European Union Network for the Implementation and Enforcement of Environmental Law

Waste Management & Circular Economy Project

Activities carried out in the period 01/04/2021 – 31/12/2021

Date of report: 01/06/2022

Report number: 2021/04

Introduction to IMPEL

The European Union Network for the Implementation and Enforcement of Environmental Law (IMPEL) is an international non-profit association of the environmental authorities of the EU Member States, acceding and candidate countries of the European Union and EEA countries. The association is registered in Belgium and its legal seat is in Brussels, Belgium.

IMPEL was set up in 1992 as an informal Network of European regulators and authorities concerned with the implementation and enforcement of environmental law. The Network's objective is to create the necessary impetus in the European Community to make progress on ensuring a more effective application of environmental legislation. The core of the IMPEL activities concerns awareness raising, capacity building and exchange of information and experiences on implementation, enforcement and international enforcement collaboration as well as promoting and supporting the practicability and enforceability of European environmental legislation.

During the previous years IMPEL has developed into a considerable, widely known organisation, being mentioned in a number of EU legislative and policy documents, e.g. the 7th Environment Action Programme and the Recommendation on Minimum Criteria for Environmental Inspections.

The expertise and experience of the participants within IMPEL make the network uniquely qualified to work on both technical and regulatory aspects of EU environmental legislation.

Information on the IMPEL Network is also available through its website at: www.impel.eu

Title of the report: WMCE: activities carried out in 2021	**Number report:** 2021/04
Project Manager/Authors: - Romano Ruggeri - Jan Teekens - Gabrielle Kuhn - Monica Crisan - Rainer Bullita - Luca Paradisi	**Report adopted at IMPEL General Assembly Meeting**: 28-29 June 2022, Paris (France) **Total number of pages: 64** Report: 54 Annexes: 10

Executive Summary

This report contains a summary of the activities carried out in March – December 2021 within the running following subgroups:

- Discard and by-products
- IED & Circular economy
- REACH & Circular economy
- Training
- End-of-waste database
- Waste Incineration
- Update Landfill Guidance

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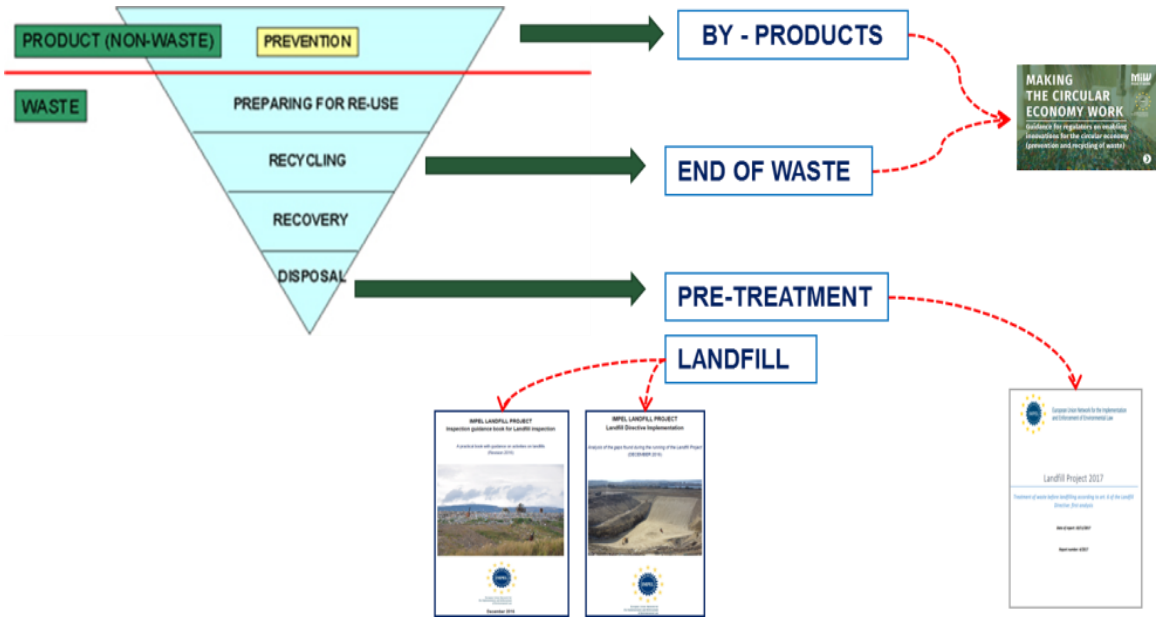
1. Purpose of the project and background

As set in the Directive (EU) 2018/851 (amending Directive 2008/98/EC on waste), Waste management in the Union should be improved and transformed into sustainable material management, promoting the principles of the circular economy.

Waste management plays a central role in the circular economy: it determines how the EU waste hierarchy is put into practice. The waste hierarchy establishes a priority order from prevention, preparation for reuse, recycling and energy recovery through to disposal, such as landfilling.

The IMPEL "Waste Management and Circular Economy" project (former called "Landfill and Circular Economy") is moving through the waste hierarchy steps, in order to achieve a common understanding of the key points of the Waste Framework Directive and homogenize behaviours across MS; the project has already produced guidance documents related to the waste hierarchy steps, as shown in the following figure:



The Guidance "Enabling eco-innovations for the circular economy (prevention and recycling of waste)" has been launched in Rome in March 2019 and is a living document that will be further revised with the results of the subgroups.

The work streams set out in this ToR specifically address the actions of the EU environmental policy, as mainly outlined in the New Circular Economy Action Plan (CEAP), in the programme of the Environmental Compliance and Governance Forum (2020-22) as well as in the amended Waste Framework Directive (Directive (EU) 2018/851). The adoption of guidance documents for the ad hoc application of the harmonised conditions established at Union level for waste management is needed as well as initiatives to improve cooperation with Member States for better implementation of EU waste legislation.

The new Circular Economy Action Plan (CEAP) aims at accelerating the transformational change required by the European Green Deal, while building on circular economy actions. The plan presents a set of interrelated initiatives to establish a strong and coherent product policy framework that will make sustainable products, services and business models the norm and transform consumption patterns so that no waste is produced in the first place.

The plan indicates a list of key actions, some of which constitute the working area of identified subgroups in this ToR.

One key point of the Plan is the development of further EU-wide end-of-waste criteria for certain waste streams based on monitoring Member States' application of the revised rules on end-of-waste status and by-products, and support cross-border initiatives for cooperation to harmonise national end-of-waste and by-product criteria. The recast of the WFD clarify rules on by-products and those to enable recycled materials to be reclassified as non-waste whenever they meet a set of general conditions (end of waste). Uncertainties about how materials can cease to be waste are a main issue of concern. This ToR specifically addresses these topics.

Another key point is about, including the integration of circular economy practices in the Review of the IED Directive in upcoming BREFs, which EU Member States have to reflect when issuing permits for industrial installations, thus promoting innovation in industrial processes and helping to reduce waste generation, boost recycling and reduce resource use. This project aims to look at how the IED and BAT in combination with Eco-Innovations can be better used to achieve Circular Economy in IED Installations.

The programme of the Environmental Compliance and Governance Forum (2020-22) promotes inter-actions within and between the expert teams and projects of the IMPEL network at sectoral/thematic level, in particular with reference to Circular Economy (focal topic of the "Green Deal), e.g. through integration of this topic into inspection-and surveillance-related IMPEL-projects. This ToR specifically addresses the above mentioned action, taking also in consideration Action No. 9: Strategies for Verification of Self-Monitoring and Reporting, within the subgroups related to BAT analysis on waste incineration.

The "European Parliament resolution of 13 September 2018 on implementation of the circular economy package" addresses the interface between chemical, product and waste legislation. One of the goal of this TOR is to better understand the interface between waste and product legislation and giving practical guidance on how to apply REACH regulation to secondary raw material.

Waste-to-energy processes play a role in the transition to a circular economy as one of the step of the waste hierarchy. BAT Conclusions on waste incineration have been recently issued and their relevant application in IED permits is a challenge for regulators. The need for practical guidance for regulators, permit writers and inspectors is widely felt.

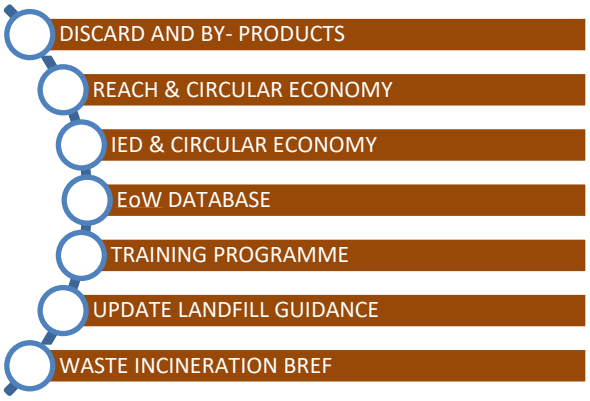
2. ToR 2021 & budget framework

The project is outlined in the ToR 2021, as reported in Annex I.

Due to the travel ban related to the pandemic, no face to face meetings were held and consequently no expenditure was recorded. The budget allocated for the EoW Database was not spent, as it was agreed to first wait for the new IMPEL website to be in place. To sum up, no money was spent in the reporting period 01/04-31/12 2021.

3. Structure of the project

Under the umbrella of the project, the following subgroups have been structured:



For each subgroup a referent has been appointed:

- Discard and by-products: Jan Teekens (The Netherlands)
- REACH & Circular economy: Topi Turunen (Finland)
- IED & Circular Economy: Simon Farrugia (Malta)
- EoW Database: Luca Paradisi (Italy)
- Training: Gabrielle Kuhn (The Netherlands)
- Landfill Guidance: Rainer Bullita (Germany)
- Waste Incineration BREF: Fabio Colonna & Romano Ruggeri (Italy).

Each subgroup can count on a core team actively involved in the activities. Nevertheless, it has to be considered that the pandemic negatively affected the level of involvement of participants.

More then 40 people from 20 Member States expressed their interest to participate at different levels. More then 20 people are actively involved in working subgroups.

The project has switched to Basecamp 3: the page of the project is constantly updated with Schedule, Library, Working docs.

4. Meetings carried out in the period 01/04/2021 – 31/12/2021

Due to the severe effect of the pandemic, the travel ban has been extended to all the 2021. Physical meetings have been replaced with virtual meetings. Running subgroups periodically met using the platforms *TEAMS*. A strong activity of networking has been carried out.

The following formal meetings took place remotely; subgroups also met informally several times using videocalls:

APR 2, 2021	**Subgroup Training vdc n.1** 3:00pm - 4:00pm
APR 12, 2021	**Byproduct subgroup vdc n.2** 3:00pm - 4:30pm
MAY 21, 2021	**Vdc EIPPC Bureau - IED& CE subgroup** 3:00pm - 4:00pm
MAY 24, 2021	**Subgroup REACH & CE: catch-up vdc** 3:00pm - 4:00pm
MAY 27, 2021	**Subgroup Training vdc n.2** 3:00pm - 4:30pm **Untitled** 3:00pm - 4:30pm
JUL 8, 2021	**WASTE MANAGEMENT & CIRCULAR ECONOMY - PLENARY MEETING** 3:00pm - 6:30pm
SEP 16, 2021	**Videocall Training subgroup REACH & CE** 4:00pm - 5:00pm
SEP 27, 2021	**Training REACH & CE - workshop preparation** 3:45pm - 4:45pm
OCT 14, 2021	**Training REACH & CE subgroup: vdc** 3:30pm - 4:30pm
OCT 29, 2021	**Waste Incineration kick off meeting** 3:30pm - 4:30pm
NOV 8, 2021	**Training REACH & CE vdc** 3:30pm - 4:30pm
NOV 25, 2021	☐ 01 Online workshop REACH circular economy- End-of-waste, By-products and compliance with REACH Regulation TRAINING REACH & CE

5. Plenary meeting – TEAMS Videoconference 08 July 2021

AGENDA

15.00	**Welcome from the project managers & tour the table** by Romano Ruggeri	
15.15	**Greetings from the IMPEL Waste & TFS Expert Team: what's going on in IMPEL** by Allison Townley or Simonne Reufener	
15.30	**Results achieved by the project and WMCE organization in 2021** by Romano Ruggeri	Microsoft PowerPoint 97-2003 Presentation
15.45	**Subgroup 1**: Byproducts and new circular business models by Charlotte Goletz	Microsoft PowerPoint Presentation
16.00	**Subgroup 2**: IT tool – Demo version of the case-by-case End of waste Database by Romano Ruggeri	Microsoft PowerPoint 97-2003 Presentation
16.15	**Subgroup 3**: REACH & Circular economy by Topi Turunen	
16.30	**Q&A**	
17.00	**Subgroup 4**: Training session by Gabrielle Khun	Microsoft PowerPoint Presentation
17.15	**Subgroup** 5: IED & Circular economy by Simon Farrugia	Microsoft PowerPoint Presentation
17.30	**Subgroup 6**: Landfill Guidance recast by Rainer Bullitta	Microsoft PowerPoint Presentation
17.45	**Subgroup 7**: Waste Incineration BREF by Romano Ruggeri or Fabio Colonna	Microsoft PowerPoint Presentation
18.00	**Q&A and conclusions**	

In Attendance

NAME	AGENCY	MS
Romano Ruggeri	ARPA Sardegna	Italy
Bogdan Sacaleanu	National Environmental Guard	Romania
Pinar Ece Karac	the Ministry of Environment and Urbanization	Turkey
Rommens Liesbet	environmental enforcement devision	Belgium
Katriina Koivisto	Regional State Administrative Agency Western and Inland Finland	Finland
Simon Holbrook	Environment Agency	England (uk)
Cláudia Sá	DRAAC	Portugal
Carina Freitas	Direção Regional do Ambiente e Alterações Climáticas	Portugal
Jakob Albertsen	The Danish Environmental Protection Agency	Denmark
Micaela Freitas	Secretaria Regional de Ambiente, Recursos Naturais e Alterações Climáticas	Portugal
Harald Junker	Umweltbundesamt	Germany
Franz Waldner	Federal Ministry of Climate Control	Austria
Gabriëlle Kühn	Rijkswaterstaat	Netherlands
Asta Navickiene	Environmental protection department under the Ministry of Environment	Lithuania
Rene Rajasalu	Environmental Board	Estonia
Manuel Salgado	Xunta de Galicia	Spain
Tom Nickson	Environment Agency	England
John Davies	Natural Resources Wales	Wales – UK
Christian Hauschildt	The Danish Environmental Protection Agency	Denmark
Fabio Colonna	ARPA Lombardia	Italy
Helle Heidtmann	The Danish Environmental Protection Agency	Denmark
Simon Farrugia	Malta EPA	Malta
Monica	The Danish Environmental Protection Agency	Denmark
Rainer Bullita		Germany
Paavo Tertsunen		Finland

End of waste case by case database (demo): panel test

Here follows the list of members who expressed their interest in the registration form as well as during the meeting itself, to be part of the panel to test of the EoW database:

Katriina Koivisto	Finland
Cláudia Sá	Portugal
Harald Junker	Germany
Asta Navickiene	Lithuania
Rene Rajasalu	Estonia
Simon Farrugia	Malta
Christian Hauschildt	Denmark
Bogdan Sacaleanu	Romania

Further discussion

- Manuel and Simon Hoolbrok expressed interest in being part of the IED&Circular economy subgroup
- Waste incineration subgroup: it was highlighted by Simon Hoolbrok the possibility to widen the scope of the subgroup to incinerators below the IED threshold and to pyrolysis plants.
- Members have been invited to express their interest to participate in the training sessions as speakers or trainees.
- Members have been urged to share ideas for the ToR 2022 and suggest new subgroups under the WASTE MANAGEMENT & CE Project.
- It was seen as a good idea to perform joint inspections in 2022 (topic landfill or other waste facilities)

Next steps

In 2021 the following activities will take place:

- Test of the EoW case by case database
- Training session on REACH & CE
- Finalize the Landfill Guidance
- Kick off of the Waste Incineration Subgroup

- REACH & CE: contribute to the text already drafted
- IED&CE: draft new text, comment on the outline, write and develop new parts from skretch (self assessment tool ecc)
- Byprodcuts and circular business models: draft more text and develop the practical tools on byproducts.

New members are invited to collaborate.

Subgroup videocalls will be fixed; they will be advertised in BC3 and are available to everyone.

