



D1.1 – Project Management and Quality plan I

Deliverable Information Sheet

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1. Executive summary

This document aims at presenting the project coordination aspects and the project supporting procedures.

A project overview is provided, then the project structure is presented. Subsequently, the quality assurance procedures are shown and the document templates are described.

The document also includes the project management manual and the description of the procedures for the risk management.

2. PROJECT OVERVIEW AND WORKFLOW

2.1. Project Overview

The RE-SKIN project aims at developing an integrated and multifunctional system for energy retrofit of existing buildings, organised in two main subsystems, roof and façade, combined with the building's HVAC system. The roof is equipped with a hybrid photovoltaic-thermal system, which produces electricity and heat and at the same time thermally and acoustically insulates the slab beneath. Electricity, from retrofitted photovoltaic modules, powers the building's loads, which interacts with the grid and EV charging stations. Heat is used by a heat pump for heating and domestic hot water preparation. Solar modules form the outer skin of the roof and replace traditional materials such as tiles and sheets. Through a special treatment, they can take on different colours, depending on the aesthetic and architectural identity of the building. The façade is a thermal cladding with self-supporting panels and bio-based insulation, optimised for quick assembly without scaffolding, inside which the wiring for the new installations and earthquake sensors are housed. Retrofit techniques/components of existing windows are also included.

Both the roof and the façade are particularly resistant to weather and extreme climatic phenomena, as they use materials that are more resistant and waterproof than traditional ones.

The HVAC system consists of a solar-assisted DC air-water heat pump, connected to smart fan-coils, which are designed to be connected to the building's heating piping, but can provide both heating and cooling.

The whole system is designed according to a circular economy logic, using mostly recycled/bio-based/repurposed/refurbished materials, and is supported by a lifecycle cloud-based DSS and energy management tool, in order to maximise energy performance while reducing environmental impacts.

The system can be applied all over Europe, as it provides renewable energy and participates actively and passively in the energy performance of buildings, both in summer and winter.

2.2. Project Structure

To achieve its ambitious objectives, RE-SKIN project is structured in 10 work packages spanning 42 months and focused around the integrated optimization of the whole system.

A brief Work Package description follows:

WP1 "Project management" aims at enabling the trans-disciplinary project team to work synergistically, to adapt and improve the different technologies and methodologies included in the project in a holistic and systemic logic. It will also ensure project's administrative management.

WP2 “Context monitoring and project resilience” aims at updating the features of RE-SKIN system, ensuring that all possible changes/evolutions of the framework due to new policies, standards, technology advancement, etc. will be immediately taken into account in the development of the subcomponents and of the whole package, without compromising its effectiveness and the pathway to impacts.

WP3 “Definition of resistance and reliability features” aims at ensuring that every component of the RE-SKIN package has proper features that ensure long-term reliability, resilience to disruptive events and affordability during the operational phase.

WP4 “Holistic integration of subsystems” aims at carrying out all the activities related to the phase of holistic optimization and pre-construction development of RE-SKIN subsystems to ensure their synergic integration and interconnection.

WP5 “Envelope components development” aims at optimizing, prototyping and testing the energy efficient envelope technologies, including façade, windows, BIPVT system and roofing.

WP6 “Technical systems development” aims at optimizing, prototyping and testing all the technical components, including MIMO controller, heat pump, fan coils, electrical storage and smart control systems.

WP7 “Circular-economy support” aims at developing key activities oriented at supporting the circularity of the RE-SKIN renovation package.

WP8 “Demonstration activities” is focused on the on-field demonstration of RE-SKIN technologies.

WP9 “Pathway to market” aims at defining detailed and targeted business models for effectively bringing the RE-SKIN approach to market.

WP10 “Communication and dissemination of project results” aims at disseminating the value of methods and tools developed in the project and ensuring the impact of the RE-SKIN results on the key target audience.

In Figure 1 WP interactions and dependencies are graphically represented.

3. PROJECT ORGANIZATION STRUCTURE

3.1. Project Management Structure

Although RE-SKIN is characterized by a complex structure and interdependencies of WPs and related tasks, the project governance structure has been conceived in a standardized simple way, to achieve an efficient coordination of activities and minimize the effort in managing the project while avoiding adding excessive red-tapes and heavy administrative burden on the management processes. Key figures and roles are provided to guarantee the high quality and timely tasks implementation.

Several project bodies are crucial for project management and for its smooth implementation. Each of them has specific roles and competences.

Project Coordinator: the project coordination is led by POLIMI, which established a dedicated Project Management Team, and includes the following functions: financial supervision, progress report preparation and submission, formal revision and submission of official communications/documents to be produced within the project, final approval of project deliverables, organization and supervision of project meetings as well as liaison with project governing bodies.

The Project Coordinator of RE-SKIN project is Professor Niccolò Aste of POLIMI. In all these activities of project and consortium management, the Project Coordinator will be supported by a dedicated project officer of FPM (POLIMI's affiliated entity) for the day-by-day management.

General Assembly: composed of one representative per beneficiary, this body has competences and responsibility in taking the main decisions affecting the implementation and success of the project, namely:

- monitoring and reviewing the overall technical, management and financial progress of the project.
- ensuring that milestones are met and deliverables are completed.
- ensuring the quality of the data coming from the WPs, the reports and the deliverables.
- monitoring and ensuring efficient communication and co-ordination between partners, WPs and tasks.

