# MASTERPIECE -
## Multidisciplinary Approaches and Software Technologies for Engagement, Recruitment and Participation in Innovative Energy Communities in Europe

# Deliverable 1.4

## PROJECT MANAGEMENT PLAN

| Title | Project management plan |
|---|---|
| **Document description** | Description of the project management Plan |
| **Nature** | Type and dissemination level: R - SEN |
| **Task** | T1.1 |
| **Status** | Final |
| **WP** | WP1 |
| **Lead Partner** | UMU |
| **Partners Involved** | ALL |
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| Revision history | Author | Delivery date | Summary of changes and comments |
|---|---|---|---|
| **Version 01** | Antonio Skarmeta | 22/02/2023 | Initial ToC and contents |
| **Version 02** | Alfonso Ramallo | 23/02/2023 | Contributions |
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# 1 EXECUTIVE SUMMARY

This document establishes the project plan of MASTERPIECE. The key points of the management have been described here, namely the Work Breakdown Structure, the Reporting strategies for management and for delivering and the Managerial Structure. The project spams 42 months and includes the demonstration of the technologies developed within a variety of pilots in different geographic and climatic locations.

The consortium is formed by 19 partners and a detailed managerial structure has been defined to make sure that all facets of the actions of the project are supervised steered and adequately reported to the European Commission. The project has been distributed on six work packages as the first level of the work breakdown structure. On the second level of the work breakdown structure the tasks have been defined. Each task has a leader and each work package has a leader.

Extra managerial roles such as the pilot coordinator or the data management coordinator have been assigned to make sure that the project coordinator is overloaded with transversal issues and to ensure that the project is run adequately by well experienced people with respect to the different topics.

## 2 INTRODUCTION AND STAGES PLANNING

This document shows the project management plan of Project MASTERPIECE. MASTERPIECE is an Innovation Action project lasting 42 months, to achieve its ambitious objectives regarding technology development and integration for planning, establishing, building/expanding and operating different types of energy communities, as well as to refine such technologies in an iterative manner, based on demonstration and evaluation outcomes. Two implementation cycles have been considered: a) the first cycle spans from M1 until M24 when the first evaluation results of the first technical and technological prototypes pilot interventions are expected to become available; b) based on the preliminary analysis from these field observations, the second and final implementation cycle - from WP2 to WP5 - will be launched (M21), focusing on readjusting appropriately the developed solutions (M33), as well as executing the second long-term round of the pilot intervention programs until M42. The work plan is structured into three macro-categories/phases of activities:

► Management, Communication, Exploitation and Engagement WP(s): WP1 "Management and project steering" will tackle administrative/financial management, technical/innovation coordination, risk/quality control and GDPR/data/ethics management. It guarantees overall strict governance of the technical and demonstration WPs to reach the proposed objectives and expected impact. WP6 "Exploitation, dissemination, engagement and impact assessment" aims at diffusing widely the project outcomes, scientific knowledge and innovations developed: it will support the creation of a sustainable ecosystem for gathering valuable feedback from business and policy related stakeholders and contribute actively to standardisation with technological advancements, including the evaluation of replicability across different regulatory, geographical and community cases.

► Framework Foundation and Development WP(s): WP2 "Energy community requirements at national and EU for different stake- and shareholders" will study the business/social requirements, sector regulatory needs, use-cases scenarios & stakeholder behavioural aspects at local and European level. It will analyse and design the technical architecture and specifications to leverage diversified cases of energy communities as well as the impact and performance evaluation framework. WP3 "Social and sustainable innovations for energy communities" will leverage established methodologies and advanced data-driven technologies (collected by different sources: IoT metering devices, external sources (e.g., weather), Building and Community Management Systems, etc.) to deliver case-tailored incentivizing mechanisms, trigger communities setup through socio-economic planning, attract interested actors/investors/participants through social activation, homogenize energy communities aggregation through profile matching; and enable proactive assessment and decision making on community configurations. WP4 "Digital platforms and tools for energy communities" will develop digital tools for the operational phase of the energy communities in order to enable a smoother engagement of new-comers of different income and capacity, democratize and transparentize communities governance to increase trustiness, increase revenues and turnover through optimized energy and flexibility management as well as demand response mechanisms; increase reliability through secure communication, authorization and data treatment.

► Integration, Demonstration & Evaluation WP(s): WP5 "Integration, demonstration & evaluation" will initially design and plan the pilot demonstration and validation activities. Within the WP5

context, MASTERPIECE aims to integrate, test and generate functional and performance insights. It will provide the performance assessment and stakeholders evaluation. This way, a concrete feedback channel that will trigger informative refinements for WP2-WP4 during the middle of the project, will be also established.

# 3 PROJECT SUMMARY

## 3.1 MASTERPIECE in short

MASTERPIECE aims at creating a digital coordination and cooperation arena that will facilitate the creation and operation of energy communities throughout Europe. The facilities given to members of the community to contribute to services and other developments will represent the distinction of the solution offered in this proposal, making it participative-by-design. The project's objectives are: i) to develop technical and social innovations to empower traditional energy consumers and to make them active agents of collaborative energy communities, paving the way towards a new energy market paradigm; ii) to create user-centric solutions that are based on participatory approaches such as co-creation and naturally accelerate citizens' involvement; iii) to propose new business strategies and incentive mechanisms that activate the reactions of market participants craving for business opportunities that imply energy use and cost reduction; iv) to configure a standardised and sound cyber-security infrastructure so the active citizens are protected against cyberattacks, at the same time that privacy is defended in accordance with the revised EPBD and the GDPR law; and v) to demonstrate the applicability and replicability of methodological, technical and business innovations in a variety of real life pilots in different geographical locations, with heterogeneous social and economic environments and different regulatory/administrative frameworks. MASTERPIECE will follow a staged implementation approach, utilizing use cases with different maturity and TRLs. To demonstrate and evaluate the proposed innovations, it will leverage 4 pilot cases in different geographical areas and within different operational/policy frameworks (France, Italy, Sweden and Turkey).

