

**Programme:** EU-HORIZON 2020 Excellent science - 2014-2020

**Call:**

**Specific Challenge:**

The transition to a circular economy requires that the value in products is retained as long as possible. To achieve this, reliable information about the composition of components and materials is needed for health and safety in repair and recycling enterprises and for improved user integration in sustainable product design and in new business models.

Other aspects such as recyclability, dismantlability, recycled content, the sustainability of sourcing of raw materials, security of supply, and ultimately the overall environmental and social performance along the life cycle, are also related to the composition and design of products. If the downstream actors in the value chain, such as consumers, retailers or end-product manufacturers demand this information, it needs to be collected in the whole supply chain upstream. The implementation of resource efficiency benchmarks in products e.g. via Ecodesign or the EU Ecolabel also requires product composition and environmental performance data. The information needs of consumers are of course different from those of manufacturers and recyclers, and suppliers and manufacturers are traditionally worried about excessive transparency and possible violations of proprietary data rights. All this needs to be considered in the design of the information flow in the economic value chain.

Although some manufacturers and suppliers use specific software for internal communication, upstream aggregation and compliance documentation for sectoral product legislation, this does not cover the critical information needs with regard to circularity or the overall life cycle performance. Some SMEs, start-ups, and social and municipal enterprises outside the supply chain would benefit from access to such information management systems, but they have too limited resources to invest in complex and expensive software solutions.

There is thus a need for designing and piloting an information system for raw materials and components in products and their environmental performance that is linked to the material and value flows in an ideally circular system.

The design should be flexible and smart with regard to data volume and conversions and should include the whole flow for a specific business, from raw materials supply via components to the finished product, including customers, repair business, refurbishers, and recyclers.

In addition, the flexibility should allow actors to use the data for compliance reasons, such as REACH or the (future) ECHA database on the presence of hazardous chemicals in articles (ECHA, 2018). It should also allow aggregation and extrapolation with a view to the analysis and mapping of raw material flows and needs in Europe. The concept, the data flow and the specific needs of each actor should be studied in a pilot with operators that are interested in making their business sustainable and future-proof.

**Scope:**

Proposals are expected to bring together all relevant actors along product related value chains – product designers, producers, consumers, businesses providing repair or refurbishment, data provider and manager, sorters and recyclers. The selected products should have a major environmental impact, offer a high potential for circularity, have a complex supply chain, and be linked at both ends of the lifecycle to critical resource issues, e.g. the manufacturing industry, which includes amongst others textiles and plastics, construction and sectors with products that may contain critical raw materials. Where applicable, official nomenclature, such as used in Prodcom[1], should be used for all products and materials. Ideally, a fully functional system should be set up in a value chain with high internal quality standards and an established refurbishment business. The knowledge gained in this set-up should be comprehensive and systemic enough to be easily transferable to less complex sectors and business models. All information flows should be designed with a view to increased circularity, traceability and minimisation of the overall environmental footprint. Proposals should explore, develop and test integrated information flows that take into account the diverse information needs throughout and beyond the original lifecycle of the product.

To facilitate open innovation and transferability, open solutions such as open source software, open hardware design, and open access to data are encouraged. Results from the supported projects might play a central role in the further development of the policies for the transition to a circular economy. The ambition to grant open access to the underlying architecture such as databases, encryption and access rights management should therefore be a central element of the proposals, while adequately addressing possible data protection, user privacy and liability issues. Beneficiaries are encouraged to build value-added services based on the established architecture.

In order to facilitate project management, the development of respective technologies should be decentralised. Proposals are expected to provide quantitative information on the potential for transferring the implemented solution to the wider sector and to other relevant sectors. Based on the pilot data, environmental benefits should be assessed from a lifecycle perspective and quantified using the Product Environmental Footprint (PEF) method[2], which has already been elaborated for certain product categories in cooperation with industrial partners[3]. The social assessment part shall build on the work done in the context of the life cycle initiative and the Platform for Life Cycle Assessment[4]. Economic benefits should also be assessed and quantified under a life cycle perspective.

Participation of actors across the value chain, e.g. material and product producers, end-user organisations, civil society organisations, repair and recycling businesses, etc. is considered essential. Specific information needs at each point in the value chain should be addressed in a satisfactory way, systemised, and the respective data generated out of the integrated information flow. An additional aim of this testing is to obtain a better understanding of the mutual dependencies between the several operators in the system.

Clustering and cooperation with other selected projects under this cross-cutting call and other relevant projects is strongly encouraged.

Activities are expected to focus on Technology Readiness Levels (TRLs) 5-7.

Proposals submitted under this topic should include a business case and exploitation strategy, as outlined in the Introduction of this part of the Work Programme.

The Commission considers that proposals requesting a contribution from the EU in the range of EUR 7-8 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Expected Impact:

The project results are expected to contribute to:

the development of new businesses related to the transition to a circular economy, and related value-adding consulting services;

effective use of both primary and secondary resources in Europe, strengthening geopolitical resource independency, facilitating the market for secondary raw materials, closing material cycles, and reducing waste generation, environmental pollution and greenhouse gas emissions;

achieving the targets of the EIP on Raw Materials, particularly in terms of feeding secondary raw materials knowledge into the EC Raw Materials Information System (RMIS);

better insights into the material composition of products and the amount of secondary raw materials in circulation, increasing circularity of relevant material streams, and strengthening the use of PEF as the standard means for the assessment of the material efficiency and overall environmental performance of products;

streamlined social life cycle assessment ensuring comparability and validity, allowing to critically review green claim and enabling consumers to take environmentally informed purchasing decisions, as well as allowing product designers and developers to take environmentally informed design decisions at an early stage;

better insights on how to transfer successful information management approaches to other businesses and sectors.