The first General Assembly meeting was held during the project kick off meeting in Milan (Italy) on 25-26 January 2023. Each partner will have a unique representation point in the GA, as proposed here below:

Partner	Representative
1 – POLIMI	Niccolò Aste
2 - ENTPE	Mohamed El Mankibi
3 – ENELX	Silvia Arcieri
4 – PSC	Andres Barrado
5 – HELIO	Andreas Bangheri
6 – ZH	Alessandro Miglioli
7 – REV	Stuart Reigeluth
8 – GAR	Amaya Saráchaga
9 – HE	Dara Turnbull
10 – CTIC	Pablo Coca
11 – RINOVA	Toralf Nitsch
12 – INDRES	Pablo Outon
13 – USE	Gaetan Holderbeke
14 – SOLAR	Marco Ghirardello
15 - DTI	Stine Lombro Bertelsen
16 - CDM	Fabio Minchio
17 - BURGAS	Kamer Ahmedov
18 -VIP	Daniel Dominguez
19 - STI	Matteo Navaroni
20 -VILO	Julien Holgard

Executive Board: it consists of the different directors responsible for monitoring the implementation of all project tasks: Project Coordinator, Scientific Director, Integration Director, Pilot Manager, Communication and Impact Director. Their roles are well defined as summarized in the following table:

Person	Partner	Role	Responsibility
N. Aste	POLIMI	Project Coordinator	Overall project management, interface with EU.
C. Del Pero	POLIMI	Scientific Director	Supervision of scientific development and quality management.
A. Miglioli	ZH	Integration Director	Supervision on the integration of different components and on the toolkit realization.
F. Cucca	ENELX	Pilot Manager	Supervision of pilot activities and validation activities
D. Chiaroni	POLIMI	Impact Director	Project uptake and impact
S. Verma	REV	Communication and Dissemination Director	Coordination of all activities for enhancing project visibility

The Executive Board is chaired by the Project Coordinator and is responsible for monitoring the day-by-day management of the technical WPs, taking technical actions to ensure WP goals are met on time and within the budget limits. The Executive Board reports periodically to the General Assembly.

Work Package Leaders: they are responsible for coordinating the activities within each WP. Their duties include the coordination and implementation of each WP within the foreseen timeframe and budget, proposition of orientation of work to reach project objectives, deliverables preparation supervision, risk monitoring and liaison with the different Directors.

The list of WP Leaders was provided at proposal stage and confirmed at the beginning of the project:

WP No.	Work package title	Resp.	Name
WP1	Project management	POLIMI	N. Aste
WP2	Context monitoring and project resilience	ENTPE	M. El Mankibi
WP3	Definition of resistance and reliability features	DTI	S. Lombro Bertelsen
WP4	Holistic integration of subsystems	POLIMI	C. Del Pero
WP5	Envelope components development	GAR	A. Saráchaga
WP6	Technical systems development	HELIO	M. Kim
WP7	Circular-economy support	ENELX	S. Arcieri
WP8	Demonstration activities	ZH	A. Miglioli
WP9	Pathway to market	ENELX	S. Arcieri
WP10	Communication and dissemination of project results	REV	S. Verma

Exploitation Board: chaired by the Impact Director, it is composed by representatives of all industrial partners. Its main function is to monitor the business trends to adapt RE-SKIN business strategy to real market needs. The Exploitation Board is also involved in the management of intellectual property.

3.2. Decision Making Processes and Conflict Resolutions

As a general rule, decision making processes are aimed at minimizing the possible generation of conflicts. In case of conflicts, they will be solved, first of all, amicably, under the rules set out in the Consortium Agreement.

Conflicts may arise at different project levels and consequently specific solutions will be identified to solve the conflicts promptly. At Work Package level, the WP leader will set the dispute internally with a possible Executive Board support, if needed. In case not all partners share the decision, then the discussion can be taken at Executive Board level and the Project Coordinator will also be involved. All changes needed for settling a dispute must be minor to ensure that integrity and coherence among WPs are maintained.

4. QUALITY ASSURANCE PROCEDURES

4.1. Quality Control Procedures for Communication Tools

A complex international project such as RE-SKIN requires precise and transparent communication between all partners for its smooth implementation. Day-by-day communication and achievements distribution will be carried out mainly by e-mail and file sharing via the project Intranet.

4.1.1. Public Website

Public information about RE-SKIN, aiming at external communication and dissemination purposes and targeted to the greater public, is available at the following URL: <https://reskinproject.eu/>

The project website will be kept updated and improved along and beyond the project lifetime, adding new content and functionality, under the responsibility of WP10.

4.1.2. Intranet

The Intranet for internal use is hosted on Dropbox. It contains all the technical information about the project, designed to support online cooperation. Partners must use the Intranet to share information, upload intermediate versions of deliverables, and all the intermediate reports/roadmaps.

The Intranet also contains a structured repository of officially released documents, together with all contractual information, templates and so on.

4.1.3. Content of the project intranet

The Project intranet contains the following information that can be accessed and downloaded:

Administration and Management	This folder contains all administrative documents, templates and guidelines, crucial to keep under control the project implementation, including project meeting information.
Deliverables	All RE-SKIN deliverables are uploaded and accessible here
Partners info and contacts	Mailing list information and partner specific information is stored here.
Project Progress Report	This folder contains all internal interim reports produced to monitor the implementation of project activities, as well as the official project progress report documentation.
Visual Identity	Logos, images, flyers, document and presentation templates.
Work Packages	Breakdown of RE-SKIN WPs, each folder contains working documents and official documents produced under each WP.

A snapshot of the RE-SKIN Intranet is shown in **Errore. L'origine riferimento non è stata trovata..**

Nome ↑	Chi può accedere	Ultima modifica
<input type="checkbox"/> Administration and management	☆ 87 membri	Copia link 📄 ⋮
Deliverables	☆ 87 membri	--
Partners' info and contacts	☆ 87 membri	--
Project Progress Report	☆ 87 membri	--
Visual Identity	☆ 87 membri	--
Work Packages	☆ 87 membri	--
RE-SKIN Summary.pdf	☆ 87 membri	20/1/2023 12:03

Figure 2. Home page of the RE-SKIN intranet.

