

AI Data Centres: The Megastructures Tech 'Hyperscalers' Can't Get Enough Of

The increasing demand for artificial intelligence has exponentially accelerated the production of AI data centres globally, with no sign that this will slow down or ever be enough for the tech giants behind the construction. In fact, it is expected that [£2.2 trillion](#) will be spent on AI data centres between now and 2029, with global power demand from them to rise [165%](#) by 2030. While their purpose is suited to the growing demand for AI, the human and environmental impacts that come along with them are just the tip of the iceberg for what more is to come - and are conveniently rarely addressed.

Their hostile impacts on human life have become extremely sudden, yet extremely real to families and households living near these data centres, experiencing an endless list of infringements, including significant noise pollution, unavailable drinking water, and NOx pollution that has grave long-term effects on the human body. Similarly, the impacts do not stop at the human level but also transfer to the environment and communities nearby, where substantial temperature concerns, power demand, and water usage are creating uninhabitable areas for humans and wildlife alike.

Simply put, AI data centres are specialised facilities built to run artificial intelligence learning models. They operate by assembling thousands of graphics processing units (GPUs) in order to perform thousands of calculations simultaneously without losing ultra-fast networking, therefore allowing them to communicate instantaneously with their results. In doing so, these graphics units require massive power infrastructure to maintain them. At full capacity, the largest AI data centre in the world, [Colossus 2](#), uses almost a full Gigawatt of energy per day, the equivalent power consumption of 10 million lightbulbs. In 2025, the total global power needs of AI data centres reached [90 Terawatts](#), the equivalent power use of the entirety of [London](#) - for 900 days.

Aside from their power usage, AI data centres have a tremendous water footprint to satisfy their cooling needs. Because the processing units get extremely hot, data centres require a constant supply of cold water to act as engine coolant, all of which must be clean and drinkable water to avoid mineral or bacterial debris within the systems. In 2025, it is estimated that AI systems alone consumed up to [764 billion litres of water](#), the equivalent of the largest lake in Ireland, Lough Corrib, or 320,000 Olympic swimming pools.

The environmental and human impacts from this water and power usage are becoming a prominent issue among communities, especially in drought-susceptible areas where [2/3 of data centres](#) are built, such as Texas and Arizona. Their massive water needs create a 'soda straw' effect that takes away local drinking water from individuals and animals, accelerates the destruction of habitats, and even drives up local water bills for residents as the centres artificially reduce supply. Some data centres use an evaporative cooling system that entirely takes away water from local ecosystems, instead of naturally returning it to nearby rivers and streams through the water cycle.

In regard to power usage, researchers at [Cornell University](#) found that the current rate of growth of AI until 2030 would put 44 million tons of carbon dioxide in the air annually - a conservative estimate that doesn't factor in the ever-growing demand for AI. This is contributing to a dystopian phenomenon where the surrounding areas of AI data centres are warming by up to [9.1°C](#), an Orwellian consequence for local people, wildlife, and climate change that the victims cannot do anything about.

There is another significant consequence of AI data centres that has quietly attracted calls for empirical research, as the effects are slowly being noticed. Human proximity to data centres is beginning to create a correlation with poor and degrading human health, spearheaded by a cocktail of pollution and toxic gas emissions released by the centres themselves. All centres employ diesel backup generators in case of an electrical grid failure; however, the sheer volume of them being used at the same time when needed can release [200 to 600 times more nitrous oxides \(NOx\)](#) than a natural gas plant, all while producing the same amount of energy. This toxic gas can cause irritation to the eyes, throat, and nose, in addition to severe cases recorded regarding respiratory infection and death. Data centres caused about \$6 billion in public health damages from NOx in 2023 alone, a stark realisation that this was merely the beginning of public health concerns for humans worldwide, as this number is estimated to increase to [1300 annual deaths and \\$20 billion in public health](#) damages by 2030. Aside from NOx, public health concerns are arising over noise levels, with decibel readings reaching 96 dBA, far above the 85 dBA threshold.

Due to the rapid reproduction, massive scale, and excessive consumption of AI data centres, communities globally are at a major risk of unwanted, dystopian change. The health damage inflicted on humans must be curbed before reaching the expected future levels, as well as protecting resources before irreversible damage is done to local ecosystems and climate change contributions. Unfortunately, these megastructures are showing no sign of slowing down and pose a huge threat to society in less than 10 years' time.