



Rialtas na hÉireann  
Government of Ireland

# Ireland's National AI Strategy

AI – Here for Good

Refresh 2024

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Prepared by the Department of Enterprise, Trade and Employment

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## Minister's Foreword

Ireland is an AI leader, with a National AI Strategy in place since 2021, before the increase in awareness of AI prompted by the launch of a ground-breaking large language model in 2022. Our AI strategy centres on trust, and I believe this is a key part of what makes Ireland such an attractive location for innovation in AI.

We have a strong pipeline of tech talent from all regions and all universities. Ireland's AI start up ecosystem is thriving – the most recent EU update on the Digital Decade ranked Ireland as 5<sup>th</sup> in the EU for Digital unicorns, an impressive result given our size. Through the Enterprise Digital Advisory Forum, which I chair, we have a focused and structured dialogue for Government to be able to hear the views and perspectives of enterprise and experts to facilitate the adoption of digital technologies among industry, including AI.

Since 2021, companies at the forefront of AI development have chosen Ireland as the location for their EU presence, and a number of world-beating businesses have established AI Research and Innovation hubs in Ireland. However, we cannot be complacent, and we must continue to take decisive action, updating our priorities, policies, and programmes, all the while remaining agile, and adaptable in response to unfolding developments.

If 2023 was the year that AI entered many of our lives, it is fair to say that 2024 is the year that it began to change them. This refresh of the National AI Strategy takes stock, and looks to the future, mindful in particular of the implementation of the EU AI Act, which provides the framework in Ireland and the EU for safe AI innovation and the protection of fundamental rights.

I firmly believe in the opportunity for a small, open economy like Ireland to harness AI for our greater good, in business, in the economy and in wider society. The use and application of this far-reaching technology has great potential to help solve challenges in healthcare, scientific discovery, sustainability, agriculture, transport, and mobility.

To achieve this, we need to ensure that there is better awareness and transparency among businesses and users of how trustworthy AI functions and how individual rights are protected. We also need to ensure that the right supports are there. This update of the National AI Strategy sets out a roadmap to increase and better coordinate these.

We must recognise concerns about the risks of AI, both real and perceived. We must address these to ensure that we are not letting opportunities pass us by. Effective implementation of the EU AI Act, which is framed around the protection of fundamental rights will be a big part of this, as will the rollout of a standards and certification regime for AI. We must also ensure that we are having open and informed conversations on AI and its potential.

Now is the time to take decisive and informed action to deliver a vision for AI in Ireland, where our businesses are more competitive, our public services are more efficient, and our economy and our society, are enhanced.



**Dara Calleary T.D.**

Minister of State for Trade Promotion, Digital and Company  
Regulation



## Executive Summary

Ireland's first National Artificial Intelligence (AI) Strategy, 'AI – Here for Good' was launched in July 2021. The National AI Strategy serves as a roadmap for how Ireland can leverage the potential of AI for unlocking productivity, for addressing societal challenges, and for delivering public services. It envisions a future for Ireland as an international leader in using AI to the benefit of business, public services, and - most importantly - for people, through a people-centred, ethical approach to AI development, adoption and use.

The strategy set out a whole of Government approach to putting the necessary enablers in place to underpin AI adoption in enterprise and public services, including a supportive innovation ecosystem, a secure data and connectivity infrastructure, and policies to ensure that the workforce is prepared for the impact of AI.

This refresh of Ireland's National AI Strategy takes account of the significant developments in AI technology and regulation since the original Strategy was published in 2021.

It builds on the solid foundations in place, continuing to emphasise the importance of trustworthy, person-centred AI development and use, while positioning Ireland as a leader in seizing AI's economic and societal benefits. It aims to balance innovation with proportionate regulation and trust-building measures.

Highlighted **Strategic Actions** in this refresh include:

- Ensuring Ireland is a leader in the effective implementation of the EU AI Act, including through constructive participation in the EU AI Board and its working groups and rolling out AI standards and certification,
- Commissioning a landmark study on the potential impacts of AI (including generative AI) and other advanced technologies on key sectors of the Irish economy,
- Developing a national campaign to raise awareness among SMEs of the benefits of AI adoption and the supports available,
- Establishing an AI regulatory sandbox to foster innovation in AI,
- Creating a National AI Research Nexus with a unified identity,
- Continuing to develop high calibre AI talent through Research Ireland Centres,
- Creating a safe space where civil and public servants are encouraged to experiment with AI tools,
- Updating the 2022 study on AI skills of the Expert Group on Future Skills Needs, aligned to the targets set in the EU Digital Decade for skills and female participation,
- Expanding the range of digital upskilling and reskilling initiatives, including those available via Skillnet Ireland, Springboard+, apprenticeships, and future human capital initiatives,

- Promoting increased use of and access to advanced AI computing services, and
- Supporting the establishment of infrastructure, including data centres, to underpin rollout of the next waves of AI technologies.

## Introduction

Ireland's first National Artificial Intelligence (AI) Strategy, 'AI – Here for Good' was launched in July 2021. The Strategy aims to ensure a responsible, rights-respecting and inclusive approach to developing, applying and adopting AI. This requires a strong partnership between Government, our enterprises and innovators, our research communities and civil society; we are all responsible for responsible AI.

The National AI Strategy serves as a roadmap for how Ireland can leverage the potential of AI for unlocking productivity, for addressing societal challenges, and for delivering public services. It envisions a future for Ireland as an international leader in using AI to the benefit of business, public services, and - most importantly - for people, through a people-centred approach to trustworthy AI development, adoption and use.

