Assessment of the definition of recycling

Project workshop

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Joint Research Centre & DG ENV

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Housekeeping rules

- Please **mute** your microphone and **switch off** your video.
- The meeting will be recorded only for internal use and will not be circulated. **Slides** will be distributed as pdf
- Q/A discussion panels:
  - ⇒ JRC will share a link to a **Slido** via the chat box => **copy** the link in your browser
  - ⇒ Write your **name and affiliation** (e.g. "Davide Tonini-JRC")
  - ⇒ Respond to the questions presented in Slido by posting your answers/ideas
  - ⇒ When required, **vote** on the “posted ideas” by clicking on the “thumbs up” sign to the right of each idea. The most "voted" ideas will be addressed first
  - ⇒ JRC will first **give the floor** to the person having formulated the idea with the most votes, then to the person with the second most-voted idea, and so on
  - ⇒ You can **switch on your microphone** and **camera** when given the floor and you should mute yourself and switch off your camera again after finishing to speak.

Agenda

09.15: Virtual room opens + housekeeping rules

09.30: Welcome and policy framework

09.45: Project output and objectives

09.50: Q&A on policy background and project objectives

10.20: Objective 1: Capturing relevant aspects

10.30: Objective 2: Discussion panel

11.00: Break

11.10: Objective 3: Discussion panel

11.40: Wrap up and conclusions

12.00: Closure of the meeting

Policy framework

- **Support to the Circular Economy Action Plan 2.0**

- **Recycling** according the Waste Framework Directive

  => "*any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations*"

- Broad definition, with recycling calculation rules defined in Commission Implementing Decisions **2019/1004/EU** and **2019/665/EU**
- Need for clarification of recycling definition and calculation rules to allow **innovative multi-output technologies** (e.g. chemical recycling, biorefineries producing a mix of materials, chemicals, energy, and fuels) to contribute to recycling targets

Project output

- To produce a **technical proposal** to support a possible revision of the **calculation rules** for recycling targets particularly for those processes that are currently not included (e.g. chemical recycling).

- Examples of analysed **waste streams** *(& related calculation rules, if available)*:
  - ⇒ **Municipal waste** *(Commission Decision 2011/753/EU as amended by 2019/1004/EU)*
  - ⇒ **Packaging waste** *(Commission Decision 2005/270/EU as amended by 2019/665/EU)*
  - ⇒ **Construction and Demolition waste (CDW)**

Objectives of the project

1. To identify any **relevant recycling process** on which **further** guidance is **necessary** to define appropriate calculation rules

2. To propose **appropriate calculation rules** for the estimation of the recycling rate for such processes *(with special attention to chemical recycling)*

3. To discuss and suggest **potentially** relevant **approaches** for defining **quality of recycling**

Overview of the project (timeline)

- Start of the study (March 2021)
- Background paper (15 June 2021)
- **Online-Workshop** (KOM, 22 June 2021)
- **Stakeholders consultation** (June-August 2021)
- Background document and **final meeting** (first quarter 2022)
- Final Report with **Technical Proposals** on an assessment of the definition for recycling (third quarter 2022)
- End of the study (third quarter 2022)

Goals of this workshop

- **To launch** the project and **engage** stakeholders
- **To collect your inputs** on the most relevant aspects and questions to be addressed in each of the 3 objectives of this study
- **To prepare** the ground for the **stakeholder consultation** carried out by means of a survey, also based on your inputs today (distributed in the following weeks)

Q&A on policy background and project objectives

=> go to Slido: https://app.sli.do/event/rexbytoj

- 4 min to write questions
- 4 min to vote

Objective 1: Identification of recycling processes to be further assessed

Some (non-exhaustive) examples from a first literature screening by JRC:

- **Chemical recycling**-based processes (glycolysis, solvolysis, gasification and pyrolysis) that produce multiple-outputs (materials/chemicals/energy/fuels)
- **Biowaste valorisation technologies** (aka biorefineries)
  - ⇒ co-production of biogas & other gases/chemicals/materials/feed
  - ⇒ some gases used as feedstock to produce other chemicals/materials (e.g. hydrogen)
- **Wood waste processing** => similar to food waste case

Objective 1: Capturing relevant aspects

- Q.1: Which **relevant processes** are **excluded** from the recycling **calculation rules** in Commission Implementing Decision **2019/1004/EU** and **2019/665/EU**, for which further guidance is necessary?

