IQEQ

SUSTAINABLE REAL ESTATE FORUM

Contributors:

NORTON ROSE FULBRIGHT

RICS

Start Campus

ZURICH

Powering intelligence

Can *data centres* and *the energy transition* coexist?

Global digital infrastructure,
energy systems and capital markets

November 2026
Published by IQ-EQ in partnership with the Sustainable Real Estate Forum



Contents

03 **Contributors**

04 **Executive summary**

06 **Foreword:** The AI revolution is becoming an infrastructure revolution

08 **IQ-EQ:** Governing the fund structures behind AI infrastructure

16 **Zurich Insurance:** Engineering resilience: the insurance perspective on AI infrastructure

23 **Norton Rose Fulbright:** Making AI infrastructure bankable

29 **RICS and Start Campus:** Delivering sustainable data centres through carbon discipline, skills and resilient infrastructure

38 **Sustainable Real Estate Forum:** Coordinating capital and delivery for sustainable digital infrastructure

43 **Glossary**

44 **About the contributors**

46 **End notes**

IQEQ

Contributors

SREF Editorial Team



Peter Panayi
Founder and CEO
Sustainable Real Estate Forum



Cecile Babcock
Principal Advisor, Global Investment,
Sustainable Real Estate Forum



Marcus Soulsby
Director of Growth and Operations,
Sustainable Real Estate Forum

01. IQ-EQ (lead institution)



Tamas Mark
Global Head of Real Assets
IQ-EQ

02. Zurich Insurance



Roger Baumann
COO Global Real Estate and
Head Product Development
Zurich Insurance Company Ltd

04. RICS and Start Campus



Gina Ding
Head of Public Affairs Europe
Royal Institution of Chartered
Surveyors (RICS)



Rita Monteiro
Head of Sustainability
Start Campus



Nelson Pinto de Magalhães
Procurement and PMO Director
Start Campus



Foreword



Christian Baudis
Digital Entrepreneur, Futurist
and former Google Executive

03. Norton Rose Fulbright



Marjolein Dieperink
Partner,
Norton Rose Fulbright



Stella Kakanis
Associate
Norton Rose Fulbright

05. Sustainable Real Estate Forum



Peter Panayi
Founder and CEO
Sustainable Real Estate Forum

AI is becoming an *infrastructure* story

Artificial intelligence is frequently described as a software revolution. The scale and composition of the capital now being committed to it show that its next phase is equally an infrastructure revolution.

Alphabet expects capital expenditure of $195–205 billion in 2026, with the vast majority directed to technical infrastructure for AI.[1] Microsoft expects approximately $170 billion of calendar-year 2026 capital expenditure and says customer demand for AI services continues to exceed available supply.[2] Meta's latest 2026 guidance is $135–145 billion, including principal payments on finance leases.[3] Amazon expects about $220 billion of cash capital expenditure in 2026.[4]

These figures are not directly comparable measures of data-centre construction. They contain different combinations of processors, servers, networking equipment, buildings, leases and other corporate infrastructure, and should not be added together as a single "data-centre capex" figure. What they demonstrate, with little ambiguity, is the extraordinary physical capital intensity of the current AI cycle.

ELECTRICITY IS THE BINDING CONSTRAINT

Electricity is the first system in which that physical intensity becomes visible. The International Energy Agency (IEA)'s updated 2026 central projection sees global data-centre electricity consumption rising from 485 TWh in 2025 to about 950 TWh in 2030, around 3% of global electricity demand. Electricity consumption from AI-focused data centres is projected to triple over the same period.[5] The IEA also reported that data-centre electricity demand rose 17% in 2025, considerably faster than total global electricity demand.[5]

A global share of around 3% is significant but not, by itself, evidence of a global electricity crisis. The more consequential problem is concentration. Data centres cluster in particular power markets, and the IEA warns that a data centre can be operational in two to three years while the broader energy system often requires longer lead times for generation, transmission, substations and regulatory approvals.[6] That difference creates a gap between demand for computing and the physical delivery of electricity.

The central proposition of this study is therefore deliberately narrower, and more defensible, than the claim that capital markets are universally "mispricing" data-centre energy risk:

> AI infrastructure is increasingly being valued on the strength of extraordinary demand while some of its most consequential dependencies, including energisation timing, grid reinforcement, power-price exposure, cooling and water, climate resilience, insurance capacity, regulation and community consent, extend beyond conventional asset-level underwriting.



WHAT THE CONTRIBUTORS FIND

This report tests that proposition through the perspectives of its contributors.

In the foreword, Christian Baudis describes generative AI as a stress test for the energy sector. He argues that data centres and the energy transition can coexist, but that this depends on the quality of the infrastructure decisions being made now.

IQ-EQ examines fund governance. It argues that energy has moved from an operational input to a fund governance issue, and that energy geography should be written into fund documents, treated as an investment gate in due diligence and reflected in valuation, reporting and entity administration. It sets out a five-layer governance architecture covering capital and ownership, energisation, contractual dependency, resource and resilience performance, and investor transparency.

Zurich Insurance examines risk, insurability and bankability. Its review of major data-centre outages over the past decade found that 82% of the events analysed were driven by electrical or power-system failures, more than half involved cascading failures and more than one-third had clear human or procedural factors.[7] Zurich argues that each data centre should be viewed as part of a system of systems, and that insurance and risk-engineering insight adds most value when applied early in the project lifecycle.

Norton Rose Fulbright examines AI infrastructure from the position of lenders and investors, with a focus on Europe. It argues that legal architecture is where dependencies controlled by grid operators, regulators and energy suppliers are either turned into rights and obligations that can be underwritten, or left as residual risk, and that data centres structured as participants in the energy system may be better placed to obtain grid access, stabilise power costs, and by doing so realise growth.

RICS and Start Campus examine sustainable data-centre growth as a delivery challenge. Drawing on recent RICS research and standards, the chapter argues that sustainable growth depends on professional capability and consistent implementation as well as access to capital, with carbon assessment informing early design choices and carbon information made comparable across projects. Start Campus's SINES Data Campus in Portugal provides a practical example: seawater cooling built on the intake and return infrastructure of a decommissioned power plant, performance reported within a stated boundary, power secured in phases, and local skills, community and nature programmes. The Sustainable Real Estate Forum examines how capital and delivery can be coordinated. It argues that digital infrastructure and the energy transition must be planned as connected investment decisions, and proposes practical ways to make a project's external dependencies visible: a regional delivery statement alongside each asset business plan; flexibility claims that specify what can actually be delivered and on what terms; joint assessment of energy, water and carbon; and a common evidence record that allows investors, developers, advisers and public authorities to understand the same project in compatible terms.

THE CONCLUSION

Overall, evidence supports a disciplined conclusion that coexistence between data centres and the energy transition is possible, but it must be carefully engineered, financed, governed and delivered. For institutional capital, the existence of significant computing demand isn't in question, but what remains important to determine is how much of that demand can be converted into infrastructure that is energised, resilient, insurable, financeable and durable.

82%

of major data-centre outages analysed by Zurich over the past decade were driven by electrical or power-system failures.

THE REPORT IN ONE SENTENCE

AI demand is a technology thesis; converting that demand into durable investment cash flow is an infrastructure-delivery thesis.

The *AI revolution* is becoming an *infrastructure revolution*

For much of the digital era, technology appeared to be becoming weightless. Software moved to the cloud. Computing became a service. Data crossed continents almost instantaneously. Everything was digitally available at a fingertip. AI was a highly profitable growth model.



Christian Baudis
Digital Entrepreneur, Futurist and former Google Executive

Then, suddenly, things changed: investments increased exponentially, and as a consequence, the need for energy will increase dramatically too. Big Tech companies expect capex of roughly one trillion dollars for 2026/27, or more, just for data centre and technical infrastructure investments. The energy sector is heavily challenged, and long-term ROI and stock market valuations are being questioned.

What has happened here? Generative AI (especially LLMs) has entered almost every smartphone on the planet over the past three years, exponentially increasing demand for computing power. Large language models (LLMs) generate complex results for billions of requests per day, bringing search to another level. But they are, unfortunately, inefficient. They are challenged by the complexity of language and its logic, and because of this, they have to go the extra mile to find, hopefully, the correct answer to any question. This costs enormous computing power, which is why today's AI is becoming a challenge for many sectors, the energy sector in particular. It is, in a sense, a stress test for those industries, and it will decide whether today's AI succeeds on a broader scale or fails. Will there be more efficient programming models in the future? We can only hope so.

AI depends on physical systems: semiconductors, servers, fibre, cooling equipment, water, land, transformers, substations, transmission lines and electricity. If any of those run short, the development speed of AI will slow down.

AT A GLANCE

- AI has moved from a weightless digital story to a physical infrastructure challenge
- Generative AI's demand for computing power is a stress test for the energy sector
- Power, grids, water and land now set the speed at which AI can develop
- Community and regulatory acceptance shape whether development stays economically feasible
- Data centres and the energy transition can coexist, but it depends on infrastructure decisions made now

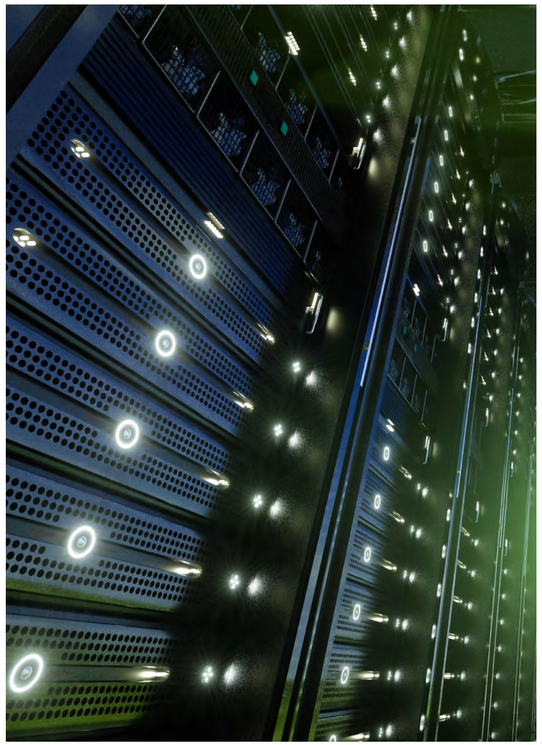
The IEA's updated outlook places global data-centre electricity consumption at 485 TWh in 2025 and around 950 TWh in 2030, with AI-focused facilities growing considerably faster than the sector as a whole.[1] The relevant question is therefore no longer only how quickly AI can advance, but how quickly the physical world can support that advance. Data centres may represent around 3% of global electricity consumption by 2030 in the IEA's central case.[1] But in the United States, Lawrence Berkeley National Laboratory's 2026 reference case estimates that data centres could account for 11.8% of total U.S. electricity consumption in 2030, with a scenario range of 9.5% to 15.3%.[2] And in the state of Virginia, data centres might consume almost half of the state's electricity by 2030.[3]

Data-centre developments raise legitimate questions about power prices, grid upgrades, water, noise, land, construction, tax revenue and who ultimately pays for the supporting infrastructure. U.S. regulators are already grappling with this directly. In June 2026, the Federal Energy Regulatory Commission (FERC) required regional grid operators under its jurisdiction to justify or reform arrangements governing large-load interconnection and cost allocation, including mechanisms intended to protect existing customers if planned large loads do not materialise as expected.[4]

These are not peripheral political questions; they're part of the economics of digital infrastructure. If energy availability determines whether a site is technically feasible, community and regulatory acceptance can influence whether development remains economically feasible.

This leads to a wider shift for institutional capital. A data centre is not simply a building containing servers, but rather a node inside a system. Its economics depend on power, transmission, fibre, cooling, water, insurers, equipment manufacturers, construction supply chains, regulators and communities.

The investment question therefore needs to move beyond "What is this asset worth?" towards "What system of dependencies makes this asset valuable, and how resilient is that system?" That change matters because the AI infrastructure cycle combines short technology lives with long physical asset lives.



CAN DATA CENTRES AND THE ENERGY TRANSITION COEXIST?

The answer can be yes. But the answer depends on the quality of the infrastructure decisions being made now. More computing requires more generation, stronger grids, more flexible systems, sophisticated risk engineering, capital structures capable of absorbing large physical investment and a more mature relationship with the communities and energy systems that enable digital growth.

Artificial intelligence may become one of the most consequential technologies of this century. But intelligence has always depended on energy. The next frontier of AI will be determined by whether the physical economy can responsibly power it.

IQEQ

01.

IQ-EQ: Governing the *fund structures* behind *AI infrastructure*



AT A GLANCE

- Energy geography is now a fund structuring and governance variable
- Fund documents should define power access, energisation risk and renewable procurement clearly
- Energy due diligence should act as an investment gate, not a supporting workstream
- ESG reporting must connect fund-level claims with asset-level energy and data-centre disclosures
- Fund administration must manage valuation, reporting, cash flow, compliance, entity and data complexity

Governing the *fund structures* behind *AI infrastructure*

The AI infrastructure build-out is often presented as a race to secure sites, servers and customers. For institutional capital, the deeper question is how those assets are structured, governed and reported once power becomes the constraint.



Tamas Mark
Global Head of Real Assets
IQ-EQ

A data-centre fund can involve real-estate ownership, development entities, operating companies, leases, equipment procurement, utility agreements, power-purchase contracts, grid connection rights, tax structures, joint ventures and co-investors. The investment may appear to sit inside a single asset, but its value depends on a wider system of contractual, regulatory and physical dependencies.

The asset sits at the intersection of several systems.

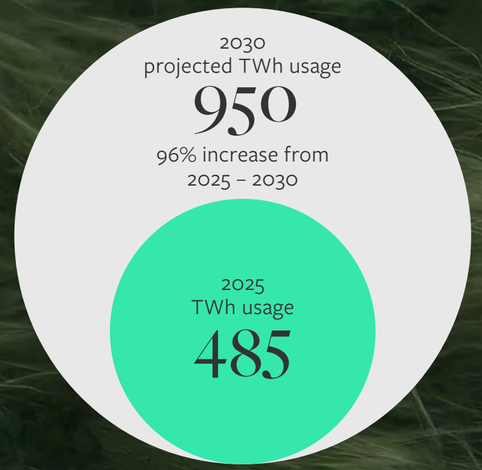
For much of the modern infrastructure cycle, energy was treated as an input. It was priced, contracted and secured late in the investment process. It was assumed to be available.

That assumption no longer holds. Energy now shapes whether a data-centre asset can operate, when it can generate revenue and how confidently investors can value the cash flow. This turns energy from an operational issue into a fund governance issue.

The scale of the market reinforces the point. UN Trade and Development estimates that announced foreign direct investment in data centres exceeded $270 billion in 2025 and accounted for more than one fifth of global greenfield project values.[1]

The implication is clear: if power is the constraint, energy geography becomes part of the investment thesis. Fund managers need to show where power comes from, when it will be available, how it is contracted, how it will be reported and how changes in availability or price could affect value.

Estimates by the IEA regarding electricity usage by data centres





EMBEDDING ENERGY GEOGRAPHY INTO FUND DOCUMENTS

Fund documents should make energy geography explicit. Limited Partnership Agreements (LPAs), investment mandates, side letters and investor reporting frameworks should not only describe asset class, region and return profile. They should define how the strategy assesses grid access, energisation timing, renewable energy sourcing and unsecured power assumptions.

In practical terms, this means documenting the quality of grid capacity, connection queue position, expected time to energisation, renewable energy availability, intermittency exposure and local rules on power allocation. A site having fibre, land, tax efficiency or customer demand is no longer enough to make it attractive; it must also be confirmed that the site can be powered on the required timetable.

