# DG ENTR Lot 8: Ecodesignfor PowerCables in Indoor Electrical Installations

| Organisation: | Name: | Date: |
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| Ref. | Section - | Page | Topic | Comment | Proposed change | VITO reply |
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| 1 | 2.4.1 | Page 29 Line 28 | Copper availability | *"However according to Europacable, referring to a JRC study, copper is becoming a scarce resource."*<br><br>• Such JRC study (http://sa.jrc.ec.europa.eu/uploads/ecodesign-Application-of-the-projects-methods-to-three-product-groups-final.pdf) has the purpose to test tentative methods for the assessment of resource efficiency parameters (reusability/ recyclability/ recoverability - RRR, use of relevant resources, recycled content, use of hazardous substances, durability) through a few case studies (washing machine, LCD TV...)<br>• The JRC document describes a testing exercise. However, the applicable criteria as per today in the field of material efficiency are defined by the MEErP module on material efficiency http://meerp-material.eu/: **"Material-efficiency Ecodesign Report and Module to the Methodology for the Ecodesign of Energy-related Products (MEErP) PART 1: MATERIAL EFFICIENCY FOR ECODESIGN Final report to the European Commission - DG Enterprise and Industry 5 December 2013"** In this document, it is clearly stated that the parameters selected as the most suitable are:<br>○ Recyclability Benefit Rates<br>○ Recycled Content<br>○ Lifetime<br>○ Critical Raw Material Index<br>• Copper has 1) outstanding recyclability rates (Preparatory Study Table 3-17 states 95%), 2) very long lifetime and 3) it is out of any official critical raw material list (http://ec.europa.eu/enterprise/policies/raw-materials/critical/index_en.htm).<br>• JRC has made several other studies in the past with the purpose of assessing the risk of disruption / depletion of metals:<br>○ Critical Metals in Strategic Energy Technologies (http://setis.ec.europa.eu/system/files/CriticalMetalsinStrategicEnergyTechnologies-def.pdf). This report excludes copper from the list of critical metals as its demand to fulfill the SET-Plan is below 1% of world supply. World supply is currently above 20 Mtons/year, 1% means >200 kTons/year, which is above the range of impact expected from the application of any improved scenario (as per the current version of the Preparatory Study). | Replace the reference to JRC study by the reference to http://meerp-material.eu/: **"Material-efficiency Ecodesign Report and Module to the Methodology for the Ecodesign of Energy-related Products (MEErP) PART 1: MATERIAL EFFICIENCY FOR ECODESIGN Final report to the European Commission - DG Enterprise and Industry 5 December 2013"**.<br><br>If collateral literature is to be mentioned, then add the following:<br>• Critical Metals in Strategic Energy Technologies (http://setis.ec.europa.eu/system/files/CriticalMetalsinStrategicEnergyTechnologies-def.pdf).<br>• Critical Metals in the Path towards the Decarbonisation of the EU Energy Sector (http://setis.ec.europa.eu/system/files/Critical%20Metals%20Decarbonisation.pdf).<br>• European Commission (http://ec.europa.eu/enterprise/policies/raw-materials/critical/index_en.htm).<br>• American Phisical Society - Panel on Public Affairs & The Materials Research Society – Energy Critical Elements: Securing Materials for Emerging Technologies (2011) (http://www.aps.org/policy/reports/popa-reports/upload/elementsreport.pdf)<br>• United Nations Environment Programme – Critical Metals for Future Sustainable Technologies and their Recycling Potential (2009) (http://www.unep.fr/shared/publications/pdf/DTIx1202xPA-Critical%20Metals%20and%20their%20Recycling%20Potential.pdf) | A reference to the new MEErP study is added, nevertheless it does not contain a precise estimate.<br><br>Therefore, the stock of cables is now compared with the USGS estimate of global undiscovered copper resources (3500 M tonnes) and a statement is made that a price increase sensitivity analysis will be done in Tasks 6&7. |

