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Economic Research Digest Quarter 4 2020

The **Economic Research Digest** monitors recently published research across a number of economic areas relevant to the work of the Department for the Economy such as competitiveness, innovation, enterprise, trade, FDI, tourism and infrastructure. The Skills Research Digest deals separately with recently published skills and labour market research.

In each case, we provide a short summary of the key points and web links to the full article or report*. A full list of sources can be found at the end of the publication.

Highlights this quarter include:

- How to combine digital and environmental priorities to drive the UK's economic recovery.
- An analysis of spending dynamics and panic buying during the first wave of Covid-19.
- The 2020 Legatum Prosperity Index.
- Modelled economic forecast for NI in Q3 from the Fraser of Allander Institute.
- The potential impact the Autumn Covid restrictions had on the NI economy.

** Links are correct at the time of publication, however it is likely that some will break over time. The list of sources has more general links, which should help the reader to track down the original report.*

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The research summarised here presents the views of various researchers and organisations and does not represent the views or policy of the Northern Ireland Executive or those of the authors.

Economic Outcomes

COMPETITIVENESS

***The Coronavirus Economy and Response*, published by the Nevin Economic Research Institute, highlights the impact Covid-19 has had on economies around the world, including Ireland and the UK.**

- The coronavirus pandemic has caused unprecedented disruption to societies and economies throughout the world. Global economic output collapsed in the first half of 2020. Every major economy experienced severely declining output in the second quarter of the year with the sole exception of China where the pandemic peaked earlier.
- Ireland's headline GDP decline was smaller than the decline in most other countries. However, Irish GDP is distorted by the impact of a small number of heavily globalised multinationals and the multinational sector has performed much better than the domestic sector. Spain (-22.1 per cent) and the United Kingdom (-21.7 per cent) experienced particularly severe drops in their output.
- Household savings jumped sharply in most advanced economies in the second quarter including in Ireland. This was partially enforced as the lockdowns imposed constraints on certain types of spending but the increase in savings was also precautionary reflecting the deteriorating labour market conditions and income expectations.
- The report states that governments in turn will need to maintain fiscal supports until well into 2021 and beyond and remain ready to reintroduce emergency income and business supports if and when incidence of the virus requires further lockdowns on economic activity.
- A final point is that the Covid-19 crisis may compound the medium-term decline in productivity growth that took hold in advanced economies in the 1990s and that accelerated in the aftermath of the financial crash.
- Governments should focus their stimulus packages on reversing the persistently low levels of investment in the productive capital stock. Investments in infrastructure can be targeted to support the necessary transition to a zero carbon economy while increased investments in education, retraining, public R&D, public childcare supports and child poverty reduction can all help improve labour productivity over the long-run.

***Unhealthy Finances: How to Support the Economy Today and Repair the Public Finances Tomorrow*, published by the Resolution Foundation, provides analysis of the dual challenges faced by the government: ensuring that there is sufficient fiscal support through the crisis and recovery, and setting fiscal policy on a sustainable long-term path.**

- In order to achieve improvements in public sectors net worth over the long-term, the government will need to consolidate its finances by around £40 billion, in 2024-25 terms.
- Fiscal policy is set to become a drag on growth in 2021, hampering the recovery. More support is needed in the short term but consolidating the finances could start as early as 2023-24.
- Fiscal consolidation needs to be driven, in part, by the impact of measures on the economy. Tax rises tend to harm the economy less than spending cuts – and the performance of public services is already low. Consolidation should therefore be done primarily through the tax system.
- Public support is necessary and so taxes on corporate crisis windfall profits should be considered.
- Environmental tax changes are needed to help move towards 'net zero' but are unlikely to be able to raise significant additional net revenue for the Treasury.
- Freezing tax thresholds and raising the Corporation Tax rate should be seen as low-hanging fruit for raising revenue.
- Reforming wealth taxes can improve the functioning of the tax system and raise significant revenue.
- A new Health and Social Care Levy should provide the remaining additional revenue.

***Smart and Green: Joining up Digital and Environmental Priorities to Drive the UK's Economic Recovery*, published by the Green Alliance, outlines how to leverage the power of digitalisation to drive a green economy that will allow businesses to compete internationally.**

- Economic recovery from the impact of coronavirus is an opportunity to create a more resilient and prosperous economy. This means gearing up businesses and communities for the new realities that will shape the future. Action on global warming and nature decline should be central to that, in line with the UK's net zero target and environmental goals. But such a recovery should also build on the wave of new digital technologies revolutionising the way businesses operate, to enable them to modernise their operations and compete internationally.
- Despite the significant opportunities smart solutions have to offer, their uptake so far has been patchy. There are specific barriers, such a lack of skills and capabilities in organisations or failings in data governance.
- The report recommends that the government should:
  - Ensure digitalisation and low carbon agendas are joined up in UK recovery plans - digitalisation policy should explicitly support climate and nature goals, and environmental policy should make the most of digital solutions. These aims should be reflected in the government's upcoming strategies, including any updates to the Industrial Strategy, the Digital Strategy, transport decarbonisation plan and the National Infrastructure Strategy.
  - Invest in smart, net zero compatible infrastructure - this will accelerate the deployment of digitally enabled low carbon solutions for better infrastructure delivery, use and decommissioning. The National Infrastructure Strategy should ensure all investments prioritise these, and the government should make sure that any infrastructure that receives public funding embeds smart technology which helps to cut carbon.
  - Strengthen skills and capabilities - businesses and communities across the country should be helped to develop services and products that minimise harm to the environment, enabled by digital technology.
  - Bring people along in the transition, ensuring they can see the benefits of data and technology - this means addressing privacy and safety concerns, and ensuring that data is used for public benefit.
  - Promote greener digital technology - the climate and resource impacts of using digital technology should be minimised, especially as their use will continue to grow. This means setting the highest energy and resource efficiency standards and investing in infrastructure and business models to support them.

