

DATA COLLECTION AND MONITORING OF PFR QUALITY PARAMETERS



Background (REF: 1)

There are different methods to assess how well the recycling service is working in the municipality.

Monitoring and evaluating scheme performance is something that all local authorities should be doing as a matter of routine. Not only does it enable you to assess whether schemes are performing as expected, it also helps diagnose problems, design new approaches and ultimately improve efficiency and effectiveness. One of key parameters to evaluate the efficiency of the paper and board collection and sorting scheme is the quality of the PFR. Currently, the main controls are focuses on measurement of two parameters (moisture content and non-paper components). For deinking grades (dedicated to deinking paper mill), the composition between graphic papers and cardboard in the paper grade is also measured.

In IMPACTPaperRec Project those two quality parameters have been defined as follow (REF: 8):

1. **Impurities:** Describes the amount of non-paper components in the Paper for Recycling. It can be measured at two different points of the process.
2. **Moisture content:** According to EN 643: 10 % maximum. Paper mills usually have individual requirements depending on PFR grade. Most paper mills set a maximum allowed level of moisture and do not accept PFR that exceeds this level (mostly: 20, 25 or 30 %). Moisture is economically important and it will be deducted if exceeding the 10 %. **To see more information and calculation, click on: [IMPACTPAPER REC: Evaluation of your Performance](#)** 

ACTION

The municipality or the collection company must establish the implementation of sampling procedures to control the quality (mainly banned materials, impurities and moisture) and data collection of paper for recycling collaborating with the recycling facilities (paper mills and sorting plants)

Example of best practice implemented

Pajaritas azules (Blue Birdies) -ASPAPEL (Spain) (REF: 2, 3)



Figure-1. "Blue birdies" logo

ASPAPEL promotes paper and board collection and recycling with its "Blue Birdies" programme as part of the "Tu Papel Es Importante" project. The aim is to develop selective collection and recycling of paper and board at municipal level and contribute to sustainable development.

"Blue Birdies" is a system of evaluation, assessment and certification of paper and board collection for local authorities.

The certification process starts with an assessment and environmental audit of the general situation of paper and board collection in the town based on 21 indicators, grouped into 5 blocks: Blue bin collection, supplementary collection, public information and awareness, regulation and planning, and outcome and traceability to final recycling (where are included "The evaluation of the quality of the paper and board collected", "Paper recycling rate", "Traceability of paper and board collection to final recycling in the paper mill" and "Annual evolution of the collection of paper and cardboard"). In those indicators are considered the % of moisture content and non-paper components.

León city council has been awarded with "Blue Birdies" in 2017 for the excellence level in its management and selective collection of paper and board.

During 2016, in León, 3.9 million kg of paper and board were collected, bringing the ratio per capita to 31 kg, 7% more than in 2015 (29 kg/inhab). Of the 3.9 million kg collected, 86.5% was collected in blue containers (3.3 million kg). The collection of paper and board accounts for 38.9% of the total weight of the separate collection. (REF: 4)



Figure-2. León city council (Spain) awarded by "Blue Birdies". Source: ASPAPEL

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Keep in mind that... (REF: 5)

- ▲ Cooperation between the municipality and recycling facilities for data exchange is needed.
- ▲ The recycling facilities need to establish procedures for gathering and managing data, including methods for sampling and measurement.
- ▲ Trained staff who control the information and in charge to request the quality data (monthly preferably) to the waste and resource manager. Including data management analysis (necessary for benefits).
- ▲ Definition of KPIs in synergy with the recycling facility.
- ▲ The Producer Responsibility Organization is an interesting organization to define quality targets as well as implement common rules to measure and follow up the quality of PfR.

How to start? (REF: 6,7)

- ▼ Describe the procedure of mutual agreement, standard terms and conditions should be indicated as part of the general conditions for recycling facilities approval. See guideline 2. It provides concepts, views and specific working approaches, which when combined create a road map. It should be used as a step by step reference guide and a conceptual directive.
- ▼ A program to collect the data from the municipalities and recycling facilities must be developed. All those data must be aggregated in a database periodically.
- ▼ Training and education for employees with common background is recommended.
- ▼ Quality control procedures in which paper mills should be based on EN 643 Standard.

A number of guideline documents addressing quality control have been issued in the paper sector, including (click on it to download):



1. **Recovered Paper Quality Control Guidelines (CEPI and ERPA)**
2. **Best Practices for the Global Inspection of Recovered Paper (CEPI)**
3. **INGEDE Methods 7,8 and 14**



Potential benefits (REF: 6,7)

			
Clear picture of the flows makes possible to identify where improvements are needed.	●	●	
Clearer differentiation of the high-quality waste paper, and recognisable distinction to lower-quality waste paper.	●		
Online quality and quantitative monitoring.	●		●
Online monitoring of outgoing quality incl. quality certification of sorting plant operators.	●		●
Comparison between municipalities.		●	●
implemented, thus the evaluation of the effectiveness is possible.	●	●	
Follow-up of the quality of paper achieved throughout years.		●	●
Increase the paper and board collection rate.	●	●	●



References:

1. WRAP (2010): Improving the Performance of Waste Diversion Schemes
2. ASPAPEL (2017): Annual programme "Blue Birdies"
3. ASPAPEL (2017): Tu papel 21 programme
4. LEON CITY COUNCIL, SPAIN (2017): Certified by "Blue Birdies"
5. CEPI (2016) Paper for Recycling quality control Guidelines
6. JRC and IPTS (2011): End-of-waste criteria for waste paper. Technical proposal
7. NORTHEAST RECYCLING COUNCIL (2002): Recycling data collection programs
8. IMPACTPAPEREC: Evaluation of your Performance