## 3.2 Consortium

The MASTERPIECE consortium is formed by the 19 partners listed below:

| No | Role | Legal name | | Country | Role |
|----|------|------------|--|---------|------|
| 1 | COO | UMU | UNIVERSIDAD DE MURCIA | ES | 999844282 |
| 2 | BEN | ALWA | algoWatt SpA | IT | 912548647 |
| 3 | BEN | CERTH | ETHNIKO KENTRO EREVNAS KAI TECHNOLOGIKIS ANAPTYXIS | EL | 998802502 |
| 4 | BEN | R2M | R2M SOLUTION SRL | IT | 952850110 |
| 5 | BEN | ODINS | ODIN SOLUTIONS SOCIEDAD LIMITADA | ES | 934796858 |
| 6 | BEN | TROYA | TROYA GENC CEVRE DERNEGI | TR | 948033478 |
| 7 | BEN | UEDAS | ULUDAG ELEKTRIK DAGITIM ANONIM SIRKKETI | TR | 925157095 |
| 8 | BEN | UB | UNIVERSITA COMMERCIALE LUIGI BOCCONI | IT | 999838850 |
| 9 | BEN | SUST | SUSTAINABLE INNOVATION I SVERIGE AB | SE | 990214025 |

| 10 | BEN | AMU | UNIVERSITE D'AIX MARSEILLE | FR | 955518483 |
|----|-----|------|----------------------------|-----|-----------|
| 11 | BEN | RDIUP | RDIUP | FR | 904017788 |
| 12 | BEN | ACEA | ACEA PRODUZIONE SPA | IT | 891399931 |
| 13 | BEN | GRID | GRID ABILITY SCARL | IT | 897088302 |
| 14 | BEN | NGEN | NGENIC AB | SE | 957202403 |
| 15 | BEN | UPP | UPPSALA KOMMUN | SE | 951881080 |
| 16 | BEN | ALEC | AGENCE LOCALE DE L ENERGIE ET DU CLIMAT | FR | 885541228 |
| 17 | BEN | BERC | COMUNE DI BERCHIDDA | IT | 906298452 |
| 18 | BEN | SEIN | PLATE-FORME EFFICACITE ENERGETIQUE SEINE AVAL | FR | 905401978 |
| 19 | AP | EXP | Experientia Global SA | CH | 895528251 |

*Table 1. MASTERPIECE list of participants*

## 3.3 Work plan

The MASTERPIECE work plan has been structured around 6 work packages (WPs), with 3 task each. The following table gives key elements for each WP and, together with the figure included below, depicts the project work plan structure.

| WP /task | Name | Lead beneficiary | Start month | End month |
|----------|------|------------------|-------------|-----------|
| **WP1** | **Project Management and Consortium Coordination** | **UMU** | **1** | **42** |
| T1.1 | Project, administrative and financial coordination | UMU | 1 | 42 |
| T1.2 | Technical & scientific management | CERTH | 1 | 42 |
| T1.3 | Risk management and quality assurance | CERTH | 1 | 42 |
| T1.4 | GDPR-compliance, data and ethics management | ALWA | 1 | 42 |
| **WP2** | **Energy community requirements at national and EU levels for different stakeholders and shareholders** | **CERTH** | **1** | **27** |
| T2.1 | Multilevel regulatory frameworks, administrative/operational barriers, market and financial requirements | UB | 1 | 24 |
| T2.2 | Assessment of energy communities maturity and aspirations of pilots | EXP | 1 | 24 |
| T2.3 | Validation scenarios analysis, deployment definition and social innovation specification | GRID | 1 | 24 |
| T2.4 | Evaluation planning and KPIs definition | ODINS | 1 | 24 |
| T2.5 | Digital platform architectural blueprint | UMU | 1 | 27 |

| WP3 | **Social and sustainable innovations modelling for energy communities** | **EXP** | **4** | **30** |
|---|---|---|---|---|
| T3.1 | Modelling of multi-level incentive mechanisms to enhance proactive participation in energy communities | R2M | 4 | 30 |
| T3.2 | Techniques for financial and social planning of sustainable energy community projects | UB | 4 | 30 |
| T3.3 | Modelling of social and behavioural determinants to support the capacity building of energy communities | EXP | 4 | 30 |
| T3.4 | Dynamic aggregation of data and participants to boost energy communities coherency | CERTH | 4 | 30 |
| T3.5 | Experimental plan to assess effects and moderators of simulated intervention programs | EXP | 4 | 30 |
| WP4 | **Digital platforms and tools for energy communities** | **UMU** | **4** | **30** |
| T4.1 | User-centric tools for engagement and automated participation in energy communities | CERTH | 4 | 30 |
| T4.2 | Interactive simulations and decision support toolkit for sustainable energy investments | ALWA | 4 | 30 |
| T4.3 | Governance, management and operation of heterogeneous energy communities | ALWA | 4 | 30 |
| T4.4 | Smart tools for real-time optimization of aggregated resources, data-driven flexibility, peer-to-peer energy exchange and Demand Response events | UMU | 4 | 30 |
| T4.5 | DLT-based secure platform for energy data collection, elaboration and sharing | ODINS | 4 | 30 |
| WP5 | **Integration, demonstration & evaluation** | **ODINS** | **10** | **42** |
| T5.1 | Proof of Concept, System Integration & Pilot adaptation | ODINS | 10 | 33 |
| T5.2 | Intervention Program: Italian Pilot | GRID | 10 | 42 |
| T5.3 | Intervention Program: Turkish Pilot | TROYA | 10 | 42 |
| T5.4 | Intervention Program: French Pilot | RDIUP | 10 | 42 |
| T5.5 | Intervention Program: Sweden Pilot | SUST | 10 | 42 |
| T5.6 | Intervention Program: Evaluation of social, environmental, technical and economic impacts | ODINS | 13 | 42 |
| WP6 | **Exploitation, dissemination, engagement and impact assessment** | **R2M** | **1** | **42** |
| T6.1 | Communication, social presence and awareness activities | EXP | 1 | 42 |
| T6.2 | Dissemination, stakeholder engagement and training | UMU | 1 | 42 |
| T6.3 | Novel energy community business models, exploitation strategies and IPR management | R2M | 13 | 42 |