***Getting the Building Blocks Right: Infrastructure Priorities for a Green Recovery*, published by the Green Alliance, argues that accelerating progress towards a green economy will support economic recovery from Covid-19.**

- From low carbon transport to clean energy, and from efficient buildings to better land management for flood protection, having the right infrastructure in place will be vital to achieve the UK's net zero emissions target and make the country rich in nature again.
- Investing now in this type of infrastructure is also the best way to promote economic recovery from the impacts of Covid-19. It is fundamental to the long term plan to promote growth and productivity.
- However, current policy risks undermining this ambition. Not only is public investment still falling short of what is needed to scale up infrastructure for net zero, but the absence of a clear infrastructure plan post-Covid and post-Brexit is also limiting private sector investment.
- While the government has taken welcome steps since the start of 2020, including committing new funding to retrofitting buildings and walking and cycling, the report estimates there is an £11.4 billion gap in investment for net zero infrastructure across transport, buildings, natural infrastructure and the circular economy in the year 2020-21 alone.
- A new comprehensive approach to infrastructure, centred on achieving the nation's climate and environmental goals, would address the current shortfalls and create a coherent, long term framework to drive economic recovery. This new approach proposed in the report should:
  - Put net zero at the heart of all infrastructure decisions - as part of the current review of the Green Book, the government should ensure all public spending and policy decisions align with the net zero goal, by setting a 'net zero test' for infrastructure proposals, ahead of assessment of the business case and ensuring compatibility with a net zero pathway at the programme level.
  - Close the investment gap in key sectors - in the forthcoming spending review, the government should allocate at least £13.5 billion a year from 2021 to 2025 to scale up

delivery of net zero infrastructure, targeting the transport, buildings, natural infrastructure and circular economy sectors.

- Boost private investment - to stimulate private investment, the National Infrastructure Strategy, alongside other national strategies that will shape infrastructure delivery, should outline a clear set of priorities and pathways to support the net zero target.
- Empower agencies and regulators - the remits of the National Infrastructure Commission and the Infrastructure Projects Authority should be expanded to ensure assessment of net zero priorities and requirements across all types of infrastructure, including circular economy and natural infrastructure.

PRODUCTIVITY AND GROWTH

***World Economic Outlook, October 2020: A Long and Difficult Ascent*, published by the International Monetary Fund, dissects the global economic effects of the Covid-19 pandemic.**

- Global growth is projected at –4.4% in 2020, a less severe contraction than forecast in the June 2020 World Economic Outlook (WEO) Update. The revision reflects better-than anticipated second quarter GDP outturns, mostly in advanced economies, where activity began to improve sooner than expected after lockdowns were scaled back in May and June, as well as indicators of a stronger recovery in the third quarter.
- Global growth is projected at 5.2% in 2021, a little lower than in the June 2020 WEO Update, reflecting the more moderate downturn projected for 2020 and consistent with expectations of persistent social distancing.
- The pandemic will reverse the progress made since the 1990s in reducing global poverty and will increase inequality. People who rely on daily wage labour and are outside the formal safety net faced sudden income losses when mobility restrictions were imposed.
- The findings suggest that, as long as significant health risks persist, economic activity is likely to remain subdued. Therefore, policymakers should refrain from withdrawing policy support too quickly and preserve spending on social safety nets.
- Tax and spending measures should privilege initiatives that can help lift potential output, ensure participatory growth that benefits all, and protect the vulnerable.
- Retraining and reskilling should be pursued to the extent feasible so that workers can look for jobs in other sectors. Because the transition may take a while, displaced workers will need extended income support as they retrain and search for jobs. Complementing such measures, broad-based accommodative monetary and fiscal responses—where fiscal space exists—can help prevent deeper and longer-lasting downturns, even if their ability to stimulate spending is initially hampered by mobility restrictions.
- To conclude, the report states a green fiscal stimulus would strengthen the macroeconomy in the short term and help lower the costs of adjusting to higher carbon prices. Carbon pricing is critical to mitigation because higher carbon prices incentivize energy efficiency in addition to reallocating resources from high- to low-carbon activities.

***How to Not Miss a Productivity Revival Once Again?*, published by the National Institute of Economic and Social Research, sets out how economies can avoid the lack of productivity growth seen in previous recessions in the drive to recover from the Covid-19 pandemic.**

- As the global economy has entered a massive recession in 2020, triggered by the Covid-19 pandemic, productivity has strongly contracted in a short period of time. During the first quarter of 2020, GDP per worker in the Euro Area dropped at 3.4 percent and in the UK at 2.8 percent compared with the previous quarter. These numbers dramatically worsened during the second quarter when the pandemic hit at its hardest.
- Coming out of the crisis, one may expect to see output recover faster than working hours causing a procyclical recovery of productivity. First, the recession will have caused some companies to go bankrupt, which often are the least productive ones. Second, incumbent companies tend to be cautious in rehiring until the recovery has taken hold and will consider the need to restructure in the light of changes in in the structure of demand.
- The key to a successful medium-term recovery is to turn the post-recession procyclical productivity rebound into a new era of sustained productivity growth.

- The report's research suggests that once the recovery gets underway, digital transformation may have sufficiently matured to provide the key to a sustained recovery in productivity. Digital transformation goes beyond the invention of new digital technologies and needs to lead to diffusion and adoption across the economy. Firms must also create the capacity to absorb and apply technology by way of a skilled workforce, investments in organizational capabilities such as agility and resiliency, and a strong innovation culture.
- The accelerated shift toward remote working, as a result of Covid-19, accentuates the importance of digital transformation as a driver of the productivity recovery. However, this productivity gain is not a given. For example, management research shows a weakening of innovation in remote work settings, especially in hybrid settings with some employees working in the office and others working at home. There seems to be a clear advantage to firms that had previously adopted digital technologies to be better at adopting new technologies, and create new products.

***The lockdown Tale of Two Economies in Ireland: How Big Tech and Pharma Bucked the Trend*, published by the Economic and Social Research Institute, discusses how GDP did not decline in the first half of 2020 to the extent expected for Ireland.**

- The research shows that, despite a drop in personal consumption expenditure that is one of the highest across the European countries examined, the concentration of Irish exports in computer services and pharmaceutical and medicinal goods ensured that overall GDP impact was much more muted due to the growth in these export products.
- Across sectors, a picture of two extremely different economic experiences can be seen. While industrial value added grew by over 10 per cent in the first half of 2020, value-added in construction fell by over 40 per cent, value-added in arts, entertainment and recreation fell by nearly 75 per cent - both of these represent the largest declines of any EU country or the UK.
- This duality in performance can be explained by a concentration of Irish exports in lockdown resistant sectors: 26 per cent of Ireland's exports are computer services and a further 11 per cent are medical and pharmaceutical goods. Exports in both of these areas grew year-on-year during the lockdown. Indeed, during the first half of 2020, the increases in medicinal and pharmaceutical product exports completely outweighed the declines in exports of travel, tourism and transport activities which were hard hit by the pandemic.
- A question arises as to whether these developments were part of multinational corporate activities without any real economic activity taking place on the island of Ireland. Goods for processing activity does not relate to a core activity undertaken in Ireland and could be seen as part of the unusual globalisation effects on the Irish economy. However, the relatively good performance of computer services and medicinal and pharmaceutical products comes from areas of a real sectoral specialisation advantage for Ireland. Even if these sectors are not employment intensive, the contribution of these activities should not be discounted from the discourse around Ireland's economic recovery.