The strategy set out a whole of Government approach to putting the necessary enablers in place to underpin AI adoption in enterprise and public services, including a supportive innovation ecosystem, a secure data and connectivity infrastructure, and policies to ensure that the workforce is prepared for the impact of AI.

### **VISION**

*Ireland will be an international leader in using AI to the benefit of our population, through a responsible, person-centred approach to trustworthy AI development, adoption and use.*

A key part of ensuring AI is widely adopted in the economy and society more broadly is building public trust. Often what it comes down to is the need to preserve transparency and accountability, some of the key principles of trustworthy AI. Ireland is currently implementing the regulatory structure to provide for the supervision and enforcement of the EU Artificial Intelligence Act at a National level. The proportionate, risk-based approach taken in the EU AI Act is the right one, and it will protect individuals' safety and fundamental rights while promoting innovation.

Much of the focus since the launch of the Strategy has been on putting the necessary building blocks in place for low-risk adoption of trustworthy AI by businesses. This includes the development of a strong Governance ecosystem and the establishment of an AI Advisory Council. Targeted grant funding is now also in place, and we are well positioned to drive accelerated adoption of AI in the coming years, working closely with our Enterprise Agencies, and drawing on the advice and guidance of the independent AI Advisory Council.

The continuous adoption and deployment of new AI technologies is critical to driving the competitiveness and innovation of Irish businesses in international markets. Many AI-driven Irish businesses are scaling globally, with a number of excellent start-ups following in their tracks. Enterprise Ireland sees a major opportunity for Irish entrepreneurs to take the lead in this ever-changing field.

IDA Ireland also sees significant opportunities. Since the strategy was launched in 2021, global companies at the forefront of AI development have set up in Ireland, and a number of world-beating businesses have established AI Research and Innovation hubs in Ireland.

CeADAR, the EI/IDA Technology Centre for Applied Data Analytics and Machine Intelligence, has been designated Ireland's National AI Hub as part of the European Digital Innovation Hub network with a funding allocation of €1.9 million per annum. This designation will allow CeADAR to act as a one-stop-shop for businesses embarking on their AI journey.

The Artificial Intelligence Advisory Council convened its first meeting in January 2024, and is tasked with providing expert guidance, advice, and recommendations to government on emerging issues in artificial intelligence providing insights on trends, opportunities, and challenges. Council members also engage in public communications aimed at demystifying and promoting trustworthy, person-centred AI, including media interviews, and participation in business, public and sectoral events.

Also in 2024, Skillnet Ireland's Talent Landscape report revealed that increasingly businesses are seeing AI skills as a critical growth area and there is a growing awareness about the opportunities that AI can bring to businesses. Each year, through its Business Networks and National Initiatives, Skillnet Ireland delivers digital skills programmes to more than 13,400 workers across multiple sectors.

An initial direct equity injection of €750 million has been allocated by Government to develop electricity infrastructure, in particular to support Phase I of offshore grid development. This significant equity injection for EirGrid will facilitate further offshore wind development, enable decarbonisation of the broader economy, and enhance our competitiveness. The signalling of the provision of this funding will encourage further industrial investment and facilitate the progression of the digital and AI enabled economy.

This refresh of Ireland's National AI Strategy takes account of the significant developments in AI technology and regulation since the original Strategy was published in 2021.

It builds on the solid foundations in place, continuing to emphasise the importance of trustworthy, person-centred AI development and use, while positioning Ireland as a leader in seizing AI's economic and societal benefits. It aims to balance innovation with proportionate regulation and trust-building measures. It focusses on action across three main areas:



- **Building Public Trust in AI:**
  - Building public understanding of AI through trusted independent voices, including the AI Advisory Council, implementing the EU AI Act, rolling out standards and certification for AI, and making Ireland's voice heard in international AI governance forums.
  
- **Leveraging AI for economic and societal benefit:**
  - Supporting businesses in adopting AI and helping AI startups and scale ups to thrive.
  - Harnessing trustworthy AI for better public services.
  
- **Enablers for AI:**
  - Maintaining a strong research ecosystem that supports a healthy balance between fundamental and applied research.
  - Embedding AI and digital skills across the education and skills infrastructure and developing high-level AI skills.
  - Ensuring sustainable access to necessary compute capacity, data, and cybersecurity measures for AI.

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## Strand 1: AI and Society



Building public trust in AI is at the heart of Ireland's AI Strategy. Government has prioritised putting in place the appropriate governance mechanisms and guardrails to ensure AI is used responsibly in Ireland. However, it is also important that there is a strong ecosystem of independent sources of expertise who will participate in building an evidence-based understanding of AI among the public.

A key action in the AI Strategy was the appointment of an AI Ambassador, Dr Patricia Scanlon, who, during her tenure, played an invaluable role in building public trust in AI.

To build on this success, in January 2024 Government established the AI Advisory Council<sup>1</sup>, comprised of independent experts, and chaired by Dr Scanlon. The Council is providing independent, expert advice to Government on artificial intelligence policy. Its mandate also includes public engagement to continue to build confidence in the use of trustworthy AI. Since January 2024, the Council members have participated in hundreds of events, interviews, panels and other engagements.

Other sources of independent AI expertise include Ireland's research community, in particular Research Ireland supported research centres. For example, the #DiscussAI public engagement programme from ADAPT, the Research Ireland Research Centre for AI-Driven Digital Content Technology, has helped more than 45,000 members of the public to learn about AI since 2021.

