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BIOTRANSFORM
TRANSITION PATHWAYS TO CIRCULAR BIO-ECONOMY

Circular BIOeconomy TRANSFORMation for regions by enabling resource and governance networks

D6.3: Data Management Plan – final version

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Table 1: Terms and Definitions

Abbreviation	Definition
CCRI	Circular Cities and regions Initiative
DMP	Data Management Plan
EC	European Commission
EEA	European Economic Area
EU	European Union
FAIR	Findable, Accessible, Interoperable and Re-usable
GDPR	General Data Protection Regulation
NGO	Non-Governmental Organisation
PC	Project Coordinator
QA	Quality Assurance
QC	Quality Control
SMA	Social Media Account
SME	Small Medium Enterprises
WP	Work Package
WPL	Work Package Leader
WTL	Work task Leader

Executive summary

This document constitutes the final version of the Data Management Plan (DMP) and has been elaborated as a deliverable (D6.3) in the framework of the BIOTRANSFORM project. BIOTRANSFORM provides European policymakers with an adequate assessment and policy development framework, knowledge base and an expert support ecosystem to accelerate the transition from linear fossil-based systems to circular biobased systems. It is therefore operating at the interface between the circular economy and the bioeconomy transitions. Within this context, BIOTRANSFORM equips policymakers with tools to set informed priorities that serve environmental, economic, and social goals, being actionable, future-proof, and aligning with supply-and-demand trends in related industries and value chains.

In this context, the final version of the project's DMP describes the overall methodological principles pertaining to the management of the data that have been collected, generated and/or re-used in the framework of BIOTRANSFORM, safeguarding sound and ethical data management along the entire duration of the project. Moreover, it provides the final overview of BIOTRANSFORM's data, along with information on the methodology pertaining to their management as well as to making them Findable, Accessible, Interoperable and Re-usable (FAIR).

The current version of the DMP is the last of two versions of the BIOTRANSFORM Data Management Plan to be produced in the course of the project, as a living document (D6.2 Data Management Plan – initial Version delivered in M3 and is currently completed as D6.3 Data Management Plan – final Version in M33). Along these lines, the DMP has been updated to reflect an accurate, up-to-date and ultimately comprehensive plan for managing the data that have been collected, and/or generated by the project across the entire life cycle, both during and after the completion of BIOTRANSFORM.

1. Introduction

The current document represents the final version of the Data Management Plan (DMP) of the BIOTRANSFORM project which has received funding from the European Union's Horizon Europe Research and Innovation Program under Grant Agreement No 10181833.

BIOTRANSFORM aims to provide European policymakers with an adequate assessment and policy development framework, knowledge base and an expert support ecosystem to accelerate the transition from linear fossil-based systems to circular biobased systems. It is therefore operating at the interface between the circular economy and the bioeconomy transitions. In this way, BIOTRANSFORM equips policymakers with the tools to set informed priorities that serve environmental, economic, and social goals, being actionable, future-proof, and align with supply-and-demand trends in related industries and value chains.

The consortium of BIOTRANSFORM consists of an interdisciplinary group of 9 partners across 7 different countries within the EU, as presented in Table 2: BIOTRANSFORM partners, and will engage many stakeholder groups resulting in a very transdisciplinary project.

Table 2: BIOTRANSFORM partners

Partner Role[1]	Partner No	Partner Name	Partner Short name	Country
COO	1	VTT TECHNICAL RESEARCH CENTER OF FINLAND	VTT	FI
BEN	2	LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY	LIST	LU
BEN	3	FLEMISH INSTITUTE FOR TECHNOLOGICAL RESEARCH	VITO	BE
BEN	4	TECHNOLOGICAL CORPORATION OF ANDALUSIA	CTA	ES
BEN	5	CLUSTER OF BIOECONOMY AND ENVIRONMENT OF WESTERN MACEDONIA	CLuBE	EL
BEN	6	CLUSTER INDUSTRIAL BIOTECHNOLOGY	CLIB	DE
BEN	7	BIOEAST HUB CR, Z. U.	HUB	CZ
BEN	8	ASSOCIATION OF CITIES AND REGIONS FOR SUSTAINABLE RESOURCE MANAGEMENT	ACR+	BE
BEN	9	Q-PLAN INTERNATIONAL ADVISORS PC	Q-PLAN	EL

All partners of the BIOTRANSFORM consortium adhere to sound data management principles, to ensure that data that have been collected, generated and / or re-used throughout the duration of the project are well-managed, archived and preserved, in line with the structure and guidelines of Horizon Europe Data Management Plan Template.

Along these lines, this final version of the DMP aims to achieve the following objectives:

a) Describe the data management lifecycle for all data that has been collected, generated and/or re-used and other research outputs during the implementation of BIOTRANSFORM, serving as the key element for good data management.
b) Outline and review the methodology employed to ensure sound management of the data collected and/or generated as well as to make the data Findable, Accessible, Interoperable and Re-usable (FAIR).
c) Provide information on the data that has been collected, generated and/or re-used and other research outputs and the way in which it will be handled during and after the end of the project, along with the standards applied to this end.
d) Provide details on how the data and other research outputs have been and will be made openly accessible and searchable to interested stakeholders as well as its curation and preservation.

[1] COO: Coordinator, BEN: Beneficiary

e) Present information on the resources allocated to make data FAIR clearly identifying responsibilities pertaining to data management, while addressing data security and ethical aspects.

Considering the aims described above, the DMP is elaborated in the following chapters:

- **Chapter 2** presents a summary of the data that have been collected/generated or re-used during the activities of BIOTRANSFORM including its purpose as well as its types and formats. Additionally, it outlines its origin, expected volume and the stakeholders that may find it useful.
- **Chapter 3** describes the methodology that has been applied in BIOTRANSFORM in order to safeguard the effective management of data across their entire lifecycle, making it FAIR.
- **Chapter 4** addresses other research outputs that should be considered to be managed during the implementation of BIOTRANSFORM and offers information on our approach to also follow the FAIR principle.
- **Chapter 5** estimates the resources required to make the project's data FAIR, while also identifying data management responsibilities.
- **Chapter 6** outlines the data security strategy applied within the context of BIOTRANSFORM along with respective secure storage solutions employed.
- **Chapter 7** addresses ethical aspects and other relevant considerations pertaining to the data collected/generated and /or re-used during the implementation of the project.
- **Chapter 8** concludes on the next steps foreseen in the framework of the project with respect to its data management plan.

Annexed in the present document are: (i) the project's Privacy Policy (Annex I), the templates for the (ii) Informed Consent Form (Annex II), (iii) the Data Subject Request Form (Annex III), (iv) the Record of Processing Activities (Annex IV) which will be used during the implementation of the project's activities to ensure compliance with relevant applicable EU and national regulation(s) and (Annex V) the changes in the BIOTRANSFORM datasets.

Note that **the DMP is not a fixed document**. It has evolved and **further elaborated and updated with its final version (i.e. as D6.3 at M32)**. Additional ad hoc updates have been realised (where necessary), to include new data, more detail and/or reflect changes in the methodology or other aspects relevant to their management, changes in consortium policies and plans or other potential external factors. Q-PLAN has been responsible for the elaboration of the DMP and with the support of all partners have updated and enriched it when it was required.

2. Data summary

BIOTRANSFORM project has collected/generated or re-uses meaningful non-sensitive data that do not fall into any special category[2] of personal data, as described within the General Data Protection Regulation[3] (GDPR). The collected data have been quantitative, qualitative or a combination of both and have been analysed with various methodological approaches. The above analyses have provided insights that successfully assisted BIOTRANSFORM's activities, enabling us to deliver evidence-based results to achieve the objectives of the project. The second chapter of the DMP starts by explaining the purpose of data collection/generation within the project and how these activities relate to the objectives of BIOTRANSFORM. It proceeds by describing the different data types, formats, origin and expected or actual size, before concluding with an overview of potential stakeholder groups that may find the project data useful for re-use.

2.1 Purpose of data collection/generation or re-use and its relation to the objectives of the project

To successfully meet the project objectives and ensure the production of evidence-based results, BIOTRANSFORM entailed several activities that required data to be collected/generated or re-used. The purpose of data collection/generation or re-use is interrelated with the objectives of the project activities that they are produced for.

In particular, these activities along with their objectives in the framework of BIOTRANSFORM have been as follows:

- **Evaluation of environmental, economic and social limits of the current linear fossil-based economy at European and regional level,** the findings have been used as a foundation to evaluate the effectiveness of the new transition pathways.
- **Analysis of the status quo of circular bioeconomy development in EU regions,** being used as the basis for the comparative analysis of the benefits of a transition from linear fossil-based economies to circular bio-based systems
- **Review of current circular bioeconomy solutions and associated measurement indicators,** that yield a relevant database integrated in the regional circular bio-based transitions pathways.
- **Literature review on existing impact assessment methodologies,** that detected and helped visualize the main knowledge gaps, limitations and benefits of the different methodologies.

[2] Special categories of personal data according to Regulation (EU) 2016/679 of the European Parliament (General Data Protection Regulation) include personal data revealing racial or ethnic origin, political opinions, religious or philosophical beliefs, or trade union membership, and the processing of genetic data, biometric data for the purpose of uniquely identifying a natural person, data concerning health or data concerning a natural person's sex life or sexual orientation.
[3] Regulation (EU) 2016/679 of the European parliament and of the council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32016R0679

- **Organization of info-days,** that introduced the BIOTRANSFORM project to stakeholders, to examine the potential for clustering and collaboration with initiatives and projects, and to gather information through interviews and surveys to co-elaborate a list of major policy challenges and solutions from both a regional and governance point of view.
- **Development of the assessment package framework** based on 3 different complementary tools. With this framework, we were able to highlight differences between fossil value chains and bio-based value chains along all the indicators used, helping to assess and establish the transition pathways.
- **Implementation of subsystem environmental, economic and socio-cultural assessment to each regional pilot,** that assessed the environmental, economic and socio-cultural impact of the proposed transformation processes in each case study.
- **Development of a user manual for measuring specific impacts, utilising tools in the assessment package,** to reach an optimal and feasible transition pathway for each case-study region.
- **Identification of key parameters,** unique to each case-study, used for the analysis of the different pathways and the selection of the optimal transition pathway from linear fossil-based to a circular bioeconomy.
- **Feasibility co-evaluation with local and regional stakeholders, through feedback group sessions,** aimed to reach an optimal transition pathway.
- **Elaboration of transition roadmaps from linear fossil-based to a circular bioeconomy for the case-studies** along with replication activities to ensure BIOTRANSFORM's results may be used for years to come regardless of future developments.
- **Development of action roadmaps** from the case study scenarios, to be used as guidelines for potential applications of the bio-based transition pathways across the European continent beyond the case-study regions.
- **Organization of a working group composed of different representatives of European regions,** that provided feedback on their experience and difficulties with the implementation of a circular bioeconomy strategy, reviewed and commented on the tools, methods and methodology developed within BIOTRANSFORM project.
- **Development of a financial roadmap** to assist public and private entities to take up funding/financial solutions tailored to their needs and to find suitable financing pathways for the proposed optimal transitions.
- **Development of a methodology for regional governance and financing** tools consisting of a short, practical guide to help regional authorities with the transition from linear fossil-based systems to circular bio-based ones as well as listing effective governance and financing instruments.
- **Organization of a policy working group** to discuss the conclusions of the project, in terms of barriers and opportunities, in order to develop appropriate policy recommendations for the case-study scenarios and other European regions.
- **Monitoring and assessing the dissemination, communication, stakeholder engagement and clustering activities** of BIOTRANSFORM, that measured their results and impact, fine-tune our strategy in this respect as well as fulfil the project's reporting requirements towards the Commission.
- **Project management and coordination,** that effectively fulfilled the Project goals, delivering high quality project results, preparing Project meetings and ensure sound management of data.

The following section provides further details on the different types and formats of data collected\generated or re-used during the project's activities.

2.2 Types and formats of collected / generated or re-used data

BIOTRANSFORM has collected / generated or re-used data of various structures and formats. Along these lines, the data definition process used for this DMP is based on the source and the physical format of the data[4]. In particular, we have defined two main aspects: (i) the process under which underlying data have been created/captured such as electronic text documents, spreadsheets, questionnaires and transcripts, among others and (ii) the storage format of quantitative and qualitative data. Examples of this aspect include but not limited to easily accessible formats, such as post scripts (pdf, xps, etc.), machine readable formats (xml, html, etc.), spreadsheets, (xlsx, csv, etc.), text documents (docx, rtf, etc.), compressed formats (rar, zip, etc.) or any other format (such as commonly used digital audio or video formats such as mp3 and mp4 respectively) required by the objectives and methodology of the activity within the framework of which it is produced.

Under this framework, special attention has been paid in using **open formats**[5] (such as csv, pdf, zip, etc.) and/or **machine-readable formats**[6] (such as xml, json, rdf, html, etc.) when possible, to enhance the **interoperability** and **re-use** of data. To achieve this, we provide data that are **easily readable** and **freely usable in any software program** employed by third parties interested in utilizing the data.

The type and format of collected/generated data in the context of BIOTRANSFORM are divided into **3 categories**, namely (i) data collected/generated by direct input methods; (ii) data collected / generated through the development and use of the assessment package and (iii) data collected/generated from dissemination, communication, stakeholder engagement and clustering activities, as described in the following subsections.

2.2.1 *Data collected/generated by direct input methods*

Direct input methods, under the scope of BIOTRANSFORM, involve methodologies for collecting data through desk research and interactions between consortium partners and external stakeholders, with the latter providing data to the former. Along these lines, external stakeholders undertake the role of a data subject that is a natural person whose personal data is being processed[7]. In particular, the identification and selection of suitable data subjects are based on purposeful sampling according to

[4] Jakobsson, U., Braukmann, R., Lundgren M., Expert Tour Guide on Data Management. Retrieved from https://www.cessda.eu/Research-Infrastructure/Training/Expert-Tour-Guide-on-Data-Management/1.-Plan.

[5] According to the Open Data Handbook: "*An open format is a file format with no restrictions, monetary or otherwise, placed upon its use and can be fully processed with at least one free/open-source software tool and it is not encumbered by any copyrights, patents, trademarks or other restrictions so that anyone may use it*".

[6] According to the Open Data Handbook: "*Machine readable formats are file formats that can be automatically read and processed by a computer. Machine-readable data must be structured data*".

[7] Regulation (EU) 2016/679 of the European parliament and of the council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32016R0679.

which, external stakeholders have been identified and selected by consortium partners based on their role within the circular bioeconomy policies and methods (e.g., individuals involved in implementing and designing regional bioeconomy strategies, stakeholders from local government, business community, academic institutions, and civil society, etc.) and the objectives of the respective activity for which data have been collected. In this context, quantitative and qualitative data have been collected / generated during BIOTRANSFORM[8]:

- **Quantitative data** is numerical and acquired through counting or measuring. Examples of quantitative data are the yearly turnovers of a business, the hourly compensation of a worker, the number of SMEs in Europe, etc. This data may be represented by ordinal, interval or ratio scales and lend themselves to statistical manipulation.
- **Qualitative data,** sometimes referred to as categorical data, is data that can be arranged into categories based on physical traits, gender, colours or anything that does not have a number associated with it. Moreover, written documents, interviews, and various forms of in-field observation are all sources of qualitative data. Examples of qualitative data are the preferences of learning, skillsets, country of origin, etc.

Additional details with respect to the different types and formats of data that have been collected through direct input methods under the frame of BIOTRANSFORM are provided below.

Environmental, economic and social limits of the current linear fossil-based economy along with the current status of circular bioeconomy development in EU regions

Desk research of relevant literature as well as semi-structured interviews of policymakers at regional level have been employed to collect the required data, to: i) depict the environmental, economic and social limits of the current linear fossil-based economy and ii) evaluate the current status of the circular biobased transitions in Europe as well as the focal regions of the project. The interviews were conducted in T1.5. Thus, the data collected consisted of a combination of information extracted from secondary sources in standard text document and spreasheet (.docx, .xlsx).

