

Interactive comment on “EDGAR v4.3.2 Global Atlas of the three major Greenhouse Gas Emissions for the period 1970–2012” by Greet Janssens-Maenhout et al.

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I have only a few comments on this article for purposes of clarification, and focus on the methodology section.

Page 4, lines 19-25: This is a very long opening sentence. I would suggest preceding it with something simpler like "Annual national emissions are calculated using national activity data and emission factors, modified by a number of additional parameters."

Page 4, line 29: what does "uncontrolled" mean in this context? Do you mean unverified or default? Is this important clarification or could it simply be dropped here? Page 5, lines 17-8: The sentences beginning "The yearly accounting..." needs to be rewritten.

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It took me several goes to understand what was meant here. Either rewrite for clarity, or consider removing/relocating: it's not clear why this point is necessary here. Annual data is clearly useful, without resorting to justification by how it might be superior to sub-annual data. Page 5, line 14: should this be "latitudinal band"? Page 5, line 18: I suggest striking "-related" and retain simply "energy sector". While Table 1b is clearly introduced, Table 1a is not. A simple "Table 1a provides..." on page 5, about line 18, would help enormously here, particularly since it's not immediately clear whether the table 1a referred to is in this paper or the IPCC guidelines. Page 6, line 35: I'm confused as to why the 1996 codes should be used when everywhere else the 2006 guidelines are referred to. page 8, line 6: The project is called "CO2 Human Emissions"; remove "of". page 8, line 13: please rewrite "countries adhering to 24OECD90 countries" as, for example, "the 24 member countries of the OECD in 1990" or "the 24 OECD90 countries", similarly 16EIT90, etc. Page 8, line 24: I had a quick look at the cited article and could find no reference to CO2. Did the authors mean carbon monoxide emissions from biofuel combustion? If the cited article doesn't specifically say that CO2 emissions from biofuel are difficult to estimate, perhaps this should be reworded. Perhaps, for example, the meaning is that reliable biofuel consumption data are difficult to obtain (indicated on page 6506 of the reference), and the authors here make the conclusion that it is difficult to estimate reliable CO2 emissions from biofuel combustion?

I wonder why Elvidge et al 2009 is used for flaring when that team has produced several updates since then. Do the subsequent releases resolve the apparent difference between night-light derived flaring and national inventory reports/CDIAC?

Comparison is made with IEA's emissions estimates, and the comment is made that that differences are largely because of the different emission factors used. But this comparison is with an old (2014) edition of the IEA dataset, and IEA have subsequently switched to using the 2006 guidelines' emission factors. Some comment must be made to this effect such that the reader is not misled. Given the same underlying energy data

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and same emission factors, one would expect for the bulk of CO₂ emissions categories that the emissions in EDGAR would be identical to those in IEA.

I congratulate the authors on the breadth of this work and the article itself. I must however register a minor complaint in response to the statement made at the top of page 18. While this paper is very welcome documentation for a very important global dataset, it cannot be said to be replicable given the descriptions herein, and therefore falls some way short of being "full, transparent and inclusive documentation." I do hope that this article will be updated in future following the release of a new version of the dataset, and that attention will be given to improving the transparency of the methodology used.

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