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[REDACTED],
Please find attached Vodafone Ireland's response to the consultation on the Digital Connectivity Strategy.
If you have any queries regarding the attached, please don't hesitate to get in touch.

Kind Regards,

[REDACTED]



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Vodafone Response to Consultation

Digital Connectivity Strategy

Version: Non-Confidential

Date: 31/03/2022

Introduction

Vodafone Ireland welcomes the opportunity to engage in this important consultation. We remain at your disposal to discuss any aspect of this submission in more detail.

Vodafone Ireland

For the purpose of the consultation, we confirm that Vodafone is a business; and is Ireland's leading total communications provider with 2.3 million customers and employs over 2,000 people directly and indirectly in Ireland. Vodafone provides a total range of communications solutions including voice, messaging, data, and fixed communications to consumers and to small, medium, and large businesses. Since 2011, Vodafone has expanded its enterprise division, offering integrated next-generation fixed and mobile solutions in addition to cloud-based platforms, machine-to-machine services, and professional ICT support.

In this submission, we provide responses to the consultation questions outlined in the document.

Vodafone Ireland Consultation Responses

Questions

1. Is the ambition level set out in the State's Digital Connectivity Strategy appropriate?

Vodafone Ireland welcomes the publication of the Digital Connectivity Strategy, as a positive step in providing a roadmap in building towards the country's digital ambitions. COVID has highlighted the critical importance of connectivity and the need to foster an environment for investment in and deployment of digital infrastructure. As the world becomes more digital, investments enabling "InfraTech" may well be more valuable longer-term to the economy. These investments will create jobs and deliver tangible assets that will fuel long-term economic growth.

The Strategy in our view could be more ambitious in terms of investment and policy approach. A report, commissioned by Vodafone and conducted by Deloitte, 'Digitalisation – An Opportunity for Europe', looks at the five key measures – connectivity, human capital, use of internet services, integration of digital technology and digital public services – that are measured by the European Commission's [Digital Economy and Society Index \(DESI\)](#), and reveals that even modest improvements can have a big impact.

*It shows how increased digitalisation of Europe's services and value chains over the next six years could **boost Ireland's GDP per capita by 0.98%, and also increase productivity by 6.30%.***

For Ireland, increasing our 2019 score by just 5 points, from 58 to 63 would boost GDP per capita by 0.56% and productivity in the long term by 1.70%. However, if the digital allocation from the EU recovery package, particularly the Recovery and Resilience Facility (RRF), was concentrated in areas that would allow Ireland to aim towards a DESI score of 90 by 2027 (the end of the EU's budget), GDP could increase by as much 0.98%. If every Member State reached the 90 milestone, the report notes that "GDP per capita across the EU would be 7.2% higher at the end of the period, with countries at lower GDP per capita in 2019 standing to be the biggest beneficiaries. There is a need for a dedicated investment roadmap, both public and private sector to be in place, as well as a set of KPIs and governance structure, if not we risk not meeting the ambition of the Strategy and the European Commissions 'Digital Decades Programme', as well as impacting Ireland as a future location for FDI.

2. The Department invites commercial operators to submit details of their existing or future planned networks delivering broadband services to premises with at least 1Gbps download speed? Details should include the list of premises that are or will be covered and the expected date by which the Gigabit broadband service will be made available to each premises.

Vodafone has invested hundreds of millions in our network over the past three years and are committed to maintaining our position as one of the lowest dropped call operators in Europe.

We are also continuing to expand our data network to bring customers 4G +5G data wherever they currently have voice today. Our strategy is to build the network for the future right, and so, we are conducting an Access Network Modernisation programme to ensure all sites are modernised and delivering the best possible mobile experience for our customers. This involves over 2,500 sites being modernised, protecting, and enhancing our customer experience and maintain our market leadership. In summary:

- *5-year project due to complete in early 2025*
- *New 4G coverage in locations for the first time*
- *Enhanced 4G capacity at key locations*
- *5G densified in the cities & 5G coverage footprint expanded across the country*
- *Delivering the optimal customer experience in an unlimited data world*

In addition, SIRO, our joint venture with the ESB, has made considerable progress on the rollout and availability of FTTH in Ireland, having recently moved to Phase 2 rollout. As part of Phase 2, €620 million in funding has been secured through the European Investment Bank and a syndicate of Irish and international lenders, which will be invested in expanding the availability of SIRO's services, as well as upgrading all its existing infrastructure for 2 Gigabit capacity – double the speed of the most powerful broadband services in Ireland today.

The upgrade to SIRO's infrastructure will see the operator reaching more than 2.1 million more people in 154 towns across Ireland. This, in turn, will power regional development and help households become more sustainable in areas such as remote working and reduced commuting.

The expansion will also bolster SIRO and Vodafone's Gigabit Hub initiative, which currently provides a 1 Gigabit broadband connection to 17 remote working and enterprise centres across Ireland, allowing professionals to work remotely and help broadening the appeal of communities in regional Ireland to companies looking to relocate their company outside of major cities.

