



Bio-MeGaFuel

Bio Methanol Production via Chemical Looping Gasification Coupled with Membrane Reactors

HORIZON EUROPE GRANT AGREEMENT NUMBER: 101147737

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WP1 – Management and scientific coordination

D1.4: Project Management Plan (PMP)

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Dissemination Level				
PU	Public			
SEN	Sensitive, limited under the conditions of the Grant Agreement			X

Content

Abbreviations.....	2
1. About the updated Project Management Plan	3
1.1. Purpose	3
Updates in PMP:.....	3
1.2. Relation to other Project Documents.....	3
2. Project Facts.....	4
2.1. Participants	4
2.2. Project Duration, budget and EU contribution.....	4
2.3. Contractual Documents.....	4
2.3.1. Grant Agreement (GA)	4
2.3.2. Consortium Agreement (CA)	5
2.4. Work Breakdown Structure	5
2.4.1. Work Packages	5
2.4.2. Deliverables	6
2.4.2.1. Reviewing Process of Deliverables.....	7
2.4.2.2. Deliverable Format	8
2.4.2.3. Delays in Deliverables	8
3. Project Management	8
3.1. Governance Structure and Bodies	9
3.1.1. Project Coordinator (PC)	9
3.1.2. Project Office.....	9
3.1.3. Project Management Board (PMB).....	10
3.1.4. Work Package Leaders	10
3.2. Communication Strategy.....	10
3.2.1. Meetings	11
3.3. Decision-Making Mechanism	11
3.4. Contract Amendments	11
4. Reporting	12
4.1. Technical Periodic Report	12
4.2. Financial Report.....	13

Abbreviations

CA	Consortium Agreement
CINEA	European Climate, Infrastructure and Environment Executive Agency
EC	European Commission
FAIR	Making research data findable, accessible, interoperable and re-usable (FAIR)
GA	Grant Agreement
PC	Project Coordinator
PO	Project officer from CIENA
PMB	Project Management Board
EAP	External Advisory Panel
WP	Work Package
PMP	Project Management Plan
PU	Public
CO	Confidential, only for members of the consortium (including the Commission Services)
ORDP	Open Research Data Pilot
SEN	Sensitive

1. About the updated Project Management Plan

1.1. Purpose

Project Management Plan (PMP) of the Bio-MeGaFuel project outlines the processes required for effective project management, addressing key areas such as intellectual property rights (IPR) and quality control for all deliverables. It also provides comprehensive guidelines and templates for financial reporting, standardizing deliverables and reports for the European Commission (EC), and ensuring timely reporting. Additionally, it includes a payment procedures plan and calendar, along with internal communication protocols.

Key components of the Project Management Handbook include:

- A detailed Gantt chart illustrating the time plan of work packages and tasks
- A comprehensive Work Breakdown Structure (WBS)

The PMP is a dynamic, so-called "living" document, adaptable to the evolving needs of the project. Any updates or revisions will be promptly communicated to all beneficiaries to ensure alignment and clarity.

Updates in PMP:

- There have been some changes in WP leaders due to the change of the staffs. The new WP leaders are included in Table 3.1.
- Table 2.3 has been updated with the status of the deliverables until the submission date of this updated PMP

1.2. Relation to other Project Documents

In the event of any discrepancies or conflicts between documents, the Grant Agreement (GA) of the Bio-MeGaFuel project, including its annexes, and the Consortium Agreement (CA) of the Bio-MeGaFuel project, along with its addendums, take precedence over this PMP.

2. Project Facts

2.1. Participants

The Bio-MeGaFuel project adopts a highly interdisciplinary approach, integrating expertise from engineering, thermodynamics, chemistry, manufacturing, modelling, business, and economics. The consortium comprises nine partners and one affiliated entity spanning five EU countries: Sweden, The Netherlands, Germany, Spain, and Denmark. This diverse consortium of the Bio-MeGaFuel project includes five companies, three research centres, and two universities.

Table 2.1 shows a list of participants in the Bio-MeGaFuel project. The list of participants is also included in the GA and the CA.

