



**SMART CITIZEN EDUCATION
FOR A GREEN FUTURE**

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Acronyms

Acronym	Definition
DMP	Data Management Plan
ECCEL	European Certification for Climate and Environmental Literacy
EU	European Union
GDPR	General Data Protection Regulation
IAT	Implicit Association Test
RRI	Responsible Research and Innovation
UNINETTUNO	Università Telematica Internazionale UNINETTUNO
ENG	Engineering Ingegneria Informatica S.p.A.
UAB	Universitat Autònoma de Barcelona
BSC	Barcelona Supercomputing Center
AGO	Agorize SAS
VTT	Tecnologian Tutkimuskeskus VTT Oy
4S	4sfera Innova SLU
UNSPMF	University of Novi Sad Faculty of Sciences
ECQA	European Certification and Qualification Association
CRA	Climate Risk Analysis
EA	Ellinogermaniki Agogi
MAYK	Maunulan yhteiskoulu & Helsingin matematiikkalukio
RST	School for Europe Foundation – Royal School in Transylvania
RGSMART	Racunarska gimnazija SMART Novi Sad
DBT	Danish Board of Technology Foundation
EAB	External Advisory Board
GA	General Assembly
LOD	Linked Open Data
WP	Work package



1. Introduction

GreenSCENT – Smart Citizen Education for a Green Future – is a research and innovation project funded by the European Union's Horizon 2020 program, under Grant Agreement N° 101036480.

GreenSCENT aims at developing a competence framework embracing all the Green Deal focus areas through an iterative, participated, experience and learning-by-doing based design approach.

GreenSCENT activities embrace both experts and researchers inputs and advise, citizen participation and stakeholder engagement initiatives; different European regions, different educational levels (from primary schools to higher education), at different engagement levels (from observation to data collection and processing, to contribution to scientific and policy agenda).

GreenSCENT legacy will consist of the GreenSCENT Competence Framework, its methodology, use cases, user guides; training kits co-designed to implement the framework; GreenSCENTbox, the set of digital, physical and hybrid demonstrators developed by the project; and ECCEL, a European "driving license" for Climate and Environmental competences and skills, that will be tested during the project.

This document called "Data Management Plan" (DMP) is part of the project management tools and has the purpose to establish the rules and guidelines for managing the data collected and produced during all phases of the project, to be compliant with the regulatory framework and ensure a high level of data quality and accessibility for final users and stakeholders and at the same time to allow the applications of data analytics techniques.

Specifically, DMP will address the following main topics:

- the data format of both the collected and the delivered data;
- characteristics of the data and their provenance;
- how data are used during the project and which goals are supported by the used data;
- data exchange protocols within the GreenSCENT tools;
- which metadata will be used within GreenSCENT. describing their content and format;
- how data are shared among partners and non-partners of the project;
- how the personal data will be made portable outside the system;
- data erasure policy;
- how data will be stored and preserved in order to allow the exploitation of the data also after the end of the project.

The principles contained in the FAIR Data Management Guidelines in Horizon 2020 have been followed for the choice of management methods, which generally require that the research data be "findable", "accessible", "interoperable" and "reusable".

Concerning data security and privacy issues, the DMP will take into account the EU directives related to both users' rights relating to electronic communications networks and services, the processing of personal data, and the protection of privacy in the electronic communications sector. The key EU juridical framework is, starting from 2002/58/EC, the (EU) 2016/680, also known as General Data Protection Regulation (GDPR). Special attention will be given to the transfer of personal data from and to non-EU countries.

Any change in the legislation will influence the ongoing research/project, regardless of the date of the legislation compared with the starting date of the research.

The DMP must be updated and revised periodically according to the progress of the subsequent phases of the project.

The content of this document is public.



2. Data mapping

In this section, the main characteristics of the data, their sources, data processing methods during the various project phases and activities, and the objectives to be achieved through their use are presented.

This document provides general information for each context generating data: reference and name, description, purpose, project objectives, deliverables, or other results.

2.1. Data source and data use in the first phase of the project

In Phase 1 of the project (mainly represented by WP1), data gathered and processed will be used to realise the first release of the GreenSCENT Competence Framework. That will be the starting point for education, demonstration, validation, citizen engagement, and open innovation activities, foreseen in Phase 2 of GreenSCENT.

The activity will be performed by the consortium researchers [Lead: UNINETTUNO, part.: All].

Data gathered and produced in Phase 1 will be mainly generated by the following data collection contexts:

1. **Analysis of existing competence framework**
2. **External advisors' validation**
3. **GreenComp piloting**
4. **Pilot activities**

2.1.1. Analysis of existing competence framework

Research activities in this context will consist of desk research and literature review of scientific and grey literature about Climate Change, Sustainable Development, and Environmental Protection.

The purpose of this activity is to analyze a wide range of existing competencies already developed from scientific and policy-related literature. The project's objective is to provide baseline information and framework that will inform Phase 2 of the project, so the validation of the competence framework itself.

A desk research and literature review carried out by project partners (both Green Deal focus areas experts, educational framework experts and technological experts) leads to the definition of a competence initial ontology.

Through this activity, the project obtains and elaborates scientific literature information.

The data collected (raw data) are accessible only to the researchers involved in the activity. Internal reports and other deliverables are shared using Google Drive.

