DG ENTR Lot 8: Ecodesign for Power Cables in Indoor Electrical Installations

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Ref.	Section -	Page	Topic	Comment	Proposed change	VITO reply
1	4.1.4	10	4th bullet (last one)	There is a confusion between the increase of the voltage and the usage of the d.c. current instead of a.c. in the current draft. Clarification shall be made to show that the main benefit came from the increase of the voltage (380V instead of 220V) and not from the the type of current.	1) Replace the current text by the following: **Increase the voltage for power distribution in commercial buildings may improve the efficiency as it reduces the current flowing in the cables.** 2) If 1 not accepted, Replace the current text by the following: **Increase the voltage for power distribution in commercial buildings may improve the efficiency as it reduces the current flowing in the cables.** **As an example, 380 VDC/24VDC power distribution instead of 110 or 230 VAC in commercial buildings, as promoted by the EMerge Alliance3.** Also other initiatives like lighting systems powered via Power- over- Ethernet (PoE)4 are examples of this trend towards smart DC grids integrating power distribution for lighting, ICT and Building Automation networks. The rationale is that cable insulation is related to the peak voltage(Vpeak). In AC systems peak voltage is Vrms.$\sqrt{}$2 = 325 Vpeak. In DC systems the peak voltage is equivalent to the VDC. As a consequence an identical cable with identical insulation would need less current in DC (e;g.: 325VDC, 1A, 325 VA) compared to AC (e.g. 230 Vrms, 1.41A, 325 W) and will therefore reduce the cable losses. Such a switch from AC to DC is complex as it requires another concept of power distribution with different converters, protection switches, distribution transformers, etc **which reduce the energy efficiency**. Therefore it will not be considered as a viable BAT improvement option.	Text has been adapted. Impact of DC is on thickness of insulation and not on losses.

2	6.5	43	2nd paragraph	Avoid confusion. It is said in the first paragraph "nothing was identified in Task 4, as a consequence that there is also no further analysis" which seem to be a conclusion. And then it is suggest in a second paragraph that there is only a solution which is too difficult to implement. You may also explain that 220VAC used in Europe is already far more efficient than the 110VAC used in many countries such as USA. Please remain on your conclusion.	Delete the whole paragraph (line 11 to 19) below: At circuit system level section 4.1.4 referred to 380 VDC systems replacing 230 VAC. The rationale was that cable insulation is related to the peak voltage(Vpeak). In AC systems peak voltage is Vrms.√2 = 325 Vpeak. In DC systems the peak voltage is equivalent to the VDC. As a consequence an identical cable with identical insulation would need less current in DC (e.g.: 325VDC, 1A, 325 VA) compared to AC (e.g.: 230 15 Vrms, 1.41A, 325 W). Cable loss will therefore reduce by half $(1/.\sqrt{2})^2$ in DC compared to AC. As mentioned in section 4.1.4 such a switch from AC to DC would require another power distribution system which is so far not a viable improvement option today (10/2014).	Paragraph has been updated and grouped in a single point The reference to 110 VAC is removed and also the related text.
3	*7.1.1*	22		Here is a proposal as requested.	It is important to understand that cables are not a product but a means to carry power. It is therefore important to take into consideration the usage of the load or application for the whole installation to maximize the efficiency of the wiring system. The brand new HD 60364-8-1 standard gives guidance to optimize the efficiency of the whole electrical installation where the wiring system is part of it. To maximize the efficiency of the wiring system during the life time of the electrical installation, it is key that the HD 60364-8-1 shall be implemented by each Cenelec country as soon as possible. As it will be implemented in the design software as it is base on the other part of HD 60364, it should be quickly implemented at the European level in a transparent and efficient way.	Proposed text has been added to the paragraph.

4	*7.1.2.2. 1.1*	13	Line 30	Please, refer to the HD 60364-8-1:2015 which will be ratified on the 2014-12-22 and available on the 2015-01-23 (see on Cenelec web site)	Replace “prIEC 60364-8-1 and/or its EN 30 equivalent” by “HD 60364-8-1”.	Replaced
5	*7.1.2.2. 1.2*	14	Line 6	Please, refer to the HD 60364-8-1:2015 which will be ratified on the 2014-12-22 and available on the 2015-01-23	Replace “prIEC 60364-8-1 and/or its EN 30 equivalent” by “HD 60364-8-1”.	Replaced
6	*7.1.2.2. 1.3*	14	Line 26	Please, refer to the HD 60364-8-1:2015 which will be ratified on the 2014-12-22 and available on the 2015-01-23	Replace “prIEC 60364-8-1 and/or its EN 30 equivalent” by “HD 60364-8-1”.	Replaced