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# Behind the Cloud:

## An investigation into the environmental, political and social impact of growing AI-related data centre infrastructure and related energy consumption in Ireland.

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**Abstract**

As Ireland becomes a key node in the global digital infrastructure, the environmental, political and social impacts of the related energy consumption and infrastructural growth become increasingly consequential for Irish policymakers and corporations. Global demand for Artificial Intelligence (AI) is growing rapidly alongside the requirement for an expanding global data centre infrastructure to support and sustain its demands for energy, landand water use. This research focuses mainly on energy and water use. AI promises endless potential, offering solutions to complex problems faced across industries such as healthcare, finance, and manufacturing. Investigating the environmental, social, and political tradeoffs are imperative to ensure that these aspects are not undermined to facilitate AI's growth.

Ireland's temperate climate and perceived abundance of wind energy makes it an attractive destination for data centres which already account for the use of a substantial proportion of Irish energy and land. Figures from 2025 suggest that AI-related electricity demand was equivalent to that of 570,000 median Irish households' demand in the same year, without accounting for the proportional share of AI consumption. Researching data centres'place in modern Irish society points toward history for further explanation. Ireland's history of Imperialist innovation dating back to the Transatlantic Telegraph Cable and Marconi Transatlantic Wireless Station, paired with Irish FDI policy in the 1960s and 1970s, provides us a greater understanding of how Ireland has developed into an economy centered around FDI.

Despite surging economic growth, Ireland is experiencing profound ecological degradation, energy price spikes, grid pressure and policy ambiguity as a result of extensive data centre expansion. Technology corporations that operate on Irish soil are not required to complete the same extensive emissions and transparency reporting as they would in other EU countries due to Irish policymakers missing the October 2025 Energy Efficient Directive transposition deadline.

This has led to public and governmental ambiguity regarding the energy consumption breakdown of data centres and the hosting of foreign intelligence, military data, or training of AI models. AI's emissions in 2025 were equivalent to 10.46% of Irish forest annual sequestration, the International Energy Agency predicts that AI's energy demand will grow by at least 30% annually (International Energy Agency, 2025). The public can clearly see the scale of data centre growth, but with the lack of reporting transparency it is becoming harder to understand why Ireland should host these data centres, as it is unclear how Irish society benefits from the growth, and whether AI itself can ever be sustainable.

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## Introduction

Artificial Intelligence (AI) has seen astronomical growth over the past decade, both scientifically and commercially (International Energy Agency, 2025). AI has expanded as an interdisciplinary tool, solving complex problems across disciplines such as mathematics, medicine, and computer science. Over the years, AI's capabilities have developed from relatively narrow task completion to human-like text generation and reasoning and video creation from text prompts.

Open AI's ChatGPT launch in 2022 brought generative AI into widespread public use in and after rapid industry growth. It now competes with search-engine-integrated AI like Google's Gemini, which corporations and the public have been very swift to adopt. Given its ease of use and wide availability, it is very easy to view AI as a weightless, invisible software that provides us with instant answers that are believed to be stored in an unidentified cloud. However, AI requires extensive physical infrastructure to operate, namely data centres (International Energy Agency, 2025). The computational demand of AI is met by data centres, making their energy consumption a growing driver of grid pressure in Ireland, where the data centre capacity is rapidly expanding.

Ireland is a particularly interesting case study regarding digital infrastructural development. As a global hub for tech, Ireland has benefited substantially from technology-related FDI. The Irish FDI model invites companies seeking low corporate tax rates, an educated workforce and a European headquarters. However, the physical infrastructure supporting this economic model creates environmental, social, and political tradeoffs.

Ireland has seen a significant expansion of data centres over the last decade (CSO, 2026a), in tandem with the growth of AI; but we cannot easily determine what proportion of the resource usage is attributable to AI growth (International Energy Agency, 2025), nor obtain transparency regarding its environmental impact (Department of Climate, Energy and the Environment, 2025), ecological and social consequences.