Consortium partners will be required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in word format or XLSX, while the deliverables will be in pdf format.

2.1.2. "External advisors validation"

This initial, wide range of competences will be validated through the involvement of GreenSCENT external advisors, composed by international experts, selected by the General Assembly (GA) of Consortium Partners, associations and activists on Green Deal topics.

A Delphi study will prioritize and categorize the main competences and sub-competences in the framework in at least two runs, while the final round will ask for proposals for assessment methodologies for each of the competence.

The other organizations supporting GreenSCENT will be involved in two different stages: a second group of organizations, mainly addressing accessibility issues, will help in the accessibility assessment of the technical solutions developed and a 3rd group will be involved in exploitation/sustainability related activities in late Phase 2 and in Phase 3.



The first draft of the competence matrix is also used with a bottom-up approach, involving citizens in the pilot countries and – using Agorize platform and experts, and Youth Design Assemblies – at a wider EU and global level, asking them about their opinions, perceived obstacles, acceptance and worries about the strategy that lies behind the competence framework.

This activity generates data through interviews, surveys or focus groups.

The identity of the external advisors will remain confidential and their expressed opinions will be anonymous.

Documents, permissions and informed consent will be kept in a locked cabinet at UAB.

The collected data (raw data) are accessible only to the researchers involved in this activity. Internal reports and other deliverables must be shared using Google Drive.

Consortium partners will be required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in word format or XLSX, while the deliverables will be in pdf format.

The information gathered leads to the final 1st release of GreenComp (D1.1) and also defines indicators and protocols that will inform the activities in WP2, 3, 4, 5 on evaluation methodologies and pilot definition.

2.1.3. “GreenSCENT Competence Framework Piloting”

This context (related to WP5), starting in Phase 1 of the project but mainly implemented in Phase 2, is based on data produced by the following activities:

- development of a common scientific framework for future pilot activities, based on previous activities (WP1);
- planning of the actions foreseen also in the subsequent phases of the project (WP3 and WP4);
- coordination among the participants through thematic meetings and workshops (Instructional co-design, Preparatory training, Experiments) during all phases of the project;
- creation and development of the operational plan;
- evaluation and final validation of the implementations also from an ethical point of view.

The purpose of all these activities is to provide common guidelines and ensure the replicability of the results.

The project objectives are to create a common steering framework and to supervise the various planned activities.

From these activities various information of a technical and procedural nature will be obtained.

The data collected (raw data) will only be accessible to the researchers involved in the activity. Internal reports and other deliverables must be shared using Google Drive.

Consortium partners will be required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in open word format or XLSX, while the deliverables will be in pdf format.

2.1.4. “Pilot activities preparation”

In this context, some dedicated survey activities will generate the data with the involvement of the External Advisory Board and some reference communities, which will range from education to business.

The purpose of these activities is to develop dedicated research topics and results.

The project goal is to provide a clearer idea about the awareness, perception, expectations, resistance, and skepticism among the different population groups within the EU.

From these activities, various information will be obtained on the research topics and the initial requirements of the pilot activities, the system requirements, and the user manual.



In this phase, the data will be collected through interviews, questionnaires, or focus groups carried out in person or remotely depending on the research method used.

Interviews and focus group will be anonymous. Identification data won't be collected and all the information that will allow you to directly or indirectly identify people and companies will be withdrawn.

Documents, permissions and informed consent about reference communities' members will be kept in a locked cabinet at UAB or in the Nebula server (nebula.uab.cat).

The collected data (raw data) will be accessible only to the researchers involved in this activity. Internal reports and other deliverables must be shared using Google Drive.

Consortium partners will be required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in open word format or XLSX, while the deliverables will be in pdf format.

At the end of the first phase of the project, the first version of the GreenSCENT Competence Framework will provide a data set of information intended for numerous uses: the mapping of skills to training, the implementation of information or pilot campaigns, the definition of the estimation and evaluation method of each of the subsequent activities to be carried out within the project, the creation of models and standards for the collection of use cases and the development of user manuals for the realization of curriculum and course projects, of a scheme for the implementation of training and learning by doing activities.

The data produced will be reported in the related deliverables envisaged by the **WP1** of the project, whose identification number, title, and level of dissemination are listed in the document "1.3.2. WT2 list of deliverables" of the Grant Agreement.

The GreenSCENT Competence Framework 1st release (D1.1) is accessible only to members of the consortium and shared using Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

2.2. Data source and data use in beyond-education and technological demonstrators development activities

In the last part of Phase 1 and the initial part of Phase 2 of the project (WP2), the data collected and produced will be used to define a complete method of civil engagement and responsible research and innovation (RRI) that will be applied to training, to the pilot activities of Citizen Science and the related demonstrations foreseen in the final part of this phase (WP3, WP5).

The data collected and produced in the initial phase of the second phase will be generated from the following contexts:

- **Collection and analysis of existing methods and initiatives**
- **Co-creation**
- **Youth engagement**

2.2.1. "Collection and analysis of existing methods and initiatives".

In this context, the data will originate from:

- the research activity on existing civil engagement methods on issues relating to sustainability and climate change;
- Citizen Science initiatives, which are linked with the areas of interest of GreenSCENT Competence Framework and Green Deal.

