

Enhanced safe and sustainable coatings for supporting the planet

Deliverable D.1.1 Integrated project delivery and team alignment

Deliverable Information

Responsible partner:	IDE
Work package No and Title:	1
Contributing partner(s):	ALL
Dissemination level:	PU
Туре:	R
Due date:	30 June 2023
Submission date:	30 June 2023
Version:	V02



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or HADEA. Neither the European Union nor the granting authority can be held responsible for them.

Project Profile

Programme	Horizon Europe
Call	HORIZON-CL4-2022-RESILIENCE-01
Торіс	HORIZON-CL4-2022-RESILIENCE-01-23
Number	101091842
Acronym	PROPLANET
Name	Enhanced Safe and Sustainable coatings for supporting the Planet
Start Date	1 January 2023
Duration	36 months
Type of action	HORIZON Research and Innovation Actions
Granting authority	European Health and Digital Executive Agency
Project Coordinator	IDENER

PROPLANET Consortium Partners

Table 1 List of project partners incl. acronym and country.

#	Partner	Acronym	Country
1	IDENER R&D AGRUPACION DE INTERES ECONOMICO	IDE	ES
2	FUNDACION TECNALIA RESEARCH & INNOVATION	TEC	ES
3	NATIONAL INSTITUT OF CHEMISTRY (KEMIJSKI INSTITUT)	NIC	SI
4	NILU STIFTELSEN NORSK INSTITUT FORLUFTFORSKNING	NILU	NO
5	HOLOSS – HOLISTIC AND ONTOLOGICAL SOLUTIONS FOR SUSTAINABILITY, LDA.	HOL	PT
6	UNIVERSIDAD DE MALAGA	UMA	ES
7.1	NOVAMECHANICS LIMITED	NM	CY
7.2	NOVAMECHANICS MONOPROSOPI IKE	NMGR	EL
8	RUKAINNOVATION B.V.	RuKa	NL
9	EXELISIS IKE	EXE	EL
10	RINA CONSULTING – CENTRO SVILUPPO MATERIALI SPA	RINA	IT
11	ASOCIACION DE INVESTIGACION DE LA INDUSTRIA TEXTIL	AIT	ES
12	REEPACK SRL	REE	IT
13	PILKINGTON TECHNOLOGY MANAGEMENT LTD	PLK	UK

Disclaimer

Funded by the European Union under GA number 10109184. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or HaDEA. Neither the European Union nor the granting authority can be held responsible for them.

© Copyright in this document remains vested with the PROPLANET Partners, 2023-2026

This deliverable contains original unpublished work except where clearly indicated otherwise. Acknowledgement of previously published material and of the work of others has been made through appropriate citation, quotation, or both. Reproduction is authorised provided the source is acknowledged.

Executive Summary

The PROPLANET project aims for the replacement of hazardous substances known as per- and polyfluoroalkyl substances (PFAS) which are widely used across many different areas in industry. Among other applications, they are used in coatings where their water and oil repellent, anti-stick, anti-corrosion, anti-soiling, and anti-reflective properties are sought for. However, since PFAS do not break down in the environment under normal conditions, they accumulate and thereby threaten the health of any organism depending on contaminated water or food.

The present deliverable addresses the **Integrated Project Delivery and Team Alignment**. It is part of WP1, which aims at setting up and aligning the PROPLANET activities and the team.

The document explains to both the consortium partners and the interested public, the role structure of the project; the communication guidelines in the project; the interconnection of work packages, planned tasks, deliverables, and entities outside of the PROPLANET project; and the means of quality control and monitoring. A flow chart was created for each WP to illustrate their connections and the flow of information, outcomes, data, or samples. Overall, this information will boost and enhance the team alignment and the comprehension of the work plan within the project.

Table of Contents

Project Profile	2
PROPLANET Consortium Partners	3
Document History	4
Disclaimer	4
Executive Summary	5
Table of Contents	6
List of Figures	8
List of Tables	9
Table of Abbreviations	10
1. Introduction	11
2. Role structure of the project	12
2.1. Project management structure	12
2.2. Project governance structure	13
2.2.1. HaDEA	13
2.2.2. Project Coordinator (PC)	13
2.2.3. Executive Board (EB)	13
2.2.4. General Assembly (GeA)	15
2.2.5. WP Leaders (WPL)	16
2.3. Contractual documents	16
2.3.1. Grant Agreement	16
2.3.2. Consortium Agreement	17
3. Project communication	18
3.1. Communication procedure and document templates	18
3.2. Internal communication channels	19
3.2.1. Face-to-face meetings	19
3.2.2. Virtual meetings	19
3.2.3. Emails and mailing lists	20
3.2.4. MS Teams	20
3.3. Communication nomenclature	20
3.3.1. E-mails	20
3.3.2. Documents and files	20
3.4. Dissemination levels	21
4. Team alignment	22
4.1. WP1 – Set up PROPLANET activities & team alignment	23
4.2. WP2 – PROPLANET SSbD coatings development	24

4	4.3.	WP	3 – Characterisation, up-scaling & manufacture of PROPLANET SSbD coatings	25
	4.4.	WP	4 – Validation of PROPLANET's coatings	26
4	4.5.	WP	5 – Mathematical & computational tools for safe & sustainable coatings	28
4	4.6.	WP	6 – Sustainability & toxicological assessments for safe & sustainable coatings	30
4	4.7.	WP	7 – Exploitation, dissemination, communication & social engagement	32
4	4.8.	WP	8 – Management & coordination	33
5.	Qua	ality o	control and monitoring	34
!	5.1.	Deli	iverables guidelines	34
!	5.2.	Gui	delines for high-quality reports	34
!	5.3.	Deli	iverables review plan	35
!	5.4.	Pre	sentations at consortium meetings	37
	5.4.	1.	Meeting organization	37
	5.4.	2.	Presentation preparation and review plan	37
	5.4.	3.	Guidelines for the meetings	37
6.	Cor	nclus	ions	38