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<sup>1</sup> DETE Press Release, 17 January 2024 <https://enterprise.gov.ie/en/news-and-events/department-news/2024/january/17012024.html>.



*Minister of State for Trade Promotion, Digital and Company Regulation Dara Calleary T.D. and Dr Patricia Scanlon, Chair of the AI Advisory Council*

### Strategic Actions

- 1A: Support the AI Advisory Council to ensure that Government has access to agile, independent expert AI advice so that it can respond in a timely manner to the rapid advances in AI technology, and emerging challenges and opportunities. (Department of Enterprise, Trade and Employment (DETE), Department of Taoiseach (DoT), other Departments, as appropriate)
- 1B: Raise awareness among the public and businesses of the guardrails in place to ensure use of trustworthy AI (AI Act, standards and certification etc.). (DETE)
- 1C: Make AI literacy<sup>2</sup> an integral component of Ireland's Literacy, Numeracy and Digital Literacy Strategy 2024-2033: Implementation Plan to 2028.<sup>3</sup> (D/Education and other Departments and agencies as appropriate)

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<sup>2</sup> 'AI literacy' means an understanding of the benefits, risks, safeguards, rights, and obligations in relation to the use of AI systems.

<sup>3</sup> Ireland's Literacy, Numeracy and Digital Literacy Strategy 2024-2033: Implementation Plan to 2028, May 2024 <https://www.gov.ie/en/publication/3f341-towards-a-new-literacy-numeracy-and-digital-literacy>

## Strand 2: Governance for Trustworthy AI



Significant progress has been made on this strand since the AI Strategy was launched in 2021.

### Regulation

Most importantly, the landmark EU Artificial Intelligence Act entered into force in August 2024. This risk-based regulation puts in place guardrails for the development and deployment of trustworthy, human-centred AI in the European Union, balancing protection of fundamental rights with promotion of innovation. The Act provides regulatory clarity and certainty for businesses that are planning to develop AI or to invest in AI solutions.

Importantly, the EU AI Act will place few, or no, obligations on most businesses who use AI to improve their productivity and effectiveness. Most AI systems pose minimal or no risk and will have no obligations under the Act. Typical low risk business applications include voice to text transcription, content recommendation, marketing tools, and back-office administration tools, such as inventory management, accounting and scheduling.

The AI Act is primarily focussed on high risk uses that have the potential to significantly impact individuals' rights or safety – examples include the use of AI for recruitment or to control access to essential services such as credit or health insurance. The Act prohibits use of AI in cases of unacceptable risk (for example criminal profiling and social scoring), and it sets out clear requirements that must be met for use in cases of high and medium risk. The Act will be implemented on a phased basis over three years, with the prohibited practices taking effect from February 2025.

Implementation of the Act will be steered at an EU level by the EU AI Board, which will have several working groups to advise on key deliverables, including development of guidelines and codes of practice. Ireland will be represented on all these groups and will advocate for a balanced approach that fosters innovation.

## Standards and Certification

The National Standards Authority of Ireland (NSAI) is actively involved in the development of EU-wide standards for AI, which will be implemented in parallel with the AI Act. Developers and deployers of AI systems will be required to comply with these standards under the Act, which will provide reassurance to businesses acquiring AI systems.

The field of AI is highly dynamic, and its regulation continues to present new and novel challenges. We will continuously review and revise governance structures, in light of developments and experience.

### Strategic Actions

- 2A: Ensure Ireland is a leader in the effective implementation of the EU AI Act, including through constructive participation in the EU AI Board and its working groups. (DETE, other Departments, Competent Authorities, as appropriate)
- 2B: Develop a campaign to raise SME and MNC awareness of the implications of the AI Act, and AI standards regime, for them. (DETE, Enterprise Ireland, IDA)
- 2C: Implement the National Standards Authority of Ireland Roadmap for AI Standards and Assurance. (DETE, NSAI, Enterprise Ireland, IDA Ireland)
- 2D: Ensure Ireland's voice is heard in international fora on the governance of AI. (Department of Foreign Affairs (DFA), DETE, Department of the Environment, Climate and Communications (DECC), Department of Further and Higher Education, Research, Innovation and Science (DFHERIS))

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### Strand 3: Driving AI in Irish Enterprise



Ireland has become a global digital technology hub, with pioneering Irish innovators playing a pivotal and disruptive role in transforming industry across many sectors. The AI sector in Ireland is flourishing. We have a strong pipeline of tech talent from all regions and all universities. Irish businesses are increasingly using AI and advanced digital tools to achieve success in international markets. Irish entrepreneurs are developing disruptive AI solutions in sectors including healthcare, cybersecurity, education, sustainability, finance, content creation, supply chain and customer service, for a global market.

The launch of the first widely available chat interface to a Large Language Model in November 2022 marked a step change in the accessibility and functionality of general-purpose AI technology. Wide availability of new Generative AI models, which can generate synthetic text, images, audio, video, and software will have significant implications for the way many businesses operate and for their competitiveness.

Generative AI is a powerful tool which businesses can use to improve productivity and efficiency, to innovate, and to enhance their relationships with their customers. Typical applications include AI systems for quality and process control in manufacturing, AI chatbots/assistants in business services, and generative AI platforms used across the content creation sectors.

Traditional or “narrow” AI applications are also continuing to evolve and offer huge opportunities for businesses.

