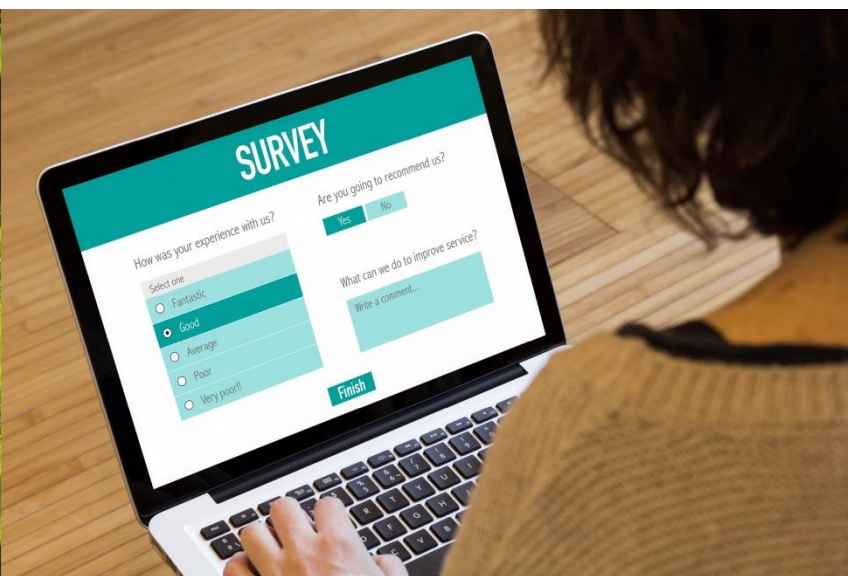


# Joint survey on bioeconomy policy developments in different countries

*Background, methods used and recommendations for future editions*

*Report of JRC, BBI JU and IEA Bioenergy*



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## **Abstract**

The Joint Research Centre, as coordinator of the European Commission's Knowledge Centre for Bioeconomy (BKC), in collaboration with the Bio-based Industries Joint Undertaking (BBI JU) and the International Energy Agency (IEA) Bioenergy and with input from other stakeholders, undertook a survey research in order to collect information on bioeconomy strategies or policies in the EU Member States and other countries. This report covers the background of this survey, provides an overview of other related initiatives, documents the methods used and concludes with recommendations for future editions of this survey. The outcomes of the survey are made available separately on the website of the BKC (<https://biobs.jrc.ec.europa.eu>), as web-based interactive dashboards in the policy tab of 'country pages', an interactive overview map in the policy 'topic page' and separate reports from the partner organisations available through the knowledge library, allowing a flexible approach for possible updates where necessary, as new information becomes available.

## 1 Introduction

In 2012, the Commission launched an EU Bioeconomy Strategy through its Communication 'Innovating for Sustainable Growth: A Bioeconomy for Europe' (EC 2012). The aim of this Strategy was to pave the way to a more innovative, resource efficient and competitive society that reconciles food security with the sustainable use of renewable resources for industrial purposes, while ensuring environmental protection. Following a review of this Strategy in 2017, a new Communication from the Commission, updating the 2012 European Bioeconomy Strategy, is tentatively planned to be adopted in 2018.

The bioeconomy is a cross-cutting field that interconnects not only different economic sectors but also many other EU policies and strategies, including the Common Agricultural Policy, the Circular Economy Strategy, the Common Fisheries Policy and the Blue Growth Strategy, the Food 2030 approach, the Renewed EU Industrial Policy Strategy, the EU Energy and Climate Union policy and the EU Biodiversity Strategy. It is also linked to global policy developments such as the Paris Climate Agreement, the Sustainable Development Goals and the Convention on Biological Diversity. The Bioeconomy Report 2016 (Ronzon et al., 2017) and the website of the European Commission's Knowledge Centre for Bioeconomy<sup>1</sup> (BKC 2017) provide a more comprehensive overview of the policy framework relevant for the bioeconomy at EU and global level.

Bioeconomy (or bioeconomy-related) strategies or policies also exist or are being developed in many of the EU Member States, and other countries, and in some of their regions. The Joint Research Centre, as coordinator of the European Commission's Knowledge Centre for Bioeconomy (BKC), in collaboration with the Bio-based Industries Joint Undertaking (BBI JU) and International Energy Agency Bioenergy – Task 42 Biorefining (hereafter IEA Bioenergy Task 42) and with input from other stakeholders, undertook a survey research in order to collect, structure and communicate updated information on such policy developments. IEA Bioenergy Task 42 joined the organisation of this survey to collect information on the international status and the role of integrated biorefineries within bioeconomy policy developments.

This report covers the background of this survey and provides an overview of other related initiatives (chapter 2), documents the methods used (chapter 3) and concludes with recommendations for future editions of this survey (chapter 4). The outcomes of the survey are made available separately on the website of the BKC (<https://biobs.jrc.ec.europa.eu>), as web-based interactive dashboards in the policy tab of 'country pages', an interactive overview map in the policy 'topic page' and separate reports from the partner organisations available through the knowledge library, allowing a flexible approach for possible updates where necessary, as new information becomes available.

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<sup>1</sup> The Knowledge Centre for the Bioeconomy is a European Commission initiative on better knowledge management for bioeconomy-related policy making.

## 2 Background

### 2.1 Partners and information needs

Over the last years the JRC, the BBI JU, IEA Bioenergy Task 42 and other organisations have been actively seeking information on bioeconomy policy developments at national level to address different needs. Due to the cross-cutting nature of the bioeconomy, a large number of institutions are involved at national level. Consequently, such information is often not comprehensively documented or scattered, at least in some of the countries. Thus, information gathering efforts have been largely relying on surveys targeting a limited pool of experts that have the overview of bioeconomy policy developments in specific countries. In order to streamline the efforts made, a decision was taken to carry out a joint survey in order to make best use of expertise and experience of the different organisations and of synergies and in order to avoid survey fatigue of targeted stakeholders potentially caused by several surveys carried out in parallel.

