

# Materials Facility Reporting Portal Q3 2015 – Commentary

## Key points

- This is the fourth publication of data under the Environmental Permitting (England and Wales) (Amendment) Regulations 2014 (Schedule 9A), and relates to the reporting period, July-September (Q3) 2015.
- The average percentage (by weight) of target material received by responding MFs in Q3 2015 was 86.1% for England and 88.0% for Wales which is very similar to the previous quarter (86.5% for England, 88.8% for Wales).
- The average percentage (by weight) of target material in the output streams is 91.1% or higher for England, and 89.7% or higher for Wales.
- Queries raised by the Regulator during the validation process on MFs initial sampling data returns, have continued to fall this quarter.
- The reporting process is still relatively new so users are advised to observe caution when attempting to draw conclusions from this data.

## Background

Of the 86 Materials Facilities (MFs) in England who notified The Regulator (Environment Agency) in accordance with the Regulations for Jul-Sep 2015, 84 submitted a quarterly data return. In Wales, 11 MFs notified The Regulator (Natural Resources Wales) and 10 submitted data.

A validation process was carried out on each return by The Regulator, and queries were raised on 60 of the returns for England and 10 for Wales. For England, this is a 23% decrease on the previous quarter. Some common reasons for validation queries include:

- Number of samples recorded and/or sample weight is lower than required;
- Percentages of individual target material do not sum to the total percentage for target material;
- Inconsistent formatting on data returns; and
- Data reported where not expected or missing data.

Not all of the queries raised have been resolved. The Portal is a transparent display of data submitted by the facilities so will include data for facilities where there is an outstanding validation issue.

The Regulators are continuing their programme of announced and unannounced visits to each site. The visits enable the Regulator to advise operators on the statutory sampling and reporting requirements and assess compliance with them. There will always be a time lag between facilities acting upon any feedback and guidance, then seeing this impact on the data shown on the Portal. Depending on when any changes are implemented, the impact may not feature in the data until the following reporting quarter which could be up to 6 months.

The overall process of sampling and inspection is still bedding in so users of The Portal are advised to use caution at this stage when making conclusions from the data, and isolating individual MF responses and comparing these to other sites.

## The first 12 months

Over the first 12 months of reporting, the number of notified facilities has increased for Wales (from 9 to 11). The number of notifications for facilities in England has reduced slightly (from 90 to 86). A site will de-notify if they no longer reach the thresholds set out by the regulations<sup>1</sup>. The number of notified sites in England is significantly lower than originally anticipated. As a consequence, the Regulator contacted 120 sites that were identified as potentially falling within the scope of the regulations but who had not notified. The majority of responses showed how these facilities did not reach the threshold for notification. Facilities self-register to notify

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<sup>1</sup> A qualifying MF is defined as a regulated facility that receives mixed waste material in order to separate it into specified output material (SOM) for the purpose of selling it, or transferring it to other facilities or persons to enable that material to be recycled by those facilities or persons. To qualify, a facility must receive 1,000 tonnes or more of mixed waste material for sorting in four consecutive reporting periods (each reporting period is three months).

Mixed waste is defined as material that:

(a) originates

(i) from households; or

(ii) from other sources but is similar to household waste in terms of its nature or composition; and

(b) consists in the largest proportion of two or more of the following kinds of target materials mixed together:

(i) glass;

(ii) metal;

(iii) paper;

(iv) plastic.

and it is anticipated that other facilities (such as new builds) will sign up in the future so the number of notified facilities is unlikely to remain static.

The number of validation queries issued by the Environment Agency to facilities submitting data has reduced from 86 in the first quarter to 60 in this quarter. This encouraging trend means that more facilities are submitting valid data returns.

There has been relatively little variation in the data observations across the 4 quarters. The percentage target input material has varied by 0.7 percentage points across the 4 quarters for England. In Wales, the last three reporting quarters have varied similarly by 0.8 percentage points, with the first reporting quarter being slightly higher (taking the difference in range to 2.6 percentage points). Wales has a much smaller dataset compared to England which means that variations in the averages can be broader.

### **General observations for Q3 2015**

Even though there is now 12 months of sampling data, the continued newness of sampling requirements and supplying this data, along with the considerations regarding data quality outlined above, it is still appropriate to show only general observations on the data. The summary statistics presented in this commentary are intended to be representative of MFs who have submitted the quarterly return.

The data displayed in The Portal and summarised here is the latest supplied by the facility for Q3 2015. Since the Portal displays the data as provided by the facility, submitted data that appears extreme have not been removed or adjusted.

