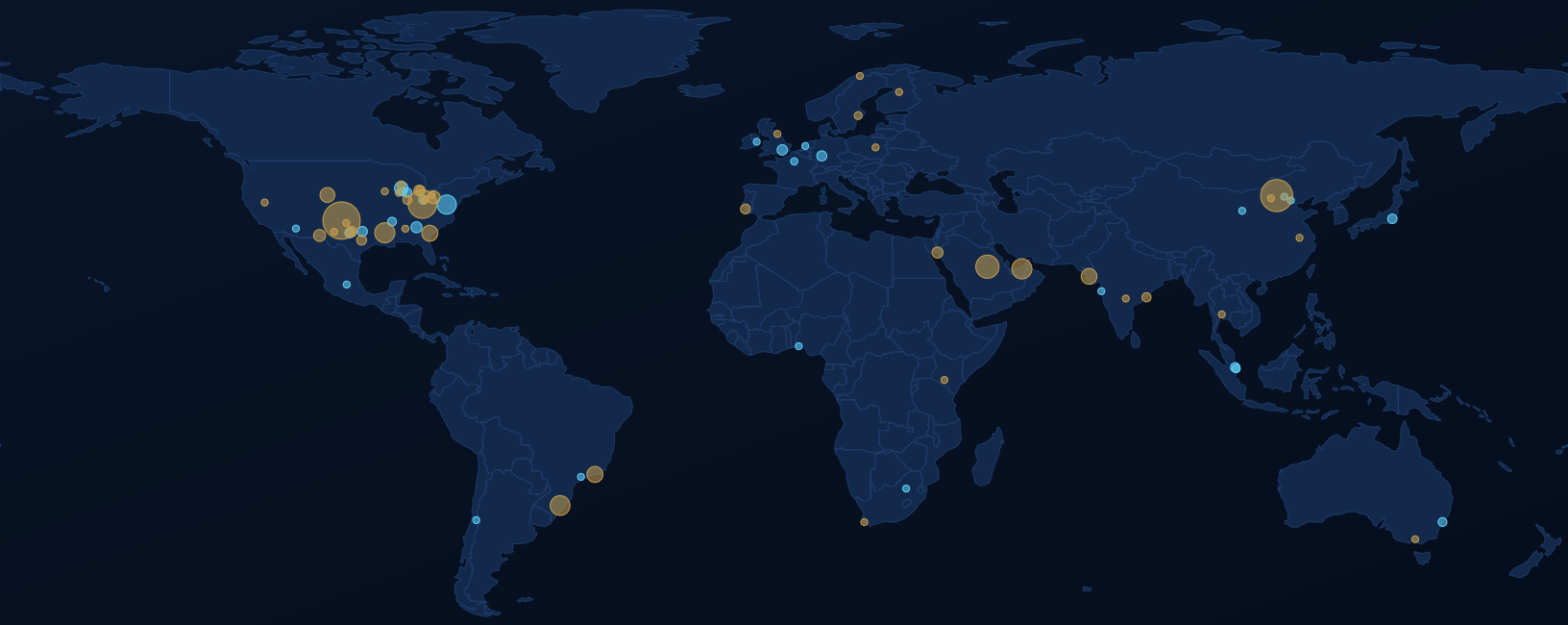
IGNITE PULSE REPORT | VOL. 2 | NOVEMBER 2026

The Global Data Centre Boom

What is being built, what it consumes, who is behind it, and what it means for how we live and work.



Seventy-one mapped locations. Blue: established hubs and operating campuses. Gold: under construction, being cleared or announced.

Nerissa Persaud
Author, The 26 Laws of The Human Experience Operating System
www.ignitethehumanspark.com

Ignite THE Human Spark

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01

Executive summary

The world now runs on more than 11,000 data centres, and the next wave being cleared and built is larger than everything that came before it. Six findings carry the report.

11,000+
data centres worldwide
over a third of them in the United States

17 GW
largest campus announced
the power of about 13 million homes

950 TWh
electricity use by 2030
about what the whole of Japan uses

1,200 bn litres
water consumed a year by 2030
about 480,000 Olympic pools

$720 to $740 bn
planned by four companies in 2026
about $2,100 for every US resident

$1.3 trillion
debt on US data centres
about $3,800 for every US resident

1. **The footprint is concentrated.** The United States holds between 4,100 and 5,400 facilities depending on who counts, eight to ten times the next country. By power, SemiAnalysis projects the US at about 56 GW by the end of 2026, against more than 24 GW in China and about 12 GW in Europe.
2. **The new sites are a different species.** A conventional data centre draws 10 to 25 MW, and 100 MW was long considered very large. Campuses now announced run from 1 GW to as much as 17 GW, on sites of several hundred to several thousand acres, often with their own gas plants. One gigawatt alone can draw the power of about 750,000 homes.
3. **Electricity use doubles in five years.** The IEA puts data centres at 485 TWh in 2025 and about 950 TWh in 2030, roughly what Japan uses in a year. BloombergNEF's 2025 outlook sees 1,200 TWh by 2035 and 3,700 TWh by 2050, close to 9% of world demand.
4. **Water and runoff are the local story.** On the IEA's measure, global water consumption could rise from about 560 billion litres a year to about 1,200 billion by 2030, which MSCI equates to the yearly use of more than four million US households. On the ground, the pressure shows up as filled wetlands, buried streams, sediment in creeks and stressed water supplies.
5. **The economics split in two.** Construction brings thousands of jobs for a few years. A typical finished facility employs about 50 people, while neighbours can face higher power bills.
6. **The money is vast and increasingly borrowed.** Amazon, Alphabet, Microsoft and Meta plan about $720 to $740 billion of spending in 2026 alone, about $2,100 for every person in the United States. US data centres carry at least $1.3 trillion of debt, and a growing share is raised through private lenders and special-purpose companies.

Every figure beyond 2035 is a projection, and the 15, 20 and 30 year numbers include scenario arithmetic prepared for this report. Each is labelled as such.

02

What are data centres?

A data centre is a building filled with computers that store information and do the work behind almost everything done on a screen. Every email, bank payment, video call, streamed film, online purchase and AI answer passes through one.

Inside are long rows of machines called servers, stacked in metal frames. Around them sit the three things they cannot run without:

- **Power.** Servers run day and night, so the building needs a constant, heavy supply of electricity, with batteries and generators standing by in case the grid fails.
- **Cooling.** The machines give off intense heat. Fans, chilled water or liquid piped straight to the chips carry it away, and this is where most of the water goes.
- **Connection.** Fibre-optic cables link the building to the internet and to other data centres.

There are three broad kinds, and the balance between them has shifted fast.

Share of world data centre capacity by kind



- **Hyperscale.** The largest technology companies, for their own cloud and AI. Heading for 67% by 2031.
- **Enterprise.** A bank, hospital or government running its own. Down from 56% in 2018.
- **Colocation.** Landlords who rent space and power to many customers.

Source: Synergy Research, end of 2025.

The newest kind, built for artificial intelligence, is the reason for this report. Its computer chips are packed far more tightly: 40 to 60 kilowatts or more in each frame, against roughly 10 to 12 in an ordinary data centre. The IEA says a single advanced frame could, at its peak, draw as much power as 65 households by 2027. That is why a conventional data centre of 10 to 25 MW is giving way to campuses planned at 1,000 MW and more, and why a building that employs about 50 people can use as much electricity as a city.

03

Why demand and supply are rising

Demand is rising because artificial intelligence needs far more computing than anything before it, and supply is rising because the richest companies and governments in the world have decided they cannot afford to be left behind.

What is driving demand

- **AI is the main cause.** Electricity used by AI-focused data centres grew about 50% in 2025 alone, three times faster than data centres overall. The IEA expects it to triple by 2030.
- **Each new use is hungrier.** Video generation, step-by-step reasoning and AI "agents" that carry out tasks can use hundreds or thousands of times more electricity per request than a simple chatbot question.
- **Efficiency is not keeping up.** The power needed for each AI task is falling quickly, yet total use keeps climbing because so many more people and businesses are using it.
- **Everyday digital life still grows.** Cloud storage, streaming, payments and business software continue to expand underneath the AI surge.
- **Space is already full.** In Northern Virginia, the world's largest hub, less than 1% of leased capacity sits empty.

What is driving supply

- **Money.** The four largest spenders went from about $376 billion in 2025 to more than $720 billion planned for 2026, and lenders are supplying what company cash cannot.
- **Competition.** No large technology company is willing to be the one that runs short of computing power, so each builds ahead of proven demand.
- **Governments.** The United States launched Stargate from the White House. China directs building to eight national hubs. Saudi Arabia, the UAE and India are funding their own, so that their data and AI stay under their control.
- **Incentives.** States and countries compete with tax breaks. Virginia's alone was worth $1.6 billion in a single year.
- **Cheap land and power inland.** Builders are moving away from crowded coastal hubs to places such as Texas, Ohio, Louisiana and Inner Mongolia.

Supply still cannot move as fast as the money. The real limits are grid connections that take years, shortages of gas turbines, transformers and advanced chips, and growing local opposition.

04

How to picture the numbers

Megawatts, terawatt-hours and billions of litres mean little on their own, so every large figure in this report is paired with something familiar. These are the yardsticks used throughout.

1 MEGAWATT (MW)
The electricity for about **750 US homes**

100 MW, A LARGE SITE BY THE OLD STANDARD
About **75,000 US homes**, a mid-sized town

1 GIGAWATT (GW), ONE OF THE NEW CAMPUSES
About **750,000 homes**, a city of nearly 2 million people

1 TERAWATT-HOUR (TWH) IN A YEAR
A year of power for about **93,000 US homes**

1 BILLION LITRES OF WATER
400 Olympic pools, or a year of home water for 3,300 US households

1,000 ACRES OF LAND
About **760 football fields**, a little more than Central Park

1 MILLION TONNES OF CO2
The yearly exhaust of about **217,000 cars**

$1 BILLION
About **$3 for every person** in the United States

Basis: Bloomberg, using IEA data, puts a 100 MW US site above 75,000 homes; an average US home uses about 10,800 kWh of electricity a year (EIA) and about 300,000 litres of water; an Olympic pool holds 2.5 million litres; a football field with end zones is 1.32 acres; a typical US car emits about 4.6 tonnes of CO2 a year.

