



Department for the  
**Economy**  
www.economy-ni.gov.uk

# A 10X ECONOMY

RESEARCH PROGRAMME 2022-23 AND BEYOND

PROVIDING AN EVIDENCE-BASE FOR ECONOMIC  
POLICY IN NORTHERN IRELAND

October 2022



**NORTHERN IRELAND'S DECADE OF INNOVATION**

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## 1. Introduction

- 1.1. Northern Ireland's Economic Vision sets out an ambition for a '10X Economy'. A decade of innovation will encourage greater collaboration and innovation to deliver a ten times better economy with benefits for all our people. This ambition can be achieved by focussing on innovation in areas where we have real strengths and making sure these gains mean something to all businesses, people, and places in Northern Ireland. Overall, we will see a positive impact on our economic, societal, and environmental wellbeing.
- 1.2. To help deliver upon this vision there will be a need for evidence-based policymaking. The Department for the Economy, along with its research partners, has already completed many important projects under its previous 10X Research Programme for 2021-22. Some key examples of recent research included the following:
- The **NI Skills Barometer 2021**, sponsored by Department for the Economy & Invest NI, and undertaken by Ulster University Economic Policy Centre (UUEPC), is relied upon for careers advice by our young people. The NI Skills Barometer is instrumental in informing wider skills policy and programmes here.
  - Research on the **High Street Scheme**, undertaken by Retail Economics for the Department for the Economy, was used to inform the roll-out of this key stimulus measure in 2021 and assess its impact.
  - Research was undertaken on the **business growth and productivity effects of Invest NI and UKRI grant support for R&D and innovation** by Queen's University Belfast (QUB) for the Department for the Economy & Invest NI. The findings of this research have been used to inform the Independent Review of Invest NI.<sup>1</sup>
  - A report by Circle Economy, published in June 2022, provides a snapshot on the gap between Northern Ireland and a **Circular Economy**, identifying how materials flow through the local economy. This report will be used to help inform the development of the Circular Economy Strategic Framework.

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1 [Independent Review of Invest NI \(investnireview.org.uk\)](https://investnireview.org.uk)

- A suite of **10X Metrics** is being chosen by the Department for the Economy, to measure Northern Ireland's economic performance on the world stage, covering the 10X pillars of innovation-led, inclusive, and sustainable growth. This work is being informed by research on **international best practice**, undertaken by Dr David Skilling and published in August 2022.
- Research examined the growth of the **Digital Sector and demand for IT workers** within Northern Ireland. This research by the Department for the Economy generated interest from policy makers, as well as wider stakeholders, particularly given the continued reports of IT skills shortages across Northern Ireland.

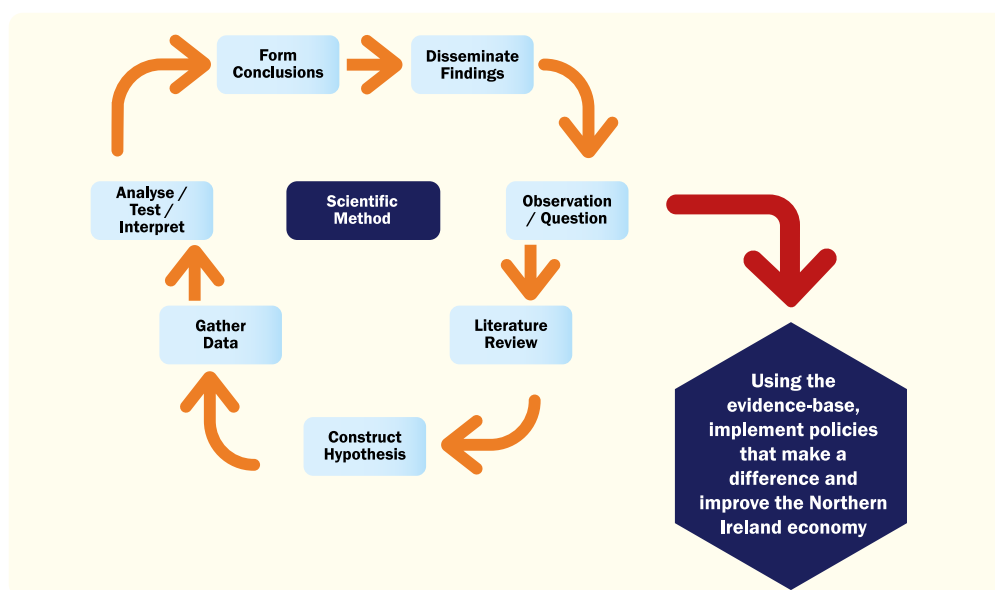
1.3. We want to build on the good research work undertaken thus far. This Research Programme document has been completed to identify key research areas for the 2022-23 year and beyond and will be the foundation building block for the 10X Vision. We want the next twelve months to really accelerate our 10X economy evidence-base, to undertake **a year of research, for a decade of innovation** and achieve our overall mission of this DfE 10X Economy Research Programme:

***“To produce research and analysis that shapes policy decisions. The evidence-base should drive successful delivery, well informed Departmental economic priorities, rebuild a stronger economy and set us firmly on the journey to realise our vision for innovation led, inclusive and sustainable growth.”***

## 2. Building on Success

- 2.1. The Practical Guide to Policy Making in Northern Ireland states that the advice and decisions of policy-makers should be based upon the best available evidence from a wide range of sources; this includes reviewing existing research, commissioning new research, and consulting relevant experts.
- 2.2. Research into the Northern Ireland economy typically follows the normal scientific method of analysing and interpreting data collected and forming conclusions. The dissemination of completed research is very important. The Department for the Economy has published dozens of research reports on its website, with the analysis often being picked up and used by local media, academia, politicians, and the general public.

**Figure 1: The Research Cycle and Policy-Making**



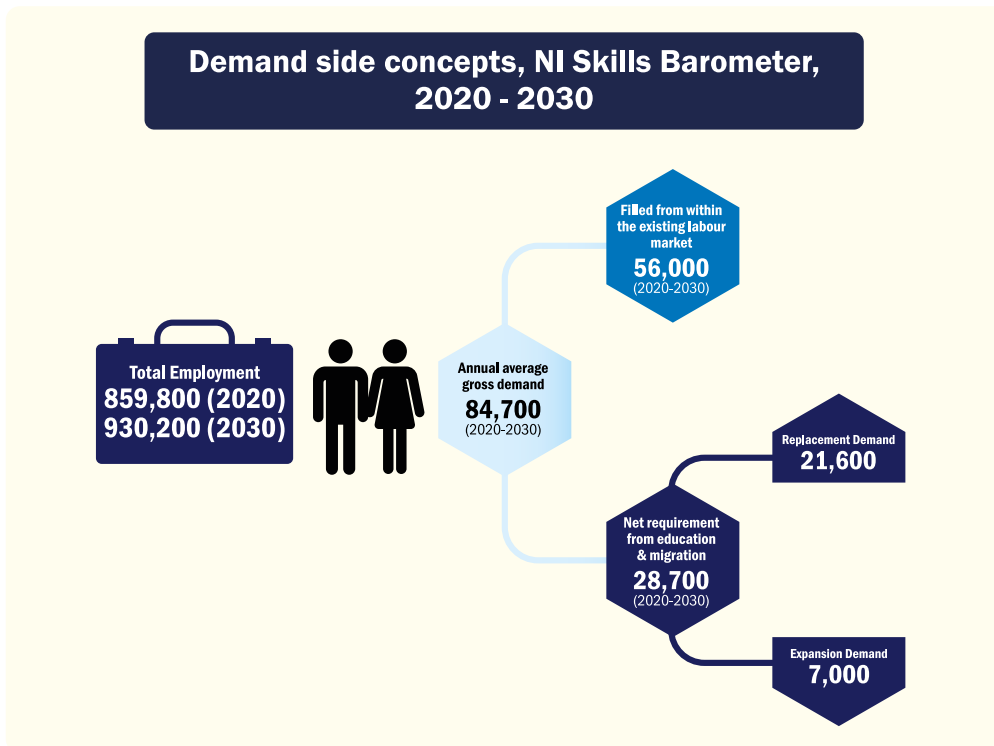
- 2.3. Research should make a difference to people's lives through its shaping of policy development and delivery. The research taken forward by the Department for the Economy has been of importance across a wide range of policy areas, including with regards to:
- Economic recovery and setting our course for long-term development;
  - Developing strategies and policy documents;
  - Informing programmes of interventions within DfE and others; and
  - Informing the media and general public about economic matters here.

## Previously Published Research

2.4. Several pieces of research have been published under the previous 10X Economy Research Programme for 2021-22. Some of the key examples published by our research partners, or by DfE are set out below. Annex 1 to this document provides a more detailed list of research published.