LPA AND MANDATE DESIGN

LPAs and mandates can also move energy from disclosure to eligibility. They can set minimum thresholds for secured grid access, maximum tolerances for energisation delay, requirements for renewable procurement strategies and exclusions for assets that depend on speculative power. This helps investors understand not only what the fund may buy, but what conditions must exist before an asset qualifies for investment.

SIDE LETTERS AND LP DISCLOSURE

Side letters and limited partner (LP) reporting should then translate those principles into ongoing transparency. Investors may seek information on renewable energy sourcing, grid dependency, energy risk exposure and the use of Power Purchase Agreements (PPAs) or Virtual Power Purchase Agreements (VPPAs). The global PPA market was valued at approximately $36.6 billion in 2024 and is projected to grow at a compound annual growth rate of 32.4% to 2034.[2]

For governance purposes, the key question is what the contract actually delivers. A renewable sourcing claim may provide accounting recognition, financial exposure or physical delivery. These are not the same thing. Fund managers and administrators need to understand the distinction before they rely on the commitment in investor reporting or sustainability claims.

RAISING ENERGY DUE DILIGENCE TO INVESTMENT COMMITTEE LEVEL

Energy due diligence should no longer sit beneath technical, legal and commercial due diligence. It should act as an investment gate. An asset without credible energy access is not simply exposed to higher operational risk. It may be unable to operate within the fund's expected investment horizon.

The diligence process should test the legal status of grid connection rights, the strength of contractual commitments, the project's position in the connection queue, the realistic energisation timeline, regional grid constraints and exposure to curtailment or instability. It should also review the procurement structure, including PPA tenor, renewable source diversity, balancing costs, intermittency and long-term price stability.

Timing is central. The IEA notes that a data centre can be delivered in two to three years, while the energy infrastructure required to serve it often takes longer.[3] This mismatch can delay revenue, alter capital call timing, increase financing costs and change valuation assumptions.

EMBEDDING ENERGY DEPENDENCY INTO GOVERNANCE

Governance frameworks should therefore treat energy as a primary risk class. Monitoring should cover energisation delay, contracted power capacity, renewable energy coverage, Power Usage Effectiveness (PUE), Water Usage Effectiveness (WUE), Carbon Usage Effectiveness (CUE), grid uptime and reliability.

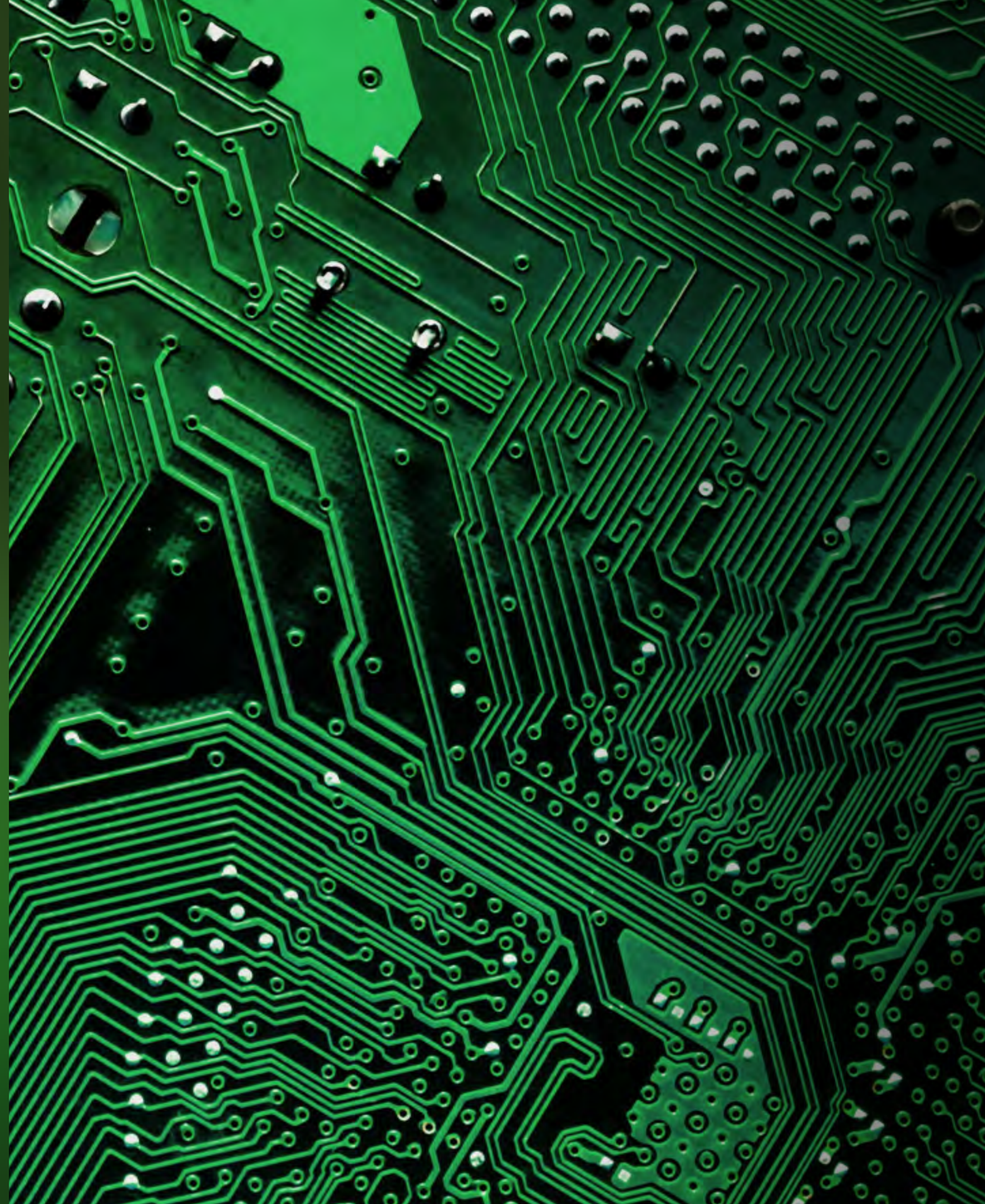
Those measures need to be used carefully. PUE measures total facility energy use divided by IT equipment energy use. A lower PUE can indicate better energy efficiency, but it does not show the carbon intensity of the electricity used. CUE helps close that gap by linking facility performance to emissions.[4,5]

Investor notification triggers should be equally clear. Limited partners should be informed when energisation timelines exceed agreed thresholds, contracted grid capacity is not secured, energy pricing or availability changes materially, or renewable procurement commitments are missed. These are not routine operating updates – they can change the investment case.

ESG FRAMEWORKS AND DATA-CENTRE DISCLOSURE

Sustainability reporting adds another layer of complexity. Current frameworks focus heavily on energy consumption, emissions and environmental impact. They do not always show whether the asset has reliable access to power, whether that power will arrive on time, or whether procurement structures are robust enough to support the operating model.

This matters for Sustainable Finance Disclosure Regulation (SFDR) reporting, EU Taxonomy alignment and data-centre-specific reporting obligations. Commission Delegated Regulation (EU) 2024/1364 requires operators of data centres with an installed IT power demand of at least 500 kW to report key information and performance indicators to a European database.[6,7] Fund-level ESG reporting should be consistent with those asset-level disclosures.



FUND ADMINISTRATION: WHERE COMPLEXITY BECOMES OPERATIONAL

This complexity does not end at investment committee approval. It flows into fund administration. Administrators must be able to support valuation, investor reporting, capital calls, regulatory reporting, entity administration and data control across assets whose performance depends on energy access.

Net asset value (NAV) processes should distinguish between assets with energised power, assets with contracted capacity awaiting energisation and assets that remain in the connection queue. Each status carries a different risk profile. Administrators should work with managers and independent valuers to make these differences visible in valuation policies, assumptions and audit trails.

Investor reporting should combine financial information with the energy and ESG metrics that explain performance. This may include PUE, WUE, CUE, renewable energy coverage, contracted versus merchant energy exposure and event-driven updates when governance thresholds are breached. Annual reporting may not be sufficient where assets remain in development or grid conditions are changing quickly.

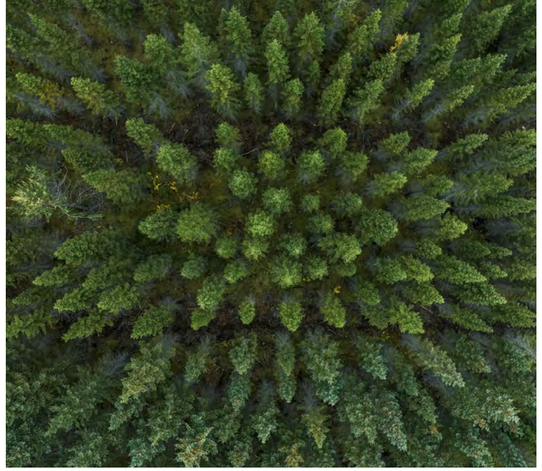
SPV AND ENTITY ADMINISTRATION

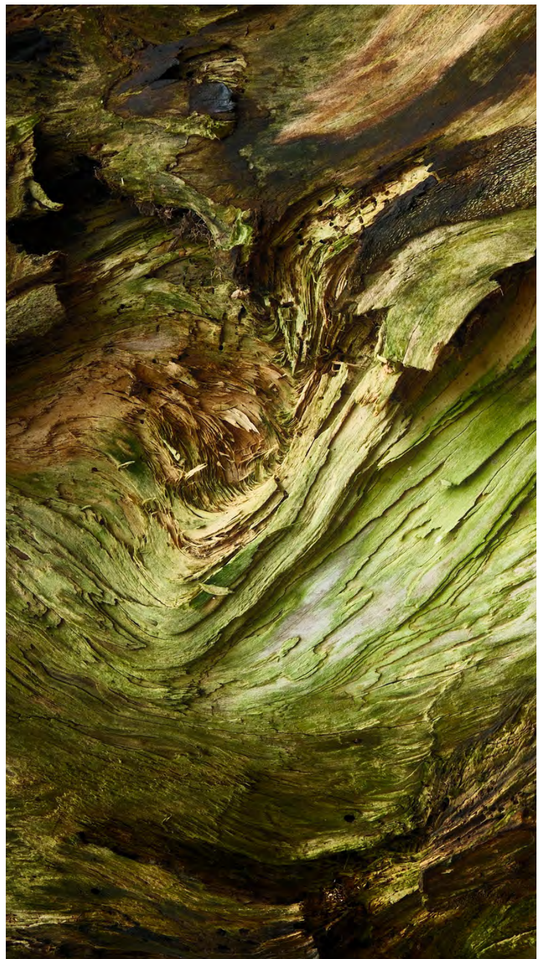
Special Purpose Vehicle (SPV) structures are central to many data-centre strategies. They may hold land, development assets, grid connection agreements, capacity rights, PPAs, VPPAs or operating assets. Each entity can carry separate governance, filing, tax, cash flow and reporting requirements.

Entity administration must therefore show which SPV holds which right, who the relevant counterparties are, how cash flows move, which obligations apply in each jurisdiction and how asset-level data feeds into fund-level reporting. Poor visibility over SPV structures can quickly become a governance, valuation and disclosure risk.

TECHNOLOGY AND DATA INFRASTRUCTURE

Technology is the practical enabler. Administrators need systems that can capture operational metrics, store energy contracts, maintain audit trails, support valuation assumptions and reconcile asset-level disclosures with fund-level reporting. Manual processes will struggle as energy, ESG and regulatory data requirements become more detailed.









FIVE-LAYER GOVERNANCE ARCHITECTURE FOR AI INFRASTRUCTURE

Based on IQ-EQ's experience supporting complex fund structures, asset owners and infrastructure strategies, we recommend looking at AI infrastructure through a five-layer governance approach. This approach is designed to help fund managers and investors make the key dependencies visible before they affect valuation, reporting or investor confidence.

01.
CAPITAL AND OWNERSHIP

Capital and ownership remain the foundation of fund governance. Investors need clarity on which entity owns the physical asset, where debt sits, how development and operating obligations are allocated, what rights co-investors hold and which liabilities belong to the fund, SPV, developer or operator.

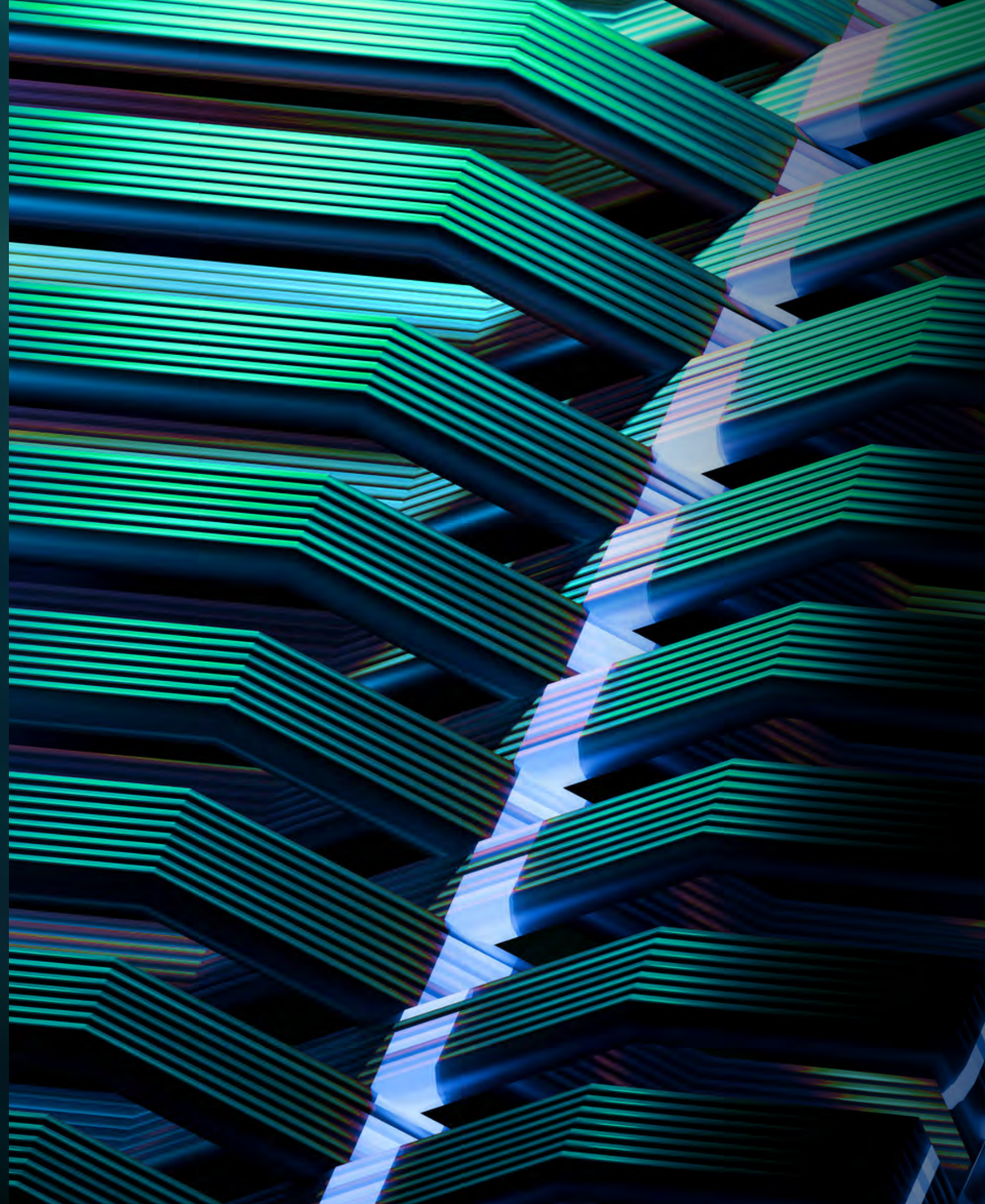
The scale of AI infrastructure makes this increasingly consequential. The IEA notes that data-centre investment has grown too large to be funded from technology-company balance sheets alone and that capital markets will be critical to continued build-out.[8] As more external capital enters the system, governance around rights, obligations and information becomes more important.