The JRC, building upon its experience from a related survey (EC 2015) jointly undertaken with the Standing Committee on Agricultural Research (SCAR) in 2014-2015, contacted potential partners. The survey was finally carried out by the JRC for the BKC (<https://biobs.jrc.ec.europa.eu/>), in cooperation with the BBI JU (<http://www.bbi-europe.eu/>) and IEA Bioenergy Task 42 (<http://task42.ieabioenergy.com/>). Additionally, experts from the Directorate-General for Research and Innovation (DG RTD), the SCAR, the Organisation for Economic Co-operation and Development (OECD) and the German Bioeconomy Council contributed to the development of the survey methodology and especially the development and testing of the questionnaire. Other organisations with similar initiatives were also contacted to contribute to the joint survey (namely the Food and Agricultural Organization of the United Nations, FAO).

The JRC is responsible for the technical coordination of the BKC, the Commission's central knowledge hub on the bioeconomy, established in 2017 as a follow-up action from the Commission Communication on Data, Information and Knowledge Management at the European Commission and the JRC Strategy 2030. The BKC brings together knowledge and experts from within and outside the Commission, including all relevant JRC competences, and serves as a single 'corporate' entry point for bioeconomy-related knowledge. Its purpose is best described as helping to manage:

- Knowledge demand: identifying, together with European Commission's policy Directorate Generals (DGs), the knowledge needs;
- Knowledge supply:
  - o informing knowledge producers (e.g. JRC, DG RTD but also organisations outside the European Commission) about the knowledge needs;
  - o making available relevant knowledge (data, information, expertise) to EU-policy makers and stakeholders.

In the framework of these obligations the BKC coordinated the development of the survey methodology, carried out the data collection, validation of responses and coordinated the reporting of the results.

The BBI JU is a Public-Private Partnership between the EU and the Bio-based Industries Consortium. The overall objective of the BBI JU is to support research and innovation activities in the field of the bio-based industry using resources from the public and private sectors. To this end, the BBI JU organises calls for proposals aimed at supporting research, demonstration and deployment activities. Its specific objectives are to:

- demonstrate technologies that enable new chemical building blocks, new materials, and new consumer products from European biomass, which replace the need for fossil-based inputs;

- develop business models that integrate economic actors along the value chain from the supply of biomass to biorefinery plants to the consumers of bio-based materials, chemicals and fuels, including the creation of new cross-sector interconnections and the support of cross-industry clusters; and
- set-up flagship biorefinery plants that deploy the technologies and business models for bio-based materials, chemicals and fuels and demonstrate cost and performance improvements to levels that are competitive with fossil-based alternatives.

IEA Bioenergy Task 42 is an international platform for collaboration and information exchange between industry, small and medium-sized enterprises (SMEs), governmental organisations (GOs), non-governmental organisations (NGOs), research and technology organisations (RTOs), and universities concerning biorefinery research, development, demonstration, and policy analysis. It contributes to the development and deployment of integrated biorefineries as part of highly efficient sustainable value chains (co-)producing food/feed ingredients, chemicals, materials, fuels, power and/or heat from sustainably sourced biomass (wood, crops, residues, etc.) as base for a global bioeconomy. Its main goals are to:

- provide quantitative, scientifically sound and systematic data (technical, economic and ecological) for measuring the added-value of biorefineries for co-producing bioenergy and bio-products in a sustainable way;
- assess the status of the implementation of biorefineries at the global level, including major deployment barriers and market data; and
- provide an international platform for cooperation and information exchange.

## 2.2 Previous studies/surveys

Table 1 provides an overview of studies/surveys on bioeconomy policies which have been or are being carried out. The first six studies/surveys listed had been organised before the methodology of the survey which is subject of this report was developed. The methodology used for this survey builds upon these previous activities.

**Table 1:** Summary of surveys and studies on bioeconomy strategies/policies

No	Organisation	Topic	Year	Attempted geographical coverage	Reports/links
1	FAO-ACSFI <sup>2</sup>	<p><b>Global Review of the Influences of Bioeconomy Strategies on Forest Industries</b></p> <p>Report presenting a review and comparison of the bioeconomy strategies (bioeconomy related policies and programmes) in the host countries of the 2014 member organisations of the FAO-ACSFI.</p>	2014	Global - ACSFI members	<p><b>Draft discussion paper:</b></p> <p><a href="http://foris.fao.org/meetings/download/2015/acsfi_56th_meeting_advisory_committee_on_sustainable/misc_documents/05_06_2015_final_bioeconomy_review_document_acsfi_2_.pdf">http://foris.fao.org/meetings/download/2015/acsfi_56th_meeting_advisory_committee_on_sustainable/misc_documents/05_06_2015_final_bioeconomy_review_document_acsfi_2_.pdf</a></p>