### Northern Ireland Skills Barometer 2021

Sponsored by the Department for the Economy and Invest NI, the Skills Barometer was developed by the Ulster University Economic Policy Centre (UUEPC) and updated in 2021. This iteration<sup>2</sup> marks the fourth NI Skills Barometer publication from UUEPC since 2015. The research focuses on the labour demand in the NI economy over the coming decade, supply side information, including trends in school performance and FE participation and HE participation as well as wider labour market considerations. The findings of this research are widely used to help guide policy, to inform careers guidance, shape curriculum design and used for strategy development by business organisations.



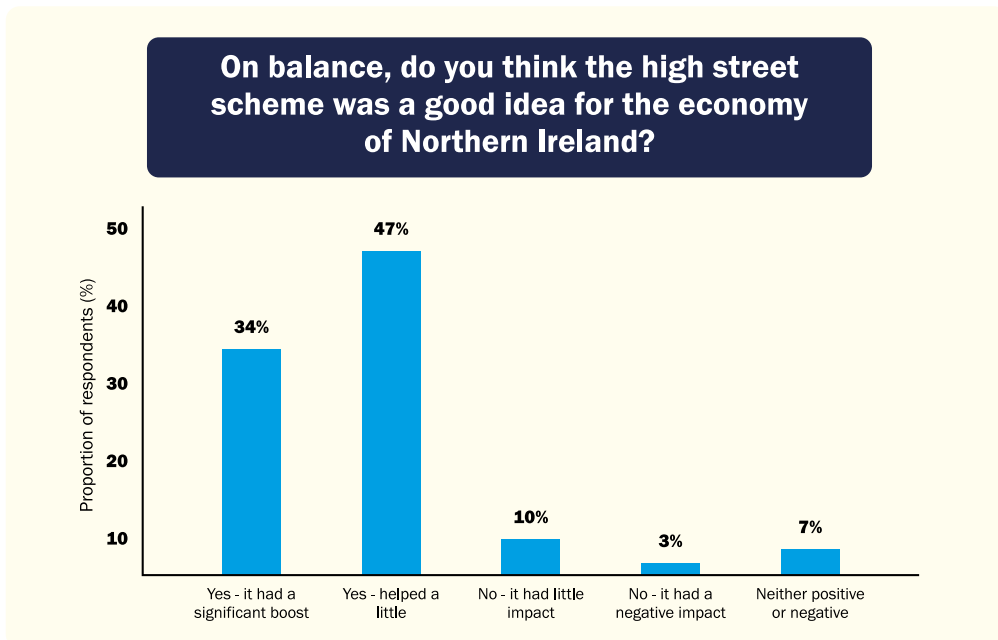
2 [Northern Ireland Skills Barometer 2021 update | Department for the Economy \(economy-ni.gov.uk\)](#)

### Research on the High Street Scheme

Two pieces of research were undertaken relating to the Northern Ireland High Street Scheme, a £140 million package aimed at supporting the local economy after the impact of Covid-19. Every person in Northern Ireland aged 18 and over was eligible to apply for a pre-paid voucher card worth £100 to spend in their local high street.

Firstly, analysis carried out by Retail Economics on behalf of the Department for the Economy, was used to inform the launch of the High Street Scheme and set out the considerations for the introduction of the scheme.<sup>3</sup>

A second research project by Retail Economics looked at the impact the High Street Scheme had in Northern Ireland. It analysed results from a business survey of independent retail, hospitality, and leisure businesses in early 2022 to assess the perceived value of the scheme. The survey reveals several key views, mainly that the scheme helped contribute additional spending in the NI economy, rather than displacing spending that would have occurred in the absence of the scheme, helped safeguard jobs in the economy and encouraged consumers to visit the high street, thus having a positive impact on footfall.<sup>4</sup>

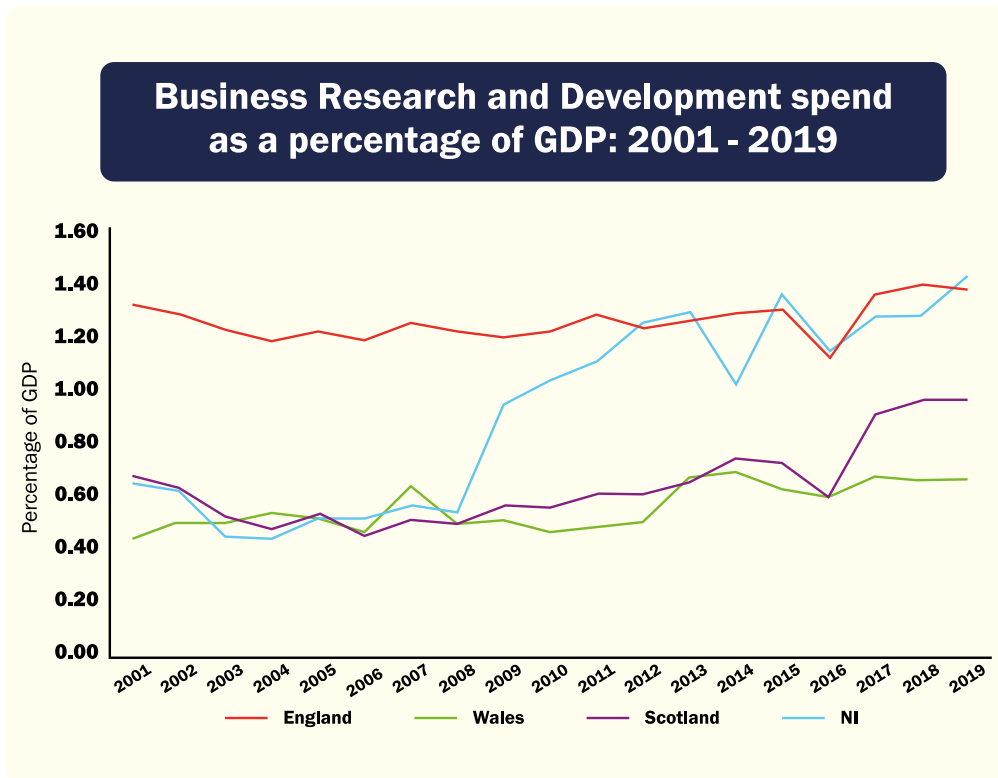


3 [Research to inform the Northern Ireland High Street Scheme | Department for the Economy \(economy-ni.gov.uk\)](https://www.economy-ni.gov.uk/research-to-inform-the-northern-ireland-high-street-scheme)

4 [Business Impact of the Northern Ireland High Street Scheme | Department for the Economy \(economy-ni.gov.uk\)](https://www.economy-ni.gov.uk/business-impact-of-the-northern-ireland-high-street-scheme)

**Assessing the Business Growth and Productivity Effects of Invest NI and UKRI Grant Support for R&D and Innovation**

Undertaken by Queen’s University Belfast (QUB) and the Enterprise Research Centre, this research analyses data to demonstrate the effectiveness of regional support measures and positive synergies between local and national support policies for R&D and innovation. The research considers several research questions, which examine the effectiveness of support on growth in terms of employment and turnover. The findings of this research will be used to help inform the ongoing independent review of Invest NI.<sup>5</sup>



5 [Assessing the business growth and productivity effects of Invest NI and UKRI grant support for R&D and innovation \(economy-ni.gov.uk\)](https://economy-ni.gov.uk)

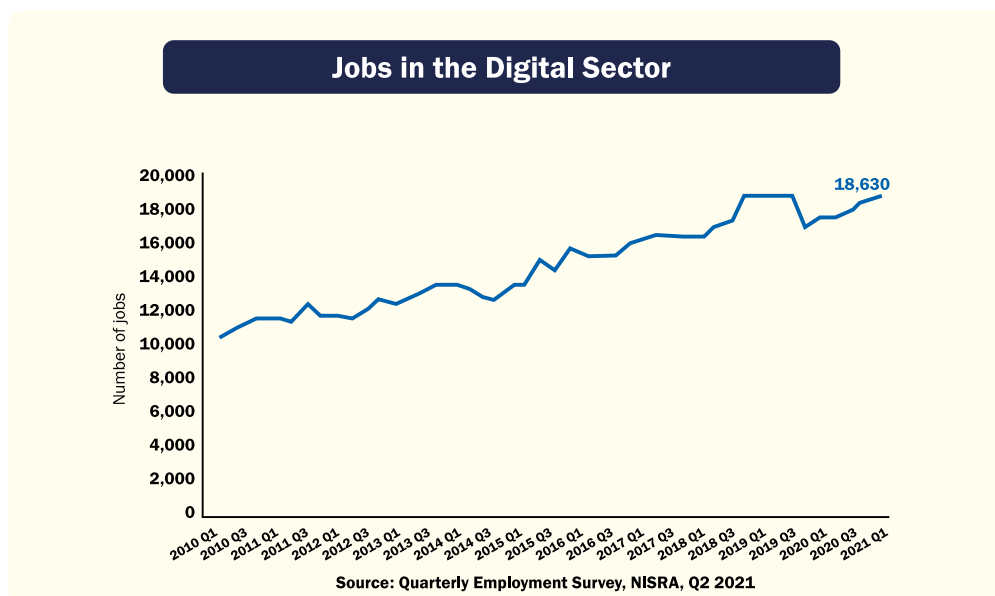


### The Circular Economy

This report<sup>6</sup> by Circle Economy, published in June 2022, provides a snapshot on how circular the Northern Ireland economy currently is. The Circular Economy is a systems solution framework that tackles global challenges like climate change, biodiversity loss, waste, and pollution. The concept of circularity closely mimics nature, where there is no waste: all materials have value and are used to sustain life in a myriad of ways.<sup>7</sup> This research report spotlights possible interventions within specific focus sectors and materials flows which could aid Northern Ireland's transition to becoming more circular. This report will be used to help inform the development of the *Circular Economy Strategic Framework*.