List of Figures

Figure 1 Project and consortium structure of governance	12
Figure 2 Legend of the elements used in the workflow diagrams	22
Figure 3 WP1 - Set up PROPLANET activities and team alignment.	23
Figure 4 WP2 - PROPLANET SSbD coatings development.	24
Figure 6 WP3 - Characterisation, up-scaling & manufacture of PROPLANET SSbD coatings	25
Figure 7 WP4 - Validation of PROPLANET's coatings	26
Figure 5: Activities flow between technical WPs.	27
Figure 8 WP5 - Mathematical and computational tools for safe and sustainable coatings	
Figure 9 WP6 - Sustainability & toxicological assessments for safe and sustainable coatings	30
Figure 10 WP7 - Exploitation, dissemination, communication and social engagement	32
Figure 11 WP8 - Management and coordination	33

List of Tables

Table 1 List of project partners incl. acronym and country.	3
Table 2 List of members of the executive board.	13
Table 3 List of members of the general assembly	15
Table 4 List of the work package leaders	16
Table 5 List of deliverables sorted by due date (month)	35

Table of Abbreviations

Abbreviation	Definition
D	Deliverable, D#.# deliverable number
DFT	Density Field Theory
GA	Grant Agreement
KDB	KPI database
KPI	Key Performance Indicator
LCA	Life cycle assessment
LCC	Life cycle costing
LCP	List of Certification Programmes
М	Month (due month)
MD	Molecular Dynamics
PFAS	Per- and poly-Fluoroalkyl Substances
PMP	Project Management Plan
SEM	Seminar on Gender & Ethics Dimension
SLCA	Social life cycle assessment
STE	Streaming Event
STP	Scientific and technical plan and execution report
т	Task, T#.# task number
WP	Work package, WP# work package number

1. Introduction

The materials classified as per- and poly-fluoroalkyl substances (PFAS) have become an indispensable part of modern life, i.e. various products and applications. Among others, PFAS are widely used in the textile, food, and glass coating industry where their oil and water-repellent, anti-stick, anti-soiling and anti-reflective properties are of great interest. However, the catch is that PFAS, also referred to as "forever chemicals", do not break down in the environment and hence accumulate, thereby threatening the biosphere and hydrosphere. Therefore, human health is at risk as via the intake of contaminated water and food PFAS end up in our bloodstream, leading to high cholesterol levels, organ damage, weakened immunity and cancer.

Due to all the problems associated with PFAS their ban is imminent¹ and there is an urgent need for alternatives. Funded by the EU, the objectives of PROPLANET are to develop novel materials that can replace PFAS without curtailing functionality or performance. The PROPLANET consortium consists of 13 research institutions and companies, and are experts in modelling and simulation, safety and sustainability, circularity-by-design, and manufacturers or end-users from 9 different European countries, is working towards these viable and sustainable PFAS alternatives.

The project's main goals are to minimize hazards to human health and the environment, while also addressing economics, recyclability, circularity and following the safety and sustainability by design (SSbD) concept². The project partners will investigate and validate materials for coating textiles, food packaging equipment, and low-maintenance glass. The experimental investigations will be backed by mathematical models (multi-objective optimisation and data-driven algorithms aided by artificial intelligence), which will be implemented in an open-source tool for replication. With this tool, the end users will be able to reduce waste, investigate novel materials and applications and focus on an eco-friendly path to market. Choosing this approach, PROPLANET intends to reconcile environmental protection, safety, chemical improvements, and circular economy.

¹ European Chemical Agency, echa.europa.eu.

² C. Patinha Caldeira *et al.*, Safe and Sustainable by Design chemicals and materials Review of safety and sustainability dimensions, aspects, methods, indicators, and tools, EUR 30991 EN, Publications Office of the European Union, Luxembourg, 2022, ISBN 978-92-76-47609-2, doi:10.2760/68587, JRC127109.

2. Role structure of the project

2.1. Project management structure

The project management tasks of PROPLANET are defined in WP8 and are led by IDE. The way coordination and management are carried out is defined in the GA, which has been agreed by the entire consortium as well as by the European Commission. The latter includes the main guidelines to reach all the project objectives while adhering to time, quality, and cost requirements. Suitable coordination, management tools, methods and decision-making processes are in place to ensure the achievement of the project's tasks and objectives.

The project management tasks are given in the following. All consortium members (see list in Table 1) are taking part in all the tasks of WP8.



Figure 1 Project and consortium structure of governance

2.2. Project governance structure

The organizational and governance structure of PROPLANET, as defined in the CA, is shown in Figure 1. It includes the Project Management Structure Diagram that comprises the following entities:

2.2.1.HaDEA

The *Health and Digital Executive Agency* (HaDEA) is the granting authority within the European Commission. It is not direct part of the project management structure yet oversees execution and outcomes and approves reports (e.g. deliverables) and project reviews. Communication with the project consortium happens via the PC and the project officer (PO).

2.2.2. Project Coordinator (PC)

As the name suggests, the duty of the PC is the coordination of the project. More specifically the PC's focus lies on (1) the everyday project management, (2) administrative and financial planning, (3) management of payments to the consortium partners according to the budget, (4) and keeping track of the payments received from the EC by the partners. Also, the PC ensures that all the deliverables are produced within the pre-defined time frame and budget, fulfil the planned performance requirements, and adhere to quality control methods and standards.

2.2.3. Executive Board (EB)

The EB is an intermediary entity between the PC and the GeA, which supervises the implementation of the project. It is chaired by the PC and made up of at least one representative from each WPL. It reports to and is accountable to the GeA. It implements the GeA's decisions to ensure smooth and efficient execution of the project. Also, it coordinates the different partners involved in the various WPs to foster collaboration and the exchange of ideas between the WPs. Furthermore, the EB collects information regarding the project's progress at least every 6 months to assess the compliance of the project with the consortium plan and, if required, proposes modifications to the GeA.

The members of the EB are listed in Table 2:

Table 2 List of members of the executive board.

