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Projections of hydrofluorocarbon (HFC) emissions and the resulting global warming based on recent trends in observed abundances and current policies

Guus J. M. Velders et al.

Correspondence to: Guus J. M. Velders (guus.velders@rivm.nl)

Table S1. Emission factors for calculating the emissions as a fraction of the bank.

Use sector	EU	USA	Japan	other OECD	Russia	Developing countries [1]
Domestic refrigeration [2]	0.025	0.025	0.025	0.025	0.025	0.025
Commercial refrigeration [3]	0.121	0.164	0.110 [2]	0.117	0.084	0.110
Transport refrigeration [3]	0.126	0.202	0.122	0.172	0.115	0.159
Industrial refrigeration [3]	0.128	0.059	0.087	0.093	0.093	0.087
Stationary AC [3]	0.060	0.034	0.035	0.087	0.037	0.060
Mobile AC [3]	0.101	0.127	0.049	0.133	0.116	0.113
Foams XPS [2]	0.050	0.050	0.050	0.050	0.050	0.050
Foams PUR [2]	0.050	0.050	0.050	0.050	0.050	0.050
Foams open cell [2]	0.670	0.670	0.670	0.670	0.670	0.670
Aerosols [2]	0.670	0.670	0.670	0.670	0.670	0.670
Fire protection [2]	0.030	0.030	0.030	0.030	0.030	0.030
Solvents [2]	0.670	0.670	0.670	0.670	0.670	0.670

1) Emission factors used for the developing countries are taken as the average of those of the developed countries.
2) From Velders et al. (2015).
3) Derived from the UNFCCC activity data and emissions (see Sect. **Error! Reference source not found.**).