Database of suitable circular bioeconomy solutions

This data has been collected by searching the available literature, to record the available circular bioeconomy solutions and often associated measurement indicators. The first step included desk research, carried out by the targeting case-study regions, exploring relevant literature, existing projects and existing under-utilised infrastructures, that could support a transition towards circular bio-based approaches. The next step entailed a review of the collected solutions and indicators to extract those to be included in the list of BIOTRANSFORM's transition pathways. The data collected through the desk research and review have been stored in spreadsheet formats (.xlsx) and in standard text document (.docx).

Overview of existing impact assessment methodologies

The data have been collected through desk research regarding existing methodologies to assess environmental/ social/ economic impacts of fossil/bio-based and linear/circular economies, as well as

[8] Neuman, W. L. (2014). Social research methods: Qualitative and quantitative approaches. Boston: Pearson

their transitions. The next step entailed a review of the collected methodologies in order to detect knowledge gaps, limitations and benefits of the different methodologies. The data collected are both qualitative and quantitative data, recorded in the form of in standard text document (.docx) and in spreadsheet format (.xlsx).

Info days material

In the frame of the BIOTRANSFORM info-days, one such event has been organised in each region in order to introduce the project to regional policymakers and stakeholders and to co-elaborate a list of major policy challenges and solutions for the transition from linear fossil-based economy to circular bioeconomy. The material collected through info-day's activities (survey and feedback sessions) was mostly of qualitative nature and has been stored in many different types of formats. Videos and photographs were captured, insights and minutes were noted in standard text documents, as well as participant lists created in spreadsheets (.xlsx) or text documents (.docx) along with the survey results.

Data collected from policymakers Interviews

The data were collected from interviews with policymakers (or stakeholders if not enough policymakers are able to participate) within the info-days in each case-study region to provide input regarding the environmental, economic and social limits of the current linear fossil-based economy and the current status of circular bioeconomy development. The interview's data was qualitative and has been stored in standard text documents (.docx) and audio transcriptions (.mp4).

Info days personal data

During the info days, policymakers and other stakeholders participated in and gave their feedback, discussed and co-elaborated a list of major policy challenges and solutions for the transition from a linear fossil-based economy to circular bioeconomy. Policymakers' and other stakeholders' personal data were collected during these activities and recorded in participant lists. Consent forms were used for the collection and processing of data in line with GDPR.

List of sustainability assessment indicators

For the development of the assessment package, we have a list of environmental, social, and economic indicators called sustainability assessment indicators. Environmental assessments utilized life cycle impact assessment (LCIA) indicators. The data generated are a mix of qualitative and quantitative results, documented in standard text files (.docx) and spreadsheets (.xlsx).

Key parameters per demo-case scenario

Key parameters unique to each demo-case scenario have been defined and identified. The parameters further elaborated include those identified within WP2, the 10 indicators towards a circular bioeconomy suggested by the EC as well as other parameters to ensure replicability across similar regions in EU. Data generated are mostly qualitative and was collected via an online collaboration tool (miro) and then translated into standard text document (.docx) accompanied with spreadsheets (.xlsx).

Co-evaluation feedback group sessions material

In the frame of the BIOTRANSFORM project, feedback group sessions with local and regional stakeholders have been organized in each case study region while also feedback loops have been

established between WP2 (Task 2.5) and WP3, to select the optimal transition pathways with adaptations for each case study. The material collected through feedback group sessions activities and the feedback loops have been mostly of qualitative nature and stored in various types of formats. Videos of online feedback sessions and photographs have been captured, transcripts, insights and minutes noted in standard text documents (any text format and finally converted to .docx and .pdf), as well as participant lists in spreadsheets (.xlsx) or text documents (.docx).

Co-evaluation feedback group sessions personal data

During BIOTRANSFORM co-evaluation feedback group sessions, personal data from participants have been collected and recorded in participant lists format (e.g., .docx) and spreadsheets (.xlsx) filled with particulars. The feedback was partially captured via online survey tools (e.g., Google Forms), which was further converted to .xls files. All the collected data are aligned with GDPR, and consent forms were used for the needs of data processing, which were filled out by most session participants.

Co-creation and capacity building workshops and train-the-trainer activities material

In the frame of BIOTRANSFORM project, co-creation and capacity building workshops with stakeholders' have been organized in each case study region to provide stakeholders with the necessary activities and skills that are essential in supporting policymakers for the co-implementation of transformation pathways. The material collected through co-creation and capacity building workshops have been mainly qualitative and stored in various types of formats. Videos and photographs have been captured (e.g., .mp4 or .png/.jpg/.jpeg), insights and minutes noted in standard text documents (any text format and finally converted to .docx), as well as participant lists created in spreadsheets (.xlsx) or text documents (.docx). Some regions have used online survey or feedback tools for interaction like sli.do, Mentimeter, etc. The results from these interactions were finally converted to .xlsx or .docx files.

Co-creation and capacity building workshops and train-the-trainer activities personal data

During BIOTRANSFORM co-creation and capacity building workshops, personal data from participants have been collected and recorded in participant lists format and spreadsheets (e.g., .xlsx) filled with particulars. All the collected data will be aligned with GDPR, and consent forms (as .docx and .pdf) are going to be used for the needs of data processing.

Transition guideline

The gathered data for the potential application of the bio-based transition pathways from the case-study scenarios have been extrapolated for use across Europe and beyond the particular case-study regions of BIOTRANSFORM and consolidated into a single "transition guideline". The outcomes are both qualitative and quantitative and exported from a graphic software as .pdf document. The methodology used and the results from different tools etc. will become part of the BIOTRANSFORM website possibly in .html format.

Working group material

In the frame of BIOTRANSFORM project, a working group composed of different representatives of European regions has been organised to ensure that the outcomes of the project are aligned with the challenges and needs of the different local and regional authorities across Europe. The material

collected through the working group sessions is mostly of qualitative nature and stored in many types of formats. Photographs have been captured, insights and minutes noted in standard text documents, as well as participant lists created in spreadsheets or text documents. During the working groups, data was also collected in the form of answers to live polls launched during the discussions.

Inventory of financial tools and solutions

Data have been collected through desk research on existing financing tools (involving funds, grants, investments) and good practices and results from other projects. Data generated are mostly qualitative and written in standard text document (.docx) as part of the technical guidelines.

Key principles and recommendations for regional governance

This activity included the transformation of the results obtained throughout WP2 and WP3 into graphic material and step-by-step guidelines for the BIOTRANSFORM transition methodology, in order to make it more friendly and easily understandable. The outcomes are qualitative data and stored in a standard text document (.docx) completed by diagrams (.jpeg).

Development of policy recommendations

This activity's data included gathering insights from the SUSTRACK, ROBIN and BIOMODEL4REGIONS projects activities along with data generated in WP1, WP3 and WP4 and illustrate how regulations or economic frameworks might limit the transition to a circular bioeconomy model in Europe and discuss possible legal and economic instruments to overcome them. The data collected are qualitative and stored in standard text documents (.docx).. Data mainly consists in short descriptions of main barriers to the transition and good practices from case regions involved in the 4 EU projects.

Material collected from project management and coordination at macro level

During the implementation phase of the BIOTRANSFORM project, data have been collected from management and coordination activities. More specifically, the collection/generation of data comes from partners coordination, communication, Quality Assurance processes, progress monitoring, risk analysis, workshops and events. The above data series have been both qualitative and quantitative and stored in various types of formats, such as recorded videos, captured photographs, noted minutes, written insights in text documents, reports presenting outcomes and progress of activities, and participant lists.

Data collected/generated through direct input methods have been stored in formats which allow the documentation of information from various files and documents in a single location. By doing so, it is possible to circulate raw data from transcripts, as well as text, images, and other objects from other files to one document file or multiple tabs of a single spreadsheet. Moreover, both formats can be immediately converted into open and machine-readable formats (e.g. .xml and .csv) boosting the interoperability and re-usability of the data produced in the framework of BIOTRANSFORM.

2.2.2 *Data collected/generated through the development and utilisation of the assessment package framework*

In the context of BIOTRANSFORM's Task 2.1 "BIOTRANSFORM assessment package framework", . An assessment package has been developed to evaluate the environmental, social, and economic impacts of transitioning to a circular bioeconomy which provides a comparison between bio-based products and the fossil-based products they aim to replace the assessment package developed during the project includes 3 different tools

(i) Impact assessment tool (LIST)
(ii) Resource flow analysis tool (CluBE) and
(iii) logistics MooV tool (VITO)

and a wide variety of variables such as: waste production, valorisation and disposal, non-renewable resources access, exploitation, regeneration, and loss, regional (and social) distribution of resources and growth, biodiversity loss at global and local scale, the impact of logistics and trade of oil and other resources, impact on quality of air/water or soil, ecosystem services and climate change emissions among other variables on a life cycle base.

Considering the above, data related to the use of the assessment package have come from a) input required to implement the assessment and b) the results of the assessment.

Environmental, economic and socio-cultural impact assessment data

To assess the environmental impacts of the transition from linear fossil-based economy to circular bioeconomy in each case-study region, Life cycle impact indicators are considered: Climate change, Particulate matter, Land use change, Water use, Resource use fossil, Resource use mineral and Metals. Qualitative information and quantitative data have been collected for each case-study region in order to characterise mass flows for all cases and energy flows for cases where data was available, along with data on release of waste and pollutants, and compiled in spreadsheets (.xlsx). Data collected and generated are documented in standard text document (.docx) and spreadsheets (.xlsx). In order to assess the economic impacts of the transition from linear fossil-based economy to circular bioeconomy in each case-study region, several key variables have been considered including job loss and creation, wages, training needs, resource efficiency, conversion rates and costs of necessary equipment, sizing and scaling, impact of the transition in terms of imports/exports, influence on trade, (regional) logistics, monetised environmental costs, and adaptation costs of underutilised infrastructures, etc. Data collected and generated have been mostly quantitative and stored in standard text document (.docx) accompanied with spreadsheets (.xlsx) and graphics or diagrams (as .png/.jpg/.jpeg). In order to assess the socio-cultural impacts of the transition from linear fossil-based economy to circular bioeconomy in each case-study region, several indicators have been defined and evaluated. The key point was to assess the impact of the transition on the overall quality of life of affected stakeholders, creation of low-qualified jobs, possible involvement of vulnerable groups, knowledge creation and capacity building in rural areas for the future, sociotechnical interfaces of innovative solutions, among other aspects. Data collected and generated are mainly qualitative and written in standard text document (docx) accompanied with spreadsheets (.xlsx).

Pathway definition

Using as input the generated data from the environmental, economic and socio-cultural assessments, the most optimal and feasible transition pathway has been defined for each case-study region. Data

generated have been mainly quantitative and written in standard text document (.docx) accompanied with spreadsheets (.xlsx) and exported graphics or diagrams (.png/.jpg/.jpeg).

2.2.3 *Data collected/generated from dissemination, communication and clustering activities*

Website analytics

The BIOTRANSFORM website is supported by tracking and analytics software to better understand visitors' interactions with the website towards improving its functionality, while user privacy is protected. To identify registered users on the website, cookies are used by Google Analytics to provide them with the possibility to comment using their profile and to edit their newsletter preferences. Cookies created by Google Analytics start with: _ga, _gat, _gid. Users have the ability to delete or block website cookies. Moreover, anonymous cookies providing information about users' location and what pages they visit are used. These cookies sometimes collect anonymous statistics about the user (such as gender, age, geographical location, and interests) and the data is stored by the analytics services that we use. These cookies also gather data regarding what pages users visit, how long they stay on the page, what videos they watch or files they download. Tracking cookies from social media networks such as Twitter, YouTube and LinkedIn are also used, for customised advertising targeting users of the BIOTRANSFORM website on these platforms and to assess the performance of ads on these platforms. The data collected by these platforms is anonymised, which means that we cannot see the social media profiles of users.

Social media statistics (Twitter and LinkedIn)

This data has been collected/generated through a periodic monitoring of the project's social media statistics (Twitter/X and LinkedIn) with a view to measuring and assessing the performance and results of the project's social media activity in terms of dissemination and communication. With that in mind, the data have been both qualitative as well as quantitative in nature addressing the metrics reached on each channel (e.g., followers, tweets impressions on twitter etc.). Additionally, this data have been followed by an analysis of the results stemming from it and possible ways to improve the results to reach the project's targets. All in all, the data have been stored in a spreadsheet format (.xlsx) while at the same time the analysis of the results have been stored in a standard word document (.docx).

Data collected from project events

These data have been collected during the implementation of the project through: (i) the different events (e.g. co-creation workshops, train-the-trainer workshop, regional knowledge transfer days, clustering webinars, final event, etc.) organised by BIOTRANSFORM (either alone or jointly with other projects or initiatives) consisting of the participants lists that will enclose demographic information about the participants; and (ii) the participation of BIOTRANSFORM partners in relevant third party events in order to reach out and engage stakeholders, thus collecting general information about the events attended and their outreach.

Along these lines, this data has been collected to keep track of the results of activities in events for stakeholder engagement and provide the opportunity to project partners to report on these activities. Moreover, this data have been updated every time a partner attended an event, or a partner organised an event. Finally, the data have been both quantitative and qualitative in nature and stored in a standard spreadsheet (.xlsx).

Newsletter subscriptions (e.g., contact details of subscribers)

A subscription form hosted in the project's web site aided the collection of this data in which any interested stakeholder could freely provide his/her contact details in a dedicated sign-up form to receive the most up-to-date news and outcomes of the project. A newsletter has been sent to subscribers once per 6 months. With that in mind, this data has been collected so as interested stakeholders could be informed about the BIOTRANSFORM's news and activities. The data has comprised of a list of stakeholders along with their personal information such as: (i) email address, (ii) first and last name, (iii) country, (iv) type of organisation, (v) region and (vi) gender. A copy of this contact list has been stored to MailChimp's server (http://mailchimp.com), which is used for e-mail campaigns and newsletters distribution. All personal information included in this contact list has been used and protected according to MailChimp's Privacy Policy.

Data from dissemination and communication activities along with clustering activities

This data has been collected through the periodic monitoring of the project's miscellaneous dissemination and clustering activities. The data consist of a list of publications and posts published by the consortium partners. The purpose of collecting this data was to assess the outreach and efficiency of the dissemination and clustering activities during the implementation of the project. For this purpose, a template has been shared with all partners to recommend activities to be performed and log the activities they performed. All the data have been integrated in a single spreadsheet (.xlsx).

2.3 Origin of data and re-use of pre-existing data

In the context of BIOTRANSFORM, **new data** has been collected/generated by partners as well as external stakeholders participating in the activities of the project. With that in mind and aside consortium partners, **external groups of stakeholders from which new data have originate include**:

- Policy makers at regional, national and EU level related to bioeconomy (regional and national public authorities, EU public authorities, regulatory bodies, advisory bodies etc.).
- Bio-based industry, advisors & investors
- Relevant Initiatives (EU projects focusing on bioeconomy, bioeconomy networks and working groups)
- Academia & research community in the field of bioeconomy and linear economy.
- Civil society (consumers, consumers' associations, NGOs, media representatives etc.).

Moreover, pre-existing data has been utilised within the context of BIOTRANSFORM as well. In particular, outputs from EU-funded projects (e.g., SUSTRACK, ROBIN, BIOMODEL4REGIONS , CEE2ACT etc.), national projects, institutions and other relevant initiatives in a large extent have provided a solid basis for BIOTRANSFORM. The BIOTRANSFORM consortium has strived to make the most of and advance the work and results of these projects. Such activities included the

development of the BIOTRANSFORM assessment package for the circular bioeconomy transformation. The whole development process of the assessment Package from the definition of its concept and attributes to its validation and finalisation, has built upon on pre-existing knowledge, methodologies and outputs of other projects, initiatives and relevant institutions. Finally, consortium partners' internal knowledge, experience and expertise from their participation in other projects and initiatives have directly and indirectly supported the implementation of activities throughout the project.

2.4 Expected size of data

BIOTRANSFORM entails a series of activities aiming to provide European policymakers with an adequate assessment and policy development framework, knowledge base and expert support ecosystem to accelerate the transition from linear fossil-based systems to circular bio-based systems. With that in mind, the table that follows presents the different activities implemented during the course of the project in which data is collected/generated, the types and formats of the data as well as the expected size of the data.