Entity	Representative	Email
IDE [Chair]	Johannes Seif	johannes.seif@idener.es
EXE	Alexandros Zoikis Karathanasis	info@exelisis.gr
RINA	Alice Reina	alice.reina@rina.org
UMA	Ana Belén Ruiz	abruiz@uma.es
HOL	Ana Lago	ana.lago@holoss.com
RINA	Andrea Tropeoli	Andrea.Tropeoli@ext.rina.org
NM	Andreas Tsoumanis	tsoumanis@novamechanics.com
RINA	Angelo Meduri	angelo.meduri@rina.org
NM	Antreas Afantitis	afantitis@novamechanics.com
RINA	Domenico Costanzo	domenico.costanzo@rina.org
NILU	Eleonora Longhin	eml@nilu.no
NILU	Elise Rundén-Pran	erp@nilu.no

TEC	Fabiola Brusciotti	fabiola.brusciotti@tecnalia.com
TEC	Ana Suarez Vega	ana.suarez@tecnalia.com
EXE	Ioanna Katsavou	ioanna.k@exelisis.gr
RuKa	Kamal Khandelwal	Kamal.khandelwal@rukainnovation.com
HOL	Marcella Paula	marcella.paula@holoss.com
UMA	Mariano Luque	mluque@uma.es
AITEX	Óscar Calvo	ocalvo@aitex.es
HOL	Pablo Vicos	holoss@holoss.com
RINA	Simona Pace	simona.pace@rina.org

2.2.4. General Assembly (GeA)

Each partner defines at least one person as member of the GeA. This person will represent the partner in all the negotiations of project-relevant problems and the decisions leading to solutions. The GeA, which is chaired by the PC, represents the ultimate decision-making body of the consortium, and decides on matters of (1) content, (2) financing, (3) IPR, (4) changes of the consortium during the project, and (5) proposals made by the EB. All the members of the GeA are listed in Table 3.

Entity	Representative	Email
IDE [Chair]	Johannes Seif	johannes.seif@idener.es
IDE [division manager]	Carlos Leyva Guerrero	carlos.leyva@idener.es
EXE	Alexandros Zoikis Karathanasis	info@exelisis.gr
RINA	Alice Reina	alice.reina@rina.org
UMA	Ana Belén Ruiz	abruiz@uma.es
HOL	Ana Lago	ana.lago@holoss.com
RINA	Andrea Tropeoli	Andrea.Tropeoli@ext.rina.org
NM	Andreas Tsoumanis	tsoumanis@novamechanics.com
RINA	Angelo Meduri	angelo.meduri@rina.org
NM	Antreas Afantitis	afantitis@novamechanics.com
NIC	Blaš Stres	blaz.stres@ki.si
RINA	Domenico Costanzo	domenico.costanzo@rina.org
NILU	Eleonora Longhin	eml@nilu.no
NILU	Elise Rundén-Pran	erp@nilu.no
TEC	Fabiola Brusciotti	fabiola.brusciotti@tecnalia.com
EXE	Ioanna Katsavou	ioanna.k@exelisis.gr
RuKa	Kamal Khandelwal	Kamal.khandelwal@rukainnovation.com
HOL	Marcella Paula	marcella.paula@holoss.com
UMA	Mariano Luque	mluque@uma.es
HOL	Miguel Pereira	miguel.pereira@holoss.com
RINA	Mario Tului	mario.tului@rina.org
AITEX	Óscar Calvo	ocalvo@aitex.es
HOL	Pablo Vicos	holoss@holoss.com

Table 3 List of members of the general assembly.

AITEX	Rosa López	rlopez@aitex.es
NIC	Uroš Novak	uros.novak@ki.si

2.2.5.WP Leaders (WPL)

The WPLs are responsible of the correct and timely execution of the tasks in their WP. To this end they oversee planning, progress control, quality management as well as the interaction with other WPs. Furthermore, they focus on coordination, monitoring, WP progress assessment and compliance with the budget. They also design and monitor the execution of the WP work plan, keep their WP on track and regularly report the status to the PC while always keeping track of problems and risks.

Entity	WP	Representative	Email
TEC	WP1, WP3	Fabiola Brusciotti	fabiola.brusciotti@tecnalia.com
NIC	WP2	Uroš Novak	uros.novak@ki.si
TEC	WP3	Ana Suarez Vega	ana.suarez@tecnalia.com
AITEX	WP4	Óscar Calvo	ocalvo@aitex.es
IDE	WP5, WP8	Johannes Seif	johannes.seif@idener.es
HOL	WP6	Marcella Paula	marcella.paula@holoss.com
EXE	WP7	Ioanna Katsavou	ioanna.k@exelisis.gr

Table 4 List of the work package leaders.

2.3. Contractual documents

The two main contractual documents that govern the implementation of the PROPLANET project are the Grant Agreement (GA) and the Consortium Agreement (CA). Both documents are signed by a representative of each consortium member.

2.3.1. Grant Agreement

The GA #101091842 was signed by all PROPLANET beneficiaries and HaDEA in 2022. The document is divided into 6 chapters with several sections and a total of 44 articles that define the terms and conditions of the agreement, the implementation of the action, consequences of non-compliance with the agreement and final provisions (communication between the parties, periods and deadlines, amendments etc.). Furthermore, 5 annexes have been attached to the document.

- I. Annexe 1: Description of the Action (DoA)
- II. Annexe 2: Estimated budget for the action and Additional information on unit costs and contributions
- III. Annexe 3: Accession forms for beneficiaries
- IV. Annexe 4: Financial statements
- V. Annexe 5: Specific rules

2.3.2. Consortium Agreement

The CA is based upon Regulation (EU) No 2021/695 of the European Parliament and of the Council of 28 April 2021 which establishes *Horizon Europe* – the Framework Programme for Research and Innovation (2021-2027). The regulation sets its rules for participation and dissemination and the General Model Grant Agreement and its Annexes of the on the European Commission. The CA was created at the beginning of the project and signed by all partners.

