

Beyond the connection: making data centers work for the Dutch energy transition

How data centers can support a more resilient
Dutch energy system

KPMG Deals



1 | The challenge: energy demand growth is colliding with infrastructure constraints. How do we resolve this while enabling data sovereignty for Dutch public services and economic development?

It is no secret that the rapid growth of AI and digital infrastructure is creating unprecedented demand for power, land and network capacity¹. At the same time, digital infrastructure has become a strategic resilience and sovereignty issue²: countries and companies increasingly need secure, reliable and locally anchored compute capacity³, supported by energy systems that are affordable, resilient and less dependent on external supply chains.

Dutch data centers consumed 5,100 GWh in 2024, or 4.6% of national electricity, up from 3.3% in 2021, and equivalent to the annual consumption of nearly two million homes⁴. Network operators plan for that share to approach 15% by 2030.⁵ In comparison, Irish data centers reached 23% of metered national consumption in 2025, having stood at 5% in 2015⁶.



The Netherlands is not on a different trajectory from Ireland. It is roughly a decade behind on the same path, which is precisely why the conditions attached to growth can still be set in advance rather than imposed in retrospect.

While data centers are often viewed as a source of system stress, leading international examples demonstrate that, when integrated strategically, they can become enablers of renewable investment, infrastructure utilization and industrial decarbonization by providing the long-term demand certainty needed to support investment in offshore wind, hydrogen and CCS infrastructure.⁷

Enabling digital transformation and improved outcomes for critical public services requires growth in secure data center capacity across the Netherlands and Europe. European policymakers, energy companies, ports, infrastructure investors and corporates are therefore grappling with the same question: How can we support data center growth without exacerbating congestion, delaying the energy transition or crowding out other strategic users?

We highlight key levers that can help align data center growth with broader energy-system objectives: flexible connection agreements, heat energy recycling, and co-location with other large energy users.

We also show examples to illustrate how implementing these levers alongside strategic data center investments can unlock growth and maximize value from new energy system investments.

1. IEA, 2024 Analysis and Forecasts to 2026
2. European Commission, AI Continent Action Plan 2025
3. The Draghi Report: A Competitiveness Strategy for Europe (2024)
4. CBS, Data centers verbruiken 4,6 procent van de elektriciteit (2025)

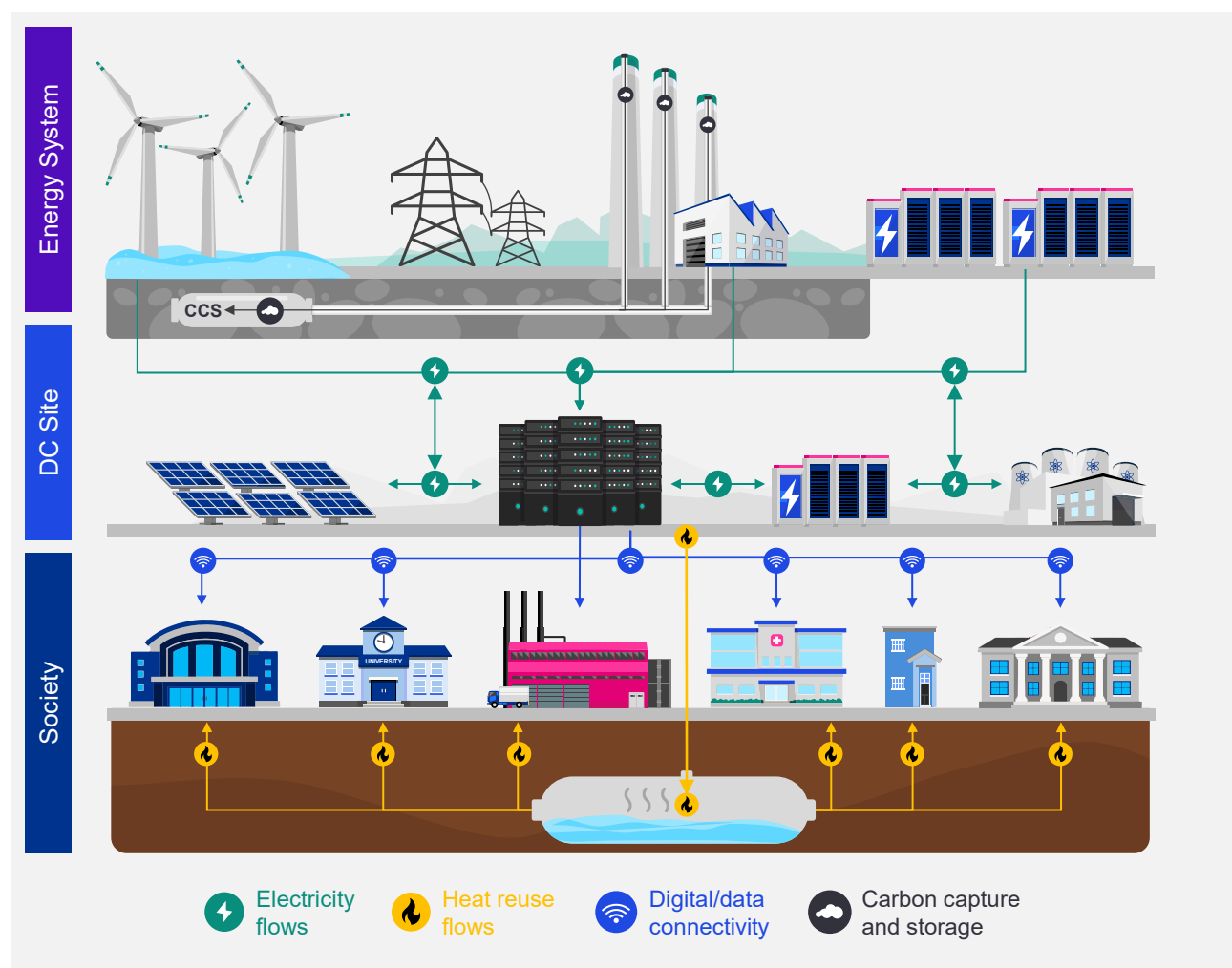
5. Netbeheer Nederland, Scenario's Editie 2025
6. CSO Ireland, Metered Electricity Consumption of Data Centres (2026)
7. Refer to the case studies highlighted further throughout the document

