



This project is co-funded by
the European Union and the Republic of Turkey.

Technical Assistance for Assessment of Turkey's Potential on Transition to Circular Economy

EuropeAid/140562/IH/SER/TR

Building a market of secondary raw material: End-of-waste and By-products in the EU and Italian legislation

Romano Ruggeri - Sardinian Regional Environmental Protection Agency (ITALY)

Activity 1.2.1. Circular Economy Training
11th May - Antalya, Türkiye

AGENDA

1. Introduction to circular innovations & secondary raw material
2. End-of waste
3. By-products

1

CIRCULAR INNOVATIONS & SECONDARY RAW MATERIALS

CIRCULAR INNOVATIONS

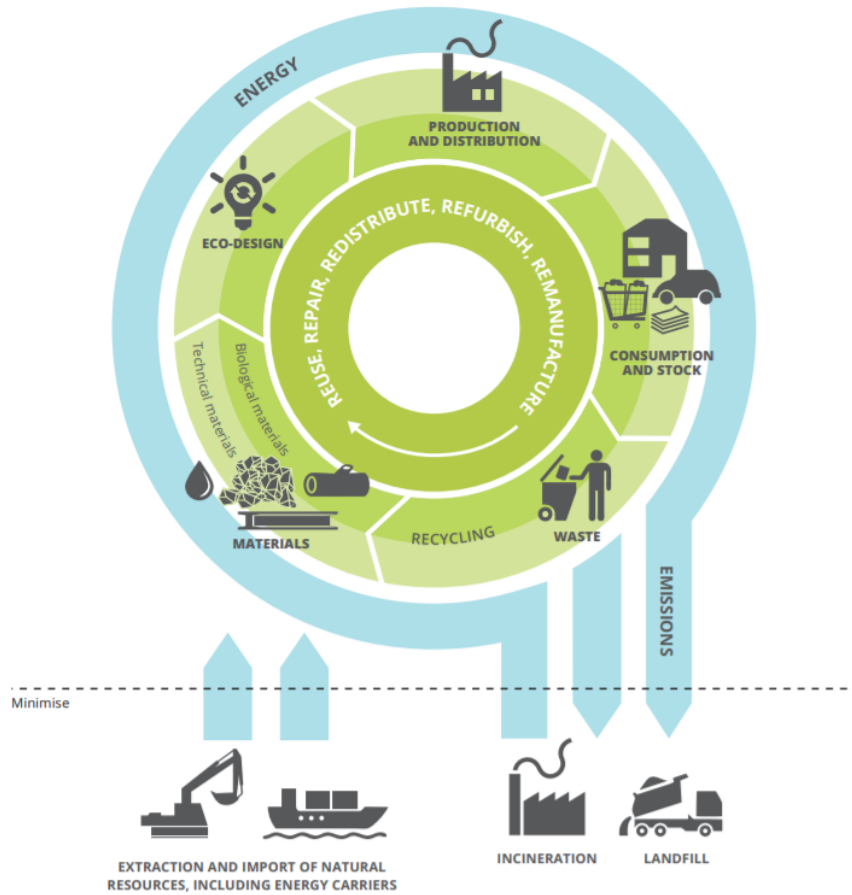


A crucial element in the **transition to the Circular Economy** are the innovations at production and recycling facilities that aim at resource efficiency, the prevention of waste and the use of production residues or materials recovered from waste as **secondary raw materials**.

A key condition for making these circular innovations work is to better connect policy, law and regulation on the ground.

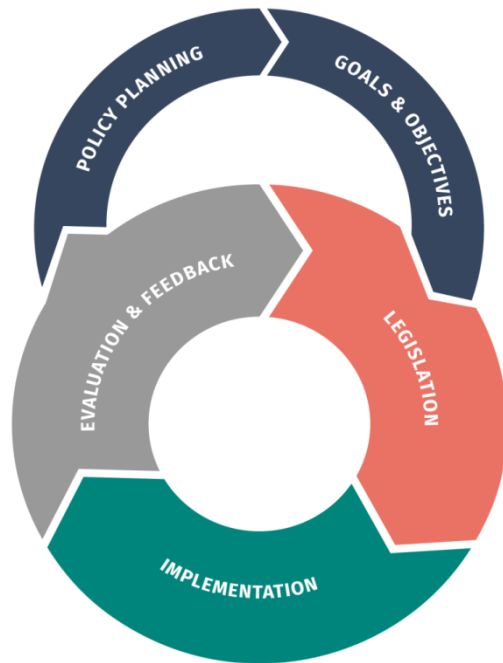
Secondary raw materials: Materials that can be used in a manufacturing process instead of or alongside virgin raw materials, e.g. by-products, end-of-waste.

Technical Assistance for Assessment of Turkey's Potential on Transition to Circular Economy