The document covers several additional points:

- Consortium organization
- Responsibilities of the partners
- Arrangements regarding liability, indemnification, and confidentiality
- Financial organization
- Access rights
- Mediation guidelines for internal dispute resolution

3. Project communication

Dissemination, exploitation, and communication is governed within WP7 of the PROPLANET project. The activities aim to maximise the project's outreach during the three years and after. Stakeholder groups will be addressed through tailored external communication campaigns to increase awareness and acceptance of the project.

- Social media
- Project website
- Brand identity
- Scientific publications
- Networking & engagement activities
- Conferences and other knowledge transfer events
- Press releases, videos, and media activities
- Communication toolkit

3.1. Communication procedure and document templates

The Consortium will take precautions regarding forms and methods of communication, particularly in relation to electronic communication management.

The EU Funding & Tenders Portal [4] (referred to as "the Portal") is the tool to be used to administer EU grants, which means that all communications must be made through the Portal, in compliance with its terms and conditions and using the forms and templates accessible there (unless instructed otherwise by the granting authority).

Only authorized personnel is entitled to communicate with the EC and must clearly identify the GA (project number and acronym) when doing so. Each beneficiary must assign a Legal Entity Appointed Representative (LEAR) to act as their authorized person. The LEAR's role and tasks are outlined in their appointment letter (see Terms and Conditions of the Portal). If the electronic exchange system is temporarily unavailable, instructions will be provided on the Portal.

The time logs of the Portal will determine both the sending and receiving dates for communications made through the latter. The receiving date is thereby determined by the date and time the communication is accessed. If a formal notification is not accessed within 10 days after sending, it will be regarded as accessed as defined in the Portal's Terms and Conditions.

If exceptionally another form of communication is chosen (email or paper mail), the communication will be subject to general principles for determining the date of sending and receipt. If notifications are sent by registered mail, they are received on the delivery date defined by the postal service or the due date of collection at the post office.

For the case that the electronic exchange system of the Portal is temporarily unavailable, the sending party will not be considered in breach of their obligation to send a communication on time.

Access to the Portal is possible via the EC website. For exceptionally authorized paper communications, the official mailing address is one specified on the EC website. For beneficiaries, the legal address specified in the Portal Participant Register is the relevant address.

3.2. Internal communication channels

3.2.1. Face-to-face meetings

A physical, face-to-face meeting will be held at different partner locations **every six months**. During these meetings the partners get the chance to exchange ideas and provide an update on the status of their work within the project. Also, technical sessions will be organized to foster the collaboration within WPs and between different WPs. These meetings will require strong collaboration between the project partners.

The GeA meetings, which shall be organized at least twice per year, can be combined with the project meetings. In addition,

The following deadlines shall be respected:

	Ordinary meeting	Extraordinary meeting
Notice	45 calendar days before	15 calendar days before
Agenda	21 calendar days before	10 calendar days before
Minutes	max. 15 calendar days after	max. 15 calendar days after

Extraordinary meetings can be organized anytime upon written request.

3.2.2. Virtual meetings

Virtual meetings via MS Teams shall be organized to save both time, money and to reduce the environmental impact of the project related to travels. The following procedure shall be adhered to:

	Virtual meeting
Notice	7 calendar days before
Agenda	predefined
Minutes	max. 15 calendar days after

It is recommended to record the meetings after obtaining the consent of all the participants.

- WP meetings are to be organized by the WPL every 1 3 months (adapt frequency to activity intensity). These meetings shall serve as main communication channel between the WPLs and the WP participants and task leaders. The participants and task leaders give a status update of the work. The outcome of the meeting shall be conserved in meeting minutes (are there any roadblocks, deviations, delays...). This can either be in the form of (1) a summary email or (2) a set of summary slides. Either document shall be stored as PDF on the shared drive (Proplanet\[WP#]\01_Meetings where [WP#] is e.g. WP2 → create new folder: [Date of the meeting, e.g. 230228]_[WP#, e.g. WP2]_[Topic, e.g. T2.1], so e.g. 230228_WP2_T2.1). The PC shall be put in Cc so that an IDE member can be present if required.
- **Bi-lateral / small groups meetings** shall be organized as often as required. The PC shall be put in Cc so that an IDE member can be present if required. It is recommended to keep the meeting minutes online as for the WP meetings.
- *Monthly, project-wide plenary meetings* gathering the WPLs shall be organized by the PC to keep all WPLs up to date and aware of future events and possible concerns that might have occurred since the last call.

Phone calls shall be used only in case of an emergency or if a prompt response or a dependable confirmation is required. If a phone call is made, it is highly recommended to send a follow-up email to make sure that there were no misunderstandings. The phone numbers of the members of the PROPLANET team are available in the contact list.

3.2.3. Emails and mailing lists

Emails shall be PROPLANET's primary way of communication and can be used to discuss and exchange any kind of project-related information (meeting minutes, executive summaries, papers, deliverables etc.). Wherever a *written notice* is required by the CA an email suffices with acknowledgement of receipt. Alternatively, for formal communications, e.g. submission of deliverables, requests etc. the platform of the EC can be used.

Mailing lists for the entire consortium as well as the EB, GeA and WPL are kept up to date by the PC and are available on the shared drive in the PROPLANET team. Any changes in the consortium composition (people joining or leaving the project team, reshuffling of roles etc.) should be communicated immediately to the PC by mail.

3.2.4.MS Teams

The PROPLANET team on MS Teams and its associated SharePoint / OneDrive shared folder shall be used to exchange data and files and work on documents collaboratively (presentations, Excel files, deliverables, questionnaires, etc.).

Furthermore, a channel structure has been set up in the PROPLANET team that can be used by all the partners of the consortium to exchange on specific topics. The channels and their purpose are:

- [General] for general communications, e.g. communications of new results
- [Meetings] for virtual plenary meetings
- [WP#] one channel for each WP for discussions related to the specific WP and virtual meetings

It is encouraged to use the virtual infrastructure to keep in touch with the other partners in the consortium.