6. Work of the subgroups

6.1 Training subgroup

Members of the subgroup:

- Gabrielle Kuhn (Netherlands - referent of the subgroup)
- Romano Ruggeri (Italy – Project Leader)
- Monica Crisan (Romania)
- Pinar Ece (Turkey)

The main goals of the training subgroup are:

- Development of a training programme consisting of training goals and modules for the main identified areas/subjects with the aim to develop knowledge and skills on crucial aspects of waste management: landfill, pre-treatment, End-of-waste, By-products; REACH and Circular Economy using the guidance Making the Circular Economy work, guidance on Landfill inspection and the guidance on Pre treatment.
- Supporting trainers on the development of training materials.

Expected outcome:

- Development training programme on REACH and Circular Economy
- Development training programme on waste and Circular Economy (to be carried out within the Norway EEA Grant)

Activities performed in 2021

The Norway EEA Grant project has received from 6 Member States positive feedback to receive training for the subject Waste and Circular Economy and End-of-Waste. The 6 member states interested are: Bulgaria; Estonia; Poland; Romania; Slovakia and Latvia. Contacts have been strengthened with Slovakia and Romania who declared the preference to organize the training in 2022. A training programme Agenda on Waste and Circular Economy has been drafted. Contact information from each of the Countries are here summarized in the table below.

Bulgaria	Rositsa Karamfilova Margarita Stoykova Desislava Stefanova Petar Markov	rkaramfilova@moew.government.bg mstoykova@moew.government.bg dnstefanova@moew.government.bg pmarkov@moew.government.bg
Estonia	Rene Rajasalu Helen Akenpärg	Rene.Rajasalu@keskkonnaamet.ee Helen.Akenparg@keskkonnaamet.ee
Latvia	Aija Kesmina	Aija.Kesmina@varam.gov.lv
Poland	Magdalena Woźniewska	magdalena.wozniewska@klimat.gov.pl
Romania	Daniela Covalinschi Roxana Stănică Bianca Olaru	daniela.covalinschi@mmediu.ro roxana.stanica@mmediu.ro bianca.olaru@mmediu.ro
Slovakia	Somogyi Henrietta	Henrietta.Somogyi@enviro.gov.sk

In 2021 an online Workshop on "*End-of-waste and By-products: compliance with REACH*" was held on 25th November 2021. Due to the COVID situation, it has not been possibil to host it in Helsinki as planned and has been converted in a remote workshop.

The workshop discussed when and how REACH comes into play when assessing by-product or end-of-waste status in practice and how operators and regulators can make sure that REACH is applied at the right moment in the right way in practice.

This workshop had 176 registered participants from 17 countries from various organizations.

Here follows the Agenda and the minutes of the Workshop. Presentations are available at the following IMPEL web address: https://www.impel.eu/en/news/results-of-the-online-workshop-end-of-waste-and-by-products-compliance-with-reach.

European Union Network for the Implementation and Enforcement of Environmental Law

IMPEL "Waste management & Circular Economy" Project

End-of-waste and By-products: compliance with REACH Regulation WORKSHOP

(25th November 2021, 10h00 CET)

Local: virtual meeting (via TEAMS)
Moderator: **Jan Teekens -** Ministry of Infrastructure and Water Management (The Netherlands)

10h00 Opening and welcome

Kristina Rabe - IMPEL Chair
Erwin Annys - Head of Unit Support and Enforcement ECHA
Enrique Garcia John - Policy Officer European Commission, DG ENVIRONMENT, Unit B3: Waste Management & Secondary Materials

10h30 IMPEL "Waste management & Circular Economy" Project

Romano Ruggeri - ARPA Sardegna, Italy

10h45 REACH & Circular economy: Setting the stage. Survey outcome and on-line poll (Slido)

Topi Turunen – Finnish Environment Institute (SYKE); **Gabrielle Kuhn -** Rijkswaterstaat (Ministry of Infrastructure & Water Management, Environmental department)

Session 1: Basic principles REACH and WFD legislation

Moderator: **Romano Ruggeri**

11h00 REACH Regulation: basic principles.

Erwin Annys - Head of Unit Support and Enforcement ECHA

11h10 The SCIP Database and the advantages for waste recyclers

Ulrich Kremser - ECHA

11h20 Waste Framework Directive: EoW and by-products requirements and interaction with REACH.

Enrique Garcia John - DG ENV

11h35 Q&A: PLENARY DISCUSSION

11h50 Coffee break

Session 2: Applying REACH to End-of-waste and By-products

Moderator: **Jan Teekens**

12h00 How to meet REACH requirements for EoW and By-products

Ulrich Kremser - ECHA

12h15 How Waste Framework Directive and REACH interact in the system of wastes becoming products

Hannela Artus - Ministry of the Environment of Estonia

12h30 Valorization of EoW and By-products in the ceramic industry: practical examples and REACH requirements

Paqui Quereda, Ana López – Institute of Ceramic Technology (ITC-AICE)

12h45 Practical implication of some terms used in REACH

Joke Teeninga - Rijkswaterstaat (Ministry of Infrastructure & Water Management, Environmental department)

13h00 REACH compliance for EoW and by-products: The current IMPEL Guidance and a flowchart for practitioners

Topi Turunen - Finnish Environment Institute (SYKE)

13h15 Q&A: PLENARY DISCUSSION

13h30 Lunch

Session 2: Applying REACH to End-of-waste and By-products

Moderator: **Romano Ruggeri**

14h30 End of Waste criticalities: verification of POPs-REACH-CLP compliance

Domenico Marchesini - ARPA Lombardia, Italy

14h45 ECHA Forum project on REACH & recovered substances

Oldrich Jarolim - Czech Environmental Inspectorate (ECHA Forum)

15h00 Q&A: PLENARY DISCUSSION

Session 3: REACH inspections and connection with WFD and WSR inspection regimes

Moderator: **Jan Teekens**

15h15 Inspection regimes for REACH & recovered substances; examples of inspection synergies of REACH, WSR and WFD authorities

Peter Hellema - Human Environment and Transport Inspectorate, Enforcement Department / Hazardous Substances (The Netherlands)

15h30 Coffee break

15h40 Challenges encountered when enforcing recovered substances

Henrik Hedlund - Swedish Chemicals Agency

15h55 Transboundary shipment of waste/end-of-waste: examples from Finland
Emma Nurmi - Finnish Environment Institute (SYKE)

16h10 Q&A: PLENARY DISCUSSION

Session 4: Stakeholders views
Moderator: **Romano Ruggeri**

16h25 REACH requirements for secondary raw materials: the point of view of the industry
Alejandro Navazas – EuRIC

16h40 Requirements for producers of recycled and / or artificial aggregates from waste
Greta Mosconi - ANPAR, Italy

16h55 Conclusions and closing of the Workshop
Romano Ruggeri - ARPA Sardegna, Italy

IMPEL "Waste management & Circular Economy" Project

End-of-waste and By-products: compliance with REACH Regulation

Minutes REACH & Circular Economy WORKSHOP

TEAMS - Date: 25/11/2021

Session 0: Opening and Welcome (Moderator: Jan Teekens)

Romano Ruggeri (ARPA Sardegna, Italy) gave information on IMPEL Waste Management and Circular Economy project. Demo version of End-of-Waste case-by-case database has been developed. Article 6 of WFD states the following: *"Member States may make information about case-by-case decisions and about the results of verification by competent authorities publicly available by electronic means"*. This tool aims at creating the structure of a voluntary database to help permit writers, inspectors and operators to find information on end-of waste case-by-case decisions or resulting from self-assessment verification.

There are 6 clusters:

1. Compiler information: This section is relative to whom is filling in the database; it may be useful if somebody wants to contact the compiler. All the fields are required.

2. Permitting authority: This part is requested when the end-of-waste status is granted within a permit. It is not requested in case of operator self-assessment. Contact details of the permitting authority can be useful if asking for more information is needed.

3. Recycling company: This part is optional; the data of the producer can be public available if included in a permit. In case of self-assessment, is up to the operator whether to publish the requested information or not.

4. Input waste: It contains crucial information about provisions of the waste to be recycled.

5. Treatment and final use: This section requires information about the recycling process, the destination market of the end-of-waste, the substance/material replaced by end-of-waste, etc.

6. Environmental and technical standards: This section collects crucial data about technical standards required, environmental standards, REACH registration.

The demo version will be integrated to the new IMPEL website next year. We will have a meeting with the Commission to present this tool.

Topi Turunen (Finnish Environment Institute) presented the results of the survey on REACH and Circular Economy that was conducted during the registration.

Issues arising in applying REACH Regulation are:

- Unclear requirements in the regulation (what to do, when to do etc.)

- How to apply REACH in permitting and inspections
- Application of REACH to EoW materials and effect of the REACH in EoW assessment
- Defining the chemical composition of waste-based materials and risk screening (traceability)
- Exemptions for REACH registration

Issues to emphasise in the IMPEL work

- Basic requirements of REACH + compliance check - how to see these waste based materials are compliant with REACH Regulation
- REACH and waste-based materials, recovery exemptions - help with import/export of EoW products
- Practical approach and examples, process type instructions
- Certain specific waste streams were mentioned (e.g. inert, oil, plastics)
- Analysis and sampling for waste based materials
- Coordination between authorities
- Workshops and training

Session 1: Basic Principles REACH and WFD Legislation (Moderator: Romano Ruggeri)

Erwin Annys (ECHA) gave a presentation on REACH Regulation – Basic Principles.

What made REACH different from the previous legislations?

- No data, no market: For every single substance which is coming into the EU or is manufactured in EU above 1 ton which do not fall under exemptions, you need a registration.
- Inversing the burden of proof – responsibility to industry: The industry has to come up with the information on the substance that they are manufacturing and importing.
- Substance and use information required
    - Hence new communication in the supply chain
- Avoid testing on vertebrate animals: Animal testing should be the last resort for gathering the information for registering substances.
- Only EU based manufacturers/importers can register
    - Non-EU manufacturers can appoint an only representative

- Authorisation introduced next to restrictions

There are two essential parts in registration:

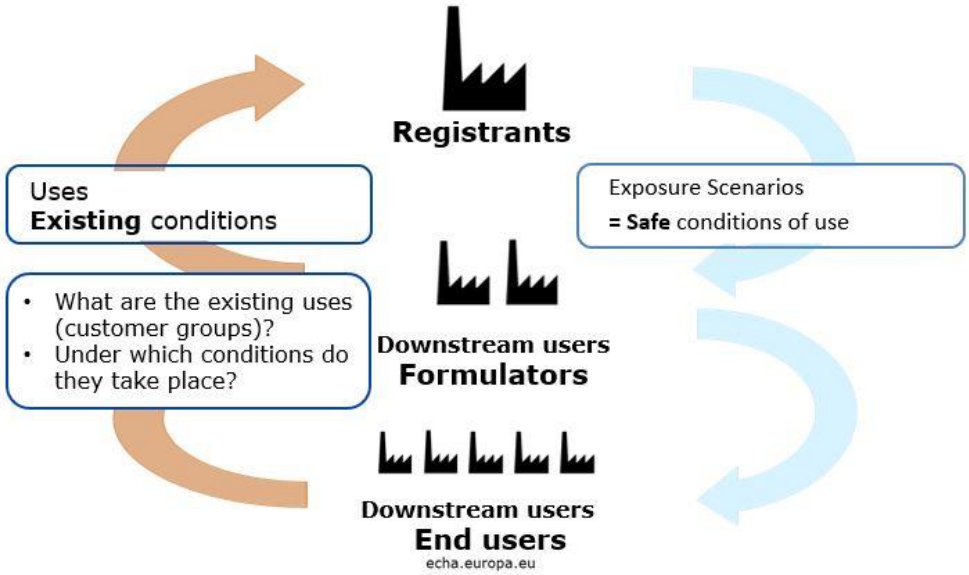
- A technical dossier: All information that is required in different annexes, the composition, analytical techniques etc.

- A chemical safety report (for substances above 10 tpa and that are hazardous according to CLP): This has to be done by the industry for substances that are above 1 ton and are hazardous according to the CLP Regulation.

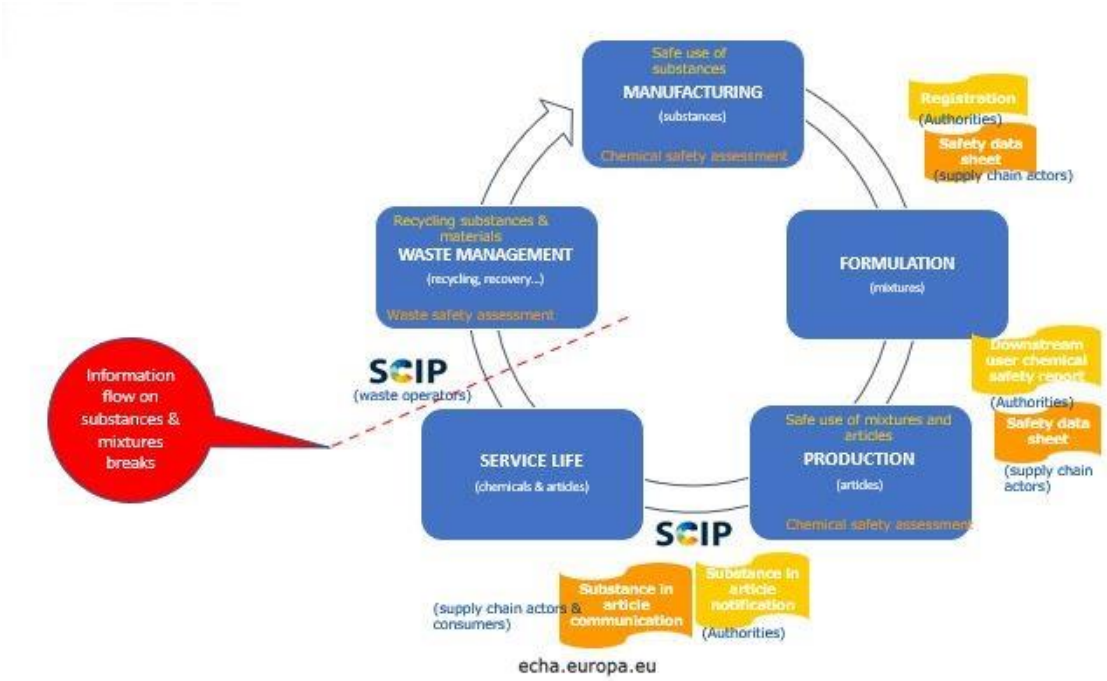
    - Including waste management measures during waste disposal and/or recycling

Chemical safety assessment is requiring different information which is in the hand of manufacturers which have to know the properties of the substances. A lot of Information is needed from the downstream users. Because they know how they are using them in the mixtures they are producing: foreseen products, concentrations and amounts, operational conditions, risk management measures.

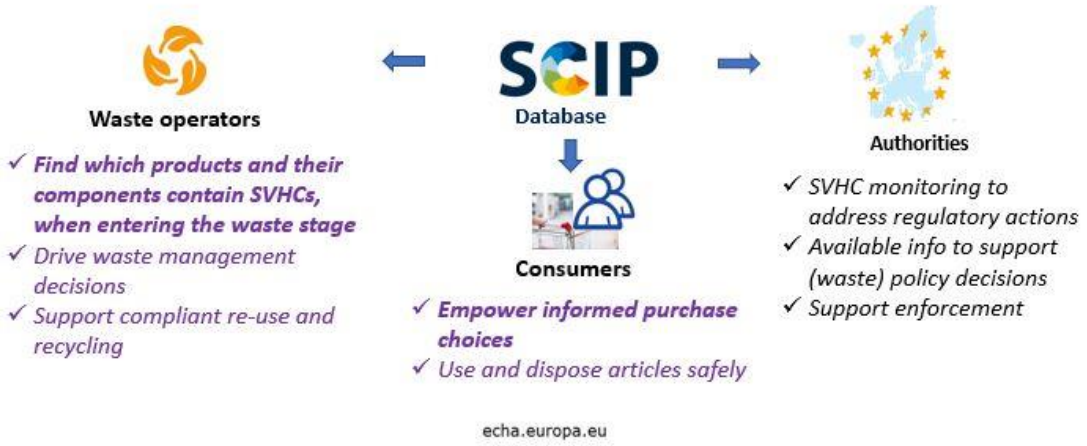
Communication in the supply chain is essential. Figure below is a simple view with only two steps. From experience we know that this can be up to seven levels.