### **MF Input stream analysis**

#### *MF Input stream analysis: England*

The waste supplied to the 84 responding MFs in England was attributed directly to 209 local authorities (LAs) and 276 other suppliers (such as waste management companies or other waste facilities)<sup>2</sup>.

The total tonnage of material entering the MFs in Q3 2015 was 817,851 tonnes which is just 72 tonnes less than the previous quarter. The MFs provided data based on a total of 8,160 samples totalling 569 tonnes which is the largest number of samples over all four quarters.

Table 1 below shows that the average percentage (by weight) of target material received by responding MFs in Q3 2015 was 86.1% which is again very similar to the previous quarter (86.5%).

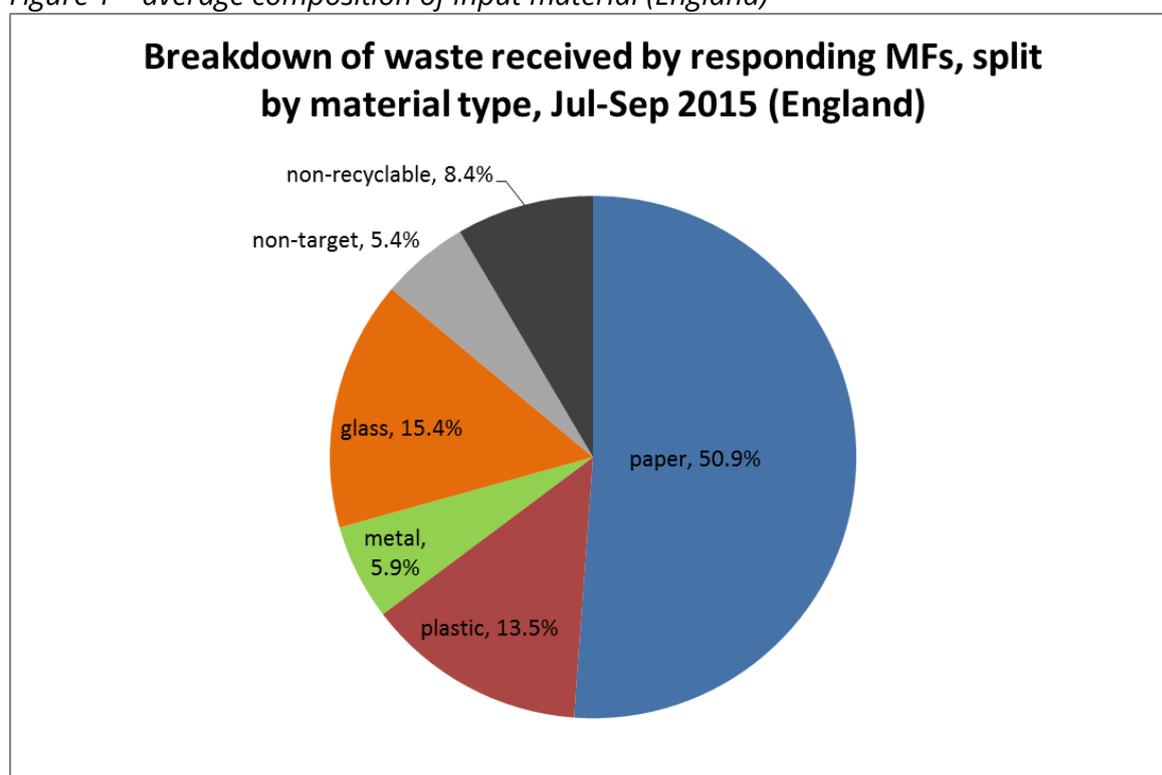
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<sup>2</sup> Listed as either "other supplier" or "Another MF or Waste Facility" in the waste return.

Table 1: Breakdown of waste received by responding MFs, split by material type , Q3 2015 England

Material Type	Percentage of waste received
Target material	<b>86.1%</b> <sup>3</sup> (Inter-quartile range <sup>4</sup> 81.1% – 92.4%)
Of which:	
• Paper	50.9%
• Plastics	13.5%
• Metals	5.9%
• Glass	15.4%
Non-target recyclable material <sup>5</sup>	<b>5.4%</b>
Non-recyclable material <sup>6</sup>	<b>8.4%</b>
All material received	100%

Figure 1 – average composition of input material (England)



### MF Input stream analysis: Wales

The total tonnage of material entering the MFs in Q3 2015 was 74,995 tonnes. This is the highest quarterly input tonnage from the 4 reporting quarters. 632 samples were taken which amounted to 49 tonnes.