3.3. Communication nomenclature

3.3.1.E-mails

Subject lines should respect some rules to keep track of the masses of emails. The subject line of any PROPLANET-related email should start with:

[PROPLANET] + [WP#] + followed by a concise description of the email's content.

Here WP# refers to the WP number the email is related to (this can be dropped if it does not apply)

A possible subject line could read e.g. [PROPLANET][WP8] Creation of PMP

3.3.2. Documents and files

Appropriate filenames must be used.

• **Deliverables:** PROPLANET_DX.Y.docx or *.pdf, so e.g. PROPLANET_D8.1.docx.

All the documents shall be uploaded to SharePoint to the corresponding folder. Tracking the document version can be achieved through the document's history on SharePoint.

3.4. Dissemination levels

The GA describes the different dissemination levels for the project deliverables. The classification is:

- Public (PU) fully open (automatically posted online)
- Sensitive (SEN) limited under the conditions laid out by the GA
- EU classified (CLAS) RESTREINT-UE/EU-RESTRICTED, CONFIDENTIEL-UE/EUCONFIDENTIAL, SECRET-UE/EU-SECRET under Decision 2015/444

4. Team alignment

For an interdisciplinary project like PROPLANET that unites various fields (coating development, manufacturing, safety and sustainability by design, circular economy, modelling experts and end-users) efficient team alignment is not only necessary but crucial. Uniting such a diverse group of people, experts in their respective fields, a common basis needs to be established to reach the set objectives. In the following the strategy to achieve this is explained in detail.

The challenge of coordinating the different activities within the team and across different disciplines is addressed in tasks T1.1 and T1.2 (described in the GA). While TEC (with the support of IDE) will be in charge of the scientific and technical coordination (T1.1), IDE will address the task of team alignment, i.e. the definition of working groups, participation and responsibilities of each partner in the WPs. With this, the consortium will be enabled to address the challenges laid down in the GA.

The interdependence and connections between the project's activities are explained by a set of interdisciplinary and detailed workflow diagrams that have been established for this purpose. These diagrams define the partners' responsibilities and activities to be performed, but also show the flow of information, data and materials between the tasks and WPs. Furthermore, they allow to identify technical requirements for and interdependence of the planned activities.

The elements of the workflow diagrams are explained in Figure 2.



Figure 2 Legend of the elements used in the workflow diagrams.

4.1. WP1 – Set up PROPLANET activities & team alignment

The activities of WP1 focus on technical coordination, team alignment, the definition of key performance indicators (KPI) and regulatory alignment (compliance, standardisation, and certification). It consists of 4 tasks (T1.1–T1.4) and will produce 6 deliverables during the project (D1.1–D1.6). The workflow of WP1 is shown in Figure 3.

Task T1.1 covers the technical coordination mainly of WP2–4, for which a scientific and technical plan and execution report (STP) will be created (M4) and updated regularly (M12, M24, and M36). **Task T1.2** addresses the team alignment, including the present deliverable D1.1 (M6).



STP: Scientific and technical plan and execution report; KDB: Key Performance Indicator (KPI) database; LCP: List of certification programmes or equivalents.

Figure 3 WP1 - Set up PROPLANET activities and team alignment.

In **Task T1.3** the focus lies on defining and validating the key performance indicators (KPI), which will help the consortium to keep track of the progress of the project. The KPI database (KDB) will be created based on information from bio value chains, available sources, material databases as well as from related European projects (link with T8.5) and a KPI report, deliverable D1.2 (M8), will be provided. Finally, in **Task T1.4**, in close collaboration with WP2–4 (*SubTask 1.4.1*) the roadmap for full standardisation of the developed PROPLANET coatings will be addressed, which will result in the deliverables D1.3 (M12), D1.4 (M24) and D1.5 (M36). In parallel, in *SubTask 1.4.2*, the certification of the coatings will be advanced which will produce deliverable D1.6 (M36).

4.2. WP2 – PROPLANET SSbD coatings development

The main objective of WP2 is the definition of the requirements for innovative coatings and substrates. Furthermore, the development of novel recipes achieving the expected performance for the applications at hand (synthesis of crosslinked biopolymers, hybrid bio-based siloxane and hybrid siloxane coatings). The work package consists of 4 tasks (T2.1–T2.4) and will produce 2 deliverables during the project (D2.1 and D2.2). It will bridge the gap between TRL3 and TRL4. The workflow of WP2 is shown in Figure 4.

In **Task T2.1**, the requirements for the final products and the substrates will be defined. The **Tasks T2.2**, **T2.3** and **T2.4** on the other hand, focus on synthesising coating materials. **Task T2.2** is linked to the modelling activities of WP5 (first-principle and environmental fate modelling, T5.2–3). Furthermore, T2.1 of WP2 will contribute to synthesising hybrid siloxane bio-based coatings using the sol-gel method.



Figure 4 WP2 - PROPLANET SSbD coatings development.

Figure 7 shows the details of the workflow within the technical WPs 2, 3 and 4, and how information and results flow in and out of this block, mostly feeding the mathematical and computational tools (WP5) and the sustainability and toxicological assessment (WP6). Information gathered in WP5 and WP6 will then be fed back WP2, WP3 and WP4 for coatings optimization in terms of physical properties, environmental and toxicology issues.



4.3. WP3 – Characterisation, up-scaling & manufacture of PROPLANET SSbD coatings

In continuation of WP2, WP3 addresses the validation (characterisation of physical, mechanical, and chemical properties) and application of the three previously developed coatings, reaching TRL4. The work package consists of 3 tasks (T3.1–T3.3) and will produce one deliverable during the project (D3.1). The workflow of WP3 is shown in Figure 5.

All three **Tasks T3.1–T3.3** consist of preparing and applying the final recipes of the materials for textile, food, and glass applications. These tasks also include the innovative characterisation of novel materials, the scale-up and their validation at laboratory level. The different tasks in WP3 are supported by WP2 and WP5 and will also contribute to WP4.