Table 2.1 List of participants in the Bio-MeGaFuel project

Participant No.	Participant organization name	Short name	Country
1 (Coordinator)	RISE RESEARCH INSTITUTE OF SWEDEN	RISE	SE
2	GIDARA ENERGY	GID	NL
2.1	GIDARA Energy Technology Solutions	GIDynamics	NL
3	TECHNISCHE UNIVERSITÄT DARMSTADT	TUDA	DE
4	EINDHOVEN UNIVERSITY OF TECHNOLOGY	TUE	NL
5	SPANISH NATIONAL RESEARCH COUNCIL	CSIC	ES
6	IVL SWEDISH ENVIRONMENTAL RESEARCH INSTITUTE	IVL	SE
7	PERPETUAL NEXT	PNB	NL
8	1CUBE	1CUBE	NL
9	BLUE WORLD TECHNOLOGY	BWT	DK

2.2. Project Duration, budget and EU contribution

The Bio-MeGaFuel project started on 1st September 2024 and will run for 48 months until the 31st of August 2028. The project has an overall budget of €3,797,326.25 with a maximum funding of €3,797,326.25 from EU (100% funding).

The budget detailed per beneficiary and the corresponding EU contribution to each beneficiary is detailed in Annex 2 to the GA– Estimated budget of the action. The pre-financing payment(s) remain the property of the EU until the payment of the balance (approval of final report and final payment) is cleared against the eligible costs accepted by the Commission/Agency.

2.3. Contractual Documents

2.3.1. Grant Agreement (GA)

Grant Agreement with the European Commission (EC): No. 101147737. The GA is the funding agreement concluded between the European Commission and the project participants. The GA specifies the rights and obligations of the contracting parties. It contains, among other things, information about criteria for the eligibility of costs and provisions for handling intellectual property rights. The GA consists of:

- Terms and Conditions
- Annex 1 Description of the action
- Annex 2 Estimated budget for the action
- Annex 3 Accession Forms
- Annex 4 Model for the financial statements
- Annex 5 Model for the certificate on the financial statements
- Annex 6 Model for the certificate on the methodology

The GA and all its Annexes are accessible to all participants of the Bio-MeGaFuel project, which are shared on the shared point on Microsoft Teams in the “GA” folder.

2.3.2. Consortium Agreement (CA)

The CA is an internal contract which was signed and agreed upon by all members of the consortium. It establishes the internal rules for project management, outlines the consortium's organizational structure, and defines the procedures for decision-making. In the event of any discrepancies, the GA takes precedence over the CA.

The CA is readily accessible to all participants via the Bio-MeGaFuel project's shared point on Microsoft Teams, located in the “CA” folder.

2.4. Work Breakdown Structure

The project adheres to the tasks, activities, and schedule outlined in the Description of Action (Annex 1 to the GA).

2.4.1. Work Packages

The workflow and interconnections between work packages are illustrated in the PERT chart in *Figure 1*