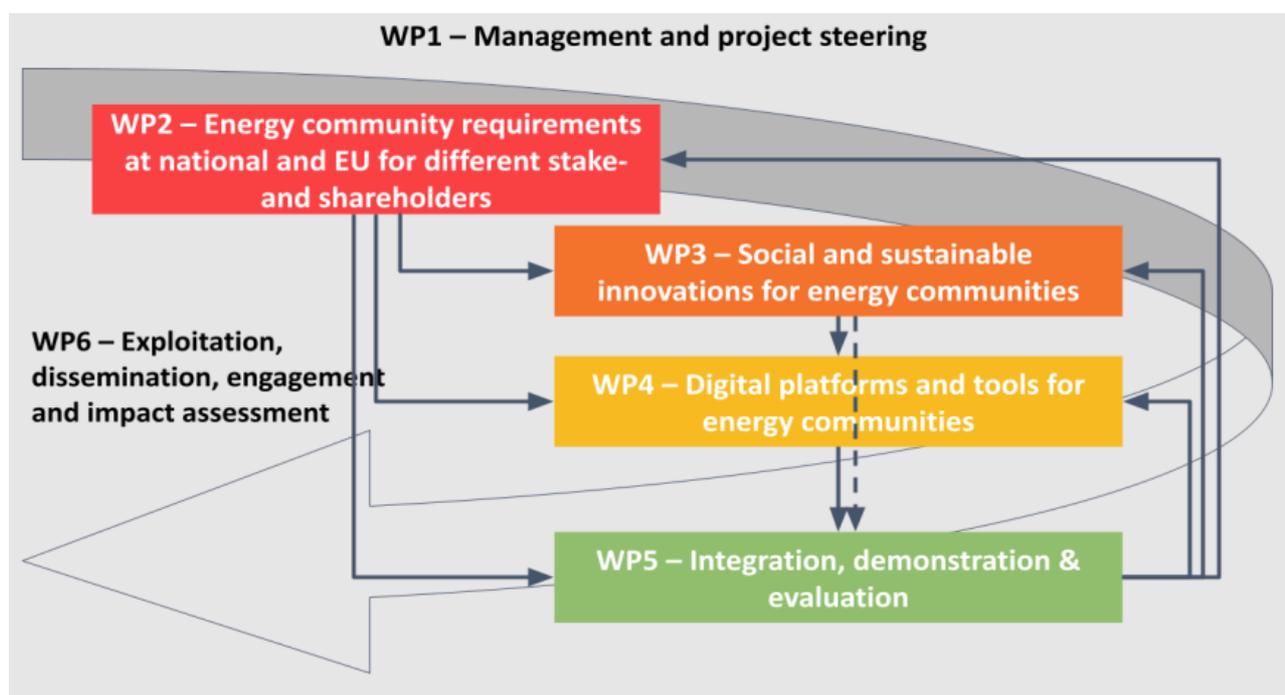| T6.4 | Regulatory innovation for boosting energy communities and recommendations for policymakers: contributions to standardisation | UB | 25 | 42 |
|------|---|----|----|----|
| T6.5 | Replicability study of methodological and technological innovations | R2M | 31 | 42 |

