

# Deliverable D2.1

## Report on cell specifications and on testing protocols

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## Public Summary

In Deliverable 2.1 battery cell specifications for different automotive applications (mHEV, PHEV, BEV) were provided as possible baseline for the cell KPIs. Starting from these requirements a tentative cell design has been developed, observing the impact on the energy density performances of the variation of several different aspects related to the materials applied, understanding which values allow to reach the target defined the project. The parameters involved in this evaluation are cathode composition and thickness, solid electrolyte density thickness, coating density and thickness and Li metal thickness. For every of them the impact significancy on gravimetric and volumetric energy density was evaluated and the results obtained have been employed for the definition of a tentative design for the PULSELiON cell, defining also the KPIs for these final prototypes.

The KPIs defined according to this calculation are in line with the target defined in the project from the energy density point of view, reaching value  $> 450 \text{ Wh/kg}$  and  $> 1200 \text{ Wh/l}$ . From the functional point of view the KPIs have been defined according with the current requirement for the automotive application, which are in line with the target of the project.

In this document a general baseline for the final testing for the cell development is also reported. The protocols are based on very widespread international standard reference norms and on customized testing procedure employed in the automotive field and are fully devoted to the evaluation of the electrical and safety performance of battery cell, to verify the achievement of the proposed objectives on the prototype cells that will be developed during the project.