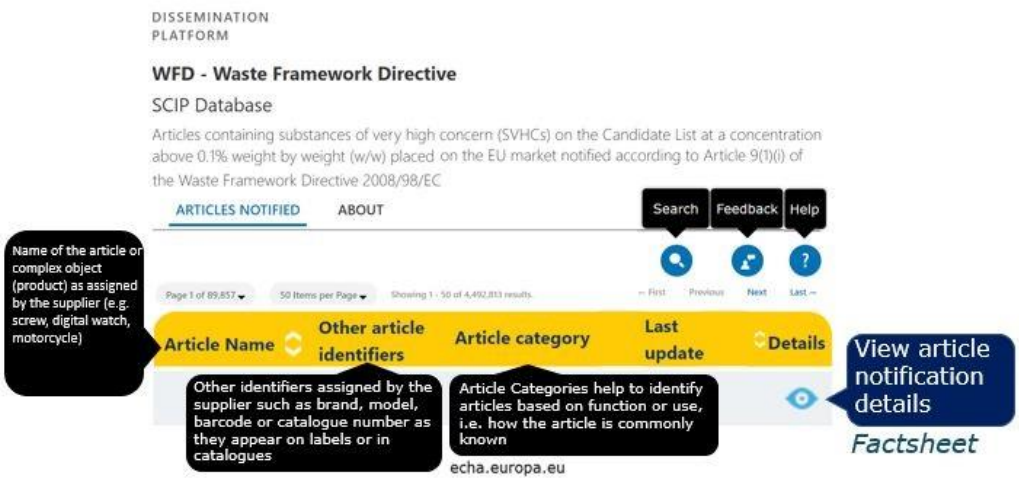
Ulrich Kremser (ECHA) presented the SCIP Database and the advantages for waste recyclers. SCIP is the database for information on **S**ubstances of **C**oncern **I**n articles as such or in complex objects (**P**roducts) established under the Waste Framework Directive (WFD).



The objective is to improve transparency on substances of very high concerns in articles through the supply chain mainly for waste operators.

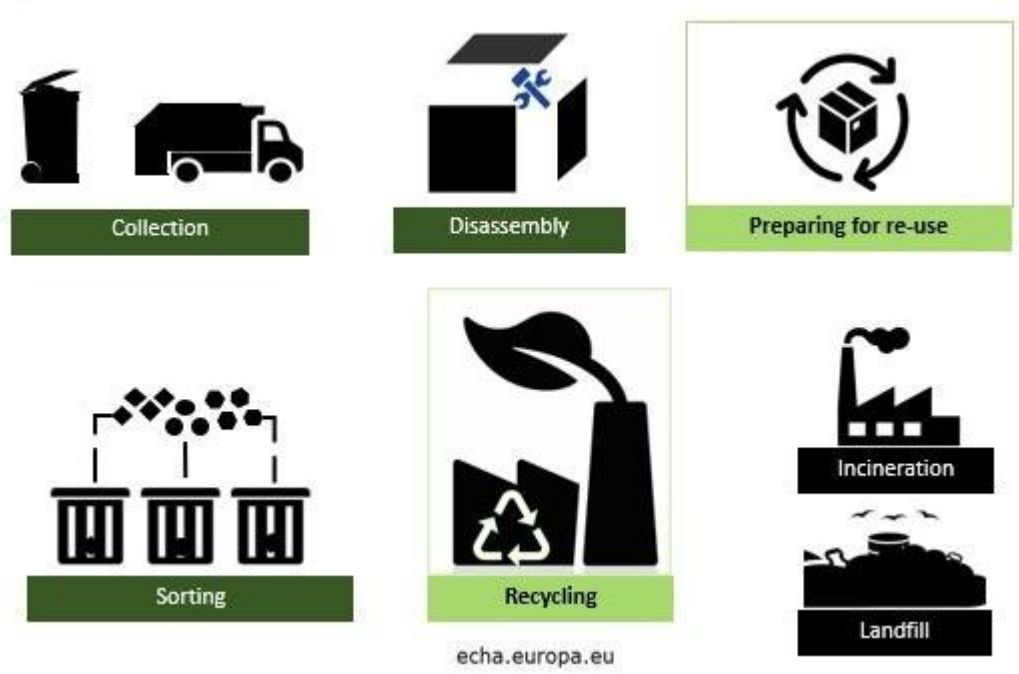


Dissemination of SCIP data: When the duty holders make their SCIP notification ECHA publishes this information on their homepage as it is received.



There are different filters (article identity/category, material & mixture category, substance of concern or concern/reason for inclusion) to search articles and products.

Waste operators are a diversified group. It is a complex chain with very different needs. Waste stage operations are:



Information from SCIP database, since it is article centric, would be of most use by those actors in the waste treatment chain that actually still deal with complex objects or articles. These are collection, disassembly and preparing for re-use.

The Information from the SCIP Database could, for instance:

- **support the segregation of waste** containing Candidate List substances in waste collection, disassembling, and sorting operations

- **facilitate high-quality recycling** through identification and removal of Candidate List substances from further processing, and consequently **boost the uptake of better quality secondary raw materials**
- **help identify material-based streams** that could be impacted by these substances in articles when they become waste; and
- **contribute to innovation** and emergence of new waste treatment technologies.
- lower the costs of necessary chemical analysis of certain wastes
- support models to identify "concerning" sources

Enrique Garcia John (DG Environment) gave a presentation on Waste Framework Directive: EoW and by-products requirements and interaction with REACH.

EoW in the revised WFD: Member States shall take appropriate measures to ensure that waste which has undergone a recycling or other recovery operation is considered to have ceased to be waste… (new Art 6).

There are aspects linked to ensuring that material that ceases to be waste and go back into the economy has to meet some minimum quality requirements.

Ensuring quality EoW through detailed criteria (Art. 6 (2)): Permitted input material, allowed treatment processes, quality criteria for EoW material, management system, declaration of conformity.

Transparency and knowledge sharing (Art. 6 (4)): Member States may make information about case-by-case decisions and about the results of verification by competent authorities publicly available by electronic means.

This links to the work carried out by IMPEL Waste Management and Circular Economy project to collect this information and make it available electronically.

When we move to product legislation, we have REACH and CLP. WFD already sets number of issues how these two legislations interact with each other. These are related to the transition from waste to product.

WFD:

- Rules on by product and EoW apply without prejudice legislation on chemicals and legislation concerning the placing on the market of certain products.
- End-of-waste status can only be achieved if substances or objects comply with relevant requirements applicable to products.
- End-of-waste rules can be established in product-specific legislation. (e.g. FPR)

REACH:

- [Art. 2(2)] - Waste as defined in Directive 2006/12/EC … is not a substance, mixture or article within the meaning of Article 3 of this Regulation.

This article makes it clear that waste is not a substance, mixture or article which means that waste is not subject to REACH.

- [Art. 2(7)(d)] - Substances recovered in the Community are exempt of registration obligations, subject to: 1) sameness to registered substance; 2) Article 31 (eSDS) and 32 information.

Guidance on waste and recovered substances (ECHA 2010) state that '… companies willing to benefit from this exemption must provide the authorities (only on request) with appropriate documentation proving that their recovered substances qualify for the exemption.'

Regulation on Fertilising Products:

Article 19 – End-of-waste status: This Regulation lays down criteria in accordance with which material that constitutes waste, as defined in Directive 2008/ 98/EC, can cease to be waste, if it is contained in a compliant EU fertilising product. In such cases, the recovery operation under this Regulation shall be performed before the material ceases to be waste, and the material shall be considered to comply with the conditions laid down in Article 6 of that Directive and therefore to have ceased to be waste from the moment that the EU declaration of conformity was drawn up.

There are developments regarding waste within DG Environment with the help of JRC. Circular Economy Action Plan (CEAP) has a chapter called 'Less waste more value':

- Enhancing circularity in a toxic-free environment

- Working to create a well-functioning EU market for secondary raw materials

Why are EoW and BP a priority?

- Circular Economy
  - Safe and quality secondary materials
  - Waste/by-products from one industry input for another
  - Level playing field between MS and regions
  - Legal clarity for businesses and authorities
- Internal market
  - Avoid delays or restrictions of intra-EU shipments because of waste vs. non-waste discussions
- Environmental protection
  - Most stringent and protective criteria at EU level

Session 2: Applying REACH to End-of-waste and By-products (Moderator: Jan Teekens)

Ulrich Kremser (ECHA) gave a presentation on How to meet REACH requirements for EoW and by-products.

Whereas the instruments to verify end-of waste status differ between Member States, the underlying very basic approach to regulatory risk assessment whether a substance, mixture or article can be released from the waste stage should be the same for all end-of-waste criteria and case-by-case decision making.

The waste recovery operator has some roles under WFD and REACH.

WFD: Has the recovered material met the criteria for no-longer being waste?

- Provide all relevant information for the assessment
- Final determination remains with MSCA

REACH: Recovery operation considered as a manufacturing process

- Registration obligations
- Safe use information
- Authorisation/restriction

The REACH Regulation requires all chemical substances manufactured or imported in quantities of one tonne or more per year to be registered, except

- substances out of the scope of REACH (e.g. waste, food …)
- substances exempted from the registration obligation under REACH (Annex IV, V)

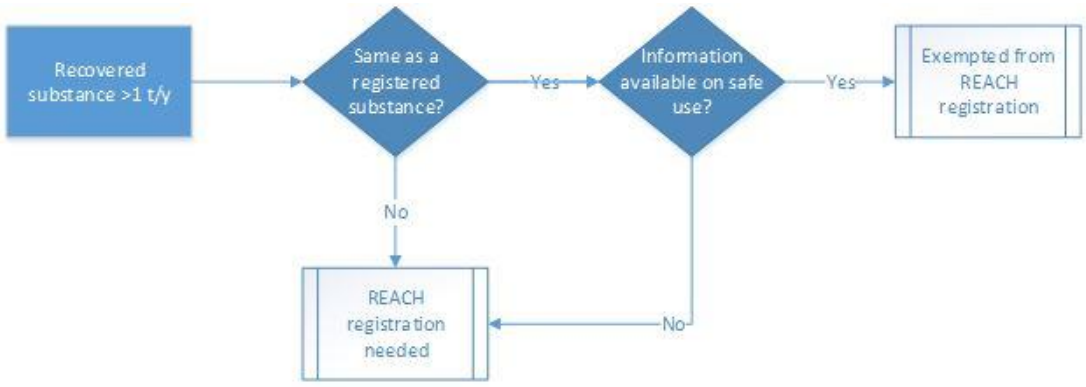
For EoW materials and by-products REACH foresees under certain conditions an exemption from registration for substances on their own, in mixtures or in articles.

A recovered substance can benefit from the exemption only in case:

- it is manufactured in EU by a chemical and/or mechanical process handled by a recovery operator under the WFD,
- from at least one of the sources that is a waste, and
- if the conditions i) and ii) in Article 2(7)(d) of REACH are fulfilled.

Please also see ECHA's Guidance on waste and recovered substances for more information.

REACH Article 2(7)(d) exemption (assuming that the substance as such is not completely exempted from REACH registration)



Existing registration of the same substance at manufacturing or importing stage

- any registration by any registrant: the registrant does not have to be part of the supply chain leading to the waste generation; many recovery operators may benefit from one registration (issue of 'free-riding')
- the use of a recovered substance is not limited to the identified uses of the "original" registered substance, but can be applied to different uses
- no restriction regarding the quantities of the recovered substance

How to judge the sameness is based on:

- Rules of the guidance on substance identification; based on the sameness of the main constituent;
- Assessment to be done by the recovery operator themselves (no confirmation by ECHA)
- Same EC and CAS numbers for substances are an indicator for the sameness of the substance

Most recovered materials are substances in mixtures and the substances are UVCB substances (Substances of **U**nknown or **V**ariable composition, **C**omplex reaction products or **B**iological materials): composition it either unknown or number of constituents is very high

- Requires information on the waste sources and from recovery processes for identification

Article 2 (7)(d)(ii) of REACH: *"the **information required by Articles 31 or 32** relating to the substance that has been registered in accordance with Title II **is available** to the establishment undertaking the recovery"*.

Thus, the recovery operator must have available one of the following

1. A SDS as required by Art 31 (1) or Art 31 (3) on the registered substance, with the annexed exposure scenario, if applicable *(substances classified as hazardous, PBT, vPvB, SVHC),* or
2. The registration number(s), status of on authorisation and restrictions, and any other information about the substance necessary to enable appropriate risk management measures *(if an SDS was not required for the 'original' substance)*

Access to this information is in practice very difficult:

- Recovery operators usually do not receive such information with the input waste (from the registrant)
- Potential breach of intellectual property rights if the recovery operator applies 'detective's work' to compile this information; no mandate for ECHA to intervene in the data sharing

Requirements for the second life-cycle

- in case the recovery operator can rely on the recovery exemption no registration of the recovered substance is needed
- Safe use information for the recovered substance in its second life needs to be provided down the supply chain: SDS or other information on safe use
- Use of information from recovery exemption (information 'available') can form the basis for the supply chain information of the recovered substance(s): relevance and adequacy of this information (e.g. different hazard profile) for potentially different uses

Requirements for by-products

- By-products as defined in Article 5 of the WFD cannot benefit from the Article 2(7)(d) exemption under REACH

- In principle, registration obligation when the by-product substance is manufactured / used for the first time (not only when the substance is placed on the EU market)
- By-products may however be exempted from registration on the basis of Annex V REACH, unless
  - they are imported, or
  - placed on the market themselves

Essentially, this only leaves by-products that are used in the same production process to be exempted from registration.

Hannela Artus (Ministry of Environment of Estonia) gave a presentation on How Waste Framework Directive and REACH interact in the system of wastes becoming products.

All environmental decisions are under the administration of the Ministry of the Environment (MoE). Main role for implementation is given to the Environmental Board and the Environmental Inspectorate (now in one authority).

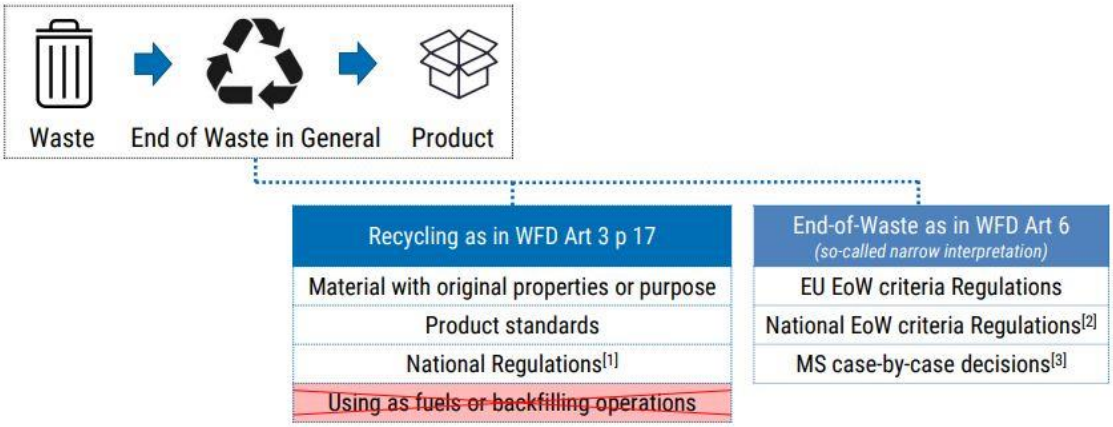
All REACH topics responsibilities are under administration of the Ministry of Social Affairs (MoSA) – main role the Health Board as the CA of REACH&CLP.

Core discussions about the End-of-Waste criteria started with and related oil wastes which are hazardous waste. Up to 01.01.2020 all hazardous waste operators had to apply for a licence prior to a permit. Since 01.01.2020 there is only a permit with the same requirements.

All hazardous waste licences were discussed in a committee for hazardous waste management. Now the environmental protection permit committee.

Members of the committee are industrial emissions, waste, ambient air experts from MoE and the Environmental Board, enforcement representative, legal adviser, REACH&CLP experts from MoSA and the Health Board + invited experts dependant on topics. All case studies were discussed in the Committee.

