DG ENER Lot 37: Preparatory Study on Ecodesign and Energy Labelling of rechargeable electrochemical batteries with internal storage

Organization:	Name:	Date:
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Task #	Section #	line #	Topic	Comment	Proposed change	Reply study team
	1.1		Definitions	Solid-state batteries should also be defined.	Add a definition for solid state batteries	
	1.2.2		Battery hierarchy	The difference between cell block and modules is not very clear in this definition.	Clarify definitions	
	1.4.1	Table 1	Rechargeable electrochemical batteries classified according to their chemistry	When comparing Li-Ion Pouch to Cylindrical geometry, Energy Density is mentioned for both as an advantage over the other.	Correct inconsistency	
	1.4.1		Rechargeable electrochemical batteries classified according to their chemistry	After stating different Li-Ion chemistries, the text makes a sudden jump from cell-level to battery system-level. It would also be interesting to compare other advantages/disadvantages of different Li-Ion chemistries other than energy density.	Insert table comparing advantages of different Li-Ion chemistries other than energy density.	
	1.4.1		Rechargeable electrochemical batteries classified according to their chemistry	The text focuses too much on Li-Ion chemistry and leaves aside other types of batteries such as Ni-Metal Hydride batteries that are common in hybrid vehicles. Other kinds of battery technologies should be further presented in the text, comparable to what is done for Li-Ion batteries.	Give the same amount of detail for other types of batteries as for Li-Ion batteries	

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	1.4.1		Rechargeable electrochemical batteries classified according to their chemistry	We do not understand why flow batteries have been excluded from the scope of the study. Although not explicitly mentioned, these are in no way excluded by the Battery Directive definition: "*In addition to this non-exhaustive list of examples, any battery or accumulator that is not sealed and not automotive should be considered industrial.".* Flow batteries are regularly studied as an option for stationary applications, especially for grid support applications (such projects exist in Belgium and France). We believe that the question of the inclusion of flow batteries in the scope should be evaluated on grounds of whether they can be massively produced for a certain application in the short term, and the related environmental impacts.	Consider including flow batteries in the scope of the study.	
	1.5		Definition of a battery system and a battery application system for use in this study	We do not see any reference to passive or active cell balancing systems, although these are well mentioned in the definition of cell electronics. We believe that this is an important component of the battery system and should be considered in the scope of the study, in particular since balancing systems are essential in preserving battery longevity.	Elaborate on cell balancing systems.	
	1.5		Definition of a battery system and a battery application system for use in this study	We believe that an explicit mention should be made of Battery Management Systems (BMS's) and their specific components (software, central units, slave units), since these are essential battery system components for several reasons: 1) they control safety systems but also cell balancing systems (as mentioned in previous comment); 2) they represent a crucial aspect in the reuse of the battery; 3) they constitute a key challenge in interoperability with other systems (i.e. Energy Management Systems);	Elaborate on BMS components.	

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	1.6		Definition of the primary functional parameter and unit	It is important to underline that any stationary battery can also be used as a UPS in a logic of application stacking. For example, a building can use a Li-Ion stationary battery that is primarily destined to serve as a UPS to provide peak-shaving or grid services, or vice-versa, the UPS can be a secondary application. It should be clarified how the UPS application should be considered in this framework.	Clarify how UPS application will be considered.	
	Ge ne ral			In general, it is very important to define whether this study applies also to second-life batteries. These often undergo an important re-manufacturing procedure, so it is very important to define the perimeter of application of this study in respect to the fabrication process of second-life batteries.		
	1.7		The basic secondary product performance parameters	As mentioned in the JRC study [8], there is a lack of clear definitions in standards on durability, SoH, End-of-Life and the real-life testing (among others), including IEC 62660-1. We therefore suggest not to include any threshold related to performance and durability parameters.	Eliminate any threshold related to performance and durability parameters.	
	1.7		The basic secondary product performance parameters	The study mentions that the calendar life is an absolute value, yet in the parenthesis it is mentioned as a percentage.	Correct the typo	
	1.8		Discussion of the proposed scope of this study	In this paragraph the study refers to Table 4 in regards to energy density (although the author probably meant to refer to Table 2), mentioning that it should leave out of scope any battery that has an energy density lower than 100Wh/kg. We believe that this threshold is unacceptable in that it excludes technologies such as NiMH or Ni-Cd that are very common in the industry (in particular NiMH that are very common in HEV).		

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	1.1 0.9		The European Ecodesign Directive (2009/125/EC) and its implementing regulations	EV (including HEV) batteries are one of the key products to be addressed in this study; whether these are included or not in the Ecodesign Directive should in no case be used as grounds to exclude them from the scope of this study. Another argument supporting this is that, thanks to the Vehicle-to-Grid (V2G) technology, EV batteries will be used as electricity storage for buildings and have a different nature than the solely transport-related one.		