

No.	Question / Comment	LUT / VTT Answer
1	Should action to provide handprint be company-specific? Could for example certain sector provide handprint - like deposit system for beverage packages reducing waste and increasing circularity?	Company or sector provides their offerings for wide variety of different customers. As the handprint assessment is always customer-specific, it is difficult to determine any general handprints at company-level. However, company can calculate its handprint through product portfolio. In example of beverage packages, calculation would be required to ensure environmental benefits, e.g. to make sure that the transportation emissions of the returnings would not exceed the benefits achieved by the deposit system.
2	So you use standard LCA calculation and just calculate the difference between two solutions	LCA-based footprints creates a basis for handprint assessment. However, there are several factors that need to be defined in handprint assessments to get accurate and reliable results. All these factors are not included in standard LCA. Handprint assessment takes into account a real operating environment where a product or service is used. That means that an actual beneficiary or user for an offering needs to be defined. Naming a beneficiary guides the selection of a baseline, which act as a reference point for a comparison. By acknowledging the real operating environment and by selecting realistic baseline, a handprint assessment can give more reliable results than just comparison of e.g. CFs. Similar to LCA, defining functional unit, consistent system boundaries and data are also essential in handprint assessments.
3	Handprint vs consequential LCA - very similar in practice?	Handprint can be calculated by comparing two consequential LCAs or two attributional LCAs. Depending on the goal and scope of the case, the LCA practitioner needs to make the decision between the two approaches. However, handprint describes difference between life cycle footprints of two solutions, and acknowledges an operating environment in which an offering is used.
4	the handprint was mentioned to be relative, i.e. %. Why is that? It can be 1 kg or 1 ton which is a huge difference.	The handprint can be communicated with other units than percentages as well, e.g. X kg/year. What we meant by relative is that handprint is always relative to the baseline.
5	About Handprint: Have you developed any rules how the comparison is chosen (the product to which the assessed product is compared to)? I mean a specific product does not get better, by comparing it to something that is worse.	We have guidelines on how to select the baseline, or, in other words the product to which the comparisons is made against. You can find baseline setting guidelines on the Carbon handprint Guide 2.0, page 15. https://publications.vtt.fi/julkaisut/muut/2021/Carbon_handprint_guide_2021.pdf
6	Probably the guidelines will be updated in near future according to Green Claims directive rules for offsetting.	Developments in science and policy can cause alterations to the requirements of the climate target guidelines. In addition to the green claims directive, the currently developed EU Carbon Removal Certification Framework (CRCF) is hoped to improve the quality of carbon offsetting. On the other hand, the ongoing developments regarding instructions and policy work should not be used as a reason to postpone companies climate action.
7	Can you elaborate main differences between properly made comparative CF or LCA study (which are already mentioned in LCA ISO standards) (e.g. scopes and data sources are really comparable) and a handprint study?	See question no. 2.

8	<p>More of a comment than a question: Companies understand the language of money much better than hard to read/implement guidelines. It's very important that credible offsetting tools will be available in the future to enable faster green transition. This requires that offsetting tool is truly available for every company/organization in less controversial way than today.</p>	<p>Carbon offsetting, whether based on emission reductions, avoidance, or removals, is necessary for achieving the targets of the Paris Agreement as well as company-level carbon neutrality and net zero targets. However, various carbon offsetting project types have high uncertainties in delivering the promised climate impacts. While some project types, such as technological carbon removal, can provide more certain climate impacts, they are still emerging and too pricy for various companies to use. However, it is important to financially support the development of these technologies.</p> <p>Even though various ongoing initiatives aim to improve the quality of offsetting, it is expected that high-uncertainty carbon offsetting will be available on the market for years to come. Eventually, it will be the company's responsibility to ensure that carbon offsetting is reliable.</p> <p>Our recommendation would be that companies, where the handprint approach is applicable, should prioritize it as a tool to achieve emission reductions across the supply chain and thus decrease the need for offsetting. Handprint can offer a more reliable and transparent emission reduction method compared to offsetting. After all, offsetting is not a method for decreasing one's carbon footprint, but rather a method for achieving external reductions to 'make up' for what cannot be reduced from the footprint. Creating carbon handprints is another way to achieve external reductions. Carbon handprints arise from selling emission reducing solutions to customers, and can thus reflected as increased revenues. On the other hand, buying carbon credits to offset emissions is a cost to the company.</p>
9	<p>Is this animation available online?</p>	<p>Yes. You can find it at https://www.handprint.fi/animation/</p>
10	<p>How does the Handprint approach address additionality and speculative calculations of "Scope 4" avoided emissions? How are appropriate benchmarks selected objectively and consistently for everyone aiming to provide a more sustainable alternative to current offerings? It seems that there is potential for double-counting emissions, as has proven the case with carbon credit trading.</p>	<p>The baseline selection is described in answer no. 5. The baseline may change with time and thus the handprints should be updated if new data becomes available.</p> <p>Scope based calculations always include double counting since scope 1 emissions from one company are scope 2 or scope 3 for other companies.</p> <p>The scope 4 relates to avoided emissions on organizational level, where it contributes to the carbon footprint of the same organisation. Handprints cannot be subtracted from footprints. They show how a company may help others to reduce their footprints.</p>
11	<p>For comparison (not a question but an observation related to my question above): The only reporting standard to date of which I'm aware that takes the context of carbon budgets and planetary boundaries into account to assess sustainability performance is the SDPI from UNRISD. It attempts to inform organisations about what their fair share of the global carbon budget is, but to do this it has to omit Scope 3 (as one entity's Scope 3 is another's Scopes 1+2).</p>	
12	<p>"Helping others in sustainability" is already a huge business model especially within fiber based industry in many steps of the value chain :)</p>	