### Skills Demanded by the Digital IT Sector in 2021

Undertaken by DfE, this research<sup>8</sup> examines the growth of the Digital Sector and the demand for IT workers within Northern Ireland. It examines the increasing, decreasing and new skills sought after in the sector as well as the wage premium for workers in the ICT sector. The data suggest that the Digital Sector in Northern Ireland has steadily increased since 2010, with the number of jobs recorded in Q2 2021 the highest quarterly figure on record. Job growth in the Digital Sector has been concentrated in Computer Programming, Consultancy and Related Activities. The research generated interest from policy makers, as well as the Software Alliance, particularly given the continued reports of IT skills shortages across Northern Ireland.



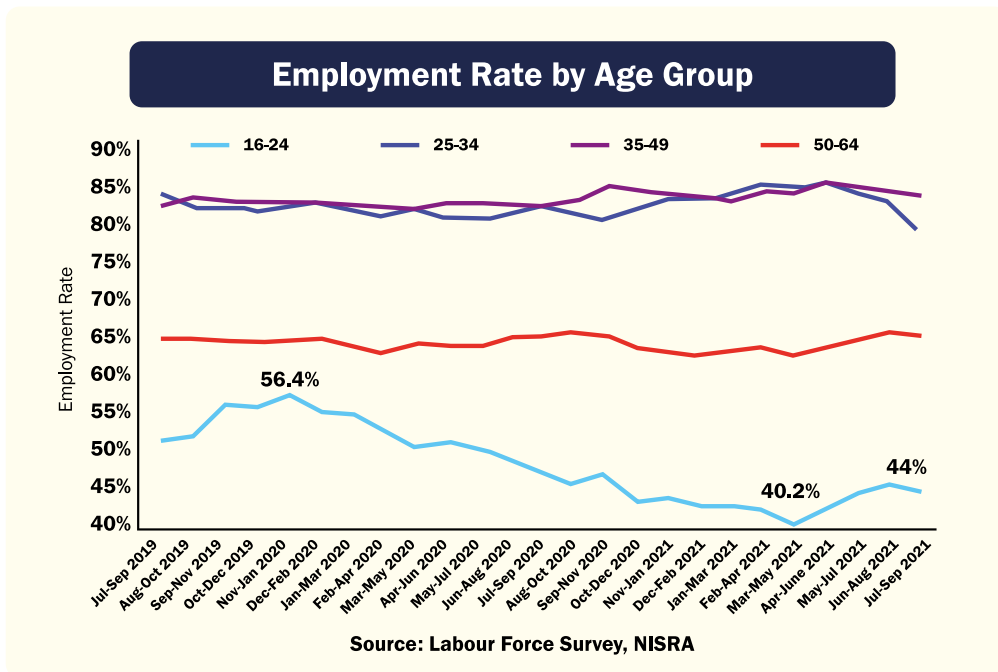
6 [The Circularity Gap Report Northern Ireland | Department for the Economy \(economy-ni.gov.uk\)](https://www.economy-ni.gov.uk/publications/the-circularity-gap-report-northern-ireland)

7 [What is the circular economy? \(circle-economy.com\)](https://www.circle-economy.com/what-is-the-circular-economy/)

8 [Research Bulletin 21/2- Skills demanded by digital IT sector \(economy-ni.gov.uk\)](https://www.economy-ni.gov.uk/publications/research-bulletin-21-2-skills-demanded-by-digital-it-sector)

**NI Labour Market in Context of COVID-19**

Undertaken by DfE and DfC, this research provided an overview of the Northern Ireland labour market in the context of COVID-19. Whilst the impact of the pandemic on the local labour market has not been as severe as initially projected, due to the NI Executive response to the challenges of Covid-19, there have been impacts felt across particular groups. The data suggest the sectors most impacted by the pandemic have been workplaces which require closer interaction between people and where working from home was not possible. As a result, workers under 25 and low earners have been amongst the most impacted.<sup>9</sup>



2.5. The above examples provide a short summary of a few significant research projects completed under the previous Programme. It is also worthwhile to mention other pieces undertaken in recent years that were of importance. The Department for Transport’s Union Connectivity Review (November 2021)<sup>10</sup> for UK Government made numerous references to DfE-led research as part of its work - including analysis on air connectivity in Northern Ireland<sup>11</sup>, a study on cross-border people movements<sup>12</sup>, as well as analysis on HGV movements between Northern Ireland and Great Britain.<sup>13</sup>

9 [Research Bulletin 21/1 - NI Labour Market in the context of Covid-19 \(economy-ni.gov.uk\)](#)  
 10 [Union connectivity review: final report - GOV.UK \(www.gov.uk\)](#)  
 11 [Aviation connectivity research | Department for the Economy \(economy-ni.gov.uk\)](#)  
 12 [Cross Border Movements: The movement of people across the Northern Ireland - Republic of Ireland border](#)  
 13 [Research bulletin 20/1 - Analysing HGV movements between NI and GB using mobile network data](#)

## Building Capacity for Delivery of Economic Research

- 2.6. To deliver upon the Research Programme, the development and day-to-day delivery of projects is managed by Analytical Services Division (ASD), within the Department for the Economy. ASD is staffed by professional statisticians and economists with experience and expertise on various aspects of the Programme.
- 2.7. Delivering upon the Research Programme requires a Departmental-wide effort, often relying on the published Official Statistics produced by DfE in relation to energy, skills, apprenticeships, Further Education and Higher Education and will involve its partners in a number of organisations, many of which DfE sponsors.<sup>14</sup> Principally, the Ulster University Economic Policy Centre (UUEPC) and Queen's University Belfast (QUB) will undertake a number of important research projects for DfE and Invest NI, mostly relating to skills, the labour market, enterprise and business growth, but other topics also.
- 2.8. In addition, the UK Trade Policy Observatory (UKTPO), a partnership between the University of Sussex and Chatham House will undertake research relating to inclusive trade and investment, within an ever-changing world.
- 2.9. The Department for the Economy undertakes a variety of research projects in-house, utilising a team of Economists and Statisticians to produce high quality research outputs. In-house capability has been built up in recent years. For example:
- **Linked NISRA Databases** – joint DfE/ NISRA collaboration creating a linked database of various surveys which include those on annual earnings, trade and research and development.
  - **Administrative Data Research** – Using administrative data already created by government and public bodies across the UK for research in a safe and secure way.<sup>15</sup>
  - **NISRA Economic Accounts** – including Supply Use Tables / Input-Output.
  - **Other Economic Modelling** – Hypothetical Extraction Model<sup>16</sup>, Computed General Equilibrium (CGE)<sup>1718</sup> etc.

14 [About the Department for the Economy | Department for the Economy \(economy-ni.gov.uk\)](#)

15 [ADR UK - Administrative Data Research UK. Data-driven change](#)

16 [Research Bulletin 20/8 - understanding economic shocks using the FAI HEM Model for Northern Ireland](#)

17 [Research Bulletin 19/6 - Expanding the Analytical Toolkit with Computable General Equilibrium Modelling](#)

18 In the future, the Department may enhance the functionality of the model further to include an energy component that could be used to assess the implications of changes to energy policy.

- **Accessing and Utilising Innovative Data on the NI Economy** – this can involve the use of new web-scraping software to better understand the current job market<sup>19</sup> and to better understand the companies that operate in a modern economy<sup>20</sup>. High street footfall and mobility data has also proved informative, for example in the roll out of the High Street Scheme.
- **International Competitiveness** – benchmarking Northern Ireland against other small advanced economies across a range of indicators.
- **Economic Monitoring** – looking at short-term indicators, the performance of the labour market and business activity<sup>21</sup>; and
- **Linking AppsNI data to HMRC** – This linked dataset will show employment and earnings outcomes for AppsNI leavers who achieved their targeted qualifications.