2 Integrating data centers while strengthening the Dutch energy system

The position of the Netherlands as a digital infrastructure hub increasingly depends on its ability to connect compute growth with the realities of the constrained energy system. Grid congestion, spatial pressure and rising sustainability expectations mean that data centers can no longer be planned as standalone loads. Designed around flexibility, co-location, renewable procurement, heat-reuse and shared infrastructure, they can instead become anchor users that help unlock wider economic and energy system value.⁸



The strategic question is therefore not simply whether the Netherlands should accommodate more data centers, but what conditions are required for growth that strengthens the energy system around strategically aligned data center development.”



8. Trinity College Dublin – The AI economy in Ireland (2025)document

The digital and energy transitions now share the same map

For years, the Netherlands could treat digital infrastructure and energy infrastructure as related but largely separate policy domains. That distinction is becoming harder to sustain. Growth in artificial intelligence, cloud services and digital connectivity is increasing demand for power, land and network capacity⁹ while electrification is expanding across industry, transport and the built environment. In a congested system, every major connection request becomes part of a broader question about timing, location and public value.^{10,11}

This does not make data centers uniquely problematic. Rather, they are highly visible examples of a broader shift: access to electricity cannot be assumed to be unconstrained, and new demand must increasingly demonstrate its contribution to system efficiency and broader public value. For Dutch decision-makers, the relevant question is therefore not growth versus no growth, but how digital infrastructure can support grid efficiency, renewable deployment and industrial development rather than competing with these objectives.

A market and policy context shaped by scarcity

The Netherlands combines strong connectivity, a sophisticated digital economy and a strategic location in northwestern Europe. These fundamentals support continued interest in data center investment. Yet the commercial logic is increasingly filtered through energy availability, network constraints, spatial planning and permitting. A technically attractive site may not be suitable for development on the required timetable if firm grid capacity is unavailable or if the project does not align with local and regional priorities.

This changes the basis of competition. Securing land and a connection remains necessary, but it is no longer sufficient on its own. Globally, projects are increasingly assessed more closely on their contribution to the surrounding energy system: whether demand can be flexible, whether renewable generation can be contracted or co-located, whether residual heat has a credible user, and whether shared infrastructure creates value beyond the site boundary. At the same time, policymakers face a balancing act. Digital infrastructure supports economic activity and resilience, but scarce grid and land capacity must also serve housing, mobility, industry and other strategic uses.

