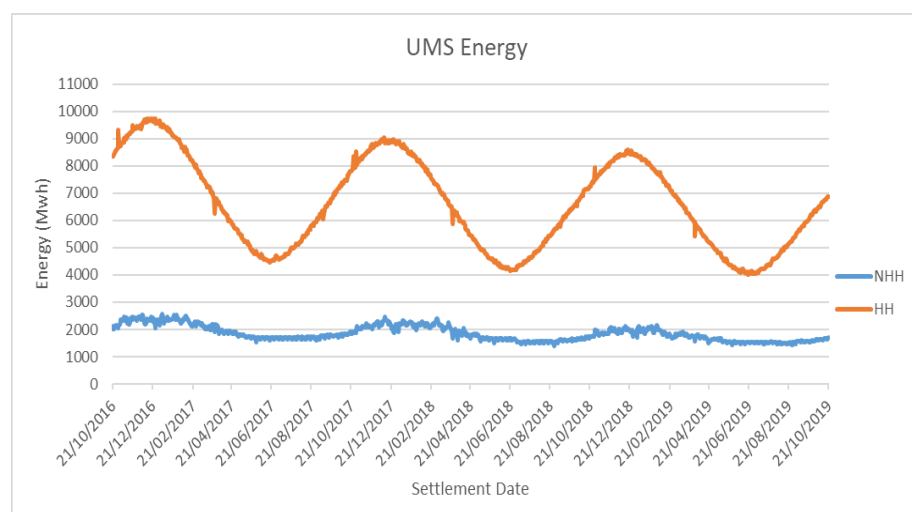
- 2, 10 - Half-Hourly (HH) and;
- 19 – Non Half-Hourly (NHH)

Data point considered

We analysed all industry Import energy over the last three years, separating it based on CCC ID and assessed not only what proportion of the Import market was energy related to UMS, but what proportion of that UMS energy was HH and NHH.

At Risk Population		
Period	UMS - HH	UMS - NHH
2017	2,570,343	727,339
2018	2,386,327	679,243
2019	2,262,514	624,814

paa@elexon.co.uk

Page 1 of 3

Risk Evaluation Supplementary Information

V1.0

© ELEXON 2020

ELEXON

UNMETERED SUPPLIES VOLUMES

> ➢ Both HH and NHH volumes are decreasing year on year.
> ➢ This decrease is likely due to improved energy efficiency in UMS equipment such as LED street lighting

Forecast

Below are the key considerations and assumptions when forecasting the at risk population in the 2020/21 period:

- Due to the increased power efficiency and popularity of LED street lighting, we are forecasting a decrease in overall UMS volumes
- Volumes related to Electric Vehicle (EV) are currently very low (less than 0.1% of all UMS energy), but may increase over the next few years as EVs become more widely adopted.
- Forecasted HH and NHH UMS volumes are based on steady decreases over recent years in both markets, which range between 5% to 10% each year.

Failure rate

From the population at risk, we need to estimate the proportion where the risk will manifest, i.e. the failure rate. To do this, we assess historical performance in the area and consider any upcoming changes that have the potential to impact future performance.

Data points considered

When assessing historical performance in the area, we considered the gross error associated with UMS, which is reported in one of ELEXON's Performance Assurance Techniques (PATs), Material Error Monitoring (MEM).

ELEXON monitors the issue of erroneous values of UMS in the Non Half-Hourly (NHH) market. The monitoring involves comparing UMS data from Unmetered Supplies Operators (UMSOs) and Non Half-Hourly Data Aggregators (NHHDAs) on a particular Settlement Date following the SF run.

The following table provides a view of the total Gross Error over the last four quarterly reporting periods:

	Dec-18	Apr-19	Jul-19	Oct-19
Gross Error (MWh)	61,046	48,530	63,765	67,202

While it is difficult to quantify errors in the HH market due to how HH data is processed, an estimation of error should be applied to account for the possibility that some of the reported HH energy is incorrect. It has been reported that some UMS customers have outdated inventories and there is the possibility that data related to Central Management Systems (CMS) can be processed incorrectly by MAs, resulting in incorrect consumption data for street lighting or Electric Vehicles (EV). With this considered, an estimate of 4% could be applied as 'error' for the HH

UNMETERED SUPPLIES VOLUMES

market to account for this potential unseen error. The following table provides a view of this, as well as its relation to the overall UMS market.

	2017	2018	2019
HH Volumes	2,570,343	2,386,327	2,265,514
4% potential error Energy (MWh)	102,814	95,453	90,621
% error of all UMS Energy	2.75%	3.11%	3.56%

Forecast

Below are the key consideration and assumptions when forecasting failure rates in the 2020/21 period:

- The percentage of overall UMS energy affected by NHH UMS Gross Error has remained relatively low over recent years. With an average error over 2019 of 60,146MWh, this equals approximately 2% of all UMS volumes. Within the NHH market specifically, it equals approximately 9% of all NHH UMS volumes. Based on this, a NHH failure rate prediction of somewhere between 8%-10% for the future seems reasonable.
- ELEXON do not envisage any major changes to the current estimated 4% failure rate for HH. We do anticipate an increase during the 2020/21 period of NHH to HH migrations though, which will likely have a notable impact on the ratio of NHH to HH UMS volumes. An increase in migration activity may also increase the chances of erroneous energy entering Settlement.

Impact

To estimate the impact of a risk we need to understand the days impacted and error volume on average per instance.

Average days impacted

Due to the nature of UMS, it is difficult to quantify exactly which days would be impacted by any error. However, things such as incorrect inventories would be persistently misrepresenting equipment that has or has not been installed, or replaced. Therefore, considering the estimations and forecasts of data have been done at an annual level, we have stated all days of the year are impacted.

Average error per day

Because the average days impacted is 365 and the error has also been calculated annually, the calculation behind average error per day is annual materiality (MWh) divided by 365. The following table provides a view of this in relation to the overall UMS market forecasted for 2020/2021:

Market	Avg. error Annually (MWh)	Avg. error per day (MWh)
All UMS	150,767	412
HH	90,621	248
NHH	60,146	164

ELEXON