The homes comparison for megawatts is based on how data centres actually run, not on their maximum rating, so it can be read as a fair everyday picture. It counts US homes. Homes in most other countries use less power, so the same site would equal more of them.

05

Scope and method

No public source lists every data centre on earth with its size, owner and funding, so this report maps the places that matter most and says plainly where it stops.

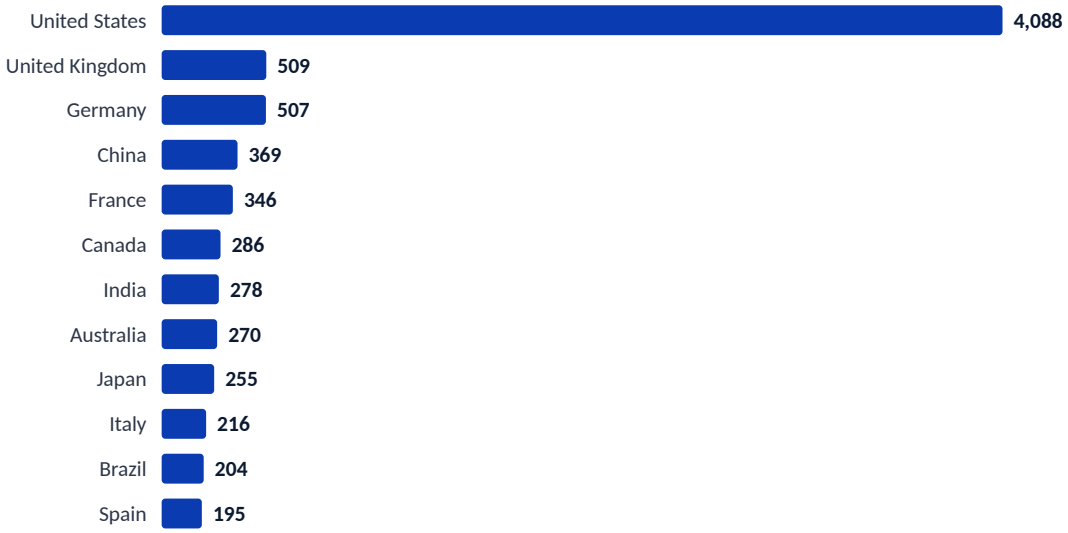
- **What is mapped.** 71 locations: the largest established hubs, the biggest operating campuses, the major sites announced or being built, and sites where land clearing is documented. Data Center Map's public directory lists 13,346 entries across 185 countries, some of which are separate buildings on one campus.
- **How size is stated.** In megawatts (MW) or gigawatts (GW) of power, the industry's standard measure. Announced size is not built size: Stargate Abilene is planned at 1.2 GW, and Epoch AI estimated about 0.8 GW running in November 2026.
- **Where the numbers come from.** The International Energy Agency, BloombergNEF, Synergy Research, CBRE, SemiAnalysis, Epoch AI, company filings and releases, court and permit records, and news reporting from 2025 and 2026.
- **How the long horizons were built.** Published forecasts reach 2030, 2035 and 2050. The 15 and 20 year figures (2041, 2046) are steady-growth points between BloombergNEF's 2035 and 2050 numbers. The 30 year figure (2056) is an extension prepared for this report and is shown as a range.
- **How it was checked.** On 19 November 2026 every figure, name and date in this report was reviewed against its source by independent checkers. Figures that could not be confirmed were corrected or removed. Estimates, allegations, proposals and company announcements are labelled as such.
- **A caution on sources.** Several jobs and electricity-bill studies were paid for by the industry or by its critics. Where that is so, the report says so. Investment figures should not be added together, because the same project can appear in a tenant's spending, a developer's budget and a lender's loan.

06

The footprint today

Data Center Map counted 11,102 facilities in 174 countries in April 2026. The United States alone holds over a third of them.

Number of data centres by country, April 2026

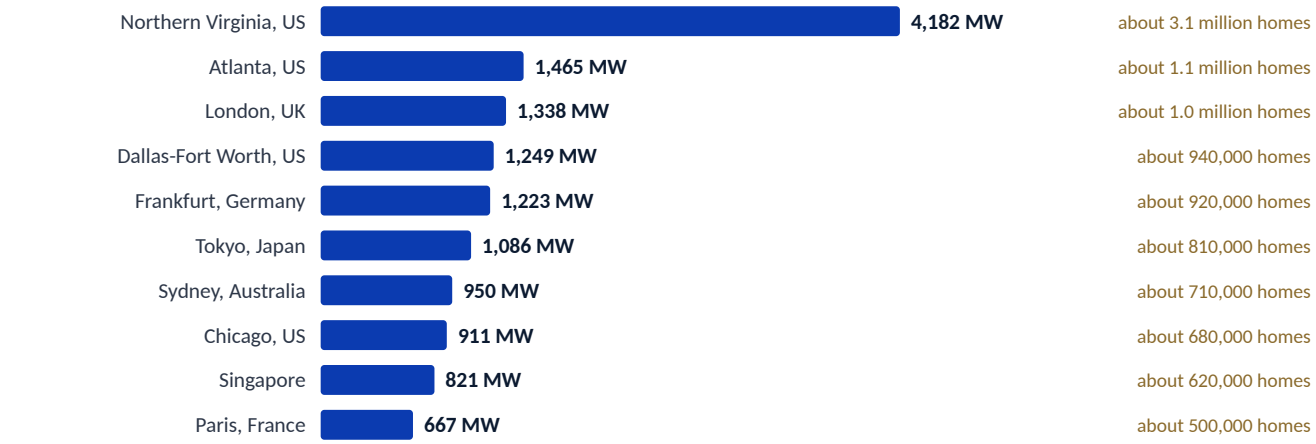


Source: Data Center Map via Brilliant Maps. Other registries count differently: Cloudscene puts the US at 5,427.

Counting buildings understates how lopsided the picture is, because a single new campus can outweigh a whole country's stock. Measured by power, SemiAnalysis estimates more than 24 GW operating in China and projects about 56 GW in the United States by the end of 2026, with a further 50 GW in China's pipeline or announced. Europe has just over 12 GW operating and is expected to reach 13 GW by the end of 2026. Africa holds about 0.6% of world capacity, according to the Africa Data Centres Association.

The largest established hubs

Leased data centre capacity in ten of the largest hubs, in megawatts



Source: CBRE, Global Data Center Trends 2026 (first quarter of 2026). These figures count space leased to customers, so the technology companies' own campuses sit on top of them.

In everyday terms. Northern Virginia's leased capacity would power about 3.1 million homes on these figures, and had grown to 4,497 MW, about 3.4 million homes, by mid-2026. Atlanta's hub equals about 1.1 million homes, London about 1 million, and Paris about 500,000. Johor in Malaysia, outside this survey, has reached 1,110 MW, about 830,000 homes, according to Knight Frank.

Three facts explain who owns this estate. Synergy Research counted 1,360 very large "hyperscale" sites at the end of 2025, holding 48% of all capacity. Amazon, Microsoft and Google together hold 57% of that hyperscale share. Northern Virginia and Greater Beijing alone account for 17% of it.

Ireland shows what concentration does to a small country. Data centres used 23% of its metered electricity in 2025, up from 5% in 2015, despite a de facto national freeze on new data centre grid connections from 2021 until December 2025.

