

Overall the manuscript and spreadsheets present data from a wide mixture of scientific and political sources. The authors do a first-class job of compiling, describing, assessing and explaining. They provide a logical and useful structure and excellent documentation, with careful and explicit attention to errors and uncertainties throughout. The two spreadsheets represent models of clear and effective data presentation. Even if this represents the 10th version and now the third or fourth published in ESSD, the topic and the budget calculations remain absolutely essential. I applaud the authors and the overall GCP team for the effort and for the quality of the effort. Prompt publication will serve the project and represent a good effort by the journal.

I submit a short set of comments, questions and suggestions. I also mark a few typos because apparently many of those persisted through prior proof reading and in at least one case they affect the intended meaning.

General (and throughout the manuscript): Assuming publication of this manuscript before the end of calendar 2015, the authors and this journal will then have two carbon budget papers cited as Le Quere et al. 2015 (with likely slight differences in the long lists of authors). The manuscripts will have separate dois, of course, and good, but can the authors or publishers think of a convenient way to designate 2015 first and 2015 second?

P4, line 4 - Typo: "growth in EFF will be near of slightly below zero". 'or', not 'of'?

P7, line 13 - Typo (?): "Finally we provide the total or cumulative emissions from fossil fuels" Does the 'or' in this case indicate that 'total' equates to 'cumulative' or should this read 'total of cumulative'?

P8, line 24 - Comment: "emission estimates are verified by the UNFCCC". How does the UNFCCC verify? Against some other data source not available to this group? In the National Carbon Emissions spreadsheet, the (green) UNFCCC reports for Canada and Germany (I only looked at those two countries) look higher than the CDIAC estimates. Systematically true, e.g. for all reporting countries? Impact?

P11, line 12 - Question: "China's emissions could be overestimated". Those of us who follow the climate blogosphere, and no doubt several of these authors, now know that China under-reported emissions for 2015 (and perhaps prior years). I do not request or even encourage the authors to chase down every small or large update - to manage annual accounting they must set and adhere to firm cut-off dates. But in view of the importance of this particular correction, and noting that the authors admit later, in the discussion (P42, line 29) "Our approach also depends on the reliability of the energy and land cover change statistics provided at the country level", this reviewer wonders whether they can or should correct the China national data? Such a correction in E_{FF} would of course have a knock-on effect on S_{Land} for 2014 and on projections for 2015 as well? Apparently the authors accessed the particular Chinese data sources as recently as October 2015? I leave it to the authors to decide their possible and plausible options at this late date. Perhaps 15% to 20% change for a single country, even for China, remains within the uncertainty limits in any case? They might at least need to modify the sentence about overestimation then leave more accurate accounting and any corrections to a subsequent budget?

P15, line 2 - Question: "In both cases, the projection of a decrease is consistent with the realised change." I do not understand this sentence. It refers, evidently, to projected vs. reported coal use (-3.2% to -2.9%) and projected vs. reported cement production (+3.5% to +2.3%). Because the values for coal (negative) and cement (positive) differ in sign, I do not understand how both can show a projected decrease? Perhaps the authors mean that both projections had the correct sign (trend direction) even if they missed the magnitude of change slightly?

P21, line 23 - Typo: "The methods implicitly assumes instantaneous loss or gain". Either 'method implicitly assumes' or 'methods implicitly assume' ...

P22, line 11 - Typo: "These estimate are" 'estimates are'?

P25, line 24 - Comment: We just saw, in past days, updated version of SOCAT v3? Does the updated version include some or all of these additional data records? (And then the authors could eliminate the long version of Appendix 1?)

P26, line1 - Comment: "discrepancies". I have not read Rödenbeck et al. 2015 but evidently the authors refer to more or broader discrepancies than addressed in that paper? From Table 3 we know that the authors used 3 ocean data products in 2013 but only two in this paper. Do we need more explanation? At least as guidance or advice to other potential users? Again, I leave this decision to authors.

P35, line 7 - Typo: "ensemble mean ... also reproduce the observed mean" 'reproduces'?

P36, line 29 - Question: Here again the acute dependence on accurate emission numbers from China "lower growth in emissions than anticipated in China". See comment (P11, line 12) above. Would the revised emission numbers have come closer to the authors projections? As above, authors to decide if and how to use any revised numbers.

P58, Table 2 - Question: Here and again in Table 4 the authors provide very useful listing of and access to "individual components" or "each component" of "global" budgets. But the country data do not appear here, e.g. the 'General' or 'National' data from China. Those sources do occur in the reference list. Because of their prominent use in this particular version of the budget, this reviewer does not understand why some data sources appear in both the tables and the reference list but others only in the reference list? Not a big issue, only a curiosity.

P60, Table 4 - Typo: For G_{ATM} , the NOAA ESRL data source should reference 1980 to 2015, not 1980 to 2014?

P62 & 63, Table 6 - 'Not applicable' in this table indicates that first use of the particular model occurred in this paper, e.g. that no prior use occurred so that accordingly no change could occur?

P62, Table 6, row starting with "CCSM-BEC" - Typo: "small difference in the mean flux are caused by". 'differences'?

P64, Table 7, line 9 - Typo: "** Estimate are not corrected" 'Estimates'?

P72, Figure 5, line 5 - Typo: "emissions projection for year 2014 based on GDP projection (red dot)". Surely 2015 rather than 2014?

P74, Figure 6, Panel C - Comment: In this panel and in a few other figures as well, consider using a different colour palette to accommodate colour-blind readers? E.g. http://geog.uoregon.edu/datagraphics/color_scales.htm.

P80, line 4, Typo: "year when the budget was first release." 'released'? (And this designation will get more confusing in future years with two '2015' citations? See top comment.)