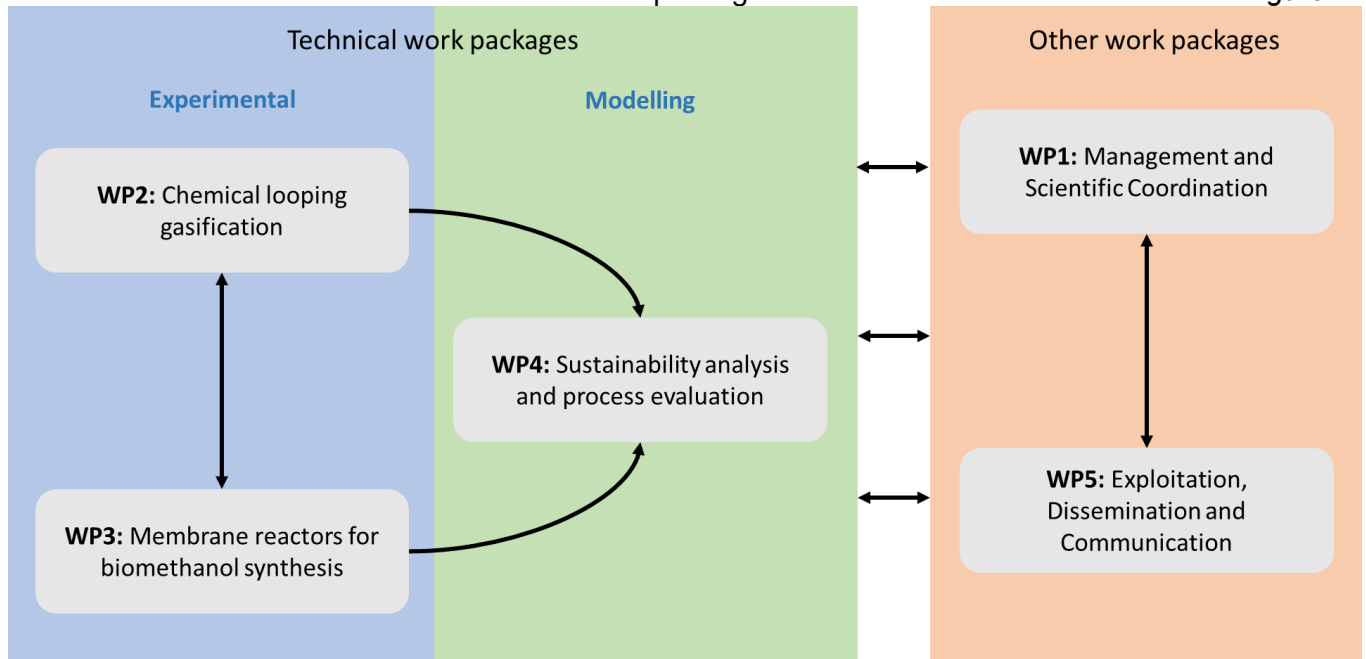


Figure 1. PERT Chart illustrating the structure of the Bio-MeGaFuel project

Each Work Package (WP) has a WP leader, who oversees the technical progress in order to ensure that WP goals are met on time and within budget restrictions and reports research progress to the PMB and Project Coordinator (PC). The list of WPs and WP Leaders are presented in Table 2.2.

Table 2.2 List of WPs and WP Leaders

WP number	WP Title	Lead Participant Short Name	Start Month	End month
1	Management and scientific coordination	RISE	M1	M48
2	Chemical looping gasification	TUDA	M1	M45
3	Membrane reactors for bio methanol synthesis	TUE	M1	M42
4	Process evaluation and sustainability analysis	RISE	M22	M48
5	Exploitation, Dissemination and Communication	IVL	M1	M48

Each WP leader will report project progress to the PC in a monthly meeting. This will cover technical progress, results, deliverables and compliance with the WP, as well as the monitoring and updating of the possible identified risks. Progress of the Tasks will be reported in terms of percentage of completion and estimated time to completion, deviations from agreed time scales and corrective actions. The PC will summarise the overall project progress.

2.4.2. Deliverables

Deliverables serve as key monitoring tools for continuous reporting. Each deliverable must be completed according to the specified timeline in the Description of Action (DoA) of the GA. The list of deliverables and lead participant in each deliverable is summarized in **Table 2.3**.

Table 2.3 List of Deliverables

Deliverable (number)	Deliverable name	WP	Lead participant	Type	Dissemination level	Delivery date	Status
D1.1	Project Management Plan	1	RISE	R	SEN	M6	Submitted
D1.2	Ethic issues	1	RISE	ETHICS	SEN	M6	Submitted
D1.3	Initial data Management Plan	1	RISE	DMP	PU	M6	Submitted
D1.4	Updated Project Management Plan 1	1	RISE	R	SEN	M17	To be submitted
D1.5	Updated Project Management Plan 2	1	RISE	R	SEN	M35	
D2.1	Selection of biogenic feedstock	2	GID	R	PU	M3	Submitted
D2.2	Characterization of selected biogenic residues	2	PNB	R	PU	M6	Submitted
D2.3	Results of HTW pilot tests	2	TUDA	R	SEN	M21	In progress
D2.4	Results of continuous CLG tests with selected biogenic fuels	2	CSIC	R	PU	M21	In progress
D2.5	Results of 1 MW CLG pilot tests	2	TUDA	R	PU	M36	
D2.6	Gasification kinetic data of selected biogenic fuels	2	CSIC	R	PU	M27	
D2.7	Validation of HTW model with 500 kW _{th} pilot data	2	GID	R	SEN	M33	
D2.8	Validation of 1.5D CLG model with 1 MW _{th} CLG pilot data	2	CSIC	R	SEN	M39	
D2.9	Comparison of CLG with HTW as gasification technology	2	GID	R	SEN	M45	
D3.1	Report on catalyst and membranes selection	3	TUE	R	SEN	M18	In progress
D3.2	Report on lab scale biomethanol production	3	TUE	R	SEN	M27	
D3.3	Report on biomethanol synthesis demonstration at TRL 5	3	TUE	R	SEN	M42	
D4.1	Report for mass and energy balance for the production plant	4	RISE	R	PU	M45	
D4.2	Report on the techno-economic assessment of the production plant	4	RISE	R	PU	M48	