Table 3: Expected size of data

No.	Name of activity	Data	Type of data	Format of data	Size of data (MB)*
1	**Q-PLAN & HUB** Evaluation of environmental, economic and social limits of the current linear fossil-based economy at European and regional level and analysis of the status quo of circular bioeconomy development in EU regions	Environmental, economic and social limits of the current linear fossil-based economy along with the current status of circular bioeconomy development in EU regions	Machine Generated, Reports, Published articles	.docx/ .xlsx	10 MB
2	**VTT** Review on current circular bioeconomy solutions and associated measurement indicators	Database of suitable circular bioeconomy solutions	Machine Generated, Reports, Spreadsheets	.xlsx	12 MB
3	**CTA** Literature review on existing impact	Overview of existing impact	Notes, Machine Generated, Reports, Published	.docx/.pdf, .xlsx	47 MB

	assessment methodologies	assessment methodologies	articles, Spreadsheet		
4	**CLUBE** Organization of info-days	Info days material	Notes, Photos, Minutes, Participant lists, On-line survey, Mindmap	.docx, .jpg, .png, .pdf, .xmind	20 MB
		Data collected from policymakers Interviews	Notes, Photos, audiovisual material	.docx, .jpg, .png, .pdf, .mp4	1 MB
		Info days personal data	Notes, Spreadsheets, Participant lists	.docx, .xlsx	0.5 MB
5	**LIST** Development of the assessment package framework	List of sustainability assessment indicators	Notes, Spreadsheets	.docx, .xlsx, .pdf	3 MB
6	**LIST** Implementation of subsystem environmental, economic and socio-cultural assessment to each regional pilot	Environmental, economic and socio-cultural impact assessment data	Notes, Spreadsheets	.xlsx, .docx, .pdf, .csv	30 MB
7	**VTT** Development of user manual for measuring specific impacts utilising tools in the assessment package	Pathway definition	Notes, Spreadsheets, Mindmaps	.xlsx, .docx, .xmind, .pdf	5 MB
8	**CLIB** Identification of key parameters	Key parameters per demo-case scenario	Notes, Spreadsheets, Machine Generated, Reports, Published articles	.xlsx, .docx, .pdf	2 MB
9	**CluBE** Co-evaluation with local and regional	Co-evaluation feedback group sessions material	Notes, Photos, Minutes, Participant lists, Video,	.docx, .jpg, .png, .pdf, .mp4, .vtt	600 MB

	stakeholders' through feedback group sessions		Transcript, Summary		
		Co-evaluation feedback group sessions personal data	Notes, Spreadsheets, Participant lists	.docx, .xlsx	1 MB
10	**CluBE** Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for the case-studies	Co-creation and capacity building workshops, train-the-trainer activities and webinars material	Notes, Photos, Minutes, Participant lists, Video, Transcript, Summary	.docx, .jpg, .png, .pdf, .mp4, .vtt	600 MB
		Co-creation and capacity building workshops, train-the-trainer activities and webinars personal data	Notes, Spreadsheets, Participant lists,	.docx, .xlsx	1 MB
11	**CluBE** Development of action roadmaps	Guidelines for transition	Brochure, Graphics	.pptx, .png, .ai, .pdf	5 MB
12	**ACR+** Organization of a working group composed of different representatives of European regions	Working group material	Notes, Photos, Minutes, Participant lists	.docx, .jpg, .png, .pdf	10 MB
	ACR+ Development of a financial roadmap	Inventory of financial tools and solutions	Notes, Spreadsheets, Machine Generated, Reports, Published articles	.xlsx, .docx, .pdf	3 MP
13	**ACR+** Development of a methodology for regional governance and financing	Key principles and recommendations for regional governance	Notes, diagrams	docx, .jpg, .pdf	3 MP
14	**ACR+**	Development of policy recommendations	Notes, Reports	Docx, .pdf	3 MB

	Organization of a policy working group				
15	**Q-PLAN** Monitoring and assessment of the dissemination, communication, stakeholder engagement and clustering activities	Website analytics	Machine generated	.xlsx	10 MB
		Social media statistics	Machine generated	.xslx	0.2 MB
		Project events data	Spreadsheets	.xlsx	0.2 MB
		Newsletter subscriptions	Spreadsheets	.xslx	0.3 MB
		Data from dissemination and communication activities	Spreadsheets	.xlsx	2 MB
16	**VTT** Project management and coordination	Material collected from Project management and coordination under GDPR principles	Contact Lists, Photos, Minutes, Reports, Videos, Spreadsheets, Notes	.docx, .xlsx, .mp4, .pdf, .jpg, .png	40 MB

* The size of the data is based on the size of data for completed activities or adjusted size of data generated via similar activities of project partners in the past unless otherwise indicated.

2.5 Data utility

The stakeholders that may find meaningful utility for the data to be collected/generated or re-used by the project (both within as well as outside of BIOTRANSFORM's consortium) along with the benefits that could arise for them by utilizing this data, are concisely presented in the table that follows.

Table 4: Data utility

Stakeholder Groups	Data utility
Policy makers at regional, national and EU level related to bioeconomy	The aim of BIOTRANSFORM is to set a framework to accelerate the transition from linear fossil-based systems to circular bio-based systems at 6 regional cases providing European policymakers with an adequate assessment and policy development framework, knowledge base and an expert support ecosystem.The analysis of the current linear economic model as well as the bieconomy potential in each region, the co-creation of an assesment package to drive the circular bioeconomy transition and the co-creation of meaningful policy recommendations are going to be very useful for regions around the world that wish to pursue the same endeavours. The participative approach followed ensures that the project's results are aligned with policymaker's challenges and needs. More specifically, the project's generated data and results offer policy makers the tools to set informed priorities that serve environmental, economic, and social goals, being actionable, futureproof, and aligned with supply-and-demand trends in related industries and value chains.

	Along these lines, data generated to this end, may be of great utility for experts who design, implement and/or fund relevant policies
Bio-based industry, advisors & investors	The results of the project are expected to increase awareness regarding circular bioeconomy and its benefits and to provide useful feedback on policy making processes and better understanging the current and future trends (bio-based) in order for them to continue being competitive in the future. To this end, data generated through BIOTRANSFORM, may be of great utility for industry advisors and investors engaging in the implementation and funding of relevant policies
Academia & research community	In the frame of the BIOTRANSFORM project, interdisciplinary research is performed that largely builds upon prior research efforts to generate insights on the limits of linear economy models, the circular bioeconomies and the assessment methodologies for linear fossil and circular bio-based economies. Research data of the project that will be published in reports or peer-reviewed scientific journals as well as deposited in open repositories can be of great utility for scientists in the field, to include the newest assessment methodologies and identify knowledge gaps towards transformation.
Civil society	BIOTRANSFORM engages local stakeholders and the general public, through the involved stakeholders and communication activities, in its core activities in order them to gain understanding of views on circular bio-based economies and benefits over current linear business models and to participate in the transition process with regional and local governments.
Project partners	The data collected/generated during BIOTRANSFORM is the corner stone for project partners in order to produce evidence-based results and ultimately achieve the objectives of the project. Indeed, this data enable the co-development, testing of useful tools that will help embed the transition of the regional linear economies to circural bieconomy. At the same time, this data may be meaningful for project partners beyond the end of the project as well, enabling them to build and capitalise upon interesting ideas and opportunities that may emerge to ensure the long-term sustainability of the BIOTRANSFORM methodology.

3. FAIR data

The guidelines on Data Management Plan[9] of the Commission emphasise the importance of making the data produced by projects funded under Horizon Europe FAIR, with a view to ensuring its sound management. This means using standards and metadata to make data discoverable, specifying data sharing procedures and which data will be open, allowing data exchange via open repositories as well as facilitating the reusability of the data. With that in mind, the following sections of the DMP lay out the methodology followed in the framework of BIOTRANSFORM with respect to making data findable, accessible and interoperable as well as ensuring their preservation and open access, with a view to increasing its re-use.

[9] https://ec.europa.eu/research/participants/data/ref/h2020/grants_manual/hi/oa_pilot/h2020-hi-oa-data-mgt_en.pdf

3.1 Making data findable, including provisions for metadata

3.1.1 Data discoverability and identification mechanisms

BIOTRANSFORM places special emphasis in enhancing the discoverability of the data collected/generated or re-used during the course of its activities. **Open data produced during the implementation of the project will be locatable by means of a standard identification mechanism.** Indeed, BIOTRANSFORM has assigned globally resolvable **Persistent Identifiers (PIDs)** on any open data (more information on open data as well as the respective repositories we plan on employing in the context of the project are provided on section 3.2). An identifier is a unique identification code that is applied to a dataset, so that it can be unambiguously referenced. For example, a catalogue number is an identifier for a particular specimen and an ISBN code is an identifier for a particular book. PIDs are simply maintainable identifiers that allow for permanent reference to a digital object. In other words, PIDs are a way of giving digital resources, such as documents, images and data records, a unique and persistent reference number.

At the same time, data that are not open are deposited in a searchable resource (i.e., the cloud web storage service of the project) and well-tailored identification mechanisms have been utilized as well, in the form of standard naming conventions that safeguard their consistency and make them easily locatable for partners within the frame of the project. Along these lines, the following subsection provides further analysis on naming conventions and versioning.

3.1.2 Naming conventions and versioning

Following a consistent set of naming conventions in the development of the project's data files can greatly enhance their searchability. With that in mind, BIOTRANSFORM has created consistent data file names that have provided clues to their content, status and versioning, while also increasing their discoverability. In doing so, project partners as well as interested stakeholders can easily identify a file as well as classify and sort them.

According to the UK Data Archive[10], a best practice in naming conventions is to create brief yet meaningful names for data files, that facilitate classification. The naming convention should avoid the utilisation of spaces, dots and special characters (such as & or !), whereas the use of underscores is endorsed, to separate elements in the data file name and make them understandable. At the same time, versioning should be a part of a naming convention to clearly identify the changes and edits in a file.

With that in mind and to facilitate the reference of the datasets that have been produced during its implementation, BIOTRANSFORM has employed a **standard naming convention that integrates versioning and takes into account the possibility of creating multiple datasets** during an activity that entails data collection/generation. Indeed, BIOTRANSFORM's naming convention considers this

[10] UK Data Service. Data organizing. Retrieved from *https://ukdataservice.ac.uk/learning-hub/research-data-management/format-your-data/organising/*

issue and addresses it by employing a unique element that captures the number of datasets that are produced under the same activity.

In particular, the **naming convention employed by the project is described below**.

[Name of project] _ [Name of Study] _ [Number of dataset] _ [Issue Date] _ [Version number]

- **Name of project:** BIOTRANSFORM
- **Name of Study:** A short version of the name of the activity for which the dataset is created.
- **Number of dataset:** An indication of the number assigned to the dataset.
- **Issue Date:** The date on which the latest version of the dataset was modified (YYYY.MM.DD.).
- **Version number:** The versioning number of a dataset.

With the above in mind, some **indicative examples** to showcase the naming structure that will be applied in the context of BIOTRANSFORM are provided below:

- **BIOTRANSFORM_InterviewDataSummary_Dataset2_2024.07.01_v2 –** The dataset created through desk study and interviews with policymakers, in order to identify and evaluate the environmental, economic and social limits of the current linear fossil-based economy activity. This is the second version of the dataset that was last modified on the 1st of July 2024 (1/07/2024).
- **BIOTRANSFORM_GeneralRepository_Dataset3_2024.07.21_v2 –** The dataset created through review of already existing methodologies to assess environmental/social/economic impacts of fossil/bio-based and linear/circular economies, which in this case produced the second version of the dataset, 1st of July 2024 (1/07/2024).

Versioning of information makes the revision of datasets uniquely identifiable and can be used to determine whether and how data changed over time and to define explicitly which version the creators/editors are working with. Moreover, effective data versioning enables understanding if a newer version of a dataset is available and which are the changes between the different versions, allowing for comparisons and preventing confusion. In this context, **a clear version number indicator is used in the naming convention** of every data file produced during BIOTRANSFORM in order to facilitate the identification of different versions.

3.1.3 *Metadata allowing discovery*

In addition to consistent naming conventions and versioning, the project also follows a metadata-driven approach so as to allow discovery and further increase the searchability of the data, while also facilitating its understanding and re-use. Metadata is defined as “data about data” or “information about information”[11]. It is usually structured textual information that describes the creation, content, or context of a digital resource – be it a single file, part of a single file, or a collection of many files. Metadata is the glue which links information and data across the world wide web. It is the tool that

[11] Huxley, L., & Jacobs, N. (2004). Online information services in the Social Sciences. Oxford: Chandos.

helps people to discover, manage, describe, preserve, and build relationships with and between digital resources [12].

In particular, three distinct types of metadata exist[13], as presented below:

- **Descriptive metadata**, used to identify and describe collections and related information resources. Descriptive metadata at the local level help with searching and retrieving. In an online environment, descriptive metadata help to discover resources. Most of the times, such metadata include information such as the title, author, date, description, identifier, etc.
- **Administrative metadata** are used to facilitate the management of information resources. It is helpful for both short-term and long-term management and processing of data. This is information that will usually not be relevant for the public but will be essential for staff to manage collections internally. Such metadata may be location information, acquisition information, etc.
- **Structural metadata** enable navigation and presentation of electronic resources. It documents how the components of an item are organized. Examples of structural metadata could be the way in which pages are ordered to form chapters in a book, a photograph that is included in a manuscript or a scrapbook or the JPEG and TIF files that were created from the original photograph negative, linked together.

Data produced/used during BIOTRANSFORM is discoverable with metadata suitable to its content and format. The project employs **metadata standards** to produce rich and consistent metadata to support the long-term discovery, use and integrity of its data. More details on the metadata standards adopted by BIOTRANSFORM are provided on the following subsection.

3.1.4 *Standards for metadata creation*

BIOTRANSFORM has employed standards for creating metadata for the data collected/generated by the project, with a view to describing it with **rich metadata** and thus improving their discoverability and searchability. In result, effective searching, improved digital curation and easy sharing is being realized. In addition, the standards applied enable the integration of metadata from a variety of sources into other technical systems.

With that in mind, for **BIOTRANSFORM's openly available data,** the metadata standards provided by **Zenodo have been used**. Zenodo (https://zenodo.org/) is an open repository developed under the European OpenAIRE programme and operated by CERN. The repository along with its metadata standards have been adopted and are being used by numerus research communities, enabling them to deposit research papers, datasets, software, reports as well as other research outputs. Along these lines, Zenodo creates metadata to accompany the datasets that are uploaded to the repository, extending their reach to a wider audience of interested stakeholders. This metadata can be exported in several standard formats, including open and machine-readable ones (such as MARCXML, Dublin

[12] Foulonneau, M., & Riley, J. (2008). Metadata for digital resources: Implementation, systems design and interoperability. Oxford: Chandos.
[13] Caplan, P. (2003). Metadata fundamentals for all librarians. Chicago: American Library Association.

Core, and DataCite Metadata Schema), following the guidelines of OpenAIRE and are stored by Zenodo in JSON-format according to a defined JSON schema[14].

Project **data not open, have also been annotated with open and machine-readable metadata** following the **Dublin Core Metadata standard**. The Dublin Core Metadata element set (certified with the ISO Standard 15836) is a standard which can be easily understood and implemented and as such, is one of the best-known metadata standards. It was originally developed as a core set of elements for describing the content of web pages and enabling their search and retrieval. Among the reasons for selecting this standard is also the fact that **Zenodo is compatible with Dublin Core metadata formats** and thus any initially closed data, that may become open at a later stage (e.g., due to a change in the consortium's policy), will not lose its metadata. With that said, the Dublin Core metadata standard is a simple yet effective set for creating rich metadata that will describe a wide range of resources. The fifteen element "Dublin Core" described in this standard is part of a larger set of metadata vocabularies and technical specifications maintained by the Dublin Core Metadata Initiative (DCMI)[15]. The full set of vocabularies also includes sets of resource classes, vocabulary encoding schemes, and syntax encoding schemes.

3.1.5 *Search keywords included in metadata*

The project's data have been provided with search keywords with a view to optimizing its findability as well as its ultimate re-use by interested stakeholders during its entire lifetime. With that in mind, the metadata standards employed by BIOTRANSFORM provide opportunities for tagging the data collected/generated and its content with keywords. In general, keywords are a subset of metadata and include words and phrases used to name data. In the context of BIOTRANSFORM, keywords are used to add valuable information to the data collected/generated as well as to facilitate the description and interpretation of its content and value.

