

3. STANDARDIZATION OF THE UPLIFT TECHNOLOGY

by Alberto Barranca



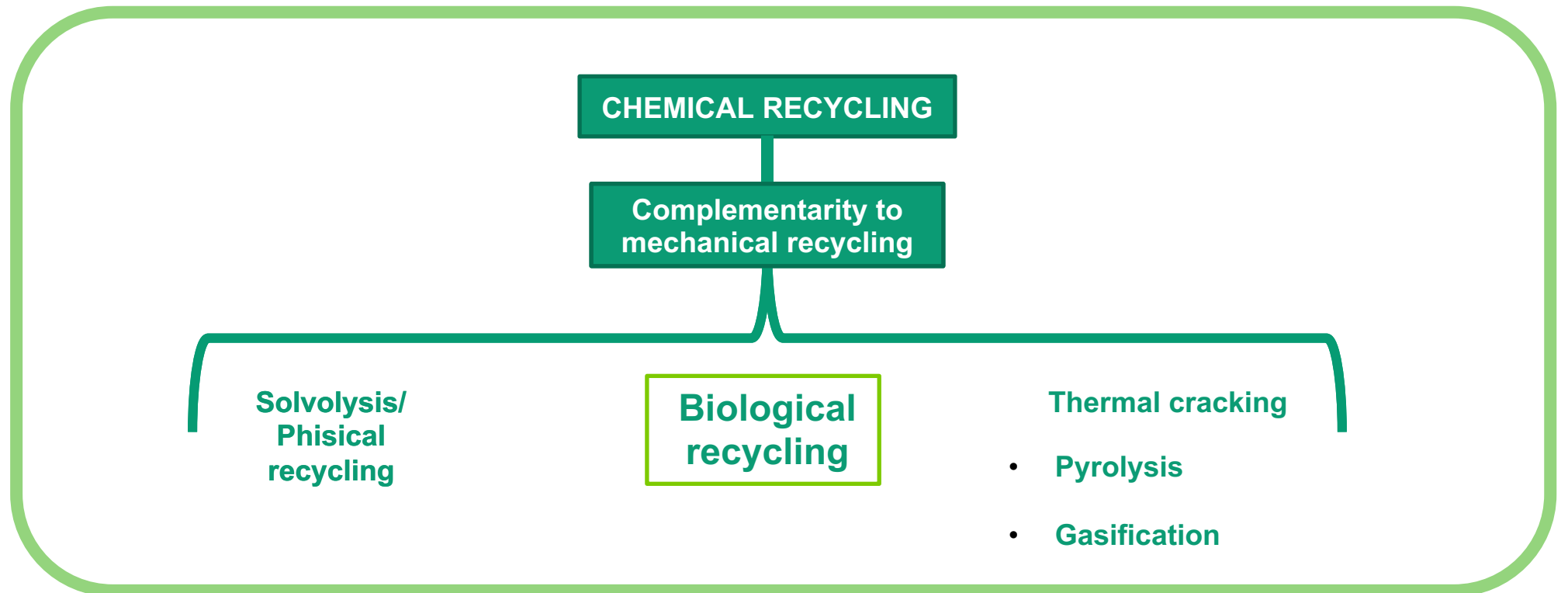


Index

- Introduction to the UpLift technology
- Context of standardization in UpLift technology
- Challenges in the field of standardization
- UpLift roadmap to solve standardization challenges
 - a) Collect interest from industrial field
 - b) CWA development
 - c) IWA development
- Conclusions