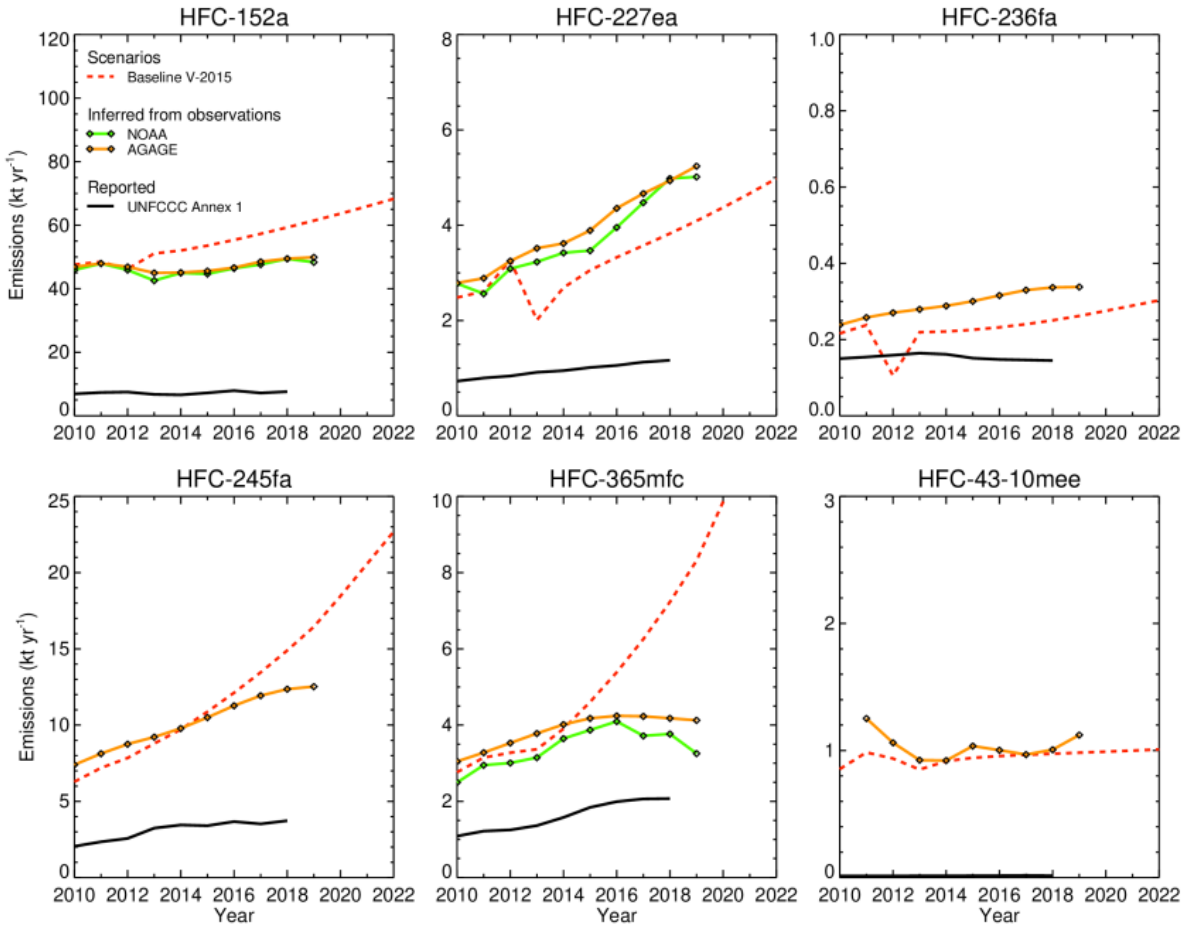

Figure S1: Global total HFC emissions (kt yr^{-1}) from the V-2015 baseline compared with emissions inferred from observed mixing ratios from the AGAGE and NOAA networks. Also shown are the emissions reported to the UNFCCC by Annex 1 countries. The scenario emissions were constrained by the emissions inferred from observed mixing ratios up to 2013.

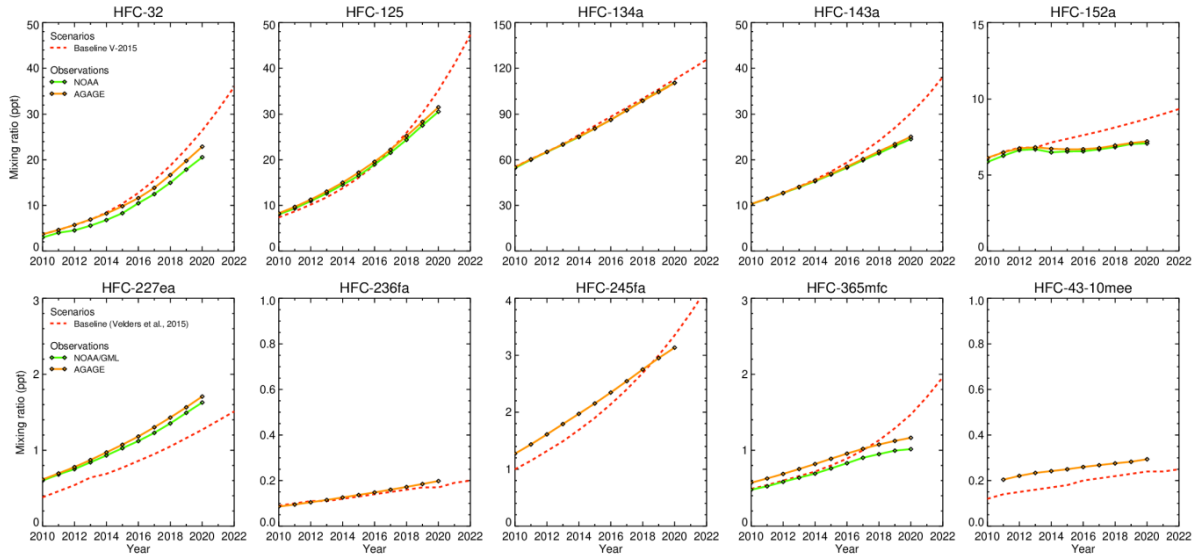

Figure S2: Globally averaged HFC mixing ratios (ppt) from the V-2015 baseline scenario compared with observations from the AGAGE and NOAA/GDL networks. The scenarios were constrained to the observed mixing ratios up to 2013. The global average mixing ratios observed by the AGAGE network are derived using a 12-box model (Cunnold et al., 1983;Rigby et al., 2013) with 1 sigma uncertainties of 1% (HFC-134a), 3% (HFC-32, HFC-143a, HFC-152a), 5% (HFC-125), 8% (HFC-227ea, HFC-245fa, HFC-43-10mee), 14% (HFC-365mfc), and 21% (HFC-236fa). Uncertainties associated with the NOAA measurements are a similar magnitude (Montzka and Velders et al., 2018).