This paper aims to investigate the environmental, political and social implications of growing AI-related data-centre infrastructure and energy consumption in Ireland. First, the paper establishes its methodology and AI Proxy; it then considers the historical context surrounding Ireland's data centre economy and FDI, estimates AI-related energy and emissions footprint, examines water and ecological implications, reviews the regulatory framework and finally explores the wider political implications. The quantitative analysis primarily uses 2025 as the reference year.

## Methodology

### Research Design and Sources

Throughout my research I used an interdisciplinary, desk-based study using secondary quantitative and qualitative data. This research combined quantitative, publicly available energy and emissions research with qualitative policy analysis, legal analysis, historical analysis, and broader political and environmental discussion.

The important authoritative datasets that I use during my quantitative research are: CSO data-centre electricity consumption, SEAI emissions conversion factors, IEA and EU Parliament estimate of AI/Accelerated-server demand, Teagasc/DAFM forest sequestration data, CSO household electricity statistics, Uisce Eireann statistics (Central Statistics Office, 2026a; Central Statistics Office, 2026b; Sustainable Energy Authority of Ireland, n.d.; International Energy Agency, 2025; Widuto, 2025; Teagasc, n.d.; Department of Agriculture, Food and the Marine, 2022; Uisce Éireann, n.d.a; Uisce Éireann, n.d.b). My calculations use these datasets to estimate and evaluate AI-attributable electricity consumption and emissions.

During my qualitative research I review EU legislation and Irish government material concerning data-centre disclosure. Similarly, I use literature concerning Irish FDI history and technological development. During discussion I reference reports and investigations by journalists where the paper examines contemporary political issues. The quantitative aims to establish the scale of environmental impact while the historical, policy and political analysis is used to interpret why the infrastructure developed in Ireland and what broader consequences it may create.

### Data Centres and Accelerated Servers as an AI Proxy

A data centre is a physical building or facility that houses IT infrastructure, such as clusters of networked computer servers, data storage drives, and network hardware. Each of these components serves different core functions. Accelerated Servers are high powered computers that run applications and process requests, storage systems secure large volumes of physical data, networking gear connects servers to each other and to the outside internet, power and cooling units keep uninterrupted power supplies and prevent overheating. Since

AI data is not published or readily available, to estimate AI consumption figures, the IEA uses Accelerated Servers as a proxy. Accelerated Servers are high-performance computing systems enhanced with GPUs or other specialized chips like TPUs or FPGAs to speed up AI, machine learning and data intensive workloads in data centres (International Energy Agency, 2025). Standard servers tend to be equipped with CPUs for the purpose of computing. As of now, there is no AI declaration for consumption or disclosure policy. See Policy Section for more information. Data centres can be run by single entities or rented out to multiple different users for different functions.

In the European Parliament's 2025 report *AI and the Energy Sector*, it is stated that the IEA estimates that AI electricity demand accounts for 24% of all electricity demand in the EU. They also approximate that the electricity use of AI accounts for 60% of the electricity used in data centres (Widuto, 2025). Therefore, AI (proxied by Accelerated Servers) accounts 15% of total EU electricity, 60% of 24% ≈ 15%.

However, I question the validity of this estimate because the remaining 40% of data centre electricity usage is used for cooling and general infrastructure. Server consumption cannot exist without the cooling and infrastructural consumption that physically facilitates it. Logically, the % of infrastructural consumption must be amortised across the server's consumption to find the overall energy footprint of accelerated servers. The cooling and infrastructural energy usage of accelerated servers can be attributed to AI use as follows.

- **IEA Proxy:**As noted above, IEA estimates accelerated server energy demand excluding the cooling and infrastructural consumption as 15% of total EU electricity use (Widuto, 2025)
- **Proportional Attribution (Power Usage Effectiveness):**If cooling and infrastructural usage is distributed as a proportional figure to sever demand, the overall consumption figure becomes 24%. That is 15% plus 24% of 40%, equals 24%.