2.10. Furthermore, we aim to create a **linked dataset** of DE and DfE education data which will match to HMRC and DfC/DWP data to create a Northern Ireland equivalent of Longitudinal Educational Outcomes (LEO)<sup>22</sup>. This project is still in development but will be an important model for our economic research in the future.

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19 [Monthly online job posting factsheets | Department for the Economy](#)

20 [The Data City – the alternative to SIC codes](#)

21 [Economic briefing | Department for the Economy](#)

22 [Longitudinal Education Outcomes for Northern Ireland - a data linkage initiative | Department for the Economy \(economy-ni.gov.uk\)](#)

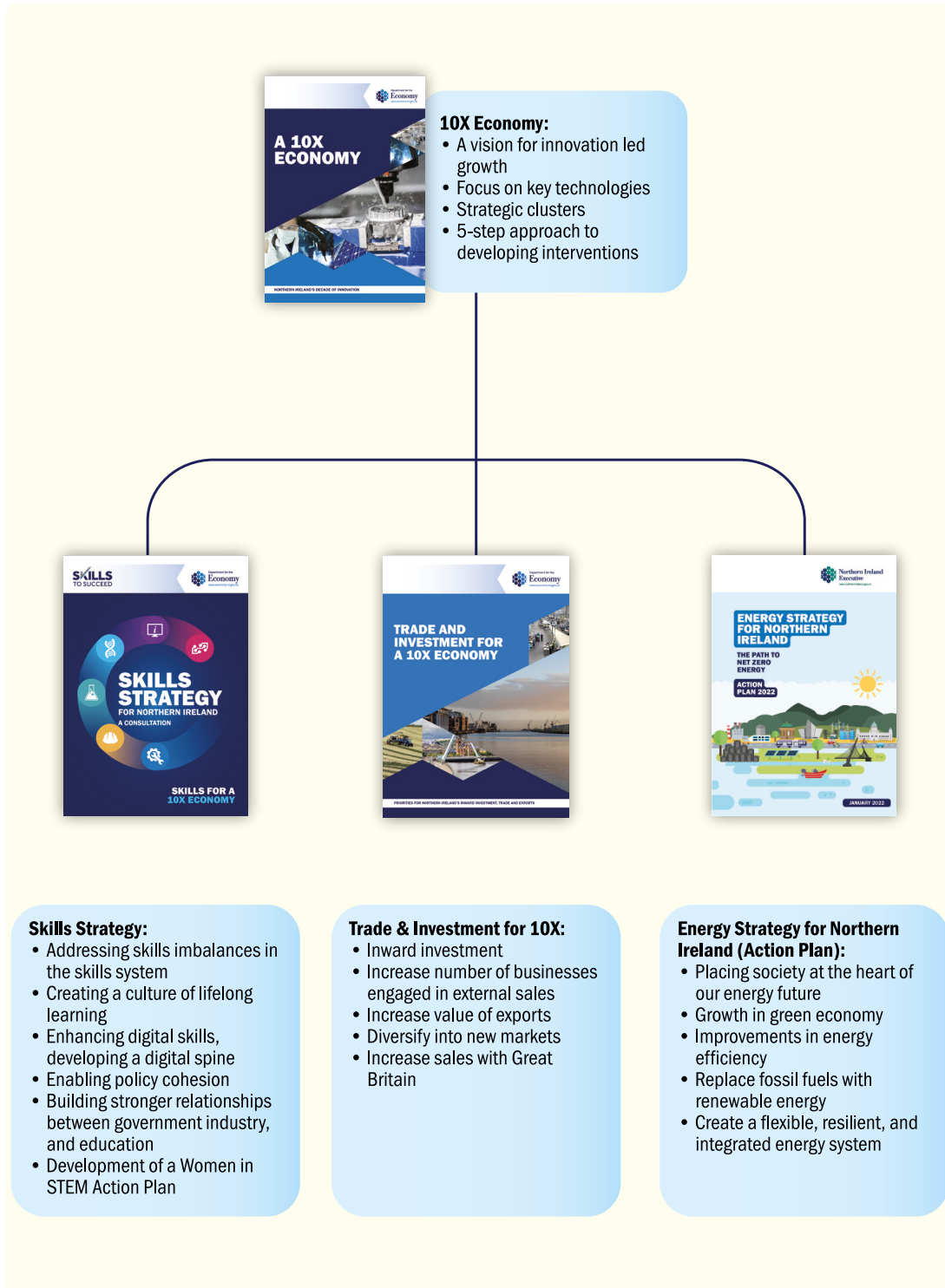
## 3. Strategic Context

- 3.1. The Department for the Economy was established in May 2016. The Departmental mission is to develop and implement agile policies and programmes which promote a competitive, sustainable, and inclusive economy through investment in skills, economic infrastructure, research and innovation, and business development. Our strategic objectives centre around, amongst other things:
- Accelerating innovation and research;
  - Enhancing education, skills, and employability;
  - Driving inclusive, sustainable growth; and
  - Succeeding in global markets.<sup>23</sup>
- 3.2. To achieve its objectives the Department carries out a wide range of activities. Essential elements of its normal recurring business include, but are not limited to:
- Leading on wider economic policy, including specific areas like Energy, Tourism and Telecoms;
  - The operation of a range of employment and skills programmes;
  - Oversight and funding of the further and higher education sectors;
  - Various aspects of employment law; and
  - The management and operation of various EU funding programmes.
- 3.3. The Department for the Economy's 10X Vision for a Decade of Innovation, Skills Strategy, Trade & Investment, and Energy Strategy Action Plan documents set out our visions and approach for longer-term economic recovery, transformation and development.

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23 [About the Department for the Economy | Department for the Economy \(economy-ni.gov.uk\)](#)

Figure 2: Strategic Context for Research <sup>24</sup>



24 [Skills for a 10x economy - Skills Strategy for Northern Ireland | Department for the Economy \(economy-ni.gov.uk\)](https://www.economy-ni.gov.uk)  
[Trade and investment for a 10X Economy: priorities for Northern Ireland's inward investment, trade and exports](https://www.economy-ni.gov.uk)  
[Energy Strategy - Path to Net Zero Energy - Action Plan | Department for the Economy \(economy-ni.gov.uk\)](https://www.economy-ni.gov.uk)  
[Women in Stem. Driving Inclusive Growth in a 10x Economy](https://www.economy-ni.gov.uk)

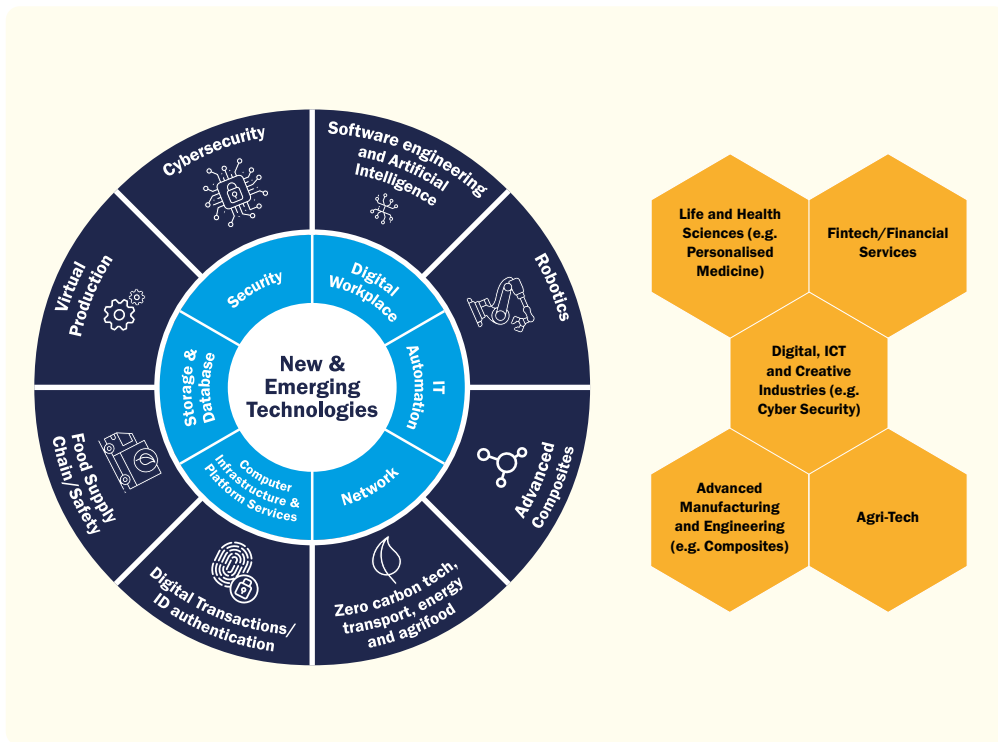
3.4. It should be noted that in addition to the strategy documents referenced above, when developing this document consideration has also been given to the strategic direction and objectives of the DfE sponsored organisations.<sup>25</sup>

**10X Economy: A Decade of Innovation**

3.5. In May 2021, the Department for the Economy published its 10X Economy - an Economic Vision for a Decade of Innovation Report.<sup>26</sup> This provides the basis for an innovation driven recovery and provides long term plans on how to make Northern Ireland a better economy by 2030 and create a generational change.