***Dashboard for a New Economy towards a New Compass for the Post-Covid Recovery*, published by the World Economic Forum, outlines a general framework for macroeconomic targets beyond GDP growth to serve as a guide for the post-Covid-19 economic recovery.**

- The simultaneous disruption caused by the Covid-19 crisis in nearly every country around the world has forced societies into a moment of pause and reflection on what is truly of value. Rebuilding the post-pandemic economy in this spirit will require a more comprehensive definition of economic success to serve as a guide for the economic recovery.
- Despite a range of long-standing efforts to define alternative measures of economic progress, reverting to conventional growth in gross domestic product (GDP) as the core economic policy objective remains a reflex for most governments.
- In the wake of Covid-19, much energy has gone into trying to predict what shape the economic recovery will take. Yet, targeting a recovery in GDP growth alone will not be sufficient to advance the holistic economic, environmental and societal reset that is needed at this moment. Instead, the recovery itself will need to be anchored in such a reset.
- In line with this ambition, non-financial economic performance measures will need to be mainstreamed more fully into economic analyses, implemented more fully by governments and tracked more fully by policy-makers on an ongoing basis along with an updated definition of GDP.
- The report proposes five core principles to anchor a new narrative and set of policy targets for the post-Covid economy:

  - Balance people, planet, prosperity, institutions and recognize their interlinkages and trade-offs;
  - Update the measure of GDP and re-evaluate growth as a core policy target;
  - Monitor distributional outcomes and access to opportunity;
  - Include future-orientation and resilience;
  - Reflect connection and community.
- Government and business leaders now find themselves at a historic crossroads, as they are challenged to shape the recovery. A business-as-usual recovery in GDP growth and firm profitability alone will not be sufficient. A compass is needed to guide governments and firms with a broader set of targets that is widely adopted and fully operationalized.

***Jobs for a Strong and Sustainable Recovery from Covid-19*, published by the Centre for Economic Performance, sets out coordinated net-zero-aligned investments which the UK can place at the heart of its recovery plan.**

- The paper draws together evidence on job-creation potential in net-zero-aligned investments from a diverse range of sources. Evidence gathered covers both ex-post and forward-looking studies, with contrasting areas of focus across short-run job creation and longer-term job creation and broader benefits. It also includes new quantitative approaches to identifying economic opportunities across geographies or traded products.
- Evidence from varied sources indicates that net-zero-aligned investments can play an important role in generating employment and economic growth benefits across the UK. It is therefore recommended to place net-zero-aligned investments at the heart of the UK's recovery plan.
- A diverse range of evidence is available to aid understanding of the potential economic impacts associated with making net-zero-aligned investments. Policy makers should therefore draw on diverse economic evidence to design recovery policies and investments seeking to create and sustain jobs; allowing for where in the UK jobs might be created in the short run, and sustained into the longer run, based on comparative advantage in production and innovation.
- There are complex short and long run trends that will shape labour market dynamics. In the short term, Covid-19 will have a devastating impact on a number of sectors – in particular in-person services including hospitality, whereas into the longer term the structural effects of transitioning towards net zero may disproportionately impact some sectors more than others.
- Investments made in the recovery, led by the public sector, will be unlikely to catalyse a longer term increase in these kinds of investments if they do not effectively leverage private investment by demonstrating a path for the private sector to follow. Aligned incentives, improved policy certainty and a National Investment Bank can help reduce risk for long-term sustainable investments.
- Strategic investments should be accompanied with strengthened policies, institutions and regulation to direct private sector investment towards achieving societal goals such as net zero, starting with a robust, net-zero-aligned carbon price, a National Investment Bank and a relaunched, long-term Industrial Strategy with sustainability at its core.

LIVING STANDARDS, WELLBEING AND PROSPERITY

***The 2020 Legatum Prosperity Index*, published by the Legatum Institute, provides an overview of the UK's performance on all twelve pillars of the index.**

- In the global Prosperity Index, the UK ranked as the 13th most prosperous country (Denmark ranking 1st) in the world before the pandemic struck, and was in the top 20 countries for all pillars except Safety and Security, Health, and Natural Environment. On average, the British public enjoyed among the best living conditions globally, with access to quality healthcare and world-leading higher education institutions, and the economy was one of the most dynamic and enterprising in the world.
- However, the pandemic is testing the UK's institutional, economic, and social resilience. One of the most deeply felt effects has been the change observed in interacting with others – family, friends, neighbours, colleagues, and strangers. Over the last 10 years personal and family relationships have deteriorated and the strength of wider social networks has increased less than in other countries.

- In addition, while the overall level of institutional trust in the UK has improved since 2010, public confidence in national government has been deteriorating and is now among the lowest levels seen across the world. This reflects a decline in government effectiveness – of the 20 countries currently ranked highest for this, the UK has deteriorated most since 2017.
- The UK ranked just 80th in the world for mental health at the start of 2020, and many people are likely to have suffered as they have been isolated due to lockdown measures.
- The UK ranks 10th for living conditions, with Denmark 1st. However, an increasing number of people are struggling to find affordable accommodation for themselves and their families.
- In terms of education, the UK ranks 17th overall and 5th for primary education (Singapore is 1st overall). The UK has seen the quality of secondary and tertiary education and vocational training improve over the last decade.
- The report concludes that the UK's future prosperity relies on economic decisions that foster employment, productivity, innovation, and dynamism.

***Poverty During the Covid-19 Crisis*, published by the Legatum Institute, outlines how Covid-19 has impacted poverty and the effect that government policy has also had on it.**

- UK poverty is a significant long-term issue. Prior to the pandemic, more than one in five people in the UK (22%) lived in families in poverty. This has hardly changed over the last 20 years.
- As well as significant health and social impacts, the Covid-19 pandemic has had economic impacts. These have most clearly been seen in falling employment levels, wage reductions for furloughed workers and falling earnings for the self-employed.
- These impacts have not been evenly spread. The economic impacts of the Covid-19 crisis have been felt particularly hard in certain sectors and by people with a range of specific characteristics. In general, those hardest hit have been young workers, those in relatively low-paying employment and those working in sectors such as hospitality and retail.
- Poverty has risen as a result of the Covid-19 crisis. Compared to the situation where the Covid-19 pandemic had not hit the country, 440,000 more people were in poverty in Summer 2020 and 690,000 more in Winter 2020.
- The largest impacts have been seen in poverty amongst working-age adults. The distribution of economic impacts has meant that poverty has risen most amongst working-age adults. Compared to the situation where Covid-19 had not hit the UK, 640,000 more working-age adults are in poverty in Winter 2020.
- In an attempt to mitigate some of the financial impacts of the Covid-19 crisis, the Government has introduced a range of financial support for families and businesses. These include a temporary increase of £20 a week to Universal Credit and Working Tax Credits and the suspension of the Minimum Income Floor. The report estimates that these policies alone have protected some 690,000 people from poverty in Winter 2020.
- Projections in the report show a reduction of 100,000 in poverty amongst people living in lone-parent families and a reduction of 170,000 in poverty amongst people in workless families in Winter 2020, compared to the case where the Covid-19 crisis and resulting increases to benefit generosity had not happened.
- Poverty depth has also changed. Compared to the situation where the Covid-19 pandemic had not impacted the UK, 270,000 more people are in the deepest form of poverty (50% + below the poverty line). However, the majority of the increase in poverty is seen in the shallowest form of poverty (0-25% below the poverty line), with 370,000 more people in this situation because of the impacts of the Covid-19 pandemic.

