

## Sector Theft Apportionment

Upon review of the data used by the AUGÉ to determine the theft allocation across sector we make the following observations.

We cannot recreate exactly the AUGÉ calculation to derive the 92.1% and 7.9% but by summarising the data for theft detections we can get equivalent results:

### Number and volume of detected theft instances 2006-2010 (as per AUGÉ data)

Original	Number	% of Total	TOG Volume (KWh)	% of Total
SSP	4,474	96.11%	104,701,227	92.38%
LSP	181	3.89%	8,641,609	7.62%

This is using the data from 2006 - 2010 for theft detections as per the AUGÉ's methodology.

The AUGÉ has introduced an error in that it has used the 'Meter AQ' to define the sector apportionment.

The 'Meter AQ' does not incorporate the theft consumption and as such is inaccurate as a sector differentiator. This error introduces a large-scale adverse bias to the SSP sector since the AQ value will ALWAYS be understated if it does not include all consumption and as such LSP sites will be incorrectly classified as SSP sites and the apportionment of theft volumes will be incorrect, unfairly allocating the cost of theft to SSP customers.

For example, an account with an AQ of 1 with a theft of gas volume of 517,531KWh over 673 days has been classified by the AUGÉ as "SSP" since the AQ is 1. Clearly an SSP site cannot have over 280,000KWh stolen consumption per annum and remain within the SSP sector since the annual consumption exceeds the 73,200KWh threshold.

Therefore the data needs to be adjusted to incorporate the theft consumption to derive a new AQ value; this new AQ value would then be suitable for use as a sector differentiator. The precise way to do this would be to re-run the AQ Review process for these accounts factoring in the theft consumption. We accept however that this may not be possible within the timeframe but a simple alternative approach could be taken.

In order to provide a correct view of the data we have produced a methodology to derive a new AQ value taking account of the theft consumption. We have used the listed 'TOG Start Date' and 'TOG End Date' to identify the number of 'theft days'. We have then divided this figure by 365 to derive the number of 'theft years'. Then we have taken the KWhs of assessed theft volume and divided it by the number of 'theft years' to derive the annual theft volume. The annual theft volume has been added to the reported 'Meter AQ' to derive an 'Adjusted AQ' value.

On 5 records there is no 'TOG End Date' so for these we have used 09/11/11 as a replacement date and highlighted this in yellow – this will ensure that the annual theft volume for these few records will be the smallest possible figure and therefore would only bias the end number in the favour of the LSP sector. We would recommend the AUGÉ correct for this bias when reviewing the AUGS.

There are 9 records where the 'TOG End date' is prior to the 'TOG Start Date'. Clearly this is an error and produces a negative 'Adjusted AQ' value. We have included these records with a negative 'Adjusted AQ' value. This will classify all the associated theft volume (114,965KWh) as attributable to the SSP sector but in actuality the true allocation would be split between sectors. Again, these records have been left in for completeness and the outcome can only be bias in favour of the LSP sector. We would recommend the AUGÉ correct for this bias when reviewing the AUGS.

We have also noticed 70 duplicated records within the data. Again to ensure that the data we use matches exactly the data used by the AUGÉ we have included these records in the overall calculation. We would recommend that when the AUGÉ reviews their calculation that they make some adjustment for these duplicate records.

Utilising the 'Adjusted AQ' value to apportion into sectors now takes the theft consumption into account and means that the same data can be summarised thus:

**Number and volume of detected theft instances 2006-2010 (corrected for AQ error)**

Adjusted	Number	% of Total	TOG Volume (KWh)	% of Total
SSP	4,238	91.04%	84,726,071	74.75%
LSP	417	8.96%	28,616,765	25.25%

This is significantly different to the summarisation by the AUGÉ and is a more accurate summary of the detected theft data.

This approach assumes that the effort applied to both sectors has been equal and uniform over the measured period; however recent data shows a much higher proportion of theft associated to the LSP sector.

**Detected theft sector volume proportions 2006-2010 (corrected for AQ error)**

	2006	2007	2008	2009	2010
SSP	82.71%	81.32%	81.96%	68.74%	65.03%
LSP	17.29%	18.68%	18.04%	31.26%	34.97%

We believe it is appropriate to use the more recent data which is likely to reflect a more realistic view.

If we were to utilise the more current data from 2009 and 2010 to define the SSP and LSP split then this would result in:

SSP 67.52%  
LSP 32.48%

This demonstrates clearly that using the same data in the way prescribed in AUGS arrives at a MINIMUM theft volume attributable to the LSP sector of 25.25% of the total. Furthermore it is extremely likely to be much higher than this.

Therefore the AUGÉ must adjust the AUGS to reflect both the incorrect sector apportionment and also the appropriateness of the measured period – utilising more recent data when available.