

SteamDry

D1.1. Quality Management Plan QMP

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GRANT AGREEMENT NUMER: 101137906

PROJECT NAME: Superheated steam drying for sustainable and recyclable web-like materials

PROJECT ACRONYM: SteamDry

EXECUTIVE SUMMARY

This Quality Management Plan (QMP) is a deliverable report for the SteamDry project. The report determines the management structure and procedures implemented in the project to facilitate the coordination and communication between different management structures, support the decision-making and ensure the reporting and execution quality in the project activities.

The management structure in the SteamDry project is composed of the General Assembly (GenA), Executive Board (EB), External Advisory Board (EAB) and Coordinator. The Project Coordinator, VTT, is responsible for the overall coordination and management of the project and for communication with the European Commission (EC), within the consortium as well as with external bodies of the consortium. The project management includes all administrative, financial, and contractual issues and ensures compliance of the project with the Grant Agreement. The coordinator represents the project beneficiaries to the European Commission.

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1 Introduction

The deliverable D1.1 Quality Management Plan is created to establish a quality management system for the SteamDry consortium and contribute high quality reporting and implementation throughout the project. The targets of the QMP are to ensure:

- i) management of project related documentation,
- ii) monitoring and quality control of project deliverables and milestones, and
- iii) risk contingency management.

In this QMP, management of project documentation is allocated only from the aspects of storing project documents and ensuring qualified reporting. It will be used to prevent possible deviations from the Work Plan and to grant deliverables of high quality. Data management, collection and processing are described more specifically in a separate deliverable report, the Data Management Plan (D.1.3, M6 and updated version D2.1, M24).

This QMP consists of the information about the SteamDry project, the management structure, and the quality management processes. The plan is based on the guidelines of the European Committee on quality management and on the Grant Agreement (GA) and Consortium Agreement (CA) of the project. These agreements are supported by the QMP, but not overruled or replaced. Primarily the QMP is meant to be used by the SteamDry consortium members but can also offer example of best practices in quality management to beneficiaries of other collaborative research projects.

The use of the present plan can ensure better collaboration among the Consortium Partners, individuals and groups.

1.1 Project documentation quality

Quality management activities ensure that:

- Deliverables are prepared to meet agreed-upon standards and requirements.
- Research processes are performed efficiently as required and regularly documented and reported.
- Non-conformities found are identified and appropriate corrective actions are taken.

Quality Management Plan apply to Project deliverables and Project research processes.

Quality control (QC) activities monitor and verify that Project deliverables meet defined quality standards.

Quality assurance (QA) activities monitor and verify that the processes used to manage and create the deliverables are followed and are effective.

1.2 Quality Plan Components

The Quality Management Plan describes the following quality management components:

- Quality objectives
- Key Project deliverables and processes to be reviewed for satisfactory quality level
- Quality standard
- Quality control and assurance activities
- Quality roles and responsibilities
- Quality tools
- Plan for reporting quality control and assurance problems

1.3 Purpose

As integral part of SteamDry Project Management Plan, the Project Quality Management Plan is intended to provide a solid ground for successful, timely and quality implementation of the Project activities. It forms a common standard to be applied and followed throughout the entire Project life.

For the purpose, it defines the set of procedures to be followed in order to secure that:

- The GA requirements and conditions have been fully applied and followed by all Partners
- The EU/national rules and procedures are taken into account in operational, administrative and financial management
- All rights and obligations defined in the Consortium Agreement are fulfilled
- All Project activities are realized in accordance with the Work Plan and assigned budget

The purpose of developing a quality plan is to match EU expectations in terms of quality and prepare a proactive quality management plan to meet those expectations. The Quality Management Plan helps the Executive Board, Coordinator and project partners to determine if deliverables are produced to an acceptable quality level and if the Project processes, used to manage and create the deliverables, are effective and properly applied.

1.4 SteamDry project

The SteamDry project will radically reduce drying energy consumption and CO₂ emissions in paper and board manufacturing industry through demonstrating a concept leading to 60 % energy savings in thermal drying and 40 % energy savings on a production line and up to 100 % CO₂ emission reduction. Technology has a good replication potential in e.g., mechanical wood processing and food manufacturing industries. These goals will be obtained by digitizing and implementing superheated steam drying technology (SSD).

