

Europe

The AI build, and the power it cannot find.

Capital is abundant and demand is contracted years ahead, yet grid-connection queues in the core hubs now run seven to ten years against a roughly two-year build. Europe is not a next hotspot. It is an incumbent that has hit a wall, and the scarce input is no longer money. It is megawatts.

FLAP-D · Q4 2025

6.3%

Colo vacancy, a record low

GRID QUEUE · CORE HUBS

7-10 yrs

To connect, against a 2-year build

DEMAND · 2030

150 TWh

Approx 35 GW, modelled

INVESTMENT · TO 2030

250 USD bn+

Capex the build implies, modelled

READ THE FULL CHAPTER

A summary of chapter 10 of The Next Hotspot.
The full chapter, its interactive instruments and all sourcing remain open at entelligencia.report

Five named seats, on the record.

Europe carries more contributed material than any other chapter. Each seat supplied original analysis, graded Contributed and published with approval. Positions are reported in house style rather than quoted verbatim.

E01 ON THE RECORD  Jérôme Totel Chief Strategy Officer • DATA4 Power is the thing you buy first. An operator running two strategies at once. The traditional hubs stay because they are connectivity markets and demand still grows there. New capacity goes where AI can actually be built. 2.2 GW secured • Escaudain 700 MW • €15bn over four years OPEN THE SEAT →	E02 ON THE RECORD  Giuseppe Caltabiano AVK Where the grid has no date, the plant is the schedule. The lead-time seat. Where the grid cannot deliver a date, on-site generation becomes the schedule, and the procurement queue for that plant becomes the constraint behind the constraint. On-site power • lead times • graded Contributed OPEN THE SEAT →	E03 ON THE RECORD  Venessa Moffat Data Centre Alliance The country can build, if policy stops siloing the tracks. Three pieces of work reading the same problem from three angles: the planning system, the physics of latency, and the gates where projects actually die. The conclusion is consistent. Planning • latency • the gates where projects die OPEN THE SEAT →	E04 ON THE RECORD  Mark Acton Acton Consulting Announced far more than it can energise. Three decades in data-centre engineering, reading the distance between the press release and the running building: queues that do not clear until the 2030s, a power price that deters investors, and an operations problem nobody budgets for. Gap score 50 of 100 • queues clear in the 2030s OPEN THE SEAT →	E05 ON THE RECORD  Kirsty Barnes Partner • Simmons & Simmons When the date slips, the penalties begin. The third clock, and the one that runs on money. When the grid and the supply chain push the ready-for-service date back, the contract penalties start. That is a legal problem before it is an engineering one. The damages clock • RFS slippage • contract risk OPEN THE SEAT →
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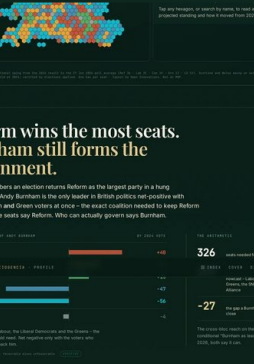
Positions are reported in house style rather than quoted verbatim, except where quotation marks appear on the live chapter. The register stays open. [See the register.](#)

Five instruments, one summary.

This brief condenses the Europe chapter into twelve pages. Every section below runs live and in full on the report, with the interactive models, the complete source record and the contributor files. Each entry here links straight through.

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CHAPTER 10 OF 10

Europe

The AI build, and the power it cannot find.

Entelligencea desk • Europe
Published 28 July 2026 • maintained live

HOW TO READ IT

The grading taxonomy

Every figure carries the same grade it carries in the report. Announced figures are commitments, not delivered capacity.

- VERIFIED** On the public record and confirmed by the primary party.
- ANNOUNCED** Stated intent or commitment; not yet delivered capacity.
- CONTESTED** Sources disagree, or the figure has been publicly disputed.
- ESTIMATED** An Entelligencea desk figure, modelled and framed as such.