- **AI Density Attribution (Partial PUE):**Since figures are not directly reported regarding the quantifiable impact that Accelerated Servers have on cooling and network infrastructure, there is not one standard figure that can be used as an AI Density Attribution. Due to higher intensity of Accelerated Servers, AI-related consumption is more dense than conventional cloud servers, requiring liquid cooling, higher airflow, more pumping power, and greater electrical conversion loss. Accelerated servers create a disproportionately large share of cooling demand. Therefore, if anything 24% is an understatement of the electricity use of AI.

Due to the lack of transparency and reporting of figures by tech companies regarding the AI density attribution consumption, I will use this proportional attribution method as a benchmark figure to calculate the energy consumption of accelerated servers in Ireland. Future Irish policy should adapt to understand and monitor a further breakdown in power usage within data centres so that an accurate AI density attribution figure can be found.

**Methodological Limitations**

The primary methodological limitation of the research is that there is uncertainty surrounding the AI proxy of Accelerated servers (Widuto, 2025). Accelerated servers are not a perfect proxy for AI, because not every accelerated-server workload is necessarily AI; AI workloads are not directly disclosed. The EU Parliament uses accelerated servers as a proxy for AI.

In addition, the exact attribution of cooling and infrastructure is unknown. The research deliberates proportionate attribution, zero attribution, and weighted attribution. I propose that actual AI workloads may create disproportionately high cooling demand, but the data is not publicly available to provide evidence for this.

This study relies entirely on public secondary sources. This means that my analysis is constrained by the level of detail published by the CSO, SEAI, EU institutions, government agencies, and companies.

The comparability of the environmental metrics used is intended as interpretive equivalents rather than literal offsets, e.g. forest sequestration equivalents and household electricity equivalents. The equivalents are used to contextualise scale and not to imply direct impact.

## Findings and Discussion

### Can History Explain the Irish Data Centre Economy?

To understand why Ireland has become a global hub for data centre development, it is imperative to take a look back into the history of FDI in Ireland and to investigate how it has shaped the economic landscape which makes it so attractive for tech companies to set up headquarters and data centre campuses in Ireland.

Ireland's modern FDI economy's origin dates back to early development due to the geographical significance of the island for the British empire. In the late 19th century and early 20th century, Ireland found itself as a key node in transatlantic communications development. With projects such as Transatlantic Telegraph Cable and Marconi Transatlantic Wireless Station, locals saw positive externalities of technological innovation at the time.

The transatlantic Telegraph Cable meant that there was an influx of global business, leading to development of roads, ferry routes and hospitality in the locality. Wealthy investors would visit and highly skilled operators would spend their wealth locally, which heavily supported local hospitality, fishermen and farmers. Similarly, the Marconi Transatlantic Wireless Station was entirely powered by local peat/turf cutters. The development of this plant allowed for local employment growth and infrastructural development during a time when the west of Ireland was particularly vulnerable, recovering from the great famine in the 19th century.

This imperial innovation sets the tone for policymakers once Ireland gains independence and begins to develop its economy. Having been an island dependent on the British Empire and its development for so long, Ireland looked abroad for economic answers at the same time as USA's growing economic hegemony. Until World War II, Ireland saw itself attempting to industrialise using an Import-substitution industrialisation model. As both Minister for Industry and Commerce, and later as Taoiseach, Sean Lemass played a huge role developing Irish economic policy throughout the 1950s and 1960s in Ireland.

Establishing an economic vision for the IDA of 'industrialisation by invitation', this initiated the low corporate tax system that we see today (Barry and ó Fathartaigh, 2015).

In the 1960s these policies began attracting technological and pharmaceutical FDI, with General Electric bringing economic prosperity to Shannon and Pfizer to Cork. Followed by a Tech expansion with Analog Devices in Limerick and Apple in Cork during later years, Ireland became a key location for US companies looking to expand to Europe. In the late 1980s, Intel's Leixlip campus became the largest private investment in the history of the Irish State. Over the decades, Intel's spending on its Leixlip campus reached over €30bn.