D4.3	Report on preliminary sustainability assessment of developed technologies	4	RISE	R	PU	M40	
D4.4	Comparative environmental and social sustainability report of developed technologies	4	IVL	R	SEN	M45	
D4.5	Comparison of technoeconomic assessment and LCA of process schemes based on CLG and HTW	4	GID	R	SEN	M48	
D5.1	Report on scenarios of production and market potentials	5	IVL	R	PU	M12	Submitted
D5.2	Report on current and conceptual value chains and business models for bio-methanol production	5	IVL	R	PU	M24	
D5.3	Report on factors impacting effective replication of the biomethanol production solution for the demo site countries	5	IVL	R	PU	M36	
D5.4	Exploitation roadmap	5	IVL	R	PU	M45	
D5.5	Project logo and set of public documents templates	5	1CUBE	R	PU	M2	Submitted
D5.6	Public project website	5	1CUBE	R	PU	M2	Submitted
D5.7	Dissemination and Communication Plan updated	5	1CUBE	R	PU	M3	Submitted
D5.8	Dissemination video 1	5	1CUBE	R	PU	M6	Submitted
D5.9	Dissemination and Communication Plan updated 1	5	1CUBE	R	PU	M12	Submitted
5.10	Dissemination activities 1	5	1CUBE	R	PU	M18	In progress
5.11	Dissemination and Communication Plan updated 2	5	1CUBE	R	PU	M24	
5.12	Dissemination activities 2	5	1CUBE	R	PU	M36	
5.13	Dissemination and Communication Plan updated 3	5	1CUBE	R	PU	M42	
5.14	Dissemination video 1	5	1CUBE	R	PU	M45	
5.15	Dissemination activities 1	5	1CUBE	R	PU	M48	

2.4.2.1. Reviewing Process of Deliverables

To ensure high-quality results, all deliverables undergo a peer review process conducted by at least one expert nominated by the PC in collaboration with project partners. The internal review procedure follows these steps:

- 1) Outline on Teams: two months before the deliverable submission deadline;
- 2) Reviewers are appointed: four weeks before the deliverable submission deadline;
- 3) First Draft on Teams: The complete first draft is uploaded four weeks before the submission deadline;
- 4) Draft Comments: Reviewers provide comments two weeks before the submission deadline;

- 5) Revised Draft on Teams: A second draft, incorporating feedback, is shared with the PC and relevant consortium members one week before the submission deadline; and
- 6) Submission: The final version is submitted by the PC as per the timeline.

This structured review process ensures that deliverables meet the required standards of quality and alignment with project goals.

2.4.2.2. Deliverable Format

The standard deliverable template developed by 1CUBE must be used for all deliverables. This template is available on the Bio-MeGaFuel project's shared point on Microsoft Teams, located in the "WP5" folder.

2.4.2.3. Delays in Deliverables

The WP leader must promptly notify the PC of any anticipated delays. In such cases, the WP leader will discuss the situation with the PC (Dr. Amir Soleimani Salim) and collaborate with the lead partner responsible for the deliverable to:

- 1) Analyze the cause of the delay;
- 2) Develop a plan to address the issue;
- 3) Define a revised submission date; and
- 4) Present a contingency plan to the PC.

If a delay occurs, the PC will notify the Project Officer (PO) as soon as possible to ensure transparency and minimize impact.

3. Project Management

All consortium partners share full technical and financial responsibility for the management tasks assigned to them as part of the project. These management tasks include:

- Ensuring that the project's primary objectives are achieved within the agreed timeframe and budget;
- Coordinating and organizing the project's activities;
- Establishing and maintaining effective communication flow;
- Monitoring project progress, controlling planning, and ensuring the quality of deliverables;
- Defining and implementing decision-making procedures;
- Resolving conflicts that may arise during the project; and
- Ensuring compliance with European Commission (EC) rules and regulations.

The management responsibilities are distributed among the organizational bodies established for the Bio-MeGaFuel project, as illustrated in *Figure 2*.

