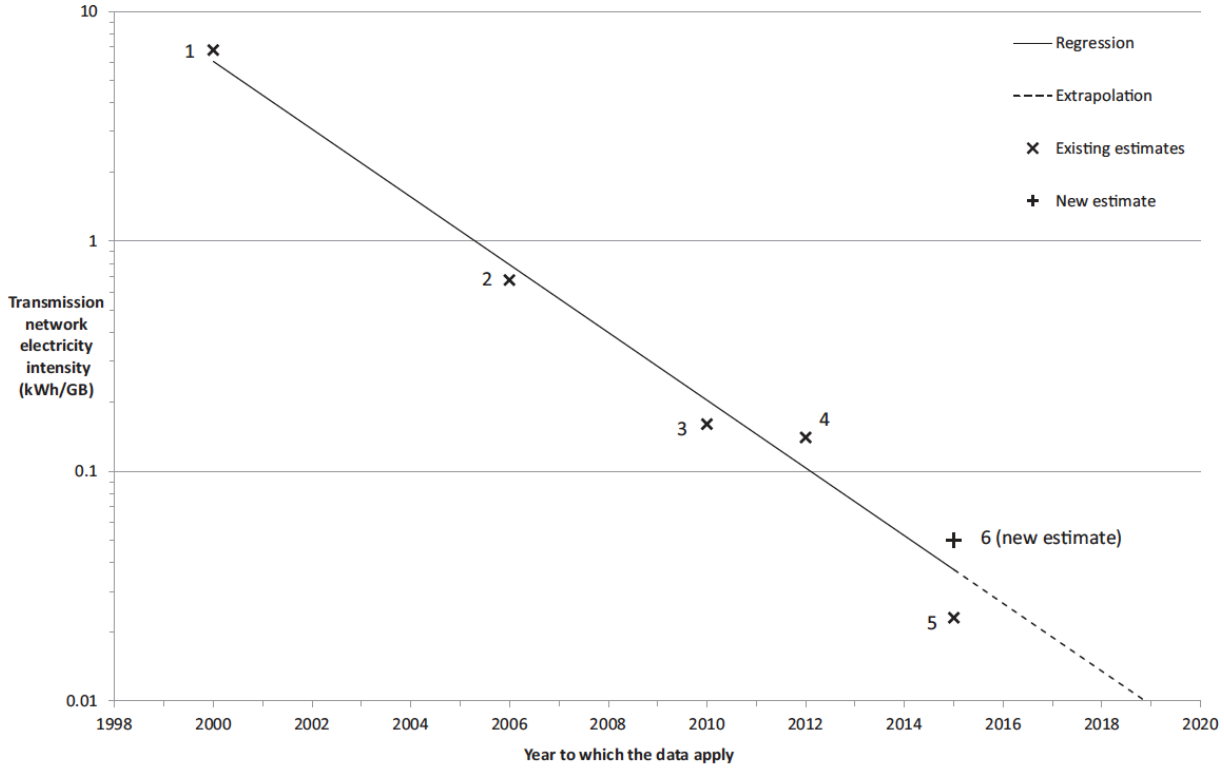
CO_2 footprint of Zoom meeting for Sweden (Paul Glantz/Kevin Noone)



The figure above shows energy use of data as a funtion of time from Asian et al. (2017). They found that the energy intensity of data centers (in units of kWh/GB) has been decreasing exponentially since the late 1990s. Their estimate for the year 2015 was **0.06 kWh/GB** of data transmitted. This value is used here, but keep in mind that it is likely lower by a factor of two or more in 2022 than it was in 2015.

The Zoom data usage for a group call is taken from REVIEWS.org. Group Zoom meetings take up somewhere between 810 MB and **2.4 GB per hour** and here we have used the latter value in the calculations.

Finally, we need information about the CO_2 emissions, which is taken from the EEA energy mix data from the European Environmental Agency EEA. The estimate is **0.126 kg** CO_2e/kWh in energy mix at the year 2019 for Denmark. The Nordic Zoom server is located in Denmark.

The results are for using Zoom HD according to a 2-days and 3-days meeting and a 5-days conference (**8 hours with Zoom each day**), compared to emissions from return flights calculated according to the International Civil Aviation Organization (ICAO).

	2-days meeting	3-days meeting	5-days conference
Swedish Zoom HD meeting (kg CO2e)	**0.29**	**0.44**	**0.73**
Return flight to Paris (kg CO2e)	300.8	300.8	300.8
Return flight to New York (kg CO2e)	546.8	546.8	546.8

Reference

Aslan, J., K. Mayers, J. G. Koomey, and C. France (2017), Electricity Intensity of Internet Data Transmission: Untangling the Estimates, *Journal of Industrial Ecology*, *22*(4), 785-798, doi:10.1111/jiec.12630.