Figure 5 WP3 - Characterisation, up-scaling & manufacture of PROPLANET SSbD coatings.



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or HADEA. Neither the European Union nor the granting authority can be held responsible for them.



4.4. WP4 – Validation of PROPLANET's coatings

The aim of WP4 is the consolidation of the developed SSbD coating solutions and reaching TRL5. This will include standardized tests to fully validate the coatings' performance and deliver proof that the novel coatings are viable alternatives for PFAS-type coatings. This work package consists of 4 tasks (T4.1–T4.4) and will produce 2 deliverables during the project. The workflow of WP4 is shown in Figure 6.

Task T4.1 focuses on the materials' selected for textiles and testing their performance (water and oil repellence, surface wetting and wear resistance – washing and drying). **Tasks T4.2 and T4.3** will do the same for the materials applied in the food industry as well for glass coatings. For T4.2, coated parts will be provided by TEC and the non-stick, anti-corrosion, thermal and mechanical stability will be tested. T4.3 addresses the anti-soling and anti-reflection properties of the materials selected as glass coatings and investigates their performance also with respect to ageing and transmittance. Finally, in **Task T4.4** the end of life, as well as possible re-use and chemical as well as thermal recycling pathways, will be investigated. This task will receive direct input from WP6 and provide information for WP5 and WP7.



Figure 6 WP4 - Validation of PROPLANET's coatings.



Enhanced Safe and Sustainable coatings for supporting the Planet





Figure 7: Activities flow between technical WPs.



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or HADEA. Neither the European Union nor the granting authority can be held responsible for them.



4.5. WP5 – Mathematical & computational tools for safe & sustainable coatings

The focus of WP5 lies on the exploitation of AI, modelling, and numerical simulations (first-principles-based models, in silico toxicological models, environmental fate models and data-driven algorithms) and the development of computational tools to support SSbD principles. The goal is creating a PROPLANET replication tool (incl. a database of materials for coatings). The work package consists of 6 tasks (T5.1–T5.6) and will produce 5 deliverables during the project (D5.1–D5.5). The workflow of WP5 is shown in Figure 8.



Figure 8 WP5 - Mathematical and computational tools for safe and sustainable coatings.



Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or HADEA. Neither the European Union nor the granting authority can be held responsible for them.



During **Task T5.1** the PROPLANET database will be created and fill with data coming from different sources: (1) existing databases and material developers, (2) collected from WP2–4 and (3) T5.2–5. The deliverables associated with this task are D5.1 and D5.2 which will provide a detailed map of the PROPLANET database. Using the input from T5.1, **Task T5.2** will address the environmental fate of the materials using in silico toxicological models. The results will be added to the PROPLANET database. In contrast to this, in **Task T5.3** first-principle-based models will be used to evaluate the performance of the materials at atomic scale. Just like in T5.2, the resulting data will used in the PROPLANET database and along with the data from T5.2, it will serve as input for **Task T5.4**. In the latter data-driven algorithms and the corresponding governing equations will be developed. **Task T5.5** will receive the governing equations from T5.4 and use multiobjective optimisation to optimize the problem at hand. Besides serving as input for WP2–4, the optimized equations will also be implemented in the PROPLANET replication tool that will be developed in **Task T5.6**. The latter will be based on the PROPLANET database of T5.1 and the input from T5.4. It will be used to support the replication tasks of T7.5 of WP7.





4.6. WP6 – Sustainability & toxicological assessments for safe & sustainable coatings

In contrast to WPs 2, 3 and 4, the focus of WP6 lies on the assessment of the coatings regarding sustainability, their potential for circularity and environmental impact related to their toxicological hazard. The latter will be supported by in vitro tests. The work package consists of 5 tasks (T6.1–T6.5) and will produce 8 deliverables during the project (D6.1–D6.8). The workflow of WP6 is shown in Figure 9.



Figure 9 WP6 - Sustainability & toxicological assessments for safe and sustainable coatings.

In **Task T6.1**, sustainable-by-design criteria will be defined for the advanced materials while at the same time optimizing the product costs of the coatings. This will consider the entire life cycle of the prototypes also applying an eco-design approach. The results will be assembled in deliverable D6.1. Besides, a detailed analysis of possible materials and assembly and disassembly alternatives will be performed in conjunction with T6.2. The best scenarios will serve as a guideline for each material and support the manufacturing activities of WP2–3. **Task T6.2** will concentrate on life cycle assessment (LCA), focusing mainly on sustainability by design principles (recyclability, waste reduction, greenhouse gas emissions etc.). While the planned life cycle costing (LCC) will estimate the cost-related aspects of the new materials,





the social life cycle assessment (SLCA) will highlight social aspects related to different impact categories. The assessments will be compiled in an initial report (D6.2) M15 and updated in M36 (D6.3). Opportunities for a circular economy, end of life strategies and the value chains will be assessed in **Task T6.3**. The results will be used both in WP4 T4.4 and WP7 T7.1 and will be summarised in a report (D6.5). Changing perspective, **Tasks T6.4** and **T6.5** will address toxicological aspects of the new materials. This will include testing the new materials regarding their safety and sustainability and their impact on human health. The results will be collected in a report on the toxicological impact (D6.4). In T6.5 health and safety guidelines will be established to avoid exploitation problems of the products in terms of standard regulations (T1.4). Regular reports will be produced (D6.6, M12; D6.7, M24; and D6.8, M36).





4.7. WP7 – Exploitation, dissemination, communication & social engagement

In WP7 spans the domains of market analysis and circular business planning, exploitation and IPR management, communication and dissemination, social engagement, and replication cases. The work package consists of 5 tasks (T7.1–T7.5) and will produce 16 deliverables during the project (D7.1–D7.16). The workflow of WP7 is shown in Figure 10.



Figure 10 WP7 - Exploitation, dissemination, communication, and social engagement.