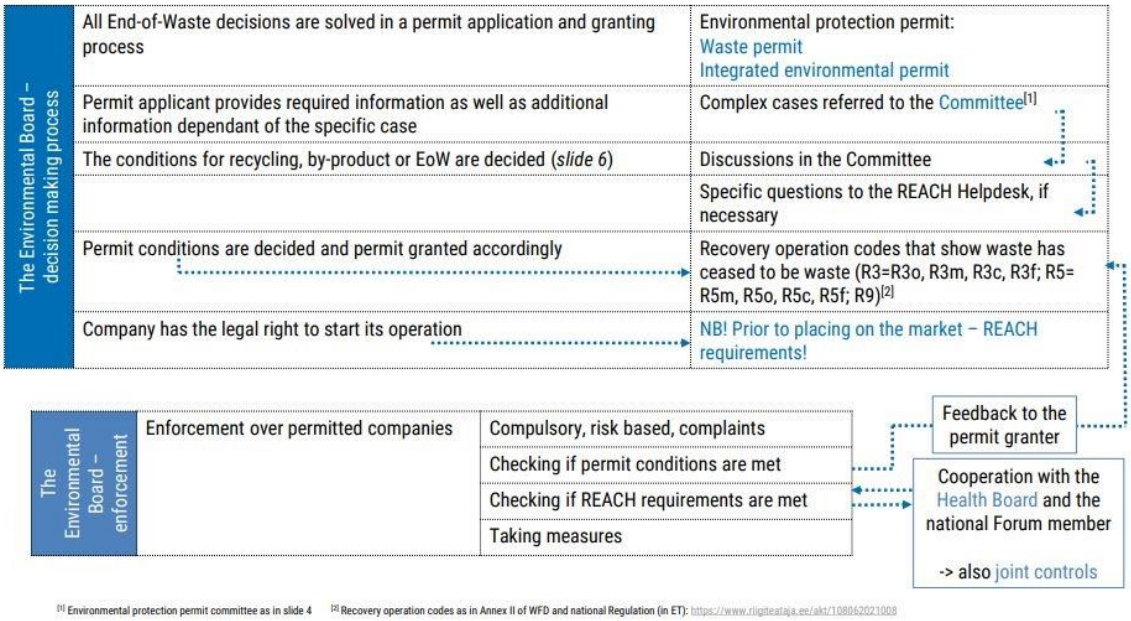
The illustration below shows the approach that is being implemented since 2013. It shows how waste ceases to be waste.



[1] E.g. biomass ash and oil shale fly ash if they meet specific criteria set in the Fertilisers Act and related Fertilisers Regulations
[2] Six National Regulations have been established for the EoW of specific waste streams (in ET https://envir.ee/ringmajandus/jaatmed/jaatmete-lakkamine); IRIS search -> Country EE, numbers 458, 357, 700, 154, 297, 662, 28
[3] Directive (EU) 2018/851 amending Directive 2008/98/EC on waste, Article 6 amendments; No case-by-case decisions have been made so far

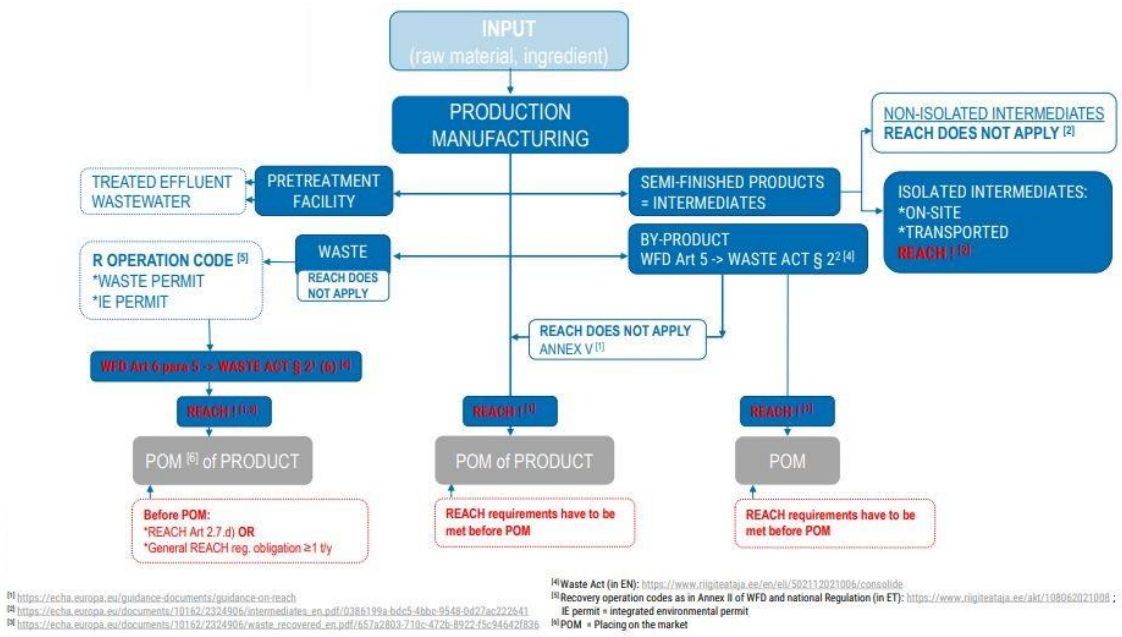
Estonia has 6 National End-of-waste criteria Regulations. There are no MS case-by-base decisions in Estonia so far.

Decision making process is as follows:



[1] Environmental protection permit committee as in slide 4 [2] Recovery operation codes as in Annex II of WFD and national Regulation (in ET): https://www.riigiteataja.ee/akt/108062021008

In conclusion, the general production scheme is as follows:



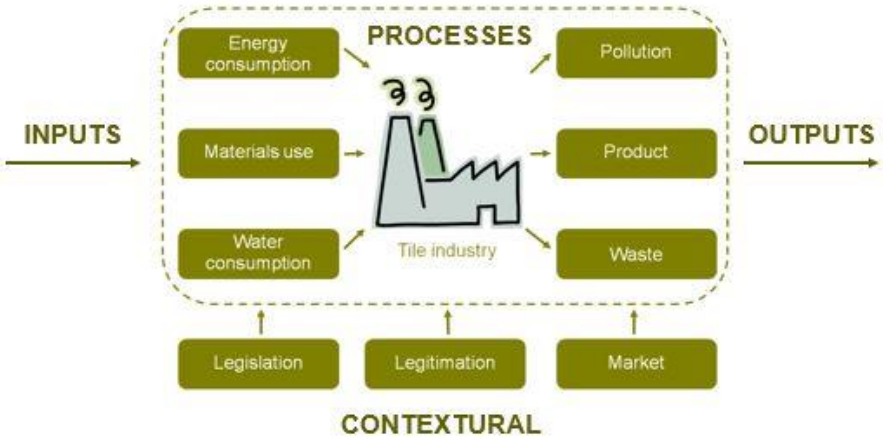
- Application of REACH Article 2.7.d) exemption for recovered substances
    - Clear EU rules should be developed on the approach how to assess substance sameness – what data should be provided on the waste side and what on the already registered substance side
    - Could be applied only to simple substances that are comparable on a chemical structure level
    - Should not be applied to UVCB
- EoW questions as regards to customs codes and shipment of liquids: definition of waste and fuels, application of WSR, REACH and Customs activities

From the authorities' perspective;

- Large production companies fall under several legislations with obligations to apply for permits in their sector
    - A permit giving authority takes responsibility of permitting an activity but doesn't have a say in the companies' decision about REACH
- What is the role of an environmental permitting authority as regards to REACH requirements? And what is the role seen here for the REACH CA?
    - How to ensure that a permit is not granted to a company that is not able to fulfil its REACH requirements?
- What data could and should be asked from the applicant in the permit application process to facilitate the work of an environmental inspector?

Paqui Quereda and Ana Lopez (Institute of Ceramic Technology) presented the Valorisation of EoW and By-products in the ceramic industry: practical examples and REACH requirements.

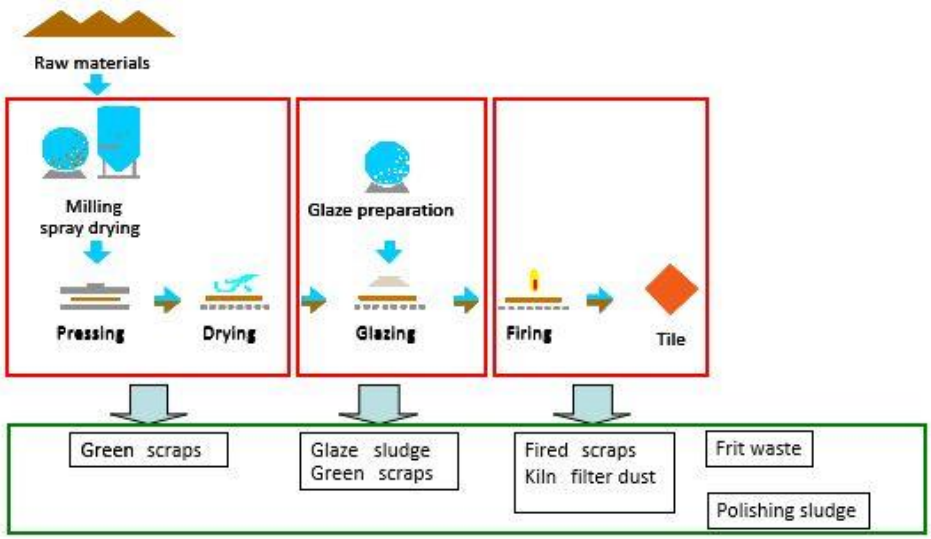
Green factors affecting the ceramic industry:



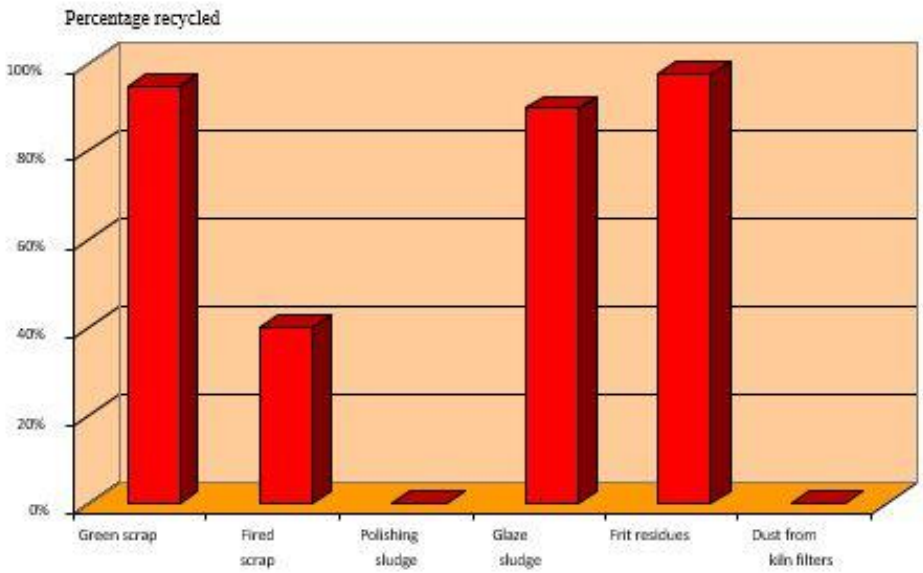
D. Gabaldón, E. Criado and E. Monfort. 2014. The green factor in European manufacturing: A case study of the Spanish ceramic tile industry. Journal of Cleaner Production 70, 242-250.

Energy consumption (mainly natural gas) is very intensive in ceramic industry. We also have high water consumption.

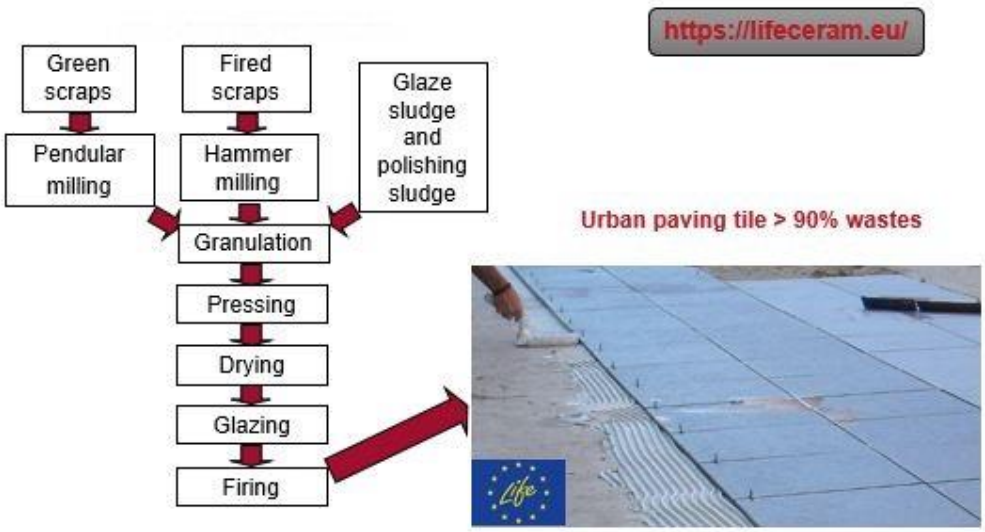
Manufacturing process of ceramic tiles and type of wastes produced can be seen below:



Graphic below shows the percentage of wastes recycled within the sector.



Ceramic wastes LIFECERAM project developed a manufacturing process for urban paving tile using wastes. Manufacturing process is as follows:



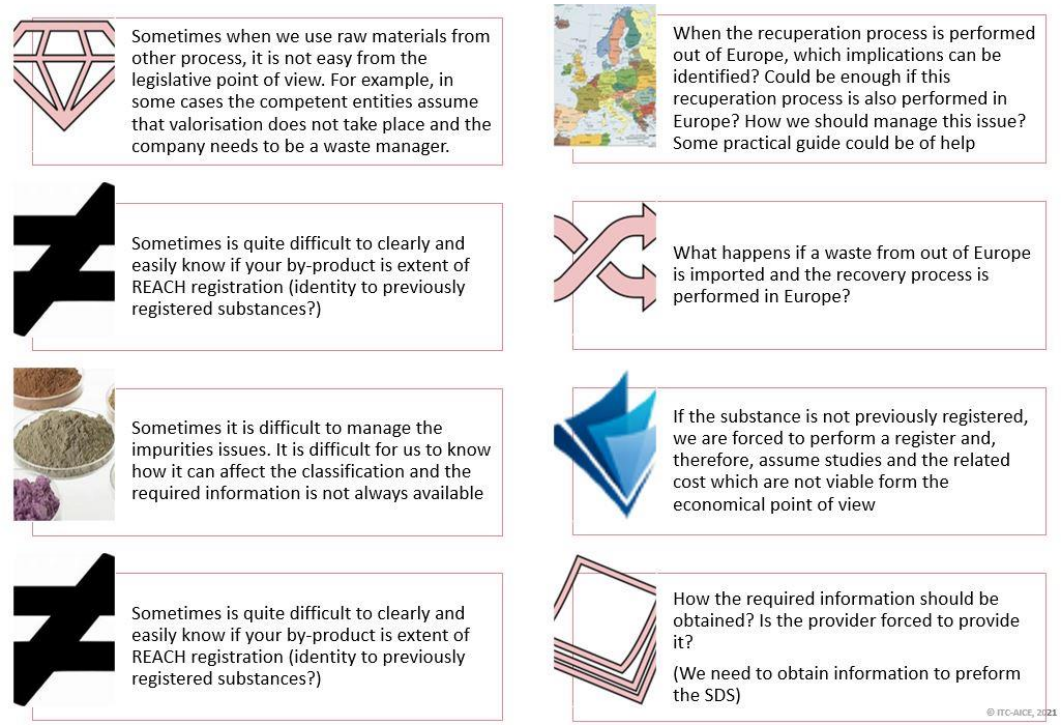
Project for non-ceramic wastes, namely FOUNDRYTILE, aimed to demonstrate the valorisation of all iron foundry sand and dust in the ceramic tile production process.

Steps to be follow in the projects are:

The main problems from the industrial perspective are as follows:

- EoW requirements
- REACH implications
- Substance, complex substance, mixture
- REACH regulation exemptions

Some specific examples can be seen below:



Joke Teeninga (Rijkswaterstaat, the Netherlands) gave a presentation on Practical implication of some terms used in REACH.

When there is end of waste you have to fulfil REACH obligations. As member of a competent authority, you have to judge whether the material is end of waste or a by-product, ask for evidence that the material is REACH compliant.

Example 1: Is it a substance or article? The advantage is exemptions of registration.

Definition of Article:

- Object
- Special shape/surface/design
- Determines its function to a greater degree than does its chemical composition

Here are some examples:

- Blasting grit: It is a solid material. It is a substance.
- Postcard: The surface is very important. It has to be capable of receiving graphite from a pencil. It is an article.
- Crayon: Mixture of paraffin and pigment.