<sup>2</sup> ACSFI = Advisory Committee on Sustainable Forest-based Industries



No	Organisation	Topic	Year	Attempted geographical coverage	Reports/links
2	IEA Bioenergy Task 42	<b>BioEconomy Survey 2014. National BioEconomy Strategies IEA Bioenergy Implementing Agreement Countries</b>  Identification of major bio(based) economy strategies in the 22 member countries of the IEA Bioenergy IA.	2014	Global - 22 member countries of the IEA Bioenergy IA	<b>Survey results:</b>  <a href="http://www.iea-bioenergy.task42-biorefineries.com/web/file?uuid=5168c6ab-e4ba-4356-b6cd-a9772aae032a&amp;owner=218d4964-09e5-4dde-ab22-18845a4aba18">http://www.iea-bioenergy.task42-biorefineries.com/web/file?uuid=5168c6ab-e4ba-4356-b6cd-a9772aae032a&amp;owner=218d4964-09e5-4dde-ab22-18845a4aba18</a>
3	JRC and SCAR	<b>JRC-SCAR Bioeconomy survey</b>  Survey collecting data on national Bioeconomy policies, legal status of bioeconomy development and national as well as regional/cluster R&D initiatives and public R&D funding.	2015	EU 28, Candidate Countries and Countries associated to H2020	<b>Survey results:</b>  <a href="https://www.scar-swg-sbgb.eu/lw_resource/datapool/items/item_24/survey_bioeconomy_report_1501_full_text.pdf">https://www.scar-swg-sbgb.eu/lw_resource/datapool/items/item_24/survey_bioeconomy_report_1501_full_text.pdf</a>
4	German Bioeconomy Council	<b>Bioeconomy Policy - Synopsis and Analysis of Strategies in the G7</b>  Report providing an overview of the political strategies for promoting the bioeconomy within the G7 members, including the EU.	2015	Global – G7 members	<b>Report:</b>  <a href="http://bioekonomierat.de/fileadmin/Publikationen/berichte/BOER_Laendestudie_1_.pdf">http://bioekonomierat.de/fileadmin/Publikationen/berichte/BOER_Laendestudie_1_.pdf</a>
5	German Bioeconomy Council	<b>Synopsis of National Strategies around the World</b>  Report providing an overview of bioeconomy related policy strategies in 45 countries around the globe.	2015	Global – Countries with bioeconomy strategy	<b>Report:</b>  <a href="http://bioekonomierat.de/fileadmin/Publikationen/berichte/Bioeconomy-Policy_Part-II.pdf">http://bioekonomierat.de/fileadmin/Publikationen/berichte/Bioeconomy-Policy_Part-II.pdf</a>
6	BBJ JU	<b>Bio-based Industries in Europe</b>  Survey collecting information on national and regional programmes, communication and dissemination and deployment activities under article 11 of Annex I to the Council Regulation 560/214 establishing the Bio-based Industries Joint Undertaking, on the tasks of the States Representatives Group-SRG.	2016	EU28 and Associated Countries	<b>Questionnaire:</b>  <a href="https://ec.europa.eu/eusurvey/runner/QuestionnaireSRG">https://ec.europa.eu/eusurvey/runner/QuestionnaireSRG</a>
7	DG RTD <sup>3</sup>	<b>Bioeconomy development in the EU regions 2017</b>  Mapping of EU Member States' / regions' Research and Innovation plans & Strategies for Smart Specialisation (RIS3) on Bioeconomy	2017	EU 28	<b>Report:</b>  <a href="https://ec.europa.eu/research/bioeconomy/pdf/publications/bioeconomy_development_in_eu_regions.pdf">https://ec.europa.eu/research/bioeconomy/pdf/publications/bioeconomy_development_in_eu_regions.pdf</a>

<sup>3</sup> The study was carried out under a contract between Directorate-General for Research & Innovation (DG RTD) and a consortium led by SWECO and Spatial Foresight with the participation of ÖIR, t33, Nordregio, Berman Group and INFYDE.

No	Organisation	Topic	Year	Attempted geographical coverage	Reports/links
8	German Bioeconomy Council	<b>Update Report of National Strategies around the World</b> Bioeconomy Policy (Part III) – Synopsis of National Strategies around the World.	2018	Global – Countries with bioeconomy strategy	<b>Report:</b> <a href="http://biooekonomierat.de/fileadmin/Publikationen/berichte/GBS_2018_Bioeconomy-Strategies-around-the-World_Part-III.pdf">http://biooekonomierat.de/fileadmin/Publikationen/berichte/GBS_2018_Bioeconomy-Strategies-around-the-World_Part-III.pdf</a>
9	SCAR	<b>SCAR survey on challenges facing bioeconomy</b>  (i) Identify innovation challenges to support the implementation of the Bioeconomy Strategy for Europe.  (ii) Identify the interactions between the primary sector and the bioeconomy their key underlying constraints.	2018 On-going	EU 28, Candidate Countries and Associated Countries to H2020	<b>Questionnaire:</b> <a href="https://ec.europa.eu/eip/agriculture/en/communitiy/news/scar-survey-challenges-facing-bioeconomy">https://ec.europa.eu/eip/agriculture/en/communitiy/news/scar-survey-challenges-facing-bioeconomy</a>
10	SCAR	<b>MontBioeco survey</b> Survey on objectives and indicators of bioeconomy strategies.	2018 On-going	EU 28, Candidate Countries and Associated Countries to H2020	<b>Report:</b> Being finalised at the time of publication (May 2018).

## 3 Survey

### 3.1 Objective

The objective of the survey was to collect information on bioeconomy developments at national scale in EU Member States, Horizon 2020 (H2020) Associated Countries and countries participating in IEA Bioenergy, in particular:

1. Information on bioeconomy policy developments:
  - institutions involved in the development of the bioeconomy at national level;
  - status of national bioeconomy strategies and definitions of bioeconomy;
  - information on dedicated national strategies (e.g. goals, sectors and stakeholders involved, existence of monitoring framework, etc.);
  - other bioeconomy-related strategies;
  - bioeconomy strategies at regional level;
  - other relevant bioeconomy-related information (e.g. funding and educational programmes, certification schemes and incentives for bio-based products, etc.).

This information was needed to up-date and complement already existing compilations of information on bioeconomy policies in different countries.

2. Information on bio-based industries:
  - national institutions responsible for Bioeconomy;
  - relevant stakeholders in the Bio-Based Industrial Sector;
  - national strategies and funding programmes;
  - deployment activities;
  - dissemination and promotion of the BBI JU at national level.

This information is required under article 11 (4) of Annex I to the Council Regulation 560/214 establishing the Bio-based Industries Joint Undertaking (EU 2014), which foresees that the States Representatives Group shall also provide information to, and act as an interface within, the BBI Joint Undertaking on:

- (a) the status of relevant national or regional research and innovation programmes and identification of potential areas of cooperation, including deployment of relevant technologies, to allow synergies and avoid overlaps;
- (b) specific measures taken at national or regional level with regard to dissemination events, dedicated technical workshops and communication activities;
- (c) specific measures taken at national or regional level with regard to deployment activities in relation to the BBI Initiative.