<sup>3</sup> Average weighted by the total sample tonnage of each MF-supplier pairing

<sup>4</sup> The inter-quartile range shows the distribution of the middle 50% of the sample.

<sup>5</sup> Material that is capable of being recycled but is not a target material for that facility.

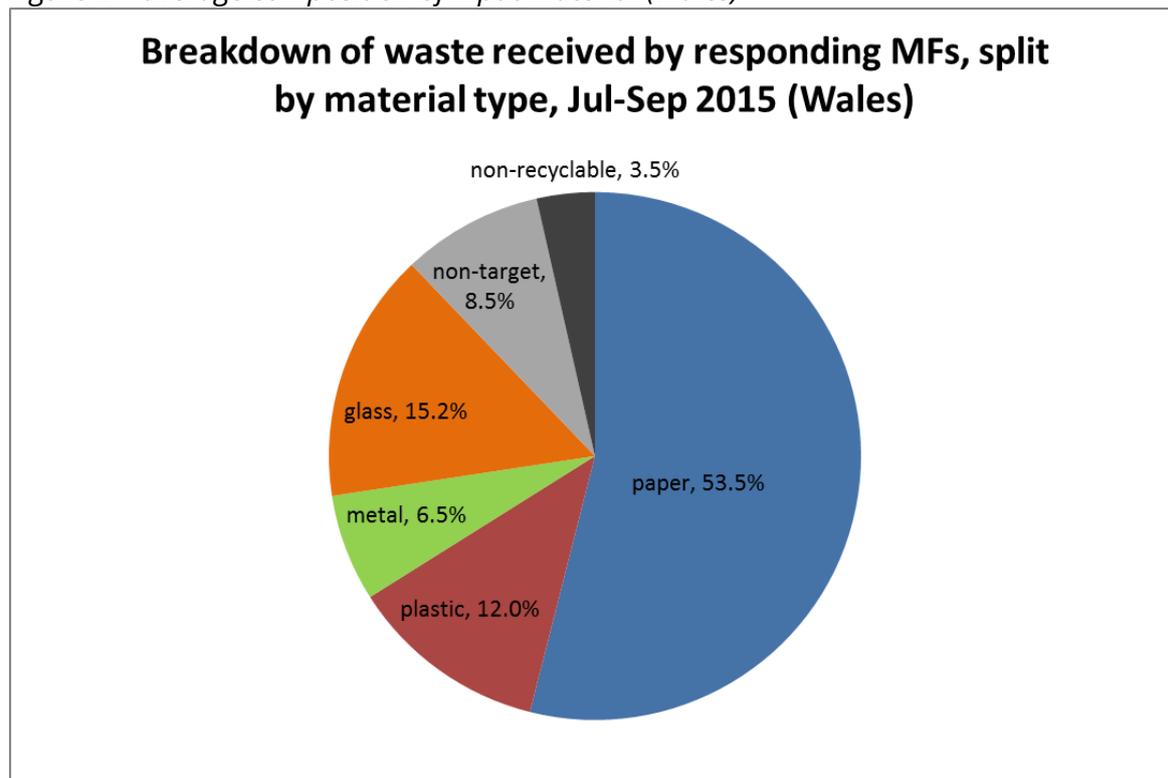
<sup>6</sup> Waste material that is not capable of being recycled (e.g. disposable nappies).

Table 2 below shows that the average percentage of target material received by responding MFs in Q3 2015 was 88.0%, which is similar to the previous quarter (88.8%).

Table 2: Breakdown of waste received by responding MFs, split by material type ,Q3 2015 Wales

Material Type	Percentage of waste received
Target material	<b>88.0%</b>
Of which:	
• Paper	53.5%
• Plastics	12.0%
• Metals	6.5%
• Glass	15.2%
Non-target recyclable material	<b>8.5%</b>
Non-recyclable material	<b>3.5%</b>
All material received	100%

Figure 2 – average composition of input material (Wales)



## MF Output stream analysis

### MF Output stream analysis: England

The total tonnage of Specified Output Material (SOM)<sup>7</sup> leaving the responding MFs in Q3 2015 was 606,674 tonnes. This is an increase by 10,857 tonnes compared to the previous quarter but is not the highest (638,894 tonnes for Q1 2015). The MFs

<sup>7</sup> Paper (including card), metal, plastic and glass

provided data based on a total of 17,578 samples totalling 755 tonnes which is the highest across all quarters.