While these risks are real, international examples (detailed below) point to solutions that can unlock energy system value alongside data center development. In Ireland, large energy users support renewable deployment and grid integration following a structural policy reset to enable growth¹². In the Nordics, high electricity consumption improves infrastructure utilization and network economics, provided transmission and generation capacity expand in step with demand growth¹³. In Denmark, data center heat reuse demonstrates the potential for circular energy systems¹⁴. Together, these examples show that



Integration, rather than isolation, is the decisive design principle.

Data centers that are designed around flexible and circular energy and resource systems will maintain their social license to operate and can deliver both shareholder and societal value at the same time."

9. Dialogic - Consequenties van beleidsopties voor een AI-fabriek

10. Grid congestion is posing challenges for energy security and transitions – Analysis - IEA

11. IEA - The Netherlands 2024, Energy Policy Review

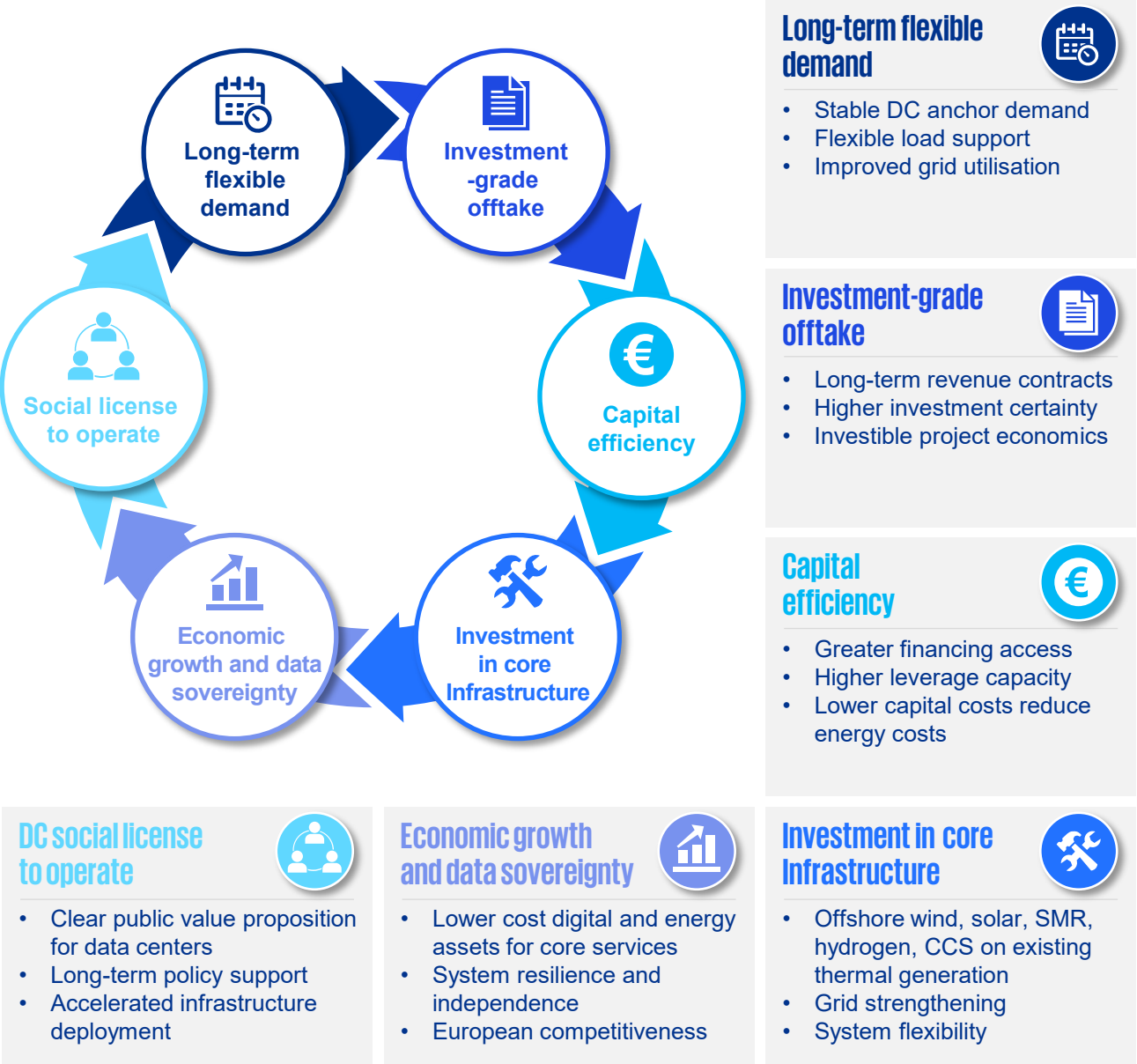
12. CRU202504 LEU Connection Policy Proposed Decision