3. Data on biorefineries and stakeholders

This information is needed as part of the knowledge exchange platform function of IEA Bioenergy Task 42 (bringing together governmental organisations (GOs), non-governmental organisations (NGOs), SMEs, industries and universities). The main objective is to gather data and information on the existence of commercial,

flagship, demo and pilot biorefineries, biorefinery R&D-projects and stakeholders involved in biorefineries deployment.

### 3.2 Target group

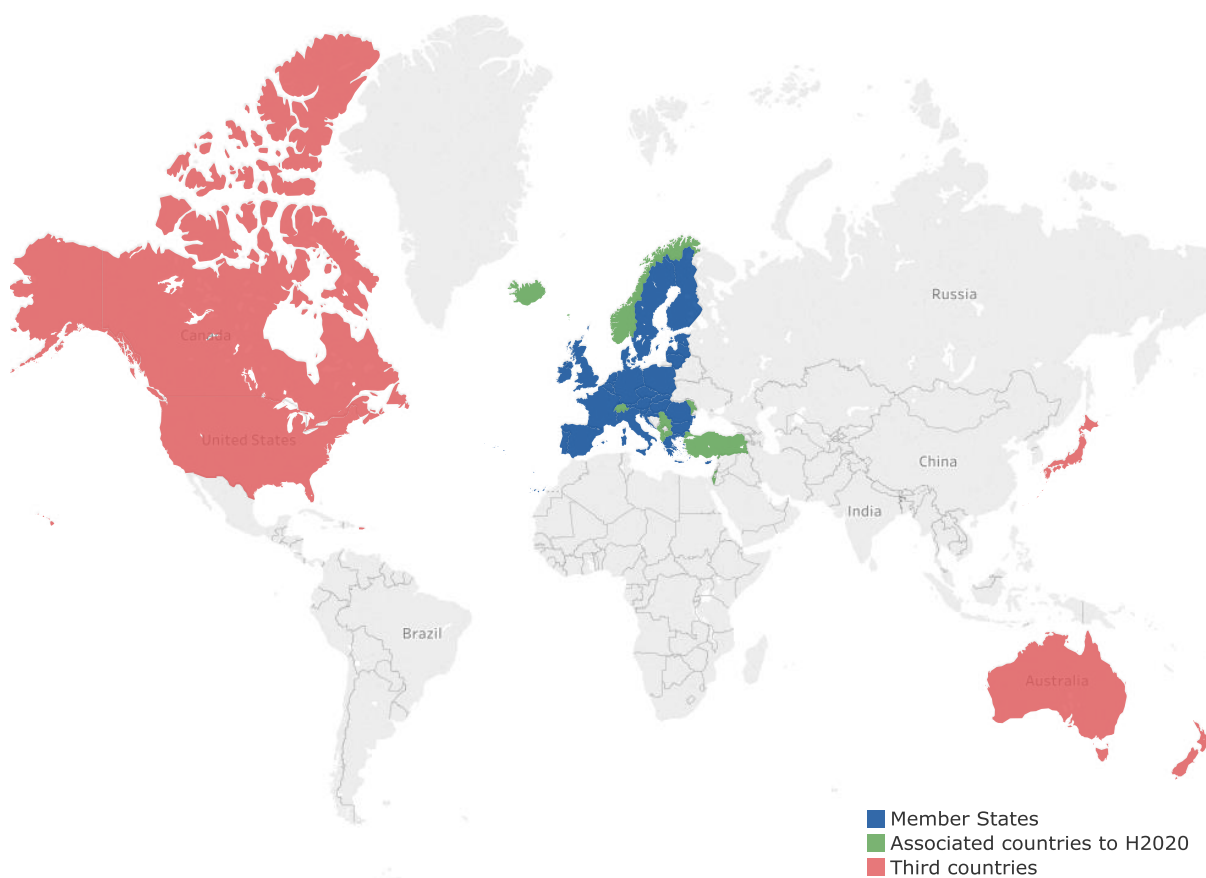
During the preparatory phase, a list of groups of experts with broad knowledge of bioeconomy policy developments at national level was compiled which included:

- a. SCAR members (from the SCAR plenary group, the steering group and the strategy working group – SCAR-BSW);
- b. BBI JU State Representatives Group (SRG) members;
- c. members of IEA Bioenergy Task 42.

The groups listed under (a) and (b) are made up by experts from EU Member States and H2020 Associated Countries. Group (c) includes representatives from EU MS and participating organisations on the IEA Bioenergy Task 42 from Third Countries.

In total contact persons from those groups, covering 44 countries were eventually invited to participate (Figure 1):

- 28 Member States
- 11 (out of 16) H2020 Associated Countries
- 5 Third Countries: Australia, Canada, US, Japan and New Zealand.



**Figure 1:** Countries covered by the group of experts invited to participate to the joint bioeconomy survey.

### **3.3 Development of questionnaire**

In 2016, JRC had analysed six existing surveys/initiatives (1-6 in the table included in the Annex) concerning

- organising entities
- objective of the surveys/studies
- geographic coverage
- topics covered by the survey questionnaires
- participants in the surveys

On the basis of this analysis, potential partners were identified and the questionnaire was then drafted and further developed by the JRC, in cooperation with experts from BBI JU, IEA Bioenergy Task 42 as well as from DG RTD, SCAR, OECD and the German Bioeconomy Council.

The survey questionnaire, as finalised, is included in the Annex to this report. It is structured in three groups of questions:

1. a general part relevant for all survey participants (sections A-E)
2. a specific part for members of the BBI JU State Representatives Group only (section F)
3. a specific part for members of IEA Bioenergy Task 42 (section G).

It was decided to administer the survey through the web-based EU Survey tool and that potential participants should be invited by e-mail to participate and encouraged to coordinate at country level and submit joint answers, when possible.