02.
ENERGISATION

"Power secured" can describe materially different realities. A project may have submitted a connection request, received an indicative allocation, signed a connection agreement, funded grid upgrades, contracted generation or reached tested operational energisation. Those stages carry different execution risk.

The IEA's evidence on the mismatch between data-centre delivery and energy-system lead times makes this distinction investment-relevant.[3] Governance reporting should preserve the stages rather than compress them into a binary flag.

For boards, investment committees and limited partners, the useful questions are: what capacity is available now, what capacity is conditional, what physical works remain, who controls those works, what milestones precede energisation and what happens financially if the schedule moves?





03.

CONTRACTUAL DEPENDENCY

Power arrangements can redistribute risk through long-term PPAs, utility tariffs, minimum-volume commitments, connection charges, capacity obligations and pass-through provisions. Development agreements and customer contracts can do the same with construction and demand risk.

The governance task goes beyond confirming that contracts exist and extends to understanding where the downside sits. The key questions are who carries electricity-price exposure, who carries the cost of network reinforcement, who carries delay, what happens if a customer does not take capacity on schedule and which obligations survive a refinancing or change of control.

04.

RESOURCE AND RESILIENCE PERFORMANCE

IQ-EQ's published data-centre guidance for investors emphasises energy use, cooling, water, ESG reporting, site resilience and technology adaptability as important metrics.[9] For investment governance, the next step is to make those metrics contextual.

A water-consumption figure has different meaning in a water-stressed location than in a water-abundant one. A renewable-procurement percentage does not by itself explain hourly power resilience. An energy-efficiency metric needs context on utilisation, rack density and cooling architecture. Climate resilience can depend on external grid and water infrastructure that the asset does not own. Governance therefore requires decision-useful metrics rather than reporting volume for its own sake.

A renewable-procurement percentage does not by itself explain hourly power resilience. An energy-efficiency metric needs context on utilisation, rack density and cooling architecture.

05.

INVESTOR TRANSPARENCY

Traditional fund reporting remains essential: NAV, leverage, income, capital calls, distributions, valuations and material events. AI infrastructure adds a need to expose the dependencies capable of changing those outcomes.

This does not mean turning an LP report into an engineering manual. It means identifying the small number of physical and contractual variables that can alter cash flow, valuation or financing. Depending on the asset, those variables could include energisation stage, grid milestones, power-cost sensitivity, customer concentration, critical insurance conditions, water strategy, resilience actions and material regulatory or community dependencies.

The purpose is to give investors a more complete explanation of why the asset is performing as expected, or why it may not.

This produces a wider implication for fund administration. Administration is often treated as infrastructure around the investment process. In AI infrastructure, administration can become part of the risk architecture itself because the investment can only be governed effectively if material dependencies are identified, allocated, monitored, escalated and reported.

The challenge becomes greater across jurisdictions. Electricity markets differ. Grid connection frameworks differ. Data-centre regulations differ. Water exposure differs. Sustainability rules differ. A global investor therefore requires consistency in the governance questions without assuming uniformity in the local answers.

BLUEPRINT TEST

- What does the investment own?
- What does it owe?
- What does it depend upon?
- Who bears failure of those dependencies?
- Can an investor see those answers clearly enough to make an informed decision?

If the final question cannot be answered, governance remains incomplete. The AI era does not replace traditional fund governance, but increases the number of physical dependencies that can influence financial outcomes and therefore need to be governed.
For institutional capital, the role of administration therefore evolves beyond reporting the asset accurately after the fact, to helping make the system around the asset visible enough for investors to understand what they are truly underwriting.



IQEQ

02.

Zurich Insurance: Engineering resilience: the *insurance perspective* on *AI infrastructure*



AT A GLANCE

- The average value of data-centre projects insured by Zurich has risen from $150 million to $3 billion in five years
- 82% of major outages studied were driven by electrical or power-system failures
- Risk sits at the interfaces between power, cooling, controls and operations, not only in individual components
- Each data centre should be viewed as part of a system of systems, from grid and water to supply chains and communities
- Insurance and risk-engineering insight adds most value when applied early in the project lifecycle

Engineering resilience: the *insurance perspective* on *AI infrastructure*

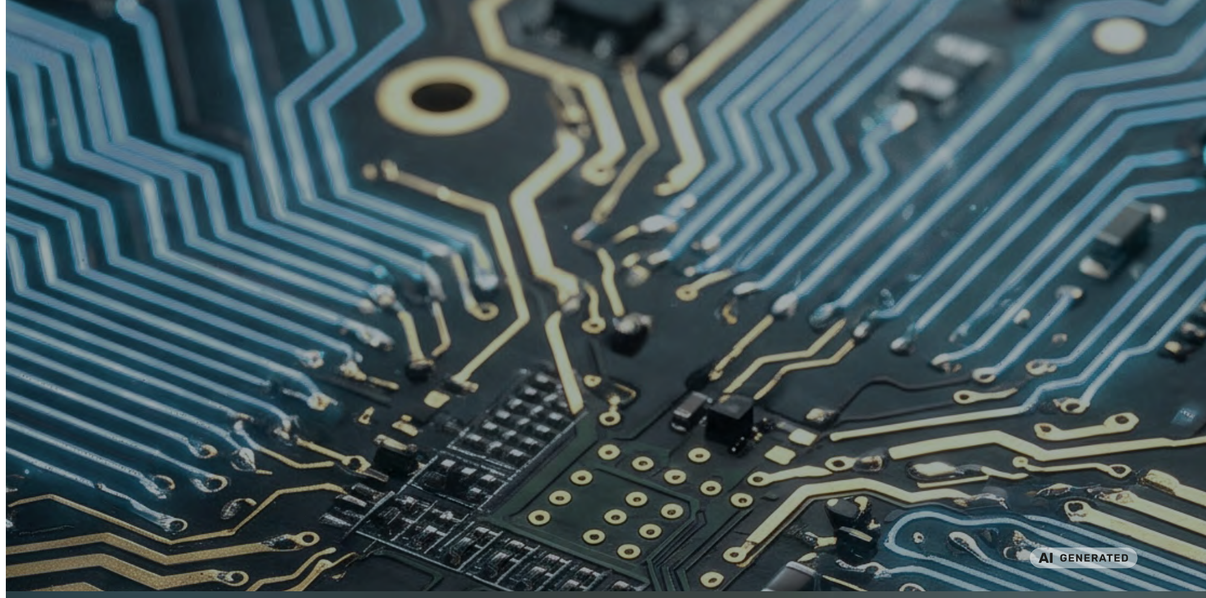
The AI revolution will depend on the delivery of physical infrastructure capable of supporting rapid growth in computing capacity. That capacity requires much more than semiconductors and servers.



Roger Baumann
COO Global Real Estate and Head Product Development
Zurich Insurance Company Ltd

Data centres need land, buildings, cooling equipment, communications links and, above all, consistent and reliable access to power. This infrastructure must be delivered quickly, with political and community support, and operate reliably over time in the context of increasing exposure to extreme weather.

These requirements are arriving at the same time as a fundamental shift in how societies produce, transport and use energy. Power systems are being redesigned to cut emissions, integrate renewables, improve efficiency and protect shared resources such as water and land. In this dynamic environment, the rapid rollout of data centres is already testing established assumptions about how, and when, to assess risk and consider the role of insurance. Whether a data centre can be built is increasingly a question of whether it can coexist with the energy transition sustainably and in a way that is acceptable to the communities around it.



Projects that might previously have been evaluated largely on technical feasibility and demand forecasts now also need to be assessed against a broader set of risks, including climate targets, resource constraints and evolving expectations from regulators, lenders and communities.

In our report on data-centre risks, published earlier this year, Zurich described campuses extending across multiple buildings, combining live operations with continuing construction and concentrating billions of dollars of sensitive equipment within tightly connected systems. The average value of data-centre projects insured by Zurich has increased from $150 million five years ago to $3 billion today, with the largest projects reaching tens of billions of dollars.[1]

This scale matters because it increases potential loss severity, stretches insurance capacity and creates concentrations across contractors, suppliers, utilities and locations. It also narrows the margin for error: a design weakness, delayed grid connection or commissioning failure can affect not only the delivery of an individual building, but also a wider development programme and the capital structure behind it. This is where the digital and energy transitions converge. Data centres are critical to supporting more productive economies and accelerating innovation, but they also add large, continuous loads to power systems that are themselves being reconfigured. Generation is becoming more distributed and variable, grids require expansion and reinforcement, and storage and flexible demand are becoming more important.

Successfully aligning these transitions will require investment decisions to consider the reliability and resilience of the system as a whole, rather than treating AI and energy infrastructure as separate. Forward-looking insurance risk modelling and engineering insight can play a greater role here by providing clarity on risk and future resilience during project design and construction.



ENERGY AND AI INFRASTRUCTURE

The operational requirements of data centres extend beyond the quantity of electricity supplied. They require dependable power delivered continuously and within tight tolerances. Power-quality disturbances, protection-system errors and failures in backup generation can interrupt operations even where the wider market has adequate generation capacity. Grid strength, connection timing, transmission constraints, local network stability, redundancy, fuel supply, storage, maintenance and the ability to isolate faults are all critical to operational resilience.

Zurich analysis highlights this wider system of dependencies. It identifies grid reliability under single-site loads of 1 GW or more, cooling-water availability and exposure to natural hazards as material vulnerabilities beyond data-centre walls, each of which can trigger cascading failures.[2] A loss of power can disable or degrade cooling, that disruption can create thermal instability, and control-system responses or human interventions can then amplify the original event. Risk is therefore found not only in the reliability of individual components, but also at the interfaces between power, cooling, controls, communications and operating procedures. Coexistence between data centres and the energy transition ultimately depends on the quality of these interfaces: whether power demand, system design and local constraints are considered together rather than in isolation.

In a review of major global data-centre outages over the past decade, Zurich found that 82% of the events analysed were driven by electrical or power-system failures, including generator faults, protection misconfiguration and power-quality disturbances.[2] More than half involved cascading failures in which an initial issue propagated into cooling loss, instability or full-site interruption. More than one-third had clear human or procedural factors, including inadequate commissioning controls, unsafe interventions or training gaps. These findings indicate that important failure modes are recurring, observable and potentially reducible. Design choices, commissioning standards, electrical isolation, diversified cooling paths, operating practices and workforce competence can materially reduce risk exposure. Resilience can therefore be treated as a concrete, quantifiable and investable characteristic rather than simply an aspiration.
Developers are responding through combinations of grid supply (comprising fossil, nuclear and renewable generation) and behind-the-meter generation, including gas turbines, fuel cells, battery energy storage, renewables, geothermal resources and, over a longer-term horizon, nuclear generation via small modular reactors. The precise mix will depend on factors including geography, supply constraints, the energy-transition plans of those using the resulting computing capacity, and local community concerns about effects on energy supply.

These solutions may ease constraints on the delivery of AI infrastructure, but they also broaden the risk perimeter. Assessing the resilience of a campus's complete power architecture therefore becomes more important as part of an investment decision.



THE NEED TO UNDERSTAND SYSTEM-LEVEL RESILIENCE

Power-related risks are not the only factors that can affect the infrastructure underpinning AI. Data centres have large roofs, exposed mechanical equipment and stringent temperature and humidity requirements. As AI infrastructure develops globally, facilities may be located in areas with unfamiliar exposure to extreme weather, including floods, wildfires, tornadoes and heatwaves. Over the past three years, severe weather has become the leading cause of loss in Zurich's U.S. data-centre builders' risk portfolio, indicating the growing significance of weather risk more broadly.

Related concerns arise around water availability. Some facilities depend on substantial volumes for cooling, while electricity generation may itself be water-intensive. Local availability can change with climate conditions and competing demands. A project may be technically feasible at financial close but become less robust if drought, regulation or community pressure restricts access over its operating life. Cooling strategies should therefore be assessed alongside watershed conditions, reuse capacity, alternative cooling modes and the operational consequences of restrictions.



Construction practice can also create transitional risks that conventional asset analysis misses. Compressed schedules increasingly lead to phased handovers, with one data hall operating while adjacent structures remain under construction. Zurich's data-centre report describes a 2025 loss in which hot work ignited an air filter after sensitive equipment and heating, ventilation and air-conditioning systems had been installed but before permanent fire protection was available. The lesson extends beyond the incident. Construction and operational risk cannot be assessed sequentially when the two phases overlap. Investors need a lifecycle view covering site selection, design, construction, commissioning, phased occupation and mature operations.

Workforce capacity is also part of that lifecycle. Large programmes require experienced electrical tradespeople, commissioning specialists, fire-protection experts, machinery engineers and operators able to manage complex, tightly coupled systems. Scarcity in a critical role can delay multiple projects. Rapid recruitment can heighten the importance of training, supervision and procedural discipline. Technology and standardisation may improve productivity, but replication creates its own concentration risk: a defect embedded in a common design, component or control platform can spread across a portfolio.

Finally, project planning and design will need to consider their wider impact on the system that they are fitting into and how to manage interdependencies. Those that do will be best able to demonstrate positive, sustainable impact on the local area, which in turn will be critical to maintaining their social licence to operate over time.

Data-centre development can bring investment, tax revenues and employment, but communities are also asking legitimate questions about electricity costs, water use, land, emissions and accountability. Permitting and grid access are consequently linked to whether developers can demonstrate credible local benefits and transparent resource use.

FROM RESILIENCE TO INSURABILITY

Taken together, these factors suggest that each data-centre should be viewed as part of a system of systems encompassing generation, grid connections, water, cooling, communications, supply chains, contractors, software and community infrastructure. Some dependencies are shared across several assets. A regional grid constraint, specialist-equipment shortage or common design weakness can affect a portfolio simultaneously. Traditional project-by-project diligence may therefore understate accumulation and correlation risks.