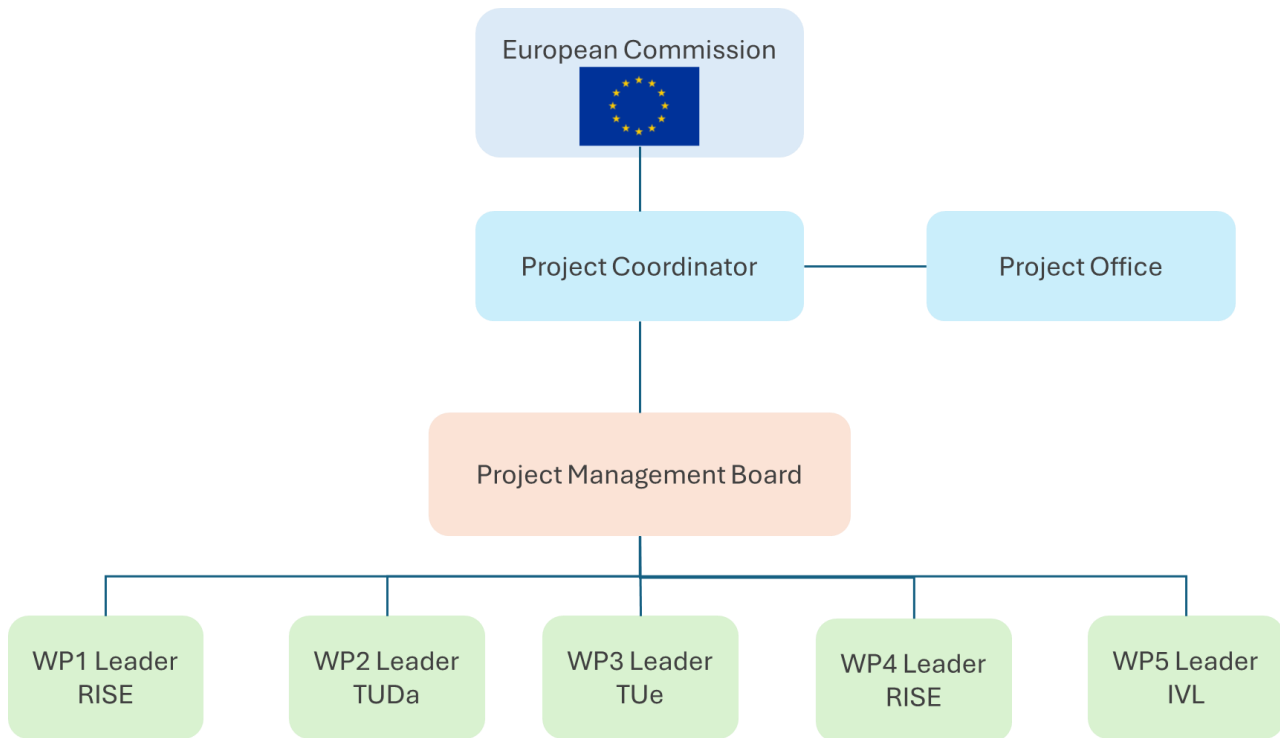


Figure 2. Management structure

3.1. Governance Structure and Bodies

3.1.1. Project Coordinator (PC)

RISE serves as the PC, holding overall responsibility for managing communications between the project partners and the European Commission (EC). Dr. Amir Soleimani Salim (RISE) is the primary PC, supported by Dr. Huong Nguyen (RISE) as the assisting coordinator.

Responsibilities of the PC are:

- Organizing Project Management Board (PMB) meetings, as well as setting up and circulating the meeting agendas;
- Monitoring compliance, reporting and follow-up on the work plan;
- Follow-up of continuous reporting to EC (deliverables including reports and financial statements);
- Supervising and ensuring the information flow among all participants about the project's progress;
- Financial control (partners payments management). Expense monitoring and budget allocation.
- Leading innovation management of the project results; and
- Establish a Data Management Plan for the project in close cooperation with the project partners.

3.1.2. Project Office

The Project Office is led by Dr. Amir Soleimani Salim (RISE) as the overall Project Coordinator, supported by Dr. Huong Nguyen (RISE) as the Assisting Coordinator, and a Project Controller (to be decided) (RISE).

Under the supervision of the primary PC, the Project Office is responsible for the following tasks:

- Managing the flow and delivery of administrative and financial documents within the consortium;
- Overseeing the submission of deliverables and reports to the EC;
- Ensuring proper filing and organization of all documentation related to the GA, the CA, and financial records;

- Co-organizing all project meetings and maintaining effective communication throughout the consortium;
- Acting as a permanent contact point for the project and all partners, addressing any relevant requests regarding their participation in the project; and
- This structure ensures efficient administration and communication within the project consortium.

3.1.3. Project Management Board (PMB)

The PMB is responsible for making high-level management decisions within the framework of the GA and CA. This includes overseeing the regular monitoring of day-to-day technical work. Additionally, the PMB serves as an effective communication hub, facilitating the exchange of information across the various WPs to support the implementation and execution of the project. The PMB also provides advice and support to the PC on operational and management matters.

The PMB is composed of one representative from each partner in the consortium and is chaired by the PC from RISE.