4.1.4. E-Mail

E-Mail will be one of the major means used in RE-SKIN project to exchange information, while the main exchange of documents in electronic form over the Internet will be accomplished using the intranet.

A RE-SKIN specific mailing list has been setup to advise the partners of the availability of new information, circulate agendas of meetings and events related to the project, and notify the presence of new documents on the intranet of the project. Usage of mailing lists is strongly recommended. The usage of person-to-person private emailing should be limited, to privilege visibility within the project to all people working in the project.

It is recommended not to send e-mails with attached documents to mailing lists. It is more effective to post them on the Intranet and allow each participant to download them including a document link in the email.

4.1.5. MS Teams

It is recommended that each participant use MS Teams service for voice communications.

4.1.6. Conference Calls

Conference calls have proven effective for organising short meetings and quickly became a major tool for the management of projects, avoiding the jeopardizing effect of long email exchanges and allowing for the reduction of travel expenses.

The following general principles should be respected for calls where critical/strategic decision for the project implementation are to be taken:

- in the same way for a physical meeting, the date, time, expected duration, agenda and name of participants should be communicated in advance, together with all required documents,
- the meeting agenda will be distributed prior to the meeting with a clear indication of the topics to be covered during the conference call and the partners responsible for them,
- as with all other meetings, minutes must be produced by the meeting chairperson, and circulated to the other participants.

A minute of each conference call has to be recorded and stored in the Dropbox folder.

4.2. Quality control procedures for meetings

Whether virtual or physical, a meeting is convened by the chairperson, who also determines the location in accordance with the foreseen attendees. For major meetings, the Coordinator will provide support and keep track of the action items. If the Coordinator is not present, it is the responsibility of the chairperson to prepare and distribute the action items.

Regular meetings should be convened with at least twenty (20) calendar days (45 days for the project General Assembly meeting) prior notice and be accompanied by an agenda proposed by the meeting convenor. The agenda will be considered accepted unless one of the partners notifies the Project Coordinator and the other partners in writing of additional points to add, at the latest two working days before the date of the meeting (14 days for the General Assembly meetings). Partners may also participate to physical meetings by teleconference, if the facilities are available, although this should be avoided as much as possible for General Assembly meetings.

Please note that it is mandatory to produce and share action items or minutes of every meeting, this can help support any audit checks the Commission may carry out concerning claimed travel expenses. The format for the meeting minutes is shared in the Dropbox folder.

4.2.1. Project General Assembly and Executive Board Meetings

The project **kick-off meeting** was the first plenary meeting and marked the effective launch of the project. It reinforced the sense of common goal of all partners, and identified the responsibility of each one. Open technical issues were identified and debated; co-operation between work packages

was initiated. Specific thematic tables were organized to start identifying potential risks and actions to be undertaken. The project management team exposed what is expected of each in terms of results, performance and reporting. The detailed course for the whole duration of the project was confirmed and fine-tuned.

Other **project plenary meetings** will take place approximately every 6 months (or earlier if required). They will involve all the participants. They will be complemented and prepared by Executive Board meetings to be held in the same time frame. Additional Executive Board meetings will be convened as required. Specific intra or cross WP meetings will be organised by the work package leaders as needed for the progress of their tasks.

In addition to the planned plenary meetings, Virtual Meetings may be held as necessary. All General Assembly meetings are convened by the chairperson, who also determines the location in consultation with the Executive Board.

Any decision requiring a vote at a General Assembly and Executive Board meeting must be identified as such on the pre-meeting agenda, unless there is a unanimous agreement to vote on a decision at that meeting.

Each Consortium Body shall not deliberate and decide validly unless a majority of two-thirds (2/3) of its voting members are present or represented, including those participating by teleconference. Where decisions are to be taken unanimously, all members must be present or represented at the meeting.

Full details can be found in the Consortium Agreement.

4.2.2. Workpackage meetings

General

Technical meetings or conference calls can be held as necessary. A Workpackage Chairperson can convene meetings of the Workpackage whenever required, giving members at least seven (7) calendar days' notice and providing an agenda.

Decisions

For major decisions, the Workpackage Chairperson should consult with the Executive Board for final approval.

4.3. Quality control procedures for project reviews

4.3.1. General

The European Commission controls the progress of the project by essentially three means:

- Periodic Reports;
- Deliverables;
- Project Reviews.

Project Reviews are normally one or two-day meetings held in a specific period of time defined by the European Commission where the participants illustrate the status to the Project Officer and a number of independent Project Reviewers nominated by the Commission.

These meetings are the most important events in the project's life, for the following reasons:

- The Project Officer and the Project Reviewers usually do not have much time to dedicate to the project. For them, Project Reviews are the main events to evaluate the project.
- Project Reviews are the only occasion to present to the Project Officer and Reviewers results of the project and to discuss its progress.
- Project Reviews are real opportunities to demonstrate the cohesion of the consortium and the commitment of the partners to achieve project objectives.

As a consequence, Project Reviews should be paid special attention by all the partners.

4.3.2. Preparation

The following procedure is recommended for the preparation of Project Reviews:

- Approximately one to two months before the Review, the Project Coordinator in consultation with the General Assembly will define the main objectives to be accomplished during the Review, and consequently assign roles to the partners, prepare a detailed agenda and ask partners to prepare their contributions.
- Once agreed, the agenda will be sent to the Project Officer and agreed with her.
- Approximately two weeks before the Review, all project deliverables for the time period concerned must be made available to the Reviewers. This will be done by granting them access to the RE-SKIN Administrative Intranet site.
- Also, two weeks before the Review, all presentation material must be ready internally, so that all partners can check its consistency and the quality of the presentations, and choose the best approach. The Project Coordinator will ensure the necessary quality checks are carried out.