Along these lines, the project's strategy on keywords is underpinned by the following principles:

- The who, the what, the when, the where, and the why should be covered.
- Consistency among the different keyword tags needs to be ensured.
- Relevant, understandable, and clear keywording ought to be sought.

In general, the keywords have comprised terms related to small-scale bio-based solutions, bioeconomy value- chain actors and biomass production. The keywords have accurately reflected the content of the datasets and avoided words used only once or twice within them.

3.1.6 *Offering metadata that can be harvested and indexed*

We know that the vast diversity of the metadata accompanying open data across the plethora of online repositories (e.g., disciplinary archives, institutional repositories, open access journals) can serve as

[14] For more information on the JSON format and the JSON schema visit the following website: http://json-schema.org/

[15] Retrieved from: https://www.dublincore.org/

barriers for their findability and sharing amongst different research communities. Therefore, in the context of BIOTRANSFORM we have aligned our metadata creating approach with the **Open Archives Initiative (OAI)**, which promotes the use of a standard protocol for metadata harvesting, designed for better sharing and retrieval of data residing in distributed repositories. This protocol, namely the Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH)[16] promotes interoperability standards that facilitate efficient dissemination of data amongst diverse communities[17].

All structured **metadata linked to the project's open data have been offered in a way that can be exported and harvested** via the OAI-PMH thanks to the standards we adopt for metadata creation (see section 3.1.4). The same standards also helped us produce **metadata that facilitate indexing**. For instance, the use of the Dublin Core Metadata Standard (as further elaborated in section 3.3) provides a vocabulary of concepts with definitions in open-machine readable formats that enable easier indexing of metadata. Along these lines, there are several tools[18] which implement the Archives Initiative Protocol for Metadata Harvesting, such as **Arc source**, **EnhancedOAIServer** and **eprints.org**, and can be used for harvesting our data by different repositories.

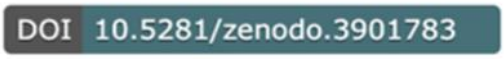
BIOTRANSFORM's openly available data have and will be uploaded in Zenodo, which is in line with FAIR principles, including "To be Findable" principle. Metadata of each record uploaded in Zenodo is indexed and searchable directly in Zenodo's search engine immediately after publishing. Metadata of each record is sent to DataCite servers during DOI registration and indexed there.

3.2 Making data openly accessible

3.2.1 *Repository*

The **data produced by BIOTRANSFORM and deemed open for sharing and re-use, have and will be deposited to and securely stored by Zenodo which constitutes an open data repository** and has been specifically selected to enable access to the project's open data free of charge. In fact, Zenodo builds and operates a simple service that enables researchers, scientists, EU projects and institutions, among others, to share and showcase research results (including data and publications) that are not part of the existing institutional or subject-based repositories of the research communities. It accepts any file format, promotes peer-reviewed openly accessible research, allows the creation of own collections and it is available free of charge both for BIOTRANSFORM to upload and share data as well as for other stakeholders to explore, download and re-use this data.

Figure 1: Typical DOI created by Zenodo



Moreover, as a digital repository, Zenodo registers **Digital Object Identifiers (DOIs)** for all submitted data through DataCite[19], which is the leading global non-profit organisation that provides PIDs (and specifically DOIs) for research data, and preserves these submissions using the safe and trusted

[16] Retrieved from: https://www.openarchives.org/pmh/

[17] Corrado, E.M. (2005) 'The importance of open access, open source, and open standards for libraries', Issues in Science and Technology Librarianship.

[18] For more information about the tools implementing the OAI-PMH: https://www.openarchives.org/pmh/tools/

[19] For more information on DataCite: https://www.datacite.org/

foundation of CERN's data centre, alongside the biggest scientific dataset in the world, the LHC's 100PB Big Data store[20]. This means that the data preserved in Zenodo will be accessible for years to come, and the DOIs will function as perpetual links to the resources. DOIs remain valuable since they are future proofed against Uniform Resource Locator (URL) or even protocol changes, through resolvers (such as DOI[21]). With that in mind, an example of a DOI retrieved from this open repository follows the structure illustrated by Figure 1.

3.2.2 *Data*

Openly available and closed data

BIOTRANSFORM, in line with FAIR principles of data management in the context of Horizon Europe, adopts the good practice of making data as open as possible and as closed as necessary. This calls for partners to disseminate its data that have the potential to offer long-term value to external stakeholders and do not harm the confidentiality and privacy of the stakeholders that contributed to the collection/generation of this data, maximising the beneficial impact of BIOTRANSFORM.

Only anonymised and aggregated data are made open to ensure that data subjects nor their organizations can be identified in any reports, publications and/or datasets resulting from the project. The relevant project partner in each case has undertaken all the necessary anonymisation procedures to anonymise the data in such a way that the data subject is no longer identifiable (more details on data management responsibilities are provided in Section 5.2)

To this end, it is important to keep in mind that during the process of data anonymisation, data identifiers need to be removed, generalised, aggregated or distorted. Moreover, **anonymisation is different than pseudonymisation**, which falls under a distinct category in the GDPR - anonymisation theoretically destroys any way of identifying the data subject, while pseudonymisation allows for the data subject to be re-identified with additional information. Along these lines, the table 5 which follows provides a **list of good practices** for the anonymisation of quantitative and qualitative data derived from the tour guide on data management of the Consortium of European Social Science Data Archives (CESSDA).

Table 5: Good practices for data anonymisation

Type of data	Good practices
Quantitative data	• Remove or aggregate variables or reduce the precision or detailed textual meaning of a variable. • Aggregate or reduce the precision of a variable such as age or place of residence. As a general rule, report the lowest level of geo-referencing that will not potentially breach respondent confidentiality. • Generalise the meaning of a detailed text variable by replacing potentially disclosive free-text responses with more general text.

[20] Retrieved from: https://www.software.ac.uk/tags/zenodo
[21] Retrieved from: http://dx.doi.org/

Type of data	Good practices
	• Restrict the upper or lower ranges of a continuous variable to hide outliers if the values for certain individuals are unusual or atypical within the wider group researched.
Qualitative data	• Use pseudonyms or generic descriptors to edit identifying information, rather than blanking-out that information. • Plan anonymisation at the time of transcription or initial write-up, (longitudinal studies may be an exception if relationships between waves of interviews need special attention for harmonised editing). • Use pseudonyms or replacements that are consistent within the research team and throughout the project. For example, using the same pseudonyms in publications and follow-up research. • Use 'search and replace' techniques carefully so that unintended changes are not made, and misspelt words are not missed. • Identify replacements in text clearly, for example with [brackets] or using XML tags such as <seg>word to be anonymised</seg>. • Create an anonymisation log (also known as a de-anonymisation key) of all replacements, aggregations or removals made and store such a log securely and separately from the anonymised data files.

Source: Tour guide on data management of the CESSDA[22]

With that in mind, the following table (Table 6) presents the data collected/generated during the course of the project that will be made openly available. In case certain data cannot be shared (or need to be shared under restrictions), a justification for that choice is provided.

Table 6: Data availability

No	Data	Availability	Notes
1	Environmental, economic and social limits of the current linear fossil-based economy and the current status of circular bioeconomy development in EU regions	Open	Open in Zenodo and in the project website via the respective deliverables
2	Database of suitable circular bioeconomy solutions	Open	Open in Zenodo and in the project website via the respective deliverables
3	Overview of existing impact assessment methodologies	Open	Open in Zenodo and in the project website via the respective deliverables
4	Info days material	Open	Open with the consent of participants

[22] Retrieved from: https://www.cessda.eu/Research-Infrastructure/Training/Expert-Tour-Guide-on-Data-Management/5.-Protect/Anonymisation

5	Data collected from policymakers Interviews	Open	Open with the consent of participants
6	Info days personal data	Closed	Closed because it concerns personal data
7	List of sustainability assessment indicators	Open	Open in Zenodo and in the project website via the respective deliverables
8	Environmental, economic and socio-cultural impact assessment data	Open and closed	The Specific Data collected from each regional case study shall remained closed. These data are required for the sustainability assessment and are provided by public or private stakeholders from the region of concern, they could be sensitive or confidential. The assessment data, namely the results of the assessment (calculated indicators, and written interpretation) remain Open
9	Pathway definition	Open	Open in the project website via the respective deliverables in due time
10	Key parameters per demo-case scenario	Open	Open in Zenodo and in the project website via the respective deliverables
11	Co-evaluation feedback group sessions material	Open	Open with the consent of beneficiaries
12	Co-evaluation feedback group sessions personal data	Closed	Shared only with contributors to feedback session
13	Co-creation and capacity building workshops and train-the-trainer activities material	Open to participants	To be shared with participants at request
14	Co-creation and capacity building workshops and train-the-trainer activities personal data	Closed	Generally closed as personal information but shared only with contributors to feedback session
15	Guidelines for transition	Open	Methodology shared with public and CCRI
16	Working group material	Open/closed	Working group materials are mostly based on the project's public deliverables that will provide the framework for the discussion. To collect the feedback from the participants, participative tools such as Slido or Miro will be used. The

			outcomes of the processes are made public, but the individual contributions remain closed.
17	Inventory of financial tools and solutions	Open	These outputs are intended to be used by the targeted end-users, therefore are made public.
18	Key principles and recommendations for regional governance	Open	The recommendations for regional governance have been established by capitalising on the outputs of the different WP of BIOTRANSFORM, the findings from the case studies, and the input of the regional working groups.
19	Development of policy recommendations	Open/closed	Policy recommendations provide public information and data on the current barriers and opportunities for a biocircular transition, along with propositions of policy recommendations. It ισ based on the barriers identified by the case studies, the working groups, and the discussions led during the policy working groups. Data are anonymised. Any personal data collected for the organisation of the policy working group have been treated in line with the GDPR.
20	Website analytics	Open & Closed	Website analytics have been available only to BIOTRANSFORM consortium and the EU Commission. In cases where statistics were shared, data were aggregated and anonymized before being made openly available (e.g., reported in the publicly available Dissemination and Communication Plan of the project), while personal data were treated as expected by the GDPR.
21	Social media statistics	Open & Closed	Social media analytics have been available only to BIOTRANSFORM consortium and the EU Commission. In cases where statistics were shared, data were aggregated and anonymized before being made openly available (e.g., reported in the publicly available

			Dissemination and Communication Plan of the project), while personal data were treated as expected by the GDPR. Specific types of social media analytics (e.g., number of followers) are publicly available on the project's SMAs
22	Project events data	Open & Closed	Personal data of participants have remain closed, as well as confidential information of SMEs.
23	Newsletter subscriptions	Closed	Data from newsletter subscriptions have remained closed as they contain personal information and are useful only for internal reporting purposes
24	Data from dissemination and communication activities	Open & Closed	Data collected from dissemination actions have been available only to BIOTRANSFORM consortium and the EU Commission. In cases where it was needed to share information for dissemination and communication purposes through the project's website and social media accounts, any personal information was anonymized before being made openly available. In cases where photos of participants have been shared online, it has been done in the framework of a project's activity or after having the consent of participants.
25	Material collected from Project management and coordination	Open & Closed	This data contain sensitive private information and cannot be made public. Available only within the consortium.

It is important to note that all personal data collected / generated have been considered as closed data prior to their anonymisation and aggregation to safeguard the confidentiality of the data subjects

Data accessibility and availability

Public access to the open data has been made available and free of charge through Zenodo, which automatically link to OpenAIRE. The data are fully accessible thanks to the included metadata and the search facility available on Zenodo. At the same time, closed data are stored and shared amongst authorised members of the consortium through cloud storage and file sharing providers which

constitute structures that maintain and manage data and make these data accessible over a network, usually the internet (i.e., Microsoft Teams). Before starting using these cloud services from providers situated both inside and outside the EEA, we have ensured that they comply with the relevant GDPR requirements.

The following table (Table 7) presents where data have and will be made accessible in the context of BIOTRANSFORM.

Table 7: Data accessibility

No	Data	Accessibility
1	Environmental, economic and social limits of the current linear fossil-based economy and the current status of circular bioeconomy development in EU regions	The open data are available on Zenodo and the respective deliverables in the project website.
2	Database of suitable circular bioeconomy solutions	The open data are available on Zenodo and the respective deliverables in the project website.
3	Overview of existing impact assessment methodologies	The open data are available on Zenodo and the respective deliverables in the project website.
4	Info days material	The open data are available on Zenodo and the respective deliverables in the project website.
5	Data collected from policymakers Interviews	The open data are available on Zenodo and the respective deliverables in the project website.
6	Info days personal data	Closed data
7	List of sustainability assessment indicators	The open data are available on Zenodo and the respective deliverables in the project website.
8	Environmental, economic and socio-cultural impact assessment data	Assessment results available through project deliverables and Zenodo
9	Pathway definition	Through project deliverables and website
10	Key parameters per demo-case scenario	The open data are available on Zenodo and the respective deliverables in the project website.
11	Co-evaluation feedback group sessions material	The open data are available on Zenodo and the respective deliverables in the project website.
12	Co-evaluation feedback group sessions personal data	Confidential, in case only shared with direct contributors of the feedback session and other partners

13	Co-creation and capacity building workshops and train-the-trainer activities material	Through workshops directly to participants and project deliverables
14	Co-creation and capacity building workshops and train-the-trainer activities personal data	Confidential, in case only shared with direct contributors of the feedback session
15	Guidelines for transition	Through project deliverables and website
16	Working group material	Communicated to participants and on the website for the presentation materials.
17	Inventory of financial tools and solutions	Through project deliverables and website, and made available on bioeconomy public repository (ECESP Knowledge Hub, HOOP Virtual Library, etc.)
18	Key principles and recommendations for regional governance	Through project deliverables and website, and made available on bioeconomy public repository (ECESP Knowledge Hub, HOOP Virtual Library, etc.)
19	Development of policy recommendations	Through project deliverables and website, and made available on bioeconomy public repository (ECESP Knowledge Hub, HOOP Virtual Library, etc.)
20	Website analytics	Website analytics are available only to BIOTRANSFORM consortium and the EU Commission. Anonymized and aggregated data available in the respective public deliverables.
21	Social media statistics	Website analytics are available only to BIOTRANSFORM consortium and the EU Commission. Anonymized and aggregated data available in the respective public deliverables.
22	Project events data	Available only within the consortium through the cloud storage for closed data. Anonymized and aggregated data available in the respective public deliverables.
23	Newsletter subscriptions	Available only within the consortium through the cloud storage for closed data
24	Data from dissemination and communication activities	Available only within the consortium through the cloud storage for closed data
25	Material collected from Project management and coordination	Available only within the consortium through the cloud storage for closed data

Restrictions on use

By utilising Zenodo for sharing the project's openly available data, BIOTRANSFORM applies **different levels of accessibility** for this data, taking into account any relevant issues (such as ethical, rules of personal data, intellectual property, commercial, privacy-related, security-related, etc.).

More specifically, **Zenodo offers the following levels of data accessibility**:

- **Open access**: Data remains available for re-use. Nevertheless, the level in which this data can be re-used is determined also by their accompanied licence for re-use (see subsection 3.4.2).
- **Embargoed status**: Access to the data will be restricted until the end of the embargo period, at which time, the content will automatically become publicly available.
- **Restricted access**: The data will not be made publicly available and sharing will be made possible only by the approval of the project partner that has the responsibility of the data.
- **Closed access**: The data is protected against unauthorized access at all levels and only members of the consortium have the right to access it.

Project partners have mainly utilized the open access level to disseminate project data amongst the interested stakeholders. Data that have not been available for re-use have been accessible only by authorised partners of BIOTRANSFORM's consortium and /or authorised personnel from the funding authority of the project.

Moreover, **BIOTRANSFORM ensures open access to all peer-reviewed scientific publications** that will be produced in the framework of the project. In particular, according to the Grant Agreement, BIOTRANSFORM follows:

- At the latest at the time of publication, deposit a machine-readable electronic copy of the published version or final peer-reviewed manuscript accepted for publication in a trusted repository for scientific publications.
- Ensure immediate open access to the deposited publication — via the repository — under the latest available version of the Creative Commons Attribution International Public License (CC BY) or a license with equivalent rights. Moreover, for monographs and other long-text formats, the license may exclude commercial uses and derivative works (e.g. CC BY-NC, CC-BY-ND).
- Ensure information is given – via the repository – about any research output or any other tools and instruments needed to validate the conclusions of the scientific publication.