*Table 2. MASTERPIECE work packages and tasks*



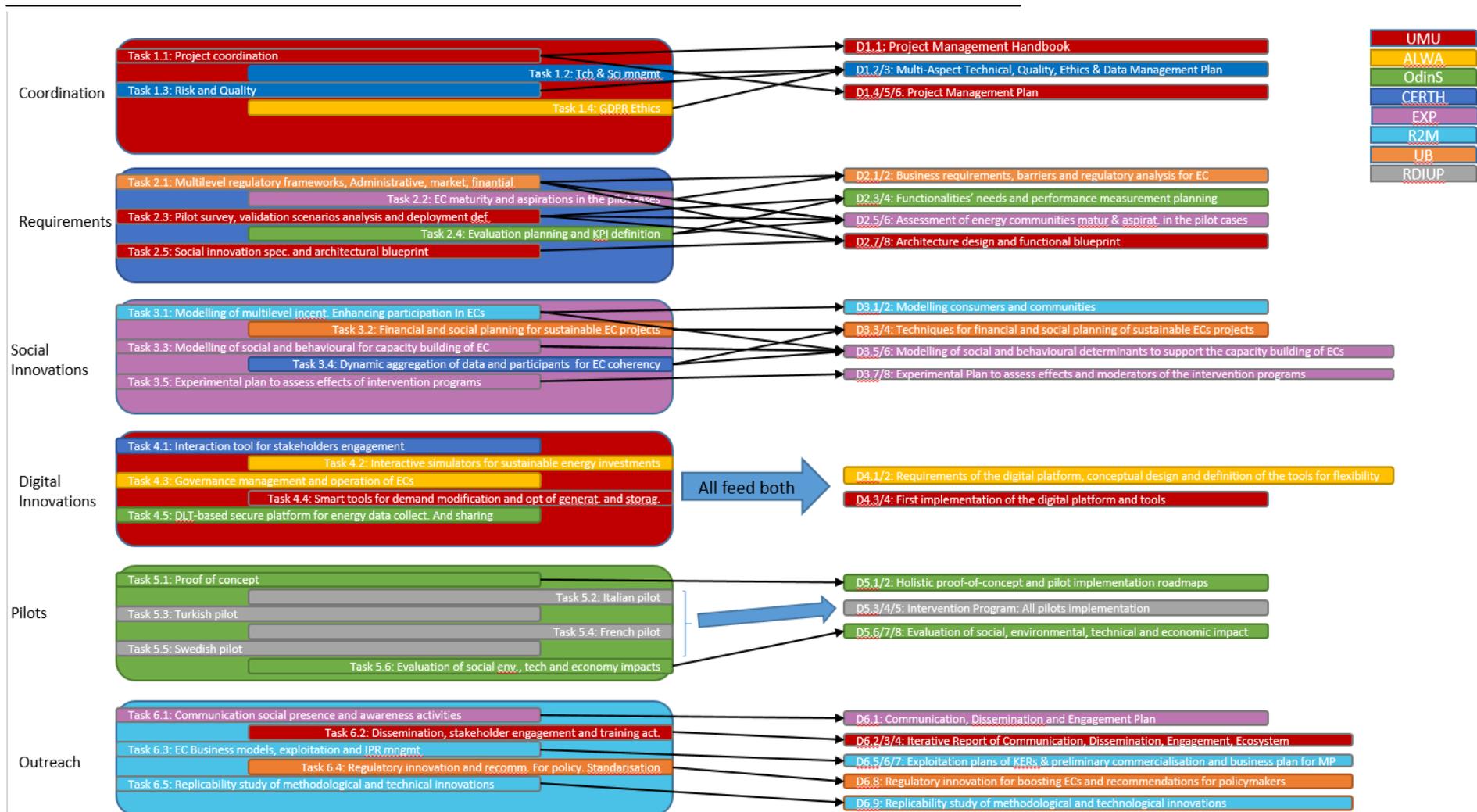*Figure 1. MASTERPIECE PERT diagram*

Figure 2. MASTERPIECE PERT diagram and relation with deliverables.

## 3.4 Deliverables and milestones

The contractual deliverables and milestones to be achieved within the MASTERPIECE project are listed in the tables 3 and 4, respectively.

| No | Deliverable Name | WP | Leader | Due date (month) |
|----|------------------|-----|--------|------------------|
| D1.1 | Project Management Handbook | WP1 | 1 - UMU | 6 |
| D1.2 | Multi-Aspect Technical, Quality, Ethics & Data Management Plan | WP1 | 3 - CERTH | 6 |
| D1.3 | Multi-Aspect Technical, Quality, Ethics & Data Management Plan - update | WP1 | 3 - CERTH | 30 |
| D1.4 | Project Management Plan | WP1 | 1 - UMU | 2 |
| D1.5 | Project Management Plan - interim update | WP1 | 1 - UMU | 18 |
| D1.6 | Project Management Plan – final update | WP1 | 1 - UMU | 36 |
| D2.1 | Business requirements, barriers and regulatory analysis for energy communities | WP2 | 8 - UB | 6 |
| D2.2 | Business requirements, barriers and regulatory analysis for energy communities – update | WP2 | 8 - UB | 24 |
| D2.3 | Functionalities' needs and performance measurement planning | WP2 | 5 - ODINS | 6 |
| D2.4 | Functionalities' needs and performance measurement planning – update | WP2 | 5 - ODINS | 24 |
| D2.5 | Assessment of energy communities' maturity and aspirations in the pilot cases | WP2 | 19 - EXP | 6 |
| D2.6 | Assessment of energy communities' maturity and aspirations in the pilot cases – update | WP2 | 19 - EXP | 24 |
| D2.7 | Architecture design and functional blueprint | WP2 | 1 - UMU | 9 |
| D2.8 | Architecture design and functional blueprint – update | WP2 | 1 - UMU | 27 |
| D3.1 | Modelling consumers and communities | WP3 | 4 - R2M | 15 |
| D3.2 | Modelling consumers and communities – update | WP3 | 4 - R2M | 30 |
| D3.3 | Techniques for financial and social planning of sustainable energy community projects | WP3 | 8 - UB | 15 |

| D3.4 | Techniques for financial and social planning of sustainable energy community projects – update | WP3 | 8 - UB | 30 |
|------|---|------|------|----|
| D3.5 | Modelling of social and behavioural determinants to support the capacity building of energy communities | WP3 | 19 - EXP | 15 |
| D3.6 | Modelling of social and behavioural | WP3 | 19 - EXP | 30 |
| D3.7 | Experimental Plan to assess effects and moderators of the intervention programs | WP3 | 19 - EXP | 15 |
| D3.8 | Experimental Plan to assess effects and moderators of the intervention programs – update | WP3 | 19 - EXP | 30 |
| D4.1 | Requirements of the digital platform, conceptual design and definition of the tools for flexibility | WP4 | 2 - ALWA | 9 |
| D4.2 | Requirements of the digital platform, conceptual design and definition of the tools for flexibility – update | WP4 | 2 - ALWA | 24 |
| D4.3 | First implementation of the digital platform and tools | WP4 | 1 - UMU | 15 |
| D4.4 | Final implementation of the digital platform and tools | WP4 | 3 - CERTH | 30 |
| D5.1 | Holistic proof-of-concept and pilot implementation roadmaps | WP5 | 5 - ODINS | 18 |
| D5.2 | Holistic proof-of-concept and pilot implementation roadmaps – update | WP5 | 5 - ODINS | 33 |
| D5.3 | Intervention Program: All pilots implementation | WP5 | 11 - RDIUP | 15 |
| D5.4 | Intervention Program: All pilots implementation – interim update | WP5 | 11 - RDIUP | 30 |
| D5.5 | Intervention Program: All pilots implementation – final update | WP5 | 11 - RDIUP | 42 |
| D5.6 | Evaluation of social, environmental, technical and economic impact | WP5 | 5 - ODINS | 18 |
| D5.7 | Evaluation of social, environmental, technical and economic impact – interim update | WP5 | 5 - ODINS | 24 |
| D5.8 | Evaluation of social, environmental, technical and economic impact – final update | WP5 | 5 - ODINS | 42 |
| D6.1 | Communication, Dissemination and Engagement Plan | WP6 | 19 - EXP | 6 |
| D6.2 | Iterative Report of Communication, Dissemination, Engagement, Ecosystem | WP6 | 1 - UMU | 15 |
| D6.3 | Iterative Report of Communication, Dissemination, Engagement, Ecosystem – interim update | WP6 | 1 - UMU | 30 |

| D6.4 | Iterative Report of Communication, Dissemination, Engagement, Ecosystem – final update | WP6 | 1 - UMU | 42 |
|------|---------------------------------------------------------------------------------------|-----|---------|----|
| D6.5 | Exploitation plans of KERs and preliminary commercialisation and business plan for the MASTERPIECE platform | WP6 | 4 - R2M | 24 |
| D6.6 | Exploitation plans of KERs and preliminary commercialisation and business plan for the MASTERPIECE platform – interim update | WP6 | 4 - R2M | 33 |
| D6.7 | Exploitation plans of KERs and preliminary commercialisation and business plan for the MASTERPIECE platform – final update | WP6 | 4 - R2M | 42 |
| D6.8 | Regulatory innovation for boosting energy communities and recommendations for policymakers | WP6 | 8 - UB | 42 |
| D6.9 | Replicability study of methodological and technological innovations | WP6 | 8 - UB | 42 |