The above activities will be carried out by the project partners [Lead: VTT, part.: All].



The purpose of these activities is to define an initial methodology that will be based on the complete inventory of engagement methods.

The collected data (raw data) will be accessible only to the researchers involved in this activity. Internal reports and other deliverables must be shared using Google Drive.

Consortium partners will be required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in open word format or XLSX, while the deliverables will be in pdf format.

The project goal is to collect and analyze a broad set of information for the creation of a final methodology.

From these activities various information of a scientific and social nature will be obtained, the inventory will also provide a catalog of the best existing Citizen Science initiatives. The methodology will also include the collection of information from recent citizenship publications contained in social forums, university research systems and other projects.

2.2.2. “Co-creation”

In this context, the data will originate from the creative activity of the research team interacting with the involved research participants coming from different target communities already mentioned in section 2.1.

The purpose of this activity is to create the final methodology for the educational and technological validation of the competence framework.

The fulfilment of the project objectives will ensure that the chosen methods can be meaningfully used in pilot activities to better align the process and its results with the expectations of GreenSCENT and all its stakeholders.

From this activity, information of a technical nature will be obtained that can be integrated with other tools created in the subsequent phases of the project (SCENTbox) and in particular the co-creation of guidelines for a bottom-up approach: from students to researchers and politicians. An essential part of this methodology will be based on the Responsible Research and Innovation (RRI) evaluation criteria.

The data produced will be reported in the related deliverables envisaged by the WP2 of the project, whose identification number, title, and level of dissemination are listed in the document “1.3.2. WT2 list of deliverables” of the Grant Agreement.

2.2.3. “Youth engagement”

This activity involves only some researchers [Lead: DBT, part: BSC, AGO, VTT].

In this context, the data will originate from the activity of four Youth Design Assemblies. Youth will be involved in the selection and creation of the content of the pilot activity and the definition of the corresponding curriculum that will be implemented in the successive project phases. The activities of the four Youth Design Assemblies will be carried out by young citizens. The Assemblies will be composed of at least two students from each nation participating in the pilot activities, chosen to guarantee diversification based on age, gender, level of education, employment, and geographical area. In the first meeting, the participants will produce a set of questions, wishes, ideas for improvements, and additions to the pilot activities, which have already been created, in draft form and general features, during the final phase of **WP1**. In the following meetings, participants will first receive feedback from the experts involved in **WP1** and then will provide a priority list of topics that will function as the main reference for the development activities and the creation of the contents foreseen in the subsequent phases of the project. The activities of the four Youth Design Assemblies will be carried out through face-to-face meetings and the final test of the skills framework.

The results of all these activities will fine-tune the innovative training model used in the continuation of phase two.

The project aims to promote awareness-raising and provide knowledge on climate change and its environmental and socio-economic repercussions, involving all categories belonging to citizenship and in



particular young people.

From these activities, various information of different nature will be obtained (feedback, assessment, evaluation), also containing personal data referable to the participants. The data will be used as an input to create a collection of recommendations from the bottom to top, as a basis for future decisions.

DBT is responsible for the design of the engagement process and the facilitation of the four assemblies. All partners are responsible for the recruitment of citizens, following the guidelines and requirements provided by DBT.

In accordance with GreenSCENT's ethical procedures, partners conducting research activities ensures that the privacy, confidentiality and cultural sensitivities of the participants and the community are respected, as part of their professional obligations to secrecy. Disclosure of subjects' identity to other than authorised individuals are prevented.

The personal data included in the project are confidential in the case of focus groups, workshops and training activities.

People giving information are indicated and tracked by a univocal code on all documents. No names, surnames, or date of birth are used.

The collected data (raw data) are accessible only to the researchers involved in this activity. Internal reports and other deliverables must be shared using Google Drive.

Consortium partners are required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in open word format or XLSX, while the deliverables will be in pdf format.

In the final part of the second phase of the project (**WP3**) the tools (Green SCENT mobile app, Green SCENT storage, and distribution platform, Augmented Reality app) will be developed together with the Open Access semantic APIs interface, based on the requirements already established in the first phase and later they will be tested and improved as part of the pilot activities. The data collected and produced in the final part of the second phase of the project will be generated from the following contexts:

- **Open Innovation**
- **Development and evaluation**

2.2.4. "Open Innovation"

In this context, the data will originate from the participatory contribution of the software developers, the organizations involved that mainly deal with the problem of accessibility and the end-users involved in the pilot activities.

The purpose of this activity is to realize the basic design of the tools created through an agile iterative methodology.

The project objectives will explore the boundaries of the design space by proposing innovative and creative solutions.

This activity involves some researchers [Lead: AGO, part.: UNINETTUNO, ENG, UAB, BSC, VTT, DBT, UNSPFM, ECQA, 4S, CRA].

AGO will run two-yearly Open Innovation initiatives on its collaborative SaaS platform, that will allow to reach out to both young people (in particular, students from the best European schools and universities) and young professionals (startup creators in particular).

These two audiences will work collaboratively on the Agorize platform on two-yearly campaigns and programs (youth and young professionals).

Students will be allowed to build multidisciplinary teams with complementary backgrounds to tackle the complexity of the issues at stake around climate change and the "Farm to fork" area.