Beneficiaries (or authors) must retain sufficient intellectual property rights to comply with the open access requirements.

Identity ascertainment and data access committee

The identity of stakeholders who want to access the data on Zenodo is not necessary to be ascertained, as the uploaded on Zenodo data are publicly open and no authorization is needed. On the other hand, closed for the public data are available only to authorized consortium partners through dedicated mechanisms provided by the cloud storage service employed by the respective partners in order to deposit the data. As further elaborated in Section 6 of this DMP, technical access controls are built into the BIOTRANSFORM website and are built into its toolkit as well, in order to ascertain the identity and access rights of those who want to access the data.

No data access committee has been established to evaluate or approve access requests to personal data, as only authorized partners had access to the project's closed data, accessible only by using their credentials (username/password), and no third-party have re-used them for their benefit.

3.2.3 *Metadata*

Availability and licences

Metadata of deposited publications generated in the context of BIOTRANSFORM are **open under a Creative Commons Public Domain Dedication (CC 0) or equivalent**, in line with the FAIR principles for data management adopted by the project (in particular machine-actionable). Such **metadata provide information, at least, about the following**:

- The publication at hand (author(s), title, date of publication, publication venue);
- Reference to the Horizon Europe funding;
- The name of the project, including its acronym and Grant Agreement number;
- Any particular licensing terms which may apply (depending on the chose license);
- Persistent identifiers that have been attributed to the publication;
- Authors involved in the action, their organisations, and the project itself.

Where applicable, the metadata also include persistent identifiers for any research output or any other tools and instruments needed to validate the conclusions of the publication. The metadata are available through Zenodo. It is quite unlikely that Zenodo will terminate its operation and stop providing its services, but in such a case all data, metadata, code and documentation uploaded will be transferred and hosted to other suitable repositories without undue delay. In this respect, it is important to note that, since all of BIOTRANSFORM's openly available data make use of PIDs (i.e., DOIs), which is further elaborated in subsection 3.1.1, the links to the data are not affected. In parallel, the project's data that are not openly available for sharing are be deposited, together with their accompanying metadata, code and documentation (if necessary), to the cloud web storage service employed by the project.

Methods, software tools and documentation to access the data

BIOTRANSFORM emphasises the accessibility of the collected/generated or re-used data during the project. With that in mind, no specialised method, software tool and/or documentation has been utilized to access the data. Interested stakeholders are able to access the data by simply using web browsers (e.g., Mozilla, Google Chrome, Internet Explorer, Safari, etc.) through computers (either desktop or laptop), smart phones and/or tablets.

More specifically, interested parties first need to access Zenodo through its webpage (following the link https://zenodo.org/) and utilise the search engine of the repository to search for interesting data. By typing the name of the project (or any other relevant keyword connected to the BIOTRANSFORM data) the search engine will direct the user to the project's data, ready to be explored and re-used. Moreover, since the data are available in open formats, they can appropriately be read by a range of different software that are widely and freely accessible to all potential users of the data.

Closed data are only accessed by authorised project partners through usage of the cloud storage service (MS Teams). Again, no specialised method, software tool and / or documentation is used to this end.

As it was further elaborated in subsection 3.2.1, if Zenodo terminates its operation and stop providing its services, in such a case all data, metadata, code and documentation uploaded will be transferred and hosted to other suitable repositories without undue delay.

Along these lines, this section has provided the methodology applied in the frame of BIOTRANSFORM to ensure that its data is as openly accessible as possible by any stakeholder that may find it interesting for re-use. In this context, BIOTRANSFORM also focuses on providing metadata standards and appropriate metadata vocabularies to increase data interoperability. The following section provides further details in this respect.

3.3 Making data interoperable

Data interoperability refers to the ability of systems and services that create, exchange and use data to have clear, shared expectations for the contents, context and meaning of that data[23]. With that in mind, BIOTRANSFORM has adopted in its data management methodology the use of metadata vocabularies, standards and methods that will increase the interoperability of the data collected/generated through its activities

More specifically, **the interoperability of the data that are not publicly shared is facilitated by the use of the Dublin Core Metadata standard.** This standard is a small “metadata element set” which accounts for issues that must be resolved in order to ensure that data meet traditional standards for quality and consistency, while still remaining broadly interoperable with other data sources in the linked data environment. The fifteen elements of the standard provide a vocabulary of concepts with natural-language definitions (e.g., title, creator, author, etc.) that are instantly converted into open machine-readable formats (such as XML, HTML, etc.), enabling machine-processability. Each element is optional and may be repeated, while the standard itself offer ways exist for refining them, encouraging the use of encoding and vocabulary schemes. The vocabulary of the Dublin Core Metadata standard is presented by the following Table 8[24]:

Table 8: Dublin core Metadata standard vocabulary

No	Data	Expected time for making data open
1	Title	A name given to the resource.
2	Creator	An entity primarily responsible for making the content of the resource.
3	Subject	The topic of the content of the resource.

[23] L. Steele & T. Orrell (2017). The frontiers of data interoperability for sustainable development. Publish What You Fund and Development Initiatives

[24] Sugimoto, S., Baker, T., & Weibel, S. L. (2002). Dublin Core: Process and Principles. Lecture Notes in Computer Science Digital Libraries: People, Knowledge, and Technology, 25-35.

4	Description	An account of the content of the resource.
5	Publisher	An entity responsible for making the resource available.
6	Contributor	An entity responsible for making contributions to the content of the resource.
7	Date	A date associated with an event in the life cycle of the resource
8	Type	The nature or genre of the content of the resource.
9	Format	The physical or digital manifestation of the resource.
10	Identifier	An unambiguous reference to the resource within a given context.
11	Source	A reference to a resource from which the present resource is derived.
12	Language	A language of the intellectual content of the resource.
13	Relation	A reference to a related resource.
14	Coverage	The extent or scope of the content of the resource.
15	Rights	Information about rights held in and over the resource.

Along similar lines, **the interoperability of openly available data is facilitated through Zenodo**, which adopts community-endorsed practices, since its metadata are stored internally in JSON format according to a defined JSON schema. This encloses HTML microdata that allows machine-readable data to be embedded in HTML documents in the form of nested groups of name-value pairs. Moreover, the JSON schema provides a collection of shared vocabularies in microdata format that can be used to mark-up pages in ways that can be understood by major search engines.

BIOTRANSFORM's data offer qualified references to other data. A qualified reference is a cross-reference that explains its intent. For example, X is regulator of Y is a much more qualified reference than X is associated with Y, or X see also Y. Our goal is to create as many meaningful links as possible between (meta)data resources to enrich the contextual knowledge about the data, balanced against the time/energy involved in making a good data model. To be more concrete, our references will specify if one dataset builds on another dataset, if additional datasets are needed to complete the data, or if complementary information is stored in a different dataset. The links between the datasets will also be described and, all datasets will be properly cited, including their persistent identifiers.

3.4 Increase data re-use

3.4.1 *Documentation for validating data analysis and facilitating data re-use*

By utilising Zenodo for sharing the project's openly available data, BIOTRANSFORM ensures the facilitation of data access, validation and re-use, in compliance to the general policies of Zenodo

regarding content, access and re-use. More specifically, the following principles are followed by Zenodo to make data re-useable according to the FAIR principles[25]:

- R1: (meta)data are richly described with a plurality of accurate and relevant attributes

Each record contains a minimum of DataCite's mandatory terms, with optionally additional DataCite recommended terms and Zenodo's enrichments.

- R1.1: (meta)data are released with a clear and accessible data usage license

License is one of the mandatory terms in Zenodo's metadata, and is referring to an Open Definition license. Data downloaded by the users is subject to the license specified in the metadata by the uploader.

- R1.2: (meta)data are associated with detailed provenance

All data and metadata uploaded is traceable to a registered Zenodo user. Metadata can optionally describe the original authors of the published work.

- R1.3: (meta)data meet domain-relevant community standards

Zenodo is not a domain-specific repository, yet through compliance with DataCite's Metadata Schema, metadata meets one of the broadest cross-domain standards available.

3.4.2 *License schemes to permit the widest use possible*

Data are being made freely available in the public domain to permit the widest re-use possible. Moreover, the application of a licence to BIOTRANSFORM's open data is a simple way to ensure that any interested third-party can re-use them. In this context, licences are the instrument which permit a third-party to copy, distribute, display and/or modify project data only for the purposes that are set by the licence. Licences typically grant permissions on conditions that certain terms are met. While the precise details vary, three conditions are commonly found in licences which are the attribution, non-derivative, and non-commerciality.

Along these lines, BIOTRANSFORM publishes openly available data under the **Creative Commons licencing scheme** to foster re-use and build an equitable and accessible environment. Zenodo provides BIOTRANSFORM the **opportunity to publish its open data under five Creative Common licences** as follows:

Creative commons Attribution-Share Alike 4.0 (CC BY-SA 4.0) according to which any third party can freely copy, distribute, display and modify the datasets for any purpose. Remix, transform, or built upon data, must be distributed under the same license as the original. Third parties must give appropriate credit, provide a link to the license, and indicate if changes were made.

Figure 2: CC BY-SA 4.0

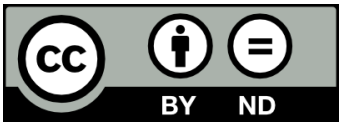
[25] Retrieved from: https://about.zenodo.org/principles/

Creative Commons Attribution 4.0 International (CC BY 4.0) according to which any third party can freely copy, distribute, display and modify the datasets for any purpose. Third parties must give appropriate credit, provide a link to the license, and indicate if changes were made.

Figure 3: CC BY 4.0

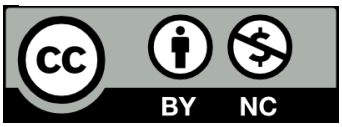
Creative Commons Attribution-No Derivatives 4.0 International (CC BY-ND 4.0) during which any third party can freely copy, distribute, display and modify the datasets for any purpose. Remix, transform, or built upon data, however must not be distributed. Third parties must give appropriate credit, provide a link to the license, and indicate if changes were made.

Figure 4: CC BY-ND 4.0



Creative Commons Attribution-Non-commercial 4.0 International (CC BY-NC 4.0) based on which third parties can copy, distribute, display and modify the datasets for any purpose other than commercial unless they get a permission by project partners first. Third parties must give appropriate credit, provide a link to the license, and indicate if changes were made.

Figure 5: CC BY-NC 4.0



Creative Commons Attribution-Non-commercial-No Derivatives 4.0 International (CC BY-NC-ND 4.0) according to which third parties can copy, distribute, display and modify the datasets for any purpose other than commercial unless they get a permission by project partners first. Remix, transform, or built upon data, however, must not be distributed. Third parties must give appropriate credit, provide a link to the license, and indicate if changes were made.

Figure 6: CC BY-NC-ND 4.0

Different licensing schemes may be selected to better fit the needs of BIOTRANSFORM's open data, ensuring not only their long-term preservation and re-use but also the interests of the consortium along with the rights of individuals for whom the data is about. In such a case, this subsection of the DMP will be updated accordingly.

3.4.3 *Availability for re-use*

The re-use of data is a key component of BIOTRANSFORM's strategy for making data FAIR. In fact, making data available for re-use ensures interested stakeholders, other than project partners, can benefit from the data, contributing towards maximising the impact of the project. **Rich metadata** created based on metadata standards that enable proper discovery as well as **appropriate licensing schemes facilitate the re-use of BIOTRANSFORM's open data**, allowing to find valuable utility even after the end of BIOTRANSFORM project.

In principle, data have and will become available for re-use no later than 120 days after the end of processing (i.e., collection, anonymisation, aggregation, etc.). This action ensures that any additional data management activities required, do not compete with the timely delivery of the project's planned outputs.

With that in mind, the expected time that BIOTRANSFORM's data made openly accessible and uploaded to Zenodo is indicatively provided in the following table:

Table 9: Expected time that data will be made open through Zenodo[26]

No	Data	Expected time for making data open	Notes
1	Environmental, economic, and social limits of the current linear fossil-based economy along with the current status of circular bioeconomy development in EU regions	2/07/2024	https://doi.org/10.5281/zenodo.12619682
2	Database of suitable circular bioeconomy solutions	15/1/2024	https://doi.org/10.5281/zenodo.10185138
3	Overview of existing impact assessment methodologies	2/07/2024	https://doi.org/10.5281/zenodo.12620312
4	Info days material	2/07/2024	https://doi.org/10.5281/zenodo.12607772
5	Data collected from policymakers Interviews	2/07/2024	In dataset 1
6	Info days personal data	N/A	This data contain sensitive private information and cannot be made public. Available only within the consortium.
7	List of sustainability assessment indicators	29/04/2025	https://doi.org/10.5281/zenodo.15302484
8	Environmental, economic and socio-cultural impact assessment data	31/10/2025	120 days after the approval of the respective deliverable, or as appropriate for release on the website
9	Pathway definition	16/05/2025	https://doi.org/10.5281/zenodo.15429743
10	Key parameters per demo-case scenario	29/04/2025	https://doi.org/10.5281/zenodo.15302595
11	Co-evaluation feedback group sessions material	31/10/2025	Shared when specifically asked. Take-aways will become part of the public deliverable. Publication in Zenodo panned 120 days after the approval of the respective deliverable
12	Co-evaluation feedback group sessions personal data	N/A	This data contain sensitive private information and cannot be made public. Available only within the consortium or to other feedback group members, when specifically asked and other group members agreed.

[26] This timetable is based on expectations and may be modified during the course of the project taking into account any unforeseen risk that may occur.

13	Co-creation and capacity building workshops and train-the-trainer activities material	31/10/2025	Shared when specifically asked. Take-aways will become part of the public deliverable. Publication in Zenodo planned 120 days after the approval of the respective deliverable
14	Co-creation and capacity building workshops and train-the-trainer activities personal data	N/A	This data contain sensitive private information and cannot be made public. Available only within the consortium or to other feedback group members, when specifically asked and other group members agreed.
15	Guidelines for transition	31/10/2025	120 days after the approval of the respective deliverable, or as appropriate for release on the website
16	Working group material	29/04/2025	https://doi.org/10.5281/zenodo.15302743
17	Inventory of financial tools and solutions	16/05/2025	https://doi.org/10.5281/zenodo.15429418
18	Key principles and recommendations for regional governance	31/10/2025	After approval of the respective deliverable.
19	Development of policy recommendations	16/05/2025	https://doi.org/10.5281/zenodo.15429545
20	Website analytics	31/10/2025	After approval of the respective deliverable.
21	Social media statistics	31/10/2025	After approval of the respective deliverable.
22	Project events data	31/10/2025	After approval of the respective deliverable.
23	Newsletter subscriptions	N/A	This data contain sensitive private and business information and cannot be made public. Available only within the consortium.
24	Data from dissemination and communication activities	31/10/2025	After approval of the respective deliverable.
25	Material collected from Project management and coordination	N/A	This data contain sensitive private information and cannot be made public. Available only within the consortium.

3.4.4 *Data provenance*

Data provenance is the documentation of where a piece of data comes from and the processes and methodology by which it was produced. Put simply, provenance answers the questions of why and how the data was produced, as well as where, when and by whom[27]. Accurately recording data provenance is a cornerstone of good data management. BIOTRANSFORM has used specific elements of the **Dublin Core Metadata Standards**[28] and the **W3C Provenance Data Model**[29], to generate specific text files (e.g., README) that accurately capture the history of each data entity throughout its versions (e.g., based on the DOI versioning Zenodo provides)[30].

3.4.5 *Data quality assurance processes*

Quality Assurance (QA) and **Quality Control** (QC) activities are an integral part of BIOTRANSFORM's data management methodology and are implemented prior to the publication of any data to Zenodo, safeguarding transparency, consistency, comparability, completeness and accuracy of the data.

QA is a planned system of review procedures conducted outside the framework of developing a dataset, by personnel not directly involved in the dataset development process[31]. In the context of BIOTRANSFORM, it takes the form of **peer-review of methods and/or data summaries** to assess the dataset quality and to identify any need for improvement, ensuring that the dataset correctly incorporates the scientific knowledge and data generated.