The main objectives in SteamDry are to:

- 1) Develop drying technology that saves over 60 % drying energy compared to BAT.
- 2) Develop a CO₂-emission free drying process.
- 3) Develop advanced control system for SSD dryer.
- 4) Pilot the SSD process for web-like products
- 5) Create environmental and techno-economic assessment of the SSD
- 6) Evaluate business potential for various product manufacturing sectors
- 7) Communicate, disseminate and exploit the outcomes of the project to relevant stakeholders to increase awareness of the new technologies, products, and associated opportunities.

Specific impacts of the project are:

- 1) Increasing the energy efficiency of energy intensive industrial processes by reducing energy use by at least 30 % and the process as compared to current state of the art.
- 2) Enabling the techno-economic feasibility of novel technologies and processes, validated and demonstrated at suitable scale against state-of-the-art industrial processes.
- 3) Enabling the potential of an increased use of renewable energy and become independent from fossil fuel and fossil fuel imports as put forward in the REPowerEU Plan.

1.5 General project information

The SteamDry project, funded by the Horizon Europe Framework Programme (HORIZON) under the call HORIZON-CL4-2023-TWIN-TRANSITION-01: Energy efficiency breakthroughs in the process industries, is a 3.5-year project with a total budget of over 9,8 million €. The project consortium consists of 17 partners: Teknologian Tutkimuskeskus VTT Oy (VTT; Coordinator), AIT Austrian Institute of Technology GmbH (AIT), VDEh Betriebsforschungsinstitut GmbH (BFI), Stichting Wageningen Research (WR), Valmet Technologies (VAL), Metsä Spring Oy (MES), METSALIITTO COOPERATIVE (Metsä Wood) (MEW), Metsä Board Corporation (MEB), AHLSTROM-MUNKSJÖ SPECIALTIES (AHLFR), Ahlstrom (AHLFI), Sappi (SAP), Sofidel SPA (SOF), Piller Blowers & Compressors GmbH (PIL), Fundación Empresa-Universidad Gallega (FEU), Universidade de Santiago de Compostela (USC), Smurfit Kappa Paper Services BV (SMU), University of Twente (UT). General project information of the SteamDry is shown in Table 1.

Table 1: General project information.

Action full title	Superheated steam drying for sustainable and recyclable web-like materials
Short name	SteamDry
Call & topic	HORIZON-CL4-2023-TWIN-TRANSITION-01-31
Type of action	HORIZON-RIA
Granting authority	European Health and Digital Executive Agency
Grant Agreement No	101137906
Starting date	01.01.2024
Project duration	42 months
Coordinator	Teknologian Tutkimuskeskus VTT Oy (VTT)
Maximum grant	9 843 168.48 €

2 Management structure

2.1 Management structure

The goal is to ensure that the overall management, administration, coordination and execution of the project, that the project progresses, and that results are achieved in accordance with the Grant Agreement (GA)

This is achieved via the following tasks:

- T1.1 Managing consortium operations
This Quality Management Plan (QMP, D1.1) is developed to ensure i) management of project-related documentation, ii) monitoring and quality control of project deliverables and milestones, iii) risk contingency management. **(THIS DOCUMENT)**
- T1.2 Financial and Administrative Management
- T1.3 Ethics Management (and RRI)
- T1.4 Data management

The management structure of the project is presented in Figure 1 Figure 1.