CIRCULAR INNOVATIONS

CONNECT POLICY, LAW AND REGULATION ON THE GROUND

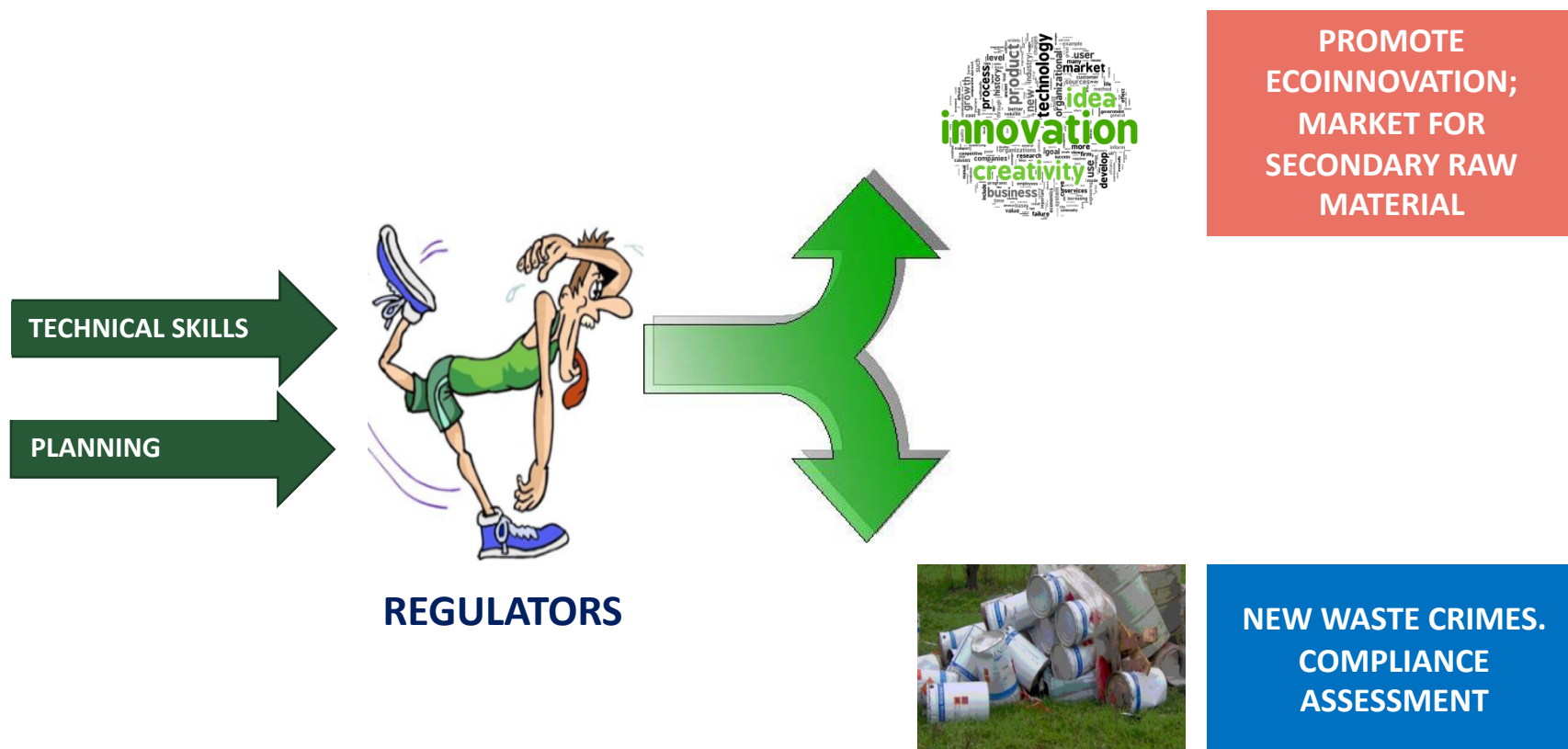


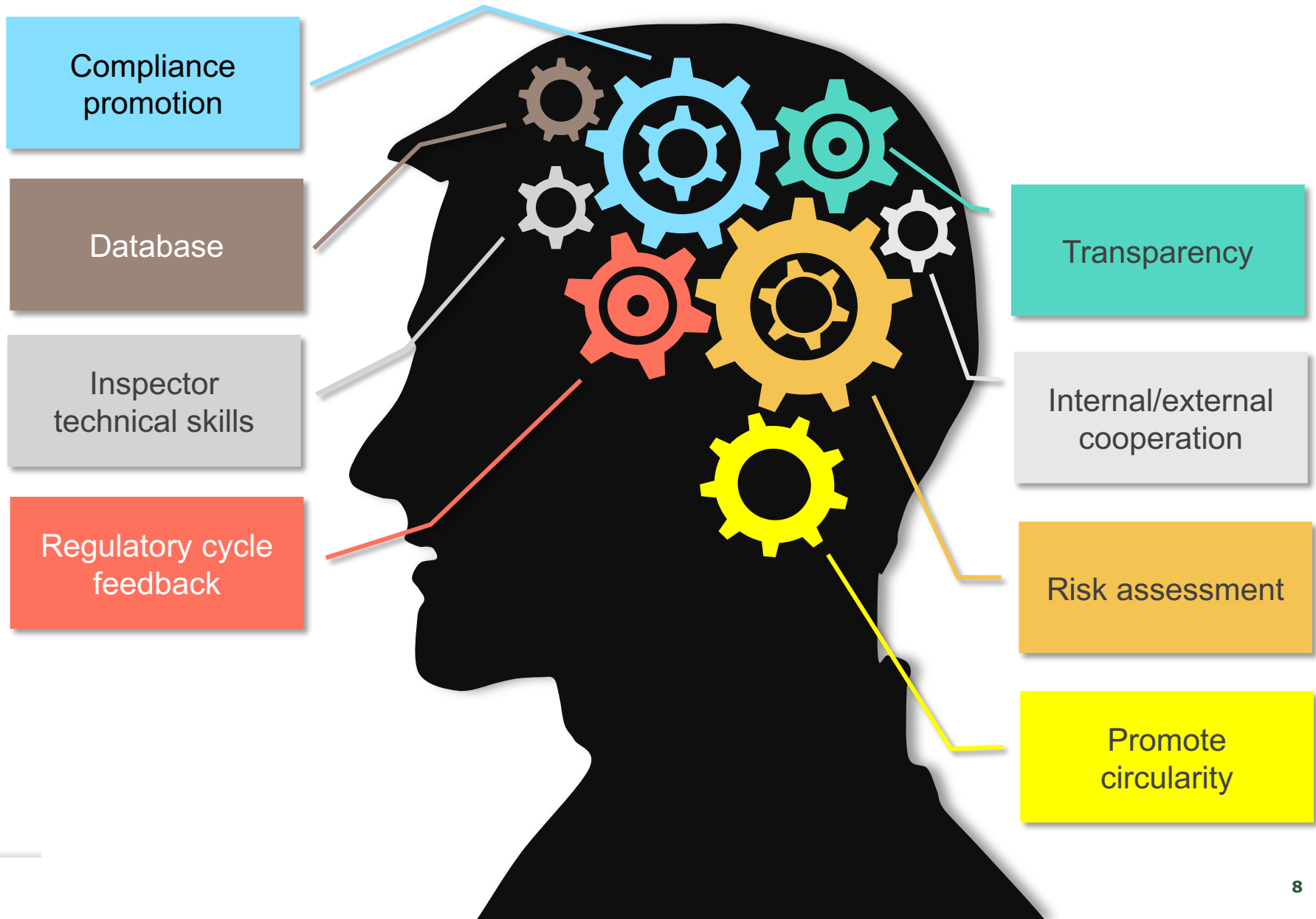
Regulators are asked to authorise or assess circular innovations

Businesses may not get the necessary regulatory certainty to give assurance to investors and manage financial risks. They may experience lack of support and engagement and lengthy decision making due to limited resources and competing priorities on the side of the regulators. And they may encounter obstacles when importing or exporting materials, because regulators as well as policymakers from different MS interpret and implement the EU waste legislation differently

Policy maker may help create favourable non-regulatory conditions, e.g. by enabling the right market conditions for secondary raw materials.

Technical Assistance for Assessment of Turkey's Potential on Transition to Circular Economy





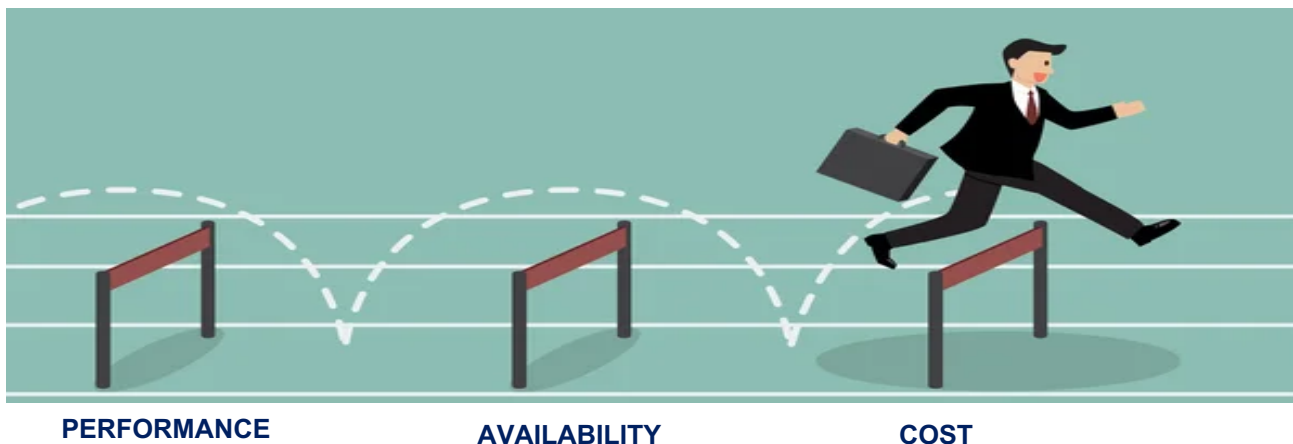
THE EU GREEN DEAL



Contents

1. INTRODUCTION	4
2. A SUSTAINABLE PRODUCT POLICY FRAMEWORK	6
2.1. Designing sustainable products	6
2.2. Empowering consumers and public buyers	7
2.3. Circularity in production processes	8
3. KEY PRODUCT VALUE CHAINS	10
3.1. Electronics and ICT	10
3.2. Batteries and vehicles	11
3.3. Packaging	11
3.4. Plastics	12
3.5. Textiles	13
3.6. Construction and buildings	13
3.7. Food, water and nutrients	14
4. LESS WASTE, MORE VALUE	16
4.1. Enhanced waste policy in support of waste prevention and circularity	16
4.2. Enhancing circularity in a toxic-free environment	16
4.3. Creating a well-functioning EU market for secondary raw materials	17
4.4. Addressing waste exports from the EU	17
5. MAKING CIRCULARITY WORK FOR PEOPLE, REGIONS AND CITIES	19
6. CROSSCUTTING ACTIONS	20
6.1. Circularity as a prerequisite for climate neutrality	20
6.2. Getting the economics right	20
6.3. Driving the transition through research, innovation and digitalisation	21
7. LEADING EFFORTS AT GLOBAL LEVEL	22
8. MONITORING PROGRESS	23
9. CONCLUSION	24
ANNEX	26

SECONDARY RAW MATERIALS: BARRIERS



Secondary raw materials face a number of challenges in competing with primary raw materials for reasons not only related to their safety, but also to their performance, availability and cost.

Preventing a mismatch between supply and demand of secondary raw materials and ensure the smooth expansion of the recycling sector in the EU (e.g. introducing requirements for recycled content).

CREATING A WELL-FUNCTIONING EU MARKET FOR SECONDARY RAW MATERIALS

To establish a well-functioning internal market for secondary raw materials the Commission will:



Assess the scope to **develop 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**;



Enhance the role of **standardisation** based on the on-going assessment of existing standardisation work at national, European and international levels;

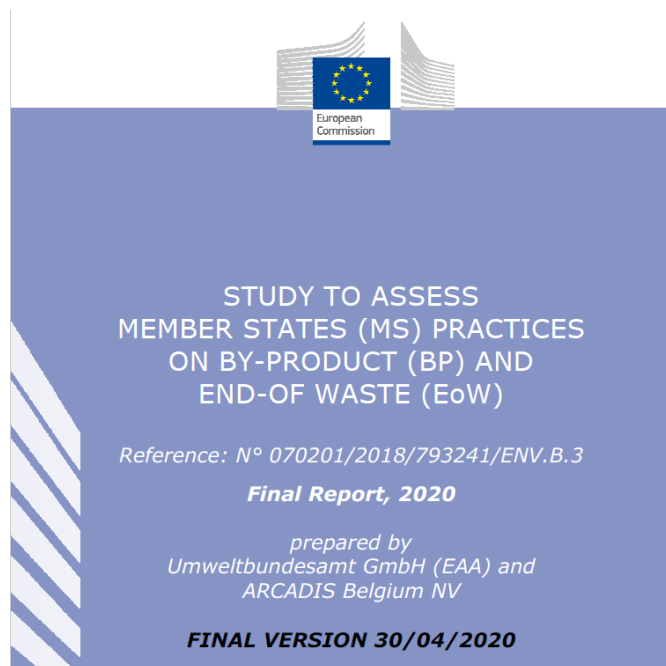


Make timely use of the **restrictions on the use of substances of very high concern** in articles for cases where the use of the substance is subject to an authorisation requirement, while continuing to improve enforcement at borders;



Assess the feasibility of establishing a **market observatory for key secondary materials**.

