Reviewer comment	Response & changes
Dear Mr. Ithurburn,	
We now have reviews of your above referenced submission to IEEE Transactions on Sustainable Computing. Copies of the review comments are enclosed.	
After considering the reviews and recommendation of the Associate Editor, I have determined that you should revise the paper as per review comments and resubmit as a new paper. The history of the paper will be preserved, but, it will be treated as a NEW submission and given a new log number. If you choose to revise and resubmit your paper, please include this original log number TSUSC-2016-10-0068 when submitting and include a detailed summary of the changes you made in response to the AE and reviewers comments. We will include your previous manuscript's history in its files. The AE may choose to send the paper to the original reviewers so that the continuity is preserved.	We chose to rework and resubmit the article as a new article and are providing a response to the original reviews along with the submission to be able to track the history.
The Associate Editor has the following comments for you:	
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Associate Editor	
Comments to the Author:	
Considering the reviews, I suggest the authors to rework the paper in depth, make it self-consistent and strengthen the contribution.	Thank you, we reworked in depth and detail.
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We hope that you will find the comments from the reviewers to be useful in your future work. If you have any questions, feel free to contact us.	Yes, they were beneficial to significantly improving the reporting.
Sincerely,	
Albert Zomaya, EIC	
albert.zomaya@sydney.edu.au	
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Reviewers' Comments	
Reviewer: 1	
Recommendation: Reject	
Comments:	
This paper presents the synopsis of the MSc thesis (with the same title) of the first author. In general that is a good practice since it allows to disseminate the results of the student to larger audiences. However, submitting a paper of this kind may also present a number of issues if not paying a close attention. That is the case of the current paper in my opinion and I cannot recommend its acceptance. Some of these issues are:	We agree that there were glitches in the writing of the synopsis that led to a number of issues and we are grateful for the detailed comments by the reviewer to help us fix those.
- Paper logic and structure: Even without explicitly mention, the reader will soon notice that this paper belongs to a different (and larger) piece of work. In that sense, using expressions such as "this project" instead of "this paper" may rise some first concerns at this respect. However, much more important is that the paper lacks of a clear and well-exposed motivation to captivate the audience. The introduction should do this work but it fails. I think that the authors should have avoided all the subsectioning and go from the general to the specific in a clear way.	We have rewritten the introduction to more clearly expose the motivation and to better captivate the audience. The words “this project” no longer appear. The introduction now begins with a general commentary on how different environmental effects complicate analysis and how the different effects leaves designers decreasing impacts in one dimension while increasing it another one. It then proceeds to explain how designers can use weighting techniques to assess multiple impacts at once and how this technique complicates assessments. Finally, the introduction presents a specific pair of products to use in a case study on how weighting might dictate design practices.
- Technical soundness: Some statements are very vaguely posed. For instance, in page 2, 1st column, lines 2-5 the authors state "A weighting triangle... ...but past researchers have found them useful, so this project follows the tradition". Statements like this obviously undermine the soundness of the paper. "Following the tradition" is no reason to apply a technique without a further justification. A paper has to be self-contained.	The introduction now contains a more elaborate justification for the weighting triangle on page 2 where it explains how the study concerns the most common analysis practices and how SimaPro, which utilizes the weighting triangle, is one of the two most common software packages used. We do not use tradition to try to justify anything.

- Readability: The paper is hard to follow. On the one hand, some information is constantly and unnecessarily repeated along the text, e.g. check how many times the three weighting factors (human health, ecosystem quality and resource use) are introduced within the text. On the other hand, some important concepts only appear very late in the text, e.g. the first reference to the Life Cycle Impact Assessment (LCIA) is on page number 6. As LCIA = LCA + Eco-indicator 99 (in the paper logic), that should have been explained much earlier, right when the first reference to Eco-indicator 99 was made.	We have reduced the number of introductions of the weighting factor. Also, the introduction now contains a clarification of the LCIA on page 2. We stress that LCIA does *not* amount to LCA + Eco-indicator 99. It only refers to an axuliary phase of the LCA, and Eco-Indicator 99 is one method available for implementing the LCIA. We believe the new explanation makes clearer what LCIA is and how it relates to the overall LCA and Eco-indicator 99.
Reviewer: 2	
Recommendation: Revise and Resubmit as "New"	
Comments:	
1. The research is relevant as it falls within the scope of STCSC i.e. "Measurement and evaluation of the sustainability of existing IT infrastructures".	We thank the reviewer for the acknowledgement. This was our reasoning for choosing the journal for submission.