QC is defined as a system of checks to assess and maintain the quality of the dataset being compiled[32]. The relevant procedures of BIOTRANSFORM are designed to provide routine technical checks as they measure and control data consistency, integrity, correctness and completeness as well as identify and address errors and omissions. In this context, QC checks cover everything from data acquisition and handling, application of approved procedures and methods, and documentation. Some of the general quality checks undertaken in the framework of the project include checking (i) for transcription errors in data input; (ii) that scale measures are within the range of acceptable values; and (iii) whether proper naming conventions are used.

4. Other research outputs

No other research outputs have been identified and are expected to be generated or re-used in the context of the project.

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[27] https://ardc.edu.au/resource/data-provenance/
[28] https://www.dublincore.org/resources/userguide/creating_metadata/#Provenance
[29] https://www.w3.org/TR/prov-dm/
[30] https://help.zenodo.org/
[31] 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 1 General Guidance and Reporting, CHAPTER 6 Quality Assurance / Quality Control and Verification.
[32] 2006 IPCC Guidelines for National Greenhouse Gas Inventories, Vol. 1 General Guidance and Reporting, CHAPTER 6 Quality Assurance / Quality Control and Verification.

5. Allocation of resources

5.1 Estimated costs to make data FAIR

The costs required for making the data collected/generated during BIOTRANSFORM activities FAIR, are integrated in the budget of the project. With that in mind, Table 11 provides an overview of the estimated costs of making data FAIR as well as their budget source within the framework of BIOTRANSFORM.

Table 10: Estimated costs for making data FAIR

No	Data Processing / Management Activity	Budget source	Total estimated effort in Person Months[33]	Total estimated cost in Euro[34]
1	Collection	Budget allocated to the WP under which the respective data are processed	17.94	104,727.62 €
2	Documentation	Budget allocated to the WP under which the respective data are processed	4.99	29,129.92 €
3	Storage	Budget allocated to the WP under which the respective data are processed	2.42	14,097.95 €
4	Access and security	Budget allocated to the WP under which the respective data are processed	2.42	14,097.95 €
5	Preservation	Budget allocated to the WP under which the respective data are processed	1.22	7,107.35 €
6	Availability and re-use	Budget allocated to the WP under which the respective data are processed	6.11	35,638.91 €
7	Overall data management	WP6	3.00	17,512.98 €
			Total	104,727.62 €

In order to make the cost estimations for making data FAIR in the context of BIOTRANSFORM, a series of **assumptions** were made, taking into account the respective **guidelines** provided by the Research Data Management Support, a multidisciplinary network of data experts within Utrecht

[33] The total estimated effort for each data processing / management activity reflects the cumulative effort for the implementation of the respective activity for all data collected / generated across the different WPs of BIOTRANSFORM.

[34] The total cost of each data processing / management activity is calculated by multiplying the effort estimated for the respective activity with the weighted average cost of a person month in the framework of BIOTRANSFORM.

University[35], as well as of the UK Data Service and its data management costing tool[36]. With that in mind, the estimated costs for making BIOTRANSFORM's data FAIR cover **data-related activities and resources across the data lifecycle**, spanning from collection and documentation through storage and preservation over to sharing and re-use.

In particular, costs for **data collection** cover activities necessary for acquiring external datasets (if required), gathering/generating new data, transcribing (if applicable), formatting and organising the data as well as acquiring informed consent from data subjects. Such data processing activities reflect the majority of the costs required for making data FAIR as the majority of BIOTRANSFORM's data constitutes new data collected/generated over the course of the project. At the same time, **data documentation** costs address the effort required for describing data (e.g. marking data with variable and value labels, code descriptions, etc.) as well as creating well-defined metadata along with a meaningful description of the context and methodology on how data was collected/generated and processed (where necessary).

Costs for **data storage** include the resources required for ensuring adequate storage space for the data as well as the effort necessary for conducting data back-ups, while **data access and security** costs encompass costs related to ensuring access to the data as well as for protecting it from unauthorised access or use or from disclosure. Given that the storage of BIOTRANSFORM's data will not require the procurement of additional space (other than what is already available to project partners) as well as that no special measures or software are required to access and secure the data (other than what is inherently built in to the repositories of BIOTRANSFORM's data), such costs are kept to a minimum

Data preservation costs, on the other hand, are estimated relatively higher than data storage, access and security costs, as additional effort will be required in several cases in order to convert the collected/generated data from their original form (e.g., physical interview transcripts) to an open and/or machine-readable format suitable for long-term preservation (e.g., to an .xlsx format.). Adequate effort for **data availability and re-use** costs is also foreseen to safeguard the appropriate digitisation and anonymisation of the data as well as cover any resources required for data sharing and cleaning. Along the same lines, appropriate effort is foreseen for **overall data management** as well, in order to cover the effort related with the operationalisation of data management in the framework of BIOTRANSFORM.

Finally, costs for **long-term preservation** in the framework of BIOTRANSFORM are assumed to be negligible, since the open data of the project will be hosted in the Zenodo repository free of charge.

5.2 Data management responsibilities

For the effective, proper and secure handling of the data collected/generated during the implementation of BIOTRANSFORM, specific data management roles have been established within

[35] Research Data Management Support. Guides: Costs of data management. Utrecht University. Retrieved from: https://www.uu.nl/en/research/research-data-management/guides/costs-of-data-management

[36] UK Data Service. Costing Data Management. Retrieved from: https://www.ukdataservice.ac.uk/manage-data/plan/costing

the data management methodology and procedures of the project. These responsibilities are outlined in this section of the DMP and are as follows:

Project Coordinator (PC): The PC, VTT, is responsible for coordinating and overseeing the successful implementation of the DMP. The PC contributes to quality assurance of the DMP and uploads the project's openly available data to Zenodo.

Data Management Leader: Q-PLAN is responsible for the overall data management of BIOTRANSFORM, including the elaboration of the DMP and its updates (when necessary along with support of all partners). Q-PLAN is also responsible for the elaboration of templates for the Informed Consent Form and the Data Subject Request Form to be appropriately adjusted and utilised by project partners during relevant activities of the project, as well as, for drafting the project's Privacy Policy that has been uploaded on the project's website. Q-PLAN in collaboration with relevant project partners (e.g. Task Leaders) have examined if additional specific privacy policies were required for certain project tasks and coordinated the elaboration of such privacy policies. Finally, Q-PLAN has coordinated with Work Package Leaders, Task Leaders and Responsible Partners to determine whether and how the data collected/generated or re-used by the project are shared and become available for re-use.

Work Package Leader (WPL): WPLs are responsible for coordinating the implementation of data processing activities performed under the Work Packages (WPs) they are leading. Moreover, they align Q-PLAN and the respective Work Task Leader on whether and how the data gathered/produced under the tasks, that fall within the WP they are leading, are shared and/or re-used. This includes the definition of access procedures and any necessary software and/or other tools which may be required for data sharing and re-use. Finally, the WPLs are the main responsible for assuring data quality stemming from the activities of the WP they are leading, including assessing their quality and indicating any need for improvement to the respective Work Task Leaders.

Work Task Leader (WTL): WTLs are responsible for the data collected / generated or re-used in the frame of the tasks that fall under their leadership as well as for safeguarding their appropriate and timely processing. Moreover, they are responsible for properly adjusting the Informed Consent Form and Data Subject Request Form templates, to the needs and specificities of the activities carried out in the task they are leading. WTLs are responsible for identifying the need for a specific privacy policy regarding the task they are leading and collaborate with the PC for drafting and releasing it to the public. Finally, they undertake any necessary actions to prepare the data collected / generated or re-used through the tasks they are leading for sharing either within the consortium or openly (including the use of proper naming conventions, application of suitable anonymisation techniques, creation of appropriate metadata and documentation, etc.).

Partners: All project partners are tasked to collect, digitise, anonymise, store, destroy and / or otherwise process data for the specific purpose of the activity in which it has been collected / generated or re-used within the project. They are responsible for appropriately collecting the necessary consent for processing data as well as for ensuring that the Informed Consent Form and the Data Subject Request Form used to this end are properly adjusted to the needs of the activity they are participating (including references to the project's Privacy Policy and any other applicable specific privacy policies) and, in any particularities, applicable to their organisation while ensuring adherence to provisions of relevant national data protection legislation in their respective country. Moreover, they are responsible for managing the consents they have collected with a view to

demonstrating their compliance with the relevant applicable EU and national regulation(s). Finally, they perform quality checks to assess and maintain the quality of the dataset(s) held within their records.

Data repositories: Data repositories are tasked with the storage and long-term preservation of the project's data. In this respect, Zenodo will maintain and preserve the openly available data of BIOTRANSFORM, enabling its sharing and re-use. To this end, Zenodo assigns metadata and DOIs to the data, while also taking all necessary measures to securely back-up the data and restore it, safeguarding its long-term preservation.

In this context, Table 11 illustrates the allocation of data management responsibilities amongst the members of the BIOTRANSFROM consortium per data collected/generated or re-used under each WP.

Table 11: Data management responsibilities of BIOTRANSFORM's partner per data collected/generated under each WP (ALCN in tasks completed before they exited the consortium)

WP	WPL	Data	Tasks	WTL	Responsible Partner
WP 1	HUB	Environmental, economic and social limits of the current linear fossil-based economy	Task 1.1	Q-PLAN	ALCN, CluBE, VTT, HUB, CTA, CLIB
		Data about the current status of circular bioeconomy development in EU regions	Task 1.2	HUB	ALCN, CluBE, VTT, CTA, CLIB Q- PLAN
		Database of suitable circular bioeconomy solutions	Task 1.3	VTT	ALCN, ACR+, CTA, CLIB, CluBE, HUB, Q-PLAN
		Overview of existing impact assessment methodologies	Task 1.4	CTA	LIST, ALCN
		Info days material	Task 1.5	CLUBE	ALCN, CluBE, VTT, HUB, CTA, CLIB, ACR+
		Data collected from policymakers Interviews	Task 1.5	CLUBE	ALCN, CluBE, VTT, HUB, CTA, CLIB
		Info days personal data	Task 1.5	CLUBE	ALCN, CluBE, VTT, HUB, CTA, CLIB
WP 2	LIST	List of sustainability assessment indicators	Task 2.1	LIST	ALCN, VITO
		Environmental impact assessment data	Task 2.2	LIST	VTT
		Economic impact assessment data	Task 2.3	LIST	VTT

		Socio-cultural impact assessment data	Task 2.4	LIST	VTT
		Pathway definition	Task 2.5	VTT	VITO, CTA, CLuBE, CLIB, HUB, LIST
WP 3	VTT	key parameters per demo-case scenario	Task 3.1	CLIB	CluBE, HUB, VTT, CTA, VITO
		Co-evaluation feedback group sessions material	Task 3.2	CluBE	HUB, VTT, CTA, CLIB, VITO, Q-PLAN
		Co-evaluation feedback group sessions personal data	Task 3.2	CluBE	HUB, VTT, CTA, CLIB, VITO, Q-PLAN
		Co-creation and capacity building workshops and train-the-trainer activities material	Task 3.3	CluBE	ACR+, VTT, CTA, LIST, VITO, HUB, CLIB
		Co-creation and capacity building workshops and train-the-trainer activities personal data	Task 3.3	CluBE	ACR+, VTT, CTA, LIST, VITO, HUB, CLIB
		Guidelines for transition	Task 3.4	CluBE	HUB
WP 4	ACR+	Working group material	Task 4.1	ACR+	VTT, CTA, CLuBE, HUB, CLIB
		Inventory of financial tools and solutions	Task 4.2	ACR+	CluBE, CTA, CLIB
		Key principles and recommendations for regional governance	Task 4.3	ACR+	CluBE, CTA
		Development of policy recommendations	Task 4.4	ACR+	CluBE, VTT, CTA, CLIB, HUB
WP 5	Q-PLAN	Website analytics	Task 5.1	Q-PLAN	Q-PLAN
		Social media statistics	Task 5.1	Q-PLAN	Q-PLAN
		Project events data	Task 5.1	Q-PLAN	Q-PLAN
		Newsletter subscriptions	Task 5.1	Q-PLAN	Q-PLAN
		Data from dissemination and communication activities along with clustering activities	Task 5.1 & 5.3	Q-PLAN & CTA	All Partners
WP 6	VTT	Material collected from Project management and coordination	All WP6 Tasks	VTT	VTT

6. Data security

BIOTRANSFORM securely handled any collected / generated or re-used data throughout its entire lifecycle as it is essential to safeguard this data against accidental loss and / or unauthorised access. To achieve this the project has applied appropriate technical and organisational measures based on a risk assessment of the relevant data that takes into account the impact and the likelihood of a potential data breach. With that in mind, the project's data security strategy has minimised the probability that a data breach occurs during the course and after the completion of BIOTRANSFORM, resulting either from human error or hardware failure, as well as inhibit any unauthorised access. Particularly, in case of personal data collection / generation it is crucial that this **data can only be accessible by those authorised to do so.**

All project partners are responsible for processing[37] data using appropriate means, such as private servers or cloud service providers that adhere to the relevant legal data protection requirements (e.g. GDPR) and ensure that this **data is protected,** and any **necessary data security controls have been implemented**, to minimize the risk of information leak and destruction. This case refers to the data that are closed and therefore not shared and / or re-used within the framework of the project. In this case, to minimize the consequences of potential data losses, the data have been **backed up at regular time intervals based on change frequency and criticality. The backed-up files are stored in appropriate storage media including external hard drives, flash drives, NAS devices and reputable cloud services**, so as to safeguard their preservation, while also enabling their recovery at any time. Moreover, **integrity checks**[38] are carried out regularly ensuring that the stored data has not been changed or corrupted.

Access to closed data is only permitted to authorised project partners. In case there is a personal data breach, the responsible project partner notifies, without undue delay and, where feasible, no later than 72 hours after having become aware of it, its competent national supervisory authority (e.g., data protection authority) as well as the data subject(s) that may be affected by the breach. Moreover, the responsible partner documents any personal data breaches, including information such as the facts relevant to the breach, its effects and the remedial action(s) taken.

Identification and authentication access controls play an important role in the context of the project, as they help partners to protect the data collected / generated or re-used during BIOTRANSFORM and especially personal data. To this end, each project partner is responsible for and committed to ensuring the application of appropriate access controls to the data they are processing. At the same time, **technical access controls are built into the BIOTRANSFORM website**, setting out clear roles with access rights to the data stored there, so that only authorised

[37] Processing, according to Regulation (EU) 2016/679 of the European Parliament (General Data Protection Regulation), means any operation or set of operations which is performed on personal data or on sets of personal data, whether or not by automated means, such as collection, recording, organisation, structuring, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or combination, restriction, erasure or destruction.
[38] An integrity check is the process of comparing the current state of stored data and/or programs to a previously recorded state in order to detect any changes.

personnel have access. Finally, in order to safeguard the privacy of the users of the BIOTRANSFORM website, dedicated **privacy policy** has defined the way in which these online spaces collect, process and use personal data, the security procedures followed, the users' rights as well as the cookies policy employed.

On another note, openly available data are stored safely for long-term preservation on Zenodo, in the same cloud infrastructure as research data from CERN's Large Hadron Collider, using CERN's battle-tested repository software INVENIO, which is used by some of the world's largest repositories (such as INSPIRE HEP and the CERN Document Server). Along these lines, data is stored and backed-up in CERN's EOS service in an 18 petabytes disk cluster. Both data files and metadata are kept in multiple online replicas and independent replicas ensuring their long-term preservation as well as their recovery when necessary. Moreover, for each file two independent MD5 checksums are stored. One checksum is stored by INVENIO, used to detect changes to files made from outside of it whereas the other checksum is stored by EOS, and used for automatic detection and recovery of file corruption on disks. In this context, access control is applied by the different level of openness that Zenodo allows (i.e., open, restricted and closed).