STUDY ON EOW AND BY-PRODUCTS PRACTICES

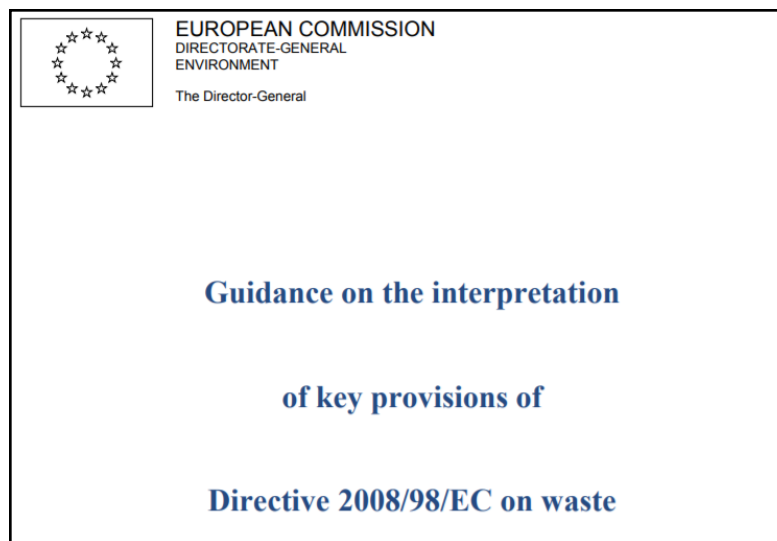


Objectives

The main purpose of this study is to provide the European Commission with key information on the national implementation of provisions related to EoW and BP in the EU in order to support the European Commission with more insight into national practices.

This should in particular contribute to the establishment of a level playing field between MS, the creation of a well-functioning internal market for secondary raw materials supporting the establishment of a circular economy, the improvement of legal certainty for MS, recyclers and users of secondary raw materials and avoiding illegal shipments and disputes over shipments of waste and non-waste.

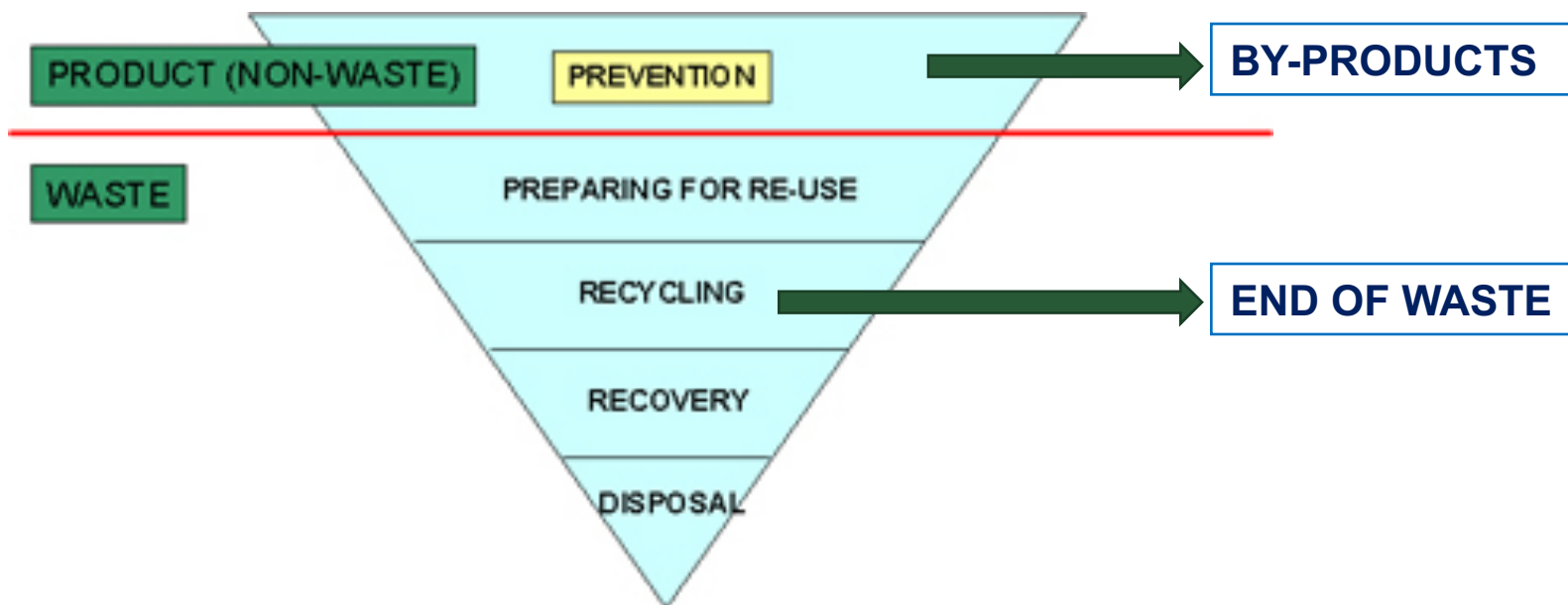
EU COM GUIDANCE

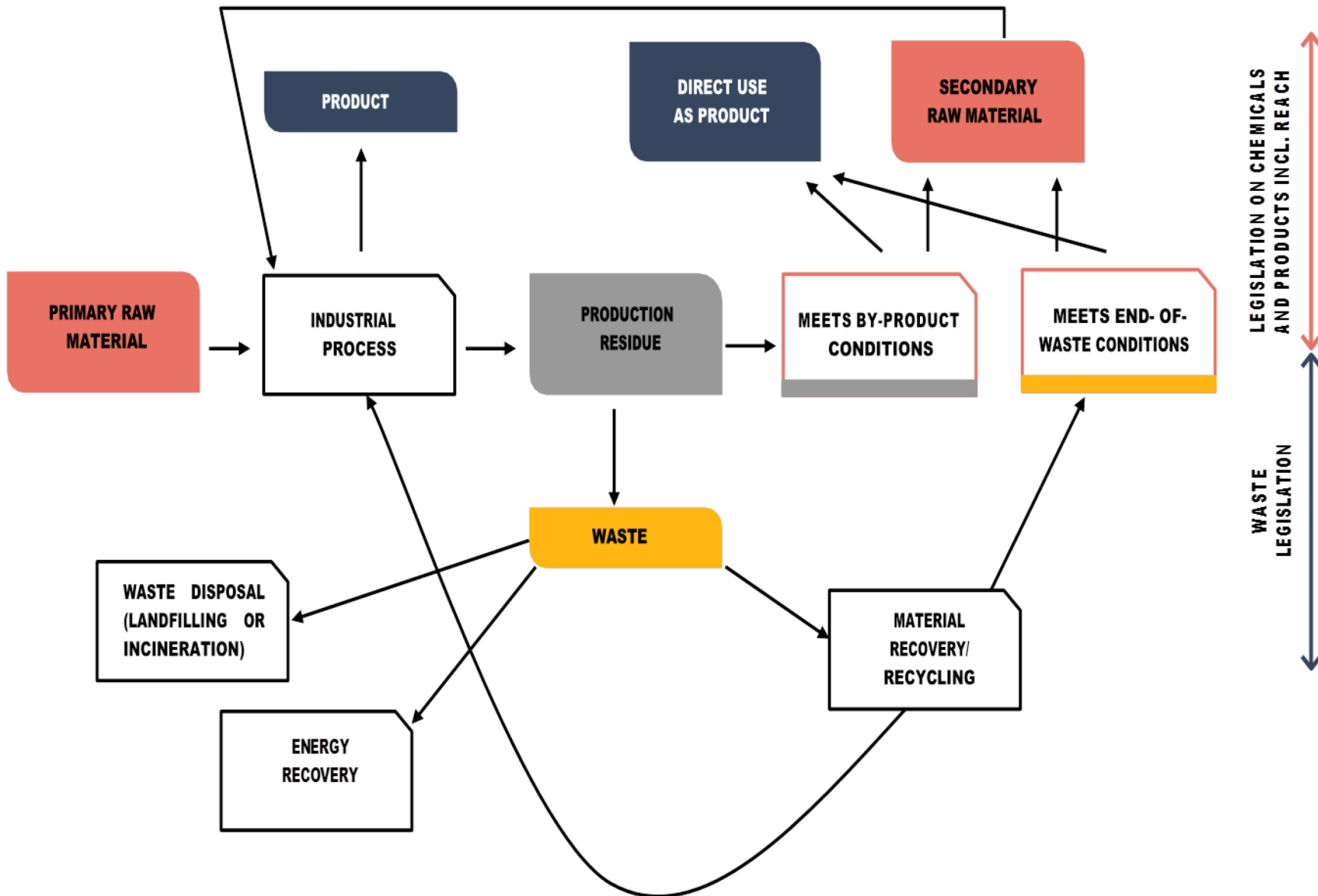


1.2	The concept of 'by-product'	14
1.3	The concept of 'End-of-waste'	22

THE WASTE HIERARCHY

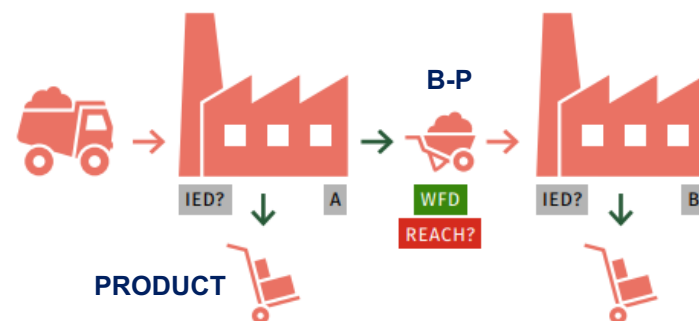
The transition to a circular economy builds on the implementation of the waste hierarchy, supporting waste prevention, reuse and waste recovery





END OF WASTE AND BY-PRODUCTS

BY-PRODUCT : a production residue which meets the cumulative conditions/criteria set out in the WFD and which is to be used as a secondary raw material or product and is not to be considered a waste.