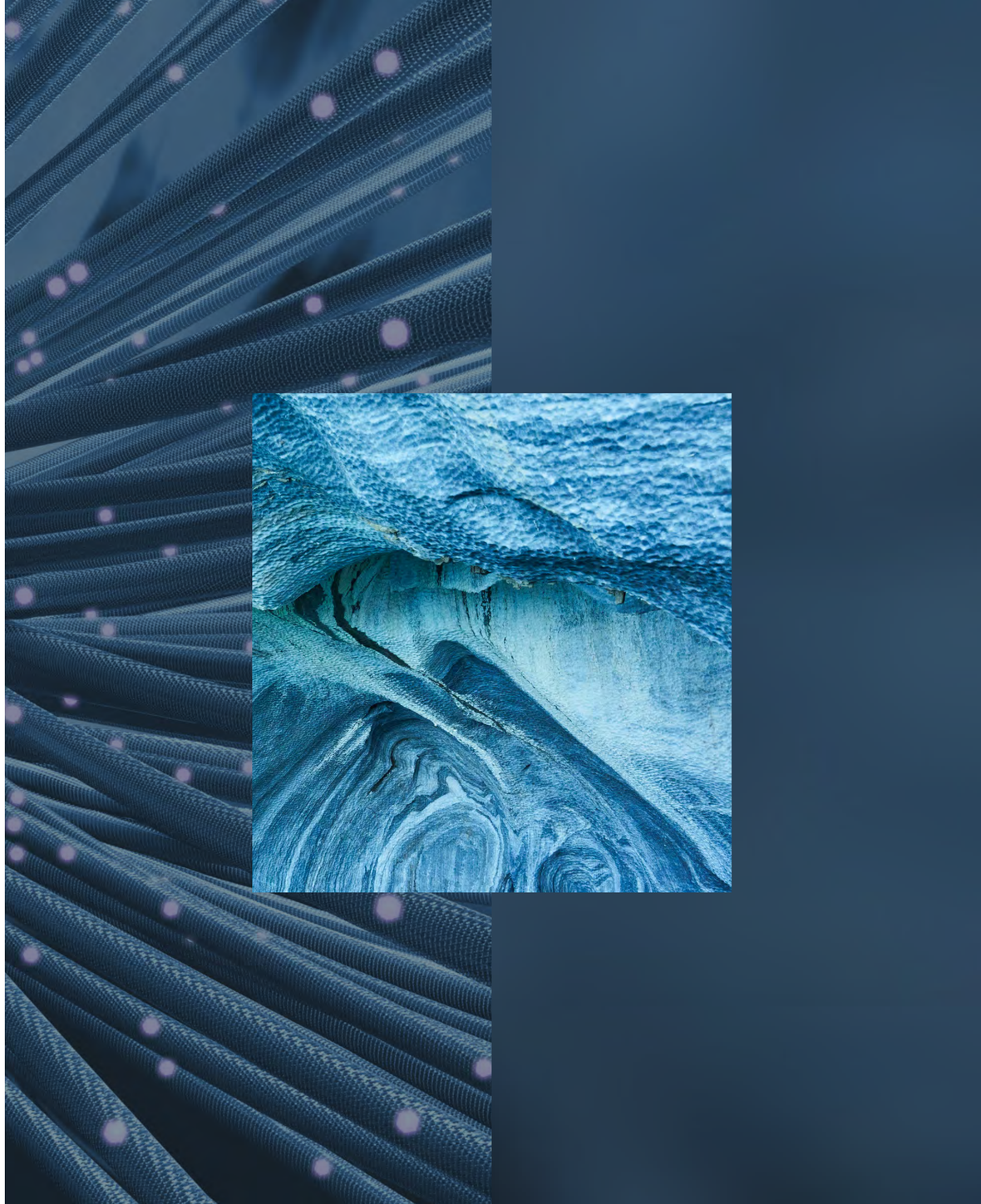
In our 'Beyond 2030: The Future of Construction' report, published earlier this year, Zurich argued that risk is arriving earlier, spreading further and being felt faster.[3] This means that feasibility, insurability and financial viability are increasingly determined outside of the traditional project boundary. The practical recommendation that flows from this is to treat infrastructure, interfaces, durability and portfolio exposure as core risks from the outset of a project. For investors, that means mapping shared dependencies and asking where diversification is real and where it is merely apparent. Sites in different locations may still rely on the same equipment vendor, grid technology, software platform, commissioning team or climate-sensitive supply route.

Community acceptance is another systemic dependency. Data-centre development can bring investment, tax revenues and employment, but communities are also asking legitimate questions about electricity costs, water use, land, emissions and accountability. Permitting and grid access are consequently linked to whether developers can demonstrate credible local benefits and transparent resource use. Social licence cannot be treated solely as a communications exercise conducted after plans are fixed. It is an element of project resilience that can affect timing, operating conditions and the durability of political support. Early engagement with utilities, authorities and residents, informed by risk and resilience analysis, can identify and address constraints while projects can still adapt.

Insurance has traditionally been considered late in the investment process, as a means of transferring residual risk once the asset and financing structure have largely been defined. That view overlooks the value of underwriting, claims experience and risk engineering in developing the system-level perspective needed to assess the resilience, and relative insurability, of the infrastructure powering the AI revolution.

Insurability is not identical to investment quality, and insurance cannot eliminate systemic risk, even with use of complementary tools such as captives or balance sheet retention. Some interruptions may arise without physical damage, some dependencies sit outside the insured's control, and a severe event can affect customers, counterparties and reputation beyond the policy response. Nevertheless, the process of achieving insurability can impose useful discipline. It requires clear loss scenarios, credible controls, quantified exposures and evidence that recommendations have been implemented. These are also foundations for bankability and durable portfolio value.

The link between resilience, insurability and bankability is not a promise that better engineering and risk management will always produce more insurance capacity. Rather, they make risk more understandable and quantifiable. Credible loss scenarios, independently validated controls, and realistic Estimated Maximum Loss and Probable Maximum Loss analysis can help insurers determine the capacity and terms they are prepared to offer, while enabling lenders and investors to understand what risks remain uninsured or retained. Bankability therefore depends not on insuring every dollar of asset value, but on demonstrating that potential losses, risk controls, insurance arrangements and retained exposures are understood, appropriately managed and financially supportable.



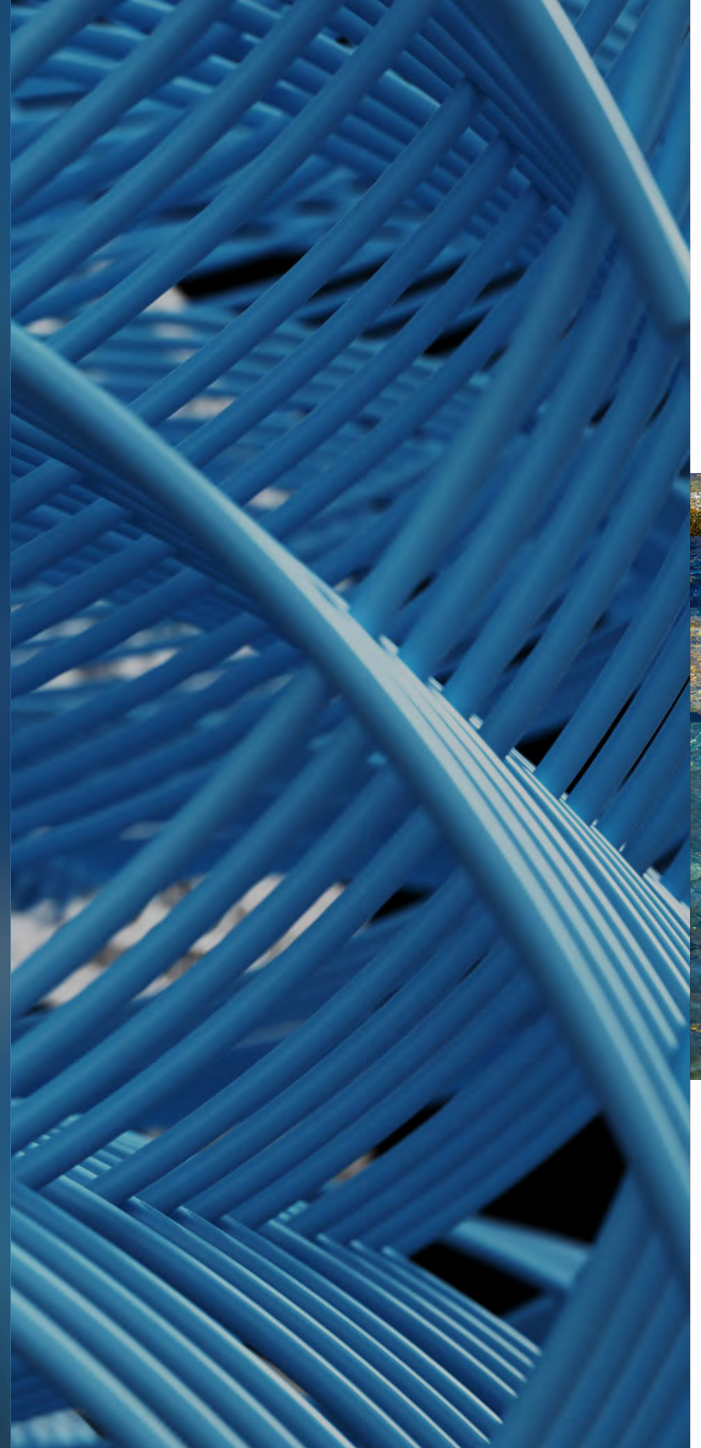
IMPLICATIONS FOR INVESTORS

Data centres and the energy transition are not mutually exclusive, but successful coexistence requires them to be planned together. Digital infrastructure can support innovation and economic growth, while investment in generation, networks, storage and flexible demand can strengthen energy systems. Conversely, poorly sequenced development can intensify grid congestion, prolong reliance on high-emission backup, increase local resource conflict and create fragile concentrations of capital. Outcomes will depend on the quality of projects and the systems around them, not simply on the volume of money committed.

For investors, the practical implication is to widen the frame. Demand forecasts and PPAs remain important, but they do not by themselves establish resilience. Investment analysis should examine the physical system that converts contracted electricity and engineered capacity into reliable digital service. It should test the interfaces, the recovery pathways and the portfolio correlations. It should ask whether local stakeholders have been treated as partners, whether climate and resource assumptions remain credible, and whether insurance feedback has been used to improve the project rather than merely complete a financing checklist.

The AI infrastructure build-out remains at an early stage. This creates urgency, but also an opportunity to avoid locking fragility into assets expected to operate for decades. The central lesson from Zurich's underwriting, claims and risk-engineering perspective is straightforward: a clear understanding of risk and resilience is essential to successful development, and the earlier that insight is applied in the project lifecycle, the greater its value.

Investors who use insurance insight as an additional lens on physical and systemic risk may be better placed to distinguish projects that are merely buildable from those that are genuinely bankable, insurable and capable of delivering long-term value. The strongest project is not necessarily the one with the largest theoretical capacity or the strongest demand forecast. It may be the one where interconnected failure pathways are sufficiently understood and controlled, or where the long-run sustainability of energy sources is clearest, so that insurers, lenders and equity investors can assess risk with confidence.





IQEQ

03.

Norton Rose Fulbright: Making AI infrastructure bankable: *contracts, power rights* and *risk allocation*

Turning off-balance-sheet dependencies into contracts capital can underwrite



AT A GLANCE

- Data centres run on three clocks: a long-lived shell, a short-lived core and a grid connection that can take seven to ten years in Europe's main hubs
- Grid capacity is increasingly allocated on the basis of project readiness and, once secured, can be withdrawn if left unused
- Dependencies that cannot be converted into enforceable rights remain residual risk and should be priced as such
- Data centres that participate in the energy system, rather than act as loads, may be better placed to secure grid access, stable power costs and by doing so realise growth
- The proposed EU Cloud and AI Development Act (CADA) aims to triple EU data-centre capacity through acceleration zones and faster permitting, and for the first time ties zone designation to grid capacity, storage and clean generation

Making AI infrastructure *bankable*: *contracts*, *power rights* and *risk allocation*

AI infrastructure is creating an enormous requirement for capital. But capital does not finance demand in the abstract. It finances contracts, assets, counterparties and enforceable allocations of risk. That makes legal architecture one of the less visible but increasingly consequential components of the AI infrastructure system.



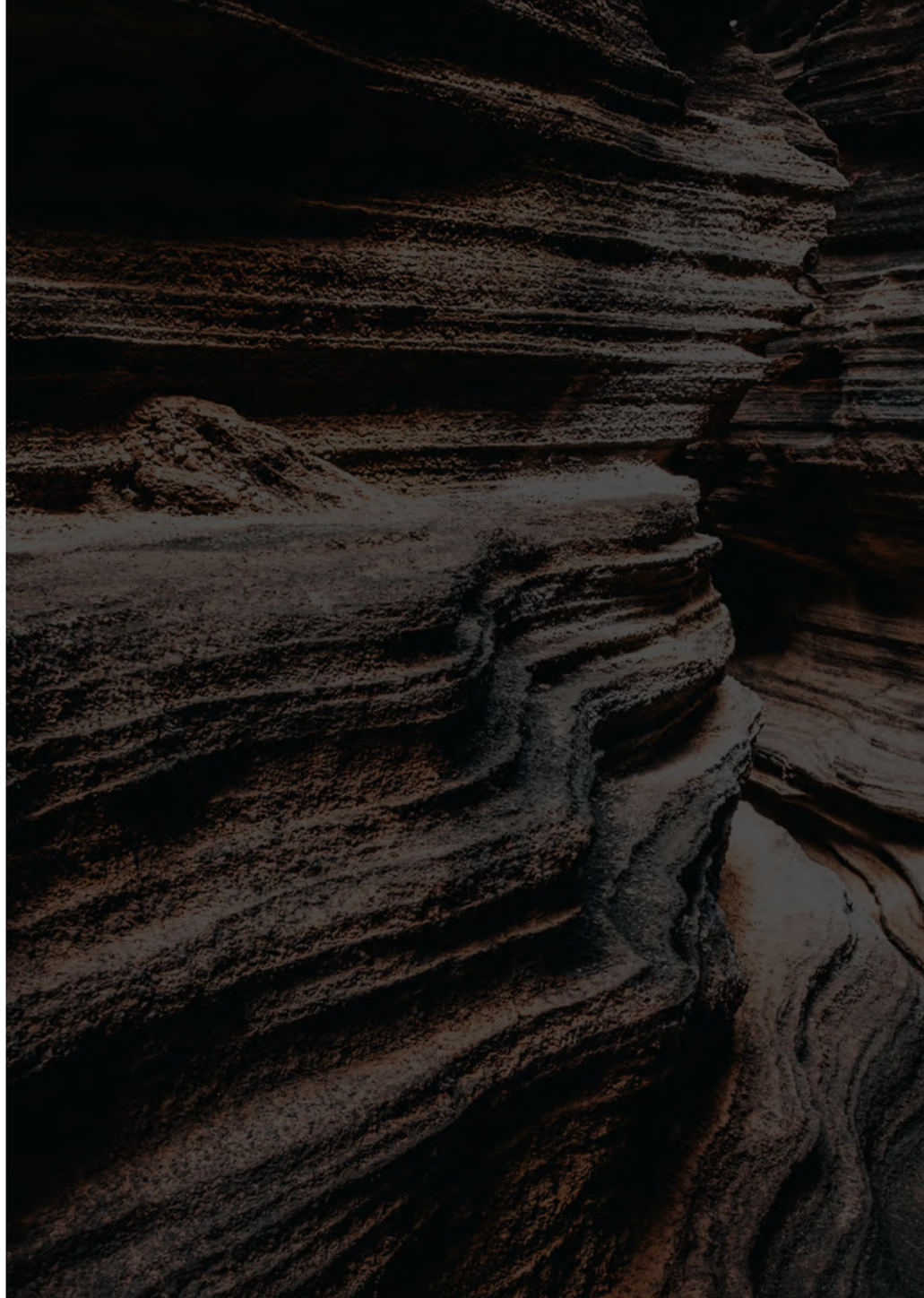
Marjolein Dieperink
Partner
Norton Rose Fulbright



Stella Kakanis
Associate
Norton Rose Fulbright

The demand case is not in doubt, as reflected by the IEA's updated projection for data-centre electricity consumption.[1] Individual AI campuses are now measured in hundreds of megawatts or even gigawatts. The harder question for capital is whether that demand can be converted into energised, contracted capacity; and who carries the consequences if it cannot. Many of the dependencies that decide this, from grid reinforcement to regulation, are controlled by parties outside the project company, such as grid operators, regulators and energy suppliers. Legal architecture is where they are either turned into rights and obligations that can be underwritten, or left as residual risk.

This chapter therefore looks at AI infrastructure from the position of lenders and investors, whether they are financing a greenfield campus, acquiring an operating portfolio or refinancing a stabilised asset. Its focus is Europe, where grid constraints are acute and the regulatory framework is changing quickly.