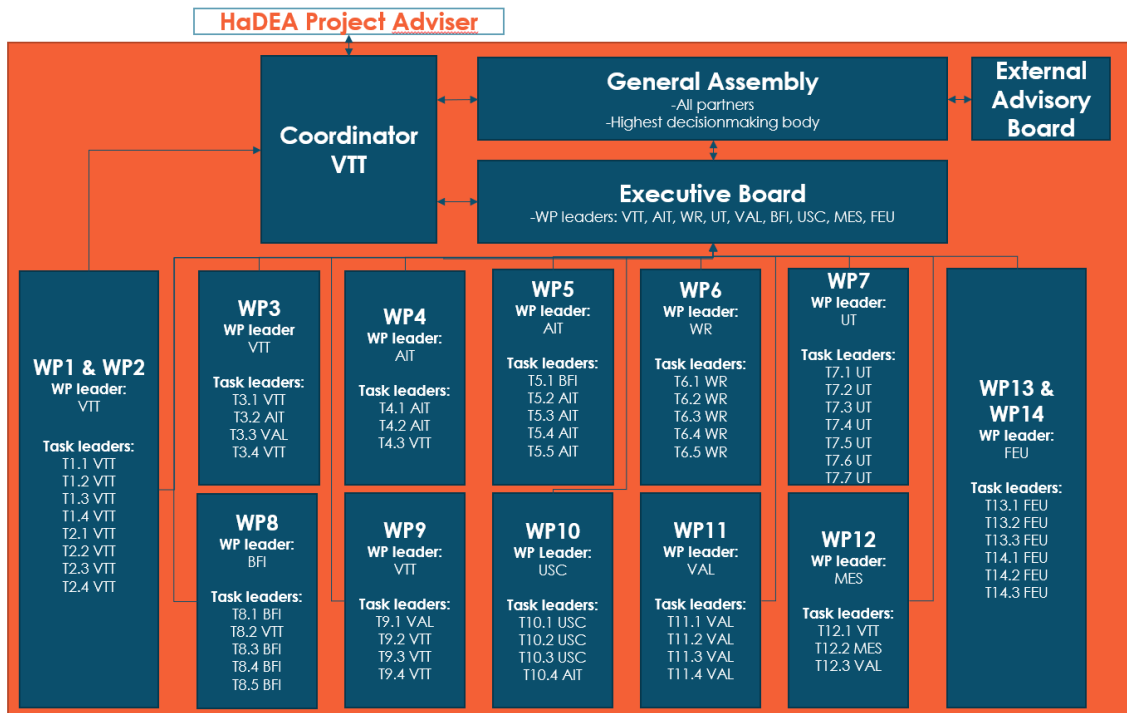


Figure 1: Management structure of the SteamDry project.

2.2 Management bodies

General Assembly is the highest decision-making body of the consortium

The General Assembly shall consist of one representative of each Party (hereinafter referred to as “Member”). Member should be present or represented at any meeting and Member may appoint a substitute or a proxy to attend and vote at any meeting.

The chairperson shall produce minutes of each meeting which shall be the formal record of all decisions taken.

The **Executive Board** as the supervisory body for the execution of the Project, which shall report to and be accountable to the General Assembly.

Minutes of Executive Board meetings, once accepted, shall be sent by the Coordinator to the General Assembly Members for information.

The **Coordinator** is the legal entity acting as the intermediary between the Parties and the Granting Authority. The Coordinator shall, in addition to its responsibilities as a Party, perform the tasks assigned to it as described in the Grant Agreement and the Consortium Agreement.

General Assembly can decide:

Content, finances and intellectual property rights

- Proposals for changes to Annexes 1 and 2 of the Grant Agreement to be agreed by the Granting Authority
- Changes to the Consortium Plan
- Modifications or withdrawal of Background in Attachment 1 (Background Included)
- Additions to Attachment 3 (List of Third Parties for simplified transfer according to Section 8.3.2)
- Additions to Attachment 4 (Identified Entities under the same control)

Evolution of the consortium

- Entry of a new Party to the Project and approval of the settlement on the conditions of the accession of such a new Party
- Withdrawal of a Party from the Project and the approval of the settlement on the conditions of the withdrawal
- Proposal to the Granting Authority for a change of the Coordinator
- Proposal to the Granting Authority for suspension of all or part of the Project
- Proposal to the Granting Authority for termination of the Project and the Consortium Agreement

Detailed meeting plan for General Assembly & consortium meetings is presented in Table 2Table 2.

Table 2: Meeting plan for General Assembly and consortium meetings.