***Poverty in Scotland 2020*, published by the Joseph Rowntree Foundation, examines the extent of poverty in Scotland for 2020, along with recommendations on how to tackle it.**

- Even before coronavirus, around a million people in Scotland were in poverty, living precarious and insecure lives.
- The report notes that while the Scottish government is committed to tackling poverty, poverty has been rising and is not on course to meet interim child poverty targets within three years. The relative child poverty target requires a fall of a quarter in the proportion of children in poverty compared to the latest data, which has increased compared to five years previously. The picture

for other groups over the last five years is similarly disappointing, with no change in poverty for working-age adults and an increase for pensioners.

- It is argued stronger support is needed at the UK level to retain as many jobs as possible. Both the UK and Scottish Governments need to strengthen training support quickly for those whose jobs disappear and key employment programmes in Scotland like the Parental Employment Support Fund should be increased and extended across the lifetime of the next parliament (2021-26).
- The report recommends the UK government must keep the increase in the Local Housing Allowance and review the adequacy of support available to low income and struggling homeowners. The Scottish Government must commit fully to an Affordable Housing Supply Programme that will create 53,000 new affordable homes, 70% of which should be for social rent. They should be prepared to step in with additional legislative support and further help with housing costs, if the existing support for renters proves insufficient to keep them in their homes. The Scottish Government should evaluate all their investment in housing for its impact on reducing child poverty and supporting equality groups.

***Poverty in Wales*, published by the Joseph Rowntree Foundation, compares poverty in Wales before and after the outbreak of Covid-19.**

- Even before coronavirus, almost a quarter of people in Wales were in poverty (700,000) living precarious and insecure lives. The risk for children alone was higher with 3 in 10 children living in poverty.
- Wales has lower pay for people in every sector than in the rest of the UK. At the start of the coronavirus outbreak, more than a third of jobs were furloughed and some local areas faced a much higher risk of losing their furloughed jobs altogether, due to the types of work in the area.
- For low-income families, one factor in being unable to escape in-work poverty is the need to balance paid work with caring for children. Two in five local authorities in Wales report that there is not enough childcare for those working atypical hours. The supply and affordability of childcare, for children of all ages, is important if women are to be able to fully enter the labour force and move out of poverty.
- With the number of Universal Credit claimants doubling from the start of 2020 it is likely that more people will be looking to rely on additional Welsh support. It is therefore even more important that the Welsh Government establishes a clear, effective and fair benefits system, which complements the social security system that already exists in the UK.
- Retaining the temporary uplift of Universal Credit and Working Tax Credit allowances, as well as extending this to legacy benefits is key. For instance, of the 180,000 children in poverty, 140,000 live in families that receive income-related benefits.
- The private rented sector remains smaller than in other UK nations, however, increasing reliance on expensive private rents puts many poorer households at additional risk of poverty. Poverty rates among private renters are higher in Wales than elsewhere in the UK.
- As the furlough scheme ends and unemployment rises, the strain on households is likely to increase. The gaps in the benefit system will become increasingly apparent for those struggling financially and arrears in housing payments and other necessary bills may begin to build. Work needs to be done to mitigate the potential long-term consequences.

***Preparing for a Pandemic: Spending Dynamics and Panic Buying during the Covid-19 First Wave*, published by the Institute for Fiscal Studies, examines consumer spending dynamics during the first wave of Covid-19.**

- The report documents a large spike in spending for storable products, such as food staples and household supplies, in the days before lockdown. Demand increases were concentrated in 30 of 138 product categories, including soap, soup, canned goods and dried pasta.
- The report shows that a number of storable categories experienced dramatic spikes in demand, and that this was primarily driven by more consumers than usual buying products in these categories on at least one of their shopping trips over this period, rather than increasing the amount they bought on any particular trip. Unusually high demands were widespread across households, although higher socioeconomic status households increased the quantities they bought by more than lower socioeconomic households.
- Understanding the motivations behind why people hoard is important in determining what, if any, is the appropriate policy response. For example, the category that saw the largest increase in

demand was soap – given the focus on the importance of hand washing to prevent the spread of the virus, this likely reflects a shift in preferences that could be persistent.

- It is also important to recognize that government policy can affect the degree of panic and subsequent hoarding. An important avenue for future research is to exploit differences in the course of the pandemic and resulting restrictions across different localities, to further unpack the drivers of panic buying and hoarding behaviour.
- Temporary limits on the number of units per transaction, introduced following the demand spike, are therefore unlikely to lead to the avoidance of stock-outs. Given rapidly increasing case numbers in the ongoing second wave, and the spectre of further national lockdowns, this work provides timely evidence for preparing for a future demand spike.

***The Impact of Imposing an Additional 2p on Fuel Duty*, published by the Centre for Economics and Business Research, outlines the impact of a 2p increase on fuel duty after a 10 year freeze.**

- The report finds that any rise in fuel duty would generate very little revenue. A rise in fuel duty would create economic damage, cutting GDP by about £600 million and reducing employment by about 8,000 jobs. It would add 0.6% to the CPI (inflation).
- A rise in fuel duty would hit the poorest motorists most. Motorists in the poorest 10% of the population spend proportionately twice as much on fuel as the richer groups. A rise in fuel duty is therefore regressive.
- With growth in the online sector, vans are critical to the economy. The increase in the burdens on van drivers, like those on other road users, has already started to impact on their willingness to service clients. If this continues a critical link in the service chain could break.
- The HGV sector is in a fragile situation. The average age of drivers is 55 with 13% over 60 and only 2% below 25. Profit margins are estimated at 1% only. The number of owner operators has been falling away. It is conceivable that a rise in duty could be the straw that breaks the camel's back of this essential service.
- Previous research has shown that the policy of freezing fuel duty, in place since 2011, has been highly successful, reducing the CPI by 6.7% compared with where it would have been and boosting household expenditure by £24 billion.
- By 2040, fuel duty receipts will probably be less than a fifth of current levels, updating the projections above to take account of the likely ban on sales of fossil fuel based vehicles. The current fiscal crisis is long term and will need up to 50 years of revenue raising and expenditure constraint. Given that any revenue gains from higher fuel duties will be only temporary and will evaporate over time, it seems unnecessary to take the political and economic damage from raising fuel duty in return for very little long-term revenue. The balance of advantages seems adverse.
- This means that even the relatively small short term revenue gains from a 2p rise in the rate of fuel duty, estimated at £250-470 million, would dwindle to £50-£90 million only (at 2019 levels of activity and prices) within 20 years. As the fiscal crisis is a long term crisis, this indicates that a rise in fuel duty has a miniscule role to play in sorting the nation's fiscal position.