This brings us up to date with Irish modernisation and the development of the Irish Data Centre Economy. Ireland's FDI policy has developed over the years in tandem with the growing part that FDI plays in our economy. This dependency that Ireland has on MNCs for tax collection and employment means that legislation is designed to attract and sustain these companies, often leading to social and environmental contradictions (Bresnihan and Brodie, 2025). This can be cited as a reason for Ireland having little to no disclosure policy in regard to data centre energy consumption and reporting transparency.

**Energy and Emissions Figures**

In contrast to the section above which attributed energy consumption to AI, using accelerated servers as a proxy for AI, in this section I calculate an approximation of the related emissions created by the production of this energy. I use the CSO's published data for metered electricity consumed by data centres to do so.

According to the CSO, in 2025 23% of all electricity use in Ireland was by data centres (CSO, 2026a). Using proportional attribution (Power Usage Effectiveness), accelerated servers (used as a proxy for AI) are responsible for 24% of this demand, therefore AI accounted for (.24) (.23) = 5.52% of all metered electricity in Ireland in 2025.

In 2025, Data centres' overall metered electricity consumption was 7,663 GWh (CSO, 2026a). Therefore, AI Proportionate Attribution of overall metered electricity consumption is (7,663) (.24) = 1,839.12 Gwh (1,839,120,000 KWh).

Electricity is produced by different fuels and sources and can be expressed in terms of volume, mass, energy, or emissions. Using The Sustainable Energy Authority of Ireland's conversion factors, it is possible to express each fuel or energy source in common units of energy or emissions so that they can be compared and aggregated.

We can find the $CO_2$ emissions per KWh of electricity using the SEAI's 2025 conversion factor of 197.8g$CO_2$/KWh (Sustainable Energy Authority of Ireland, n.d.). The SEAI notes that this conversion rate accounts for $CO_2$ emissions arising within ROI per unit of electricity available for final consumption and is calculated as total $CO_2$ from electricity generation in Ireland divided by electricity available for final consumption. $CO_2$ emissions arising outside of Ireland are not included in this factor. This does not account for imported electricity, approximately % of Irish electricity is imported (CSO, 2026)

1,839,120,000 × .1978kg$CO_2$/KWh = 363,777,936 ≈ 363,777.936 tonnes of $CO_2$ emissions can be attributed to accelerated servers (Proxy for AI) generated by electricity consumption in data centres in Ireland in 2025 converted using the SEAI's 2025 conversion factor of 197.8g$CO_2$/KWh.

**Understanding figure through comparison**

***Teagasc's Forest Carbon Tool***

Developed by Teagasc, Department of Agriculture, Food and the Marine (DAFM), Forest Environmental Research and Services. This provides indicative estimates of the potential carbon sequestration associated with different Irish forest types. Sequestration is the removal of $CO_2$ from the atmosphere and its subsequent storage as carbon in forest.

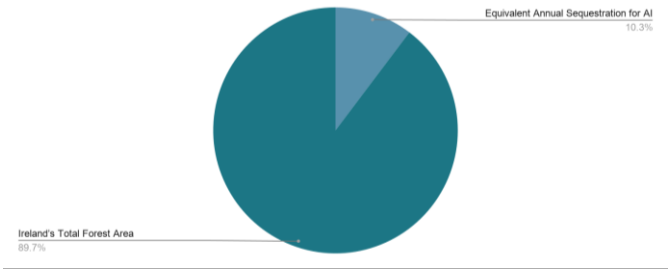
Using Teagasc's national average forest sequestration rate of 4.3T$CO_2$/ha/yr as a way to put the 2025 emissions figure of 363,777.936 tonnes of $CO_2$ (Teagasc, n.d.) into context,

84,599.52 hectares (or 845.9952 $km^2$) of forestry would be required to sequester the carbon that AI use in Ireland generates.

DAFM's fourth National Forest Inventory estimates Ireland's total forest area as 808,848 Hectares (Department of Agriculture, Food and the Marine, 2022). Comparing this to the figure above of 84,599.52 hectares, 10.46% of the Irish forest estate would be required to sequester the annual emissions produced in Ireland as a result of AI use, as shown in Figure 1 below.