3.6. Our ambition is centred on focusing on the core technologies and clusters where Northern Ireland can be a global leader within the next decade. We need to define our priority areas of focus and understand how these areas of speciality can be applied to support the whole economy and provide opportunities for all our people. Key technologies and five priority clusters that will shape the future for Northern Ireland are illustrated (respectively) below.

**Figure 3: Key Technologies for Growth and the Five Priority Clusters**

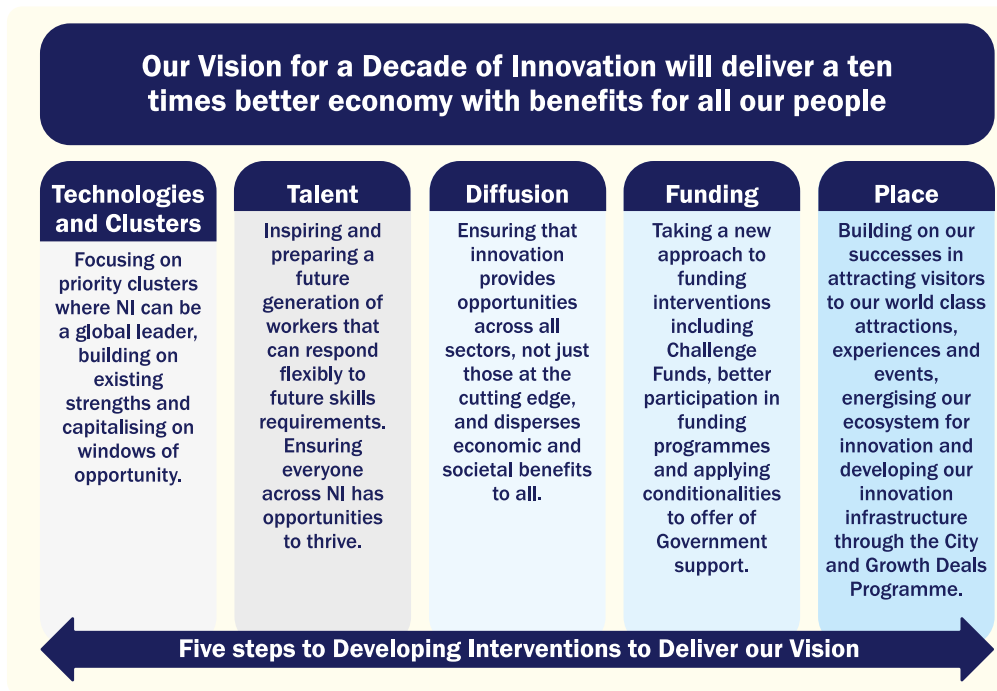


25 A full list of organisations that have a key role in service delivery for DfE is available at: [About the Department for the Economy | Department for the Economy \(economy-ni.gov.uk\)](https://www.economy-ni.gov.uk/about-the-department-for-the-economy/)

26 [10X Economy - an economic vision for a decade of innovation | Department for the Economy \(economy-ni.gov.uk\)](https://www.economy-ni.gov.uk/10x-economy/)

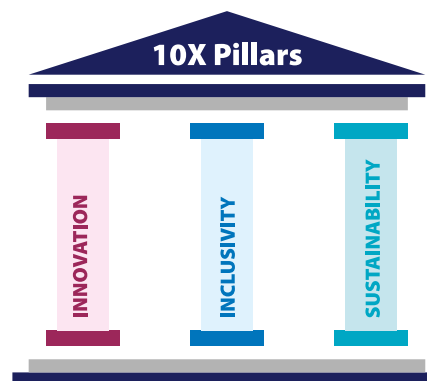
3.7. We have a real opportunity to make a difference over the next decade, but we can only do so by adopting a partnership approach to delivery. Co-design and collaboration across government, businesses and academia will be vital to achieving a culture of innovation that benefits everyone. The approach to developing interventions will fall into five steps:

**Figure 4: Developing Interventions to Deliver Our Vision**



3.8. We want to design our policies and programmes so that the rewards are distributed fairly across people and places, creating opportunities for all. Therefore, to measure progress and achievement of the 10X Vision, we need to understand how we compare to the best-in-class economies on the international stage, as well as over time.

3.9. The 10X Economy document also sets out how the Department will measure success over the decade. This will involve the development of a core set of globally recognised metrics which will help provide a clear picture of performance across three separate pillars which capture our vision for Northern Ireland:



1. Innovation led growth;
2. Inclusive growth; and
3. Sustainable growth.



- 3.10. The Department for the Economy has developed a 10X Metrics Baseline Report, comparing Northern Ireland to a diverse group of sixteen other small advanced economies, across a range of metrics. Overall, during the last 10 years Northern Ireland has made improvement in key areas, but still lags behind on a number of indicators. At the present time, Northern Ireland performs relatively well with respect to income equality, however, it is 'mid-table' on carbon dioxide emissions and on renewable electricity, and underperforms (relative to others) on many other metrics, such as productivity, employment rate and household disposable income.
- 3.11. There is a need for further research to ensure Northern Ireland can build its trade and investment base further, including how to make trade and investment more inclusive. Another large area of research in itself concerns energy and decarbonisation. These areas of research complement the projects outlined in this Research Programme.

### **Invest NI**

- 3.12. As the regional business development agency, Invest NI's role is to grow the local economy. They do this by helping new and existing businesses to compete internationally, and by attracting new investment to Northern Ireland. Invest NI provide strong support for businesses by effectively delivering the Government's economic development strategies. DfE and Invest NI jointly sponsor research at UUEPC and QUB on an ongoing basis. There will be a need therefore for research to align well with Invest NI's business plan.

### **Tourism NI**

- 3.13. Tourism Northern Ireland, who are responsible for the development of tourism and the marketing of Northern Ireland as a tourist destination, undertake a wide range of industry and consumer research to inform marketing and programme development.<sup>27</sup> Understanding the contribution that tourism makes to the wider Northern Ireland economy is an important requirement to inform decision making.

### **Other Research Programmes**

- 3.14. Research is both planned and underway across various organisations in Northern Ireland. This will add valuable analysis, of relevance to that particular body, but will also have a wider benefit to DfE and its work areas. As noted above, this includes research by other Government Departments in Northern Ireland and by local Government, as well as important work undertaken by the Consumer Council, InterTradeIreland, Northern Ireland Statistics & Research Agency (NISRA) and others.<sup>28</sup>

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27 [Tourism Statistics, Research & Insights | Tourism NI](#)

28 A full list of organisations that have a key role in service delivery for DfE is available at: [About the Department for the Economy | Department for the Economy \(economy-ni.gov.uk\)](#)

## 4. Research Themes and Projects

4.1. To set the focus for this Research Programme, we set an overall mission as well as themes and projects. The overall mission of this DfE 10X Economy Research Programme is:

***“To produce research and analysis that shapes policy decisions. The evidence-base should drive successful delivery, well informed Departmental economic priorities, rebuild a stronger economy and set us firmly on the journey to realise our vision for innovation led, inclusive and sustainable growth.”***

### Research Programme Themes and Projects

4.2. This mission will be supported by seven main research themes (see Figure 5 below) which align to the 10X Economy Paper and of relevance to Rebuilding a Stronger Economy & Recovery Action Plan documents.

**Figure 5: Main Research Programme Themes**



4.3. Table 1 overleaf shows the Research Programme’s themes, and projects for the next year and beyond. A summary of each project is provided in Annex 2. It is important to note that while the projects and themes identified are outlining the main areas of focus, there is in-built flexibility to allow additional projects to be undertaken where further needs or opportunities emerge.