- The day before the Review, a final rehearsal will be held for fine-tuning. Rules among the attending partners will be agreed (e.g. order of presentations, time management, etc.).

4.3.3. Logistics

In case that the review meeting is not held on EC premises, a detailed description of travel details (not just the address – but details of train, metro, taxi, schematic map of the meeting location, telephone number of someone in contact with the meeting coordinator) must be made available to the reviewers at least two weeks before the Review.

The location should be easy to access, all efforts must be made to avoid having reviews in places that imply long and complicated travel arrangements. Too much time is lost and the Project Officer and the Project Reviewers will not appreciate it.

Ensure that the meeting has internet access, printing services and photocopy equipment available at the Review location.

The Project Coordinator must liaise with the Project Officer for logistics information, checking that all the necessary information has been supplied.

4.3.4. Agenda of Review

The objective of a Project Review is to:

- demonstrate project progress to the Project Officer and the Project Reviewers;
- demonstrate achievements through presentations, demonstrations, etc.;
- explain modifications to initial project objectives or planning to the Project Officer and the Project Reviewers.

The agenda should be organised accordingly, and have the following contents:

- Welcome,
- Introduction (by Project Coordinator):
 - Presentation of the partners,
 - Presentation of project objectives,
 - Presentation of project organisation.
- Management summary:
 - Activities performed since previous Review,
 - Dissemination and exploitation efforts
- Technical summary:
 - Major results achieved since last Review,
 - Modifications to the Workplan.

- Answer to questions, comments made by the Project Officer or Project Reviewers since last Review (when appropriate);
- Technical presentation of major results (presentation documents, demos, visit of laboratories, etc.);
- Conclusions and plans for the next period.

5. DOCUMENTS TEMPLATES

5.1. Documents Features

Most documents in a collaborative project are written with contributions from several partners. In order to minimise the effort for handling such documents, it is important for all participants to follow agreed standards for formats and tools to be used in document editing and exchange.

This chapter specifically deals with the procedures for the release of official documents.

5.1.1. Standards

Tool :	Name :	Publisher :
Word Processing	MS Word	Microsoft
Spreadsheet	MS Excel	Microsoft
Overhead slides	MS Power Point	Microsoft
Web publication	MS Webmatrix	Microsoft
File compression	WinZIP	Corel
Documents for the Intranet	MS Word / Acrobat PDF	
Intranet Cloud Folders	Dropbox "RE-SKIN Consortium"	

5.1.2. Document versions

When a document is issued for the first time, it should be defined as a draft (version 0.x). Usually, the approval process requires that a document is circulated for comments among the interested partners. Upon receiving the comments by the specified deadline, the author will make the proper modifications, therefore changing the version sub-number, without affecting the main number.

Normally, the first official release of a document will be called V1.0 and this number will be assigned by the Project coordinator when he has approved the document. The main version number (the first figure before the ".") is increased by one unit only if a different version of the document is delivered to the Commission, or if major modifications have significantly altered the contents of the document. The editor must not forget to update the version number in all its occurrences in the document (File Properties and cover pages). Clearly, every care should be taken to avoid distributing different documents with the same version number.

Every time that modifications are made to a document, the new version must contain a clear indication of what has been added, modified or removed.

5.2. Editing Guidelines

5.2.1. Logo

The logo of the project is shown on the first page and footer of this document and is available for downloading from the intranet of the project, under “Visual Identity” folder, and is also included in all document templates.

5.2.2. Page formats

The following rules should be followed in the production of all official project documents (Deliverables, Reports, etc.), and have also been used in the present document:

Document size and orientation	A4 Vertical orientation
Margins	20mm vertical, 40mm horizontal
Normal Font (for text)	12p Calibri (body)

5.2.3. Templates

Basic models for the production of official project documentation are available on the intranet. They are Microsoft Word Templates:

RE-SKIN - DX.X Format.docx All **RE-SKIN** deliverables must use this standard template. This will ensure that the look of all deliverables follows the **RE-SKIN** model. To create a new document, use right mouse and select "new", then "save as" "name.doc(x)"

RE-SKIN - Continuous update FORM.docx For Continuous Update Reports

RE-SKIN - Minutes.doc(x) For minutes of meetings.

5.2.4. Styles

A few basic styles have been defined in the editing of the present document. The different versions of Word in the different languages should automatically translate the basic styles (such as Normal, Heading 1 ..., etc.). Extra styles include styles for use in figure captions, table text and table titles, bullet lists and a few others. Specific styles are used in the cover sheet. In order to keep consistency across documents, the number of newly defined styles should be minimised.

Every time that part of a document is pasted into a second one, all the styles defined in the first document are automatically transferred into the second one. To avoid this (which results in an exponential growth of styles) this kind of operation should be carried out with care.

5.2.5. PowerPoint presentations

A template for overhead slideshows has been defined in **RE-SKIN.ppt(x)**

As a general rule, presentations should not be long, each page should contain only a few items summarizing one idea (avoiding verbose descriptions that can be made by the speaker). The fonts used in both text and graphics should be large enough for the audience to read, cryptic abbreviations should be avoided, the use of colour can improve readability.

6. PROJECT MANAGEMENT MANUAL

6.1. Project monitoring

The Gantt chart of RE-SKIN summarizes the project activities and their expected start and end dates. The project progress will be monitored by the Project Coordinator through regular WPs, Tasks and Deliverable reporting prior to every GA/EB meeting on a fixed basis.