This figure represents the calculated area of Irish forest required to achieve an equivalent annual sequestration (of accelerated server emissions) as a proportion of Ireland's total forest area recorded by the National forest Inventory.

Figure 1




***Irish shadow Price of Carbon***

The Irish Shadow Price of Carbon is a government economic appraisal parameter based on a target-consistent marginal-abatement cost approach. This framework assigns a monetary value to each tonne of $CO_2$ equivalent emitted or avoided, reflecting the economic value associated with meeting Ireland's emissions-reduction objectives. This figure can be described as a "What If" number that is assigned to account for future environmental effects of projects that may not be evident on paper.

In 2018, the price of carbon was formulated per year up until 2050. The reference figure for 2025 is a flat rate across all industries at €335 per tonne of $CO_2$ according to updated figures

on the Public Affairs Ireland 2024 updated chapters to 'Infrastructure Guidelines' (Ferris, 2024).

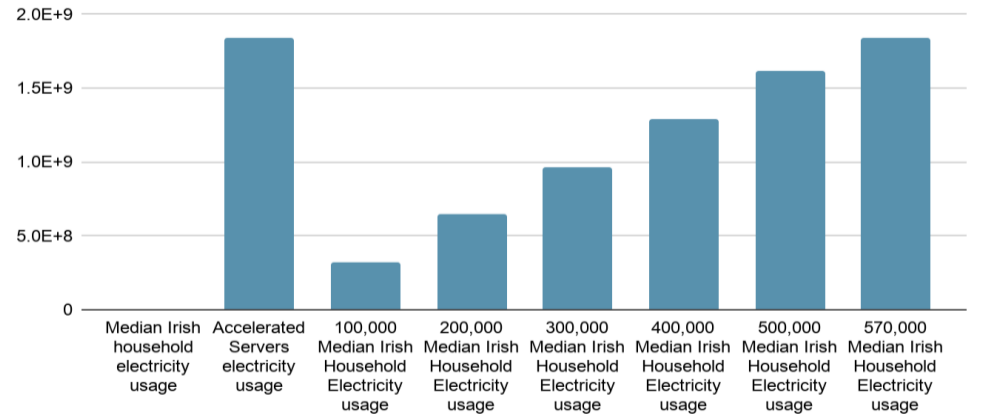
Therefore 363,777.936 × €335 ≈ €121.87m

***Irish Household Electricity Equivalence***

To further put the electricity usage into context, I compare the power consumption attributed to accelerated servers with the median Irish Household annual electricity usage. In 2025, AI electricity use was estimated to be 1,839,120,000 KWh and the CSO reported median residential metered electricity in 2025 figure of 3,228 KWh (CSO, 2026b). Therefore, AI use was equivalent to the use of 570,000 median households.

This means that accelerated servers in Ireland in 2025 used the same amount of electricity as 570,000 median Irish households, as visually represented in Figure 2.

Figure 2




**Water Usage**

According to an investigation carried out by *The Journal Investigates* published July 2026, Irish data centres used 999 million litres of water in 2025 (O'Carroll and Mac Redmond, 2026). The CSO reported that the median Irish household uses ≈ 95,000L of water per year (CSO, 2023). This means that data centres used the equivalent of ≈ 10,500 Irish households' water consumption in 2025.

Data centres used the equivalent of 400 Olympic swimming pools of water (standard Olympic swimming pools at 25000L). Of this 999,000,000L of water, 556,513,000L (55.71%) was used at the Meta Clonee data centre and 398,058,000L (39.85%) was used at Equinix data centres, showing the potential use of a single large data centre.

Data centres using water from the public water network are treated as non-domestic Uisce Eireann customers. They are subject to the same charges as other industrial and commercial customers; the marginal price per cubic metre falls as consumption increases. For example, for the period October 2025 - September 2026, the annual water charge is €2.4/$m^3$ for annual water use under 1,000$m^3$. However, for annual usage over 2,300,000$m^3$ the unit price is €1.39/$m^3$. This means that large consumers such as data centres get cost benefits from using larger amounts of water (Uisce Eireann, n.d.a.).

