Who Pays for the Data Centre Boom

Affordability and the distribution of cost — why the bill for AI infrastructure lands on the kitchen table, not the data hall.

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The cost of building the power and water systems the data-centre boom requires does not vanish. It lands on household bills — and falls hardest on the families least able to carry it.

The poorest third of UK households already spend 3.7% of income on water against a 1.6% average; the lowest-income tenth spend roughly 10% of their budget on energy against a 6% average.[1,2] The data-centre expansion does not create this inequality — it pushes on the exact point where it is already most painful. This paper draws together official forecasts across the UK, Ireland and the EU to ask the question planning systems rarely answer aloud: when the grid and the reservoirs expand to serve hundreds of new facilities, who pays — and can they afford it?

The mechanism: why a flat bill is a regressive bill

Utility bills are largely flat-rate for small consumers. A poorer family does not get a cheaper unit of electricity than a wealthy one — so when wholesale prices rise to fund new generation and grid upgrades, the same percentage increase consumes a far larger slice of a low-income budget. A 1% rise is a rounding error for an affluent household and a real choice between heating and food for a struggling one.

This is the heart of the affordability question, and it is structural, not incidental. The cost of new infrastructure is socialised across all bill-payers through tariffs; the *burden* of that cost is not shared equally, because the same pounds are a different fraction of different incomes.

The starting point, before any new demand

The inequality is already stark. Domestic energy costs make up about 6% of total spending for the average UK household — but around 10% for the lowest-income tenth.[1] Water follows the same shape: typical bills are around 1.6% of income, but among the poorest third they reach 3.7%.[2] The recognised threshold for water poverty is 3% of income, and for severe hardship 5% — meaning the poorest third are, on average, already in water poverty before the boom adds a litre of new demand.

The discipline: measured reality vs. announced demand vs. overstated claim

This paper separates three things that public debate routinely conflates. **Measured reality** is what households actually pay and what bills have actually risen. **Announced demand** is the new capacity developers say they will need — figures that may not all arrive. **Overstated claim** is the circulating number that sounds authoritative but measures the wrong thing. We use the first, scrutinise the second, and explicitly reject the third (below).

The two cost channels

Data-centre growth pushes prices up by two routes. The first is **new generation**: meeting sudden peaks and low-wind periods increasingly relies on gas plants, whose costs flow through to wholesale prices. The second is **infrastructure** — the substations, transmission lines and reservoirs needed to connect and supply the new load, whose costs typically feed into the tariffs paid by all customers. Build that infrastructure on the assumption of demand that may not fully arrive (see PR-001 on speculative overcapacity), and bill-payers fund capacity that is never used.

The evidence: the United States, further down the road

INDICATOR	MEASURED / OFFICIAL FINDING	WHAT IT MEANS FOR HOUSEHOLDS
VIRGINIA DEMAND	State JLARC 2024: unconstrained data-centre growth could raise Virginia electricity use 183% by 2040 — against 15% with no new data-centre demand.[3]	Almost all of the projected increase is attributable to data centres.
VIRGINIA BILLS	Residential electricity bills up close to 30% since 2021, faster than inflation, per analysis of utilities' regulatory filings.[3]	The cost is already landing on residents, ahead of the projected demand.
REGULATORY RESPONSE	Virginia's regulator approved a rule in early 2026 requiring large data-centre users to pay a minimum share of distribution, transmission and generation capacity.[3]	A precedent: making the load that drives the cost carry the cost.
UK EXPOSURE	Ofgem: ~140 proposed projects could require ~50 GW of new capacity — about 5 GW above today's 45 GW national peak — needing substantial new substations and lines.[4]	Same mechanism, different contracts: infrastructure cost feeds tariffs paid by all.

A note of caution on a widely-shared figure: claims that bills near data centres have risen "267%" refer to wholesale market prices — only one component of a household bill — not to what households actually pay. The Firewalkers does not use that number. The *residential reality, roughly 30% in Virginia since 2021, is serious enough without overstatement.*

The UK is not on US contracts — but the mechanism is the same

British households are not on US-style tariffs, so the American figures do not transfer directly. But the underlying mechanism — new generation and new network infrastructure, socialised through tariffs, landing as a flat charge on unequal incomes — is identical. Ofgem has warned that connecting the proposed data-centre load requires substantial investment in new substations and lines.[4] If that load is speculative and over-stated (as PR-001 found of the GB connection queue), households risk paying for capacity that demand never justifies.

What should follow

Two principles follow from the evidence. First, the load that drives the cost should carry a fair share of it, rather than socialising it onto households — the direction Virginia's 2026 rule points. Second, affordability impact should be a material consideration in approving large data centres: an honest assessment of who pays, and whether the poorest third — already in water poverty and near energy poverty — can bear another regressive increase, before consent is granted.

About this research. The Firewalkers is a global environmental movement using rigorous research to scrutinise the rush to build AI data-centre infrastructure. Our method separates what is *measured* from what is *announced* or merely *claimed*, and seeks independent and dissenting voices rather than relying on developer projections. We reject overstated figures even when they would help our case. This paper is offered freely for public use under attribution. For media enquiries: media@firewalkers.earth · firewalkers.earth

SOURCES

1. Institute for Government, citing ONS Family Spending in the UK 2023–24 (domestic energy as share of household spending).
2. Ofwat, *Affordable for All* (water bills as share of income; water-poverty thresholds).
3. Virginia Joint Legislative Audit and Review Commission (JLARC) 2024 (demand projection); analysis of Virginia utilities' regulatory filings (residential bill rises); Virginia State Corporation Commission rule, early 2026.
4. Ofgem statements on data-centre connection applications, required capacity, and network investment, 2025.