The web-based questionnaire was tested by three Member State experts. Difficulties reported were of technical nature and related to the coordination and submission process and the uploading of supporting document files on the tool. In order to facilitate the process of coordination it was decided to additionally provide a word version of the questionnaire to the survey participants.

### **3.4 Survey conduct**

On 12 September 2017 invitations were sent to a list of potential participants (see 3.2) by email (one email was sent per country, providing the link and password to access to the survey).

Contact persons in each of the countries were informed that they could

- a. answer the questionnaire individually or
- b. coordinate answers with colleagues in their country and submit a single joint answer

Participants received also a word version of the questionnaire by email in order to facilitate the coordination of answers. However, they were encouraged to submit coordinated answers via the online application.

Following the initial invitations, JRC sent several reminders including deadline extensions in order to achieve a very high coverage of target countries.

The questionnaire was answered by 31 participants covering 28 countries, including 25 of the 28 EU Member States: Austria, Belgium (two individual answers covering the Flemish and Walloon regions respectively), Croatia, Czech Republic, Denmark (two individual answers coming from experts from different institutions), Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Netherlands (two answers coming from experts from different institutions), Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and United Kingdom. Additionally,

answers were received from three H2020 Associated Countries: Switzerland, Norway and Turkey.

### **3.5 Analysis and presentation of results**

Answers to the first group of questions (sections A-E) were checked by the JRC's BKC coordination team for completeness and inconsistencies concerning the interpretation of questions by respondents. Some missing information was completed in cooperation with respondents. Furthermore, some provisional adjustments were made to some of the answers in order to harmonise the database. Finally, the data collected through the survey was complemented by information coming from other sources (mainly desktop research on publicly available information and consultation with additional experts). Special attention was given to the report from the German Bioeconomy Council (2018) that was published during the time of the analysis of the responses to this survey and the input provided by MS (in the framework of the SCAR-BSW) to the updating of the European Bioeconomy Strategy and Action Plan.

Based on this provisional evaluation, a draft web-based interactive dashboard for each country was developed in Tableau software ®. Each dashboard presents the key information in an easy to read, one-page summary. At the same time, the dashboard allows the user to drill into more detail, by prompting additional notes and links to other sources of information in an intuitive way. Furthermore, the user can navigate between the dashboards of different countries through a small interactive map embedded in the dashboard.

An additional interactive map that provides the overview of strategies and other policy initiatives dedicated to the bioeconomy in EU Member States was also developed in Tableau (<https://biobs.jrc.ec.europa.eu/topic/policy#heading-117>). This map links to the dashboard of each Member State (e.g. <https://biobs.jrc.ec.europa.eu/country/austria#bootstrap-fieldgroup-nav-item--policy>).

In order to validate and to improve the quality of the information, links to the draft dashboards were shared with the specific experts that provided the inputs through the survey for additional feedback or possible corrections.

The final versions of the interactive dashboards and map provide a country-specific overview of bioeconomy policy developments as of March 2018. They are embedded in the policy tab of 'country pages' and the policy 'topic page' of the BKC website respectively. Their web-based presentation allows a flexible approach for possible completions or corrections where necessary as new information on the reference period becomes available. New information arising from developments that occurred after March 2018 will be reflected in comprehensive regular updates.

The answers to the second group of questions (section F) focused on the collection of information on bio-based industries and were organised in the following categories: national institutions responsible for Bioeconomy, relevant stakeholders in the Bio-Based Industrial Sector, national strategies and funding programmes, deployment activities and dissemination and promotion of the BBI JU at national level. The report "2017 Update on the Strategies and Policies for the EU Bioeconomy: an analysis of national approaches as reported by the BBI JU States Representative Group" is available in the library of the bioeconomy Knowledge Centre.

Answers to the third group of questions (section G) were evaluated concerning completeness and inconsistencies by IEA Bioenergy Task 42. Geographical information on the location (national or regional affiliation) of biorefineries was evaluated. Where available the community and geographical coordinates were entered in a database. Care was taken to avoid possible multiple counting of the same facility.

For the biorefineries capacity section, data had to be aligned concerning measurements units. Conversion factors were applied in order to obtain comparable data. Also the terminology uses for raw materials and the portfolio of products had to be aligned.

Where possible, aggregation was carried out to facilitate comparison. IEA Bioenergy Task 42 will produce a separate full report which will also include the results and assessment.

## **4 Recommendations for future editions of this survey**

It is planned to repeat the joint bioeconomy survey on a regular basis in order to update the information.

### **4.1 Methodology**

Even though the use of a questionnaire and of the EU survey tool were effective and efficient methods in this first data collection exercise, other approaches may also be appropriate for future editions, especially if the information needs will largely be the same. For those information needs that will remain unchanged, compared to the first edition, it is recommended that the survey participants start from the most recent information and prompted to focus only on updates or possible corrections.

Efforts to extend the geographical coverage of future surveys will be made in order to get a more complete picture of bioeconomy policy developments in other countries outside EU.

### **4.2 Targeted information/content**

Considering that an updated Bioeconomy Strategy is likely to emerge in 2018, future surveys need to consider possible new information needs that may emerge from its action plan.

Furthermore, specific questions in this first survey, that were perceived as ambiguous or unclear and as a result the answers depended upon the individual's interpretation need to be improved in future surveys. In this context it is recommended to:

- better define the term "bioeconomy-related strategies" to explore these strategies in a more systematic way (e.g. broken down to sectors and horizontal topics);
- better specify the types of institutions involved in the bioeconomy (other than ministries) and their responsibilities considered relevant to allow a more consistent mapping across different countries (B.3);
- better specify the types of incentives for bio-based products (e.g. broken down to certain types);
- make the wording of certain questions more specific to avoid potential ambiguity (e.g. substitute "location of biorefinery" by "City" or Latitude/Longitude);
- cover regional strategies in more systematic way;
- review certain terms that were considered misleading (e.g. use of term 'infrastructure' for the title of section E) and consistency between linked questions (e.g. question D1.2 mentioned 'dedicated' whilst D.1, D1.4, 1.5, D1.6, D1.7, D1.8 didn't).