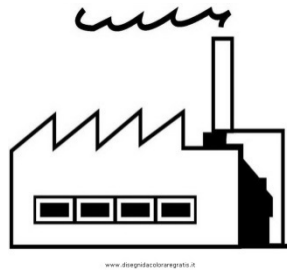


END-OF-WASTE: a material recovered from waste, which meets the cumulative conditions and requirements set out in the WFD (or the detailed criteria) and which is to be used as a secondary raw material or product and no longer be considered to be a waste.



DIFFERENCE EOW / BY-PRODUCTS

END OF WASTE



BY-PRODUCTS



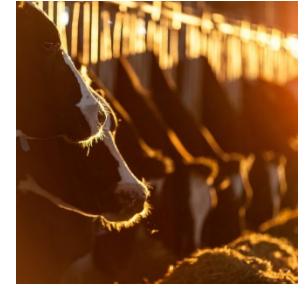
IT'S NEVER



A WASTE OR NOT A WASTE?



Technical Assistance for Assessment of Turkey's Potential on Transition to Circular Economy



Technical Assistance for Assessment of Turkey's Potential on Transition to Circular Economy



Technical Assistance for Assessment of Turkey's Potential on Transition to Circular Economy



Technical Assistance for Assessment of Turkey's Potential on Transition to Circular Economy



A WASTE OR NOT A WASTE?



‘**WASTE**’ means any substance or object which the holder discards or intends or is required to discard;

Further explanations from **ECJ case-law**:

1. The economic value of the material is not decisive
2. Assessment to be made on a case-by-case basis in relation to facts and circumstances
3. Take into account the objectives of the WFD and in particular the high level of environmental protection.

CRIMINAL CASSATION (ITA)



**Cass. Pen. Sez. VII n.
21289 del 17 luglio 2020**



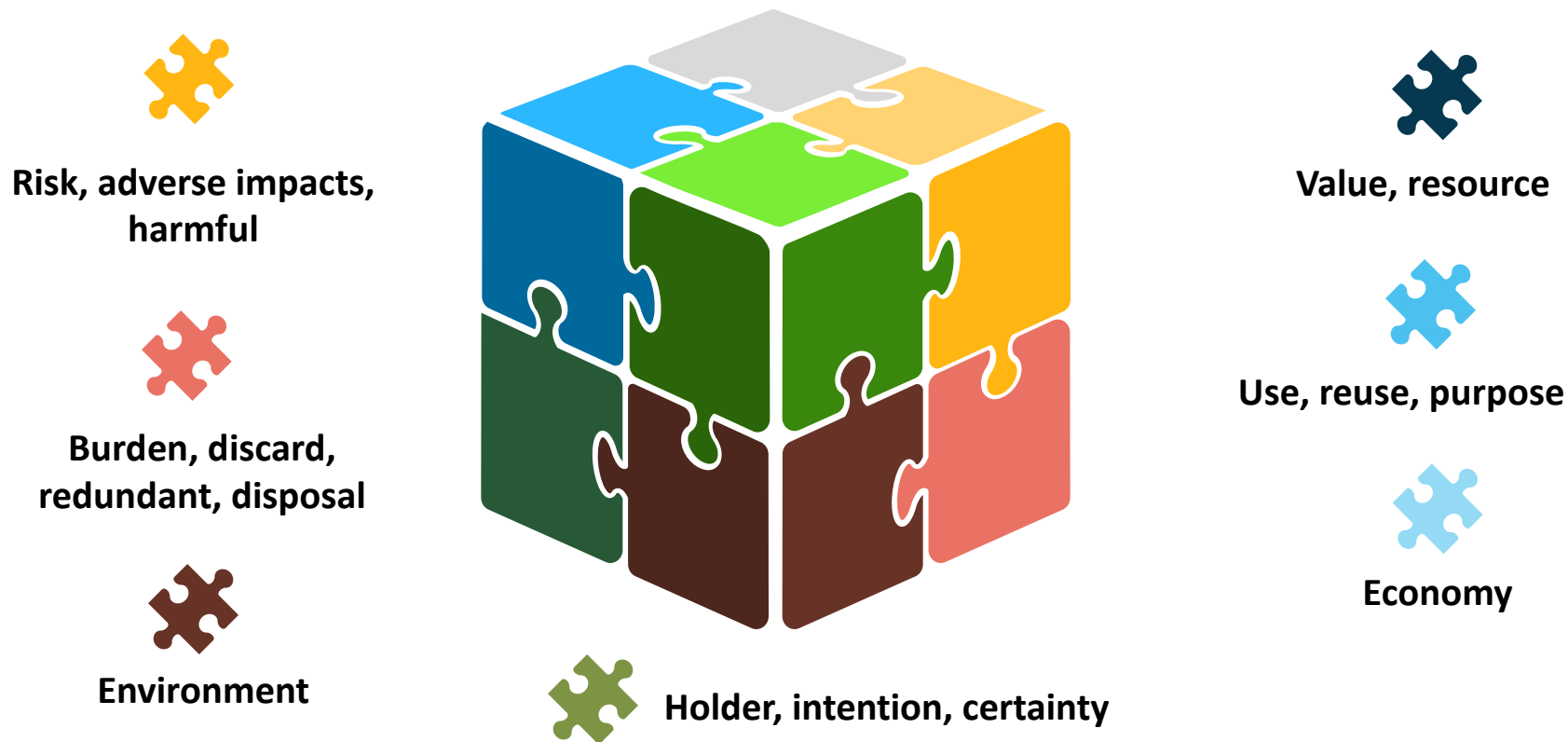
- It is certainly not the fence or the closure of the area on which the waste was spilled that excludes the will to discard it

**Cass. Pen. Sez. III n.
38979 del 08 agosto 2017**



- Waste does not lose this quality because of an agreement with third parties, nor for the economic value recognized to it in the agreement itself

WASTE VS NON-WASTE



2

END OF WASTE

Technical Assistance for Assessment of Turkey's Potential on Transition to Circular Economy



HOW TO PROVE THAT THE END OF WASTE QUALIFICATION STATUS IS ACQUIRED?

QUALITY
PROTOCOLS

EW CASE BY
CASE
DATABASE

EW
APPLICATION
CONTENT

CHECKLIST

REACH AND TFS

UNIFORM
CRITERIA

EW MARKET

ENVIRONMENTAL
STANDARD

INSPECTION
SYSTEM

EU LEGISLATION



Directive 2008/98/EC (amended by Directive 2018/851/EC)
New Art.6: End-of-waste status

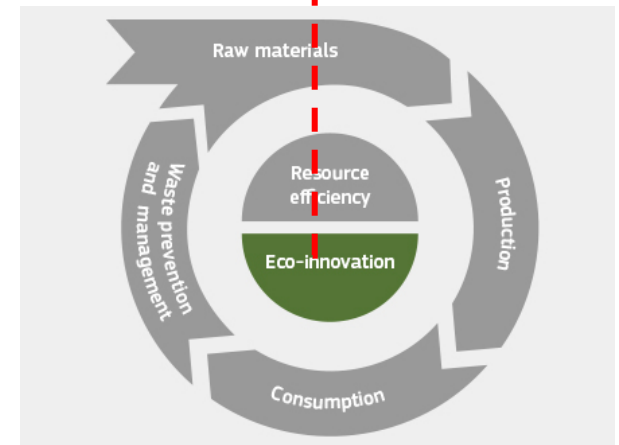


- ❑ Member States shall take appropriate measures to ensure that **waste** which has undergone a **recycling** or other recovery operation is considered to **have ceased to be waste** if it complies with the following **conditions**:



EU LEGISLATION

- a) the substance or object is **commonly** to be used for specific purposes;
- b) a **market** or demand exists for such a substance or object;
- c) the substance or object fulfils the **technical requirements** for the specific purposes and meets the existing legislation and standards applicable to products; and
- d) the use of the substance or object will not lead to overall **adverse environmental** or human health impacts.