**Table 1: Research Programme Themes and Projects**

1. Focus on Key Technologies & Priority Clusters	2. A Changing World – a Sustainable & More Inclusive Economy	3. Skills for a Contemporary Labour Market	4. Diffusing Innovation	5. Funding Interventions, Understanding Enterprise & Business Growth	6. Place-Based Growth & Investment	7. Measuring Success
Skills Demand in Digital IT Sector 2022	Inclusive Trade and Investment	Understanding Widening Participation in Northern Ireland	Management and Leadership Training in NI SMEs	Complementarities and Substitutes of Invest NI & UKRI Grant Support	Local Growth Dashboard	Measuring Success – International Benchmarking with 10X Metrics
Skills Demanded by the Offshore Wind Sector	Economic Accounts – Environmental Goods & Services Sector (EGSS)	Labour Market Intelligence (LMI) Portal v 2.0	Remote Working: Implications for the NI Economy of Changing Work Patterns	Business Dynamism: NI Business Births and Deaths	Economic Outlook	Global Competitiveness Index - Machine Learning
Key Technologies and Opportunities for Adoption	OECD – Green Skills & Vocational Education	Employer Skills Survey 2022 & Skills and Employment Survey 2023	Understanding and Improving Northern Ireland’s Productivity Performance	Global Entrepreneurship Monitor (GEM) NI 2021	Regional Economy Prosperity & Inclusion	Learning from International Best Practice to Drive 10X Performance
Priority Clusters and their Growth Potential	Skills Required for a Transition to Sustainable Energy and Circular Economy in Northern Ireland	Impact of Covid-19, Including Non-Completers and on Supply to the Labour Market	Innovation Driven Enterprises	Business Sustainability & Resilience		
	The Energy Evidence Programme*	University College London – Millennium Cohort Project		Covid-19 Counterfactual		
		Skills Barometer 2023				
		Research to Inform the Skills Strategy*				
		Further Education (FE) Delivery Model*				

**Key**

Projects in green to be undertaken by Ulster University Economic Policy Centre

Projects in red to be undertaken by Queen’s University Belfast

Project in brown to be undertaken by both Ulster University Economic Policy Centre and Queen’s University Belfast

Projects / themes in blue to be undertaken by DfE, other researchers, or yet to be commissioned

\* Denotes a suite of projects

## Other Research

- 4.4. The Department for the Economy undertakes many research projects in-house, utilising Economists and Statisticians within ASD to undertake bespoke pieces of analysis. These findings can be published as standalone reports or summarised as Research Bulletins.
- 4.5. Each year, the Department for the Economy publishes several Research Bulletins. These are short analytical articles on topical economic and labour market issues. They help to build understanding of current trends and raise awareness of research and analysis carried out. Annex 3 provides further details of Research Bulletins that have been published recently.
- 4.6. The Department regularly engages with other research providers and monitors relevant reports and publications which can inform economic policy development. Each quarter the Department publishes two digests:
- Skills Digest – Delivered on behalf of the Department through an external organisation, this focuses on research and policy development in skills and labour market areas; and
  - Economic Digest – Delivered in-house, this focuses on published research across several economic areas relevant to the work of the department such as competitiveness, innovation, enterprise, trade, foreign direct investment (FDI), tourism and infrastructure.<sup>29</sup>
- 4.7. To help inform research undertaken, the Department may subscribe to bespoke datasets or utilise various software packages, such as web scraping<sup>30</sup> or statistical software, etc.

## Dissemination of Research

- 4.8. To ensure that the research has maximum impact both within the Department and beyond, we will ensure our research gets disseminated to as wide an audience as possible. In line with our current approach, we will seek to publish research findings, to share the benefits with others and contribute to public debate. We will continue to showcase new reports on the Departmental Twitter account and, where appropriate, use infographics to convey research findings. We will continue to provide summaries of key pieces of analysis within our Research Bulletins.
- 4.9. Going forward, the Department will reflect on the impact and recognition of its research. There may be scope for further stakeholder engagement on this, as well as learning from best practice elsewhere.

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29 [Research Digests | Department for the Economy \(economy-ni.gov.uk\)](#)

30 [Online job posting trends 2022 | Department for the Economy \(economy-ni.gov.uk\)](#)

## Annex 1 - List of Published Research

Many research projects have been published over the past year and tends to get published within the following links:

- [Economic research | Department for the Economy \(economy-ni.gov.uk\)](https://economy-ni.gov.uk) and
- [JUEPC Publications - Economic Policy Centre \(ulster.ac.uk\)](https://ulster.ac.uk)

The table below provides a summary of the research published under the Research Programme for 2021-22.

Theme	Research Project	Organisation	Status	Date of Publication	Weblink
<b>1. Focus on Key Technologies and Priority Clusters</b>	IT Sector - Future Supply Analysis	DfE	Completed	20/04/2021	<a href="https://economy-ni.gov.uk">IT sector future supply analysis   Department for the Economy (economy-ni.gov.uk)</a>
	Skills Demanded by the Digital IT Sector in 2021	DfE	Completed	15/12/2021	<a href="https://economy-ni.gov.uk">Research Bulletin 22/2- Skills demanded by digital IT sector (economy-ni.gov.uk)</a>
	Developing Ecosystems to Further Drive Our Technological Strengths (Learning from Best Practice)	QUB	Ongoing		
	Priority Clusters and their Growth Potential	Various	Completed	14/01/2022 31/08/2022	<a href="https://economy-ni.gov.uk">Leading Innovation - introduction to the Horizon Scan for a 10X Economy   Department for the Economy (economy-ni.gov.uk)</a> <a href="https://economy-ni.gov.uk">Research Bulletin 22/4 - Job Advertisements in Advanced Manufacturing, Materials &amp; Engineering and Life &amp; Health Sciences (economy-ni.gov.uk)</a>
<b>2. A Changing World – a Greener and more Inclusive Economy</b>	The Impact of Covid-19 on Northern Ireland SMEs	QUB	Completed	31/03/2021	<a href="https://economy-ni.gov.uk">The impact of Covid-19 pandemic on Northern Ireland SMEs: Evidence and comparison with the rest of the UK (economy-ni.gov.uk)</a>
	Northern Ireland SMEs and Net Zero	QUB	Completed	30/06/2021	<a href="https://economy-ni.gov.uk">Northern Ireland SMEs and the Net Zero target   Department for the Economy (economy-ni.gov.uk)</a>
	The Circular Economy	Circle Economy	Completed	22/06/2022	<a href="https://economy-ni.gov.uk">The Circularity Gap Report Northern Ireland   Department for the Economy (economy-ni.gov.uk)</a>
	Research on Trade & Investment	Various	Projects published on ongoing basis	N/A	<a href="https://economy-ni.gov.uk">EU Exit Analysis   Department for the Economy (economy-ni.gov.uk)</a>
	Informing the Delivery of the Energy Strategy	Various	Evidence Programme Published	16/12/2021	<a href="https://economy-ni.gov.uk">Energy Evidence Programme - Informing the Delivery of the Energy Strategy (economy-ni.gov.uk)</a>
	*Research on Energy	DfE	Projects published on ongoing basis	N/A	<a href="https://economy-ni.gov.uk">Energy Related Analysis   Department for the Economy (economy-ni.gov.uk)</a>