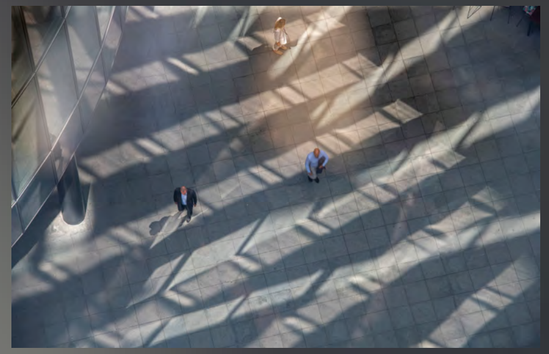
THREE CLOCKS: SHELL, CORE AND GRID

In earlier publications we have distinguished the “shell” (land, building, cooling, power, connectivity and security) from the “core” (servers, chips and racks).[2] Hyperscale customers often bring their own core; AI-focused models increasingly require the developer or operator to finance both, which changes the amount and duration of capital at risk.[2] The core and the shell operate on different clocks: the IEA notes that a transformer will typically last around 30 years, while IT equipment can become obsolete four to six years after installation.[3] Equipment financing therefore tends to carry shorter tenors.[2]

There is a third clock that is easily overlooked: the grid. In Europe’s established hubs (Frankfurt, London, Amsterdam, Paris and Dublin) new data centres wait on average seven to 10 years for a grid connection, and up to 13 years in some cases.[4] The IEA reports connection queues of up to seven years in Germany, against under three years in Italy.[3] Lenders and investors should therefore test whether a structure that matches shell and core also matches the grid clock. If it does not, the investment is in effect a bet on the timing of somebody else’s infrastructure.

FROM GRID APPLICATION TO ENERGISATION: WHAT “POWER SECURED” REALLY MEANS

A project can have land near a substation, a grid application, a connection offer, a signed connection agreement, a PPA, an obligation to fund network upgrades, a flexible connection or an energised connection. Each represents a different allocation of rights, obligations and execution risk. The engineering question (can electricity reach the facility?) becomes a legal question: who carries the consequences if it does not?



GRID CAPACITY IS BEING RE-RATIONED AND CAN BE LOST

Operators are also changing how scarce capacity is allocated, moving from first-come, first-served towards readiness. The European Grids Package encourages prioritisation by project maturity and grid-friendly use, and in Great Britain, where data centres accounted for around 73 GW of contracted demand in the connections queue by mid-2025, reforms now test readiness and may introduce commitment fees.[5] For sponsors and their financiers, a queue position is becoming an asset that must be actively defended.

Capacity once secured is also no longer guaranteed to stay secured, and this matters for operating assets as much as for new projects. Under the Dutch use-it-or-lose-it regime, contracted capacity that remains unused for a prolonged period, typically around two years, may be withdrawn. Large users with contracted capacity above 60 MW must participate in congestion management, which in practice can mean reducing consumption at the grid operator’s request. For an investor, unused headroom at an existing site or capacity reserved for a later phase is therefore not a static asset, and the operating profile of a facility may be constrained by obligations that did not exist when it was built.

WHO BEARS THE RISK OF A LATE GRID CONNECTION?

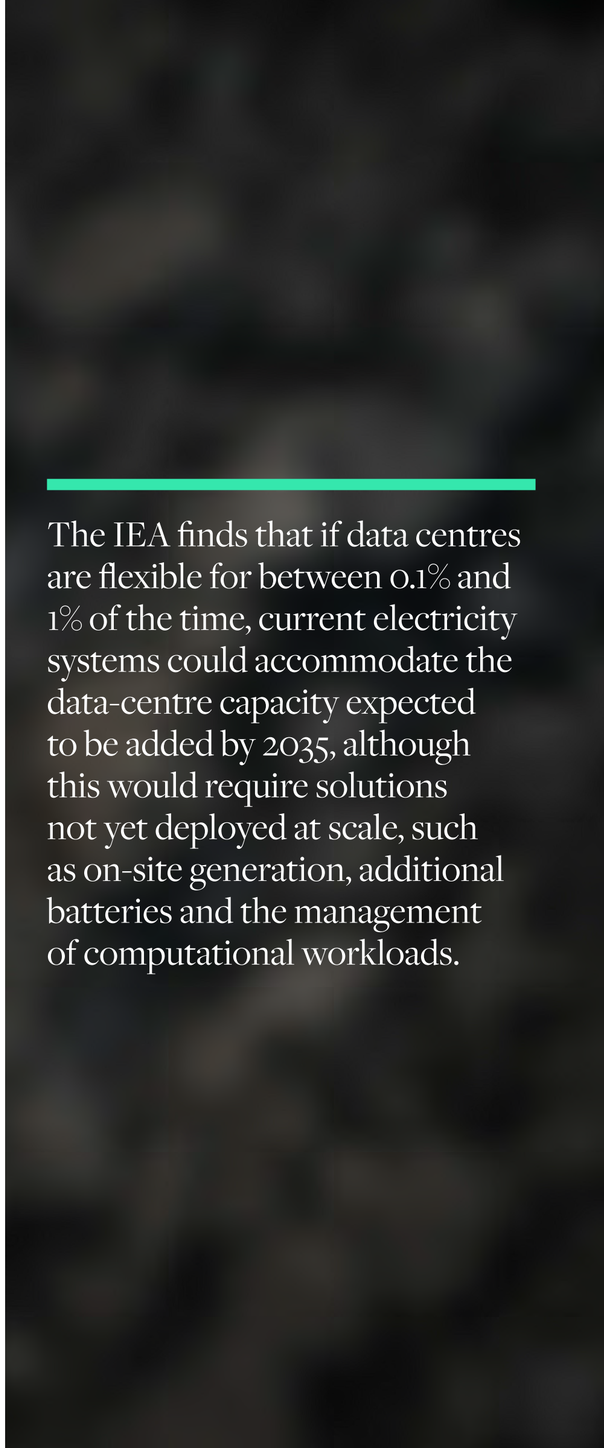
For lenders and investors, one of the less visible risks in a data-centre financing is a timing gap that no single contract closes. The date on which a hyperscale tenant expects capacity is fixed in the lease, and missing it may trigger liquidated damages or termination, and in any event lost revenue. The date on which the grid operator actually energises the site is not: across most of continental Europe, grid connection terms follow from regulation, leave little room for bargaining and rarely compensate a developer for delay. Whatever falls into the gap between those two dates is ultimately borne by the project.

Further up the energy chain, terms are more open to negotiation, but this only partly closes the gap. Generators, PPA counterparties, EPC contractors and private-network or on-site energy providers can be asked to accept contractual remedies for late or poor performance. Depending on the project, however, the potential exposure under a hyperscale lease may exceed what these counterparties are able or willing to take on, and transferring a substantial part of it to them may increase the cost of the energy project or make it harder to finance. Risk that cannot sensibly be transferred has to be reduced instead. In our view, one route to doing so is beginning to emerge, although it is not yet common practice in the sector: data centres taking a more active role in the energy system.

FROM LOAD TO PARTNER

In some congested markets, grid operators are beginning to take into account what a project can contribute to the grid, for example through storage or flexibility, when deciding on access. The IEA finds that if data centres are flexible for between 0.1% and 1% of the time, current electricity systems could accommodate the data-centre capacity expected to be added by 2035, although this would require solutions not yet deployed at scale, such as on-site generation, additional batteries and the management of computational workloads.[3] A new connection may therefore require developers to invest outside their traditional core business, in battery storage made available to the grid operator under contract, heat systems or privately financed grids and substations.[5] Phased or non-firm connections, backed by on-site generation and batteries, can give earlier access to a constrained grid,[4] and in Germany a levy reform has allowed data-centre batteries to serve both uptime and flexibility markets.[6] The IEA notes, however, that developers regard flexibility revenues as modest; the main value lies in faster access to the grid.[3]

For investors, batteries and other flexibility assets are often distinct assets alongside the data centre, with their own risk profile: uncertain market revenues, loss of battery capacity over time, the conditions a grid operator sets before an asset may provide grid services, and potential conflicts with uptime obligations to tenants. Whether they sit inside the data-centre SPV, in a separate vehicle or with a third-party provider determines who carries those risks and how they are financed. Heat recovery appears, for now, to play a more modest role, mainly to improve efficiency and support the licence to operate, although that may change as heat networks develop.[3] Long-term PPAs and joint ventures with producers may help stabilise power costs, while potentially giving generators the creditworthy offtake that new wind and solar need to reach financial close; the Clean Industrial Deal and the Action Plan for Affordable Energy actively promote such contracts.[7] These arrangements do not remove risk; they shift it between the parties. Investors will want to know who controls the shared energy assets, how capacity and costs are divided, and what happens if a partner exits or the arrangement underperforms.



The IEA finds that if data centres are flexible for between 0.1% and 1% of the time, current electricity systems could accommodate the data-centre capacity expected to be added by 2035, although this would require solutions not yet deployed at scale, such as on-site generation, additional batteries and the management of computational workloads.



EU CADA: A FIRST STEP TOWARDS LINKING DATA-CENTRE GROWTH AND THE ENERGY SYSTEM

The European Commission's recently proposed Cloud and AI Development Act (CADA, COM(2026) 502 final) aims to triple EU data-centre capacity within five to seven years. Member States in which capacity is being deployed would have to designate at least one data-centre acceleration zone, covered by an aggregated baseline permit, with decisions on individual project permits within 12 months. The Commission could also designate strategic projects, which may gain access to EU funding. On the demand side, assurance levels for cloud services procured by the public sector create a market for EU-located capacity.

What makes CADA notable for this report is that it begins to link data-centre growth to the energy system. When designating zones, Member States must consider available grid capacity, the scope for on-site storage and clean generation, and the potential to reuse waste heat; network development plans must take account of the energy needs of each zone; Member States must promote PPAs; and one criterion for strategic-project status is a contribution to grid stability through the co-location of clean generation and storage. The proposal does not yet bind grid operators to comparable timelines, so its effect will depend on how it is finalised and implemented.

These issues do not end at financial close. In an acquisition or refinancing, part of the value of an operating data centre lies in its energy position: the grid connection and transport agreements, PPAs, flexibility contracts and heat-supply contracts on which it relies. Buyers and lenders will want to know whether those contracts pass with the asset or require consent on a change of control, and whether the contracted grid capacity is secure. In some markets it is not: capacity that remains unused for a prolonged period may be withdrawn, and large users may be obliged to take part in so-called congestion management.[5] Capacity that a seller presents as room for future phases therefore needs to be checked against those rules. Where energy assets serve more than one building, the buyer should also establish which entity owns them and what share of their output belongs to the building being acquired. The energy position of a data centre is part of what is being bought.

CONCLUSION: INTEGRATION AS A ROUTE TO GROWTH ON BOTH SIDES

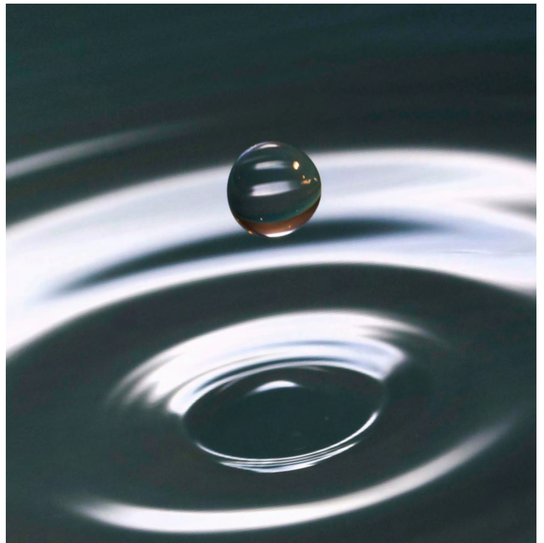
AI infrastructure can be mapped as a physical chain: generation, grid, storage and flexibility, powered sites, data centres, compute and connectivity. Beneath that chain sits a second, legal one (ownership, contracts, power rights, financing, security, insurance, regulation and governance) that determines who carries the consequences when a link in the physical chain fails to perform. For complex AI infrastructure, that second chain is not documentation completed after the commercial decision. It is part of the commercial decision itself.

As set out in the executive summary, the central proposition of this report is that some of the most consequential dependencies of AI infrastructure (energisation timing, grid reinforcement, power-price exposure, regulation and community consent among them) extend beyond conventional asset-level underwriting. From a legal perspective, this has a practical consequence: those dependencies can be brought back into underwriting only to the extent that they are converted into enforceable rights, such as a defended queue position, retained capacity, contracted flexibility, a transferable PPA or a permit route with a deadline. What cannot be converted remains residual risk and should be priced as such.

Can data centres and the energy transition coexist? From a bankability perspective, the answer is yes. And integration can benefit both. Data centres that are structured as participants in the energy system, rather than as loads to be accommodated, may be better placed to obtain grid access, keep the capacity they have secured, stabilise power costs and obtain permits, supporting the growth of AI infrastructure. The same long-term commitments can, in turn, help finance new clean generation, storage and grid capacity, and so support the energy transition. Growth on both sides increasingly depends on the same contracts.









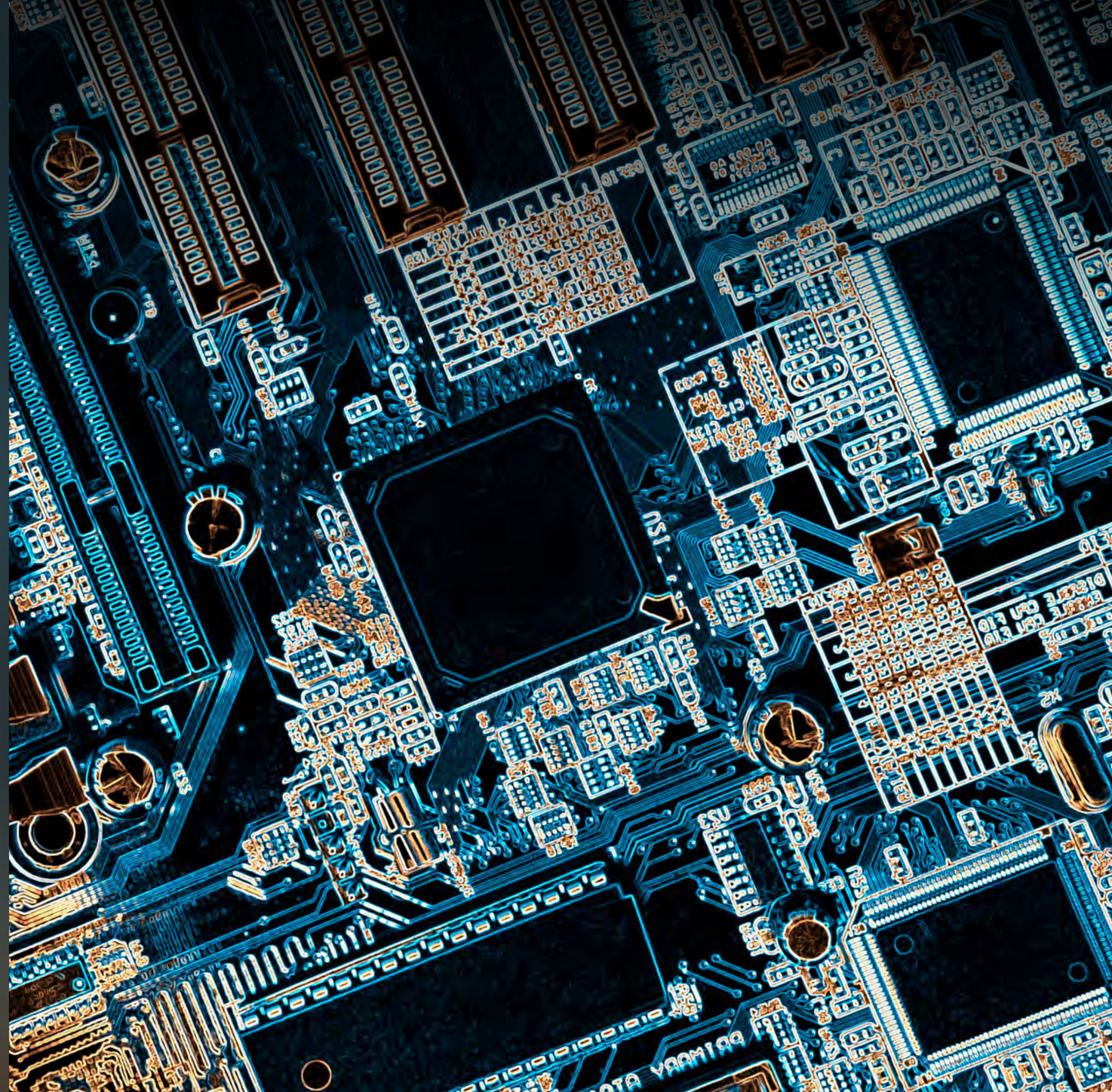
IQEQ

04.