*Table 3. MASTERPIECE list of deliverables*

| No | Name | | Due date (month) |
|------|------|------|------|
| MS01 | Project Handbook, Web-presence launched, Data Management Plan; communication, Dissemination and Engagement Plan | WP1,6 | M06 |
| MS02 | Business, regulatory, data-sources & stakeholders needs analysed; KPI d evaluation Ian defined; | WP2 | M06, M24 |
| MS03 | Architectural design specified | WP2 | M09, M27 |
| MS04 | Social and sustainable innovations for energy communities toolkit First version successful released | WP3 | M15 |
| MS05 | Social and sustainable innovations for energy communities toolkit second version successful released | WP3 | M30 |
| MS06 | Digital platforms and tools for energy communities - first version successful released | WP4 | M15 |
| MS07 | Digital platforms and tools for energy communities - second version successful released | WP4 | M30 |
| MS08 | MASTERPIECE integration and necessary pilot adaptations — first version successful released | WP5 | M18 |
| MS09 | Pilot intervention programs deployment, implementation & baseline measurement — first cycle completed (baselines) | WP5 | M18 |

| MS1O | Pilot preliminary performance measurement — second cycle complete preliminary evaluation) | WP5 | M24 |
|------|-------------------------------------------------------------------------------------------|-----|-----|
| MS11 | Pilot performance final assessment and holistic evaluation completed | WP5 | M42 |
| MS12 | Communication, Dissemination and Standardization first cycle completed | WP6 | M15 |
| MS13 | Communication, Dissemination, Engagement, Ecosystem, MASTERPIECE replicability, Exploitation plans - second cycle completed | WP6 | M30 |
| MS14 | Communication, Dissemination, Engagement, Ecosystem, STERPIECE replicability, Exploitation plans - third (last) cycle completed | WP6 | M42 |

*Table 4. MASTERPIECE list of milestones*

![Masterpiece logo]

# 3.5 Timeline

| ID | Work packages & Tasks | Leader | START | END | DUR. |
|----|----------------------|--------|-------|-----|------|
| WP1 | **Project Management and Consortium Coordination** | **UMU** | **1** | **42** | **42** |
| T1.1 | Project, administrative and financial coordination | UMU | 1 | 42 | 42 |
| T1.2 | Technical & scientific management | CERTH | 1 | 42 | 42 |
| T1.3 | Risk management and quality assurance | CERTH | 1 | 42 | 42 |
| T1.4 | GDPR-compliance, data and ethics management | ALWA | 1 | 42 | 42 |
| WP2 | **Energy community requirements at national and EU levels for different stakeholders and shareholders** | **CERTH** | **1** | **27** | **27** |
| T2.1 | Multilevel regulatory frameworks, administrative/operational barriers, market and financial requirements | UB | 1 | 24 | 24 |
| T2.2 | Assessment of energy communities maturity and aspirations of pilots | EXP | 1 | 24 | 24 |
| T2.3 | Validation scenarios analysis, deployment definition and social innovation specification | GRID | 1 | 24 | 24 |
| T2.4 | Evaluation planning and KPIs definition | ODINS | 1 | 24 | 24 |
| T2.5 | Digital platform architectural blueprint | UMU | 1 | 27 | 27 |
| WP3 | **Social and sustainable innovations modelling for energy communities** | **EXP** | **4** | **30** | **27** |
| T3.1 | Modelling of multi-level incentive mechanisms to enhance proactive participation in energy communities | R2M | 4 | 30 | 27 |
| T3.2 | Techniques for financial and social planning of sustainable energy community projects | UB | 4 | 30 | 27 |
| T3.3 | Modelling of social and behavioural determinants to support the capacity building of energy communities | EXP | 4 | 30 | 27 |
| T3.4 | Dynamic aggregation of data and participants to boost energy communities coherency | CERTH | 4 | 30 | 27 |
| T3.5 | Experimental plan to assess effects and moderators of simulated intervention programs | EXP | 4 | 30 | 27 |

*Figure 3. MASTERPIECE Gantt chart (1)*

| ID | Description | Partner | | | |
|----|-------------|---------|---|---|---|
| WP4 | Digital platforms and tools for energy communities | UMU | 4 | 30 | 27 |
| T4.1 | User-centric tools for engagement and automated participation in energy communities | CERTH | 4 | 30 | 27 |
| T4.2 | Interactive simulations and decision support toolkit for sustainable energy investments | ALWA | 4 | 30 | 27 |
| T4.3 | Governance, management and operation of heterogeneous energy communities | ALWA | 4 | 30 | 27 |
| T4.4 | Smart tools for real-time optimization of aggregated resources, data-driven flexibility, peer-to-peer energy exchange and Demand Response events | UMU | 4 | 30 | 27 |
| T4.5 | DLT-based secure platform for energy data collection, elaboration and sharing | ODINS | 4 | 30 | 27 |
| WP5 | Integration, demonstration & evaluation | ODINS | 10 | 42 | 33 |
| T5.1 | Proof of Concept, System Integration & Pilot adaptation | ODINS | 10 | 33 | 24 |
| T5.2 | Intervention Program: Italian Pilot | GRID | 10 | 42 | 33 |
| T5.3 | Intervention Program: Turkish Pilot | TROYA | 10 | 42 | 33 |
| T5.4 | Intervention Program: French Pilot | RDIUP | 10 | 42 | 33 |
| T5.5 | Intervention Program: Sweden Pilot | SUST | 10 | 42 | 33 |
| T5.6 | Intervention Program: Evaluation of social, environmental, technical and economic impacts | ODINS | 13 | 42 | 30 |
| WP6 | Exploitation, dissemination, engagement and impact assessment | R2M | 1 | 42 | 42 |
| T6.1 | Communication, social presence and awareness activities | EXP | 1 | 42 | 42 |
| T6.2 | Dissemination, stakeholder engagement and training | UMU | 1 | 42 | 42 |
| T6.3 | Novel energy community business models, exploitation strategies and IPR management | R2M | 13 | 42 | 30 |
| T6.4 | Regulatory innovation for boosting energy communities and recommendations for policymakers: contributions to standardisation | UB | 25 | 42 | 18 |
| T6.5 | Replicability study of methodological and technological innovations | R2M | 31 | 42 | 12 |