Finally, in order to further improve both the methodology and the content it is recommended that experts, including those that participated in this first version are consulted before future editions of this survey are launched.



# **Joint bioeconomy survey**

JRC-SCAR-BBI-IEA-Bioenergy 2017

## **GENERAL SURVEY**

*Questions marked with \* are obligatory*

### **A. Personal information**

\*Name

\*Organisation/Institution

\*E mail

\*Telephone number

\*Country

\*Date of filling in the questionnaire

\*Have you coordinated your answer with another member of the BBI SRG or SCAR from your country?

 Yes No

If yes, please indicate with whom:

	<b>Name</b>	<b>Organisation</b>
<b>Coordinated member 1</b>		
<b>Coordinated member 2</b>		
<b>Coordinated member 3</b>		
<b>Coordinated member 4</b>		

## B. National Institutions

1. In your country, which national ministry/ies is/are leading the bioeconomy (bioeconomy, bio-based economy or bio-based industry)?

*[if your government is not working specifically on these topics, please specify 'none']*

Please insert the name in English and the weblink.

If just one Ministry involved, leave empty rows.

	<b>Name (in English)</b>	<b>Weblink</b>
<b>Ministry 1</b>		
<b>Ministry 2</b>		
<b>Ministry 3</b>		

\*2. Are there more ministries involved in the development of the bioeconomy (bio-based economy or bio-based industry)?

Yes

No

2.1. If yes, please, insert the name(s) including weblink(s).

Please, insert the name in English

	<b>Name</b>	<b>Weblink</b>
<b>Ministry 1</b>		
<b>Ministry 2</b>		
<b>Ministry 3</b>		
<b>Ministry 4</b>		
<b>Ministry 5</b>		

3. Is/are a national bioeconomy agency or other institutions / organisations / associations / platforms / clusters / networks / universities / an informal governance body with specific bioeconomy related responsibilities?

Yes

No

3.1 If yes, please provide the name(s) including weblink(s).

Please, insert the name in English

	<b>Name</b>	<b>Weblink</b>
<b>Institution/Organisation 1</b>		
<b>Institution/Organisation 2</b>		
<b>Institution/Organisation 3</b>		
<b>Institution/Organisation 4</b>		
<b>Institution/Organisation 5</b>		

4. Can you name contact persons for the bioeconomy in your country, in addition to yourself, in particular national government representatives?

	Name	Organisation	E mail	Telephone
<b>Additional contact person 1</b>				
<b>Additional contact person 2</b>				
<b>Additional contact person 3</b>				
<b>Additional contact person 4</b>				
<b>Additional contact person 5</b>				

### C. National bioeconomy definition/scope

In your country, the term "bioeconomy" is defined as follows (please include the source if possible, e.g. the national bioeconomy strategy). If relevant, please include definitions of related concepts, such as bio-based economy or bio-based industry.

1000 character(s) maximum

*Please, feel free to attach a supporting file*

### D. National bioeconomy policy and strategy

\*1. In your country, is/are there **bioeconomy** (bioeconomy, bio-based economy or bio-based industry) policy(ies) / **strategy**(ies) at national level?

Yes

No

**If there is not a bioeconomy strategy** (drop-down the arrow on the left):

1.2. If no, is your country in the **process of preparing** of a dedicated bioeconomy strategy?

Yes

No

Not known

1.3. If yes, can you provide some details about the status of the process (e.g. just started or almost finished)?

1000 character(s) maximum (1000 characters left)

If **there is a bioeconomy strategy** (drop-down the arrow on the left):

1.1. If yes, please, provide the **name(s)** including weblink(s) of the national policy(ies) / strategy(ies).

Please, insert the name in English

	<b>Name</b>	<b>Year</b>	<b>Weblink</b>
<b>Bioeconomy policy / strategy 1</b>			
<b>Bioeconomy policy / strategy 2</b>			
<b>Bioeconomy policy / strategy 3</b>			
<b>Bioeconomy policy / strategy 4</b>			
<b>Bioeconomy policy / strategy 5</b>			

*Please, feel free to attach any supporting files*

1.4. Does the policy strategy define **goals**? Any qualitative targets? If yes, please describe them.

500 character(s) maximum

1.5. Which of the following **actions** are part of your national bioeconomy policy(ies) / strategy(ies)?

	Included
<b>Funding for R&amp;I/ PPPs<sup>4</sup></b>	
<b>Public procurement</b>	
<b>Labelling<sup>5</sup></b>	
<b>Other</b>	

1.5.1. If other, please specify

500 character(s) maximum

---

<sup>4</sup> R&I: Research & Innovation  
PPPs: Public - Private Partnership  
<sup>5</sup> Labelling of bio-based products

1.6. Which of the following **sectors** are covered by your national bioeconomy policy(ies) / strategy(ies)?

- Agriculture
- Bio-based chemicals and materials
- Bio-based textiles
- Biofuels
- Bio-based electricity
- Biotechnology
- Fisheries
- Aquaculture
- Food
- Forestry
- Organic waste
- Pulp, paper
- Wood, wood products and furniture
- Other

1.6.1. If other, please specify

500 character(s) maximum

1.7. Are the policy(ies) / strategy(ies) **monitored**?

- Yes
- No

1.7.1. Which are the main indicators used?

500 character(s) maximum

*(e.g. employment in bioeconomy sectors, targets on biomass use, etc.)*

1.8. Which of the following **stakeholder groups** are involved in the development and execution of the policy(ies) / strategy(ies)?