Innovation and Enterprise

INNOVATION

***Greater than the Sum of their Parts: How Hybrid Cloud and AI Work Together*, published by Oxford Economics, analyses a survey put forward to determine the combined value of artificial intelligence (AI) and cloud technology for businesses and organisations.**

- The report finds that cloud technology and AI are already delivering value. Many respondents report value from their combined cloud and AI projects, with return on investment (ROI) coming most often in business operations, IT operations, and customer service.
- Organizations that are further along in cloud and AI adoption outperform their peers. Leader segments are distancing themselves from the pack in important ways, including stronger reported effectiveness across a range of technology and business areas. Those furthest along in their use of AI and cloud—who also are somewhat more likely to be in a hybrid cloud environment—are more likely than others to see cloud as an accelerant of their ROI.

- Nearly three-quarters (74%) agree that cloud is critical to the successful development of AI applications. Hybrid cloud users are more likely than others to say the effective use of AI will be critical to their organization's long-term success (80%, vs. 67% of those in all-public or all-private environments).
- AI depends on data and that data is increasingly complex. For 77% of respondents, a unified platform for cloud, data, and AI is seen as critical to long term success, and a similar number say cloud is a critical foundation for data management and AI.
- Complex business needs demand a tailored approach to cloud. Executives are increasingly focused on building diverse cloud portfolios by using multiple types of hosting environments to support different needs and opportunities. This momentum is expected to accelerate in the next two years, and many are shifting to hybrid multicloud environments.

RESEARCH AND DEVELOPMENT

***Northern Ireland Research & Development Survey 2019*, published by the Northern Ireland Statistics and Research Agency, outlines research and development expenditure for Northern Ireland in 2019.**

- In 2019, £881.4m was spent on R&D by Businesses, Higher Education and Government in Northern Ireland (11.0% more than in 2018). Of this £881.4m, 71.5% was spent by Businesses, 25.1% by the Higher Education sector and 3.4% by Government departments.
- A total of 966 companies engaged in business R&D in 2019. The ten biggest spending companies accounted for around one-third of all business R&D spend (£198.6m).
- Almost three quarters of business spend (74.1%) was by the highest spending 10% of R&D companies. Median spend on R&D per company was £136,000.
- The majority of the 966 companies engaged in R&D were locally owned (813, 84.2%) and they accounted for 47.0% (£296.0m) of total R&D spend in 2019. Expenditure by locally owned companies increased by 12.2% (£32.2m) in cash terms between 2018 and 2019.
- While externally owned companies accounted for 15.8% of all R&D performing companies, they accounted for just over half (53.0%, £334.1m) of all R&D expenditure in 2019. Expenditure by externally owned companies increased by 17.2% (£49.0m) in cash terms over the year.
- Median spend on R&D was £112,000 per locally owned company in 2019, compared with £478,000 per externally owned company. Median spend was higher among small (0-49 employees), medium (50-249 employees) and large (250+ employees) externally owned businesses, compared with locally owned businesses
- In-house R&D work accounted for the vast majority (95.4%) of spend in 2019 and the majority of this spend was self-funded (64.7%).
- In-house R&D expenditure by businesses in Northern Ireland expressed as a proportion of GVA equated to 1.4%, which is in line with the UK average (1.4%) and ranks NI as 5th out of all 12 UK regions.
- In 2019, there were 9,170 full-time equivalents working in R&D roles; 39.6% worked as researchers, 27.4% as technicians and 33.0% were other staff.

SECTORS AND TECHNOLOGIES

***Cyber Information Sharing: Building Collective Security*, published by the World Economic Forum, explores the growing importance of cybersecurity.**

- Cybersecurity is a pillar of a digitally resilient society. It is essential for assuring the integrity of the interconnected business and social processes that sit on top of modern societies' complex digital ecosystems. Its growing importance as an issue has been tracked by the World Economic Forum Global Risk report and now the potential impact of cyberattacks is consistently ranked as one of the biggest risks facing the global economy today.
- Since its relatively recent emergence, the cybersecurity ecosystem has faced several challenges as it has worked to mature the isolated cybersecurity activities of actors throughout society into a cohesive ecosystem, which allows itself to be accountable to all parts of society. It has had to overcome these shared challenges in a fluid environment. The Covid-19 pandemic has led to rapid

digital transformation in many workforces and sectors, further increasing the dependency of our global economy on digital infrastructure.

- Intelligence sharing between stakeholders is a defining feature of the cybersecurity community and one of its most important shared challenges. No stakeholder alone can sustainably identify and address all the cyber threats of the fast-changing digital landscape. Trusted, secure and scalable cyber information sharing needs to be a foundational platform on which all participants of the digital ecosystem can rely.
- Barriers that cybersecurity faces includes:
    - Gaps in jurisdictions and cross-sector collaboration;
    - Skills and capabilities;
    - Trust and privacy;
    - Operational costs;
    - Lack of clear incentives.
- New technology, among other interventions, promises to overcome some of these barriers. Artificial intelligence (AI) and machine learning (ML) technologies are enhancing the effectiveness and value of sharing data, and privacy-enhancing technologies are enabling the sharing of information while protecting privacy and security. Combined, these technologies can dramatically expand, automate and improve organizations' ability to protect themselves from cyberthreats.