The biennial Open Innovation Initiative involves the collection of participants' personal data, some of which is mandatory (name, surname, email address) and some of which is voluntary (date of birth, title, photo, country, education, professional skills, employment preferences and documents, presentations, audio/video files uploaded for the challenge).

As part of the Open Innovation Initiative, in accordance with the GDPR, UNINETTUNO will be the data controller of the participants' personal data, while AGO will be the data processor.

Individual and team profiles and deliverables related to the challenge (documents, presentations, audio/video files, etc.) will be public.

From these activities, information and data sets of a technical nature will be used for the development of GreenSCENT guide and policies recommendations for the design of future visual and user interfaces and low-fi prototypes (Lead: VTT, part.: UNINETTUNO, ENG, UAB, AGO, DBT, 4S, CRA, EA, RS, MAYK, RGS).

The data will be processed in word format or XLSX, while the deliverables will be in pdf format.

2.2.5. Development and evaluation of GreenSCENT Demonstrators

In this context, the data will originate from the development activities of low-fi prototypes and tools (GreenSCENT mobile app, GreenSCENT storage and distribution platform, Augmented Reality app) and of the Open Access semantic APIs interface, and from the subsequent activities of experimentation and evaluation.

The activity will be performed by the consortium researchers [Lead: ENG, part.: UNINETTUNO, UAB, BSC, 4S] by continuously comparing the results with the contributing partners and target users.

This community will be involved in:

- the development of low-fi prototypes, created through the experimentation of iterative tests prepared within WP5, first of all to evaluate the user interface and then to progressively develop the details of the final system;
- the development of the GreenSCENT mobile app, created by adopting an agile software development methodology, which in subsequent testing activities will allow registered users to create geo-localized content through the use of metadata;
- the development of the multimedia content collection platform (GreenSCENT storage platform), created to perform the functions of central hub and to collect, manage and give access to the contents provided by the GreenSCENT mobile app and also from other available data sources, which will include the creation of a user interface for content management and which will be equipped with features of scalability and management of large amounts of metadata for each content or dataset, of being cloud-native and of modern design, of being multilingual and of have an APIs semantic programming interface;
- the development of the Augmented Reality app for the air quality demonstrator, created to allow young people and families to explore the levels of air quality in Europe, which will initially be designed for mobile devices based on the Android system and to be integrated with data from other applications;
- the validation and evaluation of the tools created in terms of usability and accessibility through the experimentation of the demonstrators (SCENTbox) by end users.

The project objectives pursued are to train and support a coherent and consistent user experience in the use of the tools created and to deal with iterative agile development methods.

From these activities various information and data sets of a technical nature (Architectural descriptions and User guides) and evaluation and validation of the demonstrators will be obtained.

At the end of the second phase of the project, a large number of tools and information will be available to be used in the last phase of the project: Training kits, GreenSCENT Platform, Demonstrators (GreenSCENTbox) and an evaluation methodology.

The collected data (raw data) will be accessible only to the researchers involved in this activity. Internal reports and other deliverables must be shared using Google Drive.



Consortium partners will be required to share final reports, App, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in word format or XLSX, while the deliverables will be in pdf format.

The GreenSCENT mobile app involves the collection of users' personal data in order to grant access to the App and for password recovery.

In accordance with the GDPR, UNINETTUNO, as the data controller, will have to limit the collection of the personal data of its users to their email address. (minimization).

The GreenSCENT platform will act as a central hub to collect, manage and access content coming from the GreenSCENT app (T3.3), or possibly from other available data sources (as an example LOD datasets), and will manage relevant metadata for each piece of content and dataset (date/time, geolocation of the photo, author, description, notes provided by the author, comments from the community).

All that metadata involves the collection of users' personal data, based on their free consent.

The personal data included in the project will be confidential in the case of focus groups, workshops and training activities. Documents, permissions and informed consent about reference communities' members will be kept in a locked cabinet at UAB or in the Nebula server (nebula.uab.cat).

In any case, in accordance with the GDPR and the Green Scent's ethical procedures, partners conducting research activities will ensure that the privacy, confidentiality and cultural sensitivities of the participants and the community are respected, as part of their professional obligations to secrecy. Disclosure of subjects' identity to other than authorised individuals will be prevented.

The Augmented Reality app for the air quality demonstrator will be developed to ensure that the data representations and the interactions are usable, understandable, and engaging. It will be designed for mobile devices with the ARCore library (Android). Pollution data will be integrated with elevation and satellite data to produce 3D models of large regions of Europe. OpenStreetMap data of Barcelona (including buildings) and municipal datasets of trees and parks (Open Data Barcelona) will be fed into Houdini to prepare a textured 3D geolocated model of the city and integrate it with data using Unity 3D engine. Portability to ARKit (iOS) or web based AR platforms will be evaluated for feasibility and performance.

2.3. Data source and data use in the instructional design and educational activities

At the beginning of the third phase of the project (**WP4, WP5**), the data collected and produced will be used to develop the tools for the knowledge, skills, and competences creation of every citizen in the EU. The aim is to create awareness and contribute to the achievement of the EU Green Deal. The data collected and produced in the initial phase of the second phase will be generated from the following contexts:

- **Development of the GreenSCENT Skill Card**
- **Development of Training Kits**
- **Assessment and evaluation methodology**
- **Development of ECCEL Certification**

2.3.1. "Development of the GreenSCENT Skill Card"

This activity will involve some researchers [Lead: ECQA, part: UNINETTUNO, ENG. UAB, VTT, DBT, UNSPMF, CRA].