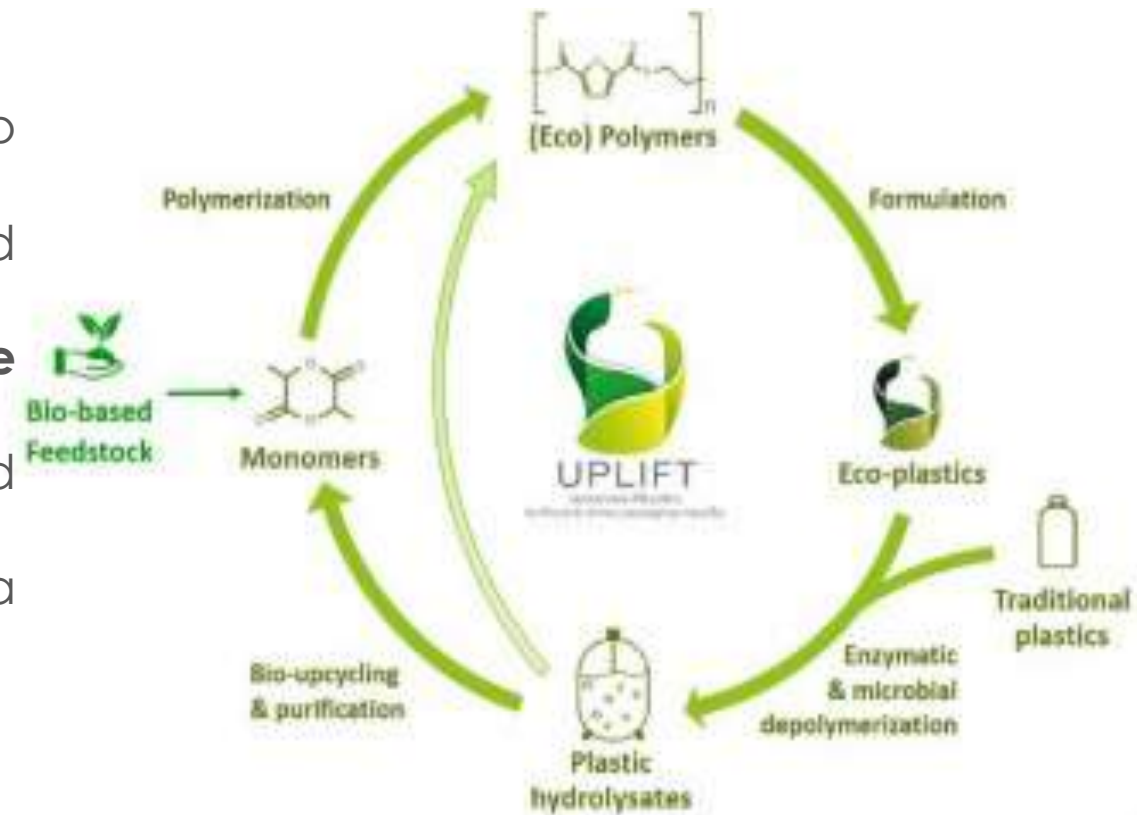
1. Introduction to the UpLift technology

Circular economy approach



1. Introduction to the UpLift technology and standardization of the project

The **main objective** of the UpLift is to **biologically depolymerize** bio- and fossil-based **plastic packaging waste** and convert it into more renewable and easily upcyclable polymers, following a **biorefinery approach**





2. Context of standardization in UpLift technology

- **Lack of regulations** related to chemical and biological recycling
- Generalities Chemical recycling scope, traceability and chain of custody

FprEN 17615: Plastics - Environmental Aspects – Vocabulary (under approval, CEN/TC 249)

ISO 15270 (ISO/TC 61/SC 14)

- Part 1: General principles (WG 1)
- Part 2: Mechanical recycling (WG 5)
- Part 3: Physical recycling (WG 5)
- Part 4: Chemical recycling (WG 5)
- Part 5: Organic recycling (WG 2)

ISO/NP 13390: Plastics -- Chemical Recycling – Gasification (ISO/TC 61/SC 14)

ISO/NP 16294: Chemical recycling of organic materials - recycling process and recycled chemicals

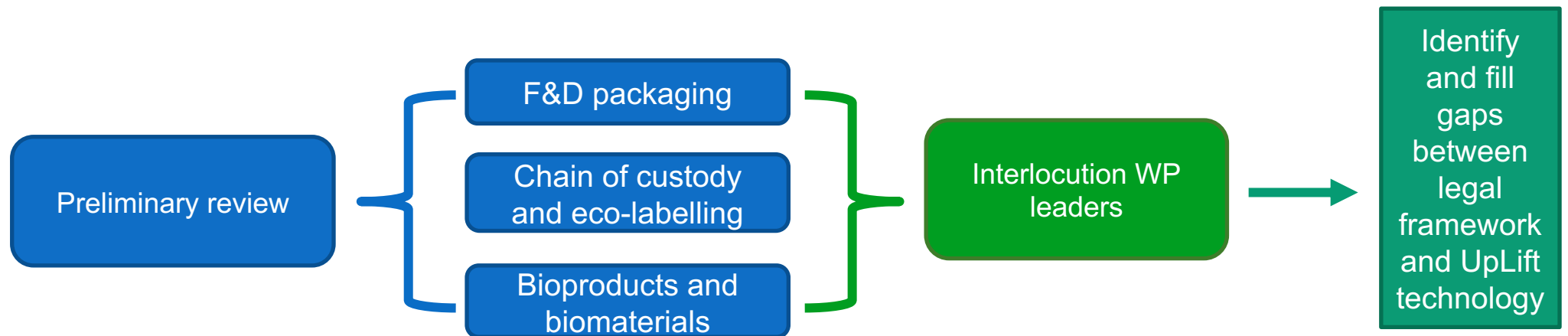
ISO/AWI 13662: Chain of Custody — Mass Balance