***The Value of Cyber Insurance to the UK Economy*, published by Oxera, considers the benefits and importance of cyber insurance policies for UK businesses and the UK economy more broadly.**

- In today's world, firms across all sectors of the economy rely on some level of digital infrastructure for their everyday operations. The abrupt transition to more remote forms of working and the digitisation of the economy more generally brought about by the Covid-19 pandemic has reinforced this trend. From small start-ups to global giants, businesses are increasingly dependent on networked devices in one form or another.
- While this presents businesses with huge benefits and opportunities, the increasing reliance on technology also increases the potential harm posed by cyber risks.
- Cyber insurance is one vital component of any strategy aimed at mitigating risks and improving cyber security. In addition to paying out in the event of a cyber incident, insurance makes an important contribution to the management of cyber risks by promoting awareness about exposure to cyber losses, sharing expertise on risk management, encouraging investment in risk reduction and offering support in responding to cyber incidents.
- Cyber insurance plays an important role in the UK economy, both through the direct benefits to UK business as well as the impact on the economy more broadly.
- The projected growth in the cyber insurance market poses challenges for data security as the quantity of data susceptible to cyber-crime increases. To tackle the challenges that arise from increasing connectivity, it is expected that coverage of cyber risks will continue to expand. To reflect this, the relevance and importance of cyber coverage in the overall functioning of the economy is expected to increase significantly.
- A deeper understanding of cyber risks is both required and expected as the market matures. This will be from both the demand side, as businesses better understand their own needs, as well as the supply side, as insurers get better at assessing and treating risks.
- By increasing the cyber-readiness of UK firms, employees and cyber-security professionals, cyber insurance is likely to help contribute to the UK's brand as a place to do business. This, in turn, may help stimulate further investment in the UK economy and boost exports.

ENTREPRENEURSHIP

***Global Entrepreneurship Monitor (GEM) UK: NI Report 2019*, published by the Department for the Economy, seeks to provide information on the entrepreneurial landscape in NI relative to the performance of 50 other countries in 2019.**

- Northern Ireland has historically lagged behind the rest of the UK in terms of enterprise start-up activity and the GEM Global project tracks this through its unique annual survey which focuses on the measurement of new business formation at the level of the individual.

- The rate of total early-stage entrepreneurship (TEA) in Northern Ireland in 2019 is 6.6%, a slight increase from 2018. The 2019 rate compares to a figure of 9.9% in the UK overall, 10.5% in England, 7.0% in Wales, and 7.2% in Scotland. The TEA rate in Northern Ireland in 2019 is significantly lower than the UK and England. This result is confirmed when the rates are combined over 2017-19.
- The female TEA rate in Northern Ireland in 2019 is 3.1% compared to a male rate of 10.1%. This gap between females and males is the highest amongst the UK nations.
- TEA rates tend to vary by age with those aged over 30 generally more likely to be engaged in entrepreneurial activity. In 2019, those aged between 25-34 in Northern Ireland were the most entrepreneurial.
- Within Northern Ireland the highest TEA rates are typically found in the Mid-Ulster Council area, while Derry City and Strabane have the lowest. The rate in Mid-Ulster is driven by male entrepreneurial activity; in Derry City and Strabane there are relatively low female rates of entrepreneurship. In 2017-19, Lisburn and Castlereagh is the only council area in which the female TEA rate is significantly lower than the male rate.
- In both Northern Ireland and the UK, starting a business to continue a family tradition is the least motivating factor, and is significantly lower than all other reasons. More than half of early-stage entrepreneurs in Northern Ireland were motivated by making a difference, building wealth and seeking to earn a living. None of the motivation factors were significantly different between Northern Ireland and the UK.

***Diagnosing Covid-19 Impacts on Entrepreneurship: Exploring Policy Remedies for Recovery*, published by the Global Entrepreneurship Monitor, analyses how policymakers need to create cohesive, holistic and conducive frameworks in order for entrepreneurs to flourish in a post Covid-19 world**.

- In response to the pandemic, many national governments have focused on securing workplaces, assuring financial liquidity and incentivising business model modifications. Several broad themes emerged as principles policymakers should consider moving forward based on analysis provided by 54 GEM National Teams. These principles of moving forward to recovery can best be summarised by the acronym CRISP:
    - Clear and concise communication of policies so as many entrepreneurs as possible can benefit from policies;
    - Resilience and responsibility in public policy that is conducive to creating new ventures and growth of existing companies;
    - Innovating by deploying new processes, tools and practices that are used for policy design and development, which result in better problem solving of current and future issues facing society, and ultimately help entrepreneurs grasp opportunities;
    - Simplifying policies so particularly new entrants from the informal sector will be able to navigate the new, formal business context;
    - Preparation, as policymakers should spend time preparing for a potential new wave of Covid-19.
- Clearly, the focus for entrepreneurs after the crisis will be accelerating further towards digitalization, managing liquidity to avoid bankruptcy, increasing sales and marketing efforts and reducing costs. There will be considerable longer-term effects owing to lower household incomes, which will decrease purchasing power and GDP even further and have a lag impact on indirectly affected industries and on liquidity for municipalities. All of these effects, naturally enough, will potentially deprive entrepreneurs and employees of their livelihoods.

BUSINESS GROWTH

***Support for Business During the Coronavirus Crisis*, published by the Institute for Government, summarises how national and subnational governments in nine advanced economies have so far supported businesses during the crisis through grants, tax cuts and other schemes.**

- The policies that governments have adopted can be split into two categories. The bulk of policies (particularly in the early stages of the crisis) were aimed at helping all businesses survive the initial shock caused by the spread of the virus and – in most cases – extensive economic lockdown. A second set of policies has focused on helping the economy 'recover' and restructure once the threat of Covid wanes.

- The countries examined in the report have used a similar set of tools to help businesses as has the UK: deferring and cancelling some business taxes; offering grants to struggling firms; and guaranteeing or directly providing loans to ease cash flow problems.
- Many of these schemes have been open to all businesses but the countries in this study, comprised of the UK, Canada, France, Germany, Japan, Ireland, New Zealand, Norway, Singapore and Sweden, have also provided some sector-specific support, mainly to those firms that have been hardest hit – usually the travel, tourism or hospitality industries – but also to start-ups, exporting firms and strategically important businesses.
- Due to the scale of the crisis and its widespread impact, most of the policies have been designed and funded by central governments. In most of these countries, subnational governments did not have the fiscal firepower to provide the scale of support needed. The extent of the economic hit from Covid has also not been well correlated with subnational governments' fiscal capacity – so there has been a need for within-country redistribution of resources by central government.
- In designing these schemes, governments have had to weigh up competing concerns. There is the risk that taxpayer money is wasted by programmes that distribute money quickly and widely but are poorly targeted and so have significant 'deadweight' costs – giving money to firms that could survive on their own. But as the crisis wears on – and particularly if evidence emerges that some of the changes induced by Covid may be long-lasting – governments may be keen not to spend money keeping businesses afloat that have no long-term future, hindering economic restructuring and weighing on growth for many years.

