Deliverable 4 – Definition, Implementation and First Stage Validation for Battery System Dynamic Response Model

Activity A2.1:

Definition and implementation of models for stationary and dynamic behaviour of a battery storage system

Activity A2.2

Obtaining real data for model parametrization

Editor:	Luis Azevedo Costa
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FLEXERGY ABSTRACT

The FLEXERGY project aims at the development of an advanced management solution, highly innovative and provided of artificial intelligence, for the management of assets of battery energy storage systems, integrated with renewable energy sources or for application within a microgrid

Document

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Language Requirements (for non-native English speakers)

In order to fully understand the content of this document, it is therefore recommended that the reader possesses a language proficiency equivalent to B1 level, according to European Language Levels

Disclosure

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1. Executive Summary

This document, Deliverable 4, aims at the creation and development of one model that can accurately describe the electrical and thermal behaviour of a battery energy storage system. The generic model includes both the DC subsystem (batteries, fuses and switches) and the AC subsystem (power inverters, circuit breakers, transformer and MV cells). The control systems will as well be a target of the modelling. During the activity, the experimental procedures performed using the DEMOCRAT testbed necessary to obtain real parameters, including the achieved results aiming to an increase in the accuracy of the described models are detailed

The models will be implemented accordingly to the use cases defined in Activity 1.2 and will serve as a reference for Activity 2.3 where the created models will be implemented in powerful simulation tools such as Matlab and CFD software for the electrical and thermal models respectively.

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