Example 2: Transported isolated intermediate

The definition of intermediate (art. 3 of REACH):

- Manufactured for and
- Used in chemical processes
- To be transformed into other substances
- (synthesis)

ECHA Guidance documents that can be helpful on these issues are:

- Guidance on requirements for substances in articles (https://echa.europa.eu/documents/10162/2324906/articles_en.pdf)
- Guidance on intermediates (https://echa.europa.eu/documents/10162/23036412/intermediates_en.pdf/0386199a-bdc5-4bbc-9548-0d27ac222641)

Topi Turunen (Finnish Environment Institute) presented REACH and Circular Economy in the IMPEL Guidance.

There are some implications to REACH Regulation in the current IMPEL Guidance document. In chapter 2 of the guidance there is a short description of REACH registration exemptions for by-products and recovery exemption. In Annex D of the guidance, the basic requirements of REACH regulation (what is meant by registration, how to register, authorisation etc.) are given. These issues are not detailed in the guidance at the moment.

Planned amendments are:

- Adding detail and examples to the existing guidance, especially the basic provisions of REACH Regulation
    - Most of the times the exemptions do not apply: basic requirements are crucial
- Adding texts on SR&D exemption and PPORD exemption
- Adding a visual tool/flow chart on REACH requirements

Goals of the flow chart/visual tool are:

- Flow chart aims to give visual guidance on how to comply the requirements of REACH Regulation

- Framework is often considered complicated → offers visual clarity, improves communication and is faster to use than the guidance text
- Flow chart is still under development

Session 2: Applying REACH to End-of-waste and By-products (Moderator: Romano Ruggeri)

Domenico Marchesini (ARPA Lombardia, Italy) gave a presentation on End of Waste criticalities: verification of POPs-REACH-CLP compliance

For the POP verification, annex IV of the POP regulation is applicable on the interaction between REACH and POP hazardous waste.
or verification of REACH and CLP requirements, article 6, under c) and d) of the Waste Framework Directive applies: when it concerns standards applicable to products (under c); and under d) the use of the substance or object will not lead to overall adverse environmental or human health impacts.
The verification of the REACH - CLP - POP regulations and specific product regulations must be verified at the same time as the verification of the End-of-Waste criteria.

Assessment of the POP verification is explained:
" 1-Are substances included in Annex IV of Regulation 1021/2019/EU and s.m.i. present in the waste (substances, mixtures or articles) starting from the production of EOW?
References: art. 4 (4), art. 7 (2) art 7 (3), art. 7(4) a), art. 7(4) b), All.IV-V POPs.

Example Paper and cardboard (PCB only in photocopiers). Flame retardants (Tetrabrobmodiphenyl ether) in plastics

2-Are the quantities of POPs identified in the starting waste, which will give rise to the EOW, below the limits set out in Annex IV?
References: art 7 (4) a)
Examples: D9 physico-chemical treatment, D10 ground incineration R1 Main use as fuel or other means of producing energy, except waste containing PCBs (Annex V Part I)
Example: EER 10 02 07 * Solid wastes from fume treatment containing hazardous substances with 50 mg/kg PCB and 5 mg/kg PCCD/F permanent storage under the conditions laid down (Annex V Part II)

3-Are there traces in the final EOW (substances, mixture or article)?
References: art. 3, Article 4 b). All.I-II.
Example: Tetrabromodiphenyl ether C12H6Br4O [40088-47-9 and others] limit 10 mg/kg in substances".

Oldrich Jarolim (Czech Environmental Inspectorate (ECHA Forum) gave a presentation on ECHA Forum project on REACH & recovered substances

An overview of the project REACH and recovered substances is presented, including the work method, experiences and preliminary conclusion.
The project deals with the interface between REACH and waste and was intended to investigate the exemption of REACH Registration obligation, under Article 2(7), under d) in the waste recycling sector. The information exchange between REACH and waste inspectors is encouraged in this project. The objectives of the project includes to raise awareness on the REACH obligations for the waste inspectors; assess the target group's compliance with REACH provisions on the registration of recovered substances in the waste recycling sector; assess whether the recovered substance/mixture fulfils the End-of-Waste criteria required by the WFD. The target group of the project are companies placing recovered substances on the market that are subject to REACH requirements.

Timeline of the project:
- Preparation from December 2019 to December 2020;
- Operational phase in 2021;
- Reporting phase 2022;
- Final report: June 2022.

11 member states are participating in de project. Work method consists of the selection of a company that place recovered substances or mixtures on the market. On sameness, article 2 (7), the duty holder is to collect sufficient information and data to demonstrate that he has identified his recovered substance. The first condition of exemption is to demonstrate that the company has identified recovered substances. The 2nd condition is the availability of the information.
Other investigations on: REACH regulation; Safety data sheets (SDS); CLP and POP regulation.
There was some delay on the inspections due to the COVID-19 restrictions. Also some questions were raised, for example on the application of legislation on recovered substances from the UK.
Cases that were discussed: pyrolysis oil from car tyres and a case on waste editable oil to make mixtures.
Result: better picture where difficulties arise between REACH and waste legislation and also better cooperation between REACH and waste inspectors was established.

And the end of the presentation, Romano Ruggeri underlines that he hopes for further cooperation between the ECHA forum project and the IMPEL project on Waste and Circular Economy.

Q&A: PLENARY DISCUSSION
Question on the presentation of Domenico Marchesini: some laboratories issue a declaration stating that no POPs are present. How to deal with such declaration without any data to support the statement?
Answer: more information is necessary on the declaration. In a database is can be checked if the declaration is real.

Session 3: REACH inspections and connection with WFD and WSR inspection regimes (Moderator: Jan Teekens)

Peter Hellema (Human Environment and Transport Inspectorate, Enforcement Department / Hazardous Substances, The Netherlands) gave a presentation on Inspection regimes for REACH & recovered substances; examples of inspection synergies of REACH, WSR and WFD authorities.

An EU pilot project on the subject of waste, by-product, End-of Waste or recovered substances. Who decides which substances fulfills the End-of Waste criteria and what happens if no decision is taken. In the Netherlands End-of Waste decisions are taken by the local authorities. Several recovered substances were inspected. For example recovered diesel imported from UK (but UK is no longer in the EU, EU legislation does not apply.
The case which is presented concerns pyrolysis oil from waste car tyres. The question to be answered was is the company which wants to produce pyrolysis oil from waste car tyres need to register or can the company benefit from the exemption in article 2(7) under d) of REACH.
The database of ECHA was checked. Two registrations of recovered pyrolysis oil from waste car tyres were found in the database. The registrations covered the use of the substance as an intermediate. Article 2(7) under d) was not applicable since and the first manufacturer had to register this recovered substance in accordance with title II. The conclusion seems that on basis of article 2.7d for other manufacturers of the recovered substance pyrolysis oil from waste car tyres it fulfills the requirements to be exempted from registration since the recovered substance has been registered “before”.
Findings and conclusions: the burden of registration of a recovered substance that has not been registered before, lies only on the first manufacturer. All subsequent manufacturers of the recovered substance can now successfully claim exemption based on article 2 (7) under d) when they can prove “sameness”. All subsequent manufacturers are free from the identified uses, CSA/CSR and exposure scenario’s. Substances that have been obtained through chemical modification during the recovery process are more likely not “registered before”.
On the identification of new PCB it is not only the chemical composition that is important, but also the feedstock it was made from and the production process. Those both are part of the identification of the substance.
This seems in contradiction with the base rules of REACH this seems in contradiction with the basic rules of REACH which is: no data, no market and every manufacturer or importer has to register.

Henrik Hedlund (Swedish Chemicals Agency) gave a presentation on Challenges encountered when enforcing an operator recycling tyres for infill materials in Sweden.

Recycling of tyres and End-of-Waste in Sweden. Decisions on End-of-Waste are taken by the local of regional waste authority in Sweden. The Swedish Chemicals Agency (Keml) and the Swedish environmental authority have provided guidance for waste inspectors. Keml checks compliance with the chemical registration. There are no national End-of-Waste criteria. The recovery operator is responsible to do the assessment and authorities check this assessment at an inspection.
The case started in 2015. The company makes rubber granules from tyres by mechanical process. There is no pre-sorting of tyres. The product is marketed as a chemical product. Keml contacted the company and requested information for enforcement (SDS and REACH registration).
The company indicated that it is waste, and it had always been sold as such. Lawyers from Keml indicated that even if the product was marketed as a chemical product, it can't be enforced as such. It was then handed over to the regional authority who performed waste inspections to make sure that it was sold as waste and complying with the waste regulation. The regional authority performs the inspection and submits the report. The company submitted the report that End-of-Waste had been fulfilled. The regional authority request the opinion of Keml if the report and data shows that chemical legislation is fulfilled. Keml informs the regional authority that it is the company responsibility that chemical legislation is fulfilled and that Keml cannot give any pre- approvement (checks are done during inspection). Keml informs the company when it starts selling the product as a chemical product, Keml requests the company to send in information needed for enforcement: information on registration according to REACH and on SDS. The company submits the information they had available, but it lacked information on registration and SDS for the recycled substances in the mixture. Based on the information, the mixture should be classified, labeled and require SDS. The granules were sold as waste as investigation is completed. Keml contacts the company and the company indicates that the granules are sold as waste and will continue the be sold as waste. The enforcement case then closed by Keml.
Conclusion is that the cooperation between waste inspectors and chemical inspectors is crucial.

Emma Nurmi (Finnish Environment Institute (SYKE)) gave a presentation on Transboundary shipment of waste/end-of-waste: examples from Finland

When waste is moving from one country to another (when waste crosses the border) this is transboundary shipments of waste. The EU waste shipment regulation (WSR) applies.
For transboundary shipment there are two procedures:
1. Notification (notification document – Annex 1A of the WSR) and financial guarantee and consent from the other country.
2. Green-listed waste – Annex VII of the WSR – no consent from the other country is needed.
Syke is the competent authority and supervisory authority.
Article 28 of the WSR deals with the disagreement on classification issues: if the competent authorities of dispatch and of destination cannot agree on the classification as regards the distinction between waste and non-waste, the subject matter shall be treated as if it were waste.
In Finland there are not many cases on End-of-Waste, most cases on used electronics.
Case on lead paste from used lead acid batteries: a regional state administrative authority for environemental permits accepted lead paste End-of-Waste status in 2020. End-of-Waste Lead paste is shipped to some other countries for smelting. In Sweden an notification is required for shipment as waste.

Case on colbalt hydroxide from battery recycling: it originates from used lithium cobalt battery recycling process in a facility located outside the EU. Company wants to the material to Finland as a product. Country of origin does not have an End-of-Waste procedure. But would have allowed export as non-waste because it is a recycled material which could be used directly as a raw material. There was no information on how the requirements of the EU chemicals legislation would be fulfilled. SYKE concluded that with the information available the material the colbalt hydroxide from battery recycling should be imported as waste.

Case shredded plastic from Finland to Russia: plastic waste had been shipped via Finland to Russia using Annex VII of the WSR. This was a wrong procedure and shipment to Russia should have been notified. The exporters informed SYKE that the use of Annex VII had been an accident and what they sent was actually End-of-Waste plastics. SYKE and other transit countries disagreed with this. A take back was initiated by the country of dispatch.

Conclusions: it is not easy to define End-of-Waste status and End-of-Waste status in one country does not mean you can forget about the WSR procedures. Cooperation between different authorities is necesarry. And also international cooperation is very important.

Q&A: PLENARY DISCUSSION
Remark on the case on pyrolysis oil from waste car tires: ECHA is publishing on chemical recycling and pyrolysis and it is one of the six different activities which could fall under the broad umbrella of chemical recycling. What is coming out of this study is that there is in literature little information on different techniques which are allowing to get an ID on substance identity, which is the beginning of the whole discussion on eventually falling under article 2.7 (d) of REACH. It includes experiences on what is happening with substances of concern under the different technologies which are falling under this chemical recycling. So hopefully this study will create some discussion and the chances are high seeing the fact that POLITICO is going to write an article about this.

Session 4: Stakeholders views (Moderator: Romano Ruggeri)

Alejandro Navazas (EuRIC) gave a presentation on REACH requirements for secondary raw materials: the point of view of the industry

The European Recycling Industries' Confederation (EuRIC) focus on mechanical on the material recovery, mostly mechanical treatment. Dealing with material recovery from tyres, plastics, paper, textiles, batteries. EuRIC is in favor of EU wide harmonize criteria for End-of-Waste because legal certainty is essential. The product legislation imposes different types of requirements and the lack of certainty as to when waste is. For the CE it is important to have more certainty. Until now, the EU wide End-of-Waste criteria have been focusing on rather very commonly used recovery materials. There are problems on REACH and sameness: for recyclers to be benefit of this exemption they need to show REACH sameness. The lead registrant needs to approve and share the data already registered which is not always the case as they often argue that the molecule is not the same as it comes from waste.

Greta Mosconi (ANPAR, Italy) gave a presentation on Requirements for producers of recycled and / or artificial aggregates from waste.

ANPAR is an Italian company that recovers metals and inner materials from different kind of waste like metal waste and bottom ash from incinerators. The presentation is about requirements for producers of recycled and or artificial aggregates from waste.
There are some End-of-Waste criteria and they are defined on different levels: European End-of-Waste criteria: on metal scrap like steel and iron; glass and copper scrap. In Italy there are some different national End-of-Waste criteria on SRF, asphalt conglomerates, paper and cardboard. There are no European or national End-of-Waste criteria for recycled/artificial aggregates. End-of-Waste conditions is included in Article 6 of Waste Framework Directive. On the condition use of substance or object will not lead to overall adverse environmental or human health impact: it is not
defined how to proof this. Can, for example, a leaching test or eco toxicity be used?

The Italian chemical test is based on empirical method. This test compares only a few parameters.
The test is considered inappropriate and does not consider the components of the aggregates. This is a problem for aggregates. Toxicity tests is in European biological test and it considered the entire mass of the sample, for that reason it is considered of higher quality than the chemical one.

Conclusions and closing of the Workshop
Romano Ruggeri closes the workshop and is thanking all participants for their valuable contributions to the workshop.

6.2 Landfill Guidance subgroup

Members of the subgroup:

- Rainer Bulitta (Ger) – Referent (Germany)
- Romano Ruggeri (Italy) – Leader Project Team WMCE
- Paul Corrigan (UK)
- Liesbet Rommens (Belgium)
- Pinar Ece (Turkey)
- Danijela Granic (Croatia)
- Franz Waldner (Austria)
- Christiana Gomes (Portugal)
- Elena Foddanu (Italy)
- Luca Paradisi (Italy)
- Andoni Martinez de Guereñu (Spain)

It was agreed in 2019 to revise the “Guidance Book for Landfill Inspection” which was created in 2016. Even though the main focus of the group now is on circular economy, the revision of the handbook was recognized as important. For the revision subgroup 5 (SG 5) was set up.

During the "on-site inspections" of several landfills, the guidance was used for preparation and inspection. It was determined that both the checklists and the content of the chapters need to be optimized for practical use and new topics should be included. The most important tasks were identified as follows:

- The guidance is primarily intended to serve inspectors and to provide appropriate assistance.
- The emphasis shall be on practical issues. Legal sources will be cited where necessary and appropriate.
- Since the LF Directive can be implemented differently in the individual Member States, the examples and best practices should provide appropriate guidance.
- Repetition should be avoided and chapters need to be revised with this in mind.
- Revision of checklists (form and content) for better and faster use during inspection.
- Implementation of chapters e.g. for "stable non-reactive waste", "financial guarantee", "trigger levels/thresholds for groundwater", "final closure and aftercare", "self-inspection".
- Implementation of “best practices” from member states to give an overview.

The chapters were assigned to the team members. "MS Word" files were created for each chapter. Team members worked on the files and uploaded the drafts to Basecamp 3.

Subgroup 5 held six videoconferences, which were supplemented by two core team videoconferences. Due to the Corona pandemic and the resulting low availability of some members, the originally planned schedule could not be met. By the end of 2021, most of the revised chapters were available. In late 2021 and early 2022, the chapters were combined and structured into one document.

Final editing of the document will take until summer 2022. Then the guidance will be submitted to the IMPEL community for comment, amendments will be incorporated, and the document will be finalized. Final approvement by IMPEL and EU- Commission and publishing is expected in late 2022.

6.3 IED & Circular Economy subgroup

Core team of the subgroup:

- Simon Farrugia (Malta – Referent)
- Romano Ruggeri (Italy - Project Leader)
- Jan Teekens (Netherlands)
- Katriina Koivisto (Finland)
- Simon Holbrook (UK)
- Paul Stevens (UK)

Circularity is an essential part of a wider transformation of industry towards climate-neutrality and longterm competitiveness. It can deliver substantial material savings throughout value chains and production processes, generate extra value and unlock economic opportunities. Enabling the implementation of industrial symbiosis is also a key point.