Theme	Research Project	Organisation	Status	Date of Publication	Weblink
<b>3. Preparing a Future Generation of Workers</b>	Northern Ireland Skills Barometer 2021	UUEPC	Completed	16/03/2022	<a href="#">Northern Ireland Skills Barometer 2021 update   Department for the Economy (economy-ni.gov.uk)</a>
	Measuring the Impact of Student Placements	UUEPC	Ongoing		
	Labour Market Intelligence (LMI) Portal	UUEPC	Completed	01/07/2021	<a href="#">Labour Market Intelligence (LMI) Portal - Economic Policy Centre (ulster.ac.uk)</a>
	NI Labour Market in Context of Covid-19	DfE & DfC	Completed	15/12/2022	<a href="#">Research Bulletin 21/1 - NI Labour Market in the context of Covid-19 (economy-ni.gov.uk)</a>
	* Transforming Careers Support for Young People and Adults in NI	Dr Deirdre Hughes OBE	Completed	25/03/2022	<a href="#">Transforming careers support for young people and adults in Northern Ireland   Department for the Economy (economy-ni.gov.uk)</a>
	* Perceptions of Level 4 & 5 Qualifications in Northern Ireland	CREU / Stranmillis	Completed	29/06/2022	<a href="#">Perceptions of Level 4 and 5 qualifications in Northern Ireland   Department for the Economy (economy-ni.gov.uk)</a>
	* Minimising Economic Scarring after Covid-19 and Restrictions	DfE	Completed	31/08/2022	<a href="#">Research Bulletin 22/6 - Minimising Economic Scarring After Covid-19 and Restrictions (economy-ni.gov.uk)</a>
	* Covid-19 and trends seen within Northern Ireland's inactivity rates	DfE	Completed	31/08/2022	<a href="#">Research Bulletin 22/5 - Covid-19 and Trends Seen Within Northern Ireland's Inactivity Rates (economy-ni.gov.uk)</a>
	Changing Patterns of Work in NI (Remote, Hybrid & Onboarding)	UUEPC	Completed	07/02/2022	<a href="#">Future of Remote Working in Northern Ireland: Full Report (ulster.ac.uk)</a>
	*Evaluation of the assessment and awards arrangements for vocational qualifications in Northern Ireland 2020-2021	CEA Regulation	Completed	27/07/2022	<a href="#">Evaluation of the assessment and awarding arrangements for vocational qualifications in Northern Ireland 2020-2021   Department for the Economy (economy-ni.gov.uk)</a>
	*Research on Further Education	DfE	Projects published on ongoing basis	N/A	<a href="#">Further education research   Department for the Economy (economy-ni.gov.uk)</a>
	*Statistical Publications <sup>31</sup>	DfE	Bulletins released on ongoing basis	N/A	<a href="#">Publication Schedule 2020 - 2023 (economy-ni.gov.uk)</a>
<b>4. Diffusing Innovation</b>	The Effects of Digital Adoption on Northern Ireland SME Performance	QUB	Completed	30/06/2021	<a href="#">The effects of digital adoption due to Covid-19 on Northern Ireland SMEs performance: new empirical results   Department for the Economy (economy-ni.gov.uk)</a>
	The Future of Remote and Hybrid Working in Northern Ireland	DfE	Completed	31/08/2022	<a href="#">Research Bulletin 22/2 - The Future of Remote and Hybrid Working in Northern Ireland (economy-ni.gov.uk)</a>
	CGE Modelling - A Decade of Productivity	DfE	Completed	31/08/2022	<a href="#">Research Bulletin 22/3 - Interpreting Productivity Challenges for Northern Ireland Using CGE Modelling (economy-ni.gov.uk)</a>
	*Characteristics and Performance of Businesses Reporting Research and Development Expenditure	DfE	Completed	22/03/2022	<a href="#">Characteristics and performance of businesses reporting research and development expenditure   Department for the Economy (economy-ni.gov.uk)</a>

31 The statistical publication also includes information on energy consumption.

## RESEARCH PROGRAMME 2022-23 AND BEYOND

Theme	Research Project	Organisation	Status	Date of Publication	Weblink
<b>5. Funding Interventions, Understanding Enterprise &amp; Business Growth</b>	Assessing the Business Growth and Productivity Effects of Invest NI and UKRI Grant Support for R&D and Innovation	QUB	Completed	17/08/2022	<a href="#">Assessing the business growth and productivity effects of Invest NI and UKRI grant support for R&amp;D and innovation (economy-ni.gov.uk)</a>
	Understanding Business Job Creation	UUEPC	Ongoing		
	Global Entrepreneurship Monitor 2020	QUB	Completed	24/02/2022	<a href="#">Global Entrepreneurship Monitor (GEM) UK: NI Report 2020   Department for the Economy (economy-ni.gov.uk)</a>
	Research to Inform the High Street Scheme	Retail Economics	Completed	29/07/2021	<a href="#">Research to inform the Northern Ireland High Street Scheme   Department for the Economy (economy-ni.gov.uk)</a>
	*Research to Assess the High Street Scheme	Retail Economics	Completed	24/03/2022	<a href="#">Business Impact of the Northern Ireland High Street Scheme   Department for the Economy (economy-ni.gov.uk)</a>
	Usage of the Coronavirus Job Retention Scheme in NI	DfE	Completed	13/08/2021	<a href="#">Research on economic recovery from Covid-19 and restrictions   Department for the Economy (economy-ni.gov.uk)</a>
	The Cost of Doing Business in Northern Ireland - Update	DfE	Completed	15/12/2021	<a href="#">Research Bulletin 21.8 - The Cost of Doing Business in NI (economy-ni.gov.uk)</a>
*Northern Ireland's High Growth Firms 1998 - 2021 - Update 12	DfE	Completed	23/02/2022	<a href="#">Northern Ireland High Growth firms 1998-2021 Update 12   Department for the Economy (economy-ni.gov.uk)</a>	
<b>6. Place-Based Growth &amp; Investment</b>	Local Growth Dashboard	QUB	Ongoing		
	The Economic Impact of Tourism	Cogent SI	Ongoing		
	Future for NI Business Investment in an Uncertain World	DfE	Ongoing		
<b>7. Measuring Success</b>	Developing New Metrics for Measuring Success	DfE	Completed	12/10/2022	<a href="#">Competitiveness and Prosperity   Department for the Economy (economy-ni.gov.uk)</a>
	Small Advanced Economy Benchmarking Report for NI	DfE	Completed	12/10/2022	<a href="#">Competitiveness and Prosperity   Department for the Economy (economy-ni.gov.uk)</a>
	Learning from Small Advanced Economies, to Drive 10X Performance	Dr David Skilling	Completed	31/08/2022	<a href="#">Research Bulletin 22/1 - Learning from Small Advanced Economies, to Drive 10X Performance (economy-ni.gov.uk)</a>
	Competitiveness Challenges	UUEPC	Completed	06/09/2021	<a href="#">Addressing NIs Competitiveness Challenges final report 6 September 2021.pdf (ulster.ac.uk)</a>

\* New or additional research project, not stipulated in 2021-22 Research Programme; or an ongoing statistical publication.



## Annex 2 – Summary of Research Projects 2022-23<sup>32</sup>

Theme	Research Project	Summary
<b>1. Focus on Key Technologies &amp; Priority Clusters</b>	<b>Skills Demand in Digital IT Sector 2022</b>	This annual research examines the growth of the Digital sector and the demand for IT workers more broadly within Northern Ireland. It considers the latest statistics on jobs and economic output for the Digital sector as well as examining the number of IT workers across all sectors. It also uses results from Burning Glass, a source of analysis for online job advertisements, to discuss what companies are demanding for IT workers.
	<b>Skills Demanded by the Offshore Wind Sector</b>	This research will examine what skills are demanded by employers when recruiting staff for Offshore Wind Sector using specialised software from Burning Glass. Given the infancy of the sector in Northern Ireland, it will examine trends across the whole of the UK. It will also consider the future plans of government (Europe and UK) to increase offshore wind capacity and how many jobs they target the sector to have in the future.
	<b>Key Technologies and Opportunities for Adoption</b>	This research will focus on key technologies identified within the 10x strategy and the opportunities that exist for adoption in businesses.
	<b>Priority Clusters and their Growth Potential</b>	This research will examine the five priority clusters identified within the 10X Vision and the growth potential associated with each.
<b>2. A Changing World – a Greener &amp; More Inclusive Economy</b>	<b>Inclusive Trade and Investment</b>	This research will cover areas of inclusive/sustainable growth and how that interacts with trade and investment decisions.
	<b>Economic Accounts – Environmental Goods &amp; Services Sector (EGSS)</b>	This research project seeks to estimate the size of the environmental goods and services sector (EGSS) in Northern Ireland. The framework follows the UN System of Environmental-Economic Accounting (SEEA). It measures various activities across the economy that produce goods and services for environmental protection and resource management purposes.
	<b>OECD – Green Skills &amp; Vocational Education</b>	The objective of the proposed project is to produce new insights about what the green transition implies for jobs that are typically targeted by Vocational Education & Training (VET) programmes (at different levels), how VET systems should adapt in light of (and in anticipation of) these changes, and what opportunities the green transition brings to make VET more attractive, innovative, and relevant.
	<b>Skills Required for a Transition to Sustainable Energy and Circular Economy in Northern Ireland</b>	The aim of this project is to identify the skills required for a sustainable future in NI and to propose a roadmap to meet the skills demand. It will involve identifying the skills required to support the transition to a more sustainable future in terms of Energy and Circular Economy. The research will propose and develop a range of programmes to fill in the identified skills gaps and seek to understand the best platform(s) and delivery mechanism(s) for the required skills.