RICS and Start Campus: Delivering *sustainable data centres* through *carbon discipline, skills* and *resilient infrastructure*

AT A GLANCE

- Sustainable data-centre growth depends on professional capability and consistent implementation as well as access to capital
- Carbon assessment should inform option selection while there is still scope to change quantities, specifications and construction methods
- Carbon information can be compared across projects only when scope, assessment period, lifecycle coverage and data quality are understood
- At Sines, Start Campus reports SINO1's first full year of operation within a stated boundary: one building, customer IT equipment excluded, data compiled internally
- Power for a phased campus moves through stages, from an initial agreement to energised supply, and the status of each phase needs to be clear



Delivering *sustainable data centres* through *carbon discipline, skills* and *resilient infrastructure*

Sustainable data-centre growth depends on professional capability and consistent implementation as well as access to capital.



Gina Ding
Head of Public Affairs Europe
Royal Institution of Chartered Surveyors (RICS)



Rita Monteiro
Head of Sustainability
Start Campus



Nelson Pinto de Magalhães
Procurement and PMO Director
Start Campus

THE DELIVERY CHALLENGE BEHIND DIGITAL GROWTH

The expansion of artificial intelligence is creating a substantial physical delivery challenge for the built environment. New computing capacity requires buildings, electrical infrastructure, cooling systems, materials and people capable of designing, constructing and maintaining them. The quality of these decisions will shape both the capacity available to digital businesses and the resources required to provide it.

Recent RICS publications provide a useful perspective on that challenge. The '2025 Sustainability report' examines the gap between environmental ambition and industry practice. The 'Construction Productivity Report 2026' considers the ability to deliver projects efficiently. The 'AI in commercial property and construction report 2026' examines the difficulty of turning technological experimentation into routine use. Together, they inform this chapter's central argument: sustainable data-centre growth depends on professional capability and consistent implementation as well as access to capital.[1, 2, 3]

These reports cover the wider built environment. Their survey results should not be presented as measurements of the data-centre sector. Their relevance here is analytical: they identify weaknesses that project sponsors should test in their own organisations and supply chains before assuming that a demanding development programme is deliverable.







CLOSE THE GAP BETWEEN SUSTAINABILITY AMBITION AND PRACTICE

RICS's '2025 Sustainability report' draws on more than 3,500 professionals across 36 countries. It reports slowing growth in demand for green buildings in most regions, together with persistent investment barriers including initial cost, insufficient evidence of returns and limited investor awareness or client demand. In construction, around 46% of respondents said they did not measure carbon emissions across projects. These are reported practices and sentiments, rather than independently audited project outcomes.[1]

For data-centre development, this raises a practical question: at what point does an environmental ambition become a requirement that changes a decision? A target stated after the location, structural design and procurement strategy have been fixed has fewer opportunities to influence the project. The proposed application is to bring resource performance into the brief, option appraisal and appointment of advisers from the outset.

A credible brief should explain the service the facility must deliver and the environmental boundaries within which it will operate. It should also identify who owns each target, what evidence is required and when an exception must be escalated. That creates a basis for managing trade-offs as design and procurement evolve, rather than relying on a final sustainability statement to reconcile decisions already made.

MANAGE WHOLE-LIFE CARBON ALONGSIDE COST AND PROGRAMME

RICS-published practitioner analysis offers a more operational narrative. In a June 2026 Construction Journal article, Arup practitioners describe using whole-life carbon assessment to establish early baselines and inform decisions alongside cost, programme and quality. They emphasise the completeness of early assessments and explain how incomplete quantities or optimistic benchmarks can undermine confidence as designs develop. This is practitioner experience published by RICS, not a controlled study establishing universal savings.[4]

The application to digital infrastructure is to make carbon assessment part of option selection. Teams should compare plausible design alternatives while there is still scope to alter quantities, specifications and construction methods. As information improves, they should explain why the carbon estimate changes: a revised design, better data and an expanded assessment boundary have different implications.

RICS's 'Whole life carbon assessment for the built environment' (WLCA), second edition, provides the underlying assessment framework and has been in full effect since July 2024.[5] It is important to note that whilst the RICS WLCA provides a consistent assessment methodology, it does not, by itself, prescribe a data-centre-specific carbon reduction target. For a data centre, the assessment should clearly identify the treatment of the building, electrical and cooling systems, replacement cycles and customer IT equipment. Responsibility for a component and inclusion within an assessment are separate questions; exclusions need to remain visible.

The resulting capital discussion is more useful when carbon and cost estimates refer to compatible scopes and time horizons. A lower purchase price can accompany higher replacement expenditure or different operating impacts. The decision should explain the relationship between those consequences without assuming that cost and carbon will always move in the same direction.



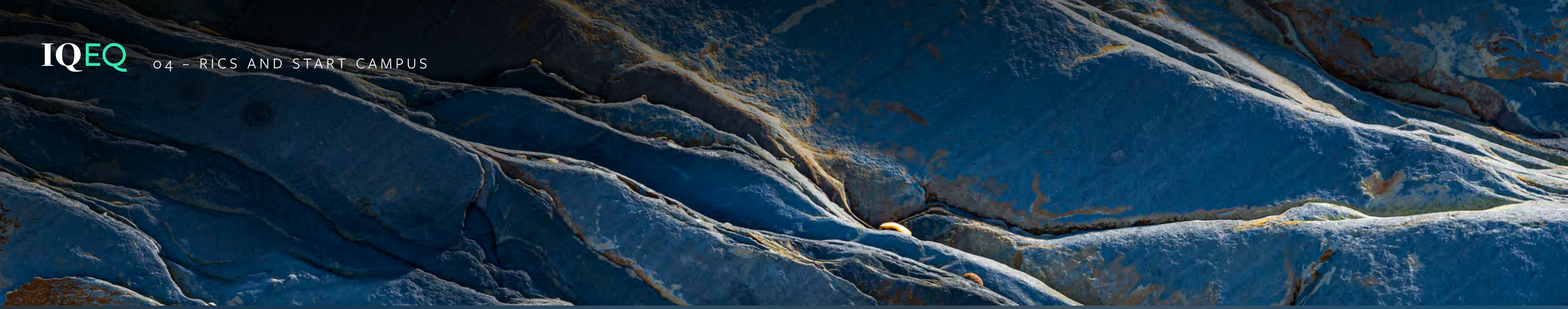
DESIGN FOR ADAPTATION AND CONTINUED USEFULNESS

RICS's World Built Environment Forum article 'Growing data centre sector looks to keep carbon emissions down' reports a discussion involving Compass Datacenters, Arup, Enchanted Rock and RICS. The panel addresses operational efficiency, embodied carbon, component reuse, equipment longevity and the difficulty of benchmarking dissimilar facilities. It also highlights the relationship between lifecycle costs and carbon assessment. These are attributed expert perspectives from a webinar summary, rather than findings from a dedicated global survey of operators.[6]

This lifecycle perspective shifts attention towards what happens after initial commissioning. A facility may need to accommodate different rack configurations, cooling arrangements and customer requirements during its life. Adaptability should therefore be evaluated through specific design provisions: access for replacing plant, space and routes for new services, and the ability to change part of a facility without unnecessarily disrupting the rest.

In this chapter's proposed application, the design team would document the foreseeable changes the asset can accommodate, the interventions those changes require and the limits beyond which major reconstruction becomes necessary. This does not require predicting every future computing technology. It requires explaining which options the present design preserves and which it closes.

The same reasoning applies to reuse. Retaining a structure or component can be considered alongside new construction, but its remaining life, technical suitability and safety must be established. The objective is to compare realistic alternatives, with evidence of the service each can deliver, rather than assume that either reuse or replacement is inherently preferable.



TREAT SKILLS AND COORDINATION AS DELIVERY INFRASTRUCTURE

The RICS 'Construction Productivity Report 2026' draws on nearly 3,000 construction professionals across five regions. It finds fragmented definitions of productivity, low use of benchmarks and expectations for future improvement that exceed recent experience. Workforce capability emerges as a central constraint, with scheduling, sequencing and coordination also important. Upskilling is the highest-rated intervention in four of the five regions. These findings concern respondent assessments across construction, not measured productivity on data-centre projects.[2]

The implication for a campus programme is that a funded construction budget does not itself establish delivery capacity. Sponsors should examine whether the required skills are available when needed, how contractors interface with specialist suppliers and who controls commissioning dependencies. Capacity in one discipline cannot compensate automatically for a missing capability elsewhere.

A useful project discussion would connect workforce planning with the actual sequence of design, procurement, installation, testing and handover. It would identify specialist roles whose absence could prevent the next stage from starting. This makes the skills question part of the programme logic and helps distinguish a realistic schedule from a date that simply reflects commercial ambition.

USE AI TO STRENGTHEN ACCOUNTABLE PROFESSIONAL WORK

RICS's 'AI in commercial property and construction report 2026' draws on more than 3,100 responses collected through its Q1 2026 market surveys. Around two-thirds of construction respondents and more than three-quarters of commercial property respondents report some AI use. Early pilots remain the most common stage in both sectors, and the report identifies a continuing gap between experimentation and embedded practice. Adoption is therefore distinct from demonstrated performance improvement.[3]

For this whitepaper, the connection is particularly relevant: the infrastructure being built to support AI can itself be delivered using AI-assisted professional workflows. Potential applications include interrogating project documents, preparing programme scenarios and helping teams identify inconsistencies. The benefit must nevertheless be established against a defined task, review process and baseline.

RICS's first edition of 'Responsible use of artificial intelligence in surveying practice' standard became effective in March 2026.[7] It requires surveyors to use AI responsibly and transparently, applying professional judgement to critically assess AI outputs while retaining accountability for their accuracy, reliability and advice provided to clients. A generated output should not be accepted as an engineering conclusion, a contractual entitlement or a confirmed milestone without checking the relevant evidence. A successful pilot should demonstrate repeatable usefulness before its benefits are incorporated into programme commitments.

BUILD RESILIENCE ACROSS THE SUPPORTING SYSTEM

In the June 2025 Built Environment Journal opinion ‘Resilient energy system will need more than legislation’, David Philp FRICS argues that faster planning must be accompanied by skills, reliable asset information, long-term design and evolving regulation. He treats critical infrastructure as an interdependent system and highlights the role of current operational data in managing it. This is an authored professional opinion, not a statement of current planning law or an independently tested forecast.[8]

The data-centre application is to examine dependencies beyond the site boundary. A facility’s resilience discussion should encompass relevant power, water and communications systems, together with the responsibilities for maintaining them. The aim is to understand how a disruption outside the building could affect the service offered inside it.

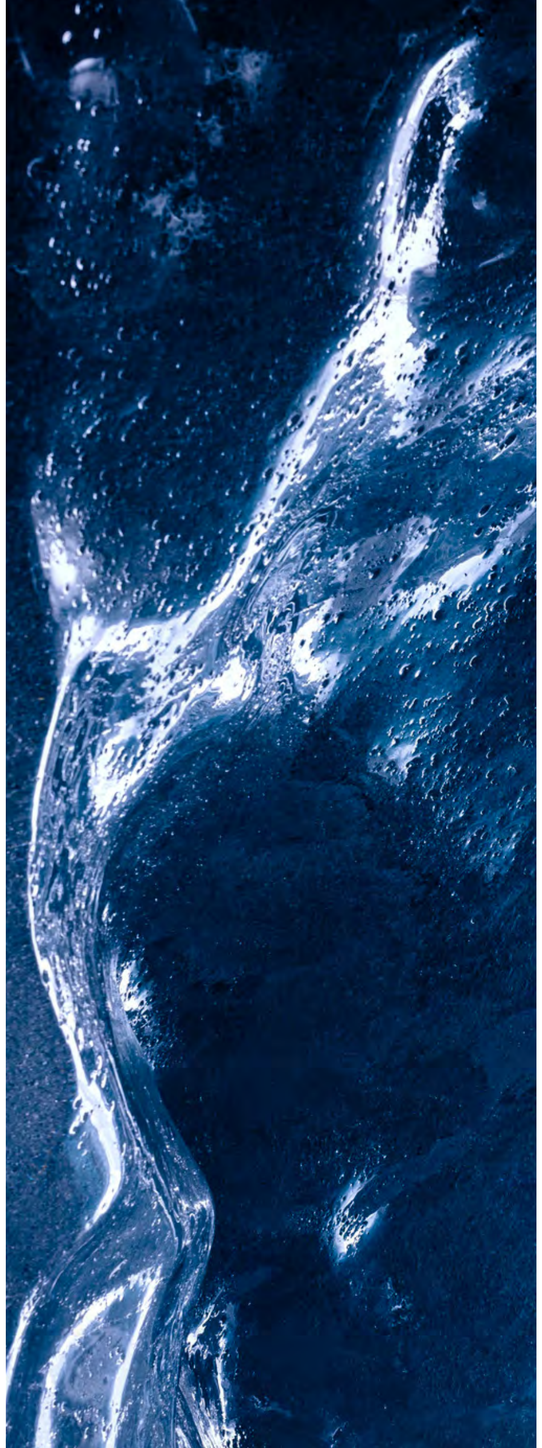
This also requires a distinction between installed redundancy and demonstrated capability. A component schedule is useful evidence, but commissioning records, maintenance arrangements and credible operating scenarios answer further questions. Where a future network improvement is essential, the project should explain its status and the consequence if it arrives later than planned.

MAKE CARBON INFORMATION COMPARABLE ACROSS PROJECTS

RICS announced the Coalition for Life Cycle Emissions Alignment and Reporting (CLEAR) for launch in April 2026. The initiative aims to align whole-life carbon measurement and reporting across markets, addressing differences that hinder comparison and benchmarking. Its early agenda includes analysing methodologies and developing resources. It should be understood as an alignment initiative, rather than proof that global reporting is already harmonised.[9]

For institutional portfolios, the proposed application is to retain the context that makes comparisons meaningful: asset scope, assessment period, lifecycle coverage, operating conditions and data quality. Two campuses should not be ranked on headline carbon figures until those differences are understood. A consistent template is useful only if the underlying definitions are also compatible.

Comparable information can improve procurement and learning across programmes. It allows teams to investigate why one design performs differently, whether an improvement is transferable and what evidence supports that judgement. It also reduces the risk that a portfolio-level summary conceals significant variation between individual facilities.