In line with Europe's new growth strategy, which gives back more than it extracts, Europe's industry must play a leading role in the ecological transition. This means reducing its carbon and material footprint and embedding circularity across the economy.

EU chemicals policy and legislation, in particular REACH, encourage a shift to 'safe-by-design chemicals' through the progressive substitution of hazardous substances to better protect citizens and the environment. However, the safety of secondary raw materials can still be compromised, for instance, where banned substances persist in recycled feedstock.

The European Green Deal sets the objective of creating new markets for climate neutral and circular products, such as steel, cement and basic chemicals.

This work should link up with the IED review by the Commission.

The goal is to draft a Guidance for regulators: making the IED permits more circular, to set up an assessment tool and a new "Index of circularity" for IED installations.The results will be

further used to review, update and improve the current guidance on Circular economy with further explanation, examples and tools. The main question addressed by the group is the following:

How IED Installations contribute to circular economy?

- Prevent/reduce waste
- Resource efficiency
- Replace virgin material with EoW and by-products
- Recyclability of products: remove SHVC. How the product can be recycled at the end of life?
- Industrial symbiosis
- Climate change

Key point of interest to address:

- Role of EMS: improve performance
- What to include in the permits?
- Risk assessment to evaluate more circular options (see UK example - Resources and waste strategy for England)
- How to monitor progress towards circular economy in a single IED installation?
- Collect examples of IED installations acting towards circularity
- Collect guidances of MS related to promoting CE in IED permits
- Promotion of industrial symbiosis and keeping materials in the economy (chain approach)
- Stimulation and facilitating of emerging techniques and innovation
- Application of BAT in case of new circular processes/innovations – representatives in Ceramic bref process
- Make full use of the IED requirements to encourage businesses to become more circular

<u>Expected outcome of the Subgroup IED & CE</u>

1. ***Guidance for permit writer and inspectors: how to make IED permits more "circular" and promote compliance.***

The Guidance aims at helping regulators at adjust IED permits to Green Deal: it can indicate what an IED application should contain with reference to circular economy and what regulators have to prescribe to boost circularity. Industrial symbiosis and Climate change are among the criteria to be considered.

The Guidance can also help regulators to include in the "new IED circular permits" provisions to provide self monitoring plan and reports containing pieces of information needed to monitor the circularity of the installations. A link with the circularity index is an option.

The Guidance can include a focus on some specific IED sector, to look deeper into existing studies and experience and come out with best practices (i.e. cement, chemicals, steel, glass sectors). It can also include a focus on the role of inspector to promote compliance and stimulate circularity.

2. Develop a Circular Economy Index for installations

The circular index shouldn't be numerical. It aims to give an overall picture of how much the installation is circular and can be monitored.

Criteria have to be identified, as well as how to use it and the benefit for the businesses.

It can used as a basis of discussion with businesses to include those goals in the EMS policy and monitor them.

3. Amending Annex A of the Guidance Making the Circular Economy work

For the next edition of the MiW-IMPEL Guidance the role of IED in respect to CE will be further elaborated, amending Annex A. This includes:

- identifying further examples of where the IED has successfully delivered upon the circular economy, e.g. fuel swapping/raw material swapping/waste prevention etc. and analysing to what extent provisions in the IED have triggered/supported such innovations;
- review of the relevant provisions of the IED and their role in the circular economy. This review can assess
- any flexibilities that may exist.

In the 2021, further comments and feedback to the initial draft have been provided and the text has been enriched. The drafted text so far is here available:


Microsoft Word Document

6.4 Discard and by-products subgroup

Core team of the subgroup:

- Jan Teekens (Netherlands – Referent)
- Romano Ruggeri (Italy - Project Leader
- Luca Paradisi (Italy)
- Charlotte Goletz (Germany)
- Arjen Snijder (Netherlands)

Discard and circular economy business models

According to article 3.1 of the WFD waste is defined as any substance or object which the holder discards or intends or is required to discard. This provision remains unchanged under the revised WFD 2018.

Increasingly, in circular business models reuse, repair, remanufacturing and refurbishment extend the lifetime of products which would otherwise have been discarded. These activities in fact prevent that products become waste: products are not discarded and therefore do not become waste.

According to the waste hierarchy (article 4 of the WFD) reuse, repair and other waste prevention measures are preferred over preparation for reuse, recycling and other waste recovery operations.

In these circular business cases the practical question may arise whether indeed a substance or object is discarded or not. Recital 61 of WFD 2018 stresses the need for a common understanding and application in practice of the term 'discard', especially taking into account circular business models in which, for instance, a substance or object is transferred from one holder to another holder without the intention to discard. Earlier a questionnaire was circulated which aimed to collect information about how IMPEL members interpret the term discard in these circular business cases.

In addition to cases of reuse, repair etc. other circular business cases can occur. In these cases materials become available when products are used or consumed. These materials may then be used as a product (for another use) or as a raw material for the production of other, new products. Again the question can arise whether such materials are discarded or not. An example are coffee grounds from cafés which are collected and then used to grow mushrooms. Another example are orange peels from juicers at cafés which are collected and then used for the production of flavouring agents or animal feed. In a non-binding legal opinion concerning this case, issued by the Dutch government, it was declared that the peels were not discarded but further used. Also for such cases the abovementioned questionnaire aimed to collect information about how IMPEL members interpret the term discard.

In the questionnaire respondents were asked if they know of cases of new circular business models where the issue of discarding of waste was raised, what they consider to be critical aspects in these cases, whether there are any tools available to support them in assessing whether waste is discarded or not and what aspects or topics the MIW-IMPEL-guidance should cover.

Critical points:

- Distinction between reuse and repair, refurbishment or remanufacturing
- Distinction between reuse and preparing for reuse; what repairs are still accepted under reuse?

- Meaning of 'extended' use, distinction with reuse (reuse: same purpose; extended use often not the same purpose); what requirements should extended use meet (nl: certain, lawful and high quality use)
- Distinction between reuse/extended use and by-product
- Reuse: when is a material suitable for direct reuse for the original intended purpose? What conditions or criteria has the product to fulfil? The same characteristics of the virgin product?
- The need of certification after the step of repairing, refurbishing or remanufacturing in order to establish that the product may be considered as new good,
- The need of a system to grant a guarantee for the repaired product (especially for eee)
- Authorising a preparation for reuse activity: can this be done through a simplified procedure? Is the final product a sort of an eow or something different?
- Intention to discard; the intention of the holder of the material (is it a burden or not?), example used clothes
- Temporal storage.

There are few tools or guidances on this topic in the MS.

Byproducts

According to article 5 of the WFD production residues are not considered as waste but as by-products if these residues meet certain conditions. A production residue is a substance or object resulting from a production process (industry, mining, agriculture, forestry etc.) which the operator not primarily aims to produce. These residues may be used as secondary raw material in another production process. Examples: Tomato stems and leaves used for the production of solid board, nylon spill used for the production of yarn, calcium sulphate and synthetic fluorite produced in a chemical plant producing aluminium fluoride and cryolite which are used in cement plants. Or they may be used as finished material for instance as animal bedding or as construction material.

Article 5 of the revised WFD (2018) now states that Member States shall take appropriate measures to ensure that a production residue is considered not to be waste, but to be a by-product if the conditions in that article are met. Recital 16 of directive 2018/851 amending the WFD links this obligation to facilitate the recognition as a by-product to the promotion of sustainable use of resources and industrial symbiosis. Appropriate measures may include legislation (for instance permitting system for by-products, information obligations for operators), instructions for inspections, guidance, web-tools, etc.

The obligation to take appropriate measures implies that a regulator in a Member State (a national, regional or local environmental authority in charge of permitting and or inspection) may need to assess on a case-by-case basis the by-product status of production residues in case no European or MS criteria exist. Depending on the MS legislation this could take the form of a

prior authorisation or a verification afterwards as part of inspections (compliance assurance activities).

In the above mentioned questionnaire respondents were asked how their MS has transposed article 5, what appropriate measures it has taken, whether national criteria exist, how a case-by-case assessment takes place and how the use of by-products is encouraged under IED and in relation to industrial symbiosis.

Critical points:

- What is a production residue?
- Further use of the substance or object is certain >
- What to do with by-products which are exported, how to assess certainty about the use over there?
- What to do with prior or intermediate storage before selling and use?
- What to do when the by-product is forwarded by an intermediary and the "final user" is not identified?;
- Intermediate storage only in authorised storage facility for products (no waste)?
- The substance or object can be used directly without any further processing other than normal industrial practice >
- What does other than normal industrial practice mean?
- What does 'directly' mean?
- How to determine if prior processing is a waste recovery operation or not?
- The substance or object is produced as an integral part of a production process >
- What does an integral part of a production process mean?
- What is the practical meaning of this condition in connection to condition b and the fact that articles 5 relates to materials which are not primarily produced within a production process?
- Further use is lawful, i.e. the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts >
- What approach is followed if no product, environmental or health protection requirements are available?;
- Standards for environmental or health protection requirements for non-hazardous substances are often not existent;
- Information of (possible) contaminants are often missing in (national) standards or other technical papers;

- How does REACH relates to this requirement? A REACH certificate may be a precondition for a residue being regarded as by-product. But from a REACH certificate you cannot conclude, that condition d is fulfilled. However, this is what operators tend to think.
- REACH registration is a big obstacle to obtain by-product status (and no recycling privilege is applicable). High cost of efforts to obtain by-product status which are economically not feasible.
- Very limited experience/policies with regard to by-products and IED or industrial symbiosis

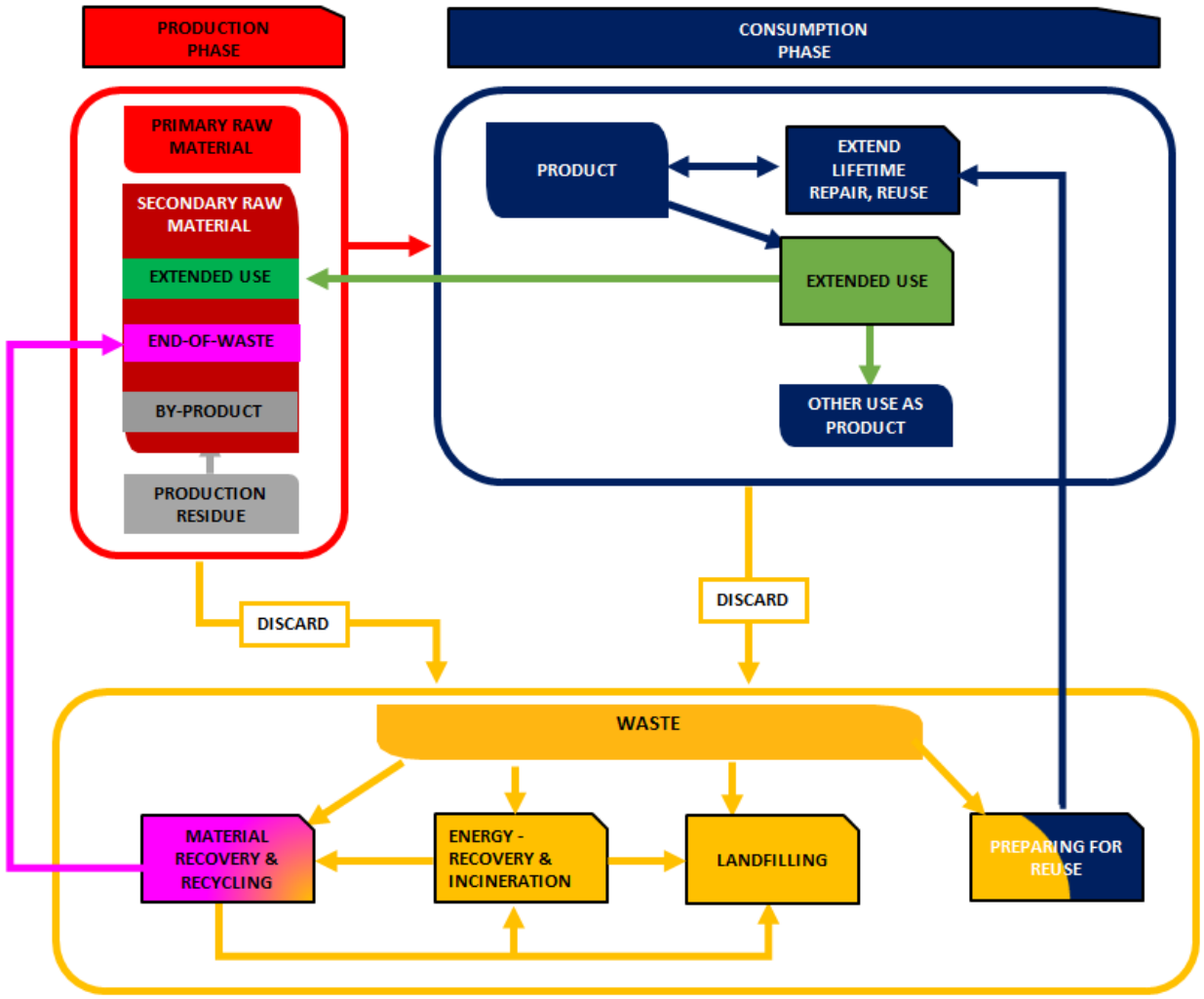
The following document is the basis to steer the work of the subgroup:

Microsoft Word Document

The subgroup aims to update and complement the MiW guidance on the two themes outlined above. See for more details the document referred to above. In 2021 work was done via the three agreed work strands. The table here below summarises the main activities under the three work stands.

Workstrand 1 Drafting guidance on new circular business models
Drafting guidance
Circulate draft and collect comments and further input
Edit according to comments
Workstrand 2A guidance on by-products
Drafting guidance
Circulate draft and collect comments and further input
Edit according to comments
Workstrand 2B Drafting practical tool for by-products
Drafting tool
Circulate draft and collect comments and further input
Edit according to comments

Because of Covid the group could not meet physically which caused considerable delay. However some further preparations have been carried out and this year, 2022, the group can proceed on the basis of the initial work done in 2021. The main focus in 2021 was on identifying the parts of the guidance which need to be revised and assessing the material already (e.g answers to the questionnaire) available. Also discussions were held to produce a new figure for the guidance outlining the planned enlarged scope of the guidance resulting from including the theme of new circular business models. See the following figure:



6.5 REACH & CE subgroup

Core team of the subgroup:

- Topi Turunen (Referent – Finland)
- Luca Paradisi (Italy)
- Tom Nickson (UK)
- Helle Heidtmann Andersen (Denmark)
- Jan Potůček (Czech Rep)

The aim of this subgroup is to provide guidance for the application of REACH Regulation to by-products and EoW products. Regulators as well as operators have to tackle difficult situations where waste-based materials need to be registered and their safety needs to be ensured.