GROWTH FINANCE

[No relevant material sourced for this quarter's release.]

BUSINESS REGULATION

[No relevant material sourced for this quarter's release.]

Succeeding Globally

TRADE

***Trading our way to recovery: Stepping up Globally to Level up Locally*, published by the Confederation of Business Industry, outlines how business and government can work together to ensure the opportunities of international trade and investment are realised.**

- The CBI has launched a report calling for government and business to work in partnership on the UK's ambitious trade agenda. Only a strong partnership between business and government will ensure the benefits of post-Brexit trade are realised. The report has four main recommendations.
- Trade starts at home and is integral to UK prosperity, influence, and security.
  - Trade and investment are key drivers of growth, enabled by competitive domestic policies such as skills and infrastructure. To succeed globally, business needs a renewed domestic agenda which puts trade and investment at its core;
  - Trade is a geopolitical lever, so integrate business thinking into foreign policy.
- Business insight leads to better trade policy.
  - So that business can better highlight issues, support economic impact analysis, and engage to prioritise asks, extend consultative structures for trade policy to wider market access discussions;
  - To ensure the UK's trade policy is supporting economic prosperity, the implementation, compliance, and effectiveness of agreed trade liberalisation, including utilisation rates and regional impact, needs to be monitored. Establish an Office for Trade Impact (OFTI) to be accountable for this.
- A Global Britain needs to build consensus, champion free trade and drive inclusive growth.
  - To provide the insight needed to fully utilise the UK's new independent seat in Geneva, convene a standing committee of UK business representatives with proven expertise in the World Trade Organisation (WTO) system.

- To harness and build the UK's strengths and leadership in innovation use free trade agreements (FTA), economic and financial dialogues (EFD) and joint economic and trade committees (JETCO) to build consensus and lay the groundwork for collaboration on emerging technology and the standards which will underpin their use.
- The UK can lead the world in services and innovation.
  - Increase the focus on services as a fundamental UK strength, both within trade policy and through launching a global campaign to promote services liberalisation and exploit export opportunities.

INWARD INVESTMENT

[No relevant material sourced for this quarter's release.]

TOURISM

***Covid-19 Consumer Sentiment Tracker*, published by Visit Britain, summaries the future holiday intentions of people surveyed between 23rd and 27th November 2020.**

- The results show that the overall mood and optimism are on the rise, but near term confidence and trip intent remains subdued.
- The national mood has fallen back slightly to 6.5/10 (despite an increase of those scoring their mood as 9/10) and the proportion who are feeling the 'worst is still to come' has declined slightly to 39% (40% last wave). 15% believe the worst is now over.
- Just 14% expect 'normality' to return to their lives by March 2021. However, more than a third (35%) are expecting life to be more normal between April-June 2021 with the remainder later in 2021/22.
- Confidence remains subdued in the immediate term, with only 15% confident they could take a domestic overnight trip during December 2020 and a similar proportion in January (14%).
- 4% of UK consumers anticipate taking a trip by the end of 2020, with an additional 11% intending to take one between Jan – March 2021. This is slightly down on the previous wave.
- Uncertainty and reticence to commit to a break is still very evident, with only a third (33%) of trips being planned by the end of 2020 and only 16% actually being booked.
- With regards to when people are thinking of taking their next UK break, the majority intend to do so from Spring 2021 onwards with 37% looking at between April – September (up 2 percentage points from the previous wave) and a further 16% after October. 32% are not currently intending to take domestic overnight trips (same as previous wave).

Economic Infrastructure

ENERGY

***Carbon taxes, Poverty and Compensation Options*, published by the Economic and Social Research Institute, examines how the Irish carbon tax can be raised without increasing poverty and disproportionately affecting low-income households.**

- The report shows that poverty can in fact be reduced and the lowest-income fifth of households left better-off using a third of revenues from a carbon tax rise on targeted increases in welfare payments, as proposed in the recent Programme for Government. This reverses the regressive impact of an uncompensated carbon tax rise, which arises because goods subject to the carbon tax make up a larger share of spending for lower- than higher-income household.
- The lowest-income fifth of households is heavily comprised of working-age adults in receipt of social welfare payments and their dependents. These can be compensated for a rise in the carbon tax through increases in the maximum rates of the main working-age welfare payments or raising Increases for Qualified Children (IQCs) paid alongside these benefits to those with dependent children.

- The report shows that doing so and using a third of the €159 million Revenue estimate that a €7.50 per tonne carbon tax increase raises would reduce the overall poverty rate by 0.2 percentage points and leave the lowest-income fifth of households on average better-off. Using the revenue to increase IQCs would reduce the child poverty rate by twice that (0.4ppts): a substantial reduction.
- Policymakers may also be concerned about the impact an uncompensated carbon tax rise will have on single adults living alone. Using a third of revenues to raise the Fuel Allowance or Living Alone Increase is well targeted at compensating such households, though would not on its own reverse the regressive impact of a carbon tax rise. This is because much of the gain from such benefits goes to households around the middle rather than the bottom of the income distribution, reflected in lower rates of poverty among retired adults than working-age adults or children. However, using one-third of the revenue to fund a combined increase in IQCs and these benefits would be both progressive and poverty reducing.

TELECOMS

[No relevant material sourced for this quarter's release.]

AIR ACCESS

***Clean Skies for Tomorrow: Sustainable Aviation Fuels as a Pathway to Net-Zero Aviation*, published by the World Economic Forum, provides a clearly defined strategy to scaling sustainable aviation fuels (SAF) in Europe.**

- Aviation now accounts for 3.6% of total greenhouse gas (GHG) emissions in the EU and its contribution is set to continue to increase in the coming decades without coordinated action from industry and policy-makers. While a range of interventions will be necessary to seize all opportunities to reduce emissions from aviation and reverse this trend, including technology improvements and breakthroughs, there is at present an urgent need to specifically support the uptake of sustainable aviation fuel (SAF).
- SAF is indispensable to achieve carbon neutral aviation, especially for long-haul flights. It has the significant financial advantage of not requiring any major new equipment or infrastructure investment, as it can be blended with conventional jet fuel. Today's commercial production is, however, only approximately 0.05% of total EU jet fuel consumption and the current pace of growth is nowhere near what it should be to meet Europe's climate objectives.
- The key issue currently preventing the production and use of SAF from taking off is the price gap between fossil-based jet fuel and SAF, which remains prohibitively large. The SAF supply chain faces a "chicken and egg" problem with supply and demand: costs will come down if production scales up (thanks to learning curve effects and economies of scale), but fuel providers are lacking a strong demand signal to increase production and demand is low due to the high price premium.
- To increase the production and use of SAF, the following proposals are made:
  - Support innovation to bring lignocellulosic/ biowaste and power-to-liquid pathways to market;
  - Support SAF provision through price floors guaranteed by government during the early stages of deployment;
  - Support early deployment by de-risking investment in the first wave of production facilities;
  - Announce in 2021 a SAF blending mandate for European aviation to be enforced no later than 2025 with a blending level increasing progressively through 2050.