07

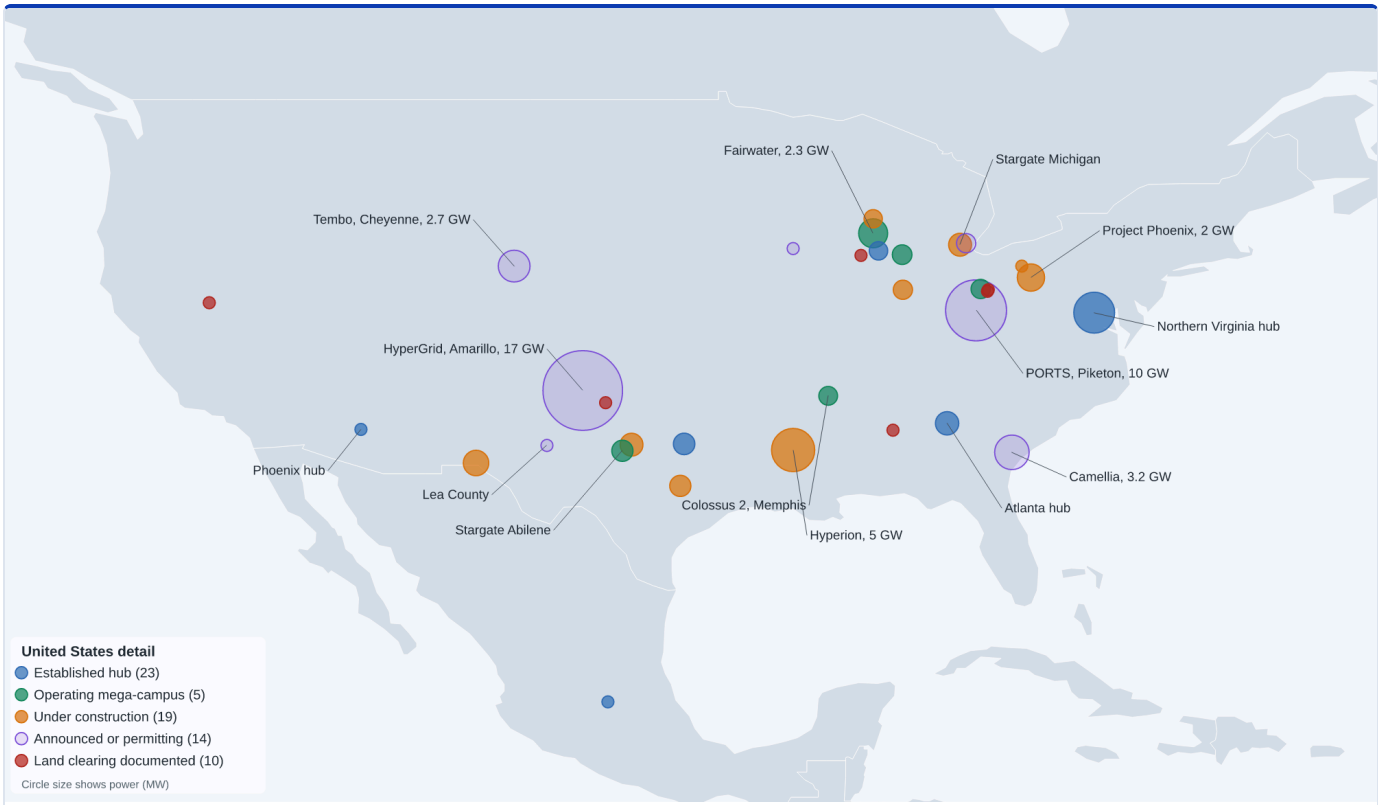
World map

The build-out clusters in the central United States, the Gulf, northern China and India, with Europe and the southern hemisphere far lighter. Each circle is one of the 71 mapped locations, sized by power where a figure is confirmed.



Seventy-one mapped data centre locations, coloured by status and sized by power.

The United States holds the densest group, so it is shown again in close-up.



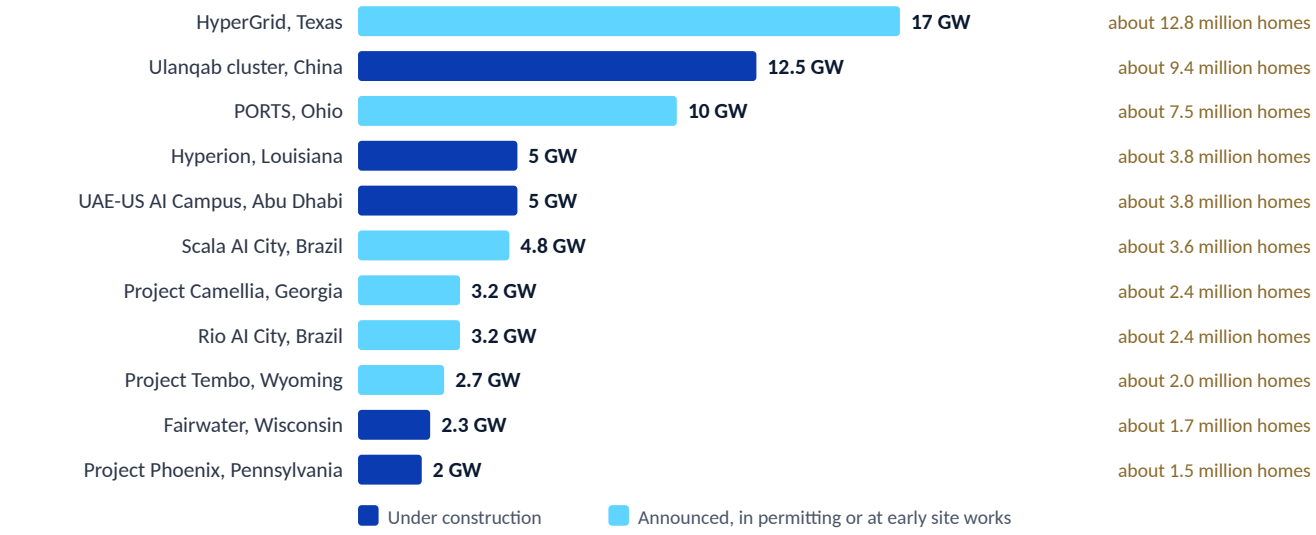
Close-up of sites across the United States.

08

Sites being cleared and built

Almost 1,500 large data centres are in the worldwide pipeline, nearly half of them in the United States, and the biggest are measured in gigawatts. One US tracker lists 956 projects under construction or planned across 47 states. Texas and the Midwest account for 53% of the new hyperscale capacity in Synergy Research's US pipeline, because that is where power and land can still be had.

The largest campuses announced or being built, in gigawatts if fully built



Announced size if fully built, from company statements, regulators and Epoch AI estimates cited in Sources. Announced size is not built size.

In everyday terms. If fully built, HyperGrid's announced 17 GW would equal the power of about 13 million US homes, and Piketon's 10 GW about 7.5 million. The Ulanqab cluster's 12.5 GW equals over 9 million homes, and Hyperion's 5 GW nearly 4 million. A 1 GW campus, the new normal, matches a city of nearly 2 million people.

United States

Site	Location	Who is behind it	Size	Reported money	Status in late 2026
HyperGrid (Project Matador)	Carson County, near Amarillo, Texas	Fermi America	Up to 17 GW of power announced (originally 11 GW)	Not disclosed	Site and power works under way; first tenant lease ended November 2026; no data centre operating
PORTS Technology Campus	Piketon, Ohio	SB Energy (SoftBank), with OpenAI and Nvidia	10 GW announced; 4.25 GW in the first agreement	$67 billion announced estimate, about half for gas generation	Groundbreaking held March 2026; first 800 MW phase due 2028

Site	Location	Who is behind it	Size	Reported money	Status in late 2026
Hyperion	Richland Parish, Louisiana	Meta 20%, Blue Owl funds 80%	Up to 5 GW on 3,200 acres	Over $50 billion	Under construction; full completion expected by 2036
Project Camellia	Effingham County, Georgia	OpenAI	3.2 GW	Not disclosed	Planned; power contracted in phases from 2028 to 2032
Project Tembo	Near Cheyenne, Wyoming	Google	2.7 GW on 716 acres	Not disclosed	In county permitting in mid-2026; completion targeted for 2031
Fairwater	Mount Pleasant, Wisconsin	Microsoft	2.26 GW by 2028 (Epoch AI estimate)	Not confirmed	First building running, about 0.37 GW (Epoch AI estimate)
Project Phoenix	Shippingport, Pennsylvania	Aligned Data Centers	2 GW on about 650 acres	About $10 billion reported	Ground broken September 2026
Project Jupiter (Stargate New Mexico)	Doña Ana County, New Mexico	STACK Infrastructure for Oracle and OpenAI	About 1.75 GW planned (Epoch AI estimate)	About $18 billion of bank loans	Under construction
Stargate Michigan	Saline Township, Michigan	Related Digital, Blackstone, Oracle, OpenAI	About 1.4 GW	$16 billion financing	Under construction
Frontier (Stargate Shackelford)	Shackelford County, Texas	Vantage Data Centers, Oracle, OpenAI	1.4 GW on about 1,200 acres	Over $25 billion	Under construction
Stargate Abilene	Abilene, Texas	Crusoe, Oracle, OpenAI	1.2 GW	$15 billion venture, including a $7.1 billion loan	About 0.8 GW running (Epoch AI estimate); a further 800 MW expansion was cancelled
Stargate Milam County	Milam County, Texas	SB Energy, OpenAI	1.2 GW	Not disclosed	Under construction
Lighthouse (Stargate Port Washington)	Port Washington, Wisconsin	Vantage Data Centers, Oracle, OpenAI	About 0.9 GW on about 670 acres	About $15 billion	Under construction since December 2025
Project Rainier	New Carlisle, Indiana	Amazon, with Anthropic as main tenant	About 1.9 GW planned (Epoch AI estimate)	$11 billion announced	About 1.04 GW running, the largest live campus (Epoch AI estimate)
Colossus 2	Memphis, Tennessee	xAI, now part of SpaceX	About 1.5 GW planned (Epoch AI estimate)	Not disclosed	946 MW running (Epoch AI estimate)
Prometheus	New Albany, Ohio	Meta	About 1 GW	Not disclosed	471 MW running (Epoch AI estimate)
Lebanon campus	Lebanon, Indiana	Meta	1 GW	Over $10 billion	Ground broken February 2026