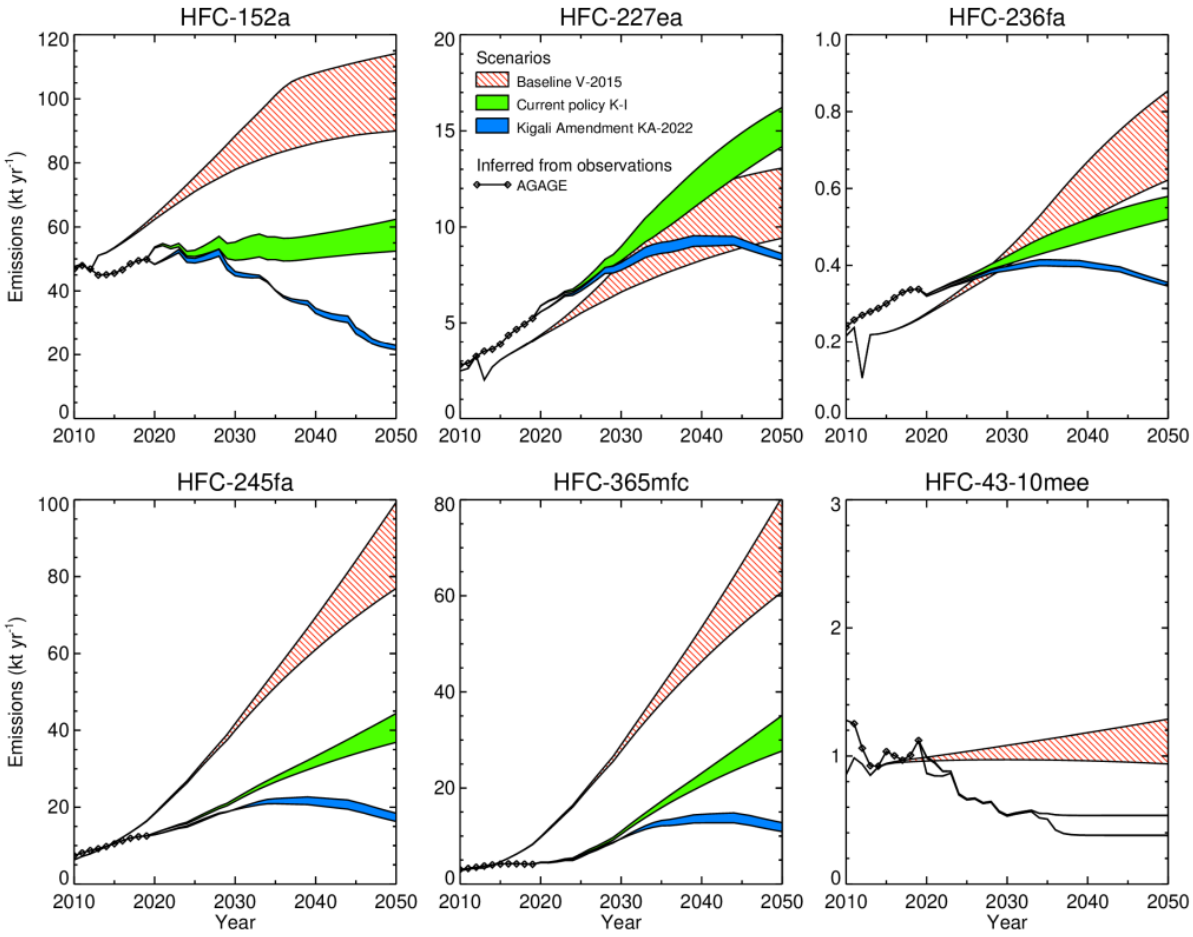

Figure S3: Global total emissions (kt yr^{-1}) of HFC-152a, HFC-227ea, HFC-236fa, HFC-245fa, HFC-365mfc, and HFC-43-10mee from the V-2015 baseline scenario, the "current policy" K-I scenario, and a scenario that follows the phasedown schedules of the Kigali Amendment (KA-2022, based on the "current policy" scenario). The bands represent the upper and lower ranges of these scenarios. Also shown the emissions inferred from observed mixing ratios from the AGAGE network

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