PMP will meet at least once every six months during the consortium meetings. If any additional meeting is needed for PMP, the meeting will be via video or audio conferences. These meetings will be organized by the PC.

3.1.4. Work Package Leaders

The WP Leaders are responsible for managing the day-to-day execution of their respective work packages. They oversee the technical progress to ensure that WP objectives are achieved on time and within budget, and are responsible for reporting progress to the PC and the PMB through periodic reports and monthly meetings.

The WP leader's responsibilities include organizing necessary WP-level meetings, monitoring technical progress, ensuring the delivery of results and deliverables, and ensuring compliance with the Work Program. Progress will be reported in terms of completion percentage, estimated time to completion, deviations from agreed deadlines, and any necessary corrective actions.

The PC will compile an overall project progress summary, updating planning charts and manpower records.

WP Leaders are listed in Table 3.1.

Table 3.1 WP Leaders of the Bio-MeGaFuel project

WP	WP Title	Leader	Lead Organization
1	Management and scientific coordination	Amir Soleimani Salim	RISE
2	Chemical looping gasification	Jochen Ströhle	TUDa
3	Membrane reactors for bio methanol synthesis	Gaetano Anello	TUe
4	Process evaluation and sustainability analysis	Sennai Mesfun	RISE
5	Exploitation, Dissemination and Communication	Ali Hedayati	IVL

3.2. Communication Strategy

Proper internal communication is key for the successful implementation of the project. Informal day-to-day communication will be done mainly by e-mail or via Teams chat. Teleconferences will be organized to discuss specific issues.

All necessary information (reports, deliverables, relevant results) will be made available, via the use of online storage/distribution tool (Shared point of the Bio-MeGaFuel project on Microsoft Teams), to all partners of the project.

These will include:

- Information on project organization and planning, WPs' description, key figures, deliverables, milestones, and reports;
- Partnership information such as contact persons with their function in the project, WP members and pre-defined mailing list;
- Document repository where in progress documents (e.g., reports and deliverables) will be made available to the partners to monitor their progress; and
- Process specific documents such as cost declarations.

All information circulated will be treated as consortium confidential unless stated as public.

3.2.1. Meetings

Consortium Meetings: PMB will meet at least every six months, with the participation of all consortium partners. Any consortium member may appoint a substitute to attend and vote on their behalf. Additionally, the consortium meetings may be held online, in person or hybrid, if necessary. In the case of physical meetings, the meetings will rotate among the locations of the core partners. The WP and task Leaders are expected to report the progress to the PMB and PC during the consortium meetings

Monthly Project Meetings: Monthly online project meetings will be held on the third Wednesday of each month from 10:00 to 11:00 CET. These meetings are designed to follow up on and plan activities within the WPs. The meetings will take place on Microsoft Teams, and WP Leaders are expected to report on the work completed and progress relative to the plan.

WP meetings: WP-level meetings, bilateral or multilateral, will take place online or face to face according to necessity.

Minutes of meetings and other relevant documents for the meeting, including the slides, will be uploaded on the shared point of the Bio-MeGaFuel project on Microsoft Teams.

3.3. Decision-Making Mechanism

As mentioned in section 6.3.4 in the CA, each Consortium Body (e.g. General Assembly and Scientific Committee) shall not deliberate and/or take decisions validly unless two-thirds (2/3) of its members are present or represented (quorum). The chairperson (the PC) shall give written notice of a meeting to each Member as soon as possible and no later than 14 calendar days preceding an ordinary meeting and 7 calendar days preceding an extraordinary meeting. If the quorum is not reached, the chairperson of the Consortium Body shall convene another ordinary meeting within fifteen (15) calendar days. If in this meeting the quorum is not reached once more, the chairperson shall convene an extraordinary meeting which shall be entitled to decide even if less than the quorum of members is present or represented.

3.4. Contract Amendments

Amendment to the contract will be handled based on the procedures elaborated in the CA and the GA. The information below is intended as a reminder.

Any modifications regarding the project work plan included in the GA, or in the partner's budget, or regarding the representatives authorized to sign contractual documents shall be communicated to the Management Committee and to the Scientific Committee when related to a specific WP.

The request for amendment must include:

- The reason explaining why the amendment is needed;
- The revised document; and
- The appropriate supporting documents.

At any time, the EC may request additional information.

Once the EC agrees with the requested changes, the Management Committee will implement the changes.