Rest of the world

Site	Location	Who is behind it	Size	Reported money	Status in late 2026
Ulanqab cluster	Inner Mongolia, China	Alibaba, Huawei, VNET, ByteDance and others	12.5 to 15 GW committed; 89 projects signed	Over RMB 500 billion announced	Building; ByteDance negotiating 5 to 6 GW more
Humain	Saudi Arabia, company-wide	Owned by the Public Investment Fund	Targets of 1.9 GW by 2030 and 6.6 GW by 2034	About $77 billion plan	A 6 GW campus in east Riyadh at tender stage
UAE-US AI Campus (Stargate UAE)	Abu Dhabi, UAE	G42, OpenAI, Oracle, Nvidia, Cisco, SoftBank	1 GW first cluster of a 5 GW campus	Not confirmed	First 200 MW was targeted for late 2026; operation not yet confirmed
Scala AI City	Eldorado do Sul, Brazil	Scala Data Centers	54 MW first, 4.75 GW at full build	R$3 billion initial, by the state government's account	Grid connection authorised
Rio AI City	Rio de Janeiro, Brazil	Elea Data Centers	1.5 GW first, up to 3.2 GW	Not confirmed	Power studies under way
Jamnagar	Gujarat, India	Reliance Industries	Up to 3 GW reported	$20 to $30 billion in press reports	First 120 MW due by the end of 2026
Oxagon	NEOM, Saudi Arabia	DataVolt with Humain	1.5 GW	About $5 billion	Construction started 2026; first 100 MW due 2028
Sines Data Campus	Sines, Portugal	Start Campus (Davidson Kempner, Pioneer Point), with Nscale and Microsoft	1.2 GW	€8.5 billion	37.5 MW live
Visakhapatnam AI hub	Andhra Pradesh, India	Google, AdaniConneX, Nxtra by Airtel	About 1 GW on 600 acres across three sites	$15 billion over 2026 to 2030	Ground broken April 2026
Strängnäs campus	Sweden	Brookfield	300 MW, growing to 750 MW	Up to SEK 95 billion	10 to 15 year build
Narvik campus (formerly Stargate Norway)	Kvandal, near Narvik, Norway	Nscale and Aker, with Microsoft taking the capacity	230 MW, with ambition for 290 MW more	$790 million of debt committed	Building; OpenAI withdrew in April 2026
Cambois	Northumberland, UK	QTS (Blackstone)	540,000 square metre campus	Up to £10 billion	Earthworks during 2026 on a former power station site
Lahti	Finland	DayOne	128 MW; first 50 MW in 2027	About €1.2 billion	Announced on a former industrial site
Johor build-out	Johor, Malaysia	DayOne, AirTrunk and others	1,110 MW operating across the market	$2.3 billion financing for one 270 MW AirTrunk campus	Building

Site	Location	Who is behind it	Size	Reported money	Status in late 2026
South Africa expansion	Johannesburg and Cape Town	Teraco, Cavaleros, Vantage	From about 400 MW to at least 1,200 MW	Not disclosed	Planned

Two cautions apply to every row. Announced gigawatts run years ahead of delivered ones, and plans change: the IEA has warned that about one in five planned projects could be at risk of delay because of grid queues and shortages of turbines and transformers. Local resistance is also real. Opposition blocked or delayed about $130 billion of US projects in the first quarter of 2026 and nearly $68 billion in the second, according to Data Center Watch.

Where land is being cleared now

An announcement is not the same as earth being moved. The sites below are those where the company's own construction updates, or a public filing, document clearing, grading or earthworks during 2026.

Site and company	What the record documents	Date
Heath, Ohio (Microsoft)	Tree removal, then mass grading, stormwater ponds and erosion controls	March to November 2026
Hebron, Ohio (Microsoft)	Perimeter tree removal, mass grading, ponds, substation work	March to November 2026
Silver Springs, Nevada (Microsoft)	Preparing the property, moving earth, relocating utility lines	September 2026
Hall County, Texas (QTS and Lancium)	Clearing and grading of the first pad, then campus-wide earthwork; over $10 billion; dedicated on-site wells	May to August 2026
Cambois, Northumberland, UK (QTS)	Earthworks on former power station land; up to £10 billion	Through 2026
Bessemer, Alabama (QTS)	Mass grading and construction stormwater permits in effect; the mayor asked for construction to halt	April to October 2026
Dickens County, Texas (Galaxy Helios, phase two)	Earthwork complete, foundations under way	August 2026
Yorkville, Illinois (CyrusOne)	Site work scheduled from early 2026; over $1 billion; first building late 2027	2026
Utajärvi, Finland (Data Tank Nordic)	Early works contract for site preparation; 200 MW if fully built	October 2026
Piaseczno, Poland (Sien Real)	Ground reinforcement, then power and water connections, on former industrial land	September to October 2026
Fishermans Bend, Melbourne (NEXTDC M4)	Early works in progress on a 162 MW campus	August 2026

These records show that work is happening. They do not, on their own, show harm. Whether a site damages its surroundings depends on what stood there before, how much is disturbed and how the runoff is controlled, which is the subject of the next section.

09

Ecological and runoff impacts

The ecological cost arrives in two waves: a sharp, local one when land is cleared, and a slow, cumulative one from decades of power and water use.

What clearing a site does

A modern campus replaces farmland, forest or wetland with roofs and paving. Rain that once soaked into soil now runs off hard surfaces, carrying sediment and heat into the nearest creek. Permit files from 2026 show the pattern. Some record what regulators allege has already happened, and others what developers have applied to do.

Site	What the record shows
Google "Project Peanut", Chesterfield, Virginia	State regulators allege seven sediment runoff incidents in nine months, and estimate 7,735 feet of stream channel and 1.4 acres of wetland affected.
Monarch Cloud Campus, Mason County, West Virginia	A state enforcement order of July 2026 found erosion controls failed and sediment-laden water reached neighbouring homes.
White Oak Data Center, Columbia County, Georgia (proposed)	The federal permit notice lists 24,752 feet of streams and 4.36 acres of wetland that would be permanently affected.
Van Buren Township, Michigan (proposed, for Google)	13.55 acres of wetland would be permanently lost, in a county that has already lost 90% of its wetlands.
Deep Park, North Port, Florida (proposed)	All six wetlands on site would be affected. A fifth of the data centre site is given over to stormwater ponds.

The scale is new. Hyperion covers 3,200 acres. American Rivers, citing the World Resources Institute, puts data centres at roughly 450 football fields on average.

> **In everyday terms.** Hyperion's 3,200 acres equal about 2,400 football fields, or nearly four Central Parks. The streams that would be affected at White Oak run to 4.7 miles, and those cited at Chesterfield to 1.5 miles. The wetland that would be lost in Van Buren Township would cover about 10 football fields.

Runoff in numbers

The US Environmental Protection Agency gives three plain measures of what paving and clearing do to water.

- **More water leaves the land.** A typical city block generates more than five times the runoff of a woodland area of the same size.
- **Hard surfaces shed almost everything.** Undeveloped land sheds roughly 10% to 30% of the rain that falls on it. Roofs and paving shed 70% to 95%.
- **Bare construction sites lose soil fast.** Sediment runoff from a construction site is typically 10 to 20 times that of farmland, and 1,000 to 2,000 times that of forest.

A simple planning-level illustration shows the size of the effect. Take 100 hectares (about 250 acres) of new roofs and paving, a metre of rain a year, and 40% more of that rain running off than before. The extra runoff is 400,000 cubic metres a year, before any stormwater controls.

Horizon	Extra runoff from 100 hectares	What that looks like
Each year	400,000 cubic metres	160 Olympic pools
5 years	2 million cubic metres	800 Olympic pools
10 years	4 million cubic metres	1,600 Olympic pools
15 years	6 million cubic metres	2,400 Olympic pools
20 years	8 million cubic metres	3,200 Olympic pools
30 years	12 million cubic metres	4,800 Olympic pools

This is an illustration, not a measurement of any named site. Ponds and other controls reduce the figure, and a stormwater pond only works if it is sized, built and maintained properly for the life of the site.

Water, air and carbon

- **Water.** A typical 100 MW site in the US consumes about 2 million litres a day. Rystad counts 222 billion litres used directly for cooling worldwide in 2025, rising to between 388 and 644 billion by 2030. The IEA's wider measure, which also counts the water used to make the electricity and the chips, goes from about 560 billion litres in 2023 to about 1,200 billion by 2030.
- **The hidden share.** Most of the water is used out of sight. Lawrence Berkeley National Laboratory estimates US data centres consumed 66 billion litres directly in 2023, and nearly 800 billion litres more through the power stations that supply them.
- **Where it lands.** About a quarter of existing sites, and nearly a third of those under construction, sit in regions projected to face greater water scarcity by 2050, according to MSCI. Protests have followed in Uruguay, Chile and Mexico.
- **What goes back into rivers.** Cooling systems can discharge biocides, corrosion inhibitors, heavy metals and PFAS, according to American Rivers.
- **Air.** A federal lawsuit filed by the NAACP in April 2026 alleges that xAI ran 27 gas turbines without an air permit in Southaven, Mississippi, about a mile from its Memphis data centre, with the potential to emit about 1,700 tons of smog-forming gases a year. The court declined to dismiss the case in October 2026. Researchers at Caltech and UC Riverside estimate, in a study not yet peer reviewed, that US health costs from data centre air pollution are approaching $20 billion a year.
- **Carbon.** The IEA's 2026 analysis sees emissions from data centre electricity rising from about 180 million tonnes of CO2 in 2024 to about 350 million by 2035. Meta's Hyperion alone is tied to a utility request for ten new gas plants totalling about 7.5 GW.