**Figure 4. MASTERPIECE Gantt chart (2)**

The overall project schedule is shown in the Gant chart, where the aforementioned WPs, tasks, deliverables and milestones are represented over the project timeline.

# 4 MANAGEMENT STRUCTURE

The project management in MASTERPIECE will guarantee transparency and commitment to all engaged partners and thus, facilitate an unobstructed and successful project evolution. The overall project management of MASTERPIECE will comply with the following two major principles, namely the: i) the Principle of creating an integrated project structure incorporating technical, scientific and partner coordination as well as issues of commonplace business operation, based on the methodology of the Project Management Institute (PMI) and supported with state-of-the-art management instruments; and ii) the Principle of achieving agreement upon all partners and guaranteeing the arrangement of spot of decision making close to the responsible levels of execution as well as elevate them if necessary, concealing the reliable and trusted agreements in order to protect intellectual properties of all partners. In the MASTERPIECE's management structure, Project Coordinator (PC) control all main activities of the project to report to the European Commission (EC) and to all participants. EC is represented by Project Officer (PO) or other officials from EC. PC is the connection between the consortium and EC. Moreover, a General Assembly (GA) consists of representatives of each partner organisation. GA will constitute the highest decision board and its main task will be project governance. GA will have the overall responsibility of all technical, financial, legal, administrative, ethical and impact issues of the project. GA will monitor and assess the project's progress and make amendments, where necessary. MASTERPIECE incorporates the Project Executive Board (PEB) coordinated by PC to supervise all main tasks of WPI management; WP2-4 technological design, development/innovation; WP5 use-case demonstration; WP6 communication, dissemination, standardization, engagement and ecosystem; business modelling and exploitation. The PEB will oversee proposing decisions and preparing the meetings and the agenda of the GA. The PEB oversees seeking a consensus in the consortium if needed, the proper implementation of the GA decisions and monitoring the efficient and effective development of the project. MASTERPIECE's Advisory Board (AB) will liaise directly with PEB to provide technical and outreach suggestions. It consists of senior representatives of relevant multi-actors' communities who will provide advice and guidance on the vision, strategy and implementation of MASTERPIECE and will help in strengthening the MASTERPIECE community. The members of the AB will represent multiple facets of the Energy Efficient Building ecosystem, from Ethics to Government, to Building end-users and Energy stakeholders. The AB will be created by M6, to help the project developments and innovations. Budget for the organization of meetings with the AB is considered. Management roles are presented in Section 3.3. I including names of assigned persons, according to proven expertise. The management structure and procedures illustrated hereby will be included in the Consortium Agreement (CA) to be signed before the project start.

## 4.1 Management roles

**Project Coordinator (PC):** Prof. Antonio SKARMETA (UMU) will chair the **GA**, represent the project at the EC and be responsible for the overall management and coordination. **PC** will gather, integrate and monitor administrative data from the participants, at bimonthly intervals, and will prepare it for submitting annually to EC. Stefano has expertise managing large-scale projects in FP7/H2020

programme. A **Project Management Office (PMO)** will be responsible for the administrative and financial management of the project under the guidelines and in tight coordination with the **PC**.

**Scientific & Technical Manager (STM):** Iakovos MICHAILIDIS (CERTH) will have the responsibility to drive and coordinate all scientific decisions, addressing and solving any technical issues that might arise, as well as ensure that the MASTERPIECE technical objectives are met with high-quality and in time. He will be responsible for the management of the technical integration and interoperability activities, including technology components, services, platforms, AI resources and datasets, both intra-MASTERPIECE and third-party.

**Quality & Risk Manager (QRM):** Pf. Elias Kosmatopoulos (CERTH), already coordinator of several FP7 projects: FP7-AGILE, FP7-NOPTILUS, FP7-PEBBLE, FP7-Local4Global while he is currently coordinating H2020 ROBORDER and H2020 Plug-n-Harvest. The QRM will be responsible for monitoring and following up any technical or administrative risks reported by the task or WP leaders to support the PC on assessing the current situation of the project in a quantified manner at a periodic basis." He will oversee T1.3 for the early identification, assessment, and – along with the support of the PC – the management of administrative and technical risks.

**GDPR, Data & Ethics Manager (GDEM):** Stefano BIANCHI (ALWA) will ensure accuracy, integrity, confidentiality and security of pesonal data, applying knowledge of regulations (i.e., GDPR, NIS, eIDAS), policies, protocols and procedures to control and maintain accurate records. **GDEM** will supervise ethical aspects and will be supported by Dr. Julián Valero Torrijos (DPO of UMU) for all aspects associated to privacy and FAIR data management (e.g., findability, accessibility, interoperability and reusability).

**Exploitation & Innovation Manager (EIM):** Eva COSCIA (R2M) has the responsibility for T6.3 to manage actions concerning exploitation and marketing of results coming out of MASTERPIECE. She will also be responsible for innovation management, defining the process to be followed, ensuring that it is being fulfilled, aligning the technical development of tools and services with the business exploitation, so as to ensure a proper uptake of project results by the market, as well as for IPR handling, market analysis and joint exploitation models and plan creation, and for supporting partners in setting up individual business models and exploitation plans.