32 This annex provides an overview of projects which have currently been scoped in broad terms



Theme	Research Project	Summary
<b>3. Skills for a Contemporary Labour Market</b>	<b>Understanding Widening Participation in Northern Ireland</b>	This research explores the progress made towards the achievement of the vision set out in Access to Success, how the higher education landscape and widening participation practice has evolved over the last ten years, the prevailing barriers to higher education for under-represented groups and effective ways to address them. The research will be used to inform future policy considerations and next steps for widening participation in higher education in Northern Ireland.
	<b>Labour Market Intelligence (LMI) Portal v 2.0</b>	As part of the 2021 research programme, the UUEPC developed and launched an LMI Portal which is comprised of a set of online interactive dashboards using Power BI. It visualises labour market indicators over time with regional benchmarks and is underpinned by data not regularly published by statistical authorities. UUEPC will continue to develop the LMI portal by adding additional thematic tabs which will also include a series of short research/ discussion papers on each individual area.
	<b>Employer Skills Survey 2022</b>	The survey, which is based on over 86,000 telephone interviews with employers in England, Scotland, Wales, and Northern Ireland, is one of the largest employer surveys in the world. The survey is vital to the work of DfE and their partners both within national and local government. The survey gathers information on the skills challenges that employers face within their workforce and when recruiting, the nature of any training provided, and awareness and involvement in various initiatives and programmes.
	<b>Impact of Covid-19, Including Non-Completers and on Supply to the Labour Market</b>	This research will examine the impact of COVID and in particular non completers and impacts on supply to the labour market. Analysis of learner completions in summer 2022 would provide an insight into the impact of the pandemic on outcomes. FE (Further Education) colleges have reported lower than expected enrolments during the pandemic which may be due to a variety of reasons including COVID, all of which may contribute to an impact on the labour market and suitably qualified employees available from Autumn 2022.
	<b>University College London – Millennium Cohort Project</b>	The Millennium Cohort Study (MCS), known as ‘Child of the New Century’ to cohort members and their families, is following the lives of around 19,000 young people born across England, Scotland, Wales, and Northern Ireland in 2000-02. The project will deliver high quality, well-documented data for research, supporting training and capacity building efforts for those analysing data, relevant and timely packaging of findings for policy development and practice guidance, facilitating access to published works using cohort data and providing accessible and engaging information on significant areas of interest on social, economic and health issues.
	<b>Skills Barometer 2023</b>	UUEPC undertakes research on the quantum of future skill requirements for Northern Ireland. The NI Skills Barometer involves the development of an economic model to forecast future skills needs and skills gaps by qualification level, subject area, and sector for Northern Ireland. The 2023 Skills Barometer will be the latest update, with the previous version having been undertaken in 2021.

Theme	Research Project	Summary
<b>4. Diffusing Innovation</b>	<b>Management and Leadership Training in NI SMEs</b>	This research will focus on understanding the extent and impact of management and leadership training among SMEs and, to understand the motivations for, and barriers to, accessing this training. This information should help identify any gaps in provision and provide potential policy solutions to reduce barriers and improve uptake.
	<b>Remote Working: Implications for the NI Economy of Changing Work Patterns</b>	This research will scope out the potential wider implications and economic impacts on the NI economy caused by increased levels of remote/ hybrid working in the longer term. The main output will be a report detailing the findings and any suggested policy recommendations.
	<b>Innovation Driven Enterprises</b>	This examines innovation driven enterprises, how they are defined and how they look beyond local markets for growth.
	<b>Understanding and Improving Northern Ireland's Productivity Performance</b>	This examines the particular productivity challenges in Northern Ireland and considers ways in which productivity can be improved.
<b>5. Funding Interventions, Understanding Enterprise &amp; Business Growth</b>	<b>Complementarities and Substitutes of Invest NI &amp; UKRI Grant Support</b>	This project builds on the quantitative analysis of Invest NI and UKRI grant support for R&D and Innovation, through a qualitative examination of NI businesses, the profile of grant support that they have received, how this has aligned with and directed their innovation efforts and the direct and indirect effects of this on their performance.
	<b>Business Dynamism: NI Business Births and Deaths</b>	This research seeks to address an important information gap by identifying the sectors in NI which are creating and losing businesses over time; understanding the extent to which these are in innovative and productive sectors; and concluding on the extent to which NI business dynamism is having a positive effect on the economy. The research findings should help inform the implementation of the 10X Strategy and the 'Decade of Innovation', as it will help to show if business dynamism is highest in the sectors that add most value.
	<b>Global Entrepreneurship Monitor (GEM) NI 2021</b>	Entrepreneurship is an important element of the 10X Economy Vision for a Decade of Innovation. This report will provide benchmark data for entrepreneurial activity in Northern Ireland, on a comparable basis.
	<b>Business Sustainability &amp; Resilience</b>	Building on the early survey of digital adoption and net zero practices of NI firms, this report would draw on an updated survey of NI and UK businesses. The ability to compare the performance of NI firms to that of firms across the UK is an advantage of this project and will help to articulate the effect of the pandemic on business activity and specifically issues such as digital adoption, sustainability, and resilience.
	<b>Covid-19 Counterfactual</b>	This research by UUEPC seeks to estimate the impact of Government interventions (UK and NI Executive) at a macro level by identifying and comparing against a Counterfactual scenario (i.e., what would the economy have looked like in the absence of Government interventions?). The study will also seek to identify potential policy supports to assist recovery.

Theme	Research Project	Summary
<b>6. Place-Based Growth &amp; Investment</b>	<b>Local Growth Dashboard</b>	Using individual firm-level and local unit statistics from the Business Structure Database (if available) this project will continue to profile business growth across all Local Government Districts in Northern Ireland. This Report will also provide contextual data for each Local Government District in Northern Ireland, including comparisons to the wider UK geographies.
	<b>Economic Outlook</b>	UUEPC provide macroeconomic forecasts for Northern Ireland relating to GVA, unemployment and jobs growth. The economic outlook also covers the possible path for interest rates and inflation.
	<b>Regional Economy Prosperity &amp; Inclusion</b>	This research will consist of two distinct reports / outputs. Firstly, an assessment of the scale of the challenge of Regional Prosperity and Inclusion. It is proposed that regional prosperity would be measured across several pillars, for example, skills and labour, business activity, health, and wellbeing etc, comparing each sub-region in NI against the NI average. The second report will detail policy suggestions identified from the evidence, including the review of policies in place elsewhere, which may be relevant to NI.
<b>7. Measuring Success</b>	<b>Measuring Success – International Benchmarking with 10X Metrics</b>	This research will benchmark Northern Ireland against small advanced economies from around the globe, across a range of indicators.
	<b>Global Competitiveness Index - Machine Learning</b>	QUB and UUEPC will work together to make use of Machine Learning techniques. This would aim to identify indicators that are highly correlated to high levels of international competitiveness, strong environmental performances, and wellbeing levels in the population. This can then inform a prioritisation of policy responses to boosting NI's competitiveness in the longer term.
	<b>Learning from International Best Practice to Drive 10X Performance</b>	This research will cover learning from areas of international best practice from small advanced economies around the world to drive 10X performance.

In addition to the above, the Department is aware that Matrix are commissioning foresight research, which will provide evidence base to government for future science and technology policies and strategies that will ensure NI's sustainable competitiveness in the global economy. Their 2022-23 workplan includes work relating to: Future of work and skills; Life & Health Sciences and City Deals; NI Hydrogen Supply and Demand foresight report; and Advanced Telecoms.

The Department is also aware of various research plans within sponsored organisations for 2022-23, and beyond, with the delivery of the research being the responsibility of the sponsored organisation.

## Annex 3 - List of Research Bulletins

Research Bulletins are short analytical articles on topical economic and labour market issues. They help to build understanding of current trends and raise awareness of research and analysis carried out. The Department for the Economy has published 50 Research Bulletin Articles over the last four years. A list of the most recent publications is shown below. All bulletins (from 2018 onwards) can be accessed online.<sup>33</sup>

### 2022 Articles<sup>34</sup>

Research Title		Organisation	Date
22/1	Learning from Small Advanced Economies, to Drive 10X Performance	Landfall Strategy	Aug 2022
22/2	The Future of Remote and Hybrid Working in Northern Ireland	DfE	Aug 2022
22/3	Interpreting Productivity Challenges for Northern Ireland Using CGE Modelling	DfE	Aug 2022
22/4	Job Advertisements in Advanced Manufacturing, Materials & Engineering and Life & Health Sciences	DfE	Aug 2022
22/5	Covid-19 and Trends Seen Within Northern Ireland's Inactivity Rates	DfE	Aug 2022
22/6	Minimising Economic Scarring After Covid-19 and Restrictions	DfE	Aug 2022

### 2021 Articles

Research Title		Organisation	Date
21/1	The Northern Ireland Labour Market in the Context of Covid-19	DfE & DfC	Dec 2021
21/2	Skills Demanded by the Digital IT Sector	DfE	Dec 2021
21/3	Furlough Effects on Northern Ireland	DfE	Dec 2021
21/4	Profiling Entrepreneurs using Machine Learning Approaches	UUEPC & QUB	Dec 2021
21/5	Northern Ireland's International Competitiveness	UUEPC	Dec 2021
21/6	Estimating Northern Ireland's Mode of Supply of Services, Exports, and Imports	DfE	Dec 2021
21/7	What has been Happening to Prices and Why Should we be Interested?	DfE	Dec 2021
21/8	The Cost of Doing Business in Northern Ireland	DfE	Dec 2021

33 <https://www.economy-ni.gov.uk/articles/research-bulletins>

34 It is intended that six more articles are to be published around December 2022.