The figure	What it looks like in real life
2 million litres of water a day at one 100 MW site	**Four fifths of an Olympic pool every day; the IEA likens it to the use of about 6,500 households**
222 billion litres for cooling worldwide in 2025	**About 89,000 Olympic pools**
1,200 billion litres by 2030	**About 480,000 Olympic pools, or the yearly use of more than 4 million US households**
Google's first plan for its Uruguay site, 7.6 million litres a day	**The daily water use of 55,000 people. After protests in 2023 the design was changed to air cooling**
180 million tonnes of CO2 in 2024	**The yearly exhaust of about 39 million cars**
350 million tonnes of CO2 by 2035	**The yearly exhaust of about 76 million cars**
7.5 GW of new gas plants requested for Hyperion	**Enough electricity for more than 5 million homes, and an increase of more than 30% in Louisiana's grid capacity**
About 1,700 tons of smog-forming gases a year alleged at xAI's turbines	**Likely the largest industrial source of that pollution in the greater Memphis area, by the lawsuit's account**
Health costs approaching $20 billion a year in the US	**About $60 for every person in the country; the same study estimates as many as 1,300 early deaths a year by 2030**
Ireland's 7,663 GWh in 2025	**About four fifths of the electricity used by every home in Ireland combined**

One 100 MW data centre over 30 years

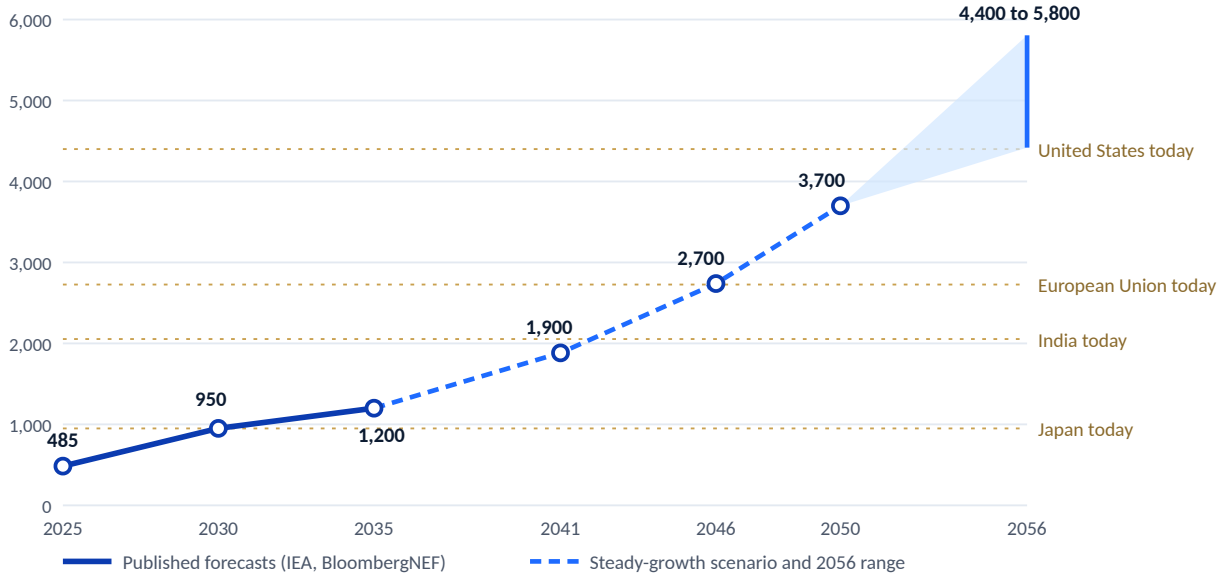
To make the long view concrete, take a single 100 MW data centre running at 80% of its capacity, with a typical 20% added for cooling and power equipment. It uses about 0.84 TWh of electricity a year, the same as about 78,000 US homes, and about 0.73 billion litres of water at the IEA's typical rate.

Years of operation	Electricity used (TWh)	Water consumed (billion litres)	In everyday terms
5	4.2	3.7	1,460 Olympic pools of water
10	8.4	7.3	2,920 Olympic pools
15	12.6	11.0	4,380 Olympic pools
20	16.8	14.6	5,840 Olympic pools
30	25.2	21.9	8,760 Olympic pools

This is arithmetic on stated assumptions, not a measurement of any named site. Cooling design can cut the water figure sharply, and the carbon that goes with the electricity depends entirely on how it is generated.

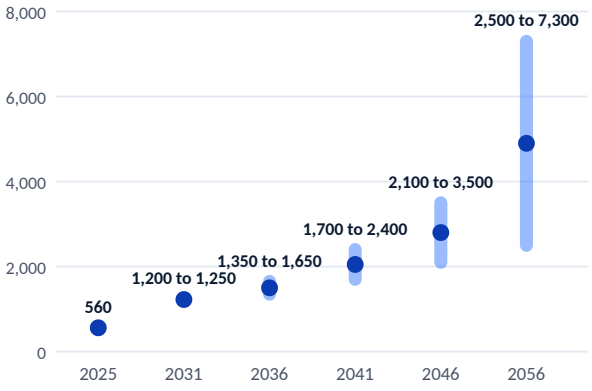
The world's data centres at 5, 10, 15, 20 and 30 years

Electricity used by the world's data centres, terawatt-hours a year

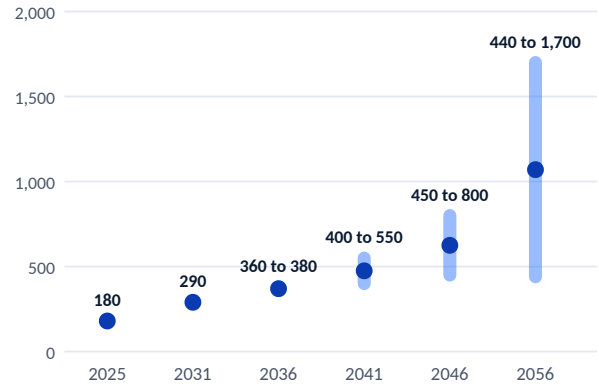


Sources: IEA for 2025 and 2030; BloombergNEF for 2035 and 2050; 2041, 2046 and 2056 are scenario points prepared for this report. Country lines are present-day consumption (IEA, Ember).

Water consumed, billion litres a year



CO2 from electricity, million tonnes a year



Each bar runs from the low case (efficiency keeps improving) to the high case (intensity stops improving); the dot marks the middle. Baselines from the IEA; later years are scenario arithmetic prepared for this report.

Horizon	Electricity (TWh a year)	Water consumed (billion litres a year)	CO2 from electricity (million tonnes a year)	What changes on the ground
Today (2025)	485	About 560 (2023 figure)	About 180 (2024 figure)	Clearing and grading under way at many large sites
5 years (2031)	About 1,000	1,200 to 1,250	About 290	Peak construction runoff; first wetland and stream losses become permanent

Horizon	Electricity (TWh a year)	Water consumed (billion litres a year)	CO2 from electricity (million tonnes a year)	What changes on the ground
10 years (2036)	About 1,300	1,350 to 1,650	360 to 380	Campuses fully paved; cooling demand competes with towns and farms in dry regions
15 years (2041)	About 1,900	1,700 to 2,400	400 to 550	Long-run effects on streams and groundwater become measurable
20 years (2046)	About 2,700	2,100 to 3,500	450 to 800	Power plants built for the first wave are mid-life; several generations of hardware scrapped
30 years (2056)	4,400 to 5,800	2,500 to 7,300	440 to 1,700	First-wave buildings reach end of life; cleared land rarely returns to its former state

How to read the table: 2025 and 2030 rest on the IEA's 2026 figures, and 2035 and 2050 on BloombergNEF's April 2025 outlook. The 2041 and 2046 electricity numbers assume steady growth of about 7.8% a year between BloombergNEF's 2035 and 2050 points. The 2056 range is an extension prepared for this report. Water and carbon ranges are scenario arithmetic. The high end holds the IEA's projected water use per unit of electricity in 2030, and its projected carbon per unit in 2035. The low end assumes water per unit falls 3% a year and carbon per unit falls 5% a year. The right-hand column is judgement, not forecast.

Growth is not the only possible path. If efficiency gains or weaker demand outran growth after 2030, electricity use would level off or fall. At a decline of 1% a year it would be about 730 TWh in 2056, well below the level expected for 2030.

The same horizons in everyday terms

Horizon	Electricity is like	Water is like	Carbon is like
Today (2025)	**45 million US homes**	224,000 Olympic pools; 1.9 million US households	39 million cars
5 years (2031)	**All of Japan; 92 million US homes**	About 490,000 pools; 4 million households	63 million cars
10 years (2036)	**About two thirds of what India uses today; 120 million US homes**	540,000 to 660,000 pools; 4.5 to 5.5 million households	About 80 million cars
15 years (2041)	**Nearly as much as all of India uses today; 174 million US homes**	680,000 to 960,000 pools; 5.7 to 8 million households	87 to 120 million cars
20 years (2046)	**About what the entire European Union uses today**	840,000 to 1.4 million pools; 7 to 12 million households	98 to 174 million cars
30 years (2056)	**As much as, or more than, the whole United States uses today**	1 to 2.9 million pools; 8 to 24 million households	96 to 370 million cars

Country comparisons use present-day consumption and are rounded. Japan's is the IEA's own comparison; India, the European Union and the United States are from Ember's 2024 figures.

10

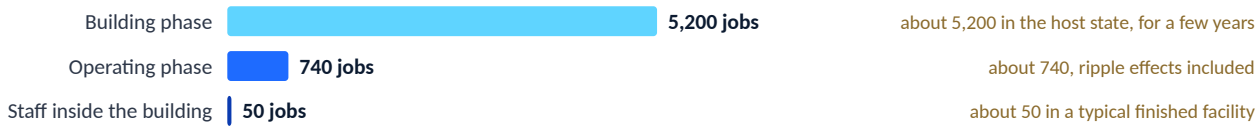
Economic impacts

The economic case is strong at national scale and much thinner at the level of the town that hosts the site.

What the evidence says today

- **National output.** PwC, in a study paid for by the industry's trade group, credits US data centres with 5.5 million jobs, $927 billion of GDP and $204 billion of taxes in 2024, counting ripple effects.
- **Local jobs.** A Brookings analysis of about 1,500 US facilities finds roughly 100 to 200 lasting jobs in a typical host county, no change in wages, and home prices up 2% to 5%. Virginia's legislative auditor found 74,000 jobs supported statewide, four fifths of them temporary construction work, with about 50 staff in a typical finished facility.
- **Construction.** The US Chamber of Commerce models a 50 MW site as supporting about 5,200 jobs in its host state during building and about 740 during operation, ripple effects included.
- **Tax.** In Loudoun County, Virginia, data centres are reported to supply about 38% of general fund revenue. Against that, Virginia's sales-tax exemption cost the state about $1.6 billion in fiscal 2025, and the legislative auditor estimates it returns about 48 cents of other state revenue for each dollar given up.
- **Power bills.** On the grid serving 67 million people from New Jersey to Illinois, the price of reserve capacity rose from $28.92 to $329.17 per megawatt-day in two years. The market's independent monitor attributes 63% of one year's rise, or $9.3 billion, to data centres. An industry-funded review by E3 finds no evidence that other customers subsidised data centres in the past, but attributes about half of that same price rise to growth in demand, mainly from data centres.
- **Pushback.** Hundreds of US communities have passed moratoriums or bans, and more than 300 state bills on data centres were filed in the first six weeks of 2026.