One of the main questions that surround water usage at data centres is the cooling demand; data centres experience their highest cooling demand during high temperatures. These periods often coincide with prolonged warm and dry weather, when river and lake levels are lower and when there is less water available for public supply. This seasonal sensitivity of consumption means that the significance of data centre water consumption may be disproportionately higher than its national percentage of water usage suggests.

The Greater Dublin Area obtains 85% of its water from the river Liffey, according to Uisce Eireann (Uisce Eireann, n.d.b.). This means that data centres water usage density also puts stress on domestic water infrastructure, affecting water supply for both household customers and commercial customers throughout the GDA. Depletion of rivers and natural water infrastructure also has profound impacts on biodiversity and habitats. Freshwater abstraction from rivers can affect aquatic habitats, wetlands, fish movement, and the dilution capacity of rivers. Data centre water usage puts upward pressure on regional, domestic and commercial water supply as well as pressure on ecological systems.

**Policy Review**

Under Article 12 of Directive (EU) 2023/1791, data centres with an installed IT power demand of at least 500 kW must report the following information annually. Article 12 requires Member States to require owners/operators to make the information in Annex VII publicly available (subject to protections for trade secrets and confidential information) (Directive (EU) 2023/1791, 2023).

Annex VII requires:

- Installed power and floor area
- Annual incoming/outgoing data traffic
- Amount of data stored and processed
- Energy consumption
- Power utilisation
- Cooling temperature set points
- Waste-heat utilisation
- Water usage
- Renewable energy use

Despite being a country legally obliged to follow EU Directives as an EU Member State, Ireland is yet to implement the public-disclosure obligation yet (as of 21/08/2026). Last updated on the 9th of June 2025, the Department of Climate, Energy and Environment published that 'Article 12 of the Energy Efficiency Directive (EED) provides an obligation for the monitoring and publication of energy performance of data centres' and that it is 'in the process of being transposed' (Department of Climate, Energy and the Environment, 2025). Ireland missed the October 2025 EED transposition deadline.

As mentioned earlier, Article 12 explicitly exempts information protected by trade/business-secret and confidentiality law, therefore Irish legislators decide which variables operators are permitted to withhold as commercially sensitive.

The aggregate figures from the EU that the public receives regarding data centre energy consumption are required under different legislation, Regulation (EU) 2024/1364 (Commission Delegated Regulation (EU) 2024/1364, 2024). These submissions are legally

confidential at a database level and are published only in aggregate as we can see in EU reporting.

**Does Technology FDI Undermine Irish Military Neutrality?**

The number of data centres in Ireland has grown rapidly over the last decade and with that has grown the global prevalence of AI. AI is increasingly becoming a geopolitical weapon used for military purposes right across the world. Simultaneously, data storage and cloud computing have become increasingly vital for military intelligence operations, equipping AI models with the extensive data infrastructure required to optimize military decision-making. At present, the EU and Irish policy do not require any disclosure regarding information being stored in cloud computing servers or LLM models being trained on Irish soil. Therefore, corporations such as Meta (Clonee), AWS (Mulhuddart, Blanchardstown and Clonshaugh), Google (Dublin) and Digital Realty (whose biggest customers are Oracle, Meta, Google, Microsoft, AWS) do not have to disclose operations that are being carried out in data centre campuses on Irish soil.

Each of these corporations hold contracts with different military organisations; Microsoft holds the JEDI Joint Enterprise Defense Infrastructure) contract awarded by the US Department of Defense. AWS, Google, AWS, and Oracle all hold JWCC (Joint Warfighting Cloud Capability) program contracts again awarded by the US Department of Defense. Although Meta had a long-standing policy preventing military use of any of its technology, it allows its open-source Llama AI model to be integrated into military systems by major defense contractors. Meta policy states that its technology can be used for defense but formally restricts using the model for automated warfare or furthering nuclear capabilities.