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| | | | | Such impact on worldwide copper demand is considered by JRC as not leading to a critical level.<br>○ Critical Metals in the Path towards the Decarbonisation of the EU Energy Sector (http://setis.ec.europa.eu/system/files/Critical%20Metals%20Decarbonisation.pdf). This report concludes that overall risks for copper are low (at any of the following criteria: supply constraints, geographic concentration, political risk)<br>• Other relevant institutions discard as well the criticality of copper in the achievement of any future energy scenario:<br>○ European Commission (http://ec.europa.eu/enterprise/policies/raw-materials/critical/index_en.htm).<br>○ American Phisical Society - Panel on Public Affairs & The Materials Research Society – Energy Critical Elements: Securing Materials for Emerging Technologies (2011) (http://www.aps.org/policy/reports/popa-reports/upload/elementsreport.pdf)<br>○ United Nations Environment Programme – Critical Metals for Future Sustainable Technologies and their Recycling Potential (2009) (http://www.unep.fr/shared/publications/pdf/DTIx1202xPA-Critical%20Metals%20and%20their%20Recycling%20Potential.pdf) | | |
| **n** | 2.4.5 | Page 38 Line 15 | Energy rates | Check that the economic analysis of LLCC has considered harmonized (in time) prices for electricity and for cables. Cable price update corresponds to June 2014. Same should apply to electricity prices (i.e. 2010 prices corrected by inflation and electricity price increase for 4 years, as indicated in MEErP methodology) | | Prices have been adjusted. |
| **3** | 7.1.2.1.1 | Page 11, Line 22 | Policy measures at product level by a generic ecodesign requirements on information | • Together with resistance, it would be welcome to give a figure of annual energy losses for a limited number of predefined load profiles (dedicated circuit high load, dedicated circuit low load, distribution circuit…).<br>• Such information could also be present in the design software commercially available. And also in the tools offered by cable manufacturers, which many already include the economic optimization on life cycle basis (some examples:)<br>○ TKF http://www.tkf.nl/producten_portal/cablecalculator/lowvoltage/<br>○ Draka http://www.draka.nl/producten/kabelberekening.asp?menuid=8<br>○ Nexans http://www.nexans.be/eservice/Belgium-en/navigate_270893_265_40_11239/EcoCalculator.html<br>○ Top cable eco matic http://www.topcable.com/ecomatic/index.php<br>○ Nexans EasyCalc http://www.nexans.fr/eservice/France-fr_FR/navigate_322622/NEXANS_EASYCALC.html | | Added in the policy measure. |

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| **4** | 7.1.2.2.1.1 | Page 13, Line 13 | Specific ecodesign requirements to increase CSA and lower cable losses | "For this, the installer has to provide additional information like circuit length and load (load factor and load form factor or equivalent operating time at maximum loss) of the circuit."<br><br>Load factor and load form factor have a decisive impact on the results. Too much freedom on its selection could lead to gaming behaviour by designer or installer to minimize investment cost at the expense of a higher life cycle cost. Here again, a number of predefined profiles could be of help. | | Added in the proposed policy measure |
| **5** | 7.1.2.2.1.1 | Page 13, Line 19 | Specific ecodesign requirements to increase CSA and lower cable losses | "HD 60364-5-52:2011 (IEC 60364-5-52:2009) defines two correction factors to determine the maximum allowable current-carrying capacity of an electric circuit; these are the method of installation and the ambient temperature. A third correction factor based on the load factor of the electrical load could be applied."<br><br>As in the previous comment, the choice of the load factor could/should be limited to a number of predefined profiles, so as to avoid gaming. | | Text added |
| **6** | 7.1.2.2.1.1 | Page 13, Line 22 | Specific ecodesign requirements to increase CSA and lower cable losses | "An alternative approach is to introduce more stringent voltage drop limitations in the standard. (TBD)"<br><br>Limiting voltage drop has been already analyzed by ECI, but this proposal fails to capture the savings potential, while introducing a burden that translates into higher investment costs that don't generate relevant loss reduction. Study will be forwarded. | | Noted |
| **7** | 7.1.2.2.1.2 | Page 14, Line 1 | Generic information requirements on the provision of information to decrease cable losses before commissioning of the electric circuit | "An economic analysis for circuits with a high load factor should be provided as part of the technical file of the electrical installation to be approved by the building owner."<br><br>Would this measure be just informative to the building owner, or would there be an obligation to design to LLCC? | | The obligation is to design the LLCC, but they can still play around with the load profile. |
| **8** | 7.1.2.2.1.2 | Page 14, Line 6 | Generic information requirements on the provision of information to decrease cable losses | "Note: it is proposed to include this in an updated prIEC 60364-8-1 and/or its EN equivalent. This could be aligned with the standard IEC 60287-3-2 that describes an economic optimization method."<br><br>We wish to highlight the importance of including the economic cable sizing optimization in IEC 60364-8-1. | | This is difficult taking into account the revision cycles of those standards (5 years) |

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| | | | before commissioning of the electric circuit | | | |
| **9** | 7.1.2.2.1.4 | Page 14, Line 40 | Requirements for monitoring of cable losses with BACS during operation of the building | "For consideration: monitor cable temperature instead of measuring the loading current."<br><br>This method seems to be much less accurate. Many factors influence cable temperature. This method would also lead to investments (required for temperature monitoring), but would deliver poorer results. | | Noted, added: ..it is less accurate but could be less expensive |
| **10** | 7.1 | Page 10 | Policy Analysis | At some point it would be welcome to indicate which existing legal instrument or other mechanism could be applied to implement the suggested measures. | | This is now added in the beginning of the sections |