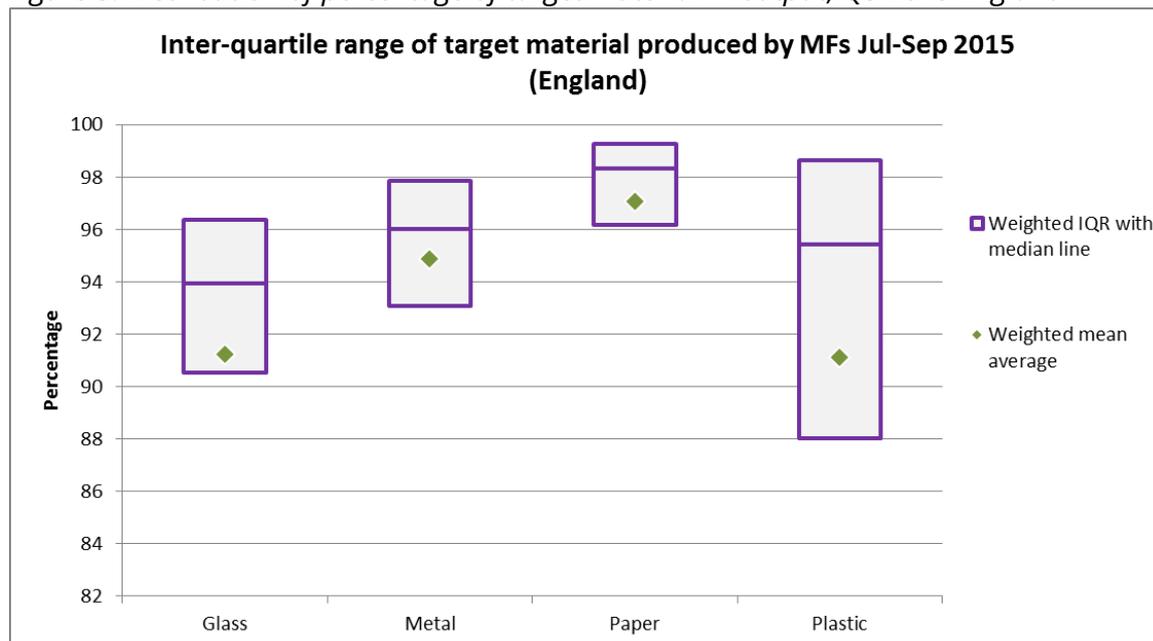
SOM produced by MFs contain some materials that are non-targeted and non-recyclable. Table 3 below shows that the average percentage of target material in the outputs of responding MFs is 91.1% or higher for all of the four main SOM. Figure 3 displays the target material percentage and inter-quartile range for each material. There is very little change in the values compared to the previous quarter. The variability across samples as indicated by the inter-quartile range is lowest for paper and highest for plastic, which is the same as the previous quarter.

*Table 3: Summary of Specified Output Materials (SOM) produced by responding facilities, Q3 2015 England (data for Q2 2015 in brackets)*

<b>SOM</b>	<b>Grades included</b>	<b>Weighted mean average percentage targeted material in output<sup>8</sup></b>	<b>Inter-quartile Range</b>
Paper	Cardboard, Newspapers and Magazines, Paper – Mixed	97.1% (96.9%)	96.2%-99.3% (96.5%-99.2%)
Plastic	Hard Plastic, HDPE Bottles – Clear, HDPE Bottles – Coloured, HDPE Bottles – Mixed, Household Plastic Film, LDPE Film – Clear, LDPE Film – Coloured, Mixed Plastic, Mixed Plastic Bottles, Mixed Rigid Plastic, PET Bottles – Clear, PET Bottles – Coloured, PET Bottles – Mixed, Polypropylene (PP), Pots, Tubs and Trays (PTT)	91.1% (91.9%)	88.0%-98.7% (88.5%-98.7%)
Metal	Aluminium, Scrap metal, Steel	94.7% (94.7%)	93.1%-97.9% (93.6%-98.0%)
Glass	Glass – Clear, Glass – Brown, Glass – Green, Glass – Mixed (Aggregate/Glass Sand), Glass – Mixed (Container / Glass fibre)	92.8% (92.8%)	90.6%-96.4% (90.5%-96.2%)

<sup>8</sup> Average weighted by total tonnage of each MF-SOM grade combination.

