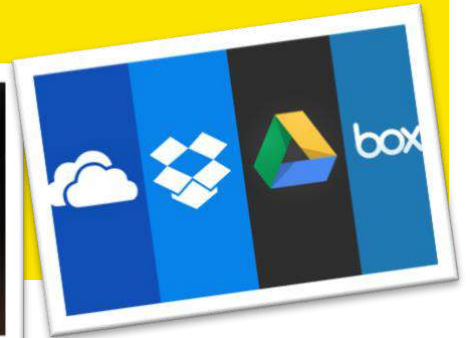


ONLINE ENERGY

My energy acceleration

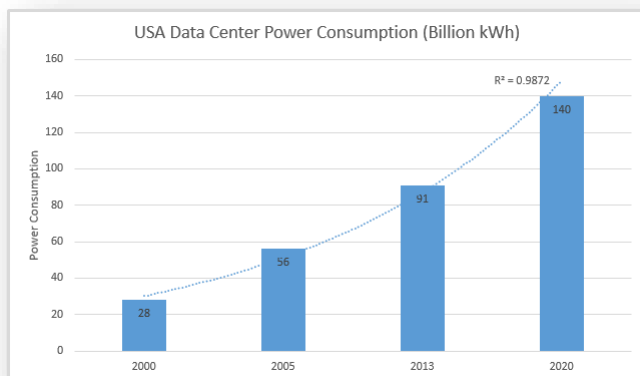
Hein Dieben, student University of Groningen



ONLINE GROWTH INCREASES ENERGY CONSUMPTION

The internet is a growing sector. This is reflected in the energy consumption of recent years. The expectation for the coming years is unprecedented growth. The emissions are almost comparable to aviation. This is therefore an important energy issue. How can we reduce this?

Rising Power consumption in the USA



CLOUD STORAGE

Cloud storage is responsible for high energy consumption. The data center in the Netherlands consume as much energy as 380,000 households. Much of the cloud storage is unnecessary. This is estimated to be 25% (see appendix 2). Unnecessary storage refers to videos and images that are only viewed once. When a movie is saved in a group chat, this movie is stored in 20 different backups. These remain stored and increase the energy demand of the data center. An idea to fix this is a feature in the app where the video is sent. Here the sender can check whether it is a 'temporary' video or will immediately receive a notification after watching whether it should be saved automatically. This makes people think about whether it is necessary to save this and can result in awareness of the energy demand that the cloud entails.

CABLES VERSUS WIFI

Using an internet cable costs 0.05kWh for every Gigabyte. If you use the WiFi, this costs 0.20 kWh per Gigabyte: four times as much power is consumed. Of course, no cable is needed for this and making the cable costs 10 kWh of electricity once and emits 5 grams of CO₂. The emission of 5 grams of CO₂ is equal to 1 kWh. If the calculation is made here, it can be seen that from 200GB is more sustainable to use an internet cable. 83% of households in the Netherlands uses more than this number of GBs.

If one uses an internet cable everywhere, this ensures a 10% reduction in the energy consumption of the internet.

Sharing and saving data causes increasingly more unnecessary storage



CRITICAL REFLECTION

It should be noted that energy and raw materials are required to produce the cables. As indicated, this is theoretically possible. On the other hand, practice teaches us that physical material can break. This is in contrast to a wireless connection. Because of this, it is necessary to take into account the fact that a person will need several cables throughout his life, and therefore might reduce the actual savings as showed in the calculation