A fifth grade, **Contributed**, marks a claim made by a named contributor about their own business. It is attributed, not independently verified.

Live links

Anything set in gold is a link. The regulatory dossier, the Grand Prix models, the national map and the liquid-cooling teardown cannot be printed, so they are summarised here and linked in full.

The edition cycle

Edition 01	August 2026	This document
Edition 02	November 2026	Update and revision log
Edition 03	January 2027	Campaign close

The chapter is not gated. This brief is a portable summary. The full Europe chapter, every instrument and every source stays open to anyone at entelligencea.report/europe.

The incumbent that has run out of room on the grid.

Over the build sits a thickening rulebook: EU energy - efficiency reporting, Germany's EnEfG, water fights in Spain, and a sovereignty push, since roughly 70 per cent of Europe's cloud sits with US providers. Read that rulebook as a cost of connection, not a cost of compliance.

FLAP-D • LIVE

3.6 GW

Doubled since 2019

PIPELINE • PRE-LET

83 %

Contracted before it is built

IRELAND • 2025

23 %

Of metered national electricity

DENMARK • MARCH 2026

60 GW

Queue closed to new requests

An incumbent, at a wall

The four core markets plus Dublin doubled to about 3.6 GW of live capacity since 2019. Vacancy has fallen to a record-low 6.3 per cent and roughly 83 per cent of the pipeline is pre-let before it is built.

The grid is the gate

Connection queues in the core hubs run seven to ten years against a two-year build. Italy drew 30 GW of requests by end-2024. In March 2026 Denmark stopped taking new ones, facing a queue it calls a fantasy.

Scarcity has reached the price

CBRE expects core-market pricing up about 12 per cent in 2026, and a powered-land plot in a primary market now trades at up to 1.7 times a secondary one.

Ireland set the template

Data centres reached 23 per cent of metered national electricity in 2025. The Dublin moratorium ended only for sites bringing their own dispatchable generation backed by additional Irish renewables.

The load is moving to the periphery

JLL expects over half of AI growth in Tier-2 and emerging European markets. Aragón, Sines and Choczewo are absorbing what FLAP-D cannot connect.

The gap, drawn

WHERE THE ROOM RAN OUT

PIPELINE ALREADY LET

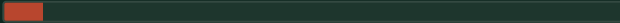
83 per cent



Contracted before it is built. Demand is not the European problem, and has not been for some years.

VACANCY ACROSS THE CORE

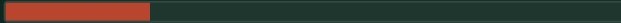
6.3 per cent



A record low. There is no slack anywhere in the incumbent market to absorb a new requirement.

IRELAND, DATA CENTRE SHARE

23 per cent of metered



Almost a quarter of national metered electricity. That single number is what produced the Dublin moratorium.

Different markets, different binding rule.

The constraint is not the same everywhere. Ireland binds on conditions of connection, Germany on the PUE, the Netherlands on energy - savings payback, Spain on water, Denmark on the grid queue. Diligence has to be written per jurisdiction, because the thing that stops a project changes at the border.

THE BINDING RULE, BY MARKET

Ireland	conditions of connection	Bring your own power
Germany	legislated PUE	EnEfG, now relaxing
Netherlands	energy - savings payback	Investment test
Spain	water	Social licence refused
Denmark	grid queue	Closed, March 2026
Netherlands	Amsterdam	Barred to at least 2030
Germany	Frankfurt	Vacancy near 0.6%

The analyst margin. The PUE meter is cheap. The dispatchable generation, the additional renewables and the water permit are what move the model. Track conditions of connection, not headline targets.

PERSONS OF INTEREST

Who controls the grid, the codes and the connection. Five files on the live chapter, each a public-record position.