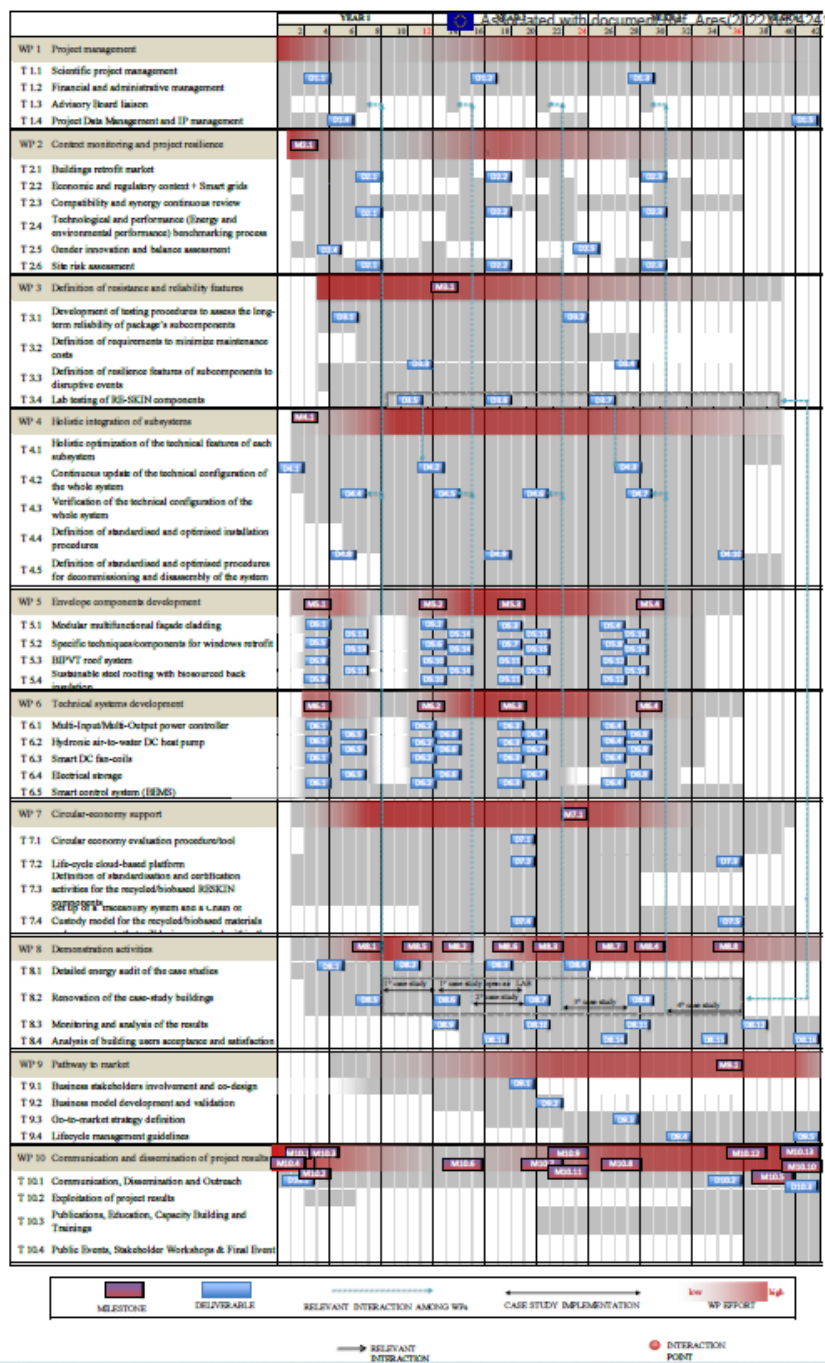


Figure 3. RE-SKIN Gantt chart..

6.2. Project reporting

6.2.1. Deliverables

Overview

Each deliverable must be submitted to the EC, before obtaining approval by the Project Officer. Final acceptance of deliverables can only happen in a review. If deliverables are not accepted, then payment of financial claims could be delayed. It is thus in the interests of all partners that deliverables are produced in high quality and in the required format.

The RE-SKIN 80 Deliverables are strictly tied to the breakdown into Work Packages that defines the structure of the project. Deliverables are generally technical documents and have an essential importance for the Commission’s appraisal of how the project is evolving, since they are written reports in which results produced during the project are collected and analysed.

Deliverable production

Each deliverable tackles a specific subject, and has a “Deliverable Manager” who will coordinate the production of the document, interacting as necessary with the other partners involved. Unless agreed otherwise among the partners involved, the Deliverable Manager is normally a person working for the consortium partner that is responsible for the deliverable according to the DoA.

The Deliverable Manager will define the document structure and the contributions expected from each partner in a preliminary document named **DDP (Deliverable Development Plan)** and will propose the calendar for the meetings he/she may consider necessary for the development of the deliverable. The Deliverable Manager, in accordance with the Project Coordinator, will also appoint 1-2 reviewers, chosen among project partners, who will be responsible for ensuring the high-quality level of the deliverable. The contents of the DDP must be finalised at least 45 days before the contractual date of the deliverable.

Then the deliverable will be produced. The Deliverable Manager will merge all contributions into a single document following as much as possible the structure defined in the DDP. This first draft will then be circulated and asked for comments. Each partner will check its consistency with the plans and give their feedback and approval.

This iterative procedure will be repeated as necessary, until all involved partners give approval. The Deliverable Manager will then prepare a final draft, which will be sent to the reviewers at least 15 days before the contractual date. The reviewers will normally not enter into the technical merits of the deliverable, but will essentially ensure that it is of sufficient quality to be sent to the Commission. They will also format it correctly and make sure all the naming conventions have been followed. The Coordinator will finally send the requested number of copies to the Commission.