**Intervention Programme Manager (IPM):** Mr. Michele Visciola (EXP) will manage the progress of the Intervention Programme and the validation of the implemented socio-technical innovations in the pilot demonstrations. The IPM is an international expert in sustainable innovation with a significant leadership in the design of services for communities and in the participatory behavioral design in both the public and private sectors.

**Demonstrations Manager (DM):** Dr. Rafael Marin-Perez (ODINS) will manage the progress of the demonstration tests and supervise of deployment of innovations in the pilots. **DM** has previous experience in technical management from over 10 EC-funded projects related to buildings, energy, AI and robotics.

**Work Packages Leaders:** Each WP has a leader who cooperates closely with the PEB members, setting detailed objectives and milestones for the WP. WP leaders will be responsible for managing their work package as a self-contained entity. Their tasks include among others coordinating, monitoring, and assessing the progress of the WP to ensure that output performance, costs, and timelines are met. Moreover, within each WP, each task has a leader (**Task Leader**) who reports to the relevant WP leader. In particular, the WP leaders are responsible for: a) preparing the WP

coordination of tasks within the WP; b) supporting and monitoring the activities of **WP's Task Leaders**; c) assessing progress and reporting against with respect to the work plan; d) preparing WP meetings (including, as well as meeting agendas and minutes); e) creating and updating lists of WP risks; f) making sure that all required documentation is delivered following the defined procedures; g) ensuring the timely and quality output from the WPs to the PEB; h) ensuring the timely production and quality control of the WP's deliverables. Within the WPs, **Task Leaders** have responsibility for specific focus areas of the individual pilots.

The management structure is simple, with well-defined roles and responsibilities for addressing the consortium management, the technical activities, the scientific excellence, and the innovation management. Main responsibilities are shared by two governing bodies with different scopes, the **Project Management Board (PMB)** and the **Technical Management Board (TMB)**, chaired respectively by the **Project Coordinator (PC)** and the **Scientific & Technical Manager (STM)**. The scientific and technical quality of the projects, as well as the innovation potential of its results, are guaranteed by the **Scientific & Technical Manager (STM)** and monitored by **Innovation Advisory Board (IAB)**, chaired by the **Exploitation & Innovation Manager (EIM)**, that ensures an unbiased and critical evaluation of project achievements.

**Management Structure (Who is who)**
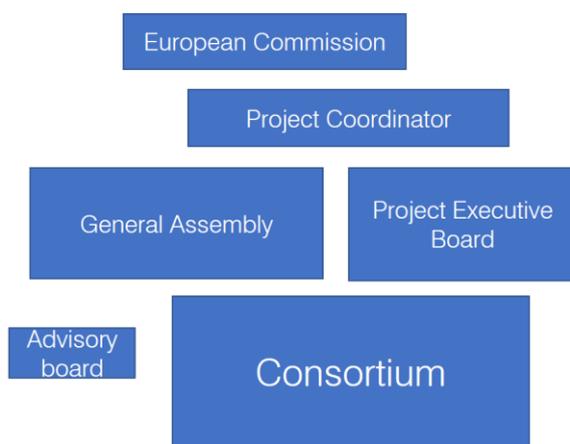
- **Project Coordinator**: Antonio Skarmeta (UMU)
- **Scientific & Technical Manager**: Iakovos MICHAILIDIS (CERTH)
- **Quality & Risk Manager**: Elias Kosmatopoulos (CERTH)
- **GDPR, Data & Ethics Manger**: Stefano BIANCHI (ALWA)
- **Exploitation & Innovation Manager**: Eva Coscia (R2M)
- **Intervention Programme Manager**: Michele Visciola (EXP)
- **Demonstration Manager:** Rafael Marin-Perez (OdinS)

*Figure 5. Diagramatic view of theManagerial structure.*

## 4.2 Quality system and management procedures

The project quality system is set up and managed by the Project Coordinator who is responsible for updating and managing the risk monitoring, mitigation and contingency table. The PC sets up and coordinates the deliverable quality review and defines a set of lean quality procedures for activity monitoring. The STM and WPLs cooperate with the PC to ensure consistency among work package activities, consistent application of quality procedures, early risk identification, and reaction plan implementation. The PC reports to the PMB on quality procedure application, quality indicators measure and risk assessment. Main processes are described here. Communication amongst

consortium partners and third parties. Efficient communication and collaboration structures are essential for the success of the project. Since all project partners are distributed across European member states, the centrepiece of the overall project communication will be a protected online collaboration platform (e.g., GoToMeeting, Email lists, etc.) offering to each partner independent access to relevant documents, code, meeting agendas, supporting materials, individual to-do lists and other miscellaneous project information.

Decision-making process and conflict resolution. The basic approach for the decision-making process is to locate the decision as close as possible to the level responsible for the execution (from task level to GA level). Effort for discussion and decision-making shall be kept at the lowest necessary level. Decisions are managed within project meetings. Decisions can be also managed by consultation. If voting is needed, the agenda should clearly indicate this fact. Quorum and voting rules will be defined in the Consortium Agreement. Decisions are binding once the relevant part of the meeting minutes has been accepted.

Quality Management Procedures. The progress follow-up mechanisms described above are designed to ensure quality in the project. However, since there is often a trade-off between productivity/keeping progress and quality, it is important to place an overall responsibility for quality in the project that is not so tightly engaged in progress monitoring and daily operations. The QRM will have the responsibility to establish quality procedures and to perform quality control during the project lifetime. For quality assurance, this will include two peer review steps, first involving an internal peer who is not involved in the respective WP and second a formal approval from a General Assembly member. Reviewers are appointed by the QRM regarding the deliverable peer review process.