Dan Jørgensen	Commission, Energy	Sets the agenda
Zbyněk Boldiš	ENTSO-E President	Plans the grid
Pedro Verdelho	CEER Chair	Sets the codes
Kanishka Narayan	UK AI	Steers the UK
Ursula von der Leyen	Commission President	Sets the package

The UK runs on three clocks

One in months, one in years, and one that starts charging when the other two slip. Planning has moved from local veto to national scrutiny. The grid connection runs far slower. A third clock runs on money: when the ready - for - service date moves back, the contract penalties begin.

Read by Venessa Moffat on planning and connection, Mark Acton on operations and deliverability, and Kirsty Barnes on the damages clock.

OPEN THE DOSSIER

OPEN THE THREE CLOCKS

The rules that decide the decade.

The central question the dossier puts: can you power it, and will they let you? Six findings, graded against the public record and reviewed by counsel.

Fo1 VERIFIED ANNOUNCED The EU now meters the build, and a rating scheme is about to grade it. Energy-efficiency reporting is in force and a rating scheme is coming. Measurement precedes obligation.	Fo2 VERIFIED CONTESTED Germany has legislated the PUE, then started to relax it. EnEfG set binding efficiency targets, and the direction of travel has since softened. The letter and the practice diverge.	Fo3 VERIFIED Ireland makes you bring your own power before it connects you. The Dublin moratorium ended in December 2025, but only for sites with dispatchable generation backed by additional Irish renewables.
Fo4 VERIFIED CONTESTED The grid is the real regulator: it says no, or it says wait ten years. Connection queues do the work no statute does. Denmark closed its queue outright rather than process a 60 GW backlog.	Fo5 CONTESTED Water has become the new social licence, and it is being refused. Spanish and Chilean objections have moved water from a technical input to a consent question a permit cannot settle.	Fo6 ANNOUNCED CONTESTED Sovereignty pulls the other way: build more, but build it European. Roughly 70 per cent of Europe's cloud sits with US providers. The policy answer is more capacity, under European control.

Four rulebooks, one direction

EACH RAISES THE COST OF A CONNECTION

EUROPEAN UNION Energy-efficiency reporting is in force, and a rating scheme is coming. Measurement precedes obligation, and the measurement has already begun.	GERMANY The EnEfG set binding efficiency targets and the direction of travel has hardened since. The letter and the practice now diverge.	IRELAND The Dublin moratorium ended in December 2025, but only for sites able to bring their own dispatchable generation. Reopening is conditional, not free.	SPAIN AND CHILE Water objections have moved the input to a cost question rather than a technical one. The same argument appears on two continents.
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OPEN THE FILE

Every claim is graded Verified, Announced or Contested. Nothing publishes until it is traceable to a primary source, and the legal read is reviewed by counsel. The live file carries the annotated primary documents behind each finding, including the CRU decision and the water exhibit. Edge cases marked Contested are concerns raised by campaigners.

Europe is in two races at once. One with the world, one with itself.

THE OUTWARD RACE • WHERE COMPUTE LANDS

Frontier-scale build chases power that is fast to secure and cheap to run. On those two axes the Gulf and the Nordics sit top right. Europe sits alone in the bottom left, slow and dear.

Gulf • Nordics	Fast and cheap
Malaysia • Brazil • India	Middle of the field
United States	Fast, not cheap
Europe, FLAP-D	Slow and dear

Europe loses on the two axes that decide siting, speed and price. It keeps a real lead elsewhere: data sovereignty, latency to a vast enterprise base, credible green-power contracts, and unmatched fibre and exchange density. Frontier training follows cheap power offshore. Regulated, latency-bound and sovereign work stays.

THE INWARD RACE • FLAP-D AGAINST THE PERIPHERY

Core live capacity grew from 1.8 GW in 2019 to 3.6 GW in 2025, on a path toward roughly 8 GW by 2031. But the core is jammed, and the load is moving to where power is already secured.