Project Month	Report	Meeting
0		M1 General assembly #1 – VTT
6		M6 General assembly #2 - AIT
12		M12 General assembly #3 - Teams
18	Periodic technical report #1	M18 General assembly #4 - FEU
24		M24 General assembly #5 - AHL
30		M30 General assembly #6 - Teams
36	Periodic technical report #2	M36 General assembly #7 - SOF
42	Periodic technical report #3	M42 General assembly #8 - BFI

Meeting marked red to be agreed in following General Assembly meetings, only tentative.

Executive Board shall:

- support the Coordinator in preparing meetings with the Granting Authority and in preparing related data and deliverables
- prepare the content and timing of press releases and joint publications by the consortium or proposed by the Granting Authority in respect of the procedures of the Grant Agreement Article 17 and Annex 5 Section “Communication, Dissemination, Open Science and Visibility” and of Section 8 of this Consortium Agreement
- assess consolidated Internal Progress Reports received from each work package leader
- confirm the status of completion of the work packages
- evaluate suggestions from work package leader(s) for restructuring the work within a work package or between work packages, as well as suggestions for reallocating Parties’ budget shares (through an amendment to Annex 2 of the Grant Agreement) and proposing the respective decisions to the General Assembly
- prepare the periodic reporting together with the Coordinator
- inform the General Assembly of an alleged breach in performance or reporting (see Section 4.5) within the breach procedure under Section 4.2
- propose to the General Assembly to define additional performance indicators for the determination of proper completion of work packages.

The Coordinator shall be responsible for:

- monitoring compliance by the Parties with their obligations under the Consortium Agreement and the Grant Agreement
- keeping the address list of Members and other contact persons updated and available



- collecting, reviewing to verify consistency and submitting reports, other and specific requested documents to the Granting Authority
- preparing the meetings, proposing decisions and preparing the agenda of General Assembly meetings, chairing the meetings, preparing the minutes of the meetings and monitoring the implementation of decisions taken at meetings
- transmitting promptly documents and information connected with the Project to any other Party concerned
- administering the financial contribution of the Granting Authority and fulfilling the financial tasks described in Section 7.2
- providing, upon request, the Parties with official copies or originals of documents that are in the sole possession of the Coordinator when such copies or originals are necessary for the Parties to present claims.

Each party has following responsibilities:

- Each Party undertakes to take part in the efficient implementation of the Project, and to cooperate, perform and fulfil, promptly and on time, all of its obligations under the Grant Agreement and the Consortium Agreement
- Each Party undertakes to notify promptly the Granting Authority and the other Parties, in accordance with the governance structure of the Project, of any significant information, fact, problem or delay likely to affect the Project.
 - Some deviations and problems are inevitable in all projects → when there is a problem, don't hide it but inform the Coordinator and those involved!
- Each Party shall promptly provide all information reasonably required by a Consortium Body, by the Coordinator or by a work package leader to carry out its tasks and shall responsibly manage the access of its employees to the EU Funding & Tenders Portal.

The **External Advisory Board (EAB)** will bring an understanding of the operational environment with special expertise and perspective of the end users to the General Assembly. The board will advise on innovation management in relation to project developments and applications in order to achieve sound scientific results and the outmost commercial impact with the dissemination of SteamDry results. EAB will be completed by M6.

3 Project documentation

3.1 Project documents preparation

The following principles shall apply to documents preparation:

- All documents shall be written using the standard format herewith supplied.
- All Partner shall ensure the maximum level of quality while preparing the documents.
- All the documents used for dissemination shall have the approval of Coordinator and Work Package leader of the deliverable.
- The Project Executive Board is in charge to check that documents comply with the proposed formats.
- All documents produced for the dissemination shall have the logo of EU and SteamDry.

All documents and reports produced within the SteamDry-project are expected to satisfy the following quality criteria:

- To respond qualitatively to objectives set in the Project Management Plan
- To be started and delivered within the time frame set in the Work Plan

- To be approved by the relevant management structure as defined in this Project Quality Management Plan
- To satisfy the visual identity requirements, i.e. to be presented in corresponding templates provided.