Tasks T7.1 and **T7.2** cover the areas of marked analysis, circular business planning, exploitation strategies, and intellectual property rights management (IPR). The output of the tasks will be an IPR roadmap report in M16 which will be updated in M36 as well as an exhaustive marked analysis in M6 (updated in M36). All the communication and dissemination activities are handled in **Task T7.3**. This covers the creation of the PROPLANET website (already achieved) and dissemination via social media channels. Moreover, the organisation of workshops falls into this task. The activities will maximise PROPLANET's impact and exploitability. In **Task T7.4** social engagement activities are planned, that will raise awareness of the problematic PFAS and the need to eliminate these substances from our daily lives and promote the most effective substitutes. The results will be presented in 4 streaming events and included on the PROPLANET website. Finally, Task 7.5 focuses on the replication studies of the PROPLANET high-performance coatings usages in different industrial sectors as well as to identify and study 6 different cases where feasible use of these coatings can be made. It should be mentioned that Task 7.5 is in collaboration with the PROPLANET replication tool developed under Task 5.6.





4.8. WP8 - Management & coordination

The tasks defined in WP8 a related to project management (administrative and financial), project monitoring and quality control, open science and data management, gender, and ethics as well as collaboration with other projects in the same domain as PROPLANET. The work package consists of 5 tasks (T8.1–T8.5) and will produce 3 deliverables during the project (D8.1–D8.3) and the project management plan (PMP). The workflow of WP8 is shown in Figure 11.



PMP: Project Management Plan; SEM: Seminar on Gender & Ethics dimension

Figure 11 WP8 - Management and coordination.

In WP8, **Task T8.1** focuses on project monitoring and quality control. The project coordinator will define management procedures and guidelines for the project partners. This will also include the creation of a PMP to clarify the responsibilities and obligations of each partner. This is also closely linked to the project's technical management in T1.1. **Task T8.2** tackles the administrative and financial management, including communication with the consortium members and the project officer of the funding agency. The aspect of open science and creating a data management plan (DMP) will be addressed in **Task T8.3**. This will also directly have an impact on WP5, T5.1 and T5.7. The DMP represents a deliverable D8.1 (M6) which will be updated in M36. Besides the more technical aspects, **Task T8.4**, will shed light on the gender and ethics dimension. A seminar on this topic will be organised. And finally, in **Task T8.5**, activities are planned to connect with other EU-funded projects and find synergies.





5. Quality control and monitoring

5.1. Deliverables guidelines

Overseeing the progress of the tasks as well as the creation of the deliverables (reports), falls in the responsibility of each WPL. The WPL also ensures that the reports **adhere to high-quality standards and that submission deadlines are respected**.

Each deliverable needs to get approval for the following people (in this order):

- 1. TL
- 2. WPL
- 3. PC (J. Seif), who will do a final quality assessment

The workflow and timing to create the deliverable is the following:

- 2 3 months before the DV deadline: the person(s) responsible for the creation of the deliverable send the table of contents to their TL, the WPL or the PC.
- **1 month before the DV deadline:** the first consolidated version of the deliverable should be ready to allow for enough time for the internal review process.
- Internal review: The WPL notifies the PC once sections of the DV are finalized so that the internal review process can start. Both the WPL and the PC review the deliverable, at least 15 days are allocated for this to both.

The document shall be uploaded to the project's shared folder to allow for collaborative and parallel review. In case of delays or other risks, the WPL shall notify the PC. All the responsibilities of the partners, in particular those of the WPL and TL, are defined in the GA and CA.

5.2. Guidelines for high-quality reports

- A template is provided for creating the deliverables (by the PC). It is stored in the shared folder, accessible to all the partners.
- The DV responsible gathers all the necessary information to complete the DV from the contributing partners.
- The DV responsible shall create a draft of the DV, including the structure (sections, chapters etc.), and indicate what is expected from each contributing partner and where the information shall be added.
- The contributing partners shall review the DV adhering to the guidelines of the review and approval process.
- The DV responsible ensures the high quality of the deliverable.
- After finalization of the deliverable, the DV responsible notifies the PC and provides final version of the document as *.docx and *.pdf.
- The submission is taken care of by the PC using the Reporting Tool on the EC Portal.
- Note that: No delay without formal justification is accepted for the submission of the deliverable.





5.3. Deliverables review plan

To reach the DVs, set down in the GA (see Table 5), efficient communication between the PC and the WPLs and TLs is crucial. During the time of the project, all available channels will be used for this purpose (mail – *preference*, phone, MS Teams, website, or other).

On the technical side, the WPLs are responsible to keep up the communication with the TLs and the other consortium members that are involved in the development of the activities. The aim here is to achieve the WP's goals. Documentation of this process is provided by the creation of DVs as described in sections 5.1 and 5.2.

D#	Deliverable name	WP	Lead Beneficiary	Dissemination level	Due date (month)
D7.1	Project identity, website, and social media	WP7	EXE	PU	M2
D2.1	Requirements for coatings and substrates	WP2	NIC	SEN	M4
D1.1	Integrated project delivery and team alignment	WP1	IDE	PU	M6
D7.2	Exhaustive market analysis towards circular approaches	WP7	EXE	PU	M6
D7.4	PROPLANET Exploitation plan and circular business approaches	WP7	EXE	SEN	M6
D7.9	Communication & Dissemination Plan	WP7	EXE	PU	M6
D8.1	DMP and Open Sourcing approach Report	WP8	IDE	PU	M6
D1.2	PROPLANET KPIs Report	WP1	HOL	PU	M8
D1.3	PROPLANET integration into standardisation process and roadmap for full standardisation	WP1	RuKa	PU	M12
D6.6	Health & safety conditions of PROPLANET	WP6	NILU	PU	M12
D7.12	Social engagement report	WP7	HOL	PU	M12
D7.14	Report on replicability cases	WP7	IDE	PU	M12
D7.8	Risk analysis report	WP7	EXE	PU	M12
D2.2	Report on the synthesis of PROPLANET SSbD coatings	WP2	TEC	SEN	M14
D6.2	LCA, SLCA, and LCC assessments	WP6	HOL	PU	M15
D6.5	End of Life strategies and activities Report	WP6	HOL	PU	M15
D7.6	IPR roadmap report	WP7	EXE	PU	M16
D5.1	Map on PROPLANET Data-Base	WP5	IDE	SEN	M18
D5.3	PROPLANET models, simulations & governing eqs.	WP5	IDE	SEN	M18

Table 5 List of deliverables sorted by due date (month).