Figure 3: Distribution of percentage of target material in output, Q3 2015 England



#### MF Output stream analysis: Wales

The total tonnage of SOM leaving the responding MFs in Q3 2015 was 51,813 tonnes which is higher than the previous quarter (48,556 tonnes) but less than the other two quarters.

SOM produced by MFs contain some materials that are non-targeted and non-recyclable. Table 4 below shows that the average percentage of target material in the outputs of responding MFs is 89.7% or higher for all of the four main SOM which is higher than the previous quarter (89.1%).

Table 4: Summary of Specified Output Materials (SOM) produced by responding facilities, Q3 2015 Wales (data for Q2 2015 in brackets)

SOM	Grades included	Average percentage targeted material
Paper	Cardboard, Newspapers and Magazines, Paper - Mixed	96.0% (97.7%)
Plastic	Hard Plastic, HDPE Bottles – Clear, HDPE Bottles – Coloured, HDPE Bottles – Mixed, Household Plastic Film, LDPE Film – Clear, LDPE Film – Coloured, Mixed Plastic, Mixed Plastic Bottles, Mixed Rigid Plastic, PET Bottles – Clear, PET Bottles – Coloured, PET Bottles – Mixed, Polypropylene (PP), Pots, Tubs and Trays (PTT)	95.3% (92.9%)
Metal	Aluminium, Scrap metal, Steel	94.4% (93.5%)
Glass	Glass – Clear, Glass – Brown, Glass – Green, Glass – Mixed (Aggregate/Glass Sand), Glass – Mixed (Container / Glass fibre)	89.7% (89.1%)

The smaller number of facilities compared to England make the calculation of inter-quartile ranges for the specific materials less meaningful.

**Date of next release**

The release of Oct-Dec 2015 data is expected for May 2016. There will be a commentary on the data at this time.

*Date of analysis – 25/01/16*

This analysis uses the data that was current on this date. The Jul-Sep 2015 quarterly data may get updated in future quarters.

## Annex - The Portal and the MF Regulations

The Regulations require qualifying Materials Facilities (MFs)<sup>1</sup> to provide quarterly details of the mixed waste tonnage received from each supplier and the output tonnage despatched by four material streams. Under the Regulations MFs are also required to take samples of the input and output material so that the average percentage of target, non-target and non-recyclable material can be estimated. This data will enable the market to obtain a greater understanding of recycling quality, through the transparency of data in this area.

The online Materials Facility Reporting Portal ([The Portal](#)) was developed to provide a simple way for users across the sector to display and interrogate the data returned by the MFs to the Regulators. Where a facility has responded to queries from The Regulator by resubmitting its return, the data displayed in The Portal reflects the update. Where no response to queries has been received, the data shown is the original supplied by the MF. There is no distinction in the Portal to whether there has been a response from the facility. All data is included to promote transparency.

### MF Input streams

The Portal displays the following input stream data for each MF-supplier pairing<sup>9</sup>:

- Tonnes of mixed material entering facility;
- Number of samples taken;
- Total sample weight;
- Average percentage composition of target material<sup>10</sup>, broken down (where targeted) by:
  - Paper
  - Plastic
  - Metal
  - Glass;
- Standard deviation, standard error of the mean, and 95% confidence interval of total target percentage composition;
- Average percentage composition of non-target material<sup>11</sup>; and
- Average percentage composition of non-recyclable material.<sup>12</sup>

Further detail around the sampling regime, definitions of terms and the calculations on the data required by MFs can be found in the MF Sampling Guidance<sup>13</sup>.

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<sup>9</sup> Where the input tonnage from the supplier reaches the sampling thresholds as stated in The Regulations.

<sup>10</sup> A material that is identified by the operator of a Materials Facility as destined to be separated out from Mixed Waste Material in order to produce bulk quantities of that identified material.

<sup>11</sup> Material that is capable of being recycled but is not a target material for that facility.

<sup>12</sup>Waste material that is not capable of being recycled (e.g. disposable nappies).

<sup>13</sup> <http://www.wrap.org.uk/sites/files/wrap/MF%20Sampling%20Guidance%20April%202014.pdf>

**MF Output streams**

Each MF submitted the following data for each grade of Specified Output Material (SOM) that it produces:

- Tonnes of material leaving facility;
- Number of samples;
- Total sample weight;
- Target material;
- Average percentage composition of the target material;
- Standard deviation, standard error of the mean, and 95% confidence interval of total target percentage composition;
- Average percentage composition of non-target material; and
- Average percentage composition of non-recyclable material.

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