In this context, the data will originate first of all from suggestions and feedback from the Advisory Board and focus groups on the draft Skill Cards, then from the collection of information from various subjects involved in ECCEL, through the administration of short questionnaires.

The purposes of these activities are to select the skills and competencies that every EU citizen must possess to contribute to the EU Green Deal and raise awareness of the GreenSCENT project and its results.



The project aims to create the GreenSCENT Skill Cards to be included in modular training courses (Skill Units), learning elements, and learning outcomes.

From these activities, GreenSCENT will produce several informative and learning tools.

In the skills card, we will break down the skills and competences into Skill Units (U) or Modules (at university level) and Learning Elements (E). Each learning element will be described by Learning Outcomes (LO). The ECQA methodology of acronyms and numbering will be followed, to provide machine-readable descriptors for the ECQA exam and self assessment platforms, for example: U1. Understanding the EU Green Deal; U1.E1 Explaining the key terms; U1.E1.LO1 S/he is able to explain what a European Green Economy is.

The collected data (raw data) will be accessible only to the researchers involved in this activity. Internal reports and other deliverables must be shared using Google Drive.

Consortium partners will be required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in word format or XLSX, while the deliverables will be in pdf format.

2.3.2. "Development of the Training Kits"

This activity will involve all researchers [Lead: UNINETTUNO, part: All].

In this context, the data will originate from the activities carried out by specific working groups set up (face to face or online) within the pilot schools and universities, with the involvement of teachers and experts from the GreenSCENT Advisory Board.

The aim of this activity is to carry out instructional co-design activities, bringing the development of the content and preparatory activities necessary for learning within the context of schools and universities.

The project goal is to create training kits that will enable other schools and universities to adapt and develop the pilot activities and use the GreenSCENT demonstrators.

From these activities, GreenSCENT will produce the learning tools and guidelines for teachers and educators so that they can replicate the training and demonstrator activities created for the GreenSCENT pilots. All learning materials will comply with European standards EN 301 549 for digital accessibility.

The collected data (raw data) will be accessible only to the researchers involved in this activity. Internal reports and other deliverables must be shared using Google Drive.

Consortium partners will be required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in word format or XLSX, while the deliverables will be in pdf format.

2.3.3. "Assessment and evaluation methodology"

This activity will involve some researchers [Lead: UNINETTUNO, part: UAB, BSC, VTT, UNSPMF, CRA, EA, RS, MAYK, RGS].

In this context, the data will originate from two activities:

- the assessment of learning outcomes of knowledge and skills related to the issues of the Green Deal, performed with students and citizens involved in the pilot activities, through the use of demonstrators and the administration of questionnaires and other qualitative and quantitative research methods;
- the evaluation carried out by the teachers involved on the practical effectiveness of the Training Kits and the innovative pedagogical proposals.

The purpose of these activities is to collect relevant evidence on the practical use of the tools created.

Furthermore, the project aims at creating a research tool based on the IAT to analyze the implicit behaviors and attitudes of EU citizens and the GreenSCENT project activity's impact on them.

These activities will produce the definitive methodology for evaluating the performances, opinions, and



satisfactions of teachers and students involved in the pilot activities and an innovative and accurate tool for measuring the real impact on EU citizenship behaviors and beliefs implicit on the issues of the Green Deal.

The collected data (raw data) will be accessible only to the researchers involved in this activity. Internal reports and other deliverables must be shared using Google Drive.

Consortium partners will be required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in word format or XLSX, while the deliverables will be in pdf format.

2.3.4. “Development of ECCEL Certification”

This activity will involve some researchers [Lead: ECQA, part: UNINETTUNO, UAB, BSC, VTT, DBT, UNSPMF,4S, CRA, EA, RS, MAYK, RGS].

In this context, the data will originate from three distinct activities:

- the development of a European certification for environmental literacy by ECQA,
- the dissemination of knowledge of its contents and its procedural rules, first among the project partners in the context of the pilot activities and then on a global level,
- the testing of the exam to obtain certification among all participants in the project.

The purposes of all these activities are the development of the ECCEL Certification, the dissemination of its knowledge and the collection of feedback for its improvement.

The project objectives are to create a certification tool made by an independent third party and explain its meaning globally.

These activities will produce the contents and procedures of the ECCEL Certification and the curriculum to qualify the accredited subjects to issue it.

The certification scheme will contain the description of the Competences Framework and all the ECQA agreements and guidelines for the certification of ECCEL candidates, trainers, training organizations, training materials, exam organizations.

The collected data (raw data) will be accessible only to the researchers involved in this activity. Internal reports and other deliverables must be shared using Google Drive.

Consortium partners will be required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in word format or XLSX, while the deliverables will be in pdf format.

In the final part of the third phase (**WP6**) the data collected and produced will be used to maximize the impact of the project.

The data collected and produced in the final phase of the project will be generated from the following contexts:

- **Dissemination activities**
- **Clustering and peer learning activities**
- **Sustainability and exploitation**
- **Impact assessment**

2.4. Data sources and data use in Dissemination and outreach activities

In this context, the data will originate from the planning of the project communication and dissemination strategy, its implementation, and its results.