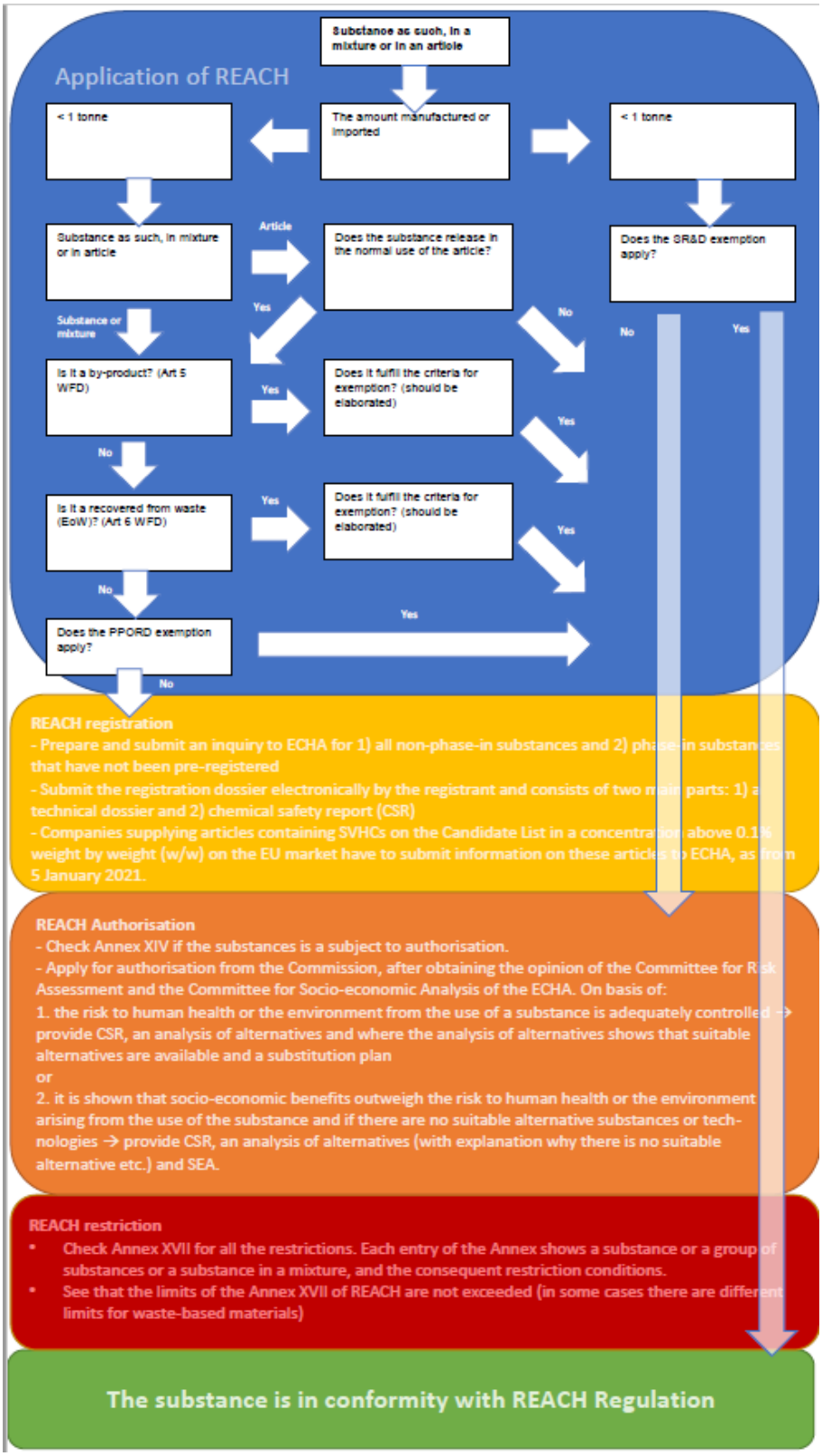
The goal is to provide a stand-alone document on guidance for REACH and WFD, starting with the text in the existing guidance document on Circular economy.

The core team in 2021 kept on revising the draft of the document, discussing when and how REACH comes into play when assessing by-product or end-of-waste status in practice and how operators and regulators make sure that REACH is applied at the right moment in the right way in practice.

The core team benefit from the discussion and presentations given during the training-workshop “End-of-waste and By-products: compliance with REACH Regulation”. Relevant studies and documents have been gathered and reviewed like the report ‘Recovered Substances by the Swedish Chemical Agency (https://www.kemi.se/global/tillsyns-pm/2016/enforcemnet-13-16-recovered-substances.pdf), ECHA Guidances ecc.

The core team has involved a wider team of work to collect some more case examples where REACH played a role in the assessment of by-product or end-of-waste status and how do exceptions work (By-product exemption, Recovery exemption, SR&D exemption, PPRORD exemption).

Currently the outline of the guidance document is ready and a visual tool/flow chart on REACH requirements has been drafted (step-by-step process for REACH registration for secondary raw materials):



More concrete examples and good practices are expected as well as more comments on the text and its possible gaps.

A discussion on how to deal with hazardous/harmful substances in secondary materials is in place:

- How does the precautionary principle play a role here?
- What role can product legislation play?
- Role of Article 9-1(i) and 9-2 in WFD 2018. These articles require MS to ensure that any supplier of an article provides the information on substances to ECHA. ECHA shall establish a database for these data and provide access to waste treatment operators.

6.6 EoW DATABASE

Core team of the subgroup:

- Luca Paradisi (Italy - referent)
- Romano Ruggeri (Italy - Project Leader

IMPEL aims to set up an international voluntary database for end-of-waste (case-by-case) decisions.

In the MiW-IMPEL Guidance (Tool1) an outline is given of the goals and possible structure of this database.

The database can help permit writers, inspectors and operators to find information on end-of waste (case-by-case) decisions (permits, legal opinions) or end-of-waste operator self-assessments.

The suggested database is one of the possible tools to implement the following provisions of the WFD 2018:

- Article 6: “Member States may make information about case-by-case decisions and about the results of verification by competent authorities publicly available by electronic means”.
- Article 38: “The Commission will organize a regular exchange of information and the exchange of best practices among Member States, including, where appropriate, with regional and local authorities, on the practical application and compliance with the requirements of this Directive, including: (d) the national by-product and end-of-waste criteria, referred to in Article 5, Paragraph 3, and in Article 6, Paragraphs 3 and 4, provided by an electronic register at Union level that will establish the Commission”.

Frequent use of information from the database could help create uniformity across Member States as certain technical and environmental standards listed in the database will be more widely used, making also end-of-waste movements across the borders easier.

At the same time, such a database can help operators to find information such as standards and provisions set in other Member States for a particular secondary raw material they would like

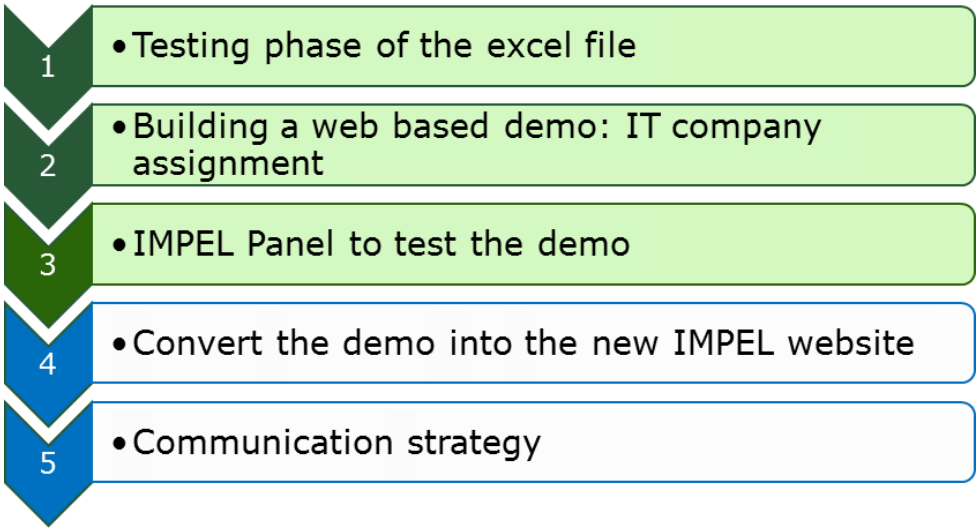
to produce or use; they may use the documentation from the database in self-assessment or permitting procedures related to end-of-waste.

Public access is considered an added value with respect to transparency, availability of environmental data and building trust on new products derived from recycling of waste. Eco-innovative products are likely not to be known by many actors and this can create difficulties to customers as well as to public authorities.

The lack of information and uniformity is an obstacle to innovation and detrimental to exchange of best practices, particularly in those situations where no market is present at all and there are no technical standards to refer to.

The database may become a strategic tool to promote the exchange of information and to guarantee uniformity of behaviour for the proper circulation of end-of-waste new products.

The selection process of the IT company in charge to convert the structure into a web based tool (in the IMPEL website) has been concluded in 2021. The contract has been signed in 2021 with ALVA Design. A demo version has been delivered and has been presented to RG Environment and to the IMPEL Network in a plenary meeting and in a dedicated meeting with DG ENV in January 2022. The first three steps of the process has been completed in 2021:

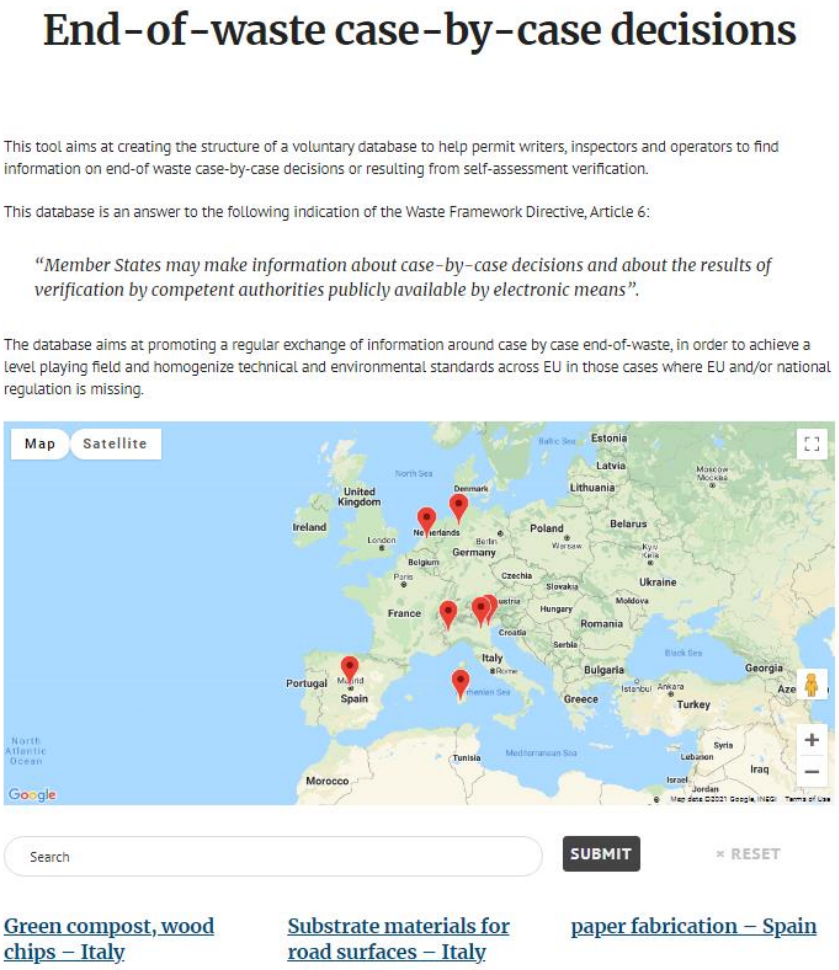


The conversion of the demo version of the EoW database into the IMPEL website has been suspended to finalize it once the new IMPEL website will be in place.

The demo version has been tested by a panel of people: it allows to use different filtering options as the waste EWC, the kind of product, the source of input waste ecc. Real examples have been included in the database allowing to test how to upload a case and how to look for information.

DG ENV expressed interest in the development of the End of Waste case-by-case Database and can support it by different communication tools. It was suggested by DG ENV to widen the scope of the Database to include End-of-Waste National Decrees, as looking for data in the TRIX Database is not immediate and gathering all pieces of information related to End-of-Waste in a stand-alone tool can be helpful.

It was also mentioned the interest to build a similar Database on By-products. IMPEL pointed out the need of a strong communication campaign to push Member States and authorities to use the Database. It will be public available.



6.7 Waste Incineration BREF

Core team of the subgroup:

- Fabio Colonna (Italy - referent)
- Romano Ruggeri (Italy - Project Leader)
- Emma Sunding (Sweden)
- Timo Alander (Finland)
- Ben Freeman (UK)
- Steven Castles (UK)

This group will deal with the published BREF and BAT Conclusions on Waste Incineration. It will gather views from permitting and inspection authorities in Member States and work to develop solutions to promote a level regulatory playing field across Europe. A particular focus of the work will be on self-monitoring requirements. Site visits and joint inspections will be carried out to gain a better understanding of BATc related problems. The work will be carried out jointly with the IMPEL project 'IED Implementation' and a joint working group will be set up to take this forward.

Regardless of whether the BAT-AELs change or not, all environmental permits of existing waste incineration installations in Europe need to be reviewed during the implementation period of four years. This may cause changes in the plant-specific ELVs (within the limits defined by the BAT-AELs).

New installations must comply with the new requirements immediately without any implementation period. Compared with the existing standards, the new BATc deliver a reinforced level of protection, with particular emphasis on toxic and persistent organic pollutants such as mercury and polychlorinated dioxins and furans.

A kick-off meeting has been held on the 29th of October 2021, attended by the following people:

NAME	MEMBER STATE	EMAIL	ROLE
Romano Ruggeri	Italy	rruggeri@impel.eu	Subgroup Leader
Fabio Colonna	Italy	f.colonna@arpalombardia.it	Subgroup Leader
Emma Sunding	Sweden	Emma.Sundling@Naturvardsverket.se	Active
Timo Alander	Finland	timo.alander@ely-keskus.fi	Active
Ben Freeman	UK	ben.freeman@environment-agency.gov.uk	Active
Gabriella Grima	Malta	gabriella.grima@era.org.mt	Passive
Steven Castles	UK (Ireland)	Steven.Castles@daera-ni.gov.uk	Active
Inesa Baños	Spain		Passive
Albert Avellaneda	Spain	albert.avellaneda@gencat.cat	Passive

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Kristel Lopsik	Estonia	Kristel.Lopsik@Envir.ee	
Nick Sauer	UK	nick.sauer@environment-agency.gov.uk	
Halla Einarsdóttir	Iceland (?)	hallae@ust.is	

The following presentation has been given to trigger the discussion:

Microsoft PowerPoint Presentation

A core team has been set-up with the goal to prepare a survey in 2022 and arrange joint inspections in waste incineration plants.

Annex 1: Terms of Reference

ToR Reference No.: Click or tap here to enter text.	Author(s): Romano Ruggeri, Jan Teekens, Luca Paradisi, Gabrielle Kuhn
Version: 1.0	Date: 30/10/2020
TERMS OF REFERENCE FOR WORK UNDER THE AUSPICES OF IMPEL	

1. Work type and title

1.1 Identify which Expert Team this needs to go to for initial consideration	
Industry and air	☐
Waste and TFS	☒
Water and land	☐
Nature protection	☐
Cross-cutting tools and approaches	☐
1.2 Type of work you need funding for	
Exchange visits	☒
Peer reviews (e.g. IRI)	☐
Conference	☒
Development of tools/guidance	☒
Comparison studies	☒
Assessing legislation (checklist)	☒
Other, (please describe):	☒
IT Tools (End of waste Database)	
1.3 Full name of work (enough to fully describe what the work area is)	

Waste management based on the “circular economy” principles and the "waste hierarchy": create a level playing field and common understanding in permitting and inspection processes.

1.4 Abbreviated name of work or project

Waste Management and Circular Economy (WMCE).

2. Outline business case (why this piece of work?)

2.1 Name the legislative driver(s) where they exist (name the Directive, Regulation, etc.)

- EU new Circular Economy Action Plan 11/03/2020
- EU Endorsed work programme 2020-2022 to improve environmental compliance and governance
- Waste Framework Directive 2008/98/EC as amended by Directive 2018/851/EC.
- European Parliament resolution of 13 September 2018 on implementation of the circular economy package: options to address the interface between chemical, product and waste legislation (2018/2589(RSP).
- Commission Staff Working Document “Sustainable Products in a Circular Economy - Towards an EU Product Policy Framework contributing to the Circular Economy” {SWD(2019) 92 final}.
- Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: “The role of waste-to-energy in the circular economy”.
- Landfill Directive 1999/31/EC as amended by Directive 2018/850/EU.
- Industrial Emission Directive 2010/75/EU.

2.2 Link to IMPEL MASP priority work areas

1. Assist members to implement new legislation. ☒
2. Build capacity in member organisations through the IMPEL Review Initiatives. ☐
3. Work on ‘problem areas’ of implementation identified by IMPEL and the European Commission. ☒
4. Other, (please specify): Click or tap here to enter text. ☐

2.3 Why is this work needed? (background, motivations, aims, etc.)

The work streams set out in this ToR specifically address the actions of the EU environmental policy, as mainly outlined in the New Circular Economy Action Plan (CEAP), in the programme of the Environmental Compliance and Governance Forum (2020-22) as well as in the amended Waste Framework Directive (Directive (EU) 2018/851). The adoption of guidance documents for the ad hoc application of the harmonised conditions established at Union level for waste management is needed as well as initiatives to improve cooperation with Member States for better implementation of EU waste legislation.

The new CEAP aims at accelerating the transformational change required by the European Green Deal, while building on circular economy actions implemented since 2015. The plan presents a set of interrelated initiatives to establish a strong and coherent product policy framework that will make sustainable products, services and business models the norm and transform consumption patterns so that no waste is produced in the first place.

The plan indicates a list of key actions, some of which constitute the working area of identified subgroups in this ToR.

