Ref. Ares(2025)1987470 - 12/03/2025

OPINCHARGE

OPINCHARGE
Project Management Plan (PMP)

03/2025

Funded by
the European Union

Lead Beneficiary	LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY (LIST)
Author(s)/Organisation(s)	**Santhana Eswara Moorthy**
Contact Email	**santhana.eswara@list.lu**
Contributor(s)	**All partners**
Work Package	**1**
Delivery Date (DoA)	**30.11.2023**
Actual Delivery Date	**30.11.2023, 2nd version: 12.03.2025**
Abstract:	**This document summarises the guiding principles upon which the project management will be carried out.**

Document Revision History			
Date	**Version**	**Author/Contributor/Reviewer**	**Summary of Main Changes**
30/11/2023	1.0	Santhana Eswara Moorthy and all partners	First version
12/03/2025	2.0	Santhana Eswara Moorthy	Second version. A section on risk management is included. Project planning and targeted meeting dates are now included. Beneficiary UPB replaced by FZJ. The leader for the task related to sample coordination updated from CICe to CIDETEC.

Dissemination Level and Nature of the Deliverable		
PU	Public	yes
SEN	Sensitive, limited under the conditions of the Grant Agreement	no
Nature	R = Report, E = Ethics or, O = Other	R

Funded by the European Union

OPINCHARGE

OPINCHARGE Consortium			
#	Participant Organisation Name	Short Name	Country
1	LUXEMBOURG INSTITUTE OF SCIENCE AND TECHNOLOGY (LIST)	LIST	LU
2	CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE CNRS (CNRS)	CNRS	FR
3	CENTRO DE INVESTIGACION COOPERATIVA DE ENERGIAS ALTERNATIVAS FUNDACION, CIC ENERGIGUNE FUNDAZIOA (CIC ENERGIGUNE)	CIC ENERGIGUNE	ES
4	DEUTSCHES ZENTRUM FUR LUFT - UND RAUMFAHRT EV (DLR)	DLR	DE
5	DEUTSCHES FORSCHUNGSZENTRUM FUR KUNSTLICHE INTELLIGENZ GMBH (DFKI)	DFKI	DE
6	FEI ELECTRON OPTICS BV (THERMO)	THERMO	NL
7	FUNDACION CIDETEC (CIDETEC)	CIDETEC	ES
8	FORSCHUNGSZENTRUM JÜLICH	FZJ	DE
9	PEDAL CONSULTING SRO (PEDAL)	PEDAL	SK
10	PAUL SCHERRER INSTITUT (PSI)	PSI	CH

NOTICE

Funded by the European Union under grant agreement number 101104032 . Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them.

OPINCHARGE

Grant Agreement: 101104032 .

Call: HORIZON-CL5-2022-D2-01.

Topic: HORIZON-CL5-2022-D2-01-02.

Type of action: HORIZON Research and Innovation Actions.

Granting authority: European Climate, Infrastructure and Environment Executive Agency.

Grant managed through EU Funding & Tenders Portal: Yes (eGrants).

Project starting date: fixed date: 1 June 2023.

Project end date: 31 May 2026.

Project duration: 36 months.

Copyright notice: © OPINCHARGE Consortium, 2023 - 2026.

Reproduction is authorised provided the source is acknowledged.

Guiding principles for project management

The OPINCHARGE project shall be managed in accordance with the Grant agreement as well as the Consortium Agreement signed with the partners. The practical guiding principles for project management were discussed with all the project partners during the project kick-off meeting on 08.06.2023 in Luxembourg. The project management plan is summarized below:

Overall legal and contractual management is led by LIST, who as Project Coordinator, will manage the start-up of the activities, and oversee any revisions and amendments to these documents, if needed, during the project execution. Legal and ethical advice will be provided to the partners in any issue related to the development of the project.

Financial and administrative management is led by LIST as Project Coordinator will manage the EC contribution and distribute funds among partners according to the rules established by the CA and the GA. LIST will undertake the lead of the financial and administrative management, monitoring the use of resources and expenditures, also taken care of the financial statements to be provided by each partner as a costs' baseline. LIST will oversee the main administrative tasks related to the project, as those involved in the preparation, execution and post-processing of major project meetings, or keeping records of all legal / financial information, minutes and agreements.

LIST will act as Technical and Scientific Coordinator of the project. This task involves the planning, implementation, monitoring and closure of the project in terms of scientific and technical development. LIST will hold quarterly meetings and concise progress reports from every WP Leaders will be collected, including milestones, deliverables, and risks log, to be included within a Project Management Plan (PMP). The information will support the decision-making process. LIST will supervise the internal review processes to ensure the quality and timely submission of the deliverables to the EC, supported by all partners. A cross-revision of deliverables within the consortium will be put in place to guarantee the quality of each deliverable.