In late 2025, it was reported that Irish authorities were requested to investigate Microsoft Ireland for allegedly storing Unit 8200 (Israeli Military/Spy Agency) data used in Israeli military operations/offensives against Palestinians in Gaza on Irish soil using Azure data cloud storage. Following investigations into a cache of leaked documents by the Guardian and Israeli/Palestinian publication +927 Magazine, it was found that Microsoft Azure systems were being used to store archives of millions of Palestinian communications and everyday

network interactions, facilitating targeted airstrikes, further surveillance and other military operations. Irish military neutrality has long been a controversial topic, especially when discussing use of Irish airports for US military refueling, but those military decisions were acutely monitored with strict disclosure policies and permissions (Davies and Abraham, 2025a). When investigated, Microsoft claimed that they were not aware of information that the contractors planned to store in their cloud computing servers. If this is true, how can the public and state be aware of what information is being stored and trained inside data centres if the operators often don't know (Davies and Abraham, 2025b)?

As US tech FDI grows extensively in Ireland and Ireland's digital significance grows globally, Ireland becomes a military weak point in the West's interconnected digital network. Ireland being a militarily neutral country with low defense spending governed by the complex 'Triple Lock' legal system seems to be a point of concern for both western governments and executives of MNCs who rely on Ireland's security and safety to insure commercial stability. Many articles across Politico, Financial Times, New York Times, Irish Times, The Guardian highlight the weakness in Irish Military capability (Drea, 2024; McQuinn, 2025; Laffan, 2025; Webber, 2025; Specia, 2026). The message seems clear, Ireland is 'defenseless' and that to remain allied with the US and Europe it needs to take defense more seriously. Author of 'From the cloud to the bog', Dr Patrick Brodie argues that this is a call for militarisation of the Irish FDI model, highlighting its weakness to US/European investments on Irish soil (Bresnihan and Brodie, 2025).

## Conclusion

The rapid growth of AI-related data centre infrastructure in Ireland creates significant environmental and infrastructural pressures. The existing limitations regarding transparency exacerbate this pressure, as it becomes difficult for the public and policymakers to fully evaluate the cost associated with this growth. Therefore, these pressures are difficult to adequately account for when weighing the environmental, social and political costs against the economic benefits associated with Ireland's FDI model, specifically technological infrastructure such as data centres.

The environmental impact of AI-related energy consumption is multidimensional. The research evaluated carbon emissions and electricity demand; however, the environmental pressure extends beyond electricity and emissions to water supply, infrastructure, and ecological systems. To assess whether AI-related data centre infrastructure is sustainable, energy demand, grid pressure, water demand, ecological consequences and the opportunity cost of allocating finite land and infrastructure to data centre expansion must be examined as well as emissions and electricity usage.

Ireland's position as a major data centre economy is not accidental. It sits within a historical context of externally oriented development and FDI attraction. Conceptually, Ireland's data centre economy represents both the success and the limitations of the Irish FDI model. While technological development brings investment, employment, tax revenue, infrastructure and economic activity, the same FDI model creates challenges regarding environmental resources, regulation, transparency and the degree to which Ireland can meaningfully scrutinise multinational operators. The paper identifies a gap between the information necessary for comprehensive evaluation of impacts of AI-related infrastructure and what is currently publicly accessible in Ireland. The lack of disclosure is not a technical data problem, but a governance problem. If policymakers cannot distinguish AI-related consumption, then it becomes difficult to assess whether the benefits and costs are appropriately balanced. This governance problem can transcend into a broader political issue when infrastructure has potential geopolitical or military relevance.

This paper uses an AI-related energy estimate based on accelerated servers as a proxy rather than a directly reported measurement. This limitation is a policy and research implication in itself. More granular disclosure of workload, server type, energy consumption and cooling demand would allow future research to produce estimates of AI's environmental footprint that are substantially more accurate. With further research and disclosure, academics, policymakers and the public will be better equipped to answer the central question of whether Ireland can continue to facilitate rapid digital infrastructure growth while remaining committed to its environmental targets and political neutrality.

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