Cross-cutting Priorities:

LC-CI

[1]<https://ec.europa.eu/eurostat/web/prodcom>

[2][http://ec.europa.eu/environment/eussd/smgp/PEFCR\\_OEFSR\\_en.htm](http://ec.europa.eu/environment/eussd/smgp/PEFCR_OEFSR_en.htm)

[3][http://ec.europa.eu/environment/eussd/smgp/ef\\_pilots.htm#pef](http://ec.europa.eu/environment/eussd/smgp/ef_pilots.htm#pef)

[4]<https://www.lifecycleinitiative.org/resources/reports/>

<https://product-social-impact-assessment.com/handbook/>

## Topic/s:

### 1. Eligible countries:

Described in Annex A of the Work Programme.

A number of non-EU/non-Associated Countries that are not automatically eligible for funding have made specific provisions for making funding available for their participants in Horizon 2020 projects. See the information in the Online Manual.

### 2. Eligibility and admissibility conditions:

Described in Annex B and Annex C of the Work Programme.

Proposal page limits and layout: please refer to Part B of the proposal template in the submission system below.

### 3. Evaluation:

Evaluation criteria, scoring and thresholds are described in Annex H of the Work Programme.

Submission and evaluation processes are described in the Online Manual.

Proposals submitted under these topics should include a business case and exploitation strategy, as outlined in the Introduction of this part of the Work Programme.

The threshold for the criteria Excellence and Impact will be 4. The overall threshold, applying to the sum of the three individual scores, will be 12.

Under 3 (a) Proposals are first ranked in separate lists according to the topics against which they were submitted ('topic ranked lists'). When comparing ex aequo proposals from different topics, proposals having a higher position in their respective 'topic ranked list' will be considered to have a higher priority in the overall ranked list.

Under 3 (b) For all topics and types of action, the prioritisation will be done first on the basis of the score for Impact, and then on that for Excellence.

### 4. Indicative time for evaluation and grant agreements:

Information on the outcome of evaluation (two-stage call):

For stage 1: maximum 3 months from the deadline for submission.

For stage 2: maximum 5 months from the deadline for submission.  
Signature of grant agreements: maximum 8 months from the deadline for submission.

## 5. Proposal templates, evaluation forms and model grant agreements (MGA):

Innovation Action:

Specific provisions and funding rates  
Standard proposal template  
Standard evaluation form  
General MGA - Multi-Beneficiary  
Annotated Grant Agreement

## 6. Additional provisions:

Horizon 2020 budget flexibility  
Classified information  
Technology readiness levels (TRL) – where a topic description refers to TRL, these definitions apply.

Members of consortium are required to conclude a consortium agreement, in principle prior to the signature of the grant agreement.

## 7. Open access must be granted to all scientific publications resulting from Horizon 2020 actions.

Where relevant, proposals should also provide information on how the participants will manage the research data generated and/or collected during the project, such as details on what types of data the project will generate, whether and how this data will be exploited or made accessible for verification and re-use, and how it will be curated and preserved.

### Open access to research data

The Open Research Data Pilot has been extended to cover all Horizon 2020 topics for which the submission is opened on 26 July 2016 or later. Projects funded under this topic will therefore by default provide open access to the research data they generate, except if they decide to opt-out under the conditions described in Annex L of the Work Programme. Projects can opt-out at any stage, that is both before and after the grant signature.

Note that the evaluation phase proposals will not be evaluated more favourably because they plan to open or share their data, and will not be penalised for opting out.

Open research data sharing applies to the data needed to validate the results presented in scientific publications. Additionally, projects can choose to make other data available open access and need to describe their approach in a Data Management Plan.

Projects need to create a Data Management Plan (DMP), except if they opt-out of making their research data open access. A first version of the DMP must be provided as an early deliverable within six months of the project and should be updated during the project as appropriate. The Commission already provides guidance documents, including a template for DMPs. See the Online Manual.

Eligibility of costs: costs related to data management and data sharing are eligible for reimbursement during the project duration.

The legal requirements for projects participating in this pilot are in the article 29.3 of the Model Grant Agreement.

## 8. Additional documents:

- 1. Introduction WP 2018-20
- 12. Climate action, environment, resource efficiency and raw materials WP 2018-20
- 20. Cross-cutting activities WP 2018-20

General annexes to the Work Programme 2018-2020

Legal basis: Horizon 2020 Regulation of Establishment

Legal basis: Horizon 2020 Rules for Participation

Legal basis: Horizon 2020 Specific Programme

**AG1 priority fields:** Advanced Manufacturing

Co-funding type:

**Co-funding type:** € euro

**Co-funding euro maximum:** 3 000 000,00 €

**Opening date:** 03 Jul 2019

**Deadline date:** 03 Feb 2020

**Field:** Innovation