13. NER - Energy Security in the Nordics

14. Meta - Odense Data Center in Denmark

Data Centers as Anchors of Energy System Investment

We highlight key levers to enable data center growth that could also unlock value and resilience from the Dutch energy system. It is important to recognize that each consideration should not be viewed in isolation. Value realization relies on interdependent implementation of considerations: co-location of generation, storage and consumption, flexible grid access, renewable procurement, and heat reuse reinforce one another and often rely on the same underlying conditions, such as location, stakeholder coordination, contractual design and supporting infrastructure. The greatest system value is therefore likely to emerge where these levers are combined as part of an integrated energy-system strategy, rather than pursued as separate initiatives.



International Case Studies: Unlocking Value and Resilience (1/3)

Increased baseload demand from data centers can underwrite renewables investment through long-term power purchase agreements (PPAs)

Renewable power procurement can provide long-term revenue visibility for new generation. Large, creditworthy users can act as anchor buyers under PPAs, potentially improving the bankability of renewable projects¹⁵. In the Dutch context, recent offshore wind tenders have highlighted the challenges of developing large-scale renewable generation without sufficient demand-side certainty, as developers face increasing merchant exposure, price volatility and curtailment risk¹⁶. A key constraint on further renewable deployment is securing sufficiently large and predictable demand capable of supporting project economics over the long term¹⁷. Certain data centers, with their continuous and creditworthy power demand, can help address this challenge by providing a stable offtake profile within the energy system that strengthens project economics, reduces revenue uncertainty and supports investment in additional renewable capacity. In some cases, the availability of long-term demand commitments may also improve the financing prospects of wider energy-transition infrastructure that depends on continued renewable deployment^{14,18}. The strength of this proposition will ultimately depend on contract design, additionality, price and volume risk allocation, and the extent to which constant demand can be matched with variable renewable output.

Case study Lenalea Wind Farm (Ireland).

Microsoft's long-term renewable power purchase agreement provides a bankable route to market to support 30MW of new wind generation. The deal demonstrates how large, creditworthy data center operators can act as anchor offtakers, reducing revenue risk and helping unlock investment in additional renewable capacity.¹⁹

Greater baseload demand can maximize the use of public infrastructure investment and potentially lower end user costs

Spreading infrastructure costs across a greater volume of electricity consumption can improve the economics of network investment, particularly when combined with flexible connection agreements (detailed below). In the Netherlands, where substantial grid investment is underway and network charges are relatively high compared with some neighboring markets, higher utilization of existing and planned infrastructure could improve overall system economics²⁰. It is important to note that additional demand could only improve infrastructure economics where it increases utilization of existing or planned assets without triggering disproportionate network reinforcement requirements, provided sufficient grid expansion and transmission capacity are available.

Case study Nordic electricity systems.

High levels of industrial electrification, electric heating and broader electricity consumption have enabled fixed network investments to be spread across larger volumes of delivered electricity. As a result, Nordic countries maintain relatively low network costs per MWh despite extensive transmission infrastructure²¹, demonstrating how higher utilization can improve overall energy system economics.



15. KPMG AI's dual promise: Enabling positive climate outcomes and powering the energy transition

16. Holland Solar & DNE Research - Nationaal Storage & Solar Trendrapport 2025

17. IEA – The Value of Demand Flexibility

18. IEA - The Netherlands 2024, Energy Policy Review

19. Power purchase deal inked with Microsoft for Lenalea wind farm | SSE Renewables (2024)

20. IDRIC – Frontiers Report, Systems Planning and Decision-Making Tools

21. NER - Energy Security in the Nordics

International Case Studies: Unlocking Value and Resilience (2/3)

Building data centers in industrial centers can support green energy hub economics.

Bringing energy-intensive facilities such as data centers together with renewable power generation, energy storage and other industrial users that may require heat energy byproducts can support the economics of energy hubs. The steady electricity demand from data centers can help make better use of shared network infrastructure while providing a stable customer base for new energy generation and storage investments. This can reduce situations where renewable power is curtailed when there is insufficient demand and minimize energy waste from operations to improve the overall efficiency of the local energy system²².