The jam	The destinations
Amsterdam	Barred to 2030+ ~2.8 GW
Dublin	23% of electricity 1.2 GW, REN secured
Frankfurt	0.6% vacancy 3.2 GW conditions

Retiring coal and heavy industry left the scarce parts behind. A brownfield site already holds the five things a greenfield build waits years for: grid connection, substation, land, water and fibre. The transition liability is becoming the data-centre asset.

THE CHALLENGERS



Greece

The southeast corridor



Poland

Choczewo, 3.2 GW secured



Romania

Cheap land, dear power



Nordics

Power secured, load absorbed

OPEN THE GRAND PRIX

A legacy connection is not automatic capacity: utilities may still demand new studies and upgrades, contamination and demolition can erase the cost advantage, and a community that remembers the old plant can be the hardest objector. Coal-site conversions are largely Announced or Estimated, not operational. Romania averaged roughly €103.5/MWh across 2024, the EU’s third-highest and most volatile market (Contested).

UPDATED 28 JULY 2026

Where the megawatts **actually** sit.

The load-bearing figures behind Europe’s build, each graded and sourced. The story they tell together: demand is contracted, capital is present, and the grid will not carry it.

6.3% FLAP-D colo vacancy A record low across Frankfurt, London, Amsterdam, Paris and Dublin at Q4 2025. The market is effectively full. Source • CBRE / market data	3.6 GW Core live capacity Roughly doubled since 2019 across the four core markets plus Dublin, on a path toward about 8 GW by 2031. Source • Market data	83% Pipeline pre-let The share of the European pipeline contracted before it is built. Demand is not the question. Source • CBRE	7-10 yrs Core grid queue Time to connect in the core hubs, against a build that takes around two years. The gate is the grid. Source • Utility filings
23% Ireland, metered demand Data centres reached 23 per cent of metered national electricity in 2025, up 10 per cent in a year while every other user grew 2 per cent. Source • CRU / EirGrid	2030+ Amsterdam barred New sites and expansions barred to at least 2030. The core market closed rather than queued. Source • Municipal policy	0.6% Frankfurt vacancy Near zero, with projects halted or relocating to markets that can energise them. Source • Market data	~60 GW Denmark’s closed queue In March 2026 the system operator stopped taking new connection requests, facing a backlog it calls a fantasy queue. Source • Energinet
30 GW Italy’s requests Connection requests drawn by end-2024, against a grid never planned for that load. Source • Terna	~12% Core pricing, 2026 CBRE expects core-market pricing up about 12 per cent, with powered land in a primary market trading at up to 1.7 times a secondary one. Source • CBRE	150 TWh Demand, 2030 Modelled European data-centre power use by 2030, roughly 35 GW, implying capex above USD 250bn. Source • Entelligencia model	~70% US-hosted cloud The share of Europe’s cloud sitting with US providers, and the reason the sovereignty push pulls against the grid constraint. Source • Market estimates

Figures are compiled by the Entelligencia desk from regulator filings, system-operator data, brokerage research and sector reporting, and graded under the report’s Verified, Announced, Contested and Estimated taxonomy. Announced figures are commitments, not delivered capacity. Modelled figures are directional and framed as such. The maintained record runs at entelligencia.report/europe.

Europe’s preconditions, scored.

Six preconditions, each scored 0 to 10 for like-for-like reading. Europe is the mirror image of the United States: it scores nine on capital, connectivity and demand, and three on the power that would let it use them.

Precondition	SCORE	THE READ
Capital committed		9 Abundant capital, from the Aragón megadeals to the UK Tech Prosperity package.
Connectivity		9 FLAP plus D anchors the densest interconnection market outside the United States.
Demand floor		9 Record-low vacancy near 6.3 per cent, with roughly 83 per cent of the pipeline pre-let years ahead.
Permission		5 A thickening rulebook shifting from disclosure to conditions of connection, led by Ireland and Germany.
Delivered vs announced		4 Demand is contracted, but the grid cannot yet carry it, so delivery lags the pipeline.
Clean power		3 Power, not money, is the wall, with connection queues of seven to ten years in the core hubs.