EU LEGISLATION

a) the substance or object is **commonly** to be used for specific purposes;



Products designed to perform functions that are not necessarily known and defined



- CHECK NOT WELL KNOWN PRODUCTS AND USES
- CHECK PILOT TESTS



EU LEGISLATION

The Commission shall adopt **implementing acts** in order to establish detailed criteria on the uniform application of the conditions laid down in paragraph 1 to certain types of waste. They shall include:

(a) permissible waste input material for the recovery operation

(b) allowed treatment processes and techniques

(c) quality criteria for EoW materials resulting from the recovery operation in line with the applicable product standards, including limit values for pollutants where necessary

(d) requirements for management systems to demonstrate compliance with the EoW criteria, including for quality control and self-monitoring, and accreditation, where appropriate

(e) a requirement for a statement of conformity



EU END OF WASTE REGULATIONS



These criteria have been laid down for:

- Iron, steel and aluminium scrap (Council Regulation (EU) N° 333/2011)
- Glass cullet (Commission Regulation (EU) N° 1179/2012)
- Copper scrap (Commission Regulation (EU) N° 715/2013)

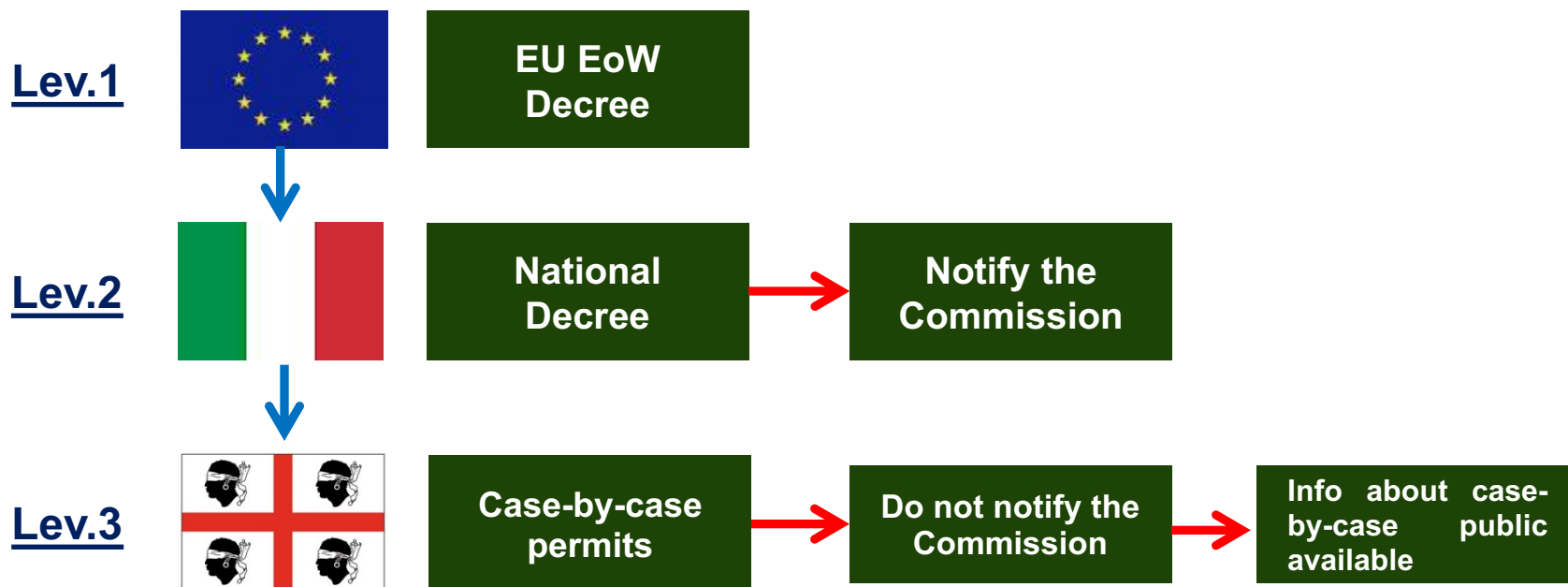
Technical Assistance for Assessment of Turkey's Potential on Transition to Circular Economy

- Where **criteria** have not been set at Union level under paragraph 2, Member States may establish **detailed criteria** on the application of the **conditions** laid down in paragraph 1 to certain types of waste.

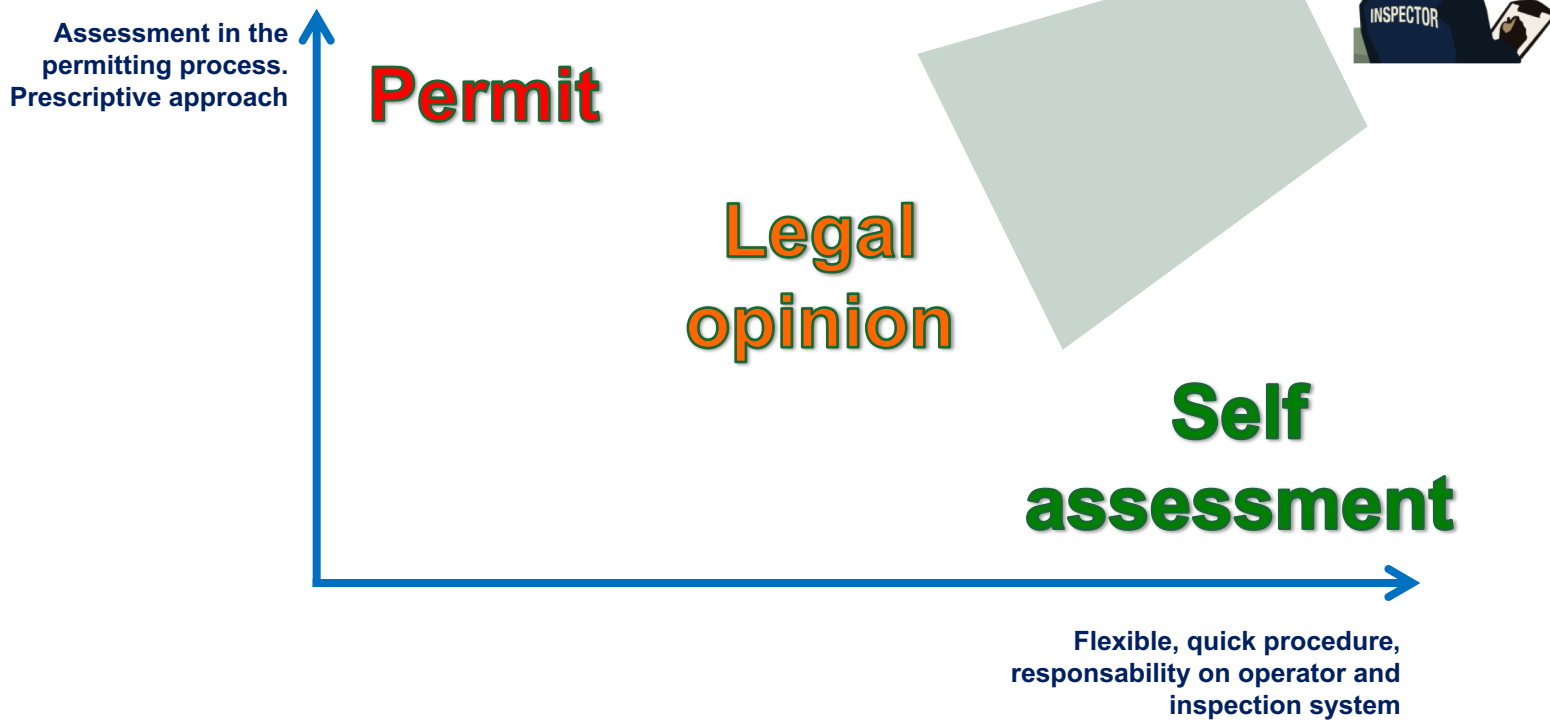


- Where **criteria** have not been set at either Union or national level under paragraph 2 or 3, respectively, a Member State may decide **on a case-by-case basis**, or take appropriate measures **to verify**, that certain waste has ceased to be waste on the basis of the **conditions** laid down in paragraph 1 and, where necessary, reflecting the requirements laid down in points (a) to (e) of paragraph 2, and taking into account limit values for pollutants and any possible adverse environmental and human health impacts.

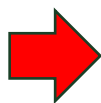
EOW CRITERIA LEVELS OF APPLICATION



EOW ASSESSMENT APPROACHES IN MS



EOW CASE-BY-CASE DATABASE



Member States may make information about case-by-case decisions and about the results of verification by competent authorities publicly available by electronic means



WASTE MANAGEMENT & CIRCULAR ECONOMY PROJECT



End-of-waste case-by-case decisions

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.

This database is an answer to the following indication of the Waste Framework Directive, 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 aims at promoting a regular exchange of information around case by case end-of-waste, in order to achieve a level playing field and homogenize technical and environmental standards across EU in those cases where EU and/or national regulation is missing.