	Involved
1. Public institutions, organisations	
2. Academia	
3. Consultants	
4. Industry	
5. NGO	
6. Other	

1.8.1. If other, please specify  
500 character(s) maximum

1.9. Do you know of other national strategies in your country that are **closely related** to the bioeconomy strategies?

- Yes
- No

1.9.1. If yes, please list them below.

	Name	Year	Weblink
<b>Bioeconomy-related strategy 1</b>			
<b>Bioeconomy-related strategy 2</b>			
<b>Bioeconomy-related strategy 3</b>			
<b>Bioeconomy-related strategy 4</b>			
<b>Bioeconomy-related strategy 5</b>			

1.10. Do you know of **regional** bioeconomy strategies in your country?

- Yes
- No

1.10.1. If yes, please, list hem below.

	Name	Year	Weblink
<b>Regional bioeconomy strategy 1</b>			
<b>Regional bioeconomy strategy 2</b>			
<b>Regional bioeconomy strategy 3</b>			
<b>Regional bioeconomy strategy 4</b>			
<b>Regional bioeconomy strategy 5</b>			

*Please, feel free to attach any supporting files*

2. Are there any specific examples of incentives for bio-based products, e.g. bio-based chemicals, bio-based materials, bioenergy (fuels/heat/electricity)?  
(e.g. tax reliefs, market quota, etc.)

- Yes  
 No

2.1 If yes, please, provide information, including relevant web links if available.

Please, insert the name in English

	Name	Weblink
<b>Incentive 1</b>		
<b>Incentive 2</b>		
<b>Incentive 3</b>		

Please, feel free to attach a supporting file for this section of the survey

## E. Bioeconomy Infrastructure

1. Are there specific bioeconomy **funding programmes** for?:

Please do not list programmes for specific sectors of the bioeconomy (e.g. agriculture)

	Yes
1. Bioeconomy R&I	
2. Infrastructure investments	
3. Bio-based industrial sector	
4. Other	

1.1. If other, please specify:

500 character(s) maximum

2. Is there a **national register** / list (or statistics) of bio-based industries or bio-refineries?

- Yes  
 No  
 Not known

2.1 If yes, please provide name, weblink and field of specialisation.

Please, insert the name in English

	<b>Name</b>	<b>Weblink</b>
<b>Register / List 1</b>		
<b>Register / List 2</b>		
<b>Register / List 3</b>		

3. Are there national **certification scheme(s)** for biomass and bio-based products?

Yes

No

Not known

3.1. If yes, please provide name(s) including weblink.

Please, insert the name in English

	<b>Name</b>	<b>Weblink</b>
<b>Scheme 1</b>		
<b>Scheme 2</b>		
<b>Scheme 3</b>		
<b>Scheme 4</b>		
<b>Scheme 5</b>		

4. Are there **educational programmes** on Bioeconomy?

Yes

No

Not known

4.1. If yes, please provide the name(s) including the weblink(s) of the Educational Programme(s).

Please, insert the name in English

	<b>Name</b>	<b>Weblink</b>
<b>Programme 1</b>		
<b>Programme 2</b>		
<b>Programme 3</b>		



Please, feel free to attach a supporting file for this section of the survey

**Are you a BBI SRG member?**

Yes  
 No

**Are you IEA-Bioenergy member?**

Yes  
 No

**F. Specific questions only for BBI SRG members**

**F.1. Relevant stakeholders on the Bio-based Industrial Sector**

This section aims at identifying key stakeholders at both national and regional level (ministries, national agencies, industry and research stakeholders, etc.) who are interested in the BBI JU Initiative and BBI JU call for proposals. The expected result is to identify measures to strengthen their involvement in the BBI JU Initiative. This section should be filled to complement section B of the current questionnaire if needed to highlight specific stakeholders or organisational structures relevant to the bio-based industrial sector in your country.

1.1. Organisation at national level (most relevant ministries, funding agencies, etc.)

	<b>Name</b>	<b>Weblink</b>
<b>Organisation 1</b>		
<b>Organisation 2</b>		
<b>Organisation 3</b>		
<b>Organisation 4</b>		
<b>Organisation 5</b>		

1.2. Main relevant industry and research stakeholders (provide some examples).

	<b>Name</b>	<b>Weblink</b>
<b>Organisation 1</b>		
<b>Organisation 2</b>		
<b>Organisation 3</b>		
<b>Organisation 4</b>		
<b>Organisation 5</b>		

1.3. Does your country have any networks, platforms, associations, clusters, etc. in place which supports the bio-based industrial sector and encourage/facilitate the involvement of national stakeholders in the BBI JU calls?

3000 character(s) maximum

## F. 2. Strategies and funding programmes

This section aims at compiling information on the status of national and regional research and innovation strategies and plans relevant for the support of the bio-based industrial sector. This section should be filled if needed to complement section D of the current questionnaire to highlight specificities for the bio/based industrial sector.

2.1. Please indicate the strategies and programmes that are more relevant for the support of the bio-based industrial sector in your country. Which are the last developments since the last time you filled the questionnaire?

5000 character(s) maximum

2.2. Does your country have national/regional funding programmes in place to specifically support the bio-based industrial sector (e.g. SMEs, projects, initiatives, etc.)? Are these initiatives bottom-up? Could you briefly elaborate on the scope of the funding?

5000 character(s) maximum

2.3. In case, you answered yes to 2.2, do you envisage areas of cooperation with the BBI JU?

5000 character(s) maximum

## F.3. Deployment activities

The aim of this section is to explore areas of cooperation with BBI JU projects and activities.

3.1. Please provide information about relevant case studies which are important for the bio-based industrial sector at national level (i.e. which are contributing to support the development of the bio-based industrial sector or/and the deployment of the technology). E.g. integrated bio-refineries, pilot plants, demonstrator regions, incubators for entrepreneurs working on bio-based innovations, etc. Do you envisage areas of cooperation with BBI JU projects? If yes, please explain.

5000 character(s) maximum

#### **F.4. Dissemination and promotion of the BBI JU at national level**

The aim of this section is to compile information on initiatives carried out at national level to promote, raise awareness and disseminate the BBI JU initiative at national level. The expected result is to share good practices between members of SRG and to identify measures to leverage national efforts for the promotion of the BBI JU.

4.1. Please provide information on the most important events (conferences, workshops, info-days, training programs, other initiatives, etc.) organised in your country to communicate and disseminate the BBI JU Initiative and the participation in BBI JU projects?