One key point of the Plan is the development of further EU-wide end-of-waste criteria for certain waste streams based on monitoring Member States' application of the revised **rules on end-of-waste status and by-products**, and support cross-border initiatives for cooperation to harmonise national end-of-waste and by-product criteria. The recast of the WFD clarify rules on **by-products** and those to enable recycled materials to be reclassified as non-waste whenever they meet a set of general conditions (**end of waste**). Uncertainties about how materials can **cease to be** waste are a main issue of concern. This ToR specifically addresses these topics.

Another key point is about, including the integration of **circular economy practices in the Review of the IED Directive in upcoming BREFs**, which EU Member States have to reflect when issuing permits for industrial installations, thus promoting innovation in industrial processes and helping to reduce waste generation, boost recycling and reduce resource use. This project aims to look at how the IED and BAT in combination with Eco-Innovations can be better used to achieve Circular Economy in IED Installations.

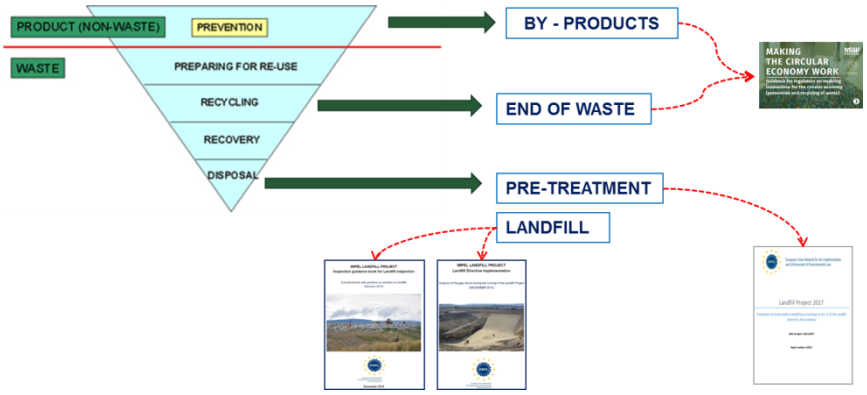
The programme of the Environmental Compliance and Governance Forum (2020-22) promotes inter-actions within and between the expert teams and projects of the IMPEL network at sectoral/thematic level, in particular with reference to Circular Economy (focal topic of the "Green Deal), e.g. through integration of this topic into inspection-and surveillance-related IMPEL-projects. This ToR specifically addresses the above mentioned action, taking also in consideration Action No. 9: Strategies for Verification of **Self-Monitoring** and Reporting, within the subgroups related to BAT analysis on waste treatment and waste incineration.

The "European Parliament resolution of 13 September 2018 on implementation of the circular economy package" addresses the **interface between chemical, product and waste legislation**. **One** of the goal of this TOR is to better understand the interface between waste and product legislation and giving practical guidance on how to apply **REACH** regulation to secondary raw material.

The use of BAT for waste treatment is considered one example to boost the application of the waste hierarchy. **BAT Conclusions on waste treatment and waste incineration** have been recently issued and their relevant application in IED permits for waste treatment installation is a challenge for regulators. Waste-to-energy processes can play a role in the transition to a circular economy. The need for practical guidance for regulators, permit writers and inspectors is widely felt.

The IMPEL "Waste Management and Circular Economy" project **is moving through the waste**

hierarchy steps, in order to achieve a common understanding of the key points of the Waste Framework Directive and homogenize behaviours across MS; the project has already produced guidance documents related to the waste hierarchy steps, as shown in the following figure:



Previous studies, including IMPEL's own work on practical challenges in the implementation of EU environmental law and the European Commission's project on implementation support for the IED, show that there are several outstanding areas in which regulatory authorities in Member States would benefit from technical support in helping to overcome implementation gaps.

2.4 Desired outcome of the work (what do you want to achieve? What will be better / done differently as a result of this project?)

The main outcomes of the project can be summarized as follows:

- Promote Eco-innovation and Circular Economy.
- Foster compliance with EU environmental law on Waste management hierarchy.
- Provide training to environmental inspectors and permit writers on waste management.
- Homogenise implementation of waste treatment and waste incineration BAT Conclusions

This will be achieved by inspectors and permit writer coming together to learn from each other, identifying good practices, developing guidance to promote those practices and disseminating technical know how through training and professional development initiatives. Supporting regulatory authorities in this way should result in stronger compliance assurance and a more level regulatory playing-field.

The Guidance "***'Making the Circular Economy work'***, launched in Rome in March 2019, is a living document that will be further revised with the results of the subgroups running in 2021-2024.

Specific outcomes of the project over the next four years will be:

- A better understanding of Value-Retention Processes (namely remanufacturing, refurbishment, repair and direct reuse) as complementary to recycling at the step of prevention of waste hierarchy (primary objective) to enable faster achievement of circular economy.
- A better understanding of Industrial symbiosis practices
- Guidances to help regulatory practitioners in applying end-of-waste and by-product criteria

looking also at specific relevant waste streams.

- Identifying the instruments within the IED that can contribute to the overall objective of achieving a circular economy in Europe and sharing good practices on how they are implemented.
- Setting up a practical tool to help operators and the competent authorities to check the more appropriate way to evaluate the compliance of EoW/by-products with REACH Regulation.
- Developing and maintaining End of waste database (case by case and national criteria set up by MS) to share information on technical and environmental criteria of secondary raw material
- Supporting regulators in the outline of waste management plans and waste prevention plans and applying EPR schemes.
- Practical solutions for the implementation of BAT Conclusions in waste incineration and waste management to help to achieve a more homogeneous level playing field across Europe.
- More robust verification of self-monitoring and reporting from duty holders by sharing and identifying good practices amongst regulatory organisations to improve the quality and reliability of self-monitoring data.
- A better understanding of preatreatment of waste obligation.

2.5 Does this project link to any previous or current IMPEL projects? (state which projects and how they are related)

- Impel Landfill project: Follow up.
- IED Implementation Project: The project will run jointly with the "IED Implementation" Project on the topic of IED&CE and Waste incineration.
- IMPEL TFS NCP Best Practice meetings: link with waste/products shipments across EU and out of EU.
- KIC Project: Training programme.

3. Structure of the proposed activity

3.1 Describe the activities of the proposal (what are you going to do and how?)

The project will be carried out over four years 2021 to 2024 and will be overseen by a core team that will be responsible for ensuring that the project outcomes are met. Priorities and timetable can change according to the implementation challenges voiced by IMPEL's member organisations and a willingness of those member to contribute to working groups.
The work of this project will be structured into three main working areas within which rolling working Subgroups will be set up. The structure is the following:

<u>Circular economy subgroups</u>

1. Value-Retention circular processes (Extended use, EoW & By-products, tools & study of main fluxes (C&D, plastic ecc), industrial symbiosis, R-ladder process)
2. REACH & Circular economy
3. IED & Circular economy
4. End-of-waste and By-products Database

Waste management subgroups

5. Waste to energy and implementation of Waste incineration BAT Conclusions
6. Implementation of Waste treatment BAT Conclusions
7. Pretreatment of waste and landfill

Cross cutting subgroups

8. Training activities
9. Waste Management tools: Waste management plans and EPR

Some of the identified working groups are currently running in 2020 and due to finish their activity in 2021. Others have been identified to start up in 2021. Some will need to be in place over the duration of the project 2021-2024. Here a summary of the content of the subgroups is presented:

Value-Retention circular processes (Extended use, EoW & By-products, tools & study of main fluxes (C&D, plastic ecc), industrial symbiosis, R-ladder process)

I. A first work-strand is on **by-products**. The aim is to provide regulators with the tools to assess about the by-product status, the connection with products legislation and help them to build related inspections. Replicable practices of industrial symbiosis will be gathered and analysed. Different practices and approaches in countries in Europe on by-priducts assessment will be presented. Minimum content of by-product criteria will be outlined.

II. A second strand is related to the "**extended use of products**" with reference to the R-ladder of circular strategies. It aims at facilitating a common understanding and application in practice of the definition of 'waste', including the term 'discard', and should take into account circular business models in which, for instance, a substance or object is transferred from one holder to another holder without the intention to discard.

III. A third strand is about the **study of main waste fluxes ending in EoW and by-products** (C&D, waste oil, plastic, ecc); it implies studying more in depth how to assess environmental (Waste comparator, LCA, leaching test, ecotest) and health impact (sanitary/epidemiological approach - microbiological approach). Furthermore, existing technical and environmental standard in national criteria will be compared for main EoW and by-products fluxes to boost their harmonisation.

REACH & Circular economy

For the next edition of the 'Making the Circular Economy work' Guidance the application of REACH in relation to by-products and end-of-waste will be looked at in more detail (resulting in additional guidance/tools etc.). This includes the following main action:

- Clarify when and how REACH comes into play when assessing by-product or end-of-waste status in practice. How can operators and regulators make sure that REACH is applied at the right moment in the right way in practice (step by step tool).
- Collect and analyse some more case examples where REACH played a role in the assessment of by-product or end-of-waste status.

IED & Circular economy

This group will look at how the application of different aspects of the IED can help to promote a more circular economy. The work will be carried out jointly with the IMPEL project 'IED Implementation' and a joint working group has already been set up to take this forward.
The work will involve three main areas:

i. Guidance for permit writer and inspectors on how to make IED permits more 'circular' and to promote compliance.

ii. Develop a Circular Economy Index for installations

iii. Amending Annex A of the Guidance 'Making the Circular Economy work'

End-of-waste and By-product Database

Beginning of 2021 a first demo of the voluntary End-of-waste database as outlined in the *'Making the Circular Economy work'* Guidance will be issued.

The database can help permit writers, inspectors and operators to find information on end-of waste (case-by-case) decisions (permits, legal opinions) or end-of-waste operator self-assessments and EoW national criteria. The suggested database is one of the possible tools to implement the following provisions of the WFD 2018: *Article 6: "Member States may make information about case-by-case ¬decisions and about the results of verification by competent authorities publicly available by electronic means*".

The database may become a strategic tool to promote the exchange of information and to guarantee uniformity of behaviour for the proper circulation of end-of-waste new products.

During the period 2021-2024 the Database will be fully implemented and a communication strategy will be in place to promote its use. The opportunity for a new module on by-products will be investigated, depending on the initial success of the first.

Waste to energy and implementation of Waste incineration BAT Conclusions

Initially, this group will deal with the published BREF and BAT Conclusions on Waste Incineration. A working group will be set up to examine the implementation issues related to each of the 37 individual BAT Conclusions for the Waste Incineration sector. The group will gather views from permitting and inspection authorities in Member States and work to develop solutions to promote a level regulatory playing field across Europe. A particular focus of the work will be on self-monitoring requirements. Site visits and joint inspections will be carried out to gain a better understanding of BATc related problems. The work will be carried out jointly with the IMPEL project 'IED Implementation' and a joint working group will be set up to take this forward.

Implementation of Waste treatment BAT Conclusions

This group will deal with BAT Conclusions on Waste Treatment. A working group will be set up to examine the implementation issues related to each of the individual BAT Conclusions for the Waste Treatment sector sector. The group will gather views from permitting and inspection authorities in Member States and work to develop solutions to promote a level regulatory playing field across Europe. A particular focus of the work will be on self-monitoring requirements. The problem of odours in in waste management facilities will be tackled.

Pretreatment of waste and landfill

The aim of tis work-strand is the update of the Final Report 2017 on Pretreatment of waste (municipal and industrial) before landfilling to include good practices of pre-treatment of the waste before landfilling. The requirement to pre-treat waste before landfilling are sometimes disregarded in MS, as pointed out by the results of the Landfill project in 2017. The Guidance on Landfill Inspection will be revised if the case, once it will be used during training or ordinary activities and a feedback is received.

Training activities

A training package in the field of waste regulation and relevant aspects on Circular Economy , drafted in 2020 will be carried out in the 2021-2024 period. Possible interactions have been envisaged with external network/organizations like ECHA Forum and Norway EEA Grant. The aim is to share knowledge and build skills on crucial aspects of waste management and Circular Economy,

Value-Retention circular processes, End of Waste and By-products, connection among waste, REACH and shipment of waste inspections, landfill inspection and pre-treatment of waste.
A detailed table of training contents (Modules and learning objects) will be drafted as well as a communication strategy and tools to promote training programme
The training activities will be carried out by means of frontal lessons (if the Covid restrictions will be lifted) and joint inspections (Experience with preparation, execution, reporting steps of the inspection)- The possibility to execute training programmes under EU or national programmes, e.g. a Peer to Peer EU programme will be explored.

Waste Management tools: Waste management plans and EPR
Waste management plan, Waste prevention programmes Extended producer responsibility are key elements of the revised Waste Framework Directive to ensure circular economy goals will be complied. The project group will look at the new requirements set in the Directive and in the New Circular Economy Action Plan to encourage sharing of information and good practices across MS.

3.2 Describe the products of the proposal (what are you going to produce in terms of output / outcome?)

The working groups will produce a range of products that will be disseminated through IMPEL's network of members to support them in achieving better implementation of the Waste framework Directive in their countries and to help develop circular economy principles. The products from each of the working groups will include:

- Revision of the 'Making the Circular Economy work' to include:
    - Value-Retention circular processes (R-Ladder approach)
    - By-product tools for regulators
    - By-product more examples and industrial symbiosis best practices
    - REACH & CE conclusions and step-by-step process for REACH compliance of secondary raw material
- Factsheet on: how to make IED permits more circular, Circular index structure
- Report on end-of-waste/by-products criteria comparison on main waste fluxes across MS
- End-of-waste database operational phase
- Factsheet on Waste Incineration BAT Conclusion implementation
- Factsheet on Waste Incineration BAT Conclusion self-monitoring requirements
- Inspection checklist on waste incineration installations
- Factsheet on Waste Treatment BAT Conclusion implementation
- Factsheet on Waste Treatment BAT Conclusion self-monitoring requirements
- Implementation of a training package programme
- Compilation of examples of good regulatory practice across member countries on EPR and waste plans

A project report that brings together all the outputs from the working groups and the results of project meetings, webinars and workshops will be produced each year.

A final project report compiling all the outputs from the 4-year project will be produced in 2024.

3.3 Describe the milestones of this proposal (how will you know if you are on track to

complete the work on time?)

The working groups will carry out their detailed work predominantly using online meeting tools. Each group is expected to conduct periodic catch-up video-conferences along the year of the project.

In addition, every year there will be two physical project meetings and one workshop focused on one of the topics of the project to track the progress of each of the working groups, share information on their outputs, seek feedback and peer review, and discuss and agree new areas of work. Training sessions will be performed back to back with the project meetings.

Each year the project will produce two progress reports and one annual report to track and document overall progress and to support decision making on the management of the project. Status reports will be presented to the Waste & TFS Expert Team who will take decisions on the direction of the project.

The detailed arrangement of 2021 and the plan for the start of the subgroup is here reported:

2021

Running subgroups:

- Value-Retention circular processes
- REACH & Circular economy
- IED & Circular economy
- Training activities
- End-of-waste Database: test phase
- Waste incineration BAT Conclusions (set up of the working group)

Meetings:

- 1 plenary videocall (May 2021)
- 1 Joint inspections REACH & waste (if accepted by ECHA Forum – June 2021)
- 1 Training session back to back with a project meeting (September 2021)
- 1 Training session (if requested by Norway EEA Grant) back to back with a project meeting (November 2021)
- Periodical videocalls

2022

Running subgroups:

- Value-Retention circular processes: study of EoW/By-product main waste fluxes.
- REACH & Circular economy
- IED & Circular economy

- Waste incineration BAT Conclusions: workshop and report
- Training activities
- End-of-waste Database: operational phase
- Waste treatment BAT Conclusions: kick off

2023

Running subgroups:

- Value-Retention circular processes: study of EoW/By-product main waste fluxes.
- Waste incineration BAT Conclusions: checklist and self monitoring requirements
- Training activities
- End-of-waste Database; by-product section
- Waste treatment BAT Conclusions: report
- Waste pretreatment Guidance: kick off

2024

Running subgroups:

- Value-Retention circular processes: Recovery of problematic waste.
- Training activities
- End-of-waste, By-products Database; maintanance
- Waste treatment BAT Conclusions: checklist and self monitoring requirements
- Waste pretreatment Guidance: revised Guidance
- Waste Management tools: Waste management plans and EPR kick off

In case of doubts or questions please contact the IMPEL Secretariat.

Draft and final versions need to be sent to the IMPEL Secretariat ***in Word format, not in PDF.***

Thank you.