AI technology has been developing so rapidly that it may be difficult for businesses to identify the opportunities it presents. There are a range of issues that need to be considered in advance of adoption of this technology. For example, established processes may need to be adapted, training may be required, and a control framework to mitigate risks may be necessary.

Government will help businesses to navigate this period of rapid technological change, to take advantage of the opportunities, and to protect themselves from the risks (including the risk of falling behind their competitors). Working with our enterprise agencies and the business representative bodies, we will help businesses to understand the implications of AI for their business model.

### **Adoption of AI by Irish Businesses**

Following the publication of the National AI Strategy, the Department of Enterprise, Trade and Employment has established an Enterprise Digital Advisory Forum to advise and work with Government to drive industry adoption of Artificial Intelligence (AI) and other digital technologies. Membership of the Forum includes officials from the Department of Enterprise, Trade and Employment, the State agencies as well as enterprise and AI experts that were selected through an open expression of interest process. The Forum is chaired by the Minister of State for Trade Promotion, Digital and Company Regulation.

A priority of the Forum is to support Government in implementing the AI strategy. As part of this work, the Forum is advising Government on how best to use the “AI development ladder framework” to drive a phased approach to AI adoption - from awareness-raising through opportunities to connect, explore and experiment with AI, to assistance for implementation - which can be rolled out to enterprises, with a focus on microenterprises and SMEs across the country.

**CeADAR, Ireland's Centre for Applied AI**, was established by Government, under the Enterprise Ireland Technology Centre Programme, to act as the bridge between the worlds of applied research in AI and data analytics and their

commercial deployment by business. CeADAR will continue to focus on meeting industry needs in the areas of data analytics and AI. It will demystify these concepts for a non-technical audience and explain how AI can be applied in practice. CeADAR is already experienced in assisting companies across a wide range of industry sectors in adding value through use of AI and has an existing established programme of formal training in AI. Options will be examined to expand CeADAR's range of services so that it becomes the kernel of the national support system for AI adoption by all Irish based business, indigenous and multinational.

SMEs seeking supports for  
AI adoption can visit  
<https://ceadar.ie/edih/>

CeADAR, along with the three other European Digital Innovation Hubs (EDIHs) in Ireland (in Cork, Sligo, and Mullingar), has a mandate to act as a one-stop shop to help SMEs in going digital. Its low cost, or no cost, supports will help small businesses who are considering using AI tools. For example, CeADAR offers a range of training for SMEs including “AI for Executives”, “AI Essentials for Everyone” and “AI Ambassadors training”. It has also developed training on how to use open-source tools to build an AI chatbot solution for business needs.

In addition to skills and training, the CeADAR EDIH programme also offers supports in three other pillars:

- **Test Before Invest**, including a Digital Maturity Assessment and follow-up consultancy, a series of workshops to scope proof of concepts and dedicated project support,
- **Support to Find Investment**, via an online platform and workshops,
- **Ecosystem Building**, with events and networking.

**Enterprise Ireland and IDA Ireland** have teams of skilled technologists to advise their client businesses about how AI tools are impacting their sectors, to guide them in exploring how they can integrate AI into their business models, and to advise them on what Government assistance is available.

To support adoption of AI by **micro-enterprises and SMEs**,

- the Department of Enterprise, Trade and Employment developed and launched the Grow Digital Portal - a new free service that allows businesses to self-assess their digital capability and receive a scorecard identifying solutions to drive efficiencies.
- The Local Enterprise Offices (LEOs) widened the eligibility for the Grow Digital voucher by extending it to all businesses regardless of their export status, with up to 50 employees, modernising eligible expenditure and doubling the grant to €5,000; The Grow Digital Voucher can be used to help businesses act on recommendations received through the Grow Digital Portal, and to invest in digital systems such as online booking, stock control, AI, customer insights, payroll software, and cyber security.

#### Other European Digital Innovation Hubs

**FactoryxChange (FxC)** led by the Irish Manufacturing Research in Mullingar to accelerate factories to become ‘Factories of the Future’ embracing the ecological, digital, and societal challenges. [www.factoryxchange.ie](http://www.factoryxchange.ie)

**ENTIRE** led by Tyndall National Institute in Cork to help SMEs and start-ups to become more competitive in their business/production processes using digital technologies such as IoT and sensors. [entire-edih.ie](http://entire-edih.ie)

**DATA2SUSTAIN** led by Atlantic Technological University in Sligo, to increase the transformation capacity of SMEs in the Northern and Western Region with a focus on circular economy, operations and sustainability areas. [data2sustain.ie](http://data2sustain.ie)



- The LEOs introduced the Digital for Business consultancy scheme that provides expert digital consultants to help businesses with up to 50 employees explore technology adoption opportunities.

The launch of Grow Digital is a key deliverable under the National Digital Strategy, to help achieve the targets of 90% of SMEs having at least basic digital intensity, and at least 75% take-up of AI, Cloud, and Data Analytics by 2030.



*DETE officials promoting Grow Digital at the National Ploughing Championships 2024*

### **Opportunities for High Potential AI Start Ups and Scale Ups**

Nurturing AI entrepreneurs, start-ups and scale-ups will continue to be a key priority for Government. Access to finance, and in particular access to risk capital, is an important enabler for innovative start-ups. More than half of firms supported by Enterprise Ireland's equity investment programmes (Competitive Start Fund, High Potential Start Up Programme and Seed and Venture Capital programme) in the 10 years to end 2022 were in the ICT sector and an increasing number are now in AI. Government, through Enterprise Ireland, launched a new Seed & Venture Capital Scheme in 2024, which will prioritise specific sectors and technologies, including AI.

