



Composition of Mixed Commercial Waste with Focus on Recyclable Fractions

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Content

- Framework of the research
 - Motivation
 - ReWaste4.0 project
- Materials and Methods
 - Mixed Commercial Waste (MCW)
 - Sorting and laboratory analyses
- Results
 - Exemplary composition of 4 MCW samples
 - Comparison to composition results from Germany
 - Exemplary fuel parameters of 1 MCW sample

Motivation

- Development of European economy towards a **circular economy** („Recycling Society“ / „Circular Economy Package“)
- Re-introduction of as much waste as possible into the production process. Potential sources for **additional recycling material**:
 - Increase of **separate collection**
 - Identification and recovery of remaining **recyclables** in **mixed waste**

Mixed waste with low content of recyclables can be processed to **secondary fuel for co-incineration** in Waste-to-Energy plants.

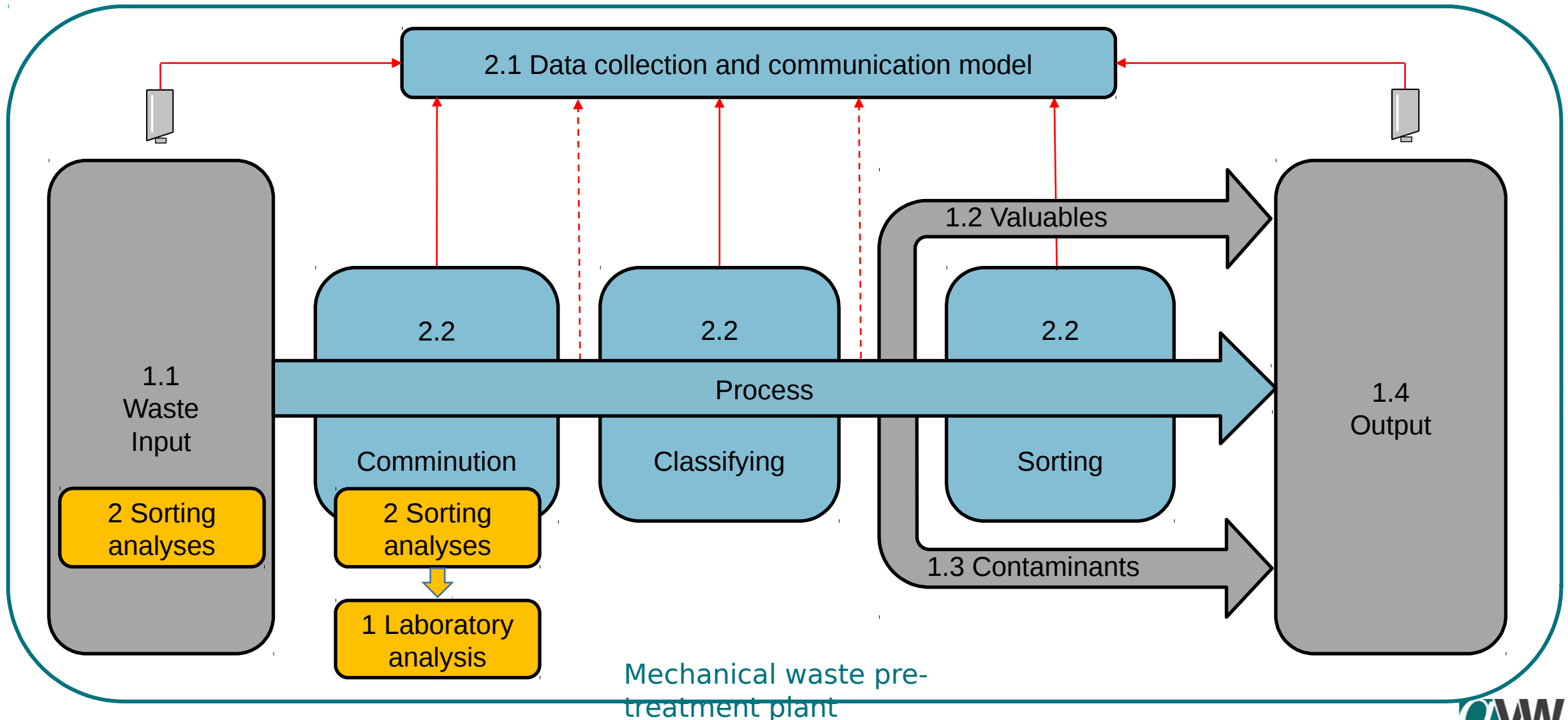
Selection of input waste stream

Selection criteria:

- Project scope: Non-hazardous, solid, mixed waste
- Relevant waste quantities available
- Sufficient share of recycling materials
=> Commercial waste
- No specific legislation in Austria
- Austrian Waste Catalogue (Standard)
 - Municipal waste from other sources than households
 - Mixed C&D waste
 - Light fraction of packaging waste
 - Kitchen and canteen waste