The diagram in Figure 4 summarizes the procedure to be followed for the preparation of deliverables.

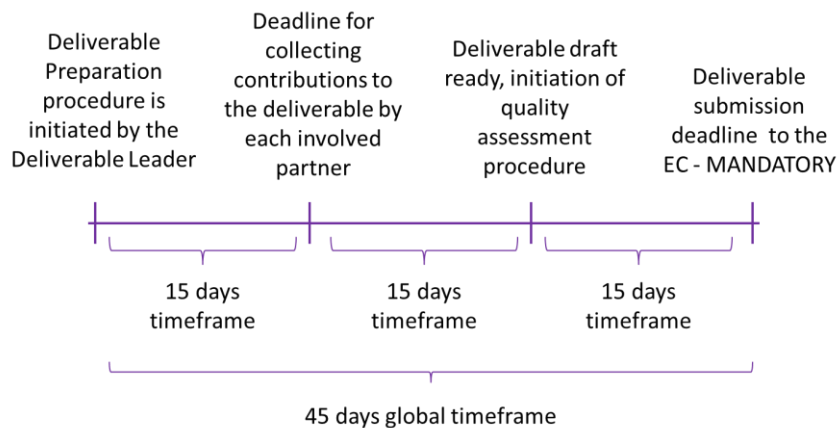


Figure 4. The deliverable preparation process.

Deliverable Development Plan (DDP)

The DDP is issued by the Deliverable Manager in order to clarify the main objectives of the Deliverable and to assign the different contributors with specific tasks in the report. It should be agreed with the Project Coordinator at least 45 days before the due contractual date of the deliverable. The DDP must sketch the structure of the future Deliverable, and therefore contain a clear indication of:

- person responsible for the deliverable (Deliverable Manager);
- table of contents;
- persons in charge of each chapter/section;
- a timetable for the deliverable development, setting deadlines at least for:
 1. submission of contributions;
 2. production of the first draft (version 0.1);
 3. internal review (partners' comments);
 4. production of further versions of the draft (versions 0.x);
 5. delivery to the Quality Manager.

All reports (scientific and financial) have to be submitted via the SEDIA portal.

The Project Coordinator keeps tracks of the deliverable advancements by filling in a table which summarizes the most important information about the deliverable and specifically its level of development. The screenshot below shows how this table is summarized and gives evidence of the information needed (by the Deliverable leader):

N	Deliv. (number)	Deliverable Name	WP number	Lead	Type	Dissem. Level	Delivery Month	DDP (Deliverable Development Plan)	Quality assessment date	Delivery Date	ACTUAL Delivery Date	Status
18	D4.1	Optimized technical specifications of each component I	WP4	POLIMI	R	PU	2	14/01/2023	13/02/2023	28/02/2023	03/03/2023	Deliverable waiting for EC approval
78	D10.1	Dissemination and communication strategy and plan I	WP10	REV	R	PU	3	14/02/2023	16/03/2023	31/03/2023	29/03/2023	Deliverable waiting for EC approval
1	D1.1	Project management and quality Plan I	WP1	POLIMI	R	PU	4	16/03/2023	15/04/2023	30/04/2023		Draft ready for review
28	D5.1	Manufacturing design of the multifunctional façade cladding I	WP5	GAR	R	PU	4	16/03/2023	15/04/2023	30/04/2023		Writing ongoing
	D5.5	Techniques/components for windows retrofit and the manufacturing design of the needed components I	WP5	ZH	R	PU	4	16/03/2023	15/04/2023	30/04/2023		Writing ongoing
36	D5.9	Manufacturing design of the BIPVT roof system I	WP5	ZH	R	PU	4	16/03/2023	15/04/2023	30/04/2023		Writing ongoing
44	D6.1	Manufacturing design of the technical components I	WP6	HELIO	R	PU	4	16/03/2023	15/04/2023	30/04/2023		Writing ongoing
9	D2.4	Gender-equality monitoring plan I	WP2	POLIMI	R	C	5	16/04/2023	16/05/2023	31/05/2023		Not started
57	D8.1	Energy audits and surveys I	WP8	ZH	R	PU	5	16/04/2023	16/05/2023	31/05/2023		Not started
4	D1.4	Data Management Plan and IP Management Plan & Report I	WP1	POLIMI	R	C	6	16/05/2023	15/06/2023	30/06/2023		Not started
11	D3.1	Methodology to test the reliability of subsystems I	WP3	POLIMI	R	PU	6	16/05/2023	15/06/2023	30/06/2023		Not started
25	D4.8	Optimized installation and disassembly procedures I	WP4	POLIMI	R	PU	6	16/05/2023	15/06/2023	30/06/2023		Not started
21	D4.4	Verification of the final configuration of the system I	WP4	ENTPE	R	PU	7	16/06/2023	16/07/2023	31/07/2023		Not started
40	D5.13	Envelope components for on-field demonstration I	WP5	GAR	DEM	PU	7	16/06/2023	16/07/2023	31/07/2023		Not started
48	D6.5	Technical components for on-field demonstration I	WP6	HELIO	DEM	PU	7	16/06/2023	16/07/2023	31/07/2023		Not started
6	D2.1	Application context periodic update I	WP2	ENTPE	R	PU	8	17/07/2023	16/08/2023	31/08/2023		Not started
61	D8.5	Final design of the renovation intervention I	WP8	ZH	R	PU	8	17/07/2023	16/08/2023	31/08/2023		Not started

Figure 5. Deliverable monitoring.