Jobs supported by one 50 MW data centre



Sources: US Chamber of Commerce model of a 50 MW site (state averages; results vary widely by state); Virginia legislative auditor for staff in a finished facility.

The 5, 10, 15, 20 and 30 year view

Horizon	Capital	Jobs and the local economy	Public cost and risk
Today (2026)	About $720 to $740 billion planned by four companies this year, up from about $376 billion in 2025	Construction boom at many sites	Capacity prices at record highs in the eastern US

Horizon	Capital	Jobs and the local economy	Public cost and risk
5 years (2031)	$6.7 trillion needed worldwide by 2030, on McKinsey's estimate	Building jobs peak, then leave the first sites	$163 billion of capacity costs on the eastern US grid from 2028 to 2033 if nothing changes, on NRDC's projection
10 years (2036)	Hardware bought today has been replaced at least once	Steady state: 100 to 200 lasting jobs per host county; property tax is the main local gain	Data centres reach about 20% of US electricity by 2035 on BloombergNEF's July 2026 forecast, up from 8.6% in its April 2025 forecast
15 years (2041)	First-wave loans and leases come up for renewal	Host towns depend heavily on a single taxpayer	Short leases meet long-lived assets: Meta's Hyperion lease has an initial four-year term, with options to extend
20 years (2046)	Second full rebuild of the computing inside	Early tax breaks expire; some sites are renewed, others idle	Ratepayers still paying for grid built for the first wave
30 years (2056)	PwC projects about $31.6 trillion of AI infrastructure spending worldwide through 2050	First-wave buildings need replacing or repurposing	Whoever holds the land, debt and power contracts carries the stranded-asset question

The first three rows rest on published figures. Rows from 15 years on describe what follows from asset lives and contract terms, and are judgement, not forecast.

The money in everyday terms

The figure	What it looks like in real life
About $720 to $740 billion of planned spending by four companies in 2026	**About $2,100 for every person in the United States, or about $90 for every person on earth, in one year**
At least $1.3 trillion of debt on US data centres	**About $3,800 for every person in the United States**
$6.7 trillion needed worldwide by 2030	**More than Japan's entire economy produces in a year; about $800 for every person on earth**
$9.3 billion of extra capacity cost on the eastern US grid in one year	**About $140 for each of the 67 million people that grid serves**
$163 billion of capacity costs from 2028 to 2033	**About $2,400 for each person on that grid over six years**
About 5,200 jobs while a 50 MW site is built	**About 740 once it operates, and about 50 inside the building**

A test every host community can apply

Before a site is approved, a community is entitled to clear answers to seven questions. A proposal that cannot answer them is a promise, not a plan.

1. **Land.** How much will be cleared, how much paved, and what stands there now?
2. **Water.** Where will the water come from, how much is consumed, and what is discharged, in a dry year as well as a wet one?
3. **Power.** How much electricity at peak, from which plants, and who pays for the new lines and stations?
4. **Runoff.** What controls are in place during construction, and who inspects and maintains them for the life of the site?

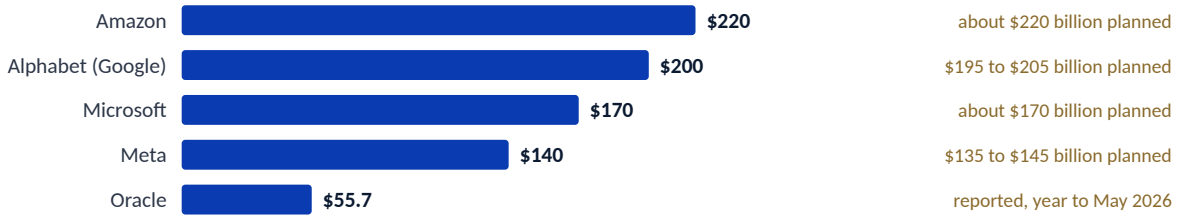
5. **Jobs.** How many permanent jobs, separate from construction jobs, and how many for local residents?
6. **Money.** What taxes will actually be collected after exemptions, and what public costs come with them?
7. **Responsibility.** Who is accountable if the tenant leaves or the owner changes, and is money set aside to restore the land?

11

Companies, backers and the money committed

Four American companies fund most of the build-out from their own cash, and a second ring of lenders, asset managers and sovereign funds now finances the rest.

Capital spending, in billions of US dollars



Sources: company guidance for 2026 as of October 2026 (midpoints shown); Oracle from its SEC filing. The first four together plan about $720 to $740 billion, up from about $376 billion in 2025. Companies define the measure differently.

The builders and users

Company	Spending	Flagship sites	Who stands behind it
Amazon	About $220 billion planned for 2026	Project Rainier, Indiana ($11 billion announced)	Own cash flow. Anthropic has committed over $100 billion across ten years for up to 5 GW
Alphabet (Google)	$195 to $205 billion planned for 2026	Cheyenne, Wyoming; Visakhapatnam, India ($15 billion)	Own cash flow; AdaniConneX and Nxtra by Airtel in India
Microsoft	About $170 billion (October 2026 guidance)	Fairwater, Wisconsin and Atlanta; $7.9 billion planned in the UAE over 2026 to 2029	Own cash flow; founding member of the AI Infrastructure Partnership
Meta	$135 to $145 billion planned for 2026	Hyperion, Louisiana (over $50 billion); Prometheus, Ohio	Blue Owl funds own 80% of Hyperion; $27 billion of bonds, with PIMCO taking about $18 billion and BlackRock about $3 billion
Oracle	$55.7 billion in its fiscal year to May 2026	Abilene, Shackelford County, Michigan, New Mexico	$14 billion of bonds arranged by Bank of America for the Michigan campus; about $18 billion of bank loans for New Mexico
OpenAI and Stargate	$500 billion and 10 GW targeted over four years, announced January 2025	Abilene, Milam County, Michigan, Ohio, Abu Dhabi	SoftBank, Oracle and MGX as founding equity partners. SoftBank led a $41 billion investment in OpenAI, about $30 billion of it its own
Anthropic	$50 billion programme announced November 2025	Custom sites in Texas and New York with Fluidstack	Fluidstack as building partner; separately committed over $100 billion to Amazon's cloud
xAI	Not disclosed	Colossus, Memphis	Now part of SpaceX, which listed publicly in June 2026
SoftBank (SB Energy)	$67 billion announced estimate for the Piketon programme	Piketon, Ohio; Milam County, Texas	SoftBank Group. OpenAI and SoftBank put $500 million each into SB Energy; Ares added $800 million

Company	Spending	Flagship sites	Who stands behind it
Chinese platforms	Alibaba, Tencent and Baidu spent about $19 billion in the second quarter of 2026	Ulanqab, Zhangjiakou, Zhongwei	State hub policy ("East Data, West Computing"). ByteDance rents about a fifth of China's delivered capacity

The developers and landlords

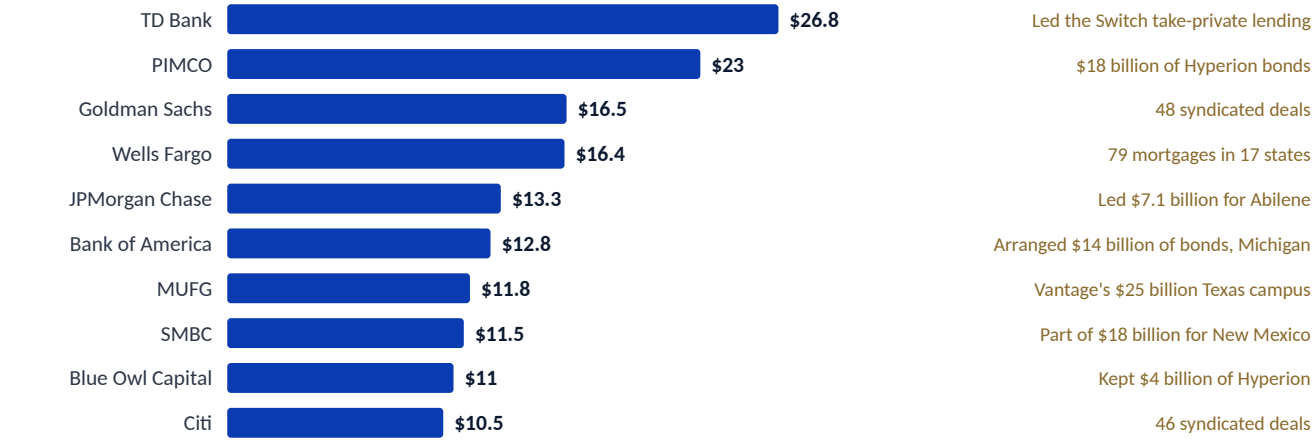
Company	Deal or commitment	Owners and backers
Aligned Data Centers	Bought at a $40 billion enterprise value in July 2026, plus $5 billion to expand	AI Infrastructure Partnership (BlackRock, Global Infrastructure Partners, MGX, Microsoft, Nvidia among its members), MGX and Global Infrastructure Partners; sold by Macquarie funds
QTS	$10 billion campus at Cedar Rapids, Iowa; over $10 billion at Hall County, Texas; up to £10 billion at Cambois, UK	Blackstone
Vantage Data Centers	Over $25 billion Frontier campus, Texas; about $15 billion Lighthouse campus, Wisconsin	Backed by DigitalBridge and Silver Lake
AirTrunk	Bought at over A$24 billion enterprise value in 2024	Blackstone and CPP Investments
Equinix (xScale US venture)	Over $15 billion including debt	GIC 37.5%, CPP Investments 37.5%, Equinix 25%
Digital Realty	About $7 billion development venture, 2023	Blackstone 80%, Digital Realty 20%
ST Telemedia Global Data Centres	Bought at an implied S$13.8 billion enterprise value in 2026	KKR 75%, Singtel 25%
CyrusOne	Bought for about $15 billion including debt in 2022	KKR and Global Infrastructure Partners
CoreWeave	$8.5 billion borrowing facility, 2026	Public shareholders; Nvidia bought $2 billion of shares
Crusoe	Builder of Stargate Abilene	$7.1 billion construction loan led by JPMorgan; Blue Owl is a co-owner of the project
Switch	$11 billion take-private in 2022	DigitalBridge and IFM; TD Bank led the lending
Nscale	$2 billion raised in March 2026	Round led by Aker and 8090 Industries, with Nvidia, Dell and Lenovo
Start Campus	€8.5 billion Sines programme	Davidson Kempner and Pioneer Point Partners
Humain	About $77 billion plan	Saudi Public Investment Fund
NTT DATA	More than $10 billion through 2027	NTT Group
Reliance and Adani	About $110 billion and about $100 billion plans announced	Indian conglomerates; AdaniConneX is Google's partner at Visakhapatnam
Brookfield	Up to SEK 95 billion in Sweden; France programme raised to €30 billion	Brookfield-managed capital