Overview K-Project Recycling and Recovery of Waste 4.0



Sorting analyses of Austrian MCW

	Site 1 Oct 2018	Site 1 Nov 2018	Site 2 Nov 2018	Site 2 March 2019
Main sorting aim	Test of statistical accuracy	Comminution experiment	Content of recycl. fractions	Material for realtime-analysis
Sorting fractions	9 fractions	9 fractions	11 fractions	18 fractions
Sorted quantity	0.8 t	2.4 t	19.5 t	1.1 t

Applied Sorting Methods

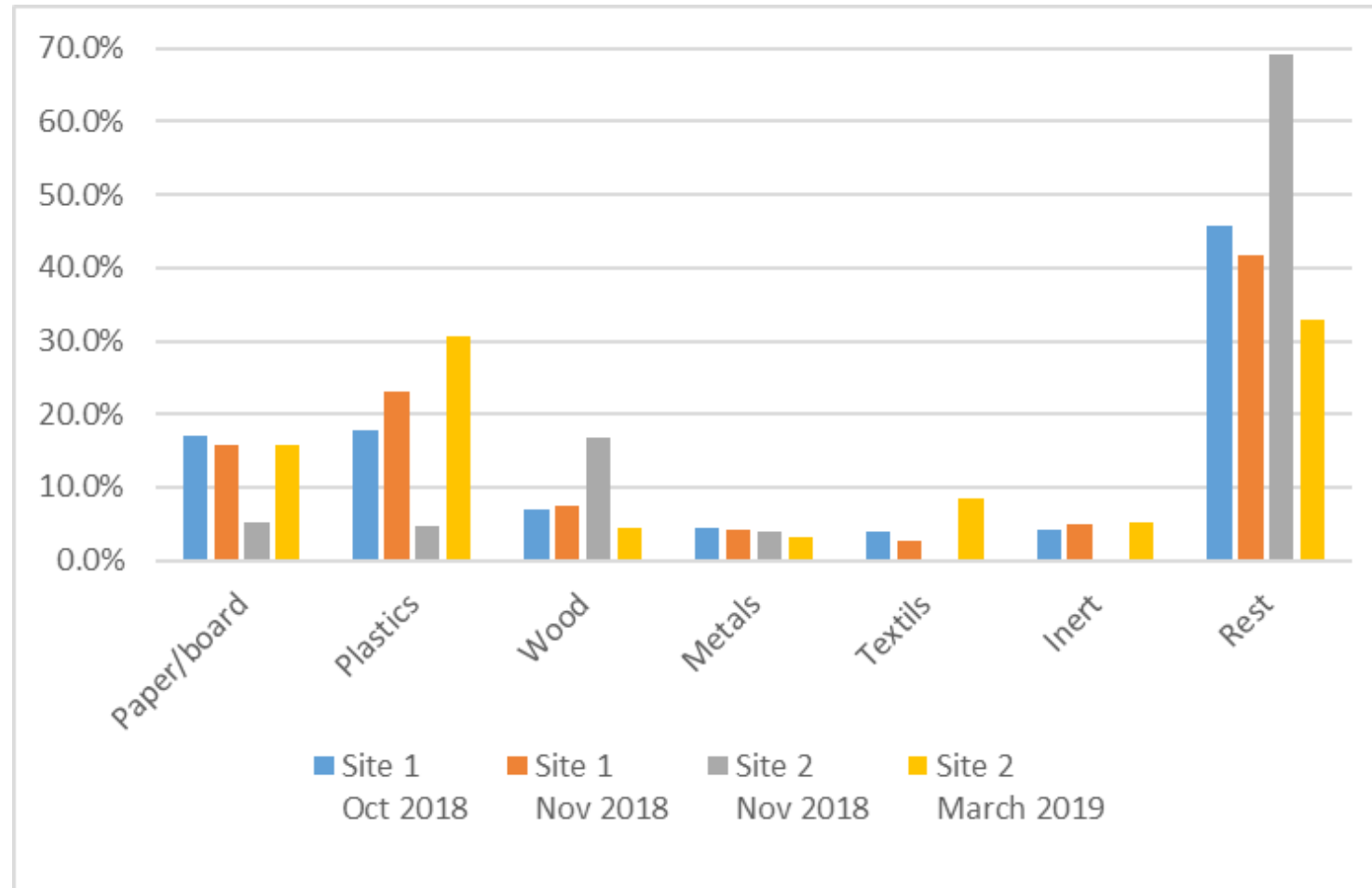
Sorting cabin with conveyor belt



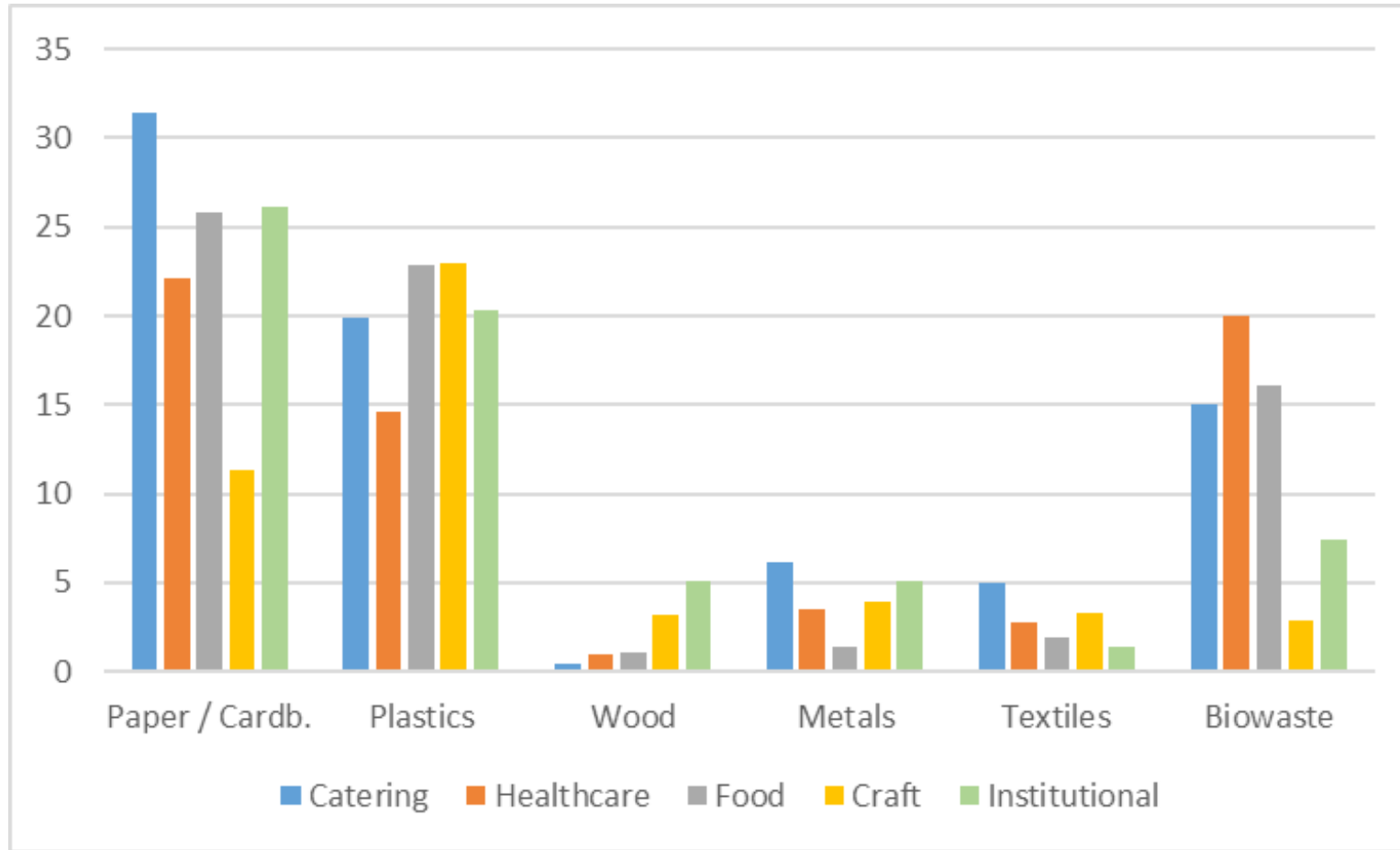
Manual sorting on sorting table



Exemplary Composition of 4 Austrian MCW-samples



Composition of MCW of different Commercial Branches in DE



© Helftewes, M.: Modellierung und Simulation der Gewerbeabfallaufbereitung vor dem Hintergrund der Outputqualität, der Kosteneffizienz und der Klimabilanz. Dissertation, Rostock, 2012