Samples coordination, benchmarking will be coordinated by CIDETEC who lead that Task. In order to avoid variations in experimental results that come from material processing conditions, the non-commercial samples as standard composite electrodes and gel electrolytes will be prepared mainly by CIDETEC and distributed to other members of the consortium. Thin film samples will be secured (by FZJ) from various commercial/national laboratory suppliers and/or collaborating groups (depending on the composition) to ensure highest quality, which will further be ensured that the film quality meets the criteria of the characterization techniques. For the commercial samples, including active material powder and liquid electrolyte, CIDETEC will identify a common vendor to avoid variability in impurities and the overall material quality. For specific cases where analysis is performed on model surfaces in half-cell configuration, spent electrolyte from full cells will be used and a common protocol will be followed by all partners.

Regarding project execution, the Gantt chart, milestones and deliverables shall be monitored periodically by all partners, and each partner shall keep the relevant Work Package (WP) leader and the project coordinator updated on the status of their part of the project. Any deviations in plan or delays in reaching the milestones should be communicated as early as possible to the WP leader and the project coordinator. A risk analysis table is provided in the Grant agreement. Risk mitigation is a joint effort, and all partners should contribute to identify any emerging risks and suggest risk

mitigation strategies on a regular basis. Work package leaders meeting will take place every 2 months. Work package level meeting shall take place at least every 2 months, and the frequency of the WP meetings shall be decided by the relevant WP leaders.

LIST will be in charge of reporting and communication with the EC, as defined by the Horizon Europe Programme rules: (i) Communicate all necessary information to the EC, (ii) Ensure quality control and submission of progress reports to the EC, and (iii) submit financial statements to the EC. All partners will receive clear guidelines recapitulating the procedures for internal communications, dissemination, and quality management, as laid down in the CA, the GA, and its annexes.

CRITICAL RISKS FOR IMPLEMENTATION

The following list of risks are identified and the strategies to mitigate each of these risks are also provided below.

Description of risk (likelihood, severity)	WP	Risk-mitigation measures
Poor coordination and management of the project leads to unusable results or conflicts related to IPR (low) (medium)	1	The consortium consists of experienced professionals to ensure that work is carried out with a maximum coordination. A multi-lateral NDA has already been signed during the course of the proposal writing outlining the principles of the collaboration and agreed by all parties. Responsibilities and obligations will be further detailed in the consortium agreement at the project start.
Limited availability of thin films samples. (medium) (medium)	1	Focus on single crystal and highly-oriented samples.
For complex surfaces, scattering signal from SEI could be small compared to background (high), (low)	2	Focus on simple surfaces
Difficult identification/location tracking by optical microscopy of SHINs (Au@SiO_2 NPs) aggregates on rough electrodes (composite) (high) (high)	2	(1) flattening of composite electrodes, (2) tracking of SHINs based on the electrolyte signal (enhanced), (3) use of dark-field objective lens
Electrolyte degradation under irradiation with near-infrared SHINERS probes (Raman laser + Au@SiO_2 NPs) (high) (high)	2	(1) Minimization of Raman laser power (design of resonant SHINs), (2) use of scanning Raman probe (50 µm diameter circular pattern)
Raster strategy works well in virtual microscope, but problems arise on the engineering level when putting the approach to practice because of incompatibility (Tasks 2.4, 4.3) (medium) (high)	2, 4	Hardware compatibility requirements will be imposed on the software codes right from the early design stage onwards.
Low-dose *operando* imaging does not yield high enough SNR in the image (medium) (medium)	3	Multiple SIMS images will be summed to improve SNR (and lateral resolution) with a proportional compromise in time resolution
NMR signal intensity too low for compounds formed at the interphases in static *in-situ* samples. (high) (medium)	3	*Ex-situ* NMR measurements using low diameter rotors for high resolution of low concentrated components will be conducted in parallel.
Low NMR nuclear excitation of compounds *in-situ* due to RF reflection by metal components. (medium) (medium)	3	Use of mesh for current collectors and *ex-situ* characterizations.
Difficulties in setting up *in-situ* cell assembly for neutron imaging (medium) (medium)	3	Simplified cell configurations will be implemented.
Validation of SEI model not successful (low) (medium)	5	Suggest additional model experiments to improve simulation
Through-SEI film current too low for thick SEI after extended cycling (medium) (low)	5	Focus on thinner SEIs during beginning of cycling and extrapolate results
EIS plots unexploitable due to low signal (low) (high)	5	Change of the system (chemistry of the cell)

Funded by the European Union

Past and upcoming meeting dates for consortium meeting:

Meeting	Dates	Venue
Kick-off Month 1	08.06.2023	LIST, Luxembourg
Month 6	07. & 08.12.2023	CNRS, Nantes, France
Month 12	20. & 21.06.2024	PSI, Switzerland
Month 18	21. & 22.11.2024	FZJ, Germany
Month 24	May 2025 (tentative)	Online
Month 30	November 2025 (tentative)	CIDETEC, Spain
Month 36 Final meeting	May 2026 (tentative)	LIST, Luxembourg

Funded by the European Union