Enhanced Safe and Sustainable coatings for supporting the Planet



D7.10	Communication & Dissemination Plan	WP7	EXE	PU	M18
D7.5	PROPLANET Exploitation plan and circular business approaches	WP7	EXE	SEN	M18
D5.4	PROPLANET Multiobjective Optimization Report	WP5	UMA	SEN	M20
D6.1	Report on SbD and Eco-design for high-functional coatings	WP6	HOL	PU	M20
D1.4	PROPLANET integration into standardisation process and roadmap for full standardisation	WP1	RuKa	PU	M24
D6.7	Health & safety conditions of PROPLANET	WP6	NILU	PU	M24
D7.3	Exhaustive market analysis towards circular approaches	WP7	EXE	PU	M24
D3.1	Final recipes of PROPLANET coatings	WP3	TEC	SEN	M26
D1.5	PROPLANET integration into standardisation process and roadmap for full standardisation	WP1	RuKa	PU	M36
D1.6	Certification of PROPLANET coatings	WP1	HOL	PU	M36
D4.1	Report on high-functional organic and hybrid coatings	WP4	TEC	SEN	M36
D4.2	EoL activities towards circularity	WP4	TEC	SEN	M36
D5.2	Map on PROPLANET Data-Base	WP5	IDE	SEN	M36
D5.5	PROPLANET Replication Software	WP5	IDE	PU	M36
D6.3	LCA, SLCA, and LCC assessments	WP6	HOL	PU	M36
D6.4	Report on the coatings' toxicological impact	WP6	NILU	PU	M36
D6.8	Health & safety conditions of PROPLANET	WP6	NILU	PU	M36
D7.11	Communication & Dissemination Plan	WP7	EXE	PU	M36
D7.13	Social engagement report	WP7	HOL	PU	M36
D7.15	Report on replicability cases	WP7	IDE	PU	M36
D7.16	PROPLANET Exploitation plan and circular business approaches	WP7	EXE	PU	M36
D7.7	IPR roadmap report	WP7	EXE	PU	M36
D8.2	DMP and Open Sourcing approach Report	WP8	IDE	PU	M36
D8.3	PROPLANET Synergies & collaboration report	WP8	NIC	PU	M36





5.4. Presentations at consortium meetings

5.4.1. Meeting organization

Project meetings, chaired by the PC, will be organized as described in section 3.2. The mail purpose of the meetings is to review the status and progress of each WP and task as well as to establish a fruitful working environment and foster collaboration between the project partners.

Together with the EB, the PC is responsible for planning these meetings (dates and locations) as well as for creating an agenda and proposing decisions to be taken.

5.4.2. Presentation preparation and review plan

The creation of the PowerPoint presentations for the WP progress reports is the responsibility of the WPL. They are supported by the TLs, who can be asked to provide any relevant information obtained during the reporting period. Collaboration across the SharePoint platform and the shared folders of the PROPLANET projects is encouraged.

A presentation template is provided and can be found on SharePoint. The guidelines and structure of this template must be respected when creating the presentation. As for the timing, it is recommended that the WPL starts preparing the presentation one month before the meeting. The completed version of the presentation shall be sent to the PC (IDE) for a final review **five days prior** to the meeting. The PC will review the slides and provide feedback to the WPL that shall be implemented where necessary. The final version of the presentation shall be sent to the PC or uploaded to the project's SharePoint **at least one day prior to the meeting** (incl. mail to the PC to notify that the final version is available).

5.4.3. Guidelines for the meetings

- The WPL shall be the main presenter of the work, however the TL may be asked to give additional details on the activity they oversaw.
- Meeting minutes shall be produced (see template on SharePoint), focusing on
 - \circ $\,$ the points that were discussed and for which decisions have been made,
 - o potential risks and roadblocks,
 - o identified deviations and
 - the next planned steps.
- The minutes shall be distributed within 15 days after the meeting and are considered approved by the participants if no objection has been sent in the following 15 days.





6. End-users' needs

The needs of the end users regarding properties (chemical, physical, toxicological, environmental, and economical) of the PROPLANET coatings have already been established in "D2.1 Requirements for coatings and substrates" (submitted in M4). The necessary hardware retrofits, changes, and upgrades will be defined in the framework of T1.2 and reported in "D2.2 Report on the synthesis of PROPLANET SSbD coatings". Based on the feedback obtained by the end-users in the project, the status regarding this question is:

- REEPACK: No changes to their production line necessary as the coatings are not applied by the company. Coated parts for the machines are supplied by other manufacturers.
- AITEX: No major changes to the production lines anticipated to accommodate new coatings.
- PILKINGTON: No issues with new type of coatings foreseen.

7. Conclusions

The present document includes detailed information about the role structure, the project communication as well as about team alignment, quality control and monitoring. During the execution of the PROPLANET project, the document, and the information within will serve as a reference for both the coordinator and the consortium and will enhance the alignment of the whole team. This will facilitate the coordinator's task to steer the consortium on an interdisciplinary level, while it helps the consortium members to understand the interconnections between the WP or task they are leading and other WPs and tasks in more detail.

Additional information about the interaction between the project participants is summarised in the *project management plan* (PMP), which gives insights into the governing structure, as well as protocols and guidelines. Also, a *scientific and technical plan and execution report* (STP) will be provided with the aim to organise the scientific and technical coordination. Both documents will be provided to the consortium partners via the TEAMS repository for internal use.

The internal documentation will be updated regularly to provide the consortium with the most recent information. This will happen for both the PMP and the STP in M12, M24 and M36 of the project.