ISO/AWI 13659: Chain of Custody — Book and Claim — requirements and guidelines

2. Context of standardization in UpLift technology

Methodology standardization

- A. Preliminary review of the legal framework for plastics in food and drink packaging considering KPIs purposed in the project
- B. Preliminary review related with **chain of custody** in plastic sector and eco-labelling will be done.
- C. Preliminary review of the legal strategies to **develop bioproducts** and **biomaterials** and treat to stablish relations with the plastic sector
- D. Interlocution to carry out the process design. Identify starting materials, how these materials will be modifies and what's product/products will be obtained
- E. After the evaluation of the process design, the eyes will be re-analysed in order to identify possible gaps. The aim is to define possible alternatives to fill these gaps



2. Context of standardization in UpLift technology

Methodology standardization

PART III SURVEY

The survey is divided into five blocks as detailed in the previous section. Each survey block consists of one table. Each table lists the regulations and laws found in the **preliminary review**. Also, key aspects of each regulation/law are detailed and, finally, the members of the consortium are asked about the existence of possible improvements/modifications made in their respective countries to each of the texts found.

In the comments section you can express doubts, proposals or contribute new regulatory or legal texts to those listed in the questionnaire.



FIELD 1. ECOLABELLING		
LEGISLATION/NORMATIVE/CERTIFICATION	KEY ASPECTS	QUESTIONS TO PARTNERS
<i>EN-ISO 14024:2018 (normative)</i>	The program to be carried out for a Type I environmental certification of labelling is presented. The environmental criteria of the product as well as the environmental verification criteria are established.	<p>Are there REGULATIONS/LEGISLATION in your country that establish voluntary environmental labeling programs operated for public or private agencies? [[PLEASE ANSWER HERE]]</p> <p>Are there any certifications specific to your country for the declaration of environmental labels? [[PLEASE ANSWER HERE]]</p>
<i>ISO 14025:2010 (normative)</i>	Procedure for obtaining <i>type III environmental labelling</i> . Details on how to develop a product category rules document. Detailed stakeholder consultation processes.	
<i>ISO 14021:2016 (normative)</i>	This standard includes requirements for Type II environmental labelling (self-declared environmental claims).	
<i>REGULATION (EC) N° 66/2010 (normative)</i>	This Regulation lays down rules for the establishment and application of the voluntary European Union Ecolabel scheme, which applies to any goods or services which are supplied for distribution, consumption or use on the European Community market.	
<p><i>Comments: This space is dedicated to post any clarification, doubts, comments... You can also describe regulations that you are aware of, that apply in your country in relation to the field of study in question and that you have not identified in the search for normative texts prior to this survey.</i></p> <p><i>Text of interest: EU Ecolabel for food and feed products – feasibility study</i></p>		

2. Context of standardization in UpLift technology

Methodology standardization



Croatia

Field 1. ECOLABELLING

HRN EN ISO 14024:2018 (croacia)

Field 2. TRACEABILITY AND MASS BALANCE

Reglamento (CE) No 1935/2004 (croacia)

WASTE MANAGEMENT PLAN OF THE REPUBLIC OF CROATIA FOR THE PERIOD 2017-2022

Field 4. CHAIN OF CUSTODY

REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL



Denmark

Field 1. ECOLABELLING



Nordic Swan Ecolabel: Responsibility of Ecolabelling Denmark

Ecolabelling Denmark: Statutory order from the Ministry of Environment no. 680 of 19 May 2020 on the community and the Nordic Swan Ecolabel.