For example, since the 2016 launch of the Ludgate Hub in the small rural town of Skibbereen, the town has become the digital hub of West Cork as Gigabit connectivity empowered the local community to think differently about what you can achieve in a regional town. Gigabit Hubs are also now active in Cavan, Galway, Louth, Laois, Sligo and 7 more counties.

Phase 2 of this initiative is due to begin in April 2022, delivering even more Gigabit Hubs around the country, where the first two years of connection is provided free of charge.

3. Are the strategic enablers set out in the State's Digital Connectivity Strategy appropriate? Do these strategic enablers need to be amended? Are further strategic enablers, initiatives or measures needed?

Vodafone are supportive and in agreement with the enablers outlined in the Strategy. We would though make reference to the following detail, which should be considered under each of the headings. In addition, we have included further areas for further enablers to be considered.

Enabler 1 – Commercial Investment in Digital Connectivity

Digitalisation has become synonymous with growth, competitiveness and improving the livelihood of citizens everywhere. On the cusp of the next technological leap offered by 5G, Internet of Things and artificial intelligence, Ireland is striving to propel their digital society, allowing for a whole host of socially and environmentally beneficial applications, underpinned by world class gigabit fixed and mobile networks. It is for a good reason, since these networks are a necessary precondition to achieve both Ireland and Europe's digital vision.

This connectivity is delivered as a result of significant investment by companies like Vodafone, which can only be justified in the context of long-term financial returns. But the reality is that our industry is one of the worst performing in Europe, meaning there is a growing disjoint between the financial health of our sector, versus the increasing criticality of the services that we provide and their importance to the resilience of the societies in which we operate. This is creating a significant risk and vulnerability for European economies.

In a recent report by the GSMA, this is evidenced by the fact the top five operators in Europe reported operating profits that were 46% lower in 2018, then those in 2010. In addition, the Return on Capital Employed (ROCE), the return operators make from investing in their network, which was averaging 10% in 2010 and had decreased to between 4-5.5% in 2021.

During the same period, the price of communications for consumers in the European Union (EU) fell by 10% in the period March 2009 – March 2019. This fall contrasts with an increase of 16% over the same period for total consumer prices, as measured by the monthly Harmonised Index of Consumer Prices (HICP). In large part this is because of the policy decision of successive EU/Country authorities to prioritise consumer prices at the expense of operator returns - which presents a choice to policy makers in Ireland and across Europe going forward.

Investments in digital connectivity, be it broadband or 5G services, will create jobs and deliver tangible assets that will fuel long-term economic growth. While commercial investment is crucial for the delivery of this essential connectivity, there is an urgent need for a dedicated policy framework outlining a series of measures to support an investment environment for the deployment of critical digital infrastructure, through public-private mechanisms or otherwise which will support balanced regional development, employment, and growth.

On this regard, Ireland has made significant progress on the rollout and availability of FTTH, through a combination of public-private partnerships such as our joint venture with the ESB, SIRO, which recently moved to Phase 2 rollout, and the National Broadband Plan.

We believe SIRO has had a dramatic impact on the fibre landscape in Ireland – it was the first full fibre national rollout to start in Ireland and it has driven the rest of the market from copper to fibre. SIRO has in our view allowed access for customers, both residential and businesses to high quality and affordable connectivity in regions across the country, which has allowed businesses to plan property and to establish their operations where they want to be.

A significant gap remains, however, in providing mobile voice and data services to address blackspots areas, which continues to have a negative impact on business and tourism in our rural regions. Over the last number of months/years, we have engaged with senior civil servants and policymakers across a number of Departments to explore the opportunity for state & industry collaboration, or shared rural network to address this issue, and assist in further balanced regional and economic development. Vodafone has experience of similar models in other markets, such as the UK and Germany and are certain there is a workable model.

Policy makers should take the opportunity to work in partnership with the private sector to jointly invest in critical digital infrastructure at an accelerated pace which will help to embed the societal resilience needed, through increased capacity and the scope of connectivity services.

This approach will still ensure a competitive market, delivering sustainable, high quality and resilient services to society, particularly in those rural areas of Ireland which do not make financial sense for commercial operators to invest in without state support. Vodafone recognise the constraints on our public finances, and the role that we can play in the deployment of critical digital infrastructure in driving employment and underpinning and helping

to reopen other economic sectors, through the enablement of the digital economy. We see our role as a partner to assist Irish policymakers. Therefore, there is a strong platform (to ensure enhanced societal resilience), a strong sense of urgency (risk of new waves of virus) and a strong positive effect (job security and job creation,) for fast-tracking a private sector led initiative for the increased deployment of digital infrastructure & employment investments.

We have seen the potential and our capability for digital acceleration during this crisis and now is the time to capitalise on our recent learnings. Policy solutions and their funded implementation plans must be inclusive for industry and society, avoiding the current situation where disruption affects life, employment, and income for some much more than others, depending on where they live or in which sector they are employed.