4. Reporting

The project is divided into three reporting periods, each covering different stages of the project:

- Reporting Period 1: Month 1 to Month 18
- Reporting Period 2: Month 19 to Month 36
- Reporting Period 3: Month 37 to Month 48

Submission of Reports: Within 60 days after the end of each reporting period, the consortium is required to submit a comprehensive report to the EC. This submission consists of two parts:

- Technical Periodic Report
- Financial Report

Both reports must be submitted through the Research Participant Portal (<https://ec.europa.eu>) using the EC's online tool.

In addition, every six months, in each consortium meeting, the partners will provide the PMB and PC with both a financial and technical report. These reports will help the PMB and the PC identify any deviations or potential issues that may arise.

4.1. Technical Periodic Report

Periodic reports will be due to the EC 60 days after the closure of the reporting periods defined in the GA (See section above). The Periodic Report consists of:

- Explanation of the work carried out by the beneficiaries;
- Overview of the progress towards the objectives of the action, including milestones and deliverables;
- Justifications about the main cost items per Beneficiary will be also needed; and
- Deviations, in terms of technical development and costs, from project plan.

The flowchart to produce the Periodic Report is set as follows (see Figure 3):

- Four (4) weeks before the end of the reporting period, all Beneficiaries and WP Leaders will be reminded by the Management Committee to provide their contribution accordingly to the predefined template;
- WP Leaders will have five (5) weeks to collect and consolidate the contributions from the different Beneficiaries prior to sending them to the PC;
- The so-received contribution will be evaluated and consolidated by the PC who will produce a first draft within 15 calendar days;
- The draft will be made available (1 week) for the partners to address eventual remarks from the PC; and
- Upon validation by the PC, the Periodic Report will be provided to the EC. The Administrative Manager will also inform the Beneficiaries of the finalization of the Periodic Reports and provide them with a final version.