7. Ethical aspects and other procedures

This chapter addresses ethical aspects of BIOTRANSFORM's Data Management Plan and the ethical compliance of underlying data foreseen to be collected/generated or re-used under the project's activities. The project will process data that are not included in any special category of personal data (i.e. non-sensitive data) according to the relevant data protection legislation (e.g. GDPR). In accordance with the **Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 (GDPR),** all personal data processed for project's activities are:

- processed lawfully, fairly and in a transparent manner in relation to the data subject;
- collected for specified, explicit and legitimate purposes relative to project's objectives and not further processed in a manner that is incompatible with those purposes;
- adequate, relevant and limited to what is necessary in relation to the purposes for which they are processed;
- accurate and, where necessary, kept up to date;
- kept in a form that permits identification of data subjects no longer than it is necessary for the purposes under personal data are processed;
- processed in a manner that ensures appropriate security of the personal data (see section 6).

For all personal data processing activities within the framework of the project at least one lawful basis as of Art. 6 GDPR applies. Where informed consent is chosen as the lawful basis for processing, all relevant provisions of the data protection legislation (e.g., Art.7 GDPR) are observed. Under this light, further details about the **scope of the activities that entail data collection/generation or re-use** in the frame of BIOTRANSFORM along with the procedures for identifying/recruiting suitable stakeholders to take part in them as well as for obtaining their informed consent are defined by the respective WP Leaders (HUB for WPI, LIST for WP2, ALCN for WP3, ACR+ for WP4, Q-PLAN for

WP5). Moreover, **personal data processing carried out by partners are in line with relevant EU and national regulations**. The project's Privacy Policy and the templates of the Informed Consent Form and the Data Subject Request Form, used in the implementation of the project's activities, are compliant with the General Data Protection Regulation and annexed to this DMP (see Annex). Last but not least, **no transfer of personal data outside the EU is foreseen as part of the project's implementation.** In case of data storage providers situated both inside and outside the EEA, partners are committed to ensure their compliance with the relevant GDPR requirements before start using their services

It is important to highlight that each partner has been responsible for ensuring that the templates for the Informed Consent Form and Subject Data Request Form (including references to the project's Privacy Policy and any other applicable specific privacy policies) are appropriately adjusted according to (i) the needs of the activity for which they are being used by them as well as to (ii) the relevant data protection laws and regulations applicable to their respective countries and / or organisation. All partners should have kept records to demonstrate that data subjects have consented to the processing of their personal data and use consent management mechanisms that make it easy for individuals to withdraw their consent.

Finally**, no other national/funder/sectoral/departmental procedures for data management were used in the framework of BIOTRANSFORM.**

8. Conclusions and way forward

This final version of BIOTRANSFORM DMP safeguards the sound management of the data collected, processed and/or generated during the project's activities across their entire lifecycle, while also making them FAIR. It describes all the underlying processes of the BIOTRANSFORM data management, collection, process and generation, in accordance with the GDPR guidelines, and sheds light on (i) the data being collected, processed, generated and/or re-used under the project activities, (ii) the specific objectives under which each dataset was collected, processed, generated and/or re-used, (iii) the management of the other research outputs of the project (iv) the allocation of resources and data management responsibilities and (v) the data security and ethical aspects of the data.

In the framework of BIOTRANSFORM, the DMP is a living document and updated throughout the course of the project, considering its latest developments and available results (i.e. as D6.3 in M32). When necessary, additional ad hoc updates were released in order to include new data, better detail and/or reflect modifications in the methodologies applied or other aspects relevant to data management (such as costs for making data FAIR, size of data, etc.), changes in consortium policies and plans or other potential external factors.

9. Annexes

9.1 Annex I – Privacy policy

PRIVACY POLICY

1. **Who we are:**

BIOTRANSFORM is a coordination and support action (CSA) project funded by the European Union's Framework Programme for Research and Innovation Horizon Europe. BIOTRANSFORM provides European policymakers with an adequate assessment and policy development framework, knowledge base and expert support ecosystems to accelerate the **transition from linear fossil-based systems to circular bio-based systems**. It is therefore operating at the interface between the circular economy and the bioeconomy transitions. In this way, BIOTRANSFORM will equip policymakers with the tools to set informed priorities that serve environmental, economic, and social goals, being actionable, futureproof, and align with supply-and-demand trends in related industries and value chains.

The partners of the BIOTRANSFORM consortium, listed below, process certain types of personal data for the purposes of the project. Each partner is responsible for the personal data they collect and process during their activities under the framework of the project.

The BIOTRANSFORM consortium:

- VTT TECHNICAL RESEARCH CENTER OF FINLAND (Coordinator), https://www.vttresearch.com/en
- LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY, https://www.list.lu/
- FLEMISH INSTITUTE FOR TECHNOLOGICAL RESEARCH, https://vito.be/en
- TECHNOLOGICAL CORPORATION OF ANDALUSIA, https://www.corporaciontecnologica.com/en/
- CLUSTER OF BIOECONOMY AND ENVIRONMENT OF WESTERN MACEDONIA, https://clube.gr/en/
- CLUSTER INDUSTRIAL BIOTECHNOLOGY, https://www.clib-cluster.de/en/
- BIOEAST HUB CR, Z. U., http://www.bio-hub.cz/index.php/en
- ASSOCIATION OF CITIES AND REGIONS FOR SUSTAINABLE RESOURCE MANAGEMENT, https://www.acrplus.org/en/
- Q-PLAN INTERNATIONAL ADVISORS PC, https://qplan-intl.gr/

For further information, we can be contacted at: www.biotransform-project.eu

2. **How we collect your personal data**

We collect personal data both directly and indirectly:

Directly. We obtain personal data directly from individuals in a variety of ways, including but not limited to the following cases:

- an individual subscribes to our newsletter/s;
- an individual registers to attend meetings and events we host and during attendance of such events;
- we establish cooperative relationships with an individual;
- we provide professional services pursuant to our contract with the European Commission;
- an individual participates in an interview or survey organized by us.

Indirectly. We obtain personal data indirectly about individuals from a variety of sources, including:

- our research partners;
- our networks and contacts;
- public and open data sources such as public registers, news articles and internet searches;
- social and professional networking sites (e.g. LinkedIn).

3. What types of data we collect?

We only collect data that are necessary for the smooth implementation of our project. These data fall into the following categories:

- **contact details** (name/ surname, e-mail address, street address, mobile phone number, land line phone number).
- **professional information** (job title, organization, field of expertise).
- **demographics** (e.g. age, gender, nationality).
- **information about what a person knows or believes**.
- **videos and photos** (from people that attend our events).

4. Bases of lawful processing

We process personal data on the following legal bases:

Legal obligations – for processing activities required for compliance both with applicable national and European legislation as well as with the specific legal and regulatory framework of the Horizon Europe Framework Programme for Research and Innovation of the European Union.

Consent – for processing activities such as organization of surveys and interviews, completing of questionnaires and dissemination of project results.

Contractual obligations – for processing activities such as reporting to the European Commission and complying with the project's publicity obligations.

5. What do we do with your personal data

We process your personal data with the purpose of:

- Conducting research (e.g. interviews, surveys);
- Dissemination of project results to different types of stakeholder;

- Sending invitations and providing access to guests attending our events and webinars;
- Administering, maintaining, and ensuring the security of our information systems, applications, and websites;
- Processing online requests or queries, including responding to communication from individuals;
- Complying with contractual, legal, and regulatory obligations.

6. How we secure your personal data when we process it

We continuously apply a personal data risk assessment process to identify, analyse, and evaluate the security risks that may threat your personal data. Based on the results of this risk assessment, we define and apply a set of both technical and organizational measures to mitigate the above security risks, including but not limited to:

- Data Protection Policies to guide our personnel when processing your data;
- Written contracts with organizations that process personal data on our behalf;
- Non-Disclosure Agreements with our personnel;
- Back up process, antimalware protection, access control mechanisms, etc;
- Some of our partners have appointed a Data Protection Officer.

7. Do we share personal data with third parties?

We may occasionally share personal data with trusted third parties to help us deliver efficient and quality services. When we do so, we ensure that recipients are contractually bound to safeguard the data we entrust to them before we share the data. We may engage with several or all the following categories of recipients:

- Parties that support us while we provide our services (e.g., cloud-based software services such as Dropbox, Microsoft Sharepoint, Google);
- Our professional advisers, including lawyers, auditors, and insurers;
- Dissemination services providers (e.g., MailChimp);
- Law enforcement or other government and regulatory agencies or other third parties as required by, and in accordance with applicable laws or regulations;
- The European Commission according to our relevant contractual obligations.

8. Do we transfer your personal data outside the European Economic Area?

We do not own file servers located outside the European Economic Area (EEA). However, some partners may use cloud and/or marketing services from reputable providers such as SharePoint, DropBox, MailChimp, Google, etc., situated both inside and outside the EEA. We always check that such providers comply with the relevant GDPR requirements before they start using their services.

9. Do we use cookies?

Our websites use cookies. Where cookies are used, a statement will be sent to your browser explaining the use of cookies. Cookies are small text files which are saved on your computer, mobile phone or tablet. They allow the website to remember your actions and preferences (such as login, language, font size and other display preferences) so you don't have to keep re-entering them whenever you come back to the site. You can control and/ or delete cookies as you wish. If you do this, however, you may need to manually adjust your preferences every time you visit a site. For more information on how to manage cookies, please visit: http://www.aboutcookies.org/

We use tools like Google Analytics to better understand how visitors interact with our website. This provides us with important information to enable the site to work better. The information collected is not linked to your personal data. For more information on the cookies set by Google Analytics, please visit: http://code.google.com/apis/analytics/docs/concepts/gaConceptsCookies.html

The following cookies are used by Google Analytics:

Name	Typical content	Cookie expires after
_ga	Used to distinguish users	2 years
_gat	Used to throttle request rate	1 minute
_gid	Used to distinguish users	24 hours

10. Your rights

You have the following rights regarding the processing of your personal data:

- **Right to withdraw consent** – You can withdraw consent that you have previously given to one or more specified purposes to process your personal data. This will not affect the lawfulness of any processing carried out before you withdraw your consent.
- **Right of access** – You can ask us to verify whether we are processing personal data about you and, if so, to have access to a copy of such data.
- **Right to rectification and erasure** – You can ask us to correct our records if you believe they contain incorrect or incomplete information about you or ask us to erase your personal data after you withdraw consent or when we no longer need your personal data for the purpose it was originally collected.
- **Right to restriction of processing** – You can ask us to temporarily restrict processing of your personal data if you contest the accuracy of your personal data, prefer to restrict their use rather than having us erase them, or need us to preserve them for you to establish, exercise or defend a legal claim. A temporary restriction may apply while verifying whether we have overriding legitimate grounds to process your data. You can ask us to inform you before we lift that temporary processing restriction.
- **Right to data portability** – In some circumstances, where you have provided personal data to us, you can ask us to transmit that personal data (in a structured, commonly used, and machine-readable format) directly to another entity.
- **Right to object –** You can object to our use of your personal data for direct marketing purposes, including profiling or where processing has taken the form of automated decision-

making. However, we may need to keep some minimal information (e.g., e-mail address) to comply with your request to cease marketing to you.

- **Right to make a complaint to your local Data Protection Authority** (DPA) (see https://ec.europa.eu/justice/article-29/structure/data-protection-authorities/index_en.htm) regarding any concerns you may have about our data handling practices.

To ask us to do anything of the above, you can contact us by email: info@biotransform-project.eu. We will promptly examine your request against the relevant requirements of the laws and regulations governing privacy and personal data protection and we will answer the latest within 30 days after receiving your request. We will ask from you some form of identification (e.g. photocopy of your identity card or passport) to avoid non-authorized reveal of your personal data. If, for reasons of complexity of the request or a multitude of requests, we are unable to respond promptly, we will notify you within 30 days of any delay, which in no case may exceed two months from the expiration of the 30-day deadline.

11. How long do we retain personal data?

We retain personal data to provide our services, stay in contact with you and to comply with applicable laws, regulations, and contractual obligations to which we are subject. Please note that we have an obligation to retain data concerning projects funded by the Horizon Europe Framework Programme for Research and Innovation of the European Union for up to five years after the end of the project (unless further retention is requested by auditors). After the expiry of the retention period, and unless further legitimate grounds for retention arise, we will dispose of personal data in a secure manner.

12. Disclaimer of liability for third party websites

Although our site may contain links to third-party sites, including the sites of the consortium partners, we are not responsible for the privacy practices or content of these sites and we expressly disclaim any liability for any loss or damage that may be caused by the use of these links. We do not monitor the privacy practices or the content of these sites. If you have any questions about the privacy practices of another site, you should contact the site's responsible personnel. We suggest you read the privacy policy of each website you interact with, before allowing the collection and use of your personal data.

We may also provide social media features that allow you to share information on your social networks and interact with our project on various social media sites. The use of these social media features may result in the collection or sharing of information about you. We recommend that you check the privacy policies and regulations of the social networking sites you interact with, so that you can be sure that you understand what information may be collected, used and disclosed by these sites.

13. Children

We do not knowingly collect, use, or disclose information from children under the age of 16. If we learn that we have collected the personal information of a child under 16 we will take steps to delete

the information as soon as possible. Please immediately contact us if you become aware that a child under 16 has provided us with personal information.

14. Revisions of this Privacy Policy

This Privacy Policy is valid from 31/03/2022 and replaces any other previous notifications that we had issued in the past regarding our personal data management practices. We reserve the right to revise this Policy at any time. The current version will be always uploaded to our website indicating the date of entry into force, so you know when the most recent revision took place. If there are critical changes in this policy or our personal data practices change significantly in the future, we will notify you by posting the changes on our website.

9.2 Annex II – Consent form

Text in red colour contains guidelines for adjusting this template and should be deleted.

Text included in < > and/or highlighted with yellow should be replaced with content that is suitable to the context of each activity & project as well as to the organisation seeking to obtain the consent.

Before using this template take the time to carefully read and adjust it to the needs of the activity at hand as well as to any relevant regulations and particularities applicable to your country and organisation.

INFORMED CONSENT FORM

Who we are:

We are < Insert Partner Name > and we are contacting you in the framework of BIOTRANSFORM a project funded by the European Union under the Horizon Europe Framework Programme for Research and Innovation. A detailed description on how BIOTRANSFORM handles personal data is presented in the project's Privacy Policy available through the project's web page (www.biotransform-project.eu).

Project:

BIOTRANSFORM – Circular BIOeconomy TRANSFORMation for regions by enabling resource and governance networks (GA Number 101081833).

Partner:

Organisation name: < Insert Partner Name >

Address: < Insert Partner Address >

Phone: < Insert Partner Phone >

E-mail: <Insert Partner Generic E-mail Address >

Responsible persons:

You may delete the line referring to the Data Protection Officer if your organisation does not have one.

#	Role	Name	E-mail
1	BIOTRANSFORM Project Manager	<Insert name of project manager from your organisation>	<Insert e-mail of project manager from your organisation>

2	Interviewer	<Insert name of interviewer from your organisation >	<Insert e-mail of interviewer from your organisation>
3	Data Protection Officer	<Insert name of DPO from your organisation >	<Insert e-mail of DPO from your organisation >

What do we need from you?

Please explain in a brief paragraph (4-5 lines) the activity and its purpose under the frame of the project.

Example: We need you to participate in an interview that will be carried out by the BIOTRANSFORM project with a view to: identify the perceptions of policymakers on the current linear fossil-based economies and the potential transition pathways to a circular bioeconomy for your region.

The interview is expected to last no more than < Insert number of minutes > minutes. We will take written notes and we will be making an audio recording of the interview.

Please adapt the following text to accurately depict the type of personal data to be collected.

To effectively conduct this interview, we need to process some of your personal data:

- Your contact details (full name, email, phone number);
- Some basic demographics (age, gender);
- Your professional info (organization, job position, field of expertise);
- Your education info
- Your opinions on the subject matter.

Why do we need your data and what will we do with them?

We need your data to contact you in order to plan and carry out the aforementioned interview and to resolve any ambiguities, questions and other issues that may arise after, as a result of the interview. We also need to record your data to keep track of the interview process. The project's deliverables that will be derived by the interview will not include your personal data or any other information that could identify you. Your personal data will remain on our written notes (interview transcript) and the sound recording we will make during the interview.

We will share your data with a few other BIOTRANSFORM project partners that are also involved in this task and will participate in the drafting of the relevant deliverables. We are also obliged to grant access to your data to:

- EU officials such as our Project Officer for purposes related to project's evaluation.
- EU agencies and other authorities for project's auditing purposes.

