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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Growth of climate change commitments from HFC banks and emissions" *by* G. J. M. Velders et al.

Anonymous Referee #1

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Review of Growth of climate change commitments from HFC banks and emissions by Velders et al., submitted to ACPD.

General remarks: This a very well written sound analysis of the banks and future emissions of HFCs. Scenarios either assume their restriction in the near future or their unabated usage for several decades to come. Furthermore, the effect of the destruction of the banks is nicely illustrated. I suggest to publish the manuscript in ACP, taking into account the suggestions from below.

Additional remark: It was really hard to read the figures. I had to blow up to 300% to properly see them. For example there is a mistake in Fig. 2, 3rd panel: issions should be emissions, which was really hard to see in the printed (100%) version.

Minor issues: Title: The term “commitments” is well-known in the scientific community related to ozone depleting substances. However, others might not understand this. Suggestion: maybe something like: Growing importance of banks on HFC emission

P 32991 Line 20: not-in-kind definition: I am not sure if the definition of “not-in-kind” includes hydrocarbons. If not: not-in-kind alternatives and non-halogenated substances (e.g. hydrocarbons) could be mentioned.

P 32991 Line 25: The contributions of HCFCs and HFCs to climate change depend upon their atmospheric lifetimes and corresponding Global Warming Potentials (GWPs).

This sentence is somehow too simplistic. The GWP is related to emissions. The contribution to climate change depends on lifetimes and radiative efficiency well as on the abundance.

P 32992 Line 8: Shouldn’t Velders et al. (2012, Science) also be mentioned here?

P 32995 Line 14: Isn’t HFC-134a also replaced in the US and in Japan in MACs?

P 32997 Line 4: Not-in-kind substitutes and non-halogenated substances?

P 33000 Line 2ff: It would possibly be better if the effect of the reduction could be shown as negative radiative forcing with a negative y-axis.

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 32989, 2013.