Field 2. TRACEABILITY AND MASS BALANCE

Traceability: Return System for beverage packaging

Field 3. CHAIN OF CUSTODY

Bureau veritas certification denmark



Austria

ACIB/Austria there are not additional regulations to consider in addition to the ones already listed in the document

3. Challenges in the field of standardization

- **Clarification of theoretical aspects:**
 - i) **definition** of biological/microbiological/enzymatic recycling
 - ii) **distinction** between **chemical and biological recycling**
- National government support
- Minimum recycled content: **legislative action***
- Tax deduction: **legislative action*** → Spanish chemical recycling case
- Industrial support
- Long terms
- Support from five European countries: European level standardization



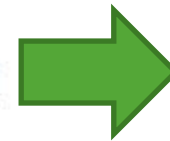
3. Challenges in the field of standardization

Minimum recycled content: legislative action*

Directive 2019/904

5. En lo que se refiere a las botellas para bebidas enumeradas en la parte F del anexo, cada Estado miembro velará por que:

- a) a partir de 2025, las botellas para bebidas enumeradas en la parte F del anexo cuyo principal componente en la fabricación sea el tereftalato de polietileno («botellas PET») contengan al menos un 25 % de plástico reciclado, calculado como una media de todas las botellas PET introducidas en el mercado dentro de su territorio; y
- b) a partir de 2030, las botellas para bebidas enumeradas en la parte F del anexo contengan al menos un 30 % de plástico reciclado, calculado como una media de todas esas botellas para bebidas introducidas en el mercado dentro de su territorio.



recycled PET content of at least 25% in bottles of less than 3 L



recycled plastic fraction (not only PET): 30 %


3. Challenges in the field of standardization

Minimum recycled content: legislative action*

Directive 2019/904

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- a) a partir de 2025, las botellas para bebidas enumeradas en la parte F del anexo cuyo principal componente en la fabricación sea el tereftalato de polietileno («botellas PET») contengan al menos un 25 % de plástico reciclado, calculado como una media de todas las botellas PET introducidas en el mercado dentro de su territorio; y
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- What kind of recycling technology?
- How recycled content will be measured? 
- Search for alternatives
- Biological recycling alternatives?
- Promoting standards in this area