The purposes of these activities are to identify and detail the forms of communication, identify the recipients,



and plan the method of execution.

The project objective is to spread the knowledge of the project and its results to the relevant target communities identified at a proposal level and further develop the communication and dissemination strategy.

From these activities, planning and communication tools and content will be produced.

The collected data (raw data) will be accessible only to the researchers involved in this activity. Internal reports and other deliverables must be shared using Google Drive.

Consortium partners will be required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in word format or XLSX, while the deliverables will be in pdf format.

The data produced will be reported in the related deliverables envisaged by the **WP6** of the project, whose identification number, title, and level of dissemination are listed in the document "1.3.2. WT2 list of deliverables" of the Grant Agreement.

2.4.1. "Clustering and peer learning activities".

In this context, the data will originate from interactions with other Green Deal projects and from the exchange of information and knowledge.

The purpose of these activities is to establish synergies and to avoid duplication of work. The project goal is to promote peer learning in the context of related projects.

The collected data (raw data) will be accessible only to the researchers involved in this activity. Internal reports and other deliverables must be shared using Google Drive.

Consortium partners will be required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in word format or XLSX, while the deliverables will be in pdf format.

2.4.2. Sustainability and exploitation.

In this context, the data will originate from the study of the sustainability of the project and its potential exploitation after the project.

The purpose of this activity is to define the actions following the end of the project.

The project objectives are to extend its results over time and increase the participation of relevant communities or stakeholders.

Economic information and planning tools will be obtained from these activities.

The collected data (raw data) will be accessible only to the researchers involved in this activity. Internal reports and other deliverables must be shared using Google Drive.

Consortium partners will be required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in word format or XLSX, while the deliverables will be in pdf format.

2.4.3. Impact assessment.

In this context, the data will originate from the impact assessment of the solutions tested by the users during and after the end of the project, through a qualitative-quantitative methodology involving multi-stakeholder



groups.

The purpose of this activity is to measure the impact of the project and the solutions developed.

The project goal is to evaluate the overall impact of the project.

These activities will produce both an evaluation tool and socio-economical impact information.

Output and activities performed will be monitored during the project development to provide a mid-term assessment to the partners to adjust their actions. The mid-term round has the main goal of providing useful inputs to the consortium to fine tune the activities for maximizing the project impacts. The final impact assessment will consider impacts on a larger scale and will take in consideration the upscaling potential of the project. Both the preliminary and the final assessment will provide input to the dissemination activities by highlighting the project added value, its transformative capability, and the most interesting results.

The collected data (raw data) will be accessible only to the researchers involved in this activity. Internal reports and other deliverables must be shared using Google Drive.

Consortium partners will be required to share final reports, deliverables and documents on Google Drive.

Deliverables and other documents with a public dissemination level must be deposited in the open data repositories OpenAIRE and Zenodo.

The data will be processed in word format or XLSX, while the deliverables will be in pdf format.

2.5. Data dimensions

It is not possible to estimate at this stage the exact dimensions of the data collected, created, or processed.

However, it is expected that the reports, questionnaires and interviews, and documentary models, in general, will reach small dimensions. While, concerning the software development activity, data may be larger, as well as what concerns videos, proofs, simulations, and prototypes.

2.6. Personal data

Concerning the use of personal data, in the initial collection phase, in the analysis and technical development phase, and finally in the subsequent testing phase of the prototypes, compliance with the GDPR and ethical principles must always be guaranteed.

According to the EU Regulation 2016/679 GDPR, when personal data is collected, data subjects shall be previously informed in an express, precise and unequivocal manner of, among others, the existence of a file, the possibility of exercising their rights, and the person in charge of the treatment of personal data.

Besides, data subjects have a right to access and port data, to rectify, erase and restrict their personal data, to object to processing, and, if the processing is based on consent, to withdraw consent.

Partners in GreenSCENT shall ensure the observance and effectiveness of the data subject's rights.

The information sheet and consent forms will be produced and approved in English, and then translated into the other languages of the project.

In the case of underage participants, consent must be given by adults who have legal responsibility for them.

An Ethical Committee (CEEAH - Comisión de Ética en la Experimentación Animal y Humana of Universitat Autònoma de Barcelona) assessed the GreenSCENT project methodology and activities, including the consent and withdrawal procedures set up for research participants.

Online surveys have to be anonymous, no personal data that allow identification has to be stored.

Interviews, focus groups, workshops must be confidential, no personal data that would allow identification must be stored during these activities.

Personal data used for training activities requires the consent of each participant.

Documents, permissions and informed consent about reference communities' members will be kept in a locked



cabinet at UAB or in the Nebula server (nebula.uab.cat).

In any case, in accordance with the GDPR and the Green Scent's ethical procedures, partners conducting research activities will ensure that the privacy, confidentiality and cultural sensitivities of the participants and the community are respected, as part of their professional obligations to secrecy. Disclosure of subjects' identity to other than authorised individuals will be prevented.

Personal data used for research will only be made available to researchers involved in that activity. In this case, personal data must be shared using a Google Drive folder with limited access.

Nebula servers and Google Drive must comply with relevant EU legislation and maintain high security standards. UNINETTUNO as the data controller must ensure compliance.