Map Satellite

Search **SUBMIT** = RESET

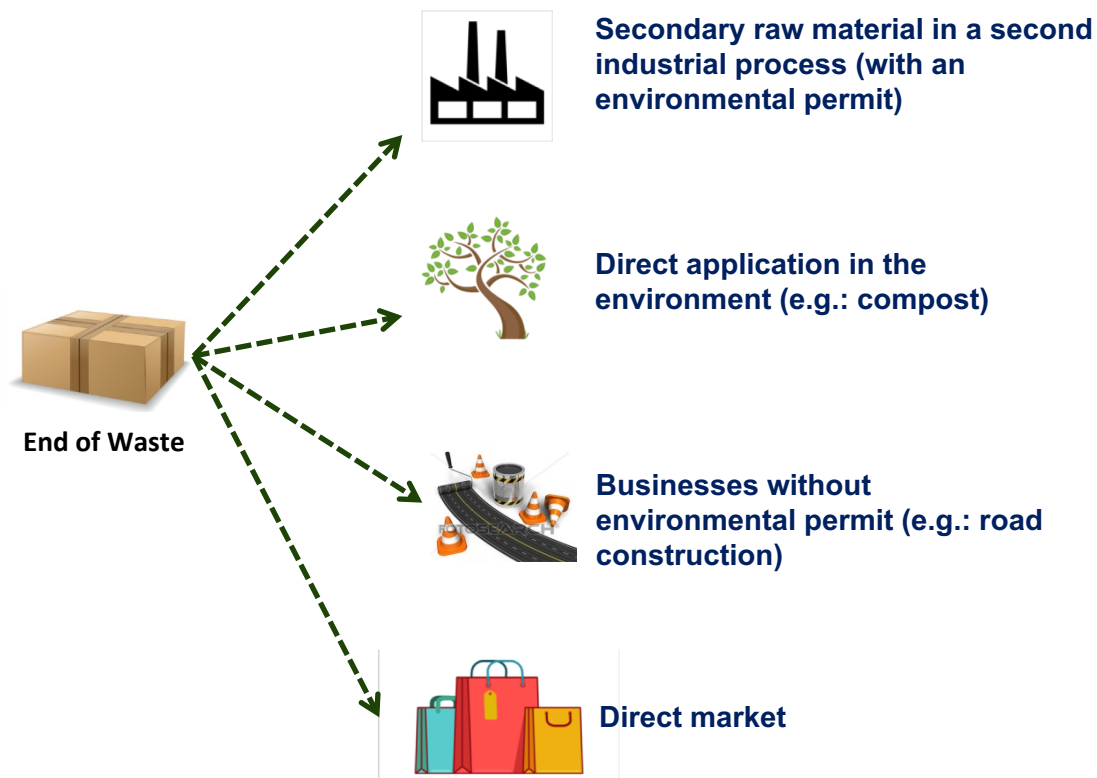
Green compost, wood chips – Italy Substrate materials for road surfaces – Italy paper fabrication – Spain

Technical Assistance for Assessment of Turkey's Potential on Transition to Circular Economy

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, it 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.

COMPILER INFORMATION	REQUIRED FIELD	1	Member State
	REQUIRED FIELD	2	Name of the Institution of the compiler
	REQUIRED FIELD	3	Role of the compiler
	REQUIRED FIELD	4	Compiler Name
	REQUIRED FIELD	5	Compiler email address
PERMITTING AUTHORITY (IF THE CASE)	REQUIRED FIELD	6	Permitting authority
	REQUIRED FIELD	7	Authorization number
	OPTIONAL FIELD	8	Contact person at the permitting authority
	OPTIONAL FIELD	9	Email of the contact person
RECYCLING COMPANY	OPTIONAL FIELD	10	End-of-waste producer
	OPTIONAL FIELD	11	City
	OPTIONAL FIELD	12	Company email address
	OPTIONAL FIELD	13	Geographic coordinates
	OPTIONAL FIELD	14	Website

FINAL USE OF END-OF-WASTE



BURDEN OF PROOF



The natural or legal person who:

- (a) **uses, for the first time**, a material that has ceased to be waste and that has not been placed on the market; or
- (b) **places a material on the market** for the first time after it has ceased to be waste,

shall ensure that the material meets relevant requirements under the applicable **chemical** and **product** related legislation.



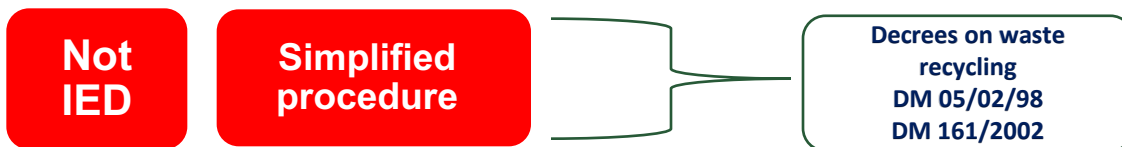
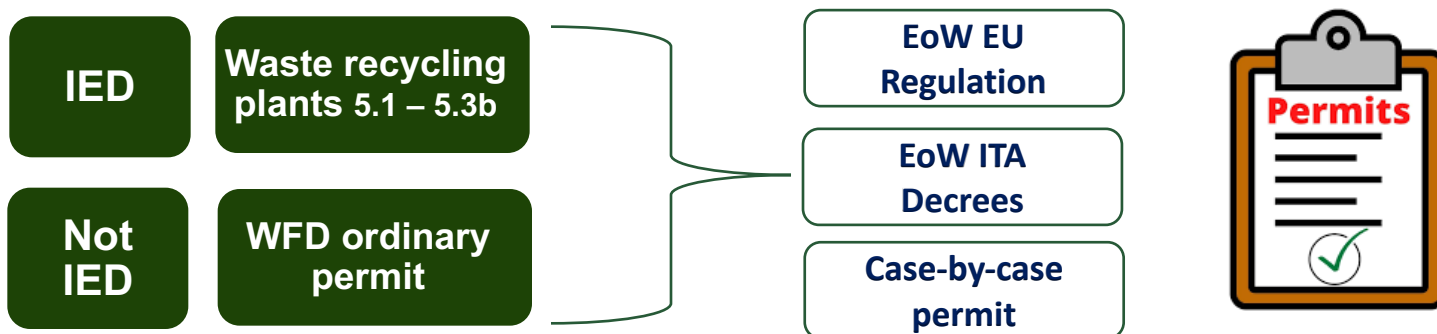
REACH & CIRCULAR ECONOMY



- ❑ REACH does not apply to waste. But REACH **applies to by-products and EoWs**
- ❑ According to the WFD a material can obtain by-product or EoW status if it complies with the legislation applicable to the **products** one of which is REACH.
- ❑ Therefore the REACH Regulation **is very relevant for the circular economy**: in principle any secondary raw material that can (potentially) be considered as a by-product or as an EoW may need to apply for REACH Registration to obtain final recognition.
- ❑ **Permission** may sometimes be required and restrictions may apply. However, there are some **exemptions** from these obligations.



PERMITTING EOW IN THE ITALIAN LEGISLATION



 **Communication to Competent Authority;**
NO PERMIT



EOW SIMPLIFIED PROCEDURE



- ❑ The exercise of waste recovery operations can be undertaken after 90 days from the communication of the start of the activity (renew every 5 years)
- ❑ The Competent Authority (Province) registers the companies that communicate the start of business in a special register
- ❑ Limited amount of input waste; pre-defined list of admissible waste, technical and environmental standards