5000 character(s) maximum

4.1.1. Are they specifically for the BBI JU calls?

Yes

No

Not known

4.2. Recommendations by SRG: ideas, good practices, measures, etc. to improve the participation of less represented countries in BBI JU, etc.

5000 character(s) maximum

4.3. Open box for reporting information and other suggestions related to other issues.

5000 character(s) maximum

*Please, feel free to attach a supporting file for this section of the survey*

## G. Specific biorefinery questions from IEA Bioenergy Task 42

Do you have some information about commercial &/or flagship &/or demo/pilot bio-refineries, and/or about bio-refinery R&D projects and/or about stakeholders involved in bio-refineries deployment?

Yes

No

Not known

### If yes

1. Please specify the main (max 5) **commercial bio-refinery** facilities currently in operation in your country (name, country, location, owner, capacity, raw materials, type of refining technology, portfolio of products, investments (private/public)), website address, main contact.

	Name	Country/ location	Owner	Capa- city	Raw materials	Type of refining technology	Portfolio of products	Investments (private/ public)	Weblink	Main contact
<b>Bio-refinery 1</b>										
<b>Bio-refinery 2</b>										
<b>Bio-refinery 3</b>										
<b>Bio-refinery 4</b>										
<b>Bio-refinery 5</b>										

2. Please specify the main (max 5) **flagship bio-refinery** facilities currently in operation in your country (name, country, location, owner, capacity, raw materials, type of refining technology, portfolio of products, investments (private/public), website address, main contact).

The term Flagships bio-refinery plants in referring to units covering a value chain with a TRL 8 (system complete and qualified), operating at an economically viable scale.

Flagships support the first application/deployment in the market of an innovation that has already been demonstrated but not yet applied/deployed in the market. 'First' means new at least to Europe or new at least to the application sector in question.

Flagships deploy the (optimised) technologies and business models for biomass conversion into competitive added value products, i.e. intermediate products (materials, chemicals) or bio-based 'consumer' products, and demonstrate cost and performance improvements to levels that are competitive with fossil-based alternatives or other non-renewable resources.

Flagship plants are large-scale production facilities; they may be new installations, substantially remodelled existing facilities or reconverted old or abandoned industrial facilities.

	<b>Name</b>	<b>Country/ location</b>	<b>Owner</b>	<b>Capa- city</b>	<b>Raw materials</b>	<b>Type of refining technology</b>	<b>Portfolio of products</b>	<b>Investments (private/ public)</b>	<b>Weblink</b>	<b>Main contact</b>
<b>Bio-refinery 1</b>										
<b>Bio-refinery 2</b>										
<b>Bio-refinery 3</b>										
<b>Bio-refinery 4</b>										
<b>Bio-refinery 5</b>										

3. Please specify the main (max 5) **demo/pilot bio-refinery** facilities currently in operation in your country (name, country, location, owner, capacity, raw materials, type of refining technology, portfolio of products, investments (private/public), website address, main contact.

	<b>Name</b>	<b>Country/ location</b>	<b>Owner</b>	<b>Capa- city</b>	<b>Raw materials</b>	<b>Type of refining technology</b>	<b>Portfolio of products</b>	<b>Investments (private/ public)</b>	<b>Weblink</b>	<b>Main contact</b>
<b>Bio-refinery 1</b>										
<b>Bio-refinery 2</b>										
<b>Bio-refinery 3</b>										
<b>Bio-refinery 4</b>										
<b>Bio-refinery 5</b>										

4. Please specify the main **bio-refinery R&D projects** running in your country (name, country, type of project/innovation, TRL-level, budget (private/public), website address, main contact.

	<b>Name</b>	<b>Country/ location</b>	<b>Type of project/ innovation</b>	<b>TRL level</b>	<b>Budget (private/Public)</b>	<b>Weblink</b>	<b>Main contact</b>
<b>Bio-refinery 1</b>							
<b>Bio-refinery 2</b>							
<b>Bio-refinery 3</b>							
<b>Bio-refinery 4</b>							
<b>Bio-refinery 5</b>							

5. Please short-list the main stakeholders directly involved in bio-refineries deployment in your specific country (industry, SMEs, institutes, universities, NGOs, GOs; max 10 per type of stakeholder).

	<b>Type of stakeholder</b>	<b>Name</b>
<b>Stakeholder 1</b>		
<b>Stakeholder 2</b>		
<b>Stakeholder 3</b>		
<b>Stakeholder 4</b>		
<b>Stakeholder 5</b>		
<b>Stakeholder 6</b>		
<b>Stakeholder 7</b>		
<b>Stakeholder 8</b>		
<b>Stakeholder 9</b>		
<b>Stakeholder 10</b>		
<b>Stakeholder 11</b>		
<b>Stakeholder 12</b>		
<b>Stakeholder 13</b>		
<b>Stakeholder 14</b>		
<b>Stakeholder 15</b>		
<b>Stakeholder 16</b>		
<b>Stakeholder 17</b>		
<b>Stakeholder 18</b>		
<b>Stakeholder 19</b>		
<b>Stakeholder 20</b>		

*Please, feel free to attach a supporting file for this section of the survey*

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## **List of abbreviations and definitions**

ACSF	Advisory Committee on Sustainable Forest-based Industries
BBI JU	Bio-Based Industries Joint Undertaking
BKC	European Commission's Knowledge Centre for Bioeconomy
DG RTD	Directorate-General for Research & Innovation
FAO	Food and Agricultural Organization of the United Nations
GO	Governmental Organisation
H2020	Horizon 2020
IEA	International Energy Agency
JRC	Joint Research Centre
NGO	Non Governmental Organisation
OECD	Organisation for Economic Co-Operation and Development
RTO	Research and Technology Organisation
SCAR	Standing Committee on Agricultural Research
SIRA	Strategic Innovation and Research Agenda
SME	Small and Medium-sized Enterprises