2. Paper construction is haphazard, hence very difficult to understand and follow. For example research gap is presented before the literature review, rather latter must lead to former.	We now present the literature review before the research gap. While there are different opinions on whether a research gap can and should be presented before the literature review, we introduce the research questions in the introduction but phase the research gap after the literature review.
3. Paper is using pre-established methodologies, however their use in the paper is not properly justified. For example, selection of Eco-indicator 99 categories is based upon the argument that "it has been traditionally used by previous researchers" and is supported by only one reference, which is inadequate. Moreover, Page 3 (last paragraph) says "….LCA serves as an appropriate tool for this particular study….", and then in page 4 (first paragraph), it is mentioned that "…data availability limits the certainty of the assessment (in LCA)…". Based on this argumentation, the results of this research are (indirectly) called uncertain by researchers themselves.	The introduction now has a justification for LCA and Eco-Indicator 99 based on their prevalence and our intention to focus on common practices. We emphasize the data limitations to make the reader aware of the study's limitations, but the methodologies in this paper need not use these particular data. We use these data because of their availability given our limited resources, but they are not inherent to our methodogies. However, we concede that the data introduce uncertainties to our results. We could not eliminate all of the limitations in our work, but we are pointing them out.
4. The example of compact fluorescent lamps majorly occupies the abstract and shows no relevance or connection to title and keywords.	The abstract no longer mentions cfls, and now focuses on the paper's central case study. We only mention the cfls in the introduction as an example of the tradeoffs in green technology.
5. Some of the major arguments lack references. For example, (page 5, section 3.3, paragraph 3) "…The desktop computers have more use hours because, in practice, users usually switch off thin clients at night, but only 30% of users switch off desktop computers. Theoretically, the use hours might equal each other for both machines, but real life users treat the machines differently. This LCA aims to reflect reality, so it uses the numbers from real users."	The use hours reference now appears in the same sentence in which we first reference use hours, "The desktop computers have more use hours because, in practice, users usually switch off thin clients at night, but only 30% of users switch off desktop computers [2]." We also achecked further arguments to ensure they had appropriate references.
Reviewer: 3	
Recommendation: Author Should Prepare A Major Revision For A Second Review	
Comments:	
The link between sustainable computing and climate change is certainly an interesting and important topic. However, the originality and depth of the paper needs significant improvement to be considered to be published in an IEEE Transactions, in my opinion.	We thank the reviewer for acknowledging the relevance of the topic and we did our best to consider and incorporate the valuable feedback.
Recommendations for the authors to improve the quality of the paper:	

- Carry our own original measurements and/or simulations	We use information from databases, that is true, and we see how original datasets can be more attractive but actually using open datasets provides for more replicability and transparency of results. The way the study is designed was to understand what difference the weightings would make in order to analyze tradeoffs, so to us it seems there is not much benefit in eliciting our "own numbers" from measuring material instead of using the databases with regard to the research questions we were investigating.
- Provide analytical investigations and modelling of the scenarios	The description of the scenarios is provided in section 3.2 (LCA scope) and then detailed further in the respective subsections. We considered different methods for modeling them in addition but found that no technique provided significant benefits to the purpose of this analysis over the existing description in natural language and the representation of that data in tabular form.
- Provide a comprehensive comparison with existing LCA approaches	We followed the official documentation as closely as possible and are not proposing any new way of performing LCA. If we were proposing a new approach, the suggested comprehensive comparison would certainly be necessary, but as this is not the case for the research at hand, it doesn't seem to be a valuable additional contribution for this article to give an overview of how other researchers have conducted LCA in the past. We simply follow the standard documentation as referenced in the article.
The methodology is based essentially on Patrick Hofstetter's work and data sets by produced by other projects. In essence, there is virtually no own experimental data or own simulation data, so the originality and impact of the paper is somewhat questionable.	It is correct that we do not provide new original datasets but that was also not the goal of the research. Instead, we do provide a new analysis of existing data that compares the impact that different weightings of factors have. Our research involves asking how assessment methodology can dictate outcomes in potentially harmful ways. Acquiring new data for the individual product materials would not serve the study's purpose. We consider it more relevant to show this analysis with existing data to underline the point of the weighting impact on the analysis.