ITALIAN END-OF-WASTE CRITERIA DECREES



**PAPER AND
CARDBOARD
(2021)**



**VULCANIZED
RUBBER FROM
DISCARDED
TIRES (2020)**



**DIAPERS
(2019)**



**BITUMINOUS
CONGLOMERATE
(2018)**

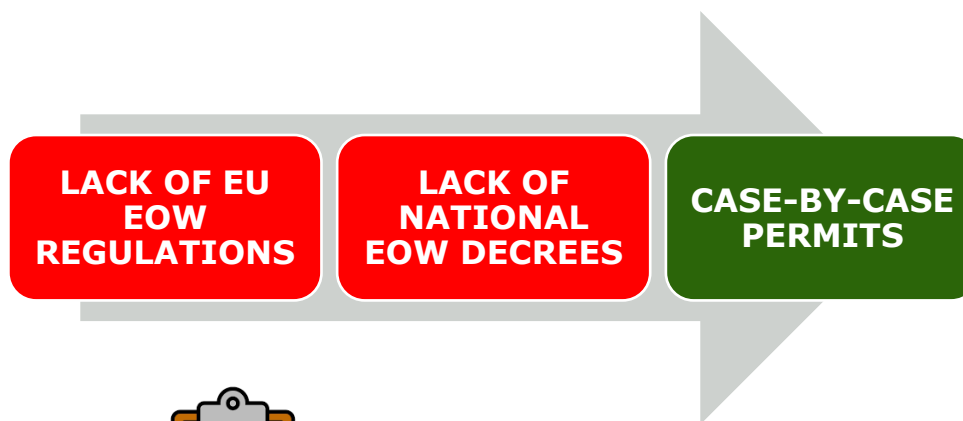


**SOLID
RECOVERED
FUELS (2013)**



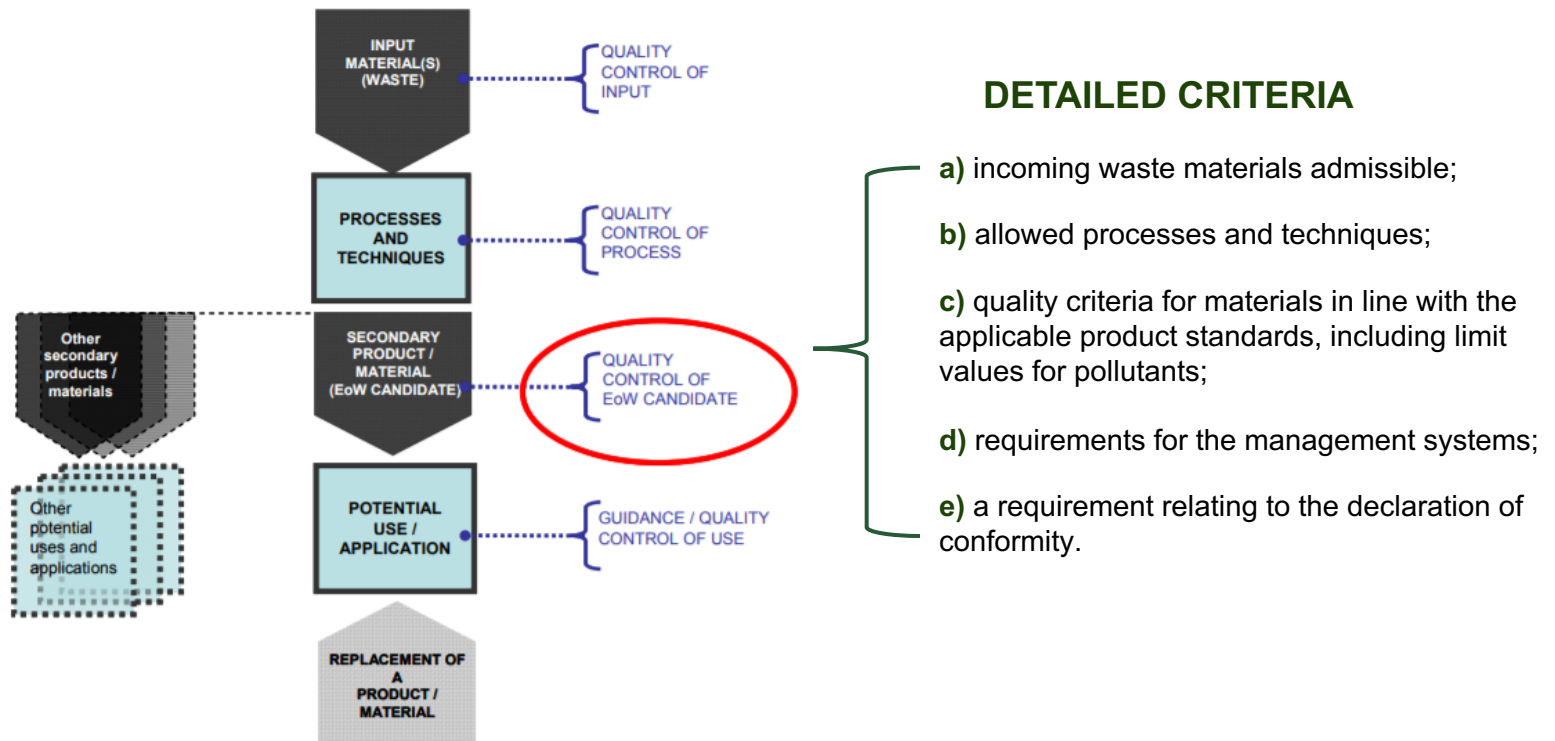
**AD HOC REGULATORY PROVISIONS FOR
BIOMETHANE**

PERMITTING CASE-BY-CASE EOW



Mandatory and binding opinion of the Environmental Protection Agency on the basis of detailed criteria

PERMITTING CASE-BY-CASE EOW



REGISTER OF EOW PERMITS



ISPRA

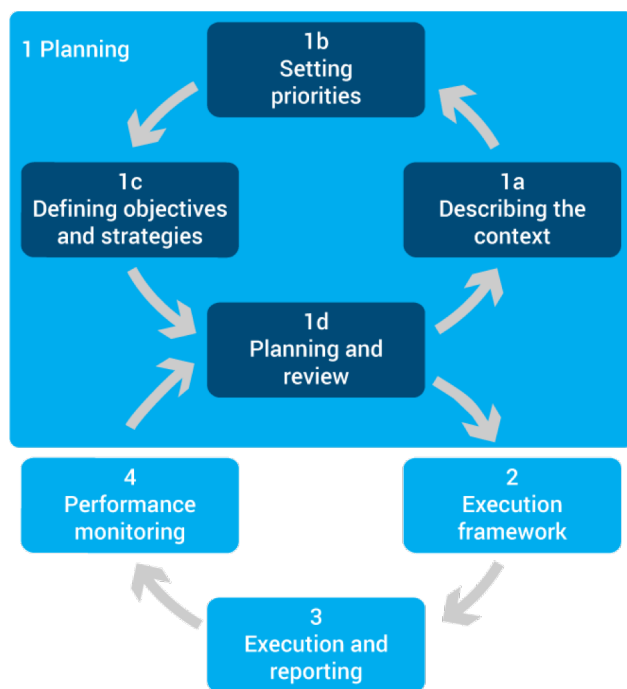
Istituto Superiore per la Protezione
e la Ricerca Ambientale

- ❑ Competent authorities notify the Ministry of the Environment and the Environmental Inspection authority of the new End-of-Waste permit issued.



REcer National register of recovery authorizations

EOW INSPECTION ACTIVITY



INSPECTION PRIORITIES: RISK CRITERIA

- Waste streams that pose higher risks to human health and the environment due to the nature and volume of waste streams
- Waste subjected to innovative recovery processes
- Waste recovered for further use in other Member States.

EOW INSPECTION ACTIVITY



Italian guideline of the Environmental Protection Agency network

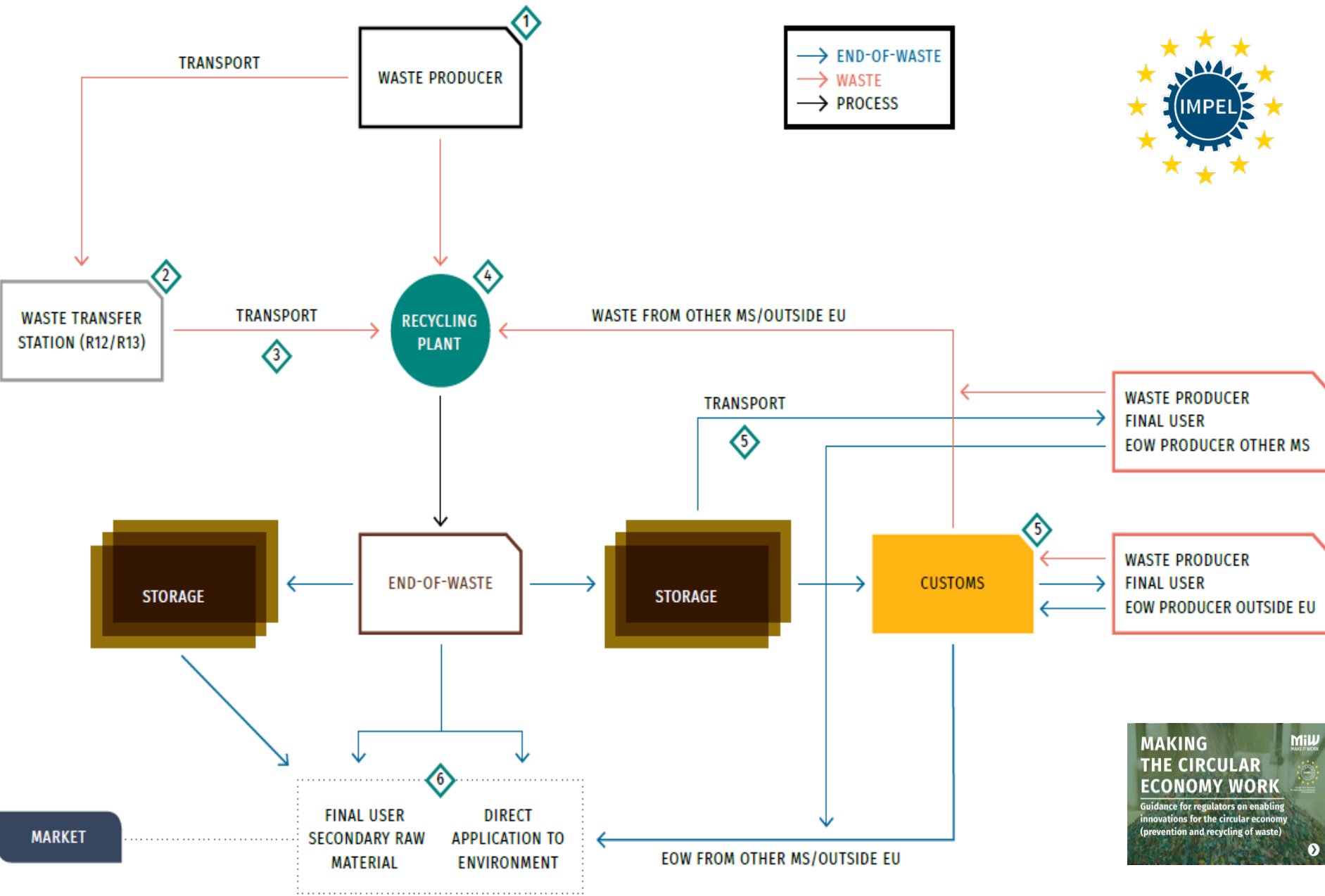
The Guideline intends to provide the Environmental Agencies network with a shared and homogeneous approach regarding the different competences attributed to them:

- ❑ in the **permitting** phase supporting the competent Authorities;
- ❑ in the **inspection** phase (common system of planning and execution of inspections).