A caution on reading these tables. The amounts are of different kinds: yearly spending, purchase prices, loans and long-term plans. The same campus can appear in several of them, so they should not be added together.

The lenders

US data centres and related infrastructure carry at least $1.3 trillion of debt across 4,296 facilities, according to AtriumData figures reported by Bisnow. The fifteen largest lenders have exposure of about $196 billion.

The ten largest lenders to US data centres, exposure in billions of US dollars



Source: AtriumData figures reported by Bisnow, August 2026; rankings as of March 2026.

The weight of the financing is shifting. Morgan Stanley estimates $2.9 trillion of data centre spending through 2028, with $1.5 trillion needing outside money once the tech companies' own cash is counted. That gap is being filled by private lenders and special-purpose companies that keep the debt off the tech firms' balance sheets.

Who pays for $2.9 trillion of building through 2028



Source: Morgan Stanley estimate, as reported by Cleary Gottlieb.

12

What would happen if we built fewer?

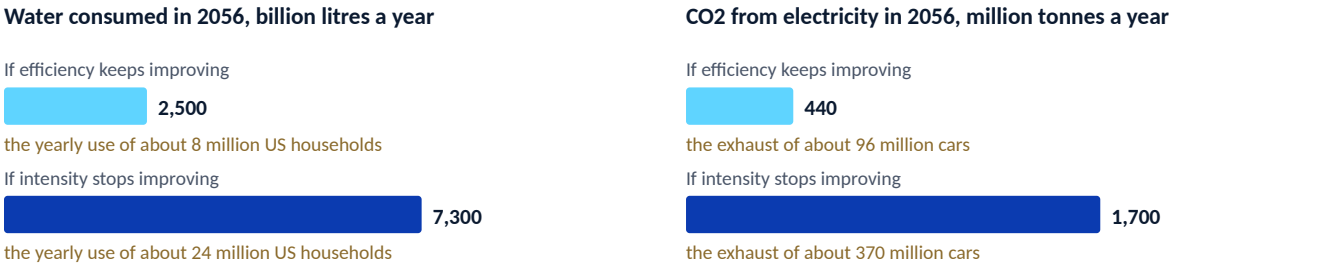
Building fewer data centres would ease pressure on power, water and land, but it would not switch demand off, and the costs would fall on different people from the benefits. This section is reasoned judgement drawn from the evidence above, not a forecast.

What would ease	What would be lost or moved
Fewer new gas plants and less strain on grids already short of reserve power	Thousands of construction jobs per site, and the property tax that host counties are counting on
Slower growth in household power bills where data centres share the grid	Slower AI and cloud services, or higher prices for them, as computing stays scarce
Wetlands, streams and farmland left intact, since those losses are permanent once made	Building may shift to places with weaker rules or less water, unless limits are widely shared
Less water drawn in dry regions	The promised gains from AI arrive later, including the energy savings the IEA believes AI could deliver
Less debt resting on demand that has not yet been proven	Countries that pause may depend on those that do not for their computing

Three pieces of evidence show how this plays out in practice.

1. **A freeze slows growth but does not stop it.** Ireland's regulator effectively halted new data centre grid connections from 2021 to December 2025. Data centre electricity use still rose 10% in 2025, as existing sites filled up.
2. **Local limits delay projects without stopping the wave.** Opposition blocked or delayed nearly $200 billion of US projects in the first half of 2026, while the largest companies raised their spending plans during the same year.
3. **How it is built matters as much as how much.** By 2056 the low and high ends of this report's ranges differ by a factor of almost three for water and almost four for carbon. Much of that gap comes from cooling design and the source of power, not from the number of buildings.

Two futures for 2056: the same technology, built two different ways



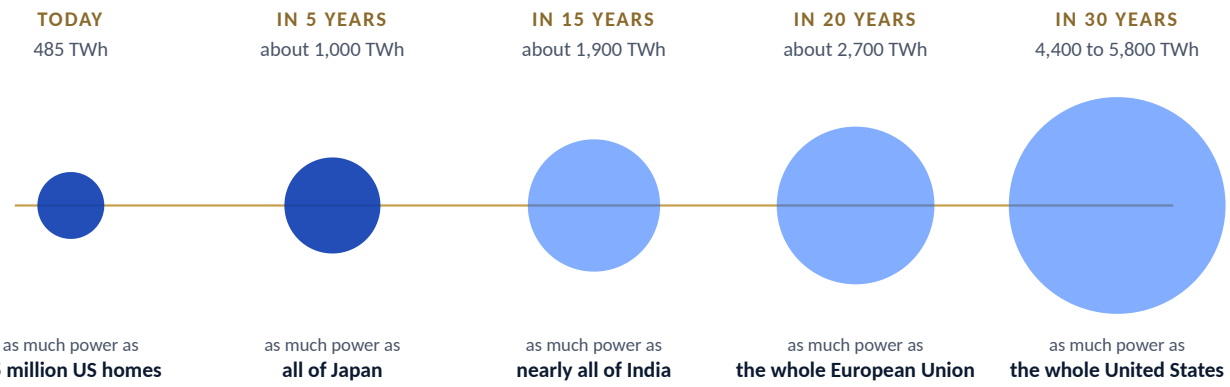
Landing at the low end instead of the high end would save the water of about 16 million US households and the exhaust of about 270 million cars every year. Scenario arithmetic prepared for this report, from the horizon tables.

13

What happens if we continue at this scale, or faster?

If building continues at today's pace, data centres become one of the largest users of electricity and capital on earth within a generation. The figures below come from the horizon tables earlier in the report.

If we continue: the electricity data centres use, measured against whole countries today



Circle area is proportional to electricity used. Darker circles rest on published forecasts; lighter circles are scenario points prepared for this report.

- **In 5 years.** Electricity use doubles to about what Japan uses. In the United States, data centres could take about 20% of all electricity by 2035, on BloombergNEF's latest forecast. The grid serving 67 million people in the eastern US has already missed its reserve target for the first time, raising the risk of blackouts.
- **In 10 to 15 years.** Use approaches that of India today. If water and carbon efficiency do not improve, water demand reaches the home use of 8 million US households and emissions match about 120 million cars.
- **In 20 years.** Use equals that of the entire European Union today. Power plants built for the first wave are still running.
- **In 30 years.** Use equals or exceeds that of the whole United States today, and PwC's central projection puts AI infrastructure spending at about $31.6 trillion through 2050.

Building faster still is what McKinsey calls its accelerated case, which puts spending on AI-related data centres alone at about $7.9 trillion by 2030. Three risks grow with speed.

1. **Dirtier power.** Speed favours gas, because turbines can be installed on site while grid connections wait. BloombergNEF expects fossil fuels to supply 64% of the new generation built for data centres over the coming decade.
2. **Heavier debt.** More of the building is financed by borrowing that depends on AI revenue arriving as hoped. If it does not, lenders and host communities are left with the buildings.
3. **Concentration.** The largest cloud and internet companies would hold 67% of all data centre capacity by 2031, on Synergy Research's projection, and a few regions would carry most of the physical burden.

Three risks that grow with speed

64%

DIRTIER POWER

of the new generation built for data centres to 2035 is expected to come from fossil fuels

$1.5 trillion

HEAVIER DEBT

must come from outside lenders and investors through 2028

67%

CONCENTRATION

of all data centre capacity held by the largest cloud and internet companies by 2031

Sources: BloombergNEF; Morgan Stanley; Synergy Research.

The case for continuing is real and should be stated fairly. The work is delivering jobs, tax revenue and investment now, and the IEA estimates that AI adopted widely across industry could cut 1.4 billion tonnes of CO2 a year by 2035, several times what data centres themselves emit. The IEA also cautions that this adoption is not assured.

14

Who is being impacted the most?

The heaviest burdens fall on people who live closest to the sites and share their power and water, while most of the gains go to companies and investors far away.