3. Challenges in the field of standardization

Tax deduction: legislative action: Spanish chemical recycling case*

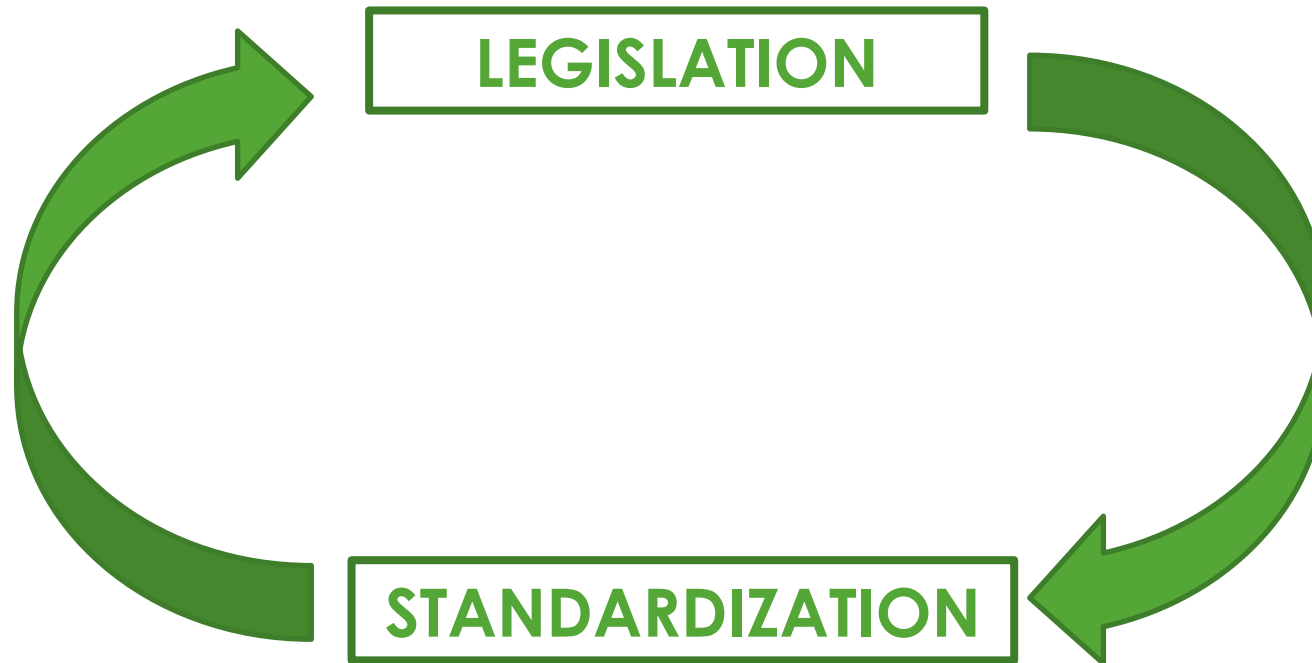


Ley 7/2022

3. A efectos de este artículo, la cantidad de plástico reciclado contenida en los productos que forman parte del ámbito objetivo del impuesto deberá ser certificada mediante una entidad acreditada para emitir certificación al amparo de la norma UNE-EN 15343:2008 «Plásticos. Plásticos reciclados. Trazabilidad y evaluación de conformidad del reciclado de plásticos y contenido en reciclado» o las normas que las sustituyan. En el supuesto de plástico reciclado químicamente, dicha cantidad se acreditará mediante el certificado emitido por la correspondiente entidad acreditada o habilitada a tales efectos.

Avoidance of **0.45 euros/kg** of plastic not recycled

3. Challenges in the field of standardization



3. Challenges in the field of standardization

European commission support in circular economy topics



4. UpLift roadmap to solve standardization challenges

3 main actions

Action 1
Engaging companies



Action 2
Involve and initiate the work of the different committees



Action 3
Workshop agreement



4. UpLift roadmap to solve standardization challenges

Involve and initiate the work of the different committees



- AIMPLAS is member of UNE (Spanish Association for Standardisation)
- **UNE/CTN 53/SC8** "Recycled Materials"
- **UNE/CTN 53** "Plastics and Rubber"
- **UNE/CTN 323** "Circular Economy"
- **UNE/CTN 53/SC4** "Packaging"
- Coordinator in UNE/CTN 53/SC6/GT1 "Biodegradability and biobased products"
- **CEN/TC 249/WG 11** "Plastics recycling"
- **CEN/TC 249/WG 9** "Bio-based and biodegradable plastics", "Biobased plastics"
- **ISO/TC 61/ SC 14/WG 5** "Mechanical and Chemical recycling"
- **CEN/TC 261/WG25** "Rigid plastic packages".

4. UpLift roadmap to solve standardization challenges

Workshop agreements

Two main alternatives

CEN/CENELEC
Workshop
Agreements
(CWA)



ISO's
International
Workshop
Agreements
(IWAs)