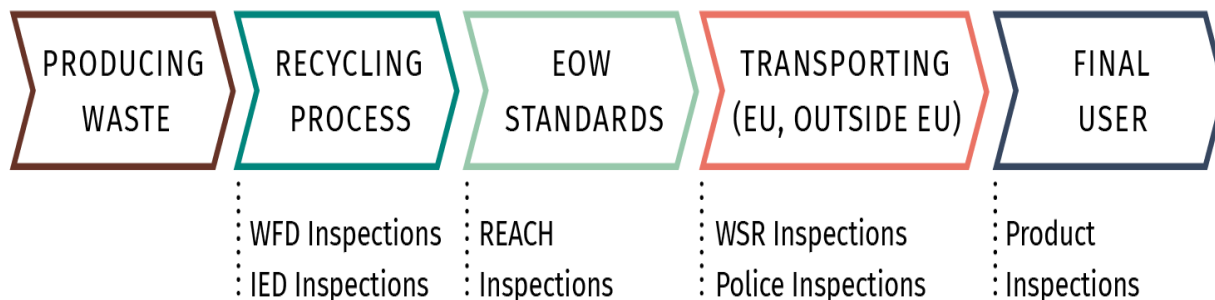
EOW TOOLS IN THE IMPEL GUIDANCE



TOPIC	WHAT TO CHECK	DOCUMENTS TO BE CHECKED
INPUT MATERIAL (WASTE)		
Quality of incoming waste in the recovery process	<ul style="list-style-type: none"> • Check the existence of a quality management procedure aiming at monitoring the quality of the input waste before it is accepted: <ul style="list-style-type: none"> - Procedure regarding the characterization of the waste and/or its origin (.) - Criteria for accepting waste into the recovery facility (specific pollutant contents, laboratory tests on a sample to verify that it is possible to comply with customer specifications after recovery..) - Procedure for managing non-conforming materials. • Is pre-acceptance information compared with the incoming waste? • Is a pre-acceptance procedure performed to assess whether the waste is suitable for storage and treatment at the facility? • Are unaccepted waste deliveries documented and reported? • Check the basic characterization of the incoming waste: <ul style="list-style-type: none"> - EWC - chemical composition of the waste - Relevant physical parameters • Check compliance with limits to pollutants that can influence health and environmental risks or that can limit the existence of a market or demand. • Is the accepted waste type (EWC) in line with the permit? • Is sampling performed by qualified persons and in line with corresponding standards? 	<ul style="list-style-type: none"> • EMS waste acceptance procedure • Characterization protocols • Lab bulletin of the basic characterization
Storage of the waste input (BAT 2-3)	<ul style="list-style-type: none"> • Check if the quantity of waste stored is regularly monitored against the maximum allowed storage capacity. • Check if the maximum residence time of waste is respected. • Check if waste is kept separated depending on its properties in order to enable easier and environmentally safer storage and treatment. 	<ul style="list-style-type: none"> • Waste register



COORDINATION IN EOW INSPECTION ACTIVITY



- Memorandum of Understanding with other supervisory authorities
- Share Inspection Programs and perform joint inspections
- Common training
- Acquire information on REACH and WSR inspections
- Access to databases

3

BY-PRODUCTS

BY-PRODUCTS



IS NEVER



- ❑ Certain **production residues**, provided that they are objectively reused in the same or another production process without causing damage to the environment and health, can be considered "**by-products**", therefore in all respects goods, **and not waste**.
- ❑ For this reason, economic activities that use by-products instead of conventional raw materials **do not need to acquire the authorizations**, which are mandatory to recover waste.







EU LEGISLATION




Directive 2008/98/EC (amended by Directive 2018/851/EC)
New Art.5: By-products



- ❑ Member States shall take appropriate measures to ensure that a substance or object resulting from a **production process** the primary aim of which is not the production of that substance or object is considered **not to be waste**, but to be a **by-product** if the following conditions are met:



EU LEGISLATION



Conditions

- a) further use of the substance or object is **certain**;
- b) the substance or object can be used directly without any further processing other than **normal industrial practice**;
- c) the substance or object is produced as an integral part of a **production process**;
and
- d) 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.



EU LEGISLATION

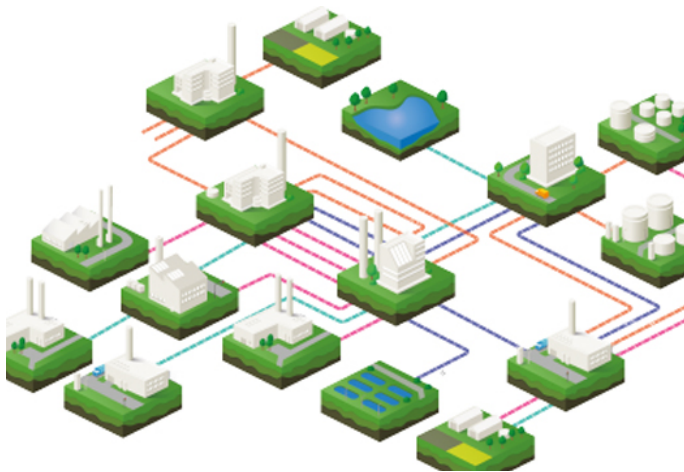


The **Commission** may adopt implementing acts in order to establish **detailed criteria** on the uniform application of the conditions laid down in paragraph 1 to specific substances or objects.

Where criteria have not been set at Union level under paragraph 2, **Member States** may establish detailed criteria and notify the Commission of those detailed criteria.



INDUSTRIAL SYMBIOSIS



Prioritise replicable practices of **industrial symbiosis** in the development of the detailed criteria

ITALIAN BY-PRODUCTS CRITERIA DECREES



SOIL AND STONES



BIOMASS FOR ENERGY



DIGESTATE AGRONOMIC USE



HOW TO ASSESS CONDITIONS

a) the substance or object originates from a production process, of which it is an integral part, and whose primary purpose is not the production of that substance or object;



The demolition of buildings (or roads) **cannot be defined as a "production process"** such as that indicated by the regulation on by-products, with the consequence that the resulting materials must be qualified as **waste** and not as by-product.

[Criminal Cassation n. 8848 del 23.02.2018.](#)

HOW TO ASSESS CONDITIONS

b) it is certain that the substance or object will be used, during the same or a subsequent production or use process, by the manufacturer or third parties;



The destination for subsequent use must be demonstrable. It is necessary to be able to exhibit:

- contracts that demonstrate that the by-product is sold to a user, as a real product;
- sales invoices;
- documentation relating to the function that the by-product will perform in the production or use process for which it is intended (for example, replacement of "traditional" raw materials).

HOW TO ASSESS CONDITIONS

c) the substance or object can be used directly without any further treatment other than normal industrial practice;



Criminal Cassation: all manipulative interventions of the residue other than those ordinarily carried out in the production process in which it is used must be **excluded** from the concept of "normal industrial practice".



NO to interventions aimed at making waste compatible from an environmental and product point of view with production processes

HOW TO ASSESS CONDITIONS

d) further use is legal, i.e. the substance or object satisfies, for the specific use, all relevant requirements regarding products and the protection of health and the environment and will not lead to overall negative impacts on the environment or human health.



The material must have properties similar to those of the products, in relation to the specific use, both from a **technical** point of view and from the protection of health and the **environment**. The use must therefore take place in compliance with the specific applicable rules.



**National or international technical standards,
Characteristics of the products usually marketed**

SUPPORTING OPERATORS AND REGULATORS

NATIONAL
DECREE (DM
264/2016)

Indicative and non-binding criteria, to demonstrate compliance with the conditions that allow the management of production residue as a by-product



- The producer and user of the by-product, register without any economic burden, in a special public list established at the territorially competent Chambers of Commerce

BY-PRODUCTS KEY POINTS

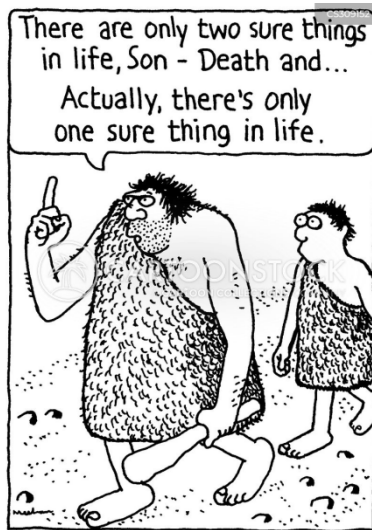


- Permit is not required. By-product is self-assessed and verified by the inspection authority



- Consumption residues cannot be by-products

BY-PRODUCTS KEY POINTS



CERTAINTIES

- Contracts (long-term?)
- Objective evidence of reuse
- Proof of the destination (unique, direct, complete)
- Marketing (reuse)
- Process of use previously identified and defined

THANK YOU

This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of the consortium led by DAI Global Austria GmbH & Co KG, and do not necessarily reflect the views of the European Union.