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Understanding existing PFAS emissions in water electrolysers and fuel cell systems through quantitative measurement techniques

D1.2 – Data Management Plan

Deliverable overview		
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Project summary

PFAS-contained materials have unique physical and chemical properties providing wide range of usages. At the same time, in the unique features of PFAS also lies the concern for the environment, i.e., the high persistence of PFAS (or their degradation products) leading to accumulation in nature and the linked impact on human and environmental health from this accumulation.

The UPeM project main target is to establish harmonised protocols for sampling and analysis of PFAS in different in- and out-streams (liquid, gas, aerosol) from PEMFC and PEMWE and for the quantitative validation of PFAS release in FC and WE operation, while also improving the understanding of the root cause(s) of the PFAS release. This will enable UPeM to provide recommendations for proper usage, mitigation strategies including filtering and operational/control strategies as well as on the type of membranes with lower (expected) PFAS release.

To achieve this project main target, four project elements (PE) have been defined, with information on the current state of the art and challenges along with the project focus are introduced per project element also scientific and technical objectives and targeted results. PE1 sets up harmonised protocols for sampling and analysis of PFAS released from PEMFC and PEMWE systems and for studying PFAS release causes. PE2 focusses on understanding the PFAS release root causes. PE3 will validate PFAS measurement protocol under industrial conditions and use cases and PE4 will provide UPeM recommendations on PFAS release for (future) WE and FC systems (incl. LCA).

To achieve the PE's the UPeM consortium compromises of Europe's leading research experts in modelling, analysis and testing procedures on PFAS (CU, UFZ, IMWS, CEA, FHA, KE, KIST), in here supported by three stack manufacturers (ITM, SYM, IE) and one of Europe's leading service providers on electrolyser and fuel cell technology (FEV) connecting both parts of the value chain.

Public summary deliverable

This deliverable D1.2 – Initial Data Management Plan (DMP) addresses all relevant project data, incl. data volume, type, format, etc, and nontechnical aspects as data ownership, confidentiality, privacy issues in relation with the (re)use, refinement and enrichment strategies according to EC guidelines. The DMP will particularly establish how the UPeM project is satisfying Open Science requirements and complies with the FAIR (findable, accessible, interoperable and re-usable) principle. This DMP is following the last available recommended template for Horizon Europe and will be updated regularly as necessary. A final version will be delivered at the end of the project.

Acknowledgements

Project partners

#	Partner short name	Partner full name
1	CEA	COMMISSARIAT A L ENERGIE ATOMIQUE ET AUX ENERGIES ALTERNATIVES
2	CU	COVENTRY UNIVERSITY
3	UFZ	HELMHOLTZ-ZENTRUM FUR UMWELTFORSCHUNG GMBH - UFZ
4	Fraunhofer	FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV
5	FHA	FUNDACION PARA EL DESARROLLO DE LAS NUEVAS TECNOLOGIAS DEL HIDROGENO EN ARAGON
6	FEV	FEV FRANCE
7	KE	KIST EUROPE KOREA INSTITUTE OF SCIENCE AND TECHNOLOGY EUROPE FORSCHUNGSGESELLSCHAFT MBH
8	SYMBIO	SYMBIO FRANCE
9	ITM UK	ITM POWER UK LIMITED
10	UNR	UNIRESEARCH BV
11	IE	INTELLIGENT ENERGY LIMITED

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