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WASTE DATA ON LINE: A PART OF THE COLLABORATIVE FUTURE BIG DATA IN WASTE AND RESSOURCES?

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SUMMARY: An internet site launched in September 2017 to host and retrieve the private and public waste data composition using a structured, online database, and to share in a controlled way proprietary data and/or to have access to others' data and public data, will be presented. Previous attempts managed by public authorities have failed, probably due to lack of collaboration by data holder and top-down controlled system (Gaschick et al. 2004, Morstadt and Striegel 2003, Oberdörfer et al. 2008). The system interests the stakeholders of the waste. It will contribute to information about substances of concern in products and waste, an important aspect that hinder the transition to a circular economy.

1. INTRODUCTION

In a recent roadmap, the European Commission (2017) has identified four issues that create obstacles for a smooth transition of recycled materials from waste to new products. The first one is “*Insufficient information about substances of concern in products and waste*”.

Many works of control, studies and research around waste produce very interesting information of composition on a waste stream. However, to date, these data are not centralized. They are then very difficult to reuse. However, archiving chemical waste data and characterization tests is necessary for:

- knowledge of waste streams (which contaminant (s) at which concentration in which waste, etc.) to identify the contaminants to be tracked;
- classification of waste (hazardousness, transport, treatment, status of installations);
- the recovery of value from waste (value-added share) and the construction of the circular economy;
- the development of regulations by making available pre-regulatory technical elements (contaminants to be investigated, concentration limits, evaluation of the impact of modifications or new rules).

Most waste studies begin with the collection of composition data, from producers or from the literature. This step is tedious and will be greatly facilitated and documented if the owners share the data (or at least part of it). Public data would in fact be made available to all (per the Aarhus Convention), whereas today it is hard work (PDF files, paper reports ...). In a field, such as waste, where discussions are sometimes complex among stakeholders, access to

compositional data can help to rationalize debate, contain the precautionary principle within quantitative limits, and move towards decisions more adapted to reality.

With several French and European public and private partners, an on-line waste composition database (parameters, tests) will be built with a controlled sharing system for private data and an open access system for public data. The structure of the database and the Internet interfaces will be provided by HazWasteOnLine (OneTouchData, UK), which has built a similar base for waste classification purposes. A European association managed by its members has been created with the objective of being self-financed from the third year onwards by the contributions of its members.

The aim of the initiative is to create a data archiving and consultation centre (a European association), enabling:

- members to upload and download their own data of composition of waste (parameters, tests) on-line, as well as to share these data with other members in a controlled manner, and to be assisted in data entry if necessary;
- the public to have freely available in a usable form data on the composition of waste acquired by public bodies or public funds;
- the association to carry out specific studies of waste composition.

This initiative aims at the knowledge and the valorisation of the data of composition or characterization of waste, useful for the development of the circular economy.

2. MATERIAL AND METHOD

2.1 Importation of analytical data in WDOL

- Manually
- By building a specific spreadsheet template in WDOL, downloading it, and filing it manually or by copy and paste
- By using a generic database template (one line = one parameter of one sample) that can be directly imported in WDOL
- For new analyses, by creation by the analysis laboratory of a file using the generic database template that can be directly imported in WDOL

2.2 Handling of the analytical data

All the embarrassing subjects (limit of detection, limit of quantification, analytical methods, units, expression on raw material or dry matter, solid and liquid waste, percolates, eluates, CAS-number format, ...) are handled and documented.

2.3 Consultation and sharing of data

The public data will be available without permission. The public authorities are invited to upload the data that they produce during the expertise for their decision-making processes. WDOL can help them at cost price.

The private data remain the property of their owners. With the agreement of the owner, they can be displayed in a public catalog. Users must request and obtain a permission from the owner to have access to these data.

Filters (waste code, date, parameter, and so on) will facilitate the research of information.

2.4 Exportation of data from WDOL

After selection of data, an export file (spreadsheet format and data base format) will be available.

2.5 Link to hazard classification tool

The data will be easily exported to HazWasteOnline, an internet site dedicated to hazard classification of waste, with up-to-date hazard statement codes of substances, easy and traced options for transformation of mineral elements into mineral substances, and different classification engines (according to decisions of 2014, and to the different past and present calculation formulas for HP 14, with or without M-factors).

2.6 Fees

An annual fee at cost price will be requested to upload, share and/or download data for public and private bodies. The access to public information will be free. The initiative is managed by a French non-profit association. An annual general assembly will take the important decisions of the initiative.

3. RESULTS

The initiative is funded by ADEME (Agence de l'Environnement et de la Maîtrise de l'Energie, French Environment and Energy Agency) for the first two years. The internet will open in September 2017. The database is created and maintained by OneTouchData, a UK company.

The institutions or companies having expressed their interest are;

- DG ENV of EU; European Environmental Agency
- Organisation for Economic Cooperation in Europe (OECD) working group
- United Nations Environmental Programme (UNEP) working group
- HazardousWasteEurope (EU)
- Ministry of Ecology (F); Institut de l'Economie Circulaire (F); Association RECORD (F); INERIS – National Institute for Industrial and Environmental Risk Assessment (F)
- Energy Center of the Netherlands – ECN (NL) (developer of LeachXS database)
- Bundesanstalt für Materialforschung und –prüfung (BAM) (D)
- Danish Waste Solutions (consulting company) (DK)
- HazWasteOnline™ (online hazardous waste classification software) (UK)...

The communication will present the achievements at the time of the conference:

- On-line upload and download methods of data
- Public data available
- Private data available with authorisation of the owner
- Members
- Examples of use of data.

4. CONCLUSIONS

This new tool aims to archive and recuse numerous composition data of waste, allowing a better social acceptance of recyclates and science-based decisions.

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REFERENCES

European Commission (2017). Analysis of the interface between chemicals, products and waste legislation and identification of policy options. 27/01/2017. http://ec.europa.eu/smart-regulation/roadmaps/docs/plan_2016_116_cpw_en.pdf

Gaschick – Wolff P, Hegemann M, Morstadt S, Striegel K-H. (2004). AIDA – Integrated Internet Waste Information System in North Rhine - Westphalia / Germany - a useful tool for waste owners , public and State authorities. Waste 2004, Symposium in Stratford - upon - Avon / England, 28- 30.9.2004

Morstadt S, Striegel K-H. (2003). Waste Disposal Balance and Waste Stream Analysis established by means of a Data Base Waste Facility Register. Sardinia 2003. 8th International Waste Management and Landfill Symposium. Cagliari (Italy). Sept. 2003.

Oberdörfer M, Becker C, Fütterer S, Hegemann M, KOß K-D. (2008). ABANDA – the waste analysis database as electronic support for waste characterization. Crete 2008. 1st International Conference on Industrial and Hazardous Waste Management. Chania (Greece). Sept 2008. (Operated by the State Agency for Nature, Environment and Consumer Protection North Rhine-Westfalia - Germany).