3.2 Internal reporting

Monthly Teams calls (2nd Tuesday of the month) are arranged for the whole consortium to follow the progress of the project. After M6 the frequency of monthly calls can be adjusted by the decision of the Executive Board. Executive Board Teams calls (for WP-leaders) are arranged one week before consortium call (1st Tuesday of the month). For each WP-meetings additional ones will be arranged on a need basis, mostly in Teams, invite is sent to all (optional/required separated) and agenda is added to invite. This ensures that all partners can follow project.

Progress of each work package and task (if relevant) will be presented by using a template which summarizes the following subjects:

- Latest activities, what has happened since the last meeting in WP level
- Highlights
- Collaboration activities
- Future plans focusing on period until the next meeting
- Coming Deliverables and Milestones (focus within next period)
- Possible problems (if any) and plans to overcome them

Based on the material in the summary templates the Coordinator together with Executive board will form a structure for the internal progress report which will be a baseline for the Technical report (see chapter 3.3).

In order to link internal communication with the management structure and reporting, three mailing lists have been created for the whole consortium, for the Executive Board and for the General Assembly members.

3.3 Technical reporting

WP leaders are requested to report to the Project Coordinator every after each reporting period (Month 18, 36 and 42) on the technical progress of their own WP. WP leaders are requested to provide the following information using the template available at SteamDry Teams site:

- The work done during the reporting period and the most important results achieved
- Status of each WP and task, details of work performed by each beneficiary
- Actions planned for the next reporting period - Updated planning for the next period
- Status of ongoing deliveries with a delivery date in the next reporting period
- Progress towards milestones planned for the next reporting period
- Critical assessment of technical development: deviations from the original plan and proposed measures

3.4 Storing documentation

All project documentation is stored in Microsoft Teams workspace and all partners have access to it. Link to it is provided to consortium members. It contains also contact information that is updated when changes occur. It contains change-history. Current contacts for Grant Agreement and Executive Board are in Excel in the abovementioned teams-site that were decided in the first General Assembly meeting.

In addition, Teams workspace can be used for activities like:

- Holding online meetings
- Chatting with participants, fast communication tool (also tagging users)

Administration of the Teams workspace is a responsibility of the Coordinator. All beneficiaries have access rights to the “General” channel of the workspace, and they can request necessary personnel, to be added, directly from the Coordinator. Safety using of the workspace is ensured by the Coordinator – the Microsoft Teams workspace is a secure team-wide and organization-wide two-factor authorisation, and single sign-on through Active Directory-based platform. The data is encrypted in transit and rest.

All official documents, such as deliverables and periodic reports, are submitted to the EC by the Coordinator.

Partners shall supply Coordinator with a list reporting names, phone and e-mail address, and keep it updated, of the various persons, inside their organization, in charge for Project administration, as follows:

- Project management matters
- Quality matters
- Administrative matters
- Technical matters
- Dissemination matters

4 Procedures for communication, publication and dissemination of project results

From the beginning of the project, communication between the partners is considered of key importance to aim at the Project results and success. Day by day communication of Project related issues will be done via email/phone/Teams calls. Important communications should be traced via mail with a copy to the Coordinator.

4.1 External communication activities

Each Partner wishing to undertake any formal communication activity/initiative related to the Project should inform both Coordinator and Communication manager (Feuga, leader of WP13 and 14). The content and the overall message of the communication activities should be agreed with the Coordinator. All communication activities shall be reported at latest quarterly, if not in monthly meetings, to the Executive Board.

4.2 Dissemination and publication of project results

Agreed in consortium agreement.

4.3 Use of social media

The Project uses social media. Any content to be shared using social media shall be sent in advance to WP13 and WP14 leader.

4.4 Project deliverables and milestones

The project has 38 deliverables and 9 milestones as described in the project plan. Their submission schedules are defined in the Grant Agreement. Progress of these is monitored by the Executive Board to ensure that they are completed in time. Quality of deliverables is ensured by the Coordinator and the WP-leader of the respective WP. Draft of the deliverable is saved to Teams 14 days before the final submission. Submission of deliverables is done by the Coordinator to the portal.

5 Risk contingency management

The purpose of risk management is to prevent possible setbacks that could jeopardize the project's results, impact and processes. Risk management is a preventive activity that aims at reducing the consequences of the risks. Risks identified are monitored regularly in Executive Board meetings. Risk table is stored in Teams with version history. Preliminary risk table is in the project plan.