THE PROFESSIONAL CONTRIBUTION TO SUSTAINABLE DIGITAL INFRASTRUCTURE

The resulting agenda is broader than valuation. It concerns how projects are briefed, how resources are measured, how people and suppliers are coordinated, how evidence is maintained and how assets remain useful over time. Valuation remains relevant when these characteristics affect the interest being assessed, but it is one downstream application of better delivery evidence. The Red Book provides the professional framework for that separate task.[10]

Here, the contribution drawn from recent RICS work is that sustainability needs to become a repeatable delivery practice. The reports identify weaknesses in measurement, implementation and capability; the practitioner publications show how those questions arise in design and infrastructure management. Applied to data centres, these insights support earlier assessment of design options, clearer allocation of responsibilities and more transparent, consistent evidence throughout the asset lifecycle.

Digital infrastructure can support economic growth while managing its environmental and resource impacts more responsibly. Achieving this requires decisions that are technically robust, measurable and practical to implement throughout construction and operation. This chapter therefore places professional practice, evidence-based decision-making and effective delivery at the centre of the transition towards more sustainable digital infrastructure.

A PRACTICAL EXAMPLE: START CAMPUS AT SINES

The principles set out above can be tested against a live development. Start Campus is building the SINES Data Campus in Portugal, a planned 1.2 GW campus, and its first building, SIN01, completed its first full year of operation in 2025.[11] The campus illustrates four of the questions raised in this chapter: how reused infrastructure contributes to delivery, how performance is reported within a defined boundary, how resilience and power supply are secured across phased development, and how skills, community and nature are addressed beyond the site boundary.



REUSING INDUSTRIAL INFRASTRUCTURE AT A REGIONAL CAMPUS

Start Campus's 2022 whitepaper 'Green Giants' set out a regional campus model built on land, renewable power and the reuse of existing industrial infrastructure.[12] At Sines, the reuse element is now physical: SIN01's seawater cooling system reuses the intake and return infrastructure of the neighbouring decommissioned coal-fired power plant.[13] An early seawater project supplying up to 10 MW of thermal power is in operation, alongside dry coolers, cooling towers and chillers, while the full seawater cooling system completes licensing.[13]

This connects directly to the reuse question above. Where legacy industrial assets are reused, their remaining service life, condition, ownership, maintenance requirements and permissions need to be established. Reuse can reduce the need for new works, and the benefit holds for as long as those assets remain fit for the proposed purpose.

REPORTING PERFORMANCE WITHIN A DEFINED BOUNDARY

Start Campus published its 'Sustainability Update 2025' on 30 September 2026, covering SIN01's first full year of operation during continued expansion. The Update states that its performance figures relate to SIN01 rather than the future campus, that the data were compiled internally without external assurance, and that customer IT equipment sits outside the reporting boundary unless stated.[13]

The Update reports that all of SIN01's operational electricity was matched annually with renewable electricity generated in Portugal through cancelled Guarantees of Origin; that 692,942 cubic metres of seawater were abstracted and the same volume returned through a once-through cooling system; that industrial freshwater withdrawn for cooling was 41,763 cubic metres; that no potable water was used for cooling; and that operations continued without disruption during the Iberian grid outage of 28 April 2025. A power usage effectiveness (PUE) of 1.1 and a water usage effectiveness (WUE) of zero are described as design targets for the campus.[13]

SIN01 achieved LEED Gold (BD+C: Data Centers v4) in December 2025. Start Campus accounts for operational Scope 1 and Scope 2 emissions, and Scope 3 screening is underway.[13]

The boundary for each figure should remain clear whenever it is compared or used elsewhere. Renewable matching is annual, through cancelled Guarantees of Origin. The seawater figures are volumes; their ecological effect is tracked separately through StartMarineBio, a marine monitoring programme that began in 2023, had completed four survey campaigns by the end of 2025 (including two years of pre-operational baseline), and continues for at least six years after seawater cooling begins.[13] Uninterrupted operation during the April 2025 outage records one event under one set of conditions. SIN01's backup generators run on hydrotreated vegetable oil (HVO), a renewable fuel; 10,075 litres were used in 2025.[13]

Results from a first operating phase can inform expectations for later buildings, but extrapolation needs an explicit rationale: load, equipment, commissioning, weather and customer configuration may all differ. Measured observations and design forecasts should therefore be kept separate.

RESILIENCE AND PHASED POWER DELIVERY

In February 2026, Start Campus and EDP signed a memorandum of understanding to align data-centre development with new renewable generation, setting a framework for further technical, commercial and strategic discussions.[14]

On the network side, a dedicated private on-site substation and associated power infrastructure are being built as part of the campus development, to physically complement the network already serving the region.[13]

This echoes a point made in this paper: power-related evidence ranges from an initial application through allocation, an executed connection agreement, funded reinforcement and commissioning to live supply. For a phased campus, the status of each phase needs to be stated clearly, with remaining conditions linked to cost and programme.

SKILLS, COMMUNITY AND NATURE BEYOND THE SITE BOUNDARY

At Start Campus, skills and community programmes are run locally, in Sines. In 2025 the company facilitated a professional training pathway for critical infrastructure maintenance technicians and hosted its first five interns at SIN01. Its community fund, GAMMA, is open to local organisations, and the community takes part in choosing which projects are funded. The first edition supported three projects, which reached around 190 children, 33 young people and 30 students and delivered 151 in-home physiotherapy sessions. Through Superpowers Portugal, 279 children in 21 kindergarten and first-grade classrooms in Sines worked on digital literacy, critical thinking, online safety and social-emotional skills.[13]

In early 2025, three patches of Atlantic wet heath (about 0.5 ha) were translocated under continuous ecological supervision, with soil moved in intact blocks, to Herdade das Pousadas Novas, in Odemira, where Start Campus manages about 55 ha under a 25-year conservation programme.[13] These outcomes, like the marine monitoring described above, are measured over several years and should be reported with a clear baseline, method and reporting period.

Taken together, the Sines example shows the chapter's argument in practice: the credibility of sustainable design depends on how well its dependencies are evidenced, bounded and delivered, on the site and beyond it.



IQEQ

05.

Sustainable Real Estate Forum: Coordinating *capital and delivery* for *sustainable* digital infrastructure

AT A GLANCE

- Digital infrastructure and the energy transition must be planned as connected investment decisions
- A regional delivery statement should make a project's external dependencies as visible as its construction programme
- Flexibility claims should specify capacity, response time, duration, operating constraints and who can activate them
- Energy, water and carbon should be assessed together rather than compressed into one favourable indicator
- A common evidence record would make handovers between engineers, lawyers, valuers and investment teams inspectable



Coordinating *capital and delivery* for *sustainable* digital infrastructure

The next challenge is coordinated execution. The Sustainable Real Estate Forum (SREF)'s position in this study is that digital infrastructure and the energy transition must be planned as connected investment decisions.



Peter Panayi
Founder and CEO
Sustainable Real Estate Forum

A building can meet its internal specification while the wider project remains exposed to unfinished network works, uncertain water arrangements or an unresolved allocation of infrastructure costs. Capital allocation should therefore examine the system that enables the asset to operate. The IEA's 'Key Questions on Energy and AI' projects global data-centre electricity consumption rising from 485 TWh in 2025 to about 950 TWh in 2030, around 3% of global electricity demand. This is a central projection, not a certainty.[1] Its significance for this chapter is the need to turn a global demand outlook into credible regional delivery plans.

We propose that the investment debate move towards a shared record of dependencies, responsibilities and evidence. The aim is to help investors, developers, energy providers, professional advisers and public authorities understand the same project in compatible terms. This is where a forum can add value: connecting disciplines and testing assumptions that otherwise remain inside separate reports.

CONNECT THE INVESTMENT CASE TO THE LOCAL ELECTRICITY SYSTEM

The IEA's 2025 'Energy and AI' report estimated that around 20% of planned data-centre projects worldwide could be at risk of delay because of grid constraints. The figure is an estimate of exposure to delay, not a count of projects that have already been delayed.[2] It illustrates why a demand forecast cannot establish the deliverability of an individual connection.

Our proposed response is a regional delivery statement alongside the asset business plan. It would describe the relevant connection arrangements, necessary network works, responsibility for funding, major equipment milestones and the consequences of delay. It should also distinguish dedicated infrastructure from systems shared with other users. The purpose is to make the project's external dependencies as visible as its construction programme.

The IEA's September 2026 'Modernising Grids in the Age of Electricity' report examines tools for making better use of existing networks, including monitoring, control and grid-enhancing technologies.[3] For SREF, the implication is to assess credible network optimisation alongside new supply and reinforcement. A project should not assume that every constraint can be solved by building more generation, or that digital optimisation can replace all physical network investment.



20%

of planned data-centre projects worldwide could be at risk of delay because of grid constraints.



TEST FLEXIBILITY AS A SERVICE WITH OBLIGATIONS

The 2026 ‘Data Centres and Flexibility’ report, commissioned by the Efficient, Demand Flexible Networked Appliances Platform (EDNA) of the IEA Technology Collaboration Programme on Energy Efficient End-Use Equipment (4E), distinguishes flexibility serving electricity markets, network bottlenecks and system stability. It considers workload flexibility, supporting infrastructure and additional flexibility assets.[4] Those distinctions matter because a resource that helps one system need may not resolve another.

We propose that any flexibility claim specify the available capacity, response time, duration, operating constraints and the party authorised to activate it. The evidence should distinguish a technical possibility from a contracted service. Customer obligations, equipment limits and site operating requirements need to be reconciled before flexibility is included as a dependable source of income or a condition of connection.

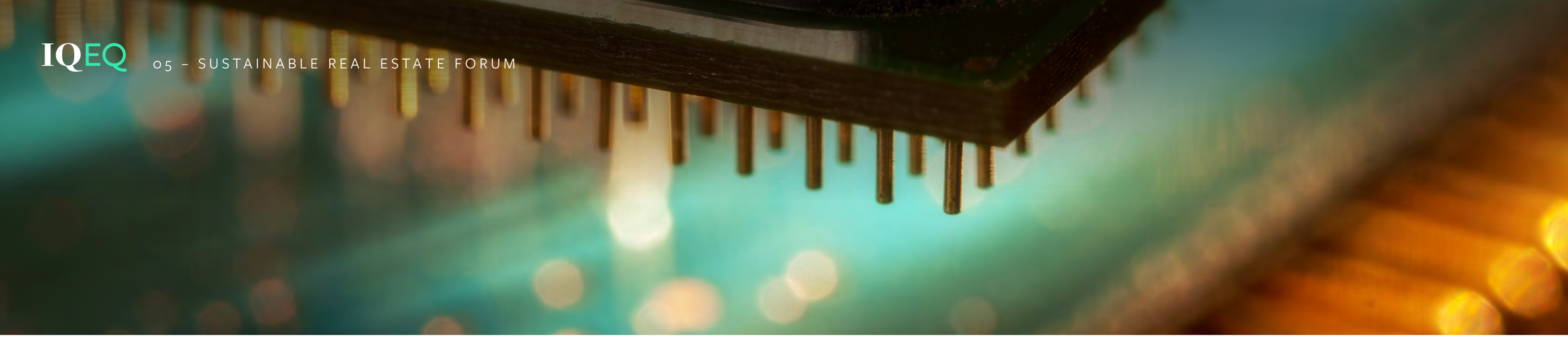
An illustrative campus may possess substantial backup equipment but only limited permission to use it for routine grid services. Another may have a willing customer but insufficient contractual freedom to reschedule the workload. The relevant investment questions are what service can actually be delivered, on what terms and under which conditions. Neither example is a finding about a named operator.

EVALUATE ENERGY, WATER AND CARBON TOGETHER

Sustainability assessment should present several resource dimensions rather than compress them into one favourable indicator. The European Commission’s data-centre reporting framework collects information relevant to energy performance and water footprint under Commission Delegated Regulation (EU) 2024/1364.[5] It provides a useful reference for comparable information, while local obligations and future policy developments require their own assessment.

Our proposal is to place absolute energy use, water volumes, operating efficiency, carbon boundaries and local resource constraints in the same investment discussion. A facility can become more efficient per unit of computing while its total demand grows. Equally, the commercial merits of a cooling design depend on the location and service requirement. A strong conclusion should explain the trade-offs and the alternatives considered.

Whole-life assessment also changes the capital question. If a design improvement requires earlier equipment replacement, the investment case should make the financial cost and carbon implications visible. Heat reuse should be assessed through the receiving customer, network, temperature requirement, seasonal demand and delivery agreement. The existence of recoverable heat is an engineering opportunity; dependable use of that heat is a separate delivery proposition.



FINANCE RESILIENCE OVER THE ASSET LIFE

The Intergovernmental Panel on Climate Change's 2023 Synthesis Report warns that delayed mitigation and adaptation can lock in high-emissions infrastructure and increase stranded-asset and cost-escalation risks.[6] The relevance to digital infrastructure is the duration of the physical investment: the decisions made at design and financing stages can shape later options.

We propose that resilience analysis examine the dependencies between the facility and its surrounding systems. Asset-level redundancy should be reviewed alongside exposure to network disruption, flooding, heat, water restrictions and telecommunications failure where relevant. The analysis should explain who funds adaptation and when expenditure is required, rather than leave resilience as a qualitative statement outside the capital plan.

Financing should follow that delivery logic. A staged commitment can be assessed against observable milestones, such as completed network works, commissioning or customer acceptance. The appropriate structure depends on the transaction, but the principle is consistent: the conditions for deploying further capital should correspond to the evidence that reduces the relevant risk. This chapter proposes an analytical approach, not financing terms for an individual investment.

MAKE PUBLIC BENEFIT AND COST ALLOCATION INSPECTABLE

Infrastructure can create value for owners and customers while imposing costs on shared systems. A credible discussion of public benefit should therefore identify who receives the benefit, who pays and over what period. Local employment, training, infrastructure contribution and heat supply should be described through measurable commitments and clear boundaries.

We propose separating construction employment from permanent operating roles, and realised outcomes from forecasts of wider economic activity. A regional economic contribution estimate should not be presented as owner revenue or as a valuation. Nor should an announcement of community benefit substitute for enforceable delivery arrangements where those arrangements are needed.

The same discipline should apply to supporting infrastructure costs. The project narrative should explain how new works are funded, how shared benefits are recognised and how exposure changes if the expected load arrives late or does not materialise. This is a practical basis for dialogue between capital providers and public authorities, rather than an assumption that all parties face identical incentives.

CREATE A COMMON EVIDENCE RECORD

SREF proposes a common project evidence record for discussion between contributors and market participants. It would bring together the asset perimeter, delivery milestones, contractual responsibilities, resource performance, resilience assumptions and financial sensitivities. Each material input would carry a source, date, owner and review status. The purpose is not to eliminate the different responsibilities of engineers, lawyers, valuers and investment teams. It is to make handovers between them inspectable. A connection date used by an investment team should be reconcilable with the evidence reviewed by the relevant technical and legal advisers. A carbon assumption should retain its boundary when it moves into a committee presentation.

A useful record would also show what changed since the last decision. If a network milestone slips, the resulting effect on revenue, remaining expenditure and customer obligations should be assessed together. If an operating forecast improves, the team should explain whether that improvement reflects measured performance, a revised design or a new assumption. Traceability makes the next decision easier to challenge and defend.

VALIDATE CASE STUDIES AROUND DECISIONS AND OUTCOMES

For the Forum, the most useful case study explains a decision that another institution can examine. It should describe the starting position, the options considered, the constraints, the chosen intervention and the measured result. Benefits should be accompanied by the relevant costs, reporting period and limitations. Where the result remains forecast, the case should say so.