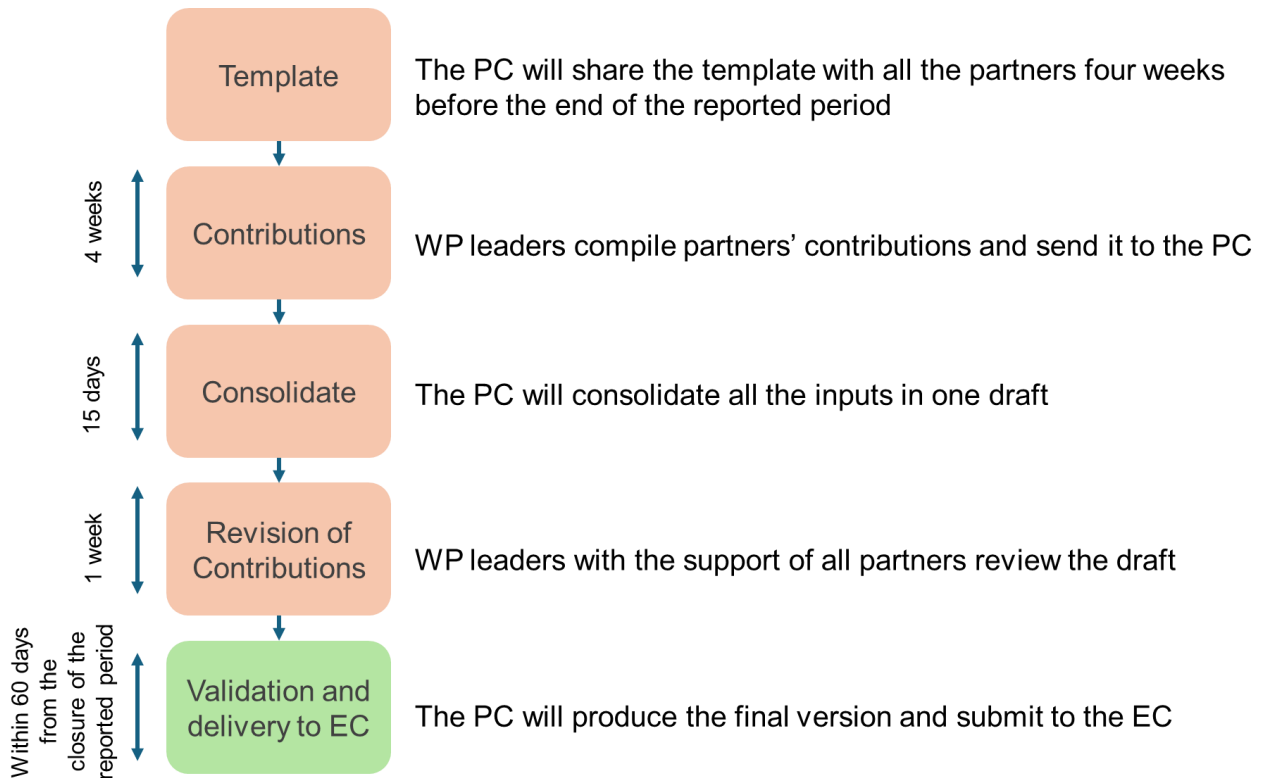


Figure 3. Flowchart of preparing a technical report

4.2. Financial Report

The Financial Periodic Report will provide detailed information on the main costs and efforts spent by the different Beneficiaries during the reported period. Financial report will be filled in, on the EC portal, and submitted by the individual Beneficiaries.

To ensure an adequate reporting the following rules apply:

- Partners must keep receipts, time sheets and other proofs of payment for 5 years following the last payment received; and
- Partners must document time spent on the project via timesheets which must include:
 - Full name of the beneficiary, full name and signature of the employee directly contributing to the project;
 - Title of the project, project number;
 - Periodicity of data entry (daily, weekly or monthly);
 - Number of hours claimed per WP for the project;
 - Full name and signature of the employee and the supervisor (person in charge of the project); and
 - Coherency with absences for holidays, illness, etc.

Timeline for delivering the financial report is described in Figure 4.

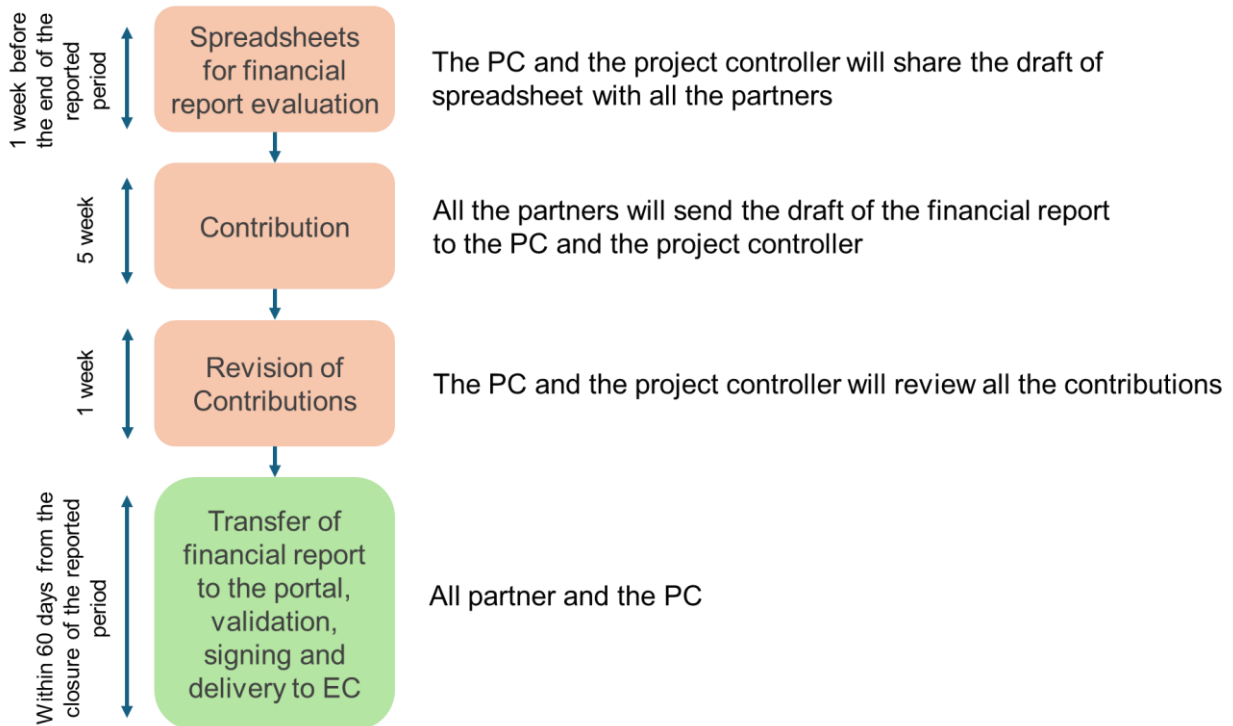


Figure 4. Timeline for preparation and submission of Financial Report.

If required (as from Art. 24 of GA) final financial report will need to be accompanied by a Certificate of Financial Statements (CFS).