The Risk Management consists of the identification of various risks from following categories:

- Project objectives, definitions, tasks, maturity of the relevant technology
- Project's human resources
- Timetable or cost pressures and financing
- Project's external stakeholders and cooperation with subcontractors
- Equipment, premises and infrastructure
- Occupational safety, environmental and information security risks

For each identified risk the likelihood (unlikely, possible, likely) and consequence (minor, harmful, serious) are evaluated in three-point scale and based on evaluation the risk category may vary from negligible to unacceptable Table 3.

Table 3 Risk consequence matrix

Evaluation of risk class in projects	CONSEQUENCES			
		Minor (1)	Harmful (2)	Serious (3)
LIKELIHOOD	Unlikely (1)	1 Negligible No actions	2 Minor Follow-up	3 Moderate Actions advisable
	Possible (2)	2 Minor Follow-up	3 Moderate Actions advisable	4 Notable Necessary actions
	Likely (3)	3 Moderate Actions advisable	4 Notable Necessary actions	5 Unacceptable Immediate and obligatory actions

The risk evaluation table includes detailed information on the risks, mitigation actions and risk assessment evaluation after the mitigation actions.

6 Ethics and safety

The ethics plan is described in detail in D1.2 Plan for the management and monitoring of ethics issues during the project implementation, due in M3 and it will be a public deliverable.

Safety is a key priority in this type of project that includes piloting activities. There are two deliverables only for the consortium that contribute to this, D3.2 (Technical and safety

requirements report for SSD, M15, lead by VAL) and D9.3 (Safety manual of pilot operation, M21, lead by VTT).

7 Gender dimension

SteamDry is designed with gender considered throughout the work plan, in terms of the team, structure and process, and the R&I work itself. The dissemination and communication materials, activities and target groups will be designed to ensure that stakeholders from all genders are addressed equally. After the project, the partners will aim to ensure that advertising and branding of the processes, materials and components is done in a genderneutral manner. Across the engineering sector "Women account for 20% of engineering and technology graduates, yet only 11% of the engineering workforce" (World Economic Forum: Global Gender Gap Report 2022). As a result, men mainly design processes and products, which do not reflect customer interests. It will therefore be an important part of SteamDry for all genders to be involved in the design of the new drying technology.

All RTO's have gender equality plans. E.g. Coordinator, VTT, will actively improve RRI approach. VTT has created special support for researchers (tools and advisers) for investigating the gender perspective regarding their research context. In addition, VTT has a team, "Ethics and Responsibility of innovation", which actively promotes the Responsible Research and Innovation approach, including gender and diversity dimensions. VTT is a partner in the GenderSTI project, which aims to analyse the participation of women in science, technology, and innovation (STI) dialogues between Europe and third countries. The project focuses on four key areas: gender equality in scientific careers, gender balance in decision making, and the integration of the gender dimension in Research and Innovation (R&I) content. VTT has an internal Responsible Research and Innovation (RRI) course for the researchers, including the module "Engagement, gender and Inclusiveness". The module gives insight to the implementation of gender dimension to the research practice to use for SteamDry. In addition, VTT has built its own guidelines and examples on how to approach the ethical and gender issues in drawing the research project plans and has regular internal training sessions and allocated resources to support its implementation, to be used in SteamDry. These practises are described in D1.2 (Ethics plan, M3). This includes gender-sensitive communication in project meetings and other communication (D1.1). The selection of personnel is equal for decision making. Gender-specific safety measures are included.

The use of inclusive language internally and externally signals the staff as well as potential job applicants that they are welcome and accepted as they are. In practice, using inclusive language entails using people-centered language, that references a person's characteristics (gender, ethnicity) only when relevant to the context, and does not make assumptions: for example, if not relevant to the story, research personnel should be referred to by their last name and professional title rather than their marital status (Mr., Mrs, or Ms), and their gender pronouns should not be assumed.

BIBLIOGRAPHY

- World Economic Forum. (2022). Global Gender Gap Report. Insight Report.