We propose using the term “validated” only with a stated basis: what was checked, by whom, against which evidence and with what limitations. Internal approval, independent assurance and an external technical review are different forms of evidence. They should not be described as interchangeable. Contributor approval of publication wording is also distinct from verification of the underlying performance.

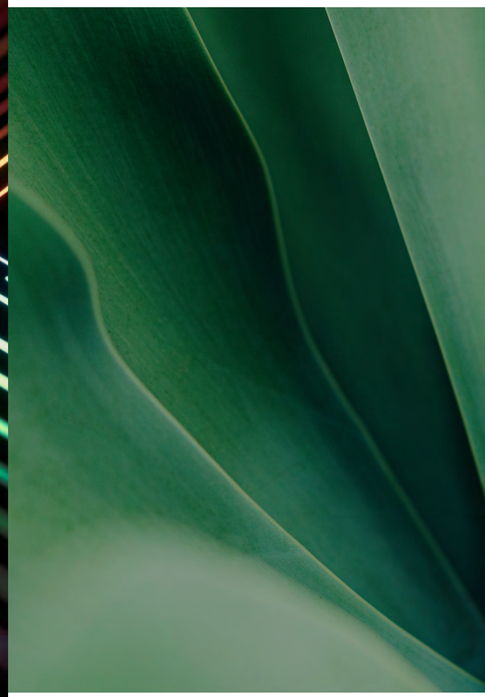
This approach supports learning across projects without turning a single successful example into a universal claim. It also gives contributors a clearer task: supply evidence of how a decision was made and what followed, rather than endorse a broad narrative about the sector.

AN AGENDA FOR INSTITUTIONAL LEADERSHIP

The Forum’s proposed agenda is to connect capital decisions with the conditions required to deliver them. Investment committees can request reconciled evidence of dependencies. Developers can expose remaining conditions early. Professional advisers can explain where their conclusions rely on other disciplines. Public authorities and utilities can make delivery and cost responsibilities clearer within their respective mandates.

Data centres and the energy transition can coexist when projects are assessed against the actual systems, contracts and resources on which they depend. The evidence reviewed here supports disciplined coordination; it does not establish that every proposed development is sustainable or financeable. SREF’s contribution is to convene that scrutiny and make the resulting lessons usable across institutional real estate and infrastructure decisions.





Glossary

AI
Artificial intelligence

Behind-the-meter generation
Power generated on or next to a site and used there, rather than drawn from the public grid

Builders' risk
Insurance covering a building or project while it is under construction

CADA
Cloud and AI Development Act: a European Commission proposal to accelerate data-centre capacity in the EU

Capex
Capital expenditure

Captive
An insurance company owned by the business it insures, used to retain risk

CUE
Carbon Usage Effectiveness: data-centre carbon emissions relative to IT equipment energy use

Energisation
The point at which a site is connected to, and able to draw, the power it needs to operate

EPC
Engineering, procurement and construction: a contract under which one contractor designs and builds a project

ESG
Environmental, social and governance

EU Taxonomy
The European Union's classification system for environmentally sustainable economic activities

FERC
Federal Energy Regulatory Commission (United States)

GP
General partner: the manager of a fund structured as a limited partnership

IEA
International Energy Agency

LBNL
Lawrence Berkeley National Laboratory

LEED
Leadership in Energy and Environmental Design: a green building certification system with levels including Silver, Gold and Platinum

LLM
Large language model

LP
Limited partner: an investor in a fund structured as a limited partnership

PPA
Power Purchase Agreement: a long-term contract to buy electricity from a generator

PUE
Power Usage Effectiveness: total facility energy use divided by IT equipment energy use

RICS
Royal Institution of Chartered Surveyors: the professional body that sets standards for surveying, valuation and construction

ROI
Return on investment

Scope 1, 2 and 3 emissions
Scope 1 covers direct emissions from owned operations, Scope 2 covers emissions from purchased energy and Scope 3 covers other indirect emissions across the value chain

SFDR
Sustainable Finance Disclosure Regulation (EU)

Side letter
A separate agreement giving an individual investor terms in addition to the fund documents

SPV
Special Purpose Vehicle: a separate legal entity created to hold a specific asset or project

TWh / GW / MW
Terawatt hour (a unit of energy) / gigawatt (a unit of power) / megawatt (a unit of power)

UNCTAD
UN Trade and Development

VPPA
Virtual Power Purchase Agreement: a financial contract for renewable energy that does not involve physical delivery of power

WLCA
Whole life carbon assessment: measurement of the carbon emissions of a built asset over its whole life, from materials and construction to operation and end of life

WUE
Water Usage Effectiveness: data-centre water use relative to IT equipment energy use

IQEQ

About the *contributors*

ABOUT THE SUSTAINABLE REAL ESTATE FORUM

The Sustainable Real Estate Forum (SREF) is a leading events and thought leadership ecosystem for sustainable real estate investment. It brings together institutional investors and LPs, asset managers and GPs, policymakers and innovators to share intelligence, debate ideas and drive the sector forward through validated case studies, whitepapers, events and global partnerships.

www.sustainablerealestateforum.com

ABOUT IQ-EQ

IQ-EQ is a global investor services group with deep expertise in private markets. Its more than 6,500 professionals across 25 jurisdictions provide administration, compliance, governance, data and reporting services to investment managers, asset owners and global businesses, with more than $950 billion in assets under administration.

www.iqeq.com



IQEQ

About the *contributors*

ABOUT ZURICH

Zurich Insurance Group (Zurich) is a leading global multi-line insurer founded more than 150 years ago, which has grown into a business serving more than 82 million customers in more than 200 countries and territories, while delivering industry-leading total shareholder returns. Reflecting its purpose to 'create a brighter future together,' Zurich offers protection services that go beyond traditional insurance, to support its customers in building resilience. Since 2020, the Zurich Forest project has supported reforestation and biodiversity restoration in Brazil's Atlantic Forest. The Group has more than 65,000 employees and is headquartered in Zurich, Switzerland. Zurich Insurance Group Ltd (ZURN) is listed on the SIX Swiss Exchange and has a level I American Depositary Receipt (ZURVY) program, which is traded over-the-counter on OTCQX.

www.zurich.com

ABOUT NORTON ROSE FULBRIGHT

Norton Rose Fulbright provides a full scope of legal services to the world's preeminent corporations and financial institutions. The global law firm has more than 3,000 lawyers advising clients across locations in the United States, Europe, Canada, Latin America, Asia, Australia, Africa and the Middle East. With its global business principles of quality, unity and integrity, Norton Rose Fulbright is recognised for its client service in key industries, including financial institutions; energy, infrastructure and resources; technology; transport; life sciences and healthcare; and consumer markets. Norton Rose Fulbright Verein, a Swiss verein, helps coordinate the activities of Norton Rose Fulbright members but does not itself provide legal services to clients. For more information, see **nortonrosefulbright.com/legal-notices**.

www.nortonrosefulbright.com

ABOUT RICS

The Royal Institution of Chartered Surveyors (RICS) is a leading professional body working in the public interest to advance knowledge, uphold standards, and inspire current and future professionals. Its members help to create and protect built and natural environments that are sustainable, resilient and inclusive for all. At RICS, its staff work inclusively with its members, collaborating to support them in their practice and build connections. They set qualifications and independently regulate chartered professionals and firms, building trust and confidence with clients and consumers. With a heritage of over 150 years, RICS sets the standard for over 130,000 members and candidates operating in the development and management of land, real estate, construction and infrastructure across more than 140 countries globally. Its trusted data and insight guides decision-makers and governments helping to shape public policy, deliver positive societal change and provide a foundation for confident markets. Its members influence the quality of lives, underpin societies and drive economies.

www.rics.org

ABOUT START CAMPUS

Start Campus is building and operating the SINES Data Campus, a 1.2GW data center in Portugal, creating Europe's largest and most sustainable data ecosystem with market-leading global connectivity. SINES DC provides maximum optionality for customers with powered shell, turn-key and build-to-suit solutions. The company's advanced customer offerings are AI-ready and address the future needs of the industry by integrating liquid cooling technologies into its flexible and scalable design. The campus utilises 100% renewable energy and targets an industry-leading PUE (Power Usage Effectiveness) of 1.1 and a WUE (Water Usage Effectiveness) of 0 by harnessing the cooling power of the ocean.

www.startcampus.pt

End *notes*

Executive summary

1. Alphabet Inc. (2026). Q3 2026 Earnings Call. 28 October 2026
2. Microsoft Corporation (2026). FY2027 Q1 Earnings Conference Call. 28 October 2026
3. Meta Platforms, Inc. (2026). Meta Reports Third Quarter 2026 Results. 21 October 2026
4. Amazon.com, Inc. (2026). Q2 2026 Earnings Call. 30 July 2026
5. International Energy Agency (2026). Key Questions on Energy and AI: Executive Summary. 16 April 2026
6. International Energy Agency (2025). Energy and AI. 10 April 2025
7. Zurich Insurance Group (2026). From insurability to bankability: why data centers must be engineered for systemic resilience. 21 May 2026

Foreword

1. International Energy Agency (2026). Key Questions on Energy and AI: Executive Summary. 16 April 2026
2. Lawrence Berkeley National Laboratory (2026). United States Data Center Energy Usage Report: 2025 Update. June 2026
3. Electric Power Research Institute (2026). Powering Intelligence 2026: Updated Scenarios of U.S. Data Center Electricity Use and Power Strategies. 26 February 2026
4. Federal Energy Regulatory Commission (2026). Large-load show-cause orders, Docket No. EL26-67-000 and related orders. 18 June 2026

01. IQ-EQ

1. UN Trade and Development (UNCTAD) (2026). Data centres are reshaping the global investment landscape. 22 January 2026
2. Market.us (2025). Power Purchase Agreement Market Size. 2025
3. International Energy Agency (2025). Energy and AI. 10 April 2025
4. Datum Datacentres (2026). Top 5 Data Centre Performance Metrics. January 2026
5. Google Data Centers (2025). Power Usage Effectiveness. 2025
6. European Commission (2026). Energy performance of data centres. 2026
7. European Union (2024). Commission Delegated Regulation (EU) 2024/1364 on the first phase of the establishment of a common Union rating scheme for data centres. 14 March 2024
8. International Energy Agency (2026). Key Questions on Energy and AI: Executive Summary. 16 April 2026
9. IQ-EQ (2026). What asset owners need to know when investing in data centres. 2026

02. Zurich Insurance

1. Zurich North America (2026). Data center risks right now: 6 critical questions to enable a resilient buildout. April 2026
2. Zurich Insurance Group (2026). From insurability to bankability: why data centers must be engineered for systemic resilience. 21 May 2026
3. Zurich Insurance Group (2026). Beyond 2030: The Future of Construction. 16 June 2026

End *notes*

03. Norton Rose Fulbright

1. International Energy Agency (2026). Key Questions on Energy and AI: Executive Summary. 16 April 2026
2. Norton Rose Fulbright (2025). Data centre financing: A European perspective. October 2025.
3. International Energy Agency (2025). Energy and AI. 10 April 2025
4. Ember (2025). Grids for data centres in Europe. 19 June 2025
   See also: TenneT / Ministry of Climate and Green Growth (2025). Versnellingspakket voor ruimte op het hoogspanningsnet. April 2025
5. Norton Rose Fulbright (2026). Power supply takes centre stage in Europe's data centres. Project Finance International, Issue 826. 6 October 2026
6. Centre on Regulation in Europe (CERRE) (2025). From Gridlock to Grid Asset: Data Centres for Digital Sovereignty, Energy Resilience, and Competitiveness. September 2025
7. European Commission (2025). A Clean Industrial Deal: A joint roadmap for competitiveness and decarbonisation, COM(2025) 85 final, 26 February 2025; Action Plan for Affordable Energy, COM(2025) 79 final; and Delivering on the Clean Industrial Deal I, COM(2025) 378 final, 2 July 2025

04. RICS and Start Campus

1. RICS (2025). Sustainability report 2025. 11 November 2025
2. RICS (2026). RICS Construction Productivity Report 2026. 9 March 2026
3. RICS (2026). AI in commercial property and construction report 2026. 18 August 2026
4. Kovacs, M., Hill, S. and Abul, T. (2026). Updated WLCA standard informing better decision-making on carbon. RICS Construction Journal. 17 June 2026
5. RICS (2023). Whole life carbon assessment for the built environment, 2nd edition. Effective 1 July 2024

04. RICS and Start Campus (cont.)

6. Pitman, K. (2025). Growing data centre sector looks to keep carbon emissions down. RICS World Built Environment Forum. 25 July 2025
7. RICS (2025). Responsible use of artificial intelligence in surveying practice, 1st edition. Effective 9 March 2026
8. Philp, D. (2025). Resilient energy system will need more than legislation. RICS Built Environment Journal. 17 June 2025
9. RICS (2026). RICS and global partners launch CLEAR to align whole-life carbon reporting across built environment. April 2026
10. RICS (2024). RICS Valuation Global Standards. Effective 31 January 2025
11. Start Campus (2026). Start Campus Publishes Sustainability Update 2025. 30 September 2026
12. Start Campus (2022). Green Giants: The heart of a sustainable European data ecosystem. January 2022
13. Start Campus (2026). Sustainability Update 2025. September 2026
14. Start Campus (2026). Start Campus and EDP Enter Agreement to Accelerate Renewable Powered Data Center Development in Portugal. 25 February 2026

05. Sustainable Real Estate Forum

1. International Energy Agency (2026). Key Questions on Energy and AI: Executive Summary. 16 April 2026
2. International Energy Agency (2025). Energy and AI. 10 April 2025
3. International Energy Agency (2026). Modernising Grids in the Age of Electricity. 21 September 2026
4. IEA 4E Efficient, Demand Flexible Networked Appliances Platform (EDNA) (2026). Data Centres and Flexibility. 1 July 2026
5. European Commission (2026). Energy performance of data centres. 2026
6. Intergovernmental Panel on Climate Change (2023). Climate Change 2023: Synthesis Report. Headline Statements from the Summary for Policymakers. 20 March 2023

IQEQ

Thank you

www.IQEQ.com



This publication is for informational purposes only and does not constitute financial advice, investment guidance, or an endorsement or recommendation for any particular security or trading strategy. The information contained herein is not intended to be a source of advice or credit analysis with respect to the material presented, and the information and/or documents contained in this note do not constitute investment advice.

This publication has been issued by IQ EQ Group Holdings S.à r.l. on behalf of certain companies that form part of IQ-EQ Group. The publication has been prepared for general circulation to clients and intermediaries and does not have regard to the circumstances or needs of any specific person who may read it. Nothing in this publication constitutes legal, accounting or tax advice or investment advice.

The foreword and contributor chapters reflect the views of the named contributors. They do not necessarily reflect the views of IQ-EQ, the Sustainable Real Estate Forum or any other contributor, and taking part in this publication does not imply endorsement of other contributors' views.

No part of this publication may be reproduced or transmitted in any form without prior written permission, except for brief quotation with full attribution.

The information contained in this publication has been compiled by the Sustainable Real Estate Forum, IQ-EQ, Christian Baudis, Zurich Insurance Company Ltd, Norton Rose Fulbright, RICS and Start Campus, from sources believed to be reliable, but no representation or warranty, express or implied is made to its accuracy, completeness, or correctness. All opinions and estimates contained in this report are judgements as of the date of publication and are provided in good faith but without legal responsibility. For information on the legal and regulatory status of our companies, please visit **www.iqeq.com/legal-and-compliance**

Follow us in

Powering intelligence: Can data centres and the energy transition coexist? 03112026

© IQ-EQ 2026