=> go to Slido: https://app.sli.do/event/rexbytoj

1 min to answer

Input waste stream	Specific waste streams	Reference for the calculation rules	Specific rules for the case of:
Municipal waste	glass, paper and cardboard, metals, plastic, wood, textiles, composites, batteries, and WEEE	Commission Decision **2019/1004/EU** amending Commission Decision **2011/753/EU**	• metals recovery from bottom ash incineration • home composting of biowaste
Packaging waste	plastic, wood, metals, glass, paper and cardboard, and 'other'	Commission Decision **2019/665/EU** amending Commission Decision **2005/270/EU**	• metals recovery from bottom ash incineration

Objective 2: Impacts on the calculation rules

- To propose **appropriate calculation rules** for the estimation of the recycling rate for processes on which **further** guidance is **necessary** to define appropriate calculation rules (*with special attention to multi-output processes producing material, chemicals, energy and fuels*)

Input waste stream	Specific waste streams	Reference for the calculation rules	Specific rules for the case of:
Municipal waste	glass, paper and cardboard, metals, plastic, wood, textiles, composites, batteries, and WEEE	Commission Decision **2019/1004/EU** amending Commission Decision **2011/753/EU**	• metals recovery from bottom ash incineration • home composting of biowaste
Packaging waste	plastic, wood, metals, glass, paper and cardboard, and 'other'	Commission Decision **2019/665/EU** amending Commission Decision **2005/270/EU**	• metals recovery from bottom ash incineration

Objective 2: Capturing relevant aspects

- Q.2) Which are the **relevant aspects** that should one consider to improve the current **calculation rules** for including processes that recover a mix of **materials/chemicals/energy/fuels** (e.g. mass balance approach, humidity corrections, calculations on dry basis…) ?

  => go to Slido: https://app.sli.do/event/rexbytoj

- 4 min to write ideas
- 4 min to vote

Break

- 11.00 - 11.10 Biobreak

Objective 3: Quality of recycling

- **High quality (HQ)** vs **low quality (LQ).** How to **define** and **operationalise** it?

  ⇒ Example of definition *(Grant et al., 2019)* => "*The extent to which, through the recycling chain, the **distinct characteristics** of the material (the polymer, or the glass, or the paper fibre) are **preserved** or **recovered** so as to maximise their **potential** to be **re-used in the circular economy***"

- Concepts already developed for **metals** &(critical) raw materials *(BIO by Deloitte, 2015; UNEP, 2011)*

  ⇒ **Functional recycling** => *"…the element in a discarded product is separated and sorted to obtain **secondary material** displacing **same primary material**"* (**HQ**)

  ⇒ **Non-functional recycling** => *"…the element in a discarded product is collected and incorporated in an associated **large magnitude material stream.** This represents the **loss of its function** as it is generally impossible to recover it from the large magnitude stream"* (**LQ**)

Objective 3: Capturing relevant aspects

- Q.3) What aspects should one consider to define **high quality recycling** (e.g. product quality, recycling yield, losses, energy consumption, environmental aspects, influence to the market, standards)?

  => free comment specifying a) waste stream; b) high quality aspects

  => go to Slido: https://app.sli.do/event/rexbytoj

Wrap up and follow up

- JRC will collect and wrap up all relevant inputs
- **Slides** will be distributed as pdf
- You will receive a **survey** through which you can contribute to this project
- The consultation will last until **15 September 2021**. Please send your replies to JRC-ENV-RESEARCH@ec.europa.eu
- The attendees will be kept in the loop for further dissemination
- **2nd stakeholder workshop** in 2022 (first half), a draft report will be presented
- JRC may organize *ad hoc* meetings/seminars to discuss selected topics emerged from the survey or this workshop

European Commission

Thank you !

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https://ec.europa.eu/jrc/en/research-topic/waste-and-recycling

European Commission