Personal data used for deliverables and other documents with a public dissemination level must be pseudonymized or require the specific consent of individuals.

GreenSCENT complies with the GDPR as follows:

a) Subject access, rectification and portability

UNINETTUNO, as data controller, on request: confirms if they process personal data; provides a copy of the data (in commonly used electronic form); provides supporting explanatory materials; data subjects can also demand that their personal data be ported to them or a new provider in machine-readable format; the request has been met within one month and any intention not to comply must be explained to the individual. Access rights allow individuals to check the lawfulness of processing and the right to a copy should not adversely affect the rights of others.

For what concerns the personal data submitted by the user in the interaction with the online services of the GreenSCENT app and GreenSCENT Platform, UNINETTUNO and partners provide users with explanations on how and which personal information has been collected during their interaction with online services. At the first usage of the GreenSCENT app and GreenSCENT Platform, users have been informed that at any moment, during their interaction with online services, they can, by clicking appropriated buttons, withdraw the collection of data and export a copy of the collected data in an open format. Users have been asked to choose from two types of open formats: CSV and JSON.

b) Right to erasure ("right to be forgotten") and right to restriction of processing

Individuals can require data to be "erased" when there is a problem with the underlying legality of the processing, or where they withdraw consent. The individual can require the controller to "restrict" processing of the data whilst complaints (for example, about accuracy) are resolved, or if the processing is unlawful but the individual objects to erasure. UNINETTUNO, as data controllers, who have made data available to other subjects, has the right to erasure request, is required to notify others who are processing that data with details of the request.

However, according to art. 17 paragraph 3 of the GDPR, UNINETTUNO may refuse the deletion of personal data to the extent that the processing is strictly necessary for the purposes of scientific research.

At the end of the Project, personal data will be deleted unless it is necessary to keep them for a longer period to allow verification by the Authority or for other purposes compatible for those they were collected.

c) Rights to object

There are rights whereby individuals can object to specific types of processing, such as processing for research or statistical purposes.

The GreenSCENT Project meets the obligation to notify individuals of these rights at an early stage through the informed consent form and its information sheet.

Online services provided by the Local Service Providers involved in the project, and extended by the advanced techniques developed by GreenSCENT, offer their own methods of objecting.

d) Data minimization



The personal data collected by the GreenSCENT Project must always be adequate, relevant, and limited to what is necessary for the purposes pursued. That is guaranteed by the use of pre-established forms and questionnaires and by the preventive configuration of the programs (privacy by design and privacy by default). During interviews and focus groups conducted by videoconference, only audio recording is allowed.

The identification data of the interviewees are separated from the remaining personal data collected with the questionnaires and are kept confidential and protected. Inter alia consent forms will be kept at UAB, Edifici MRA, Room 102 in a dedicated locker or in the Nebula server (nebula.uab.cat). The building has 24/7 security and limited access.

The personal data used in the project for interviews, surveys, focus groups are subjected to pseudonymization by assigning a number to replace the aforementioned identification data.

GreenSCENT promotes the use of aliases or nicknames as part of the experimentation of pilot activities with the GreenSCENT app and GreenSCENT Platform.

The GreenSCENT mobile app involves the collection of users' personal data in order to grant access to the App and for password recovery, in that case the collection of users' personal data will be limited to their email address.

e) Transfer of personal data from and to non-EU countries

The UNSPMF has described and certified a data protection procedure that ensures an adequate level of protection, in compliance with Serbian national regulations, that are aligned with EU GDPR.

Personal data are not necessary for performing the research activities identified and are not part of the data required for producing research results, given the nature and objective of the project.

In case personal data will be part of research activities performed during the project implementation, Gaetano Giordano as Data Protection Officer from UNINETTUNO will store all data produced by UNSPMF on a separate file in a secure server and will submit it to the Agency upon request.

Agorize Platform, GreenSCENT app, and GreenSCENT Platform will not be able to use Google Analytics or similar services of other suppliers, which transfer personal data to non-EU countries without an adequate level of user data protection.

The use of these cookies is allowed only if the guarantees provided for by the GDPR and the appropriate measures for the transfer to those countries are adopted.



3. Making data findable

3.1. Making data findable

Each category of data produced during the project phases will be organized in a uniform way, according to the criteria suggested in the Grant Agreement:

Project number

The project number has been assigned by the Commission as the unique identifier for the project. It cannot be changed.

Project acronym

The project acronym is given in the submitted proposal. It can generally not be changed.

Work Package number

Work package number: WP1, WP2, WP3, ..., WPn.

Deliverable number

Deliverable numbers: D1 – Dn.

Type

R Document, report.

DEM Demonstrator, pilot, prototype.

DEC Websites, patent filings, videos, etc. OTHER.

ETHICS Ethics requirement. ORDP Open Research Data Pilot.

Dissemination level

PU Public.

CO Confidential, only for members of the consortium (including the Commission Services). EU-RES Classified Information: RESTREINT UE (Commission Decision 2005/444/EC).

EU-CON Classified Information: CONFIDENTIEL UE (Commission Decision 2005/444/EC). EU-SEC Classified Information: SECRET UE (Commission Decision 2005/444/EC).