**The AI Ecosystem Accelerator in CeADAR as part of the European Digital Innovation Hub programme will offer 12 companies entrepreneurial, fundraising, technical and commercial mentorship over a 9-month programme in 2024/25.**

Government has also committed to developing a suite of State backed scaling instruments which will increase the availability of capital with larger ticket sizes and higher risk appetite for innovative Irish businesses (including AI businesses) with the potential to scale.

### **Ireland as an Attractive Investment location for Innovative AI Companies**

Ireland is a leading hub for international investment, particularly in the financial, ICT, life-sciences and global business services sectors. A number of firms have established centres of excellence in AI and data science here. Applied AI and machine learning have been deployed in the manufacturing, services and industrial technology sectors here for many years. We will continue to work to ensure that Ireland remains an attractive location for investment and to ensure that the Irish AI ecosystem works together coherently to drive AI-led new product development, innovation, productivity and growth.

### Strategic Actions

- **3A:** Commission research which analyses the potential impacts of AI (including generative AI) and other advanced technologies on key sectors of the Irish economy. The research will be forward looking and will identify sectoral use cases and make recommendations, including policy interventions to drive greater uptake, and drive resilience at firm and worker level. (DETE, AI Advisory Council, National Competitiveness and Productivity Council)
- **3B:** Increase the focus on helping its client base to adopt digital and AI tools as part of the Enterprise Ireland new five-year strategy, which will commence in 2025. (Enterprise Ireland)
- **3C:** Develop a National Campaign to raise awareness among SMEs of the benefits of AI adoption and the supports available and roll out that campaign in collaboration with business representative groups. (DETE, business representative groups)
- **3D:** Continue to provide and enhance the level of targeted support, training and advice to businesses to drive the adoption and deployment of AI systems across all business and industry sectors. (Enterprise Ireland, LEOs, CeADAR, IDA)
- **3E:** Tap into the leadership and expertise of the MNC community to support indigenous enterprise (i.e. 'local sourcing'). (IDA, Enterprise Ireland)
- **3F:** Examine options to expand CeADAR to be a national centre of sufficient scale to drive and support adoption of AI by businesses, including start-ups, SMEs, and MNCs. (DETE, Enterprise Ireland, IDA)
- **3G:** Incentivise private investment in AI and other deep-tech start-ups/scale ups through state-backed equity investment programmes. (DETE, Enterprise Ireland)
- **3H:** Establish an AI regulatory sandbox to foster innovation in AI; to provide legal certainty for investors; and to facilitate regulatory learning. (DETE, EI, IDA, other Public Services Bodies as appropriate)
- **3I:** Use public procurement to support innovative Irish SMEs, drawing on the expertise of the Enterprise Digital Advisory Forum where appropriate. (Department of Public Expenditure, NDP Delivery and Reform (DPENDR), DETE)

## Strand 4: AI Serving the Public



AI holds great promise for the delivery of better Public Services, and there is a strong ambition across the public service to harness trustworthy AI for this purpose, as part of the digital transformation of the Public Service.<sup>4</sup>

Our strategic approach is to create the framework conditions for successful AI adoption (skills, ethical guidelines, procurement frameworks, sharing best practice and building awareness) to equip public service bodies with the tools they need to use AI.

In January 2024, Government committed that all AI applications used by the Public Service will comply with seven requirements for ethical AI developed by the European Commission's High Level Expert Group on AI.<sup>5</sup> Interim Guidelines have been put in place to help public servants comply with this, while detailed guidelines that fully reflect the requirements of the new EU AI Act are in development.<sup>6</sup>

**RevAssist** is an internal service in the Revenue Commissioners allowing staff to query Tax and Duty Manuals (TDM) using natural language. It covers 1500+ manuals on taxes, duties, and levies. Staff use a simple interface to compose queries, receiving summarised responses with references to source manuals. The project uses GenAI/LLM technology, with the interface built "as a service" to allow easier upgrading as more advanced products become available.

<sup>4</sup> Better Public Services, May 2023 <https://www.gov.ie/en/publication/80247-better-public-services-public-service-transformation-2030-strategy>

<sup>5</sup> Press Release: "Government commits to using trustworthy AI in the Public Service", 9 January 2024 <https://www.gov.ie/en/press-release/a5c3e-government-commits-to-using-trustworthy-ai-in-the-public-service/>

<sup>6</sup> Interim Guidelines on Trustworthy AI in the Public Service, January 2024 <https://www.gov.ie/en/press-release/a5c3e-government-commits-to-using-trustworthy-ai-in-the-public-service>.

To ensure our public servants have the appropriate skills to use AI, targeted learning and development initiatives have been offered to approximately 500 public servants to date. Programmes include an AI Masterclass programme targeting senior leaders in the public and civil service and an AI Essentials programme targeting senior managers. This initiative will continue to be scaled and delivered across all grades in the public and civil service, to ensure public servants are knowledgeable about AI, and its safe and ethical use in the Public Service.

“Narrow” AI applications are being used in many areas of the public service, for example weather forecasting, prediction of disease outbreaks in animal herds, and in smart automated document handling. The emerging suite of generative AI tools have significant potential to augment the work of public servants in areas such as policy research, service delivery and administration. A number of central pilot projects to test proofs of concept and use cases are currently underway.