Case study Bord na Móna Energy Park (Ireland) demonstrates how co-location can unlock renewable growth while reducing grid constraints.

A large-scale energy park is combining wind, solar, storage, hydrogen and data center demand on a single site, reducing congestion while maximizing renewable utilization and infrastructure efficiency.

Enforcing flexible grid access can unlock growth alongside decongestion

Flexible connection structures can unlock growth while supporting decongestion.



The strategic opportunity is to treat flexibility as a design requirement from the beginning, not as a concession after a capacity problem emerges.

Spreading infrastructure costs across a greater volume of electricity consumption can improve the economics of network investment, particularly when combined with flexible connection agreements (detailed below). In the Netherlands, where substantial grid investment is underway and network charges are relatively high compared with some neighboring markets, higher utilization of existing and planned infrastructure could improve overall system economics . It is important to note that additional demand could only improve infrastructure economics where it increases utilization of existing or planned assets without triggering disproportionate network reinforcement requirements, provided sufficient grid expansion and transmission capacity are available.

Case study Irish Large Energy User (LEU) Framework demonstrates increased grid loading flexibility.

Ireland has enabled continued growth in data center capacity through flexible connection agreements, a requirement for data centers to bring new generation, demand-side flexibility requirements and coordinated long-term system planning. This solution reduces the need for unnecessary grid reinforcement and increases grid efficiency. This could be taken a step further by requiring data centers to make a positive contribution through deploying energy to the local grid under certain circumstances. ^{23, 24}



22. Bord na Móna Energy Park - Case Study
23. CRU202504 LEU Connection Policy Proposed Decision

24. MPID345 - Large Demand Facility Fault-Ride Through Issue Paper

International Case Studies: Unlocking Value and Resilience (3/3)

Recycling heat energy can support circular energy systems

Data centers can contribute to circular energy systems by transforming operational byproducts into valuable local resources. Heat reuse is currently the most mature example and demonstrates how digital infrastructure can create value beyond the data center boundary. The Danish Odense example below demonstrates the potential scale of district-heating integration²⁵. More broadly, circularity opportunities within integrated energy hubs may also include interaction with heat networks, storage infrastructure, hydrogen systems and other shared energy assets that improve overall system efficiency.

In the Netherlands, however, a compelling heat-reuse proposition requires more than technical availability: a nearby demand profile, suitable heat byproduct temperatures, heat-network infrastructure, clear ownership and a bankable allocation of investment and operating risks are all essential²⁶.

In addition, broader resource considerations, including applied cooling technologies, water use and opportunities for water reuse, should increasingly form part of the sustainability assessment of large-scale digital infrastructure. As public scrutiny of data center development increases, water consumption has become as important a consideration as grid impact, particularly where freshwater resources are limited.



Case study Meta Odense (Denmark)

Waste heat from a hyperscale data center is reused to provide district heating to more than 9,000 households with 165,000 megawatt hours of free surplus heat, demonstrating how digital infrastructure can become a contributor to broader energy-system efficiency²⁷.

25. Meta - Odense Data Center in Denmark

26. NTT DATA data centers to provide eco-friendly heating in Berlin district using waste heat

27. Meta - Odense Data Center in Denmark

3 Integration is not guaranteed

The examples above illustrate what is possible, not what is inevitable. Data centers create system value only when location, flexibility, renewable integration and supporting infrastructure are aligned. Poorly located or inflexible projects may increase congestion, require additional grid investment and compete with other strategic users for scarce capacity. The challenge for policymakers, developers and system operators is therefore not to maximize growth, but to prioritize projects that strengthen the wider energy system while supporting strategic Dutch digitization and data sovereignty objectives across public services and core economic contributors.

4 Implications for decision-makers



For investors,

Energy-system integration is a core value driver and a due-diligence topic.”

Connection terms, flexibility obligations, renewable sourcing, heat offtake and stakeholder alignment affect timing, capital expenditure, earnings, and exit value. Optionality should be assessed dynamically: a site with constrained firm capacity may still be attractive if it has credible pathways to flexible access, co-location or phased development.

For operators, the energy strategy is at the heart of the operating model. Workload management, energy procurement, storage and backup generation should be considered as a connected system to complement local grids. The most resilient operators will be able to translate technical flexibility into contractual commitments without compromising service reliability. Foresight and collaboration on energy-system integration will secure long-term value.