6.2.2. Periodic reports

The RE-SKIN project is organized in 3 Reporting Periods:

Reporting Period 1	From M1 to M18
Reporting Period 2	From M19 to M30
Reporting Period 3	From M31 to M42

Contractual obligations imply that within 60 days of the end of each reporting period (including the last reporting period) a **periodic report** should be submitted to the Commission, organised by sections as follows:

An **overview**, including a publishable summary of the progress of work towards the objectives of the project, including achievements and attainment of any milestones and deliverables identified in Annex I. This technical report should include the differences between work expected to be carried out in accordance with Annex I and that actually carried out.

An explanation of the **use of the resources**.

A **Financial Statement** from each beneficiary and each linked third party, if applicable, together with a summary financial report consolidating the claimed European contribution of all the beneficiaries (and third parties) in an aggregate form.

Financial statements should be accompanied by **certificates**, when this is appropriate (see Article 24 of the Grant Agreement).

Technical Report

At the end of every reporting period, POLIMI will prepare the project Periodic Report. It will contain the following summary information:

- Major achievements during the reporting period.
- Major problems identified.

- Deviations from the project plan.
- Resources used during the period.

POLIMI will be in charge of preparing this report with the support of all partners for additional contributions. This report will summarise the major achievements to date, any critical issues, the expected organisation for the remaining months of the project. It will include also a critical self-evaluation.

Financial Report

At the end of every reporting period, POLIMI will prepare a consolidated overview of the budgetary situation of the project, on the basis of the cost statements he has received from the partners. This report will be submitted to the Commission. The payments that have been made will also be reported. The budgetary situation will be compared with the original annual budget plan.

6.2.3. Internal management report

To support the efficiency and quality of this Periodic reporting process, an internal reporting procedure is set up in RE-SKIN on a fixed calendar basis.

Every three months, the partners are requested to send to POLIMI a “continuous update form” related to the previous period, according to the format shared in the Dropbox folder.

Prerequisites for easing the reporting procedure are:

- All participants to keep timesheet records of who is involved in the project. These can follow the normal practice of each partner, but must track, month for month, who worked on what part of the project. The information stored should be at workpackage level for every person concerned.
- For travel costs, again the normal practices of the organisation concerned can be used. Thus, if itemised travel costs are normally kept, then the total cost of the travel for each person involved should be reported in the management reports. If, on the other hand, a default daily reimbursement is used (irrespective of the real costs involved), then these default values can be reported again for every person involved. Please note that all travel costs must be specified per partner for every person who travelled. Please do not group travel costs together – they must be specific costs per person. Also, receipts must be kept, as the EC may want to see them.

6.3. Financial Management

6.3.1. Coordinator Responsibility

Overall financial management of the project is under the responsibility of the Coordinator, who shall distribute the financial contribution of the Funding Authority according to the Consortium Plan and the approval of reports by the Funding Authority. Parties shall be found only for their tasks carried out in accordance with the Contract.

6.3.2. Management of funding contribution from the Commission

Pre-financing payments are received by the project coordinator and distributed to the partners considering their share of the project budget.

The interim payment and the balance payment will be received by the project coordinator according to the rules set in the Grant Agreement with the Commission upon submission of the interim and final reports.

6.3.3. Audit Certificates

In line with the rules set by the European Commission, an audit certificate is required when the actual costs (personnel costs, other direct costs and subcontracting) are above 430.000 euros. The audit certificate will be requested once only during the project life time at the end of the action. To avoid timing issues, partners above this threshold are strongly advised to get in contact with their auditor in advance and before the end of the last reporting period.

7. RISK MANAGEMENT

7.1. Risk classification

As defined in the Description of the Action, the Consortium has conducted analysis of the risks that may compromise the achievement of the project's objectives. Corrective actions have been defined on the basis of the Work Plan, with the aim of mitigating or eliminating the most probable risks, and risks with the largest negative potential impact on the project's success. Risks that could not be completely eliminated have been studied in detail in order to prepare a reasonable backup plan in case they occur (see Table 1).

Description of risk (level of (L) likelihood, and (S) severity: Low/Medium/High)	Work package(s) involved	Proposed risk-mitigation measures
General delays and global quality lower than expected (L:L, S:H)	ALL	Project management procedures and a dedicated project management team will implement regular monitoring on the performed activities to detect possible problems in advance.
A milestone is missing due to incomplete deliverables, the related work package is delayed. (L:M S:M)	ALL	Strict coordination, reporting and check of deliverables will reduce this risk throughout the project. The Consortium agreements will clearly specify the duties of each partner. If necessary, the PM allocation will be revised to ensure that the failed task is performed as quickly as possible.
Delay and poor quality of the deliverables (L:L, S:H)	ALL	The continuous monitoring performed in WP1 will ensure a timely delivery of planned outputs. A specific deliverable development plan will reduce drastically quality and time issues.
Consortium is too big for an effective management (L:L, S:M)	ALL	Partners have been selected for their experience in research projects. Moreover, several of them are close-knit as they have already worked together in the HEART project. A dedicated project managing team will be set up by POLIMI (with support from FPM) to continuously check the project's progress.
Lack of timely decisions (L:L, S:H)	ALL	The Management Structure and internal communication flows allow for an agile management of the consortium and fast decision-making processes. Periodic working group meetings are foreseen. GANTT chart and milestones draw the timeframe for the developments.
Project results are not tailored for dissemination towards the key stakeholder categories (L:M, S:M)	WP10	The involvement of a highly skilled and experienced partner in C&D activities (REV) will minimize the risk of sending out inappropriate messages to the wrong stakeholders. A sound communication strategy will be implemented.
Objectives are too challenging (L:L, S:H)	ALL	The project's progress will be continuously assessed and fall-back strategies implemented as needed. The management structures will enable partners to follow the progress in the achievement of all the objectives.
Disputes over ownership of IP amongst partners (L:L, S:M)	ALL	The share of responsibility for each single result within project partners has already been clarified. IPR issues will be constantly monitored and addressed when needed
Results do not reach the market (L:L, S:H)	WP8	Industrial partners are strongly committed to innovate and bring their products on the markets. The financials have been explored showing the proximity to the market. A number of activities are foreseen to