We would also be grateful if you gave us your consent to also contact you in the future to ask you to participate in other project activities (e.g. surveys, interviews, project events etc.) and also to inform you about the project progress (e.g. by sending you a newsletter or similar messages).

How can you withdraw your consent?

You should know that you can withdraw your consent at any time by communicating either on the phone or by email with the responsible persons listed in the previous page. With regards to the informational messages and newsletters you can always opt out by simply clicking the link "Unsubscribe" or something similar included at the end of all the relevant messages.

I hereby give my consent to the processing of my personal data needed for:

*(Please, tick the boxes below to confirm that you give us your consent for the respective subject. Any boxes left unticked mean that **you do not consent to the relevant subject**.)*

#	Consent Subject	Tick box
1	My participation in an interview that will be carried out by BIOTRANSFORM to < insert key objective of the interview >	
2	My participation in future activities of BIOTRANSFORM	
3	Receiving newsletters and messages regarding BIOTRANSFORM activities	

_____ _____ _____

Name of participant Date Signature

9.3 Annex III – Data Subject Request Form

Text in red colour contains guidelines for adjusting this template and should be deleted.

Text included in < > and/or highlighted with yellow should be replaced with content that is suitable to the context of each activity & project as well as to the organisation seeking to obtain the consent.

Data Subject Request form

You may delete the data referring to the Data Protection Officer if your organisation does not have one.

CONTACT

<Insert name of responsible Project Manager>	<Insert name of DPO > (Data Protection Officer)
<Insert email of responsible Project Manager>	<Insert e-mail of DPO >

DATA SUBJECT REQUEST FORM

This form should be used to submit a data subject request under the provisions of the European Union General Data Protection Regulation (GDPR).

Submitter Details

Title:	
Name:	
Address:	

TYPE OF REQUEST

Please select the type of request you are making:

- ☐ *Consent Withdrawal*
- ☐ *Access request*
- ☐ *Rectification of personal data*
- ☐ *Erasure of personal data*
- ☐ *Restriction of processing of personal data*
- ☐ *Personal data portability request*
- ☐ *Objection to processing of personal data*
- ☐ *Request regarding automated decision making and profiling*

PERSONAL DATA INVOLVED

REQUEST DETAILS

REQUEST REASON/JUSTIFICATION

Name: .....

Signature: .....

Date: .....

***

Once completed, this form should be submitted via e-mail to < Insert contact e-mail of Partner > or posted to:

< Insert Partner Name >

< Insert Partner Address >

9.4 Annex IV - Record of Processing Activities

No	Project Activity / purpose	Data processing activity	Linked WP(s)	Linked Tasks	Data subjects	Data source	Data category(-ies)	Responsible partner	Involved partner(s)	Type of involvement	Special category (Art. 9 GDPR)	Lawfulness of processing	Transfer to third countires (non EU-EEA)	Transfer to EU from third countries	Recipients	Comments
1	Organization of info-days	Event organization	WP1	Task 1.5	Events participants	Data subject	Contact details Professional information Demographics	CLuBE			No	Art. 6(1)(a) - consent	No	No		
2	Organization of info-days	Event organization	WP1	Task 1.5	Events participants	Data subject	Contact details Professional information Demographics	ALCN			No	Art. 6(1)(a) - consent	No	No		
3	Organization of info-days	Event organization	WP1	Task 1.5	Events participants	Data subject	Contact details Professional information Demographics	HUB			No	Art. 6(1)(a) - consent	No	No		
4	Organization of info-days	Event organization	WP1	Task 1.5	Events participants	Data subject	Contact details Professional information Demographics	CTA			No	Art. 6(1)(a) - consent	No	No		
5	Organization of info-days	Event organization	WP1	Task 1.5	Events participants	Data subject	Contact details Professional information Demographics	VTT			No	Art. 6(1)(a) - consent	No	No		
6	Organization of info-days	Event organization	WP1	Task 1.5	Events participants	Data subject	Contact details Professional information Demographics	CLIB			No	Art. 6(1)(a) - consent	No	No		
7	Organization of info-days	Interviews	WP1	Task 1.5	Policymakers	Data subject	Contact details Professional information Demographics	CLuBE			No	Art. 6(1)(a) - consent	No	No		
8	Organization of info-days	Interviews	WP1	Task 1.5	Policymakers	Data subject	Contact details Professional	ALCN			No	Art. 6(1)(a) - consent	No	No		

							information Demographics									
9	Organization of info-days	Interviews	WP1	Task 1.5	Policymakers	Data subject	Contact details Professional information Demographics	HUB			No	Art. 6(1)(a) - consent	No	No		
10	Organization of info-days	Interviews	WP1	Task 1.5	Policymakers	Data subject	Contact details Professional information Demographics	CTA			No	Art. 6(1)(a) - consent	No	No		
11	Organization of info-days	Interviews	WP1	Task 1.5	Policymakers	Data subject	Contact details Professional information Demographics	VTT			No	Art. 6(1)(a) - consent	No	No		
12	Organization of info-days	Interviews	WP1	Task 1.5	Policymakers	Data subject	Contact details Professional information Demographics	CLIB			No	Art. 6(1)(a) - consent	No	No		
13	Co-evaluation with local and regional stakeholders' through feedback group sessions	Feedback group session	WP3	Task 3.2	Interested stakeholders	Data subject	Contact details Professional information Demographics	CLuBE			No	Art. 6(1)(a) - consent	No	No		
14	Co-evaluation with local and regional stakeholders' through feedback group sessions	Feedback group session	WP3	Task 3.2	Interested stakeholders	Data subject	Contact details Professional information Demographics	ALCN			No	Art. 6(1)(a) - consent	No	No		
15	Co-evaluation with local and regional stakeholders' through feedback group sessions	Feedback group session	WP3	Task 3.2	Interested stakeholders	Data subject	Contact details Professional information Demographics	HUB			No	Art. 6(1)(a) - consent	No	No		
16	Co-evaluation with local and regional stakeholders' through	Feedback group session	WP3	Task 3.2	Interested stakeholders	Data subject	Contact details Professional information Demographics	CTA			No	Art. 6(1)(a) - consent	No	No		

	feedback group sessions															
17	Co-evaluation with local and regional stakeholders' through feedback group sessions	Feedback group session	WP3	Task 3.2	Interested stakeholders	Data subject	Contact details Professional information Demographics	VTT			No	Art. 6(1)(a) - consent	No	No		
18	Co-evaluation with local and regional stakeholders' through feedback group sessions	Feedback group session	WP3	Task 3.2	Interested stakeholders	Data subject	Contact details Professional information Demographics	CLIB			No	Art. 6(1)(a) - consent	No	No		
19	Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for the case-studies	Workshop organization	WP3	Task 3.3	Interested stakeholders	Data subject	Contact details Professional information Demographics	ALCN			No	Art. 6(1)(a) - consent	No	No		
20	Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for the case-studies	Workshop organization	WP3	Task 3.3	Interested stakeholders	Data subject	Contact details Professional information Demographics	CluBE			No	Art. 6(1)(a) - consent	No	No		
21	Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for the case-studies	Workshop organization	WP3	Task 3.3	Interested stakeholders	Data subject	Contact details Professional information Demographics	CTA			No	Art. 6(1)(a) - consent	No	No		
22	Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for	Workshop organization	WP3	Task 3.3	Interested stakeholders	Data subject	Contact details Professional information Demographics	HUB			No	Art. 6(1)(a) - consent	No	No		

	the case-studies															
23	Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for the case-studies	Workshop organization	WP3	Task 3.3	Newsletter subscribers	Data subject	Contact details Professional information Demographics	CLIB			No	Art. 6(1)(a) - consent	No	No		
24	Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for the case-studies	Workshop organization	WP3	Task 3.3	Interested stakeholders	Data subject	Contact details Professional information Demographics	VTT			No	Art. 6(1)(a) - consent	No	No		
25	Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for the case-studies	train the trainee activites	WP3	Task 3.3	Interested stakeholders	Data subject	Contact details Professional information Demographics	ALCN			No	Art. 6(1)(a) - consent	No	No		
26	Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for the case-studies	train the trainee activites	WP3	Task 3.3	Interested stakeholders	Data subject	Contact details Professional information Demographics	CluBE			No	Art. 6(1)(a) - consent	No	No		
27	Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for the case-studies	train the trainee activites	WP3	Task 3.3	Interested stakeholders	Data subject	Contact details Professional information Demographics	CTA			No	Art. 6(1)(a) - consent	No	No		
28	Elaboration of transition roadmaps from	train the trainee activites	WP3	Task 3.3	Interested stakeholders	Data subject	Contact details Professional	HUB			No	Art. 6(1)(a) - consent	No	No		

	linear fossil-based to a circular bio-economy for the case-studies						information Demographics									
29	Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for the case-studies	train the trainee activites	WP3	Task 3.3	Interested stakeholders	Data subject	Contact details Professional information Demographics	CLIB			No	Art. 6(1)(a) - consent	No	No		
30	Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for the case-studies	train the trainee activites	WP3	Task 3.3	Interested stakeholders	Data subject	Contact details Professional information Demographics	VTT			No	Art. 6(1)(a) - consent	No	No		
31	Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for the case-studies	Webinars	WP3	Task 3.3	Policymakers	Data subject	Contact details Professional information Demographics	ACR+	All task partners		No	Art. 6(1)(a) - consent	No	No		
32	Organization of a working group composed of different representatives of European regions	Working group	WP4	Task 4.1	Interested stakeholders	Data subject	Contact details Professional information Videos and photos	ACR+	All task partners		No	Art. 6(1)(a) - consent	No	No		
33	Monitoring and assessment of the dissemination, communication, stakeholder engagement and clustering activities	Subscription	WP5	Task 5.1	Newsletter subscribers	Data subject	Contact details Professional information Videos and photos	Q-PLAN	All partners		No	Art. 6(1)(a) - consent	No	No		

34	Monitoring and assessment of the dissemination, communication, stakeholder engagement and clustering activities	Event organization	WP5	Task 5.3	Relevant projects	Data subject	Contact details Professional information Videos and photos	CTA	All partners		No	Art. 6(1)(a) - consent	No	No		
35	Project management and coordination	Project management	WP6	Task 6.3	Project partners	Data subject	Contact details Professional information Videos and photos	VTT			No	Art. 6(1)(a) - consent	No	No		
36	Project management and coordination	Project management	WP6	Task 6.3	Project partners	Data subject	Contact details Professional information Videos and photos	ALCN			No	Art. 6(1)(a) - consent	No	No		
37	Project management and coordination	Project management	WP6	Task 6.3	Project partners	Data subject	Contact details Professional information Videos and photos	LIST			No	Art. 6(1)(a) - consent	No	No		
38	Project management and coordination	Project management	WP6	Task 6.3	Project partners	Data subject	Contact details Professional information Videos and photos	VITO			No	Art. 6(1)(a) - consent	No	No		
39	Project management and coordination	Project management	WP6	Task 6.3	Project partners	Data subject	Contact details Professional information Demographics	CTA			No	Art. 6(1)(a) - consent	No	No		
40	Project management and coordination	Project management	WP6	Task 6.3	Project partners	Data subject	Contact details Professional information Demographics	CluBE			No	Art. 6(1)(a) - consent	No	No		
41	Project management and coordination	Project management	WP6	Task 6.3	Project partners	Data subject	Contact details Professional information Demographics	CLIB			No	Art. 6(1)(a) - consent	No	No		

42	Project management and coordination	Project management	WP6	Task 6.3	Project partners	Data subject	Contact details Professional information Demographics	HUB			No	Art. 6(1)(a) - consent	No	No		
43	Project management and coordination	Project management	WP6	Task 6.3	Project partners	Data subject	Contact details Professional information Demographics	ACR+			No	Art. 6(1)(a) - consent	No	No		
44	Project management and coordination	Project management	WP6	Task 6.3	Project partners	Data subject	Contact details Professional information Demographics	Q-PLAN			No	Art. 6(1)(a) - consent	No	No		

9.5 Annex V – Main changes in the data collected /generated since M6 and D6.2

No.	Name of activity	Data	Status	Remarks
1	Evaluation of environmental, economic and social limits of the current linear fossil-based economy at European and regional level	Environmental, economic and social limits of the current linear fossil-based economy	Updated	Title, description of activity, data format, size, availability, accesibility, expected time for making data open were updated to better reflect the data collected
2	Analysis of the status quo of circular bioeconomy development in EU regions	Data about the current status of circular bioeconomy development in EU regions	Deleted	Merged with no 1 as the final datasets concern complimentary topics and are thus treated as one
3	Review on current circular bioeconomy solutions and associated measurement indicators	Database of suitable circular bioeconomy solutions	Updated	Description of activity, size, availability, accesibility, expected time for making data open were updated to better reflect the data collected
4	Literature review on existing impact assessment methodologies	Overview of existing impact assessment methodologies	Updated	Description of activity, availability, accesibility, expected time for making data open were updated to better reflect the data collected
5	Organization of info-days	Info days material	Updated	Description of activity, data format, size, accesibility were updated to better reflect the data collected

		Data collected from policymakers Interviews	Updated	Description of activity, size, accesibility, expected time for making data open were updated to better reflect the data collected
		Info days personal data	Updated	Description of activity, size, accesibility were updated to better reflect the data collected
6	Development of the assessment package framework	List of sustainability assessment indicators	Updated	Description of activity, data format, size, availability, accesibility were updated to better reflect the data collected
7	Implementation of subsystem environmental, economic and socio-cultural assessment to each regional pilot	Environmental impact assessment data	Updated	Title, description of activity, data format, size, accesibility were updated to better reflect the data collected
8	Implementation of subsystem economic assessment to each regional pilot	Economic impact assessment data	Deleted	Merged with no 7 as the final datasets concern complimentary topics and are thus treated as one
9	Implementation of subsystem socio-cultural assessment to each regional pilot	Socio-cultural impact assessment data	Deleted	Merged with no 7 as the final datasets concern complimentary topics and are thus treated as one
10	Development user manual for measuring specific impacts utilising tools in the assessment package	Pathway definition	Updated	Description of activity, size, availability, accesibility were updated to better

				reflect the data collected
11	Identification of key parameters	Key parameters per demo-case scenario	Updated	Description of activity, size were updated to better reflect the data collected
12	Co-evaluation with local and regional stakeholders' through feedback group sessions	Co-evaluation feedback group sessions material	Updated	Description of activity, data format, size, accesibility were updated to better reflect the data collected
		Co-evaluation feedback group sessions personal data	Updated	Description of activity was updated to better reflect the data collected
13	Elaboration of transition roadmaps from linear fossil-based to a circular bio-economy for the case-studies	Co-creation and capacity building workshops, train-the-trainer activities and webinars material	Updated	Description of activity, data format, size, availability were updated to better reflect the data collected
		Co-creation and capacity building workshops, train-the-trainer activities and webinars personal data	Updated	Description of activity was updated to better reflect the data collected
14	Development of action roadmaps	Guidelines for transition	Updated	Description of activity, data format, size were updated to better reflect the data collected
15	Organization of a working group composed of different representatives of European regions	Working group material	Updated	Description of activity, size, availability were updated to better reflect the data collected
	Development of a financial roadmap	Inventory of financial tools and solutions	Updated	Description of activity, size, availability were updated to better reflect the data collected

16	Development of a methodology for regional governance and financing	Key principles and recommendations for regional governance	Updated	Description of activity, size, availability were updated to better reflect the data collected
17	Organization of a policy working group	Development of policy recommendations	Updated	Description of activity, data format, size were updated to better reflect the data collected
18	Monitoring and assessment of the dissemination, communication, stakeholder engagement and clustering activities	Website analytics	Updated	Description of size, accesibility were updated to better reflect the data collected
		Social media statistics	Updated	Description of size, accesibility were updated to better reflect the data collected
		Project events data	Updated	Description of size, availability, accesibility were updated to better reflect the data collected
		Newsletter subscriptions	Updated	Description of size was updated to better reflect the data collected
		Data from dissemination and communication activities	Updated	Description of size, accesibility were updated to better reflect the data collected
19	Project management and coordination	Material collected from Project management and coordination under GDPR principles	Updated	Description of size, accesibility were updated to better reflect the data collected