

Review ESSD-2019-152, global cement emissions

Good product, important contribution.

Data download easily and cleanly from Zenodo. Using the .csv file, I can easily reproduce the emissions time series as shown in Figure 2. Likewise from the .xlsx file.

Page 7 lines 3, 4: If this statement “The rebound in Chinese cement production, and therefore emissions, is the main reason for global emissions to have regained the level of 2014.” Is true, and this reviewer accepts it as true, then the green line in Figure 1 should show, since 2014, the same decline and rise as the blue line in Figure 2? Instead the line in Figure 1 shows that global production did not rise since 2014?

Thank you for pointing this out. This is because of the sharp increase in clinker ratio in China. I have modified the sentence to the following:

The rebound in China’s cement production and a higher clinker ratio in that country (Figure C3) are the main reasons for global emissions to have regained the level of 2014.

Page 7 line 13: “Uncertainty increases sharply in 2018 because of the use of more provisional data.” Reader does not see a sharp increase for 2018 in Figure 2?

Yes, again, thank you for pointing this out. I have revised the offending sentence as follows:

While official data for many countries is not available for 2018, the availability of data for China means that uncertainty in 2018 does not increase sharply.

Page 9, legend to Figure 3: Most readers will not know, without explicit reference, that Olivier et al. 2016 = the EDGAR 4.3.2 Fast Track product.

Agreed. I have added the reference in the caption.

This reader would prefer to see the list of references on page 10, after data availability and conclusions. Before the appendices. I understand that this author adds significant information and references in the appendices, but those additions could occur at the end of each appendix? Inconvenient to scroll down 50-some pages of country data to check a reference from the main text.

I agree and have shifted the References to appear before the Appendices. I’ve also taken the opportunity to move the Competing Interests and Acknowledgements sections to appear immediately after the Conclusions.

I would also prefer to see the uncertainty paragraphs, currently in Appendix D, incorporated into the main text; ESSD guidelines <https://www.earth-syst-sci-data.net/10/2275/2018/> seem to support such a change.

Manuscript now has this order:

Narrative
Appendix A - estimates
Appendix B - production data
Appendix D - uncertainties
Appendix C - country-specific data

Need to re-order or. re-name? Or, add uncertainty to main text and therefore delete Appendix D?

Thanks for this suggestion. I have moved the Uncertainties text into the main text under Methods.

In Figure C2, production data again level off after 2013 or 2014. But statement above about China suggests otherwise? E.g. here again we see production leveling off since 2014 while other data clearly show emissions rising to a peak in 2018? What am I missing? Related to the increase in clinker ratio shown in C3, e.g. so production could rise but emissions stay level, but still inconsistent with earlier (Page 7, lines 3,4) statement?

This refers to the same problem identified earlier and has been addressed by modifying the text on page 7.

Despite what one reads in the release notes about change to 4 sig figs, many values in the .csv file still pretend to 8 or more sigfigs? Oddity, fix those in the next version.

I see, yes, this is frustrating. The data are clearly rounded to four significant figures, but the software that writes the CSV files nevertheless presents 8 significant figures. However, these additional significant figures are always zero. I don't believe this will lead to misunderstanding, but I will nevertheless endeavor to fix this in a future release.