Government

NORTHERN IRELAND

***Economic and Sectoral Impact of Eight Weeks of Autumn 2020 Restrictions*, published by the Department for the Economy, analyses the cost that Autumn restrictions had on the NI economy.**

- Northern Ireland's pre-pandemic economic output was around £42bn in Gross Value Added (GVA) terms and £49bn in Gross Domestic Product (GDP) terms.
- At the height of spring lockdown, output in the economy was operating at around 25% below normal levels, with many sectors shutdown. Consequent losses are estimated to be around £4bn to £5bn in 2020 as a whole.
- The report suggests that the total direct impact to Northern Ireland's GVA over the eight weeks of Autumn 2020 restrictions is over £200m. This is a starting point, for the direct impact only. Once other considerations, including indirect and induced impacts are added to this, a total loss of approximately £400m to £600m is possible, but is subject to uncertainty.
- The possible direct and wider loss from the restrictions is therefore equivalent to around 0.5% to 1.5% of Northern Ireland's annual GVA. This is substantial, but yet is less severe (in immediate output terms) than the impact of the spring lockdown (where construction, manufacturing and office workers, etc. stayed at home en masse).
- While businesses in the early spring of 2020 were in reasonable financial health entering the first lockdown, the latest restrictions come at a time of financial stress. According to the ONS, 78% of single site businesses (16-29 November 2020) in the Accommodation & Food Services industry in Northern Ireland had no or less than three months of cash reserves, compared with 53% across the UK.
- Seasonally adjusted Labour Force Survey estimates for Northern Ireland for the period August-October 2020 showed that over the year the unemployment rate increased by 1.6pps to 3.9%. The youth (16-24) unemployment rate was 11.7%. UK-wide, current furlough take-up rates for those aged under 25 are higher than those aged 25 to 64. Those aged 65+ also have relatively high furlough take-up rates.

***The Impact of Covid-19 on the NI Economy: Modelled Results for Q3 2020*, completed by Fraser of Allander Institute on behalf of the Department for the Economy, examines the potential impact of the coronavirus pandemic on the Northern Ireland economy for Q3.**

- Data from the Business Impact of Covid-19 survey (BICS) at the start of the first lockdown in April has shown that there was a higher level of business closure in Northern Ireland than the UK average. However, since May the gap in the level of openness between the UK and NI narrowed as more businesses resumed trading.
- The overall results suggest, as before, that we are likely to see a more severe initial impact on the NI economy followed by a faster recovery than the UK average. However, this masks larger differences at a sectoral level given the detailed weighting of the NI economy.
- The manufacturing of motor vehicles, beverages and tobacco products, and machinery and equipment made the strongest contribution to the modelled Q3 growth within the manufacturing sector. Within the wholesale & retail sector, motor trades were the most important driver of growth followed by retail.
- The results show a larger fall in growth for NI during March and April. However, the modelled results suggest that the recovery has been more rapid for this lower base in NI, with higher growth than the UK average throughout May to September. The estimated trough to peak growth (April – September) was 32.7% in NI compared to 22.9% in the UK. This chimes with the BICS data, which shows a higher degree of "opening up" of the NI economy compared to the UK average.
- In Q3 mobility in Belfast has increased faster compared to London and the other capitals of devolved UK nations. The difference was largest in footfall to retail and recreational venues which was down only 26% in Belfast compared to over 40% in London and Edinburgh.
- The magnitude of decline in job vacancies between February and May was similar for NI and the UK, but the subsequent recovery has been faster in NI. In September the number of vacancies in NI was close to last year's levels, but it remained circa 40% lower in the UK.
- Overall, real-time indicators of economic activity and the labour market point to a strong recovery in Northern Ireland which exceeds the pace seen in the rest of the UK, adding further robustness to the modelled results.

ENGLAND

[No relevant material sourced for this quarter's release.]

SCOTLAND

[Low Carbon Heating in Domestic Buildings - Technical Feasibility: Report](), published by the Scottish Government, assesses the suitability of low carbon heating technologies in residential buildings in Scotland.

- The key findings of the report provide learnings on the composition of Scotland's housing stock and on its potential interaction with a wide range of low-carbon heating technologies that will be essential for the decarbonisation of domestic heating in Scotland.
- The characteristics of the insulation of the existing stock will change over time in order to comply with the requirements set by the Energy Efficient Scotland Route Map, with the target for all owner-occupied homes to reach Energy Performance Certificate (EPC) band C by 2040.
- The feasibility of the implementation of low-carbon heating in heritage homes will need to be assessed individually. While the installation of low-carbon heating technologies in heritage homes provides relatively similar obstacles as in non-heritage homes, the implementation of energy performance upgrade measures might be more difficult and will require to be assessed on a case-by-case basis.
- The number of homes that might be constrained by the fuse limit in the installation of air source heat pumps (ASHP) is significantly lower than for electric storage heating and direct electric heating, due to the higher efficiency of heat pumps.
- The installation of heat pumps is not advisable in homes with peak specific heat demand above 150 W/m^2. Peak specific heat demand could constitute a barrier to the implementation of heat pumps, due to the low flow temperature at which space heating is delivered.
- Homes with limited choice of suitable low-carbon heating options may be more subject to implementation risk. Four main groups of dwellings with limited suitability were identified, including homes that are suitable for (a) decarbonised gas, bioenergy and electricity only, (b) decarbonised gas and electric resistive heating only, (c) electric resistive heating and bioenergy only, (d) bioenergy only. Depending on the chosen technology, these homes are at risk of incurring in high costs (electricity) or not being able to rely on the availability of the technology (decarbonised gas grid and bioenergy). Depending on the chosen specific heat demand and fuse rating, homes with restricted suitability could amount to up to ~20% of the housing stock.
- Given the complex nature of the application of retrofit measures in heritage and old homes, the report advises that this area is investigated in more detail. In particular, the suitability of energy efficiency measures in homes should be assessed separately for each of the different materials available. Such a study would greatly benefit from the engagement of local stakeholders involved in retrofit projects (e.g. Scottish Land and Estates), who can provide real data and information on the types of materials applied, their suitability and costs currently in use.

WALES

[No relevant material sourced for this quarter's release.]

REPUBLIC OF IRELAND (ROI)

[No relevant material sourced for this quarter's release.]

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