For energy companies and grid operators, data centers can be more than customers. They can be partners in demand response²⁸, renewable offtake, offtakers for underwriting CCU investment and system decarbonization, storage optimization and heat supply.

That partnership requires new interfaces: transparent operating data, agreed dispatch rules and commercial structures that reward services provided to the wider system^{29,30, 31}.

For policymakers and municipalities, a selective approach is likely to be more effective than broad support or restrictions. Strong leadership and ecosystem-wide collaboration will be essential. A clear assessment framework could evaluate projects based on location, grid impact, flexibility, energy efficiency, renewable energy contribution, heat-reuse potential and local economic value. This would improve predictability for developers while safeguarding scarce public and network resources.

The relevance of this approach extends beyond the data center sector. Integrated energy hubs and shared infrastructure can unlock renewable energy supply, flexibility and network access for neighboring industries, improving the economics of energy transition investments. By providing scale and demand to underwrite investment decisions, data centers can help catalyze infrastructure investments that deliver benefits across a broader industrial cluster^{32, 33}.

28. EURO 2020 and the TV 'pick-up' effect | National Energy System Operator

29. CRU202504 LEU Connection Policy Proposed Decision

30. Bord na Móna Energy Park - Case Study

31. IEA – The Value of Demand Flexibility

32. Tees Valley Net Zero - Cluster Plan Report

33. Bord na Móna Energy Park - Case Study

5 The next phase will be defined by integration



The Netherlands does not need to choose between digital competitiveness and the energy transition

It does need to move beyond a model in which major loads are connected as standalone assets and their wider impacts are dealt with later. The more credible pathway is to design data centers as components of local and regional energy systems – connected to generation, flexibility, storage, heat and other users from the outset^{34,35}.

That shift changes the conversation. Grid scarcity becomes a catalyst for better coordination; renewable procurement becomes an investment instrument rather than only a reporting claim; and local value creation becomes part of the commercial proposition. Not every site or project will be able to meet that standard. Those that can, however, may secure more durable support and create value well beyond the data center itself.



The winners will be the parties that recognize data centers not simply as high-demand assets, but as anchor infrastructure capable of helping to organize the next generation of Dutch energy investments.”



34. European Commission - AI Continent Action Plan 2025

35. Dutch Coalition Agreement 2026-2030

6 How KPMG can help

Our multidisciplinary teams help investors, developers, utilities, ports, corporates and governments connect strategic choices with practical delivery, combining sector insight with technology, data, risk and financial capabilities to unlock value from next-generation infrastructure opportunities.

- Valuations, financial modelling, funding strategy, capital structuring and transaction support where investment decisions require financial depth
- Business case development, commercial structuring and investment appraisal
- Strategy development for data center, energy-system and industrial-cluster integration
- Stakeholder engagement, ecosystem coordination and public-private partnership design
- Market, policy and regulatory assessment for digital infrastructure and energy-transition opportunities
- Data, AI and digital twin simulation to evaluate location choices, grid constraints, flexibility options and investment scenarios
- Cyber, resilience and digital trust advisory for critical digital and energy infrastructure

Please reach out to one of our team members if you want to learn more.





Contact us

Rudolf Stegink

Partner Corporate Finance & Valuations

T +31 6 5133 4600

E stegink.rudolf@kpmg.nl

Bud van der Schrier

Partner Strategy

T +31 6 5118 6859

E vanderschrier.bud@kpmg.nl

Ruben de Wolf

Partner AI & Data

T +31 6 2294 6438

E dewolf.ruben@kpmg.nl

Christopher Brown

Partner Head of Strategy Ireland

T +353 870 504 453

E christopher.brown@kpmg.ie



www.kpmg.com

Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates or related entities.

© 2026 Copyright owned by one or more of the KPMG International entities. KPMG International entities provide no services to clients. All rights reserved.

The information contained herein is of a general nature and is not intended to address the circumstances of any particular individual or entity. Although we endeavor to provide accurate and timely information, there can be no guarantee that such information is accurate as of the date it is received or that it will continue to be accurate in the future. No one should act on such information without appropriate professional advice after a thorough examination of the particular situation.

The KPMG name and logo are trademarks used under license by the independent member firms of the KPMG global organization.

Document classification: KPMG Public