13	<p>A few questions: In a meeting I attended about the reuse of materials, carbon handprint and negative carbon footprint were criticized as "indulgences" and pointless because they do not prevent the simultaneous/immediate production of new products. How should one respond to such criticism? What would be considered as a handprint baseline for reselling used products and materials to customers? Not needing to produce new products, thereby avoiding emissions, and/or ensuring that used products don't end up in landfills or are used as energy? Is 'handprint' a verb? If I offer a service to someone, can I say my handprint is x amount, or have I produced x amount of handprint?</p>	<p>Our response to this criticism is that there are cases in which it can be verified that use of a reused product reduces the amount of product manufacture related to that specific customer. When calculating handprints we can make this positive impact visible, and guide customers and companies to more sustainable operations. To the question if that reduces the overall manufacturing of the non-sustainable products somewhere else, is not something that you can answer from the basis of a single handprint study as it is outside the scope of study. However, handprint can verify that in a specific case for a specific customer, the studied solution provides its function or functions with lesser related environmental impacts. This supports selecting the new more sustainable solutions over the non-sustainable ones represented by the baseline.</p> <p>The baseline for the reused products and materials is the option that the customer would most likely use if the handprint solution did not exist and is therefore case specific. The handprint study includes the full life cycle of the products and materials and therefore the total handprint is the sum of emission reductions from avoided manufacturing, avoided EoL emissions and all other impact reductions in the life cycle. Energy use is a tricky question, as it is often used to support non-sustainable linear life cycle operations and it slows down the transition towards material circularity (in energy production the material value as a material is lost similarly to the landfilling case and both are to be avoided in circular economy, although energy recovery is preferable over landfilling).</p> <p>In general, Handprint is a tool used to assess relative positive impacts facilitating decision-making situations and providing information on environmental performance of products and services. This allows for more environmentally friendly decisions to be made. The aim is to broaden the perspective beyond merely reducing harmful impacts and to help others to reduce their environmental impacts, since more widespread actions are needed to address current environmental challenges. However, in reducing and avoiding production and consumption, the primary responsibility lies with e.g., companies and various steering mechanisms to strive for reduced consumption and the development of new circular economy solutions. Handprint serves as a tool to compare the environmental performance of these various solutions and to motivate innovation and the production of handprint offerings. Our novel handprint approach provides guidelines for evaluating the positive environmental impacts of circular solutions, as well. As a term, 'handprint' is similar to 'footprint'. For example, a company can communicate that its product has a handprint of X kgs or X % for a defined beneficiary.</p>
14	<p>To be able to use handprint to compensate scope 3 emissions, there should be an official way to calculate it. I suppose the methodologies are still quite open to interpretation. Handprint is not yet considered in SBTi calculation or GHG protocol or is it?</p>	<p>The handprint is not meant to be used as a compensation method, but to bring an additional means to consider emission reductions on a wider level than just the own company/product. We acknowledge the need for handprint standardisation and aim to support this action.</p>
15	<p>When comparing handprints with alternate solutions, how does one ensure that the data is sufficiently reliable. Since data for competing products may not be very specific?</p>	<p>While the primary objective is to utilize primary data whenever possible, it is understood that obtaining accurate data may not always be possible. In such cases, defined customers can often provide valuable data, particularly regarding the use phase, and often also secondary data need to be relied on. For reliability and transparency, data accuracy and sources need to be described for both a baseline and an offered solution.</p>
16	<p>What kind of guidance can be given for the critical review / verification of a handprint study: critical review by a panel (multiple external parties) or by an external party?</p>	<p>If the results are intended to be used to support a comparative assertion disclosed to the public, a panel of critical reviewers is recommended (see ISO 14044).</p>

17	availability, quality & reliability of data, transparency between players, specific calculation methods, verification by certified? third parties...there seems to be still a few things that give room for interpretation and uncertainty...	There are always uncertainties related to LCA and they must be considered in the assessment following the LCA rules and with e.g. sensitivity assessments. See also answer no. 15.
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