### **Strategic Actions**

4A: Publish guidelines for the responsible use of Artificial Intelligence in the Irish Public Service. (DPENDR)

4B: Investigate use of AI for Public Service delivery, including via pilot AI projects. (DPENDPR, all Public Service Bodies)

4C: Create a safe space where civil and public servants are encouraged to experiment with AI tools. (DPENDR, Public Service Bodies)

4D: Identify and share examples of AI projects, learnings, and best practice in the Public Service. (DPENDR, Public Service Bodies)

4E: Raise awareness in the Public Service of supports to assist with AI adoption, for example, the European Digital Innovation Hub (EDIH) in CeADAR, and the Research Ireland Public Service Fellowship programme. (DPENDR, DETE)

4F: Ensure the Public Service has access to skilled AI professionals through recruitment; and provide reskilling and upskilling opportunities on AI to Public Service staff. (DPENDR, Institute of Public Administration (IPA), Public Service Bodies)

## Strand 5: A Strong AI Research and Innovation Ecosystem



Ireland's excellent Research and Innovation (R&I) ecosystem is a key driver of our economic development and international competitiveness.

Government is committed to maintaining a good balance of investment across the spectrum from fundamental to market-oriented research. A strong eco-system for fundamental AI research through collaboration between universities, research institutions, and industry is an essential foundation for breakthroughs in AI technologies and a healthy AI sector. Equally important is a research ecosystem which supports applied AI, and the rapid deployment and commercialisation of AI technologies. This includes support for start-ups, incubators, and accelerators that bring AI solutions to market.

Ireland has a number of excellent AI research facilities. However, the ecosystem would benefit from greater coherence. By unifying the goals of the various AI research centres and creating a National AI Research Nexus we will increase the potential of Ireland's research community to deliver serious and significant impact in the global AI landscape.

**CAMEO** is a project funded under the Disruptive Technologies Innovation Fund project to develop Earth Observations (EO) services sector in Ireland and explore the potential impact of EO data in the areas of climate, agriculture, and the marine. It has used artificial intelligence and satellite technology to develop an early warning system for communities at risk of severe flooding in Carrick-on-Shannon in Co. Leitrim, Middleton in Co. Cork, Athlone in Co. Westmeath, and Limerick City.

## **Incentivising Research and Innovation**

The Government provides a range of funding programmes to support collaboration between industry, research, and academia. Although broader than AI, it is important to highlight the current programmes available through which AI related projects are funded. This includes:

- Enterprise Ireland funding programmes such as:
  - Innovation Vouchers,
  - Innovation Partnerships,
  - Technology Centres,
  - Technology Gateways and
  - European Digital Innovation Hubs, such as CeADAR, Ireland's Centre for Applied AI;
- Knowledge Transfer Ireland and the Technology Transfer Office network;
- IDA Ireland funding programmes such as Innovation Vouchers, access to Innovation Partnerships and R&D Grants.
- Research Ireland Research Centres, conducting fundamental research, and Centres for Research Training, including:
  - ADAPT (AI-driven Digital Content Technology)
  - INSIGHT (Data Analytics)
  - Lero (Software)
  - EMPOWER (Data Governance).
- Disruptive Technologies Innovation Fund (DTIF).

The Department of Enterprise, Trade and Employment established the DTIF to invest in the development and deployment of disruptive technologies and applications on a commercial basis. It is designed to drive collaboration between Ireland's research base and businesses in cutting edge technology areas. Nearly half (44%) of the €370 million funding allocated to date via the DTIF, has been to projects with an AI component. An upcoming review of the Fund will assess its effectiveness in incentivising cutting edge innovation.

### Strategic Actions

- 5A: Create a National AI Research Nexus with a unified identity, including through collaboration agreements and strategic partnerships between the Research Ireland Research Centres and Enterprise Ireland Technology Centres that specialise in AI. (DFHERIS, DETE, Research Ireland, Enterprise Ireland)
- 5B: Promote Irish participation in the EU AI Innovation package measures. (DECC, DFHERIS, DETE, Enterprise Ireland)<sup>7</sup>
- 5C: Encourage participation by Irish researchers and enterprises in EU and international programmes and co-funding partnerships that support AI innovation; and continue to support AI R&I co-funding partnerships across the island of Ireland and internationally. (DFHERIS, DECC, DETE, Enterprise Ireland, Research Ireland)
- 5D: Promote R&I for AI through initiatives with a regional focus, including the Smart Regional Enterprise Innovation Scheme, underpinned by Ireland's Smart Specialisation Strategy and the Regional Enterprise Plans.<sup>8</sup> (DETE and relevant Departments and agencies)
- 5E: Review DTIF's impact on AI based collaborative R&D enabling enterprises to offer innovative AI enabled market offerings. (DETE, Enterprise Ireland)

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<sup>7</sup> European Commission Press Release, January 2024  
[https://ec.europa.eu/commission/presscorner/detail/en/ip\\_24\\_383](https://ec.europa.eu/commission/presscorner/detail/en/ip_24_383)

<sup>8</sup> Smart Specialisation Strategy, July 2022 <https://enterprise.gov.ie/en/publications/publication-files/national-smart-specialisation-strategy-for-innovation-2022-2027.pdf>



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## Strand 6: AI Education, Skills and Talent



Since the publication of the National AI Strategy in 2021, a range of measures have been put in place to ensure that Ireland has the talent and skills necessary to reap the benefits of AI. It is clear now in 2024 that AI is a disruptive technology which will lead to significant changes to the world of work, with consequent implications for our skills needs.