4. UpLift roadmap to solve standardization challenges

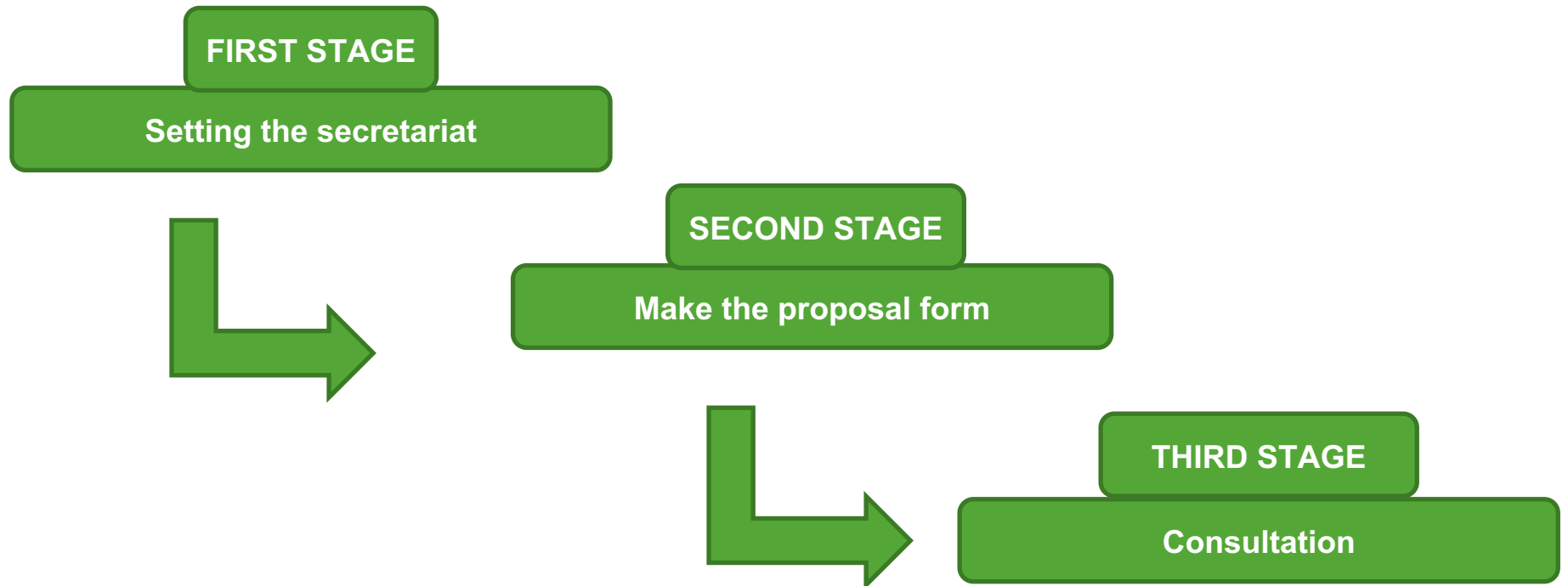
Workshop agreements: CWA

- Definition: is a deliverable developed and agreed by the participants in a temporary working group (CEN/CELENEC workshop)
- No European standard status
- if a conflicting EN is subsequently published, the CWA shall be withdrawn
- There is no geographical limits
- Fast and flexible, on average 10-12 months

4. UpLift roadmap to solve standardization challenges

Workshop agreements: CWA

10-12 months





4. UpLift roadmap to solve standardization challenges

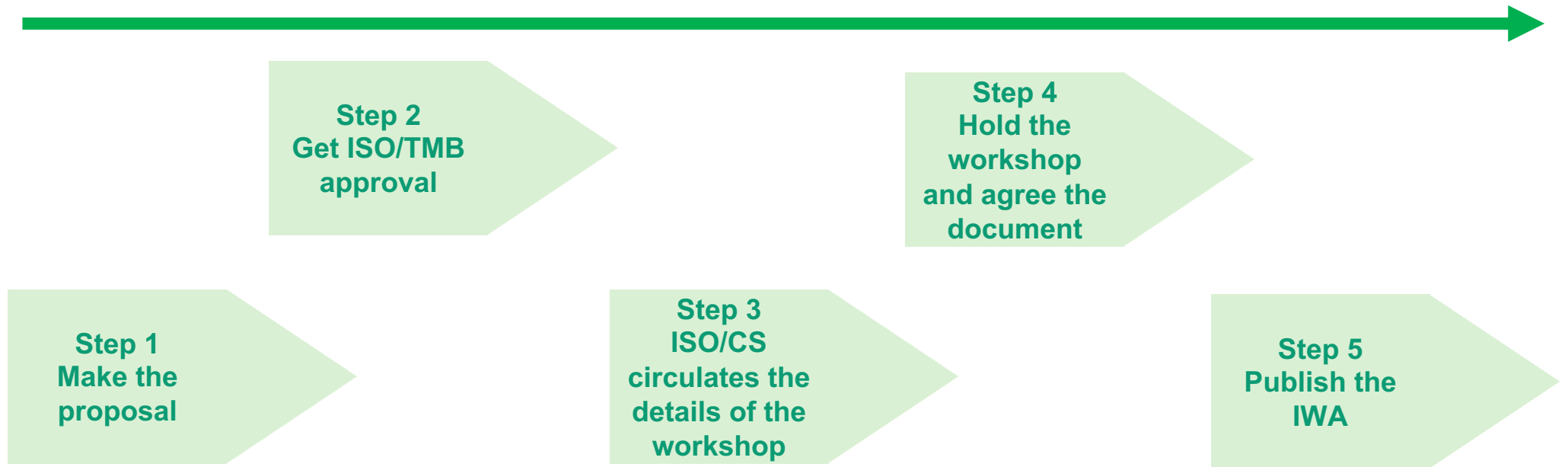
Workshop agreements: IWA

- Definition: an IWA is an ISO document produced through a workshop meeting **rather than the full ISO technical committee process**
- Market players and other stakeholders directly participate in developing an IWA and do not have to go through a **national delegation**
- An IWA can be produced on **any subject**
- An **ISO member body** is assigned to help you organize and run the workshop: transparency, fairness and consensus

4. UpLift roadmap to solve standardization challenges

Workshop agreements: IWA

< 12 months



5. Conclusions

- Existence of legislation and regulations focused on aspects such as: i) F&D packaging, ii) Chain of custody and eco-labelling and iii) bioproducts and biomaterials
- Need to define biological recycling, conceptual clarification
- Lack of legal and regulatory support for biological recycling
- Importance of coordination between legislation and regulations
- Strengthen the communication of the regulatory committees with the business sector
- Advance minimum recycled content: mass balance approach
- Include biological recycling for tax deduction purposes
- Workshop agreements as alternative for standardization of the UpLift technology



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