Exemplary fuel parameters of 1 Austrian MCW sample

- Water content: 16.3 %
- Lower heating value: 15.9 MJ/kg DM*
- Chlorine content: 0.9 % DM*
- Ash content: 34.9 % DM*

*DM=Dry Matter

Conclusions

- The **composition of mixed commercial waste varies widely** between different samples. One main factor is the different origin of the samples in terms of **commercial branches**.
- Mixed commercial waste in Austria contains a **sufficient share of fractions suitable for recycling** (30% - 55%).
- Mixed commercial waste can be a suitable input for the **production of solid recovered fuels** (SRF).
- **Additional sorting and laboratory analyses** are necessary and will be carried out in the frame of the ReWaste4.0-project.

Contact

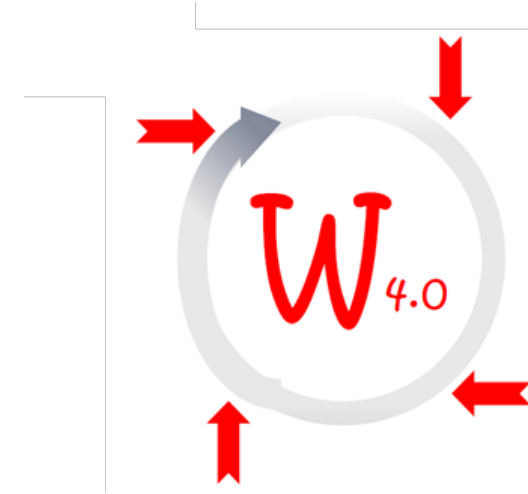
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