The National Strategic Roadmap for the EU Digital Decade Policy Programme acknowledges that it is imperative that we continue to provide the digital skills needed to support the specific needs of the labour market across all areas of the economy. Continuing to ensure adequate provision of digital skills, both basic and high-level and including for AI, remains a central area of focus for Ireland, including in relation to ensuring gender parity and digital inclusion.<sup>9</sup>

The rapid evolution of AI technology means it is too early to predict with accuracy the full impact that AI will have on the labour market. Ireland, as an advanced economy, will be part of the earliest wave of changes, with studies<sup>10</sup> indicating that about a third of employment in Ireland is likely to be impacted by AI. In many cases, AI is more likely to complement those roles than to substitute them.<sup>11</sup> However, this complementarity will

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<sup>9</sup> Ireland's National Strategic Roadmap for the EU Digital Decade Policy Programme 2024 <https://www.gov.ie/en/publication/da0d5-irelands-national-strategic-roadmap-for-the-eu-digital-decade-policy-programme/>

<sup>10</sup> *Artificial Intelligence: Friend or Foe*, Department of Finance and the Department of Enterprise, Trade and Employment, June 2024 <https://www.gov.ie/en/publication/6538e-artificial-intelligence-friend-or-foe>

<sup>11</sup> European Central Bank Research Bulletin, "Reports of AI ending human labour may be greatly exaggerated", November 2023 <https://www.ecb.europa.eu/pub/economic->

not happen automatically, rather it will require the development of new capabilities and capacities in the workforce.

The likely impact of current (and future) applications of generative AI is not captured by much of the research to date. However, as a priority, Government is closely monitoring the potential impacts of AI on the world of work, as the technology evolves, and this is a topic that Government has asked the AI Advisory Council to examine.

Government's focus will continue to be on embedding AI and digital skills provision across our education and skills infrastructure. We will also engage with key stakeholders, including the National Economic and Social Council and the Labour Employer Economic Forum, to ensure a fair transition of the world of work.<sup>12</sup>

The development of digital skills throughout the primary and secondary curriculum provides the foundation on which all adult digital skills are built, and a reform of the curriculum at both primary and post-primary is currently underway. It is important to note that the skills needed for AI are not only digital skills, and the continued development of empathetic and cognitive skills will be crucial to the success of AI adoption in Ireland.

### **High Level AI Skills**

Both given the demand for such skills and in the context of meeting our EU Digital Decade targets for ICT specialists, Ireland will continue to invest significantly into specialised educational programmes aimed at developing high-level AI research skills. This includes PhD programmes, research fellowships, and specialised 3rd level courses in AI and machine learning. This will build national capacity in AI which will enhance Ireland's standing as a location for development and deployment of AI.

Research Ireland Centres including Insight, ADAPT, Connect and Lero have an excellent track record in developing high calibre PhD graduates in AI - Insight alone has produced over 1,000 PhD graduates in the last 10 years. MNCs and indigenous Irish businesses have benefited significantly from this talent pipeline.

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[research/resbull/2023/html/ecb.rb231128~0a16e73d87.en.html](https://www.ecb.europa.eu/research/resbull/2023/html/ecb.rb231128~0a16e73d87.en.html)

<sup>11</sup> International Labour Organisation study, Generative AI and Jobs: A global analysis of potential effects on job quantity and quality August 2023

[https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS\\_890740/lang--en/index.htm](https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_890740/lang--en/index.htm)

<sup>11</sup> International Monetary Fund paper, Gen-AI: Artificial Intelligence and the Future of Work, January 2024

<https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2024/01/14/Gen-AI-Artificial-Intelligence-and-the-Future-of-Work-542379>

<sup>12</sup> In line with EU Directive 2002/14/EC which confers on employees a general right to information and consultation from their employer on matters that affect them

## AI Skills for the Labour Market

Our ambition is that AI adoption will result in safer, more productive workplaces, where workers are empowered by AI tools, but not replaced. The development of a whole-of-government approach to skills policy, including through the establishment of Ireland's new National Skills Council, is underway. The report on the first project under a DFHERIS / ESRI research programme on the role of emerging technologies, including AI, in labour market skills needs will be published in 2024.

A range of digital and related upskilling and reskilling initiatives are being made available via Skillnet Ireland, Human Capital Initiative and Springboard+. Skillnet Business Networks are providing AI upskilling to businesses at all levels, from one-day foundational training, up to the MSc in Artificial Intelligence co-developed with the University of Limerick. As of early 2024, work under Springboard+ and the Human Capital Initiative has resulted in three AI courses under the Springboard+ 2023 programme offering 78 places, and three courses under Human Capital Initiative Pillar 1 providing 55 places. A further 395 places are available between TCD, UCD and UL on AI and AI in Medicine programmes under HCI Pillar 3.

AI-related technology apprenticeships and Further Education programmes will also provide opportunities to meet the variety of skills needed across the workforce. In addition to meeting key skills needs from Level 6 and above on the National Framework for Qualifications, this approach will serve to diversify and widen the AI talent pipeline into the future including promoting greater female participation, also a requirement of our EU targets.

Key Skillnet Business Networks providing upskilling and specialised training in Artificial Intelligence (AI) include Technology Ireland ICT Skillnet, Technology Ireland Digital Skillnet, itag Skillnet and Tech Industry Alliance Skillnet.