		disseminate and communicate the results. Support measures are also provided by the business models.
Technology, environment, and regulation changes (L:M, S:L)	WP2, WP4	The context monitoring and the open-architecture approach prevent these problems.
Unforeseen technical or integration issues discovered during the coupling of components/ technologies (L:H, S:M)	WP4	The project approach is structured with iterative development and validation, to address any technical and integration problem in a time effective manner. The constant monitoring will allow for timely implementation of remedial actions. Moreover, the open architecture of the system, allow the integration of alternative subcomponents to those developed by Consortium partners in the project.
Frequent malfunctions or faults of single subcomponents during operation (H:M, S:L)	WP3, WP4	Advanced market technologies developed by partners within the previous HEART project are used as a basis. The partners involved in this development have sound experience in the field. Testing procedures to assess the long-term reliability of package's subcomponents will be carried out.
Time needed for retrofit is too short (L:H, S:M)	WP1,WP4, WP6, WP8	The planned tasks foresee a sufficient timeframe for implementing innovative designs within the first 12 months. Eventual short delays will not significantly influence the project, due to 42 months duration.
Issues in accessing supplies and materials due to global shortage (L:M, S:H)	WP1,WP4, WP5, WP6, WP7	In case of shortage of supplies, the extended network of the consortium members will allow to access a higher number of suppliers, reducing the risk of single suppliers and quickly adapting missing components with different ones
Market competition and development of more efficient commercial products (L:M, S:M)	WP4, WP5, WP6	Since RE-SKIN toolkit is based on an open architecture, in which alternative subcomponents to those developed in the project can be successfully integrated in the future also by companies not involved in the consortium
The final user has a conservative approach in the use technologies (L:M, S:H)	WP10	Specific actions to overcome the lack of trust in such innovative solutions have been developed in the communication and dissemination plan. Moreover, the Site visits of the demonstration cases will be organised in order to rise the awareness of final user.

Table 1: Risk management table.

The risk management of the project is based on the coexistence of two elements classifying the risks: the likelihood of the risks and the severity of the impact of the risks on project's results. Likelihood is classified according to the chance of the risk to come true and the severity is calculated on the how much it affects project's results.

Therefore, likelihood is classified as follows:

- Low: Very unlikely/low probability to occur
- Medium: May occur
- High: Very likely to occur / expected to occur

On the other hand, severity classification follows these criteria:

- Low: No effect or very limited effect on the project, without changing its achievements.
- Medium: Moderate impact but important project outcomes and main goals are met
- High: Severe consequences on project achievements and, in the worst case, project fail.

7.2. Risk process management

For technical problems related to a specific workpackage, the procedure to be adopted is to highlight the problem to the WP Leader. Depending on the seriousness of the situation, the WP leader may also decide to involve the appropriate Director and should the situation be particularly critical also the rest of the Executive Board, who could as necessary raise the matter at the General Assembly meeting.

The General Assembly has the ultimate authority to solve the problem.

7.3. Specific management risks

7.3.1. Problems concerning partners' performance

In the unlikely event that partners do not perform technical tasks satisfactorily, the issue will most likely first be raised by the Workpackage Leader involved, and reported to the Executive Board who may raise the issue with the General Assembly.

The first actions to be taken will be direct discussions with the partner concerned to correct the inadequacies. If these do not lead to a satisfactory conclusion, the General Assembly will meet to decide on action. Possible sanctions are:

- Sending a formal warning to the partner, addressing the possible negative consequences of the inadequacies;
- Allocation of part of the work to be performed from the partner concerned to another partner in the same WP, with a subsequent transfer of budget.
- Identifying an alternative partner/subject to support the activities, to be funded with the budget assigned to the partner that is not performing properly.

Similar actions could also result if the reporting provided by the partner is considered unsatisfactory. A short time to correct the reporting will be allowed, before more severe sanctions are considered by the General Assembly.

7.3.2. Problems concerning the financial stability of a partner

The consortium has joint technical and financial liability concerning the project. If serious concerns regarding the financial soundness of a partner exist, or a partner is increasingly going into debt, or if the financial situation of the partner changes in a substantially negative way, there is an obligation on the partner to report this to the Project Coordinator.

The Project Coordinator will liaise with the Executive Board to prepare an assessment of the risk to the project, which will then be discussed with the full General Assembly. First, a complete

assessment of the work satisfactorily completed by the partner will be carried out, and, based on the progress reports to date and the advance payments received by the partner, a calculation will be made of the credit or debit of the partner to the EC. Then a direct discussion with the partner concerned will determine the capacity of the partner to carry out the contractual work in the next period.

This will allow the General Assembly to evaluate the risk to the project, both financial and technical. Concerning the financial risk, an evaluation will be made of the risk of providing the next advance payment to the partner. In any case, at this stage an audit certificate for the work done to the date will most likely be requested of the partner.

7.3.3. Change Management

Any modifications that may be required in the work plan must be promptly reported to the Project Management. Requests for modification could come from a particular WP: in this case the WP Leader should report the situation to the Project Coordinator, who will discuss the issue with the General Assembly.

Other instances of change could occur based on general project assessments, carried out as part of the normal management. If the work plan needs to be changed, the Project Coordinator will need to discuss this with the EC. If a Review is imminent, it may be more practical to present the revised situation to the Reviewers, who can then recommend the change as an outcome of the Review.