

**= iSTORMY =**

**EUROPEAN COMMISSION**

HORIZON 2020 PROGRAMME – TOPIC: Hybridisation of battery systems for  
stationary energy storage

Interoperable, modular and Smart hybrid energy STORage system for stationarY  
applications

**GRANT AGREEMENT No. 963527**



## **Deliverable Report**

**D4.3 – Report on the integration of data-driven algorithms  
for online energy management**



*This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 963527*

<b>Deliverable No.</b>	iSTORMY D4.3	
<b>Related WP</b>	WP4	
<b>Deliverable Title</b>	Report on the integration of data-driven algorithms for online energy management	
<b>Deliverable Date</b>	30-03-2023	
<b>Deliverable Type</b>	REPORT	
<b>Dissemination level</b>	Confidential (CO)	
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<b>Approved by</b>	Project Coordinator	24/03/2023
<b>Status</b>	Final	

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## **Publishable summary**

The iSTORMY project aims at developing an interoperable and modular Hybrid Energy Storage System (HESS) by demonstrating various use cases and seamlessly interfacing the grid to provide multiple services. In this report, an innovation self-healing (SH) machine learning energy management strategy (EMS) is presented to optimize the usage of the hybrid battery energy storage system (HBESS) towards longer lifetime and higher reliability. In particular, the ageing maps of the battery modules are considered to reduce their capacity loss overtime. Machine learning algorithms are used to update the dataset in real time in function of the system operation. This is considered as part of the system EMS in order to provide the grid services for the three defined use cases. This SH-EMS is used in T4.3 for implementation in the actual EMS hardware.