### Strategic Actions

- 6A: Update the 2022 study on AI skills of the Expert Group on Future Skills Needs, as part of a work programme on technology skills and in the context of the EU Digital Decade targets on digital skills and female participation. (Expert Group on Future Skills Needs)
- 6B: Participate in the OECD study on the impact of Generative AI on skills needs of SMEs. (DETE)

- 6C: Develop guidelines on the use of AI for teachers and school leaders, building on guidelines published by the European Commission, and consider the appropriate integration into curricula of AI and AI literacy.<sup>13</sup> (D/Education)
- 6D: Continue to develop high calibre AI talent through the Research Ireland Research Centres, including through continued funding of PhD graduates. (DFHERIS, Research Ireland)
- 6E: Expand the range of digital upskilling and reskilling initiatives, including those available via Skillnet Ireland, Springboard+, apprenticeships, and future human capital initiatives. (DFHERIS)

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<sup>13</sup> European Commission, Directorate-General for Education, Youth, Sport and Culture, *Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators* <https://data.europa.eu/doi/10.2766/153756>

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## Strand 7: Infrastructure for AI



The development and deployment of AI systems requires access to hard infrastructure such as computing capacity, storage, and networks. In addition, trustworthy AI systems require soft infrastructure in the form of large, quality-controlled data sets for training.

AI technology continues to advance at pace. While the most powerful large language models will likely continue to require a very high level of compute capacity, new tools and methods of development mean that powerful models can be developed to operate in a leaner, faster, more energy efficient way.

### **Compute Capacity**

Given the heavy computational overhead of many AI models, unlocking access to advanced High Performance Computing (HPC) and quantum computing infrastructures is a critical lever for AI innovation in Ireland.

One way to do this is to promote access by Irish businesses and researchers to the pooled resources that are available across the European Union. The EU currently has three of the ten most powerful supercomputers in the world and continues to invest in its High-Performance Computing ecosystem - in part through its development of AI Factories.<sup>14</sup>

Government will conduct a strategic review of the High-Performance Computing services required to drive innovation and adoption of AI and other advanced technologies, and this will inform future investment.

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<sup>14</sup> European Commission, March 2024 <https://digital-strategy.ec.europa.eu/en/policies/ai-factories>

## **Data**

Unlocking the potential of existing data sets will be critical for driving the development and uptake of AI. For organisations like SMEs and the public sector it is crucial that best practices for data management and governance are put in place. The next Public Service Data Strategy, along with a series of new Data Standards and frameworks, will outline how the Public Service will address the issue. Similarly, enterprises will be encouraged to recognise the intrinsic value of their data. The EU Data Act will give both individuals and businesses more control over device-generated data through a reinforced data portability right, copying or transferring data easily across different services.

## **Cybersecurity**

This computing and data infrastructure is valuable. Like all valuable assets, it is therefore vulnerable to threats. The National Cyber Security Centre (NCSC) is responsible for advising public bodies and Critical National Infrastructure providers of current threats and vulnerabilities associated with network information security. In parallel, businesses will have increased responsibility for their own cybersecurity under the EU NIS2 Directive and the EU Cyber Resilience Act.

## **Data Centres and Energy Infrastructure**

Data Centres are a critical part of the infrastructure required for AI. Data Centres are very large users of energy, and the Government Statement on the Role of Data Centres in Ireland's Enterprise Strategy (published in 2022) clearly articulates the need to balance Data Centre development with our climate ambitions.

Data Centres have the potential to play an important role in driving the acceleration of renewable energy delivery. Their energy demand profile, which is predictable and at scale, can incentivise investment in renewable generation.

Ireland's climate and energy ambition is to increase the proportion of renewable electricity to up to 80% on the grid by 2030, with 20GW of offshore wind capacity by 2040 and delivering at least 37GW in total by 2050. Alongside this ambition, the National Energy Demand Strategy (NEDS) sets out a plan for a more dynamic energy demand system that can better respond to high availability or limited supply of renewable energy generation, and this includes a role for Large Energy Users such as data centres. The NEDS aims to ensure that we maximise the use of renewables, and limit the use of conventional generation, improve security of supply, and decarbonise the grid.

*Powering Prosperity - Ireland's Offshore Wind Industrial Strategy* highlights the potential for the co-location of large energy users, such as data centres, with renewable energy generation as a means of helping to decarbonise large industry. An initial direct equity injection of €750 million has been allocated by Government to develop electricity infrastructure, in particular to support Phase I of offshore grid development. This significant equity injection for EirGrid will facilitate further offshore wind development, enable decarbonisation of the broader economy, and enhance our competitiveness. The signalling of the provision of this funding, to expand the capacity of our electricity grid, will positively impact future investment decisions – currently being considered by both indigenous and multi-national companies.

### Strategic Actions

- 7A: Complete a strategic review of the High-Performance Computing services to researchers in academia and enterprise which are required to drive innovation and adoption of AI and other advanced technologies and implement the recommendations, with a view to increasing Irish access to advanced AI computing power, including EU supercomputing facilities. (DFHERIS, DETE, DPENDR, Research Ireland)
- 7B: Progress a plan led approach to maximise value of grid and energy investment, including in the context of the development of renewable energy sources, to ensure that Ireland can meet the energy needs of Large Energy Users in the medium term. This will include consideration of green or renewable energy parks. (DECC, DETE)
- 7C: Assess the cybersecurity risks arising from greater use of AI technology, including exploitation of any infrastructure vulnerability and loss of sensitive data which includes proposals and options to mitigate these risks. (NCSC)