SVA ENERGISATION STATUS

This document outlines the methodology used to assess the Settlement Risk related to Energisation Statuses. 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... the energisation status held in SMRS or by any party in the Supplier Hub does not match the physical energisation status of the SVA metering system **resulting in...** erroneous or estimated data in Settlement.

Category: Registration and Appointments

Sub category: Energisation Status

Covers: Setting and changing Energisation Status

Estimated impact in 2019/20

Market	Lower	Middle	Upper
NHH	1.0m	4.1m	13.1m
HH	548.1k	11.0m	26.5m

Does not cover: Energised but not registered

Please note: For the initial assessment of this risk, we have attempted to estimate how many times there is a mismatch between the physical and recorded energisation status of a metering system. This could present as a de-energised meter for which there are non-zero estimates, or an energised meter that is being estimated at zero.

Each of these instances are likely to be associated with different materiality (an energised meter being estimated at zero may be discovered and corrected much faster or slower than a de-energised site being estimated at non-zero values, for example) and so were considered separately.

Furthermore, as the analysis will demonstrate, energisation status mismatches are significantly more common in newly registered meters compared to meters that have been live for some time. Consequently, new connections and existing connections were considered separately where appropriate. In some Measurement / Profile Classes, the number of new connections is likely to be negligible and so this consideration was not relevant.

At risk population

Every meter registered in SMRS has the potential to undergo an energisation status change, and therefore the population at risk is every registered meter broken down by market and Profile / Measurement Class, and whether the meter is a new or existing connection. This value was calculated by finding the current number of meters in each market, and extrapolating to the 2019/20 based on the number of new installations, presented below.

Data point considered

Market	Number of meters (2017)	Number of new connections (2017)
HH (Measurement Class C)	154.1k	6.0k
NHH (Profile Class 1)	24.5m	397.1k

- The year 2017 was considered the most reliable as this was the only year for which we had full SMRS coverage.

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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.

The failure rate was calculated as the proportion of meters that undergo a material, backdated energisation change. Although there are instances where a meter's energisation status is mismatched, not every single one of those instances will result in a material error. Consequently, the failure rate here was calculated as the proportion of the at risk population that have a mismatched energisation status that will result in a material error.

To estimate the proportion of the at risk population that will experience an energisation status mismatch, we extracted the number of backdated energisation status changes in SMRS (that would have had a period of energisation status mismatch). To estimate the proportion of these mismatches that are material, we calculated how many were associated with either non-zero estimates that were later corrected to zeros, or zero estimates that were later correct to non-zero using D0036 data flows. Of the total number of energisation mismatches, around half were associated with a material error.

This calculation was not possible for the Non Half Hourly market as were unable to determine which of the sites that had a backdated energisation change were actually consuming during that period. Instead, to estimate the number of material instances, we found the number of times an energisation status change was backdated in SMRS, and assumed that an equal proportion (50%) of those would be material to the HH market

Data points considered

Market	Connection type	Meter ES	SMRS ES	Number of backdated changes		
				2016*	2017	2018*
HH (Measurement Class C)	New	Energised	De-energised	419	562	94
HH (Measurement Class C)	Existing	Energised	De-energised	96	73	5
NHH (Profile Class 1)	New	Energised	De-energised	4403	14851	7179
NHH (Profile Class 1)	Existing	Energised	De-energised	1259	6094	3833

*** Part year**

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

The number of days impacted was assumed to equate to the number of days it took for the energisation status mismatch to be rectified (i.e. the difference between the energisation status effective from date and when SMRS was updated).

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Market	Connection type	Meter ES	SMRS ES	Number of days backdated		
				2016*	2017	2018*
HH (Measurement Class C)	New	Energised	De-energised	56.3	50.6	35
HH (Measurement Class C)	Existing	Energised	De-energised	95.5	74.1	80.2
NHH (Profile Class 1)	New	Energised	De-energised	46.5	118.8	129.5
NHH (Profile Class 1)	Existing	Energised	De-energised	54.7	190	236

* **Part year**

- The SMRS data we have access to is in the form of quarterly snapshots, meaning that we do not see exactly when an update to ES is made. Consequently, we assumed that any corrections were made on the first day of the quarter.

Average error per day

When estimating the error per day, for the HH market, we were able to use the difference between what the original estimates were and what the actual readings where when the energisation status was corrected using D0036 data flows.

For the NHH market, the daily error was estimated as the average daily consumption of a site per measurement class, calculated using the default EACs.

Market	Avg. error per day (Wh)
HH (Measurement Class C)	3.385
NHH (Profile Class 1)	0.010

We convert the error volume into a monetary value by the forecast system buy and sell price for the upcoming period.

Other considerations for this risk

- The current estimate for the number of material energisation status mismatches in the NHH market is based on assuming that an equal proportion of the total number of energisation status mismatches to the HH market will be material. This may be an inappropriate assumption, and so the analysis could be improved by better estimating this value.
- Some of the markets (such as Profile Classes 2-4 and 5-8) were combined to make the analysis easier to perform and understand. It's worth noting, however, that the original analysis considered these Profile Classes separately. It was following this original analysis that we found there was very little difference in total materiality if these profile classes were combined, resulting in the current scoring methodology.