The three nines

Capital, connectivity and demand are all world class. Europe does not have a market problem, a financing problem or a fibre problem. It has one problem, and it is physical.

The three that bind

Power at three is the lowest score in the index. Delivery at four is its consequence, and permission at five is the political expression of the same scarcity. All three move together.

The composite

6.5 of 10

The widest spread in the report: a six-point gap between the best and worst precondition in the same market.

The mirror image of the United States

SAME COMPOSITE, OPPOSITE SHAPE

WHERE THEY MATCH

Both score at the top on capital and demand. Neither market is short of money or customers, and neither is competing on either.

WHERE THEY INVERT

America’s weakest score is permission, and it is political. Europe’s is power, and it is physical. A political gate can turn in one cycle. A grid queue cannot.

WHAT IT MEANS FOR SITING

A workload that tolerates distance should look at the periphery, where the constraint is weakest. One that cannot is choosing between two kinds of wait.

OPEN THE INDEX

Scores are indicative editorial 0 to 10 weightings for like-for-like reading, not a published index. The composite is an unweighted mean of the six preconditions and is shown so the weighting can be argued with.

The paper trail, annotated.

Three primary sources behind the European power question, each graded claim by claim and reviewed with the desk’s legal partner. Nothing is characterised that is not quoted, and nothing is quoted that is not graded. The live instrument carries all three in full.

CRU connection decision

Ireland · the conditions

CRU/2025236 · December 2025

6 claims · 4 verified · 1 announced · 1 disputed

EED Article 12

EU · the meter

Directive 2023/1791 · Reg 2024/1364

5 claims · 3 verified · 2 disputed

German EnEFG

Germany · the standard

In force November 2023 · BAFA

6 claims · 5 verified · 1 announced

SOURCE DOCUMENT · ANNOTATED

PUBLIC RECORD

ANALYSIS · ENTELLIGENCIA READ

CLAIM BY CLAIM

Commission for Regulation of Utilities: Large Energy Users connection policy. Decision Paper CRU/2025236, December 2025.

- 01 The decision ends the effective moratorium on new Dublin data-centre grid connections.
- 02 But a large user at or above 10 MVA must now provide dispatchable on-site or proximate generation, separately metered, matching its import capacity.
- 03 It must also procure additional renewable generation equal to about 80 per cent of its demand, on a six-year glide path.
- 04 The regulator notes data centres reached about 22 per cent of national electricity use in 2024, since revised to 23 per cent for 2025.
- 05 Critics argue the dispatchable-generation condition risks locking in fossil-gas capacity for decades.

Marked by Entelligencia. Claims are reproduced in substance, not verbatim, and located against the published decision.

LINE 01 VERIFIED

The headline is that Dublin reopens. The substance is that it reopens on conditions few other European markets impose at this scale. This is the template to watch.

LINE 02 VERIFIED

Bring your own power. A campus must be able to run on its own generation matching full import capacity, so it does not add to the peak the grid cannot serve. The single most material clause for the model.

LINE 03 ANNOUNCED

Additionality, phased. The renewables requirement glides in over six years, so the near-term cost is real but the full burden is forward-dated. A rising obligation, not a one-off.

LINE 04 VERIFIED

The number that drove the policy. The share rose from about 5 per cent in 2015 to 22 per cent in 2024, and the regulator’s own forecast has demand climbing further to 2034.

LINE 05 CONTESTED

The tension at the heart of it. Requiring dispatchable on-site power may in practice mean gas engines, which campaigners warn entrenches fossil capacity even as the renewables clause tries to offset it.

OPEN THE PAPER TRAIL

Method: claim by claim against the public record. Grades follow the report taxonomy, and a disputed grade records a live disagreement rather than a desk judgement. These are annotated representations of each source, not facsimiles; the originals are linked from the live instrument.

Read efficiency as a supply chain, not a setting.

