Energy used in streaming one film on Netflix makes 60 cuppas

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Surging demand for online video means Britain's use of the internet needs electricity equivalent to six nuclear power stations, scientists say.

They established that watching one feature film online consumes the same power as making 60 cups of tea. As demand for services such as YouTube, Netflix and Twitch, a site for gamers, may double or treble by 2030, the problem will only get worse.

"We found that streaming a two-hour high-definition film on Netflix [or another online provider] equates to boiling over 10 kettles of water," said Mike Hazas, a researcher in sustainable computing at Lancaster University.

Hazas and his colleagues wanted to find out how video streaming — already the most energy-intensive use of the internet — affects total power consumption.

Most of the energy for streaming films and other data is burnt not in homes but distant computer centres, leaving viewers unaware of how much they use. A video uploaded to Facebook from the UK, for example, will typically be transmitted 5,000 miles to data centres in Prineville, Oregon, and sent back each time a new person views it.

The researchers monitored the home internet habits of people including pensioners, students, teenagers and adult workers. Old or young, all were streaming video and other data.

"Our findings show a significant behavioural shift towards streaming as a default, with traditional broadcast TV or DVDs becoming obsolete," said Kelly Widdicks, who worked with Hazas.

YouTube was the most data-greedy, accounting for nearly 50% of demand. Many families watched different programmes simultaneously in the same room, increasing data consumption.

The surge in internet energy demand and the consequent greenhouse gas emissions mean the government may have to rethink its policy of pushing for ever-faster internet speeds, said the researchers.

"The shift to internet-based services will have an increasing impact on society and the planet," said Hazas, who added that streaming charges should rise to reflect their environmental impact.

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