Delivery date for Deliverable

Month in which the deliverables will be available, month 1 marking the start date of the project, and all delivery dates being relative to this start date.

Milestone number

Milestone number: MS1, MS2, ..., MSn.

Review number

Review number: RV1, RV2, ..., RVn.

The table for controlling the version will include the following fields:

- **Revision:** number (starting from 0.1) of the version. Always follow the order.
- **Date:** the date on which that version was available.
- **Author:** the person who prepared that version.
- **Organization:** entity in charge of that version.
- **Description:** summary of main changes in that version.

Besides, it will be possible to identify and locate the produced data through a standard identification criterion, based on "keywords".

data to be "erased" when there is a problem with the underlying legality of the processing or where they withdraw consent; the individual can require the controller to "restrict" processing of the data whilst complaints (for example, about accuracy).



3.2. Making data openly accessible

Access to most of the data provided in the reports, prototypes, or demos will be reserved only for the consortium members. This restriction depends on the voluntary choice of the Partners.

However, an action plan is foreseen to disseminate the results achieved in the various phases of the project.

In particular, WP6 will be dedicated to the dissemination of results.

For more details, in section "1.3.2. WT2 List of deliverables" of the Grant Agreement, the documents required by the project are listed as confidential or public.

3.3. Datasets

The Data Management Project helps the project partners dealing with data and all related issues raised during the project development. This document is the first version of the document that will be updated during the entire project lifespan, making it a living and dynamic document.

This Data Management Plan and its updated versions describe datasets' characteristics and define principles and rules for the data distribution within the GreenSCENT project.

Following the description of the dataset each GreenSCENT technical component (belonging to the GreenSCENT reference Architecture) uses, where the data will be stored, and how the quality assurance will be guaranteed.



4. Making data interoperable

4.1. Making data interoperable

Data interoperability is closely connected with the aims and objectives of the project.

From the initial stages, the creation of a common methodology for collecting information from target groups is envisaged.

The information collected and the results produced during the co-creation seminars will be necessary for the subsequent design activity.

As far as possible, project partners will use formats, vocabularies, and more generally, open standards to make possible the interoperability of the data produced.

All learning materials will comply with European standards EN 301 549 for digital accessibility.

4.2. Data re-use and licensing

In the final phases, the development of common end individual exploitation plans is envisaged for each partner, besides a broad strategy focusing on public-private partnership opportunities, and involvement in public tendering procedures.

Particular attention must be paid to the material protected by Intellectual Property Rights, both as regards information and documents collected during the study and analysis activities envisaged by the project, and as regards the management of the material produced by GreenSCENT.

4.3. Data quality assurance policy

In order to ensure the high quality of the produced data, it is entailed that the organizational structure of the project carries out a controlling activity during the execution of each activity in the different WPs.

To implement the above, the Project Director (PD) will use a set of communication tools, including:

Meetings: Specific meetings for different purposes will take place. These include physical meetings, web meetings and audio-conferences.

Distribution lists: Several distribution lists will be set up in order to liaise with all the relevant individuals working for the project. They will be accessible from the intranet.

Project Internal Web Portal: The IP Secretariat will set up a secure Web Portal for exchange of sensitive information within the project as well as with the Commission. This will include a Wiki for the rapid publication of news items, agenda, minutes and internal reports. Progress monitoring reports and reports to the Commission will be placed here unless they should be publicly available, in which case they will be on the Public Web Portal.

Project Public Web Portal: The public portal will be a showcase for GreenSCENT and its achievements, including all web-based applications that are produced. It will give access to the project's public documents. There will also be a Wiki that will allow individuals outside GreenSCENT to contribute ideas and suggestions.

Besides, the implementation of quality assurance tools is envisaged, based on the most appropriate project standards. The description of related procedures will be the subject of the document "Quality Plan" (D7.3).

All the deliverables realized during the project phases will pass a peer-review from the project partners.



5. Data security

All data collected, created, or processed, including personal data, will be protected against the risks of unauthorized access, modification, and loss.

To this goal, appropriate protection measures have been implemented for both physical spaces (rooms and archives), and IT resources (databases, networks, websites).

In particular, access to the physical spaces where the data is contained must be allowed only to persons authorized by the project partners. Furthermore, these spaces must be protected against the most common risks of natural or accidental events (water infiltration, fires, power outages).

Access to data via computer resources must be allowed only to persons authorized by the project partners through an identification procedure based on personal and confidential credentials (id-user and password).

Passwords must be chosen based on highly and periodically updated security criteria.

In the case of databases containing personal data, we recommend a minimum password length of 8 alphanumeric characters that includes the simultaneous presence of capital letters, punctuation marks, and numbers.

Furthermore, data must be saved on a daily basis, and IT tools must be protected against threats of intrusion and malware.

For the implementation of all these security measures, it is preferable to establish centralized automatic policies.

Finally, to reduce the risk of data loss or business continuity, the data produced during the project must be stored in dedicated repositories and possibly shared among the project partners, using cloud services. The exchange of confidential data must be implemented by sharing workbooks or files. Moreover, personal data must be processed in such a manner that they can no longer be attributed to a specific data subject without the use of additional information. Such additional information must be kept separately and must be subjected to technical and organizational measures to ensure non-attribution to an identified or identifiable natural person (pseudonymization).