The European efficiency rules do not just change how a hall is operated. They change what it is built from. A 1.2 PUE pulls liquid cooling into the base case, and liquid cooling pulls in copper, brazed stainless, precision couplings and a coolant whose chemistry is itself becoming a regulatory question.

THE COLD PLATE

Copper	Chile, Zambia, DRC
Machining	EU and Asia
Microchannels	On the die

The rule is written in water and copper. The metal that carries the heat off the chip comes from three mining jurisdictions and is machined in two more.

THE LOOP

Manifold	Stainless, polymer
Couplings	Stäubli, CPC
Hose and seals	EPDM, fluoroelastomer

Dripless quick-disconnects and fabricated manifolds are the parts that decide whether a hall can be serviced without draining it.

HEAT EXCHANGE

Plate exchangers	Alfa Laval, SWEP
Pumps	Grundfos, Wilo
CDU assembly	Integrated in Europe

Where two loops meet. Nordic and German suppliers dominate the exchange and circulation layer, which is one of the few parts of the chain Europe already owns.

THE CHEMISTRY

Single-phase PG25	Water, glycol, biocides
Two-phase dielectrics	Under PFAS scrutiny
Controls	Leak detection, telemetry

The coolant is the part of the asset most exposed to regulation. PFAS scrutiny ties the cooling choice straight back to the regulatory file.

Why the chemistry became a regulatory question

FOUR INPUTS, ONE EXPOSURE

THE MATERIAL

Copper from Chile, Zambia and the DRC, machined in two mining jurisdictions. The cold plate is a commodity position before it is an engineering one.

THE CHOKEPOINT

Nordic and German suppliers dominate the exchange and circulation layer, which is one of the few parts of the chain Europe already owns outright.

THE EXPOSURE

The coolant is the part most exposed to regulation. PFAS scrutiny ties the cooling choice straight back to the regulatory file two pages earlier.

For an investor the discipline is to **price the cooling system and its supply chain as part of the asset**, not as a line item. The megawatt is only efficient once the metal and the chemistry behind the cold plate are secured.

The module

OPENS 15 SEPTEMBER 2026

A factory-built, liquid-cooled container: capacity dropped where the grid connection already exists. The interactive build is finished; it unlocks once the technical partner's specifications and product renders are cleared. Direct-to-chip lifts heat with a cold plate. Immersion submerges the board for the highest densities.

OPEN THE TEARDOWN

The chapter is maintained, not published once.

The Europe chapter runs live and is updated as the record moves. Five questions carry into Edition 02.

- 01

Does any core hub reopen

Amsterdam is barred to 2030, Dublin conditionally reopened, Denmark closed its queue. Whether conditions become a workable template is the question.
- 02

Does the periphery deliver

Aragón, Sines and Choczewo have power secured on paper. Delivered megawatts, not secured conditions, are the test.
- 03

Does the rulebook harden or soften

Germany has already begun relaxing the PUE it legislated. Whether Europe holds its efficiency line under competitive pressure is open.
- 04

Does water become the binding constraint

Spain has shown that a permit does not settle a consent question. Water is the objection that travels fastest.
- 05

Does sovereignty change who builds

Roughly 70 per cent of European cloud sits with US providers, and the policy answer is more European capacity against a grid that cannot carry it.

THE EDITION CYCLE

Edition 01	August 2026	This document
Edition 02	November 2026	Update and revision log
Edition 03	January 2027	Campaign close

Coming to this chapter

The module	technical partner	15 September 2026
Named site assets	brownfield	As they firm up
Further seats	register open	Through the campaign

The rest of the series

Market chapters	Ten · Europe is 10
Strata layers	Seven analytical readings
Sociogencia cases	Original analysis
GULF USA EUROPE INDIA INDONESIA MALAYSIA CHILE BRAZIL SOUTH AFRICA KENYA, MOROCCO, NIGERIA	

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READ THE FULL CHAPTER