## 4.3 Roles and responsibilities

The responsibilities associated to the different PCT roles are summarised in the table below.

| Project Coordinator (PC) |
| --- |
| - Responsible for the overall management of MASTERPIECE, including interactions with the EC.<br>- Strongly collaborates with the STC, and both together form the Scientific and Technical Coordination Board (STCB).<br>- Produces agenda, minutes and chairs the GA and the PCT meetings.<br>- Follows up the project status and checks progress against schedule (timeline, budget, effort…)<br>- Reviews adequacy of deliverables and reports, and summits them to EC. |
| Scientific and Technical Coordinator (STC) |
| - Responsible for the scientific and technical development of the project.<br>- Monitors the technical progress of the project.<br>- Bridges WP leaders with the PC.<br>- Together with the PC, they form the Scientific and Technical Coordination Board (STCB). |

| Exploitation and Innovation Committee (EIC) |
|---|
| - Leads the go-to-market activities, including industry and SME partners gathering.<br>- Guides technical activities towards innovation. |
| Dissemination Manager (DM) |
| - Oversees the compliance with the dissemination and open science policy. |
| Standardization and International Cooperation Manager (SICM) |
| - Ensures international recognition and dissemination of the project.<br>- Oversees the applicable standards development processes.<br>- Coordinates the submission of contributions to selected SDOs |
| Ethics and Data Protection Officer (EDPO) |
| - Ensures the compliance with the GDPR and other ethics related aspects of the project.<br>- Coordinates the implementation of data protection. |

*Table 5. PCT roles and responsibilities*

Moreover, it is interesting to point out other roles implied in the project and their responsibilities:

| European Commission Project Officer (PO) |
|---|
| - Manages the Grants on EC's side and is in communication with the PC.<br>- Monitors the fulfilment of contractual obligations (deliverables, periodic reports…) and check the financial aspects of the project.<br>- Participates in the Kick-Off meeting, the periodic review meetings and the final project meeting. |
| Partners |
| Each partner (listed in table 1) must:<br>- Carry out the corresponding work to be performed, as identified in the work plan.<br>- Submit to the PC (or, when corresponding, to WPs leaders and PCT members) in good time: individual financial statements; progress of work and technical data reports; information and documents about ethical issues; any other documents required by the PO.<br>- Inform the PC of any event that might affect the implementation of the project.<br>- Keep up-to-date information properly stored in the common repository hosted by UMU based on OnlyOffice.<br>- Ensure that confidential information and material are not shared outside the consortium. |

*Table 6. EU Project Officer and partners' responsibilities.*

# 5  REPORTING PROCEDURES AND PAYMENT ARRANGEMENTS

The project reporting is the procedure used by the EC to assess and follow up on the financed projects. Therefore, it is of utmost importance, as it conditions in a very direct way the good image and good assessment of the project by the EC.

It is important to remark that the project reporting is a responsibility of the whole consortium, and every partner has to be actively involved in it. The Project Coordinator is the responsible for periodically gathering the information and reports from the different partners and consolidating it before sending it to the EC.

There are two types of reporting documents including technical and financial information: the Project Periodic Report and the Internal Activity Report. The Project Periodic Report refers to the official report that must be submitted to the EC according to the EC guidelines and templates. The Internal Activity Report refers to internal documents that will be used as control measures to effectively monitor the technical and economic progress of the MASTERPIECE project. The Internal Activity Reports will also feed the official reports.

## 5.1 Internal Activity Report

MASTERPIECE Internal Activity Reports have to be prepared by consortium partners and provided to the PC two times per year (every 6 months).

An Internal Activity Report shall contain: (a) Technical Information about the WP progress as provided by the respective WP leaders, (b) Effort Information as all partners will be requested to provide a breakdown of the effort spent in the related semester, per WP in comparison to the planned effort.

The procedure to be followed is:

1. At the end of the 6-months period, the PC will send to the consortium an email with instructions and template to be filled in.

2. Each partner has to fill in:
    a. Short description of the work done (per WP and task)
    b. Achievements and results
    c. Problems occurred
    d. Brief overview of planned activities for upcoming semester
    e. Overview of dissemination/exploitation/cooperation/standardisation activities
    f. An estimation of resources spent (PMs) per WP in the respective reporting semester against the actual PMs per WP

3. The partners send their report to the PC; this has to happen 20 days after the closure of the reporting period.

4. Finally, the PC consolidates the Internal Activity Report and shares it with the consortium once finalised.

## 5.2 Project Periodic Reports

During the MASTERPIECE project, two official Project Periodic Reports must be submitted to the EC by the PC, covering the periods:

- P1 (from Month 1 to Month 18)
- P2 (from Month 19 to Month 36)

The reports shall be submitted to the EC for each reporting period within 60 days after the end of the period under assessment. The delay in the submission of these reports may cause the postponement of part of the next payment to be received by the partner until the next reporting period.

The technical part will be managed through corresponding Project Periodic Reports. The PC is in charge to prepare the specific reports based on the information provided through Internal Activity Reports. The financial status of the project and costs incurred during the period must be communicated to the EC through meticulously prepared Financial Statements (FS) in order to justify the incurred costs and expenses and qualify for the next/final payment. Each consortium partner has to upload financial information to the EC participant portal (EU Login, former ECAS) based on cumulative information obtained from the Internal Activity Report.

The procedure to be followed is:

1. The Project Coordinator will ask the partners to generate their individual Financial Statements in the EC Participant Portal to officially declare the costs incurred for the reference period.

2. Each partner will complete the financial statements (FS) with the costs incurred during the period.

3. Each partner will submit and digitally sign the FS; this signature will be done by the Project Financial Signatory appointed.

4. The Project Coordinator will submit the financial report to the EC

## 5.3 Project Final Report

In addition to the second Project Periodic Report, a Final Report has to be submitted by the Project Coordinator 60 days after the end of the project.

# 6   CONCLUSIONS

A key element for the success of a project and the achievement of its objectives is a clear and rightly performed project management strategy, mainly based in the continuous and effective communication between the project partners. Therefore, this document offers a high-value guide for all partners involved in MASTERPIECE, given that it seek to optimise the coordination efforts made by them and assure that all actions and activities within the project are coherent and coordinated.

# 7   REFERENCES

MASTERPIECE DoW. (2022). *Grant Agreement No. 101096836.*