67 million
PEOPLE
share the eastern US grid where reserve power prices hit record highs

1,300
EARLY DEATHS A YEAR
the upper estimate for the US by 2030, in a study not yet peer reviewed

Nearly 1 in 3
NEW SITES
under construction sit where water is projected to grow scarcer by 2050

0.6%
OF CAPACITY
is in Africa, home to nearly a fifth of the world's people

Who	How they are affected	Evidence
Neighbours of the largest sites	Air pollution, noise, construction dust and traffic	A lawsuit alleges gas turbines ran without permits near homes, schools and churches in Southaven, Mississippi, in communities with large Black populations
Households sharing a grid with data centres	Higher electricity bills	$9.3 billion of added capacity cost in one year on the eastern US grid, by the market monitor's count; a projected $12 a month in Illinois, by a labour-aligned institute
Communities in dry regions	Competition for scarce water	In Querétaro, Mexico, reporters found residents rationed during drought while data centres were offered incentives. Protests followed in Chile and Uruguay
Low-income communities near power plants and backup generators	Asthma, heart and lung disease	Caltech and UC Riverside researchers find these communities carry the highest health risk
Rural and farming communities	Loss of farmland, wetlands and quiet; dependence on one taxpayer	A 3,200 acre site in rural Louisiana; wetland and stream losses proposed or alleged in Georgia, Michigan, Florida and Virginia
Wildlife and waterways	Habitat cleared, streams buried, warmer and muddier runoff	Permit records list miles of streams; potentially occupied gopher tortoise burrows were identified on one Florida site
Regions left out of the build-out	Little access to computing they will increasingly depend on	Africa holds nearly a fifth of the world's people and about 0.6% of its data centre capacity
Future ratepayers and savers	Paying for power plants, grid lines and debt long after today's decisions	Hyperion's power agreements run for about 15 years; much of the borrowing is sold to bond investors

The gains travel far

- Technology companies and their shareholders
- Lenders, investors and landowners
- Users of AI and cloud services everywhere
- Construction workers, for the building years
- County governments, through property tax

↔

The burdens stay close

- Neighbours: air, noise, traffic
- Households on the same grid: higher bills
- Communities in dry regions: scarcer water
- Low-income communities near power plants: health
- Farmland, wetlands, streams and wildlife
- Future ratepayers: decades of payments

Those who gain most are also clear: the technology companies and their shareholders, the lenders and landowners, construction workers during the building years, and county governments that collect the property tax. The question the evidence leaves open is whether the people in the table above are given a fair share of that gain, or a real say before the land is cleared.

15

What to watch, and where the evidence is thin

Five questions will decide which end of each range the world lands on.

1	2	3	4	5
DEMAND	**THE BILL**	**THE FUEL**	**THE WATER**	**THE VOICE**
Does the AI revenue arrive?	Who pays for the power?	Gas or clean power?	How is the cooling done?	Are communities heard first?

1. **Does the demand arrive?** Spending rests on AI revenue that has not yet been earned. If it falls short, half-built campuses and their debts are left with lenders and host communities.
2. **Who pays for the power?** Regulators in several US states and in Ireland are moving to make data centres carry their own grid costs. Where they do not, households do.
3. **Gas or clean power?** The choice of fuel locks in emissions for the life of the plants.
4. **How is the cooling done?** Closed-loop and air systems cut water use sharply but can raise electricity use. The 2030 range of 388 to 644 billion litres is the measure of that choice.
5. **Will communities be heard before the land is cleared?** Wetland and stream losses are permanent once made, so the hearing has to come first.

Four limits on this report are worth stating. Company and site figures are largely self-reported and change quickly. Many capacity figures are independent estimates, not company disclosures, and are labelled so. China's data is the least transparent of any major market. And no one has published a full site-by-site account of land cleared, so the runoff evidence here is drawn from individual records, not a global total.

16

What this means for how we live and work

What we are looking at is the building of a new public necessity, as basic to this century as the power line and the water main were to the last, and most of it is being decided before the people who will live beside it have been asked.

What we are really looking at

- **It is physical.** What we call the cloud is land, water, electricity and concrete in someone's home town. Every search, payment and AI answer draws on it.
- **It is fast.** The choices of the next five years, on where to build, how to cool and what to burn, set the pattern for the next thirty.
- **It is uneven.** The gains travel far, to shareholders and to users everywhere. The burdens stay close, with the families, farms and rivers nearest the fence.

How it reaches into daily life

Where we feel it	What changes	What the evidence shows
At home	The power bill, the water supply and the air, alongside faster and more capable services on every screen	Capacity costs up about $140 a person in one year on the eastern US grid; 23% of Ireland's electricity going to data centres
At work	AI built in these centres is entering many kinds of work, while the centres themselves employ very few	Thousands of jobs while building, about 50 once a facility is finished
In our communities	Open land becomes industrial land, and a town's income can come to rest on one industry	A site of 3,200 acres in one parish; about 38% of one Virginia county's general fund
Across the world	Countries with their own computing power set the terms, and those without it depend on others	The US and China hold most capacity; Africa holds about 0.6%

AT HOME
The power bill, the water supply, the air

AT WORK
AI in many kinds of work; few jobs in the buildings

IN OUR COMMUNITIES
Open land turned industrial; one large taxpayer

ACROSS THE WORLD
Those with computing power, and those who depend on them

A child born today

What a child born in 2026 will see

Age 5	Age 10	Age 15	Age 20	Age 30
2031	2036	2041	2046	2056
Data centres use as much electricity as all of Japan	The first great campuses are complete and fully paved	They use nearly as much electricity as India does today	As much as the whole European Union today, as this child starts work	As much as the United States today. The first buildings wear out, and this generation inherits the land, the debt and the choice

Drawn from the horizon tables earlier in this report. Figures beyond 2035 are projections.

What it asks of us

None of this is fixed. The distance between the low and high ends of this report's ranges, the water of 16 million households and the exhaust of about 270 million cars every year by 2056, is the measure of the choices still in human hands. Four questions belong to all of us, and most of all to those who lead.

1. **Who is in the room?** The people who will live beside a site should be heard before the land is cleared, since what is lost then cannot be given back.
2. **Who carries the cost?** Power, water and grid upgrades should be paid for by those who profit from them, so that households are not left with the bill.
3. **What is given back?** A community that gives its land and water is owed lasting value in return: work that stays, clean power, restored water, and a fair share of the gain.
4. **What are we using it for?** Every organisation that adopts AI is also choosing to use land, water and energy somewhere. That use should be worth what it costs.

The buildings will be raised by capital and machinery. The kind of future they serve will be decided by people: by leaders who ask harder questions, by communities who insist on a voice, and by each of us in how we choose to use what is being built in our name.

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Sources

Footprint and pipeline. Data Center Map directory · Data Center Map counts via Brilliant Maps · CBRE Global Data Center Trends 2026 · CBRE North America H1 2026 · Synergy Research, hyperscale share · Synergy Research, US pipeline · Synergy Research, inland shift · Epoch AI data centre dataset · Epoch AI on Stargate sites · SemiAnalysis figures as reported · US data centre tracker · Fermi America expansion · Fermi lease update · PORTS campus analysis · Meta Hyperion expansion · OpenAI on Effingham County · Project Tembo · Vantage Frontier · Vantage Lighthouse · Project Jupiter · Stargate Michigan financing · Meta Lebanon · Ulanqab, Caixin · Ulanqab, BSIC · Humain plan · Stargate UAE · Oxagon · Scala AI City · Google in Visakhapatnam · Start Campus · Narvik and OpenAI's withdrawal · Brookfield in Sweden · DayOne Lahti · AirTrunk Johor, IFC · South Africa, Daily Maverick · Africa's share of capacity · Ireland, CSO · Ireland's connection policy · Data Center Watch · Bisnow on opposition

Land clearing records. Microsoft, Heath · Microsoft, Hebron · Microsoft, Silver Springs · Lancium, Hall County · QTS, Bessemer permits · Galaxy Helios · CyrusOne Yorkville · NYAB on Utajärvi · Sien Real · NEXTDC

Energy, water and ecology. IEA, Key Questions on Energy and AI (2026) · IEA, Energy and AI (2025) · IEA on AI and climate · BloombergNEF, April 2025 outlook · BloombergNEF's July 2026 US forecast · Ember Global Electricity Review · Rystad Energy on water · Bloomberg on water · MSCI on water scarcity · Lawrence Berkeley National Laboratory · American Rivers · EPA runoff coefficients · EPA on urban runoff · EPA on construction sediment · EIA on home electricity use · Chesterfield, Virginia · Mason County, West Virginia · White Oak, Georgia · Van Buren Township, Michigan · North Port, Florida · Google in Uruguay · NAACP complaint against xAI · Court ruling in the xAI case · Caltech and UC Riverside · Fortune on Hyperion's gas plants

Economics. PwC and E3 studies · Brookings · Virginia legislative auditor · George Mason brief · Virginia's exemption cost · Loudoun County revenue · US Chamber of Commerce · IEEFA on capacity prices · NRDC · PJM auction result · Illinois study · PwC projection to 2050 · McKinsey

Companies and finance. Amazon results · Meta results · Spending tracker · Oracle, SEC data · Anthropic and Amazon · Anthropic's $50 billion plan · Microsoft in the UAE · Meta and Blue Owl · Michigan campus bonds · OpenAI and SB Energy · SoftBank and OpenAI · Stargate sites · SpaceX and xAI · Chinese platform spending · ByteDance's share · Aligned acquisition · QTS Cedar Rapids · AirTrunk · Equinix venture · Digital Realty and Blackstone · ST Telemedia GDC · CyrusOne · CoreWeave facility · Crusoe loan · Nscale · NTT DATA · Reliance · Brookfield in France · Bisnow on lenders · Cleary Gottlieb on financing

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Nerissa Persaud
Author, The 26 Laws of The Human Experience Operating System
Founder and Executive Director, Ignite The Human Spark SEZC

Enquiries
executiveoffice@ignitethehumanspark.com
www.ignitethehumanspark.com

Registered office
Ignite The Human Spark SEZC, c/o Lainston International Management, Ltd., Sussex House, Suite 200, 128 Elgin Avenue, P.O. Box 31298, George Town, Grand Cayman KY1-1206, Cayman Islands