Enabler 2 – National Broadband Plan

Despite the delayed rollout, Ireland has made significant progress on the rollout and availability of FTTH, through a combination of public-private partnerships such as our joint venture with the ESB, SIRO, and the National Broadband Plan.

We call on the government and NBI to speed up the delivery of the National Broadband Plan and crucially, to ensure the regulatory environment evolves appropriately, protecting consumers, ensuring fair competition & encouraging future investment in infrastructure including gigabit fibre and 5G.

We will be wholesaling from NBI and other providers, as connectivity has never been more essential for consumers and businesses.

We recently announced the expanded roll-out programme for SIRO, and have secured funding from the market, to bring our fibre network to more homes and businesses across the country. This is for up to 250k additional fibre homes which would bring SIRO >700k homes passed by mid 2020s.

We believe SIRO has had a dramatic impact on the Fibre landscape in Ireland – it was the first full fibre national rollout to start in Ireland and it has driven the rest of the market from copper to fibre.

SIRO has in our view allowed access for customers, both residential and businesses to high quality and affordable connectivity in regions across the country, which has allowed businesses to plan properly and to establish their operations where they want to be.

Since the start of its rollout and now with the move to Phase 2, this infrastructure has played an essential role in allowing for more balanced regional development. As part of the phase 2 rollout and investment, the European Investment Bank are part of the consortium, with €130 million of the overall €620 million investment, which has begun deployment in January.

SIRO has injected in our view a level of competitive tension into the market, creating more competition between retailers and improved access for business customers, as well as 'forcing' eir to further build out their own fibre network.

Enabler 3 – International Connectivity

Vodafone is supportive of the objective to position Ireland a key connectivity gateway in Europe for transatlantic connectivity to North America. It is our view that there is a significant opportunity post Brexit for Ireland, to be fundamentally reposition the country, by increasing that gateway linkage, with Dublin linking to Paris and Lisbon, and then on to the Southern Hemisphere.

Investments in submarine cables, and in the connectivity between coastal landing stations and the places where citizens live and work, will improve the overall digital connectivity of Europe.

Digital connectivity is an irreplaceable part of the value chain of almost every industry in the modern economy. Many companies rely heavily on operating online, especially since the outbreak of COVID-19, with nearly half of EU employees working from home in July 2020.

Access to fast, reliable, digital connectivity also allows businesses to take advantage of new technologies that offer cost savings, to exploit opportunities to bring new products to market and to access new customer channels and markets.

As a driver of productivity, digital connectivity can also help reduce barriers to entry/expansion in markets, increasing competition, and creating incentives to innovate. A World Bank study found that across 66 developed countries, a 10% rise in broadband penetration could lift GDP growth rates by 1.2% points.

Developed intra-EU connectivity facilitates fast and secure data exchanges (within the EU). For instance, Ireland has become a hub for data centres, with investment forecast to reach €10bn during 2022. Submarine cables between Ireland and continental Europe ensure secure and low latency connections between EU citizens and businesses all over Europe and the host data in Ireland.

Strong intra-connectivity between EU member states will enable the sharing of key data-infrastructure, including access to strategic resources such as the high-performance super computers that will underpin the data-intensive critical applications of tomorrow. Access to this infrastructure will allow for a range of sectors across the whole of the EU to benefit, including environment, energy, agriculture, and health.

There has been a lack of investment in these connections, with much of the EU's terrestrial infrastructure no longer fit for purpose and with insufficient resilience. Prioritised investment in these connections could complement the funding offered under the Connecting Europe Facility (CEF2) Digital programme to invest in cross-border cables.

As part of the Connecting Europe Facility (CEF2) Digital programme, funding is available for the deployment of new submarine cables, or the significant upgrade of existing cables. CEF2 Digital would allocate grants for up to 50% of the project cost for cross-border cables and 70% for projects in outermost regions. This funding would only be available for infrastructure where, as a result of the market issues in some areas outlined earlier, it is not economic for private providers to invest alone, meaning no relevant infrastructure of the same characteristics exists or is planned in the near future. However, given the strategic benefits of digital sovereignty, as well as the wider economic effects and spill overs of digital connectivity, the EU could benefit from additional investment in submarine cables, to address the existing market failures that may limit access to connectivity, or that provide insufficient redundancy, even where prior networks infrastructure exists.

As the world becomes more digitalised and international data exchange becomes more important to the European economy, investment in resilient international connectivity between member states, and beyond, is essential. However, investment in submarine cables has been described as "the missing pillar" of the EU's digital strategy. European governments will need to coordinate with telecommunications providers to ensure that these networks are sufficient to meet the current needs of member states including Ireland and allow for the potential expansion of the digital sector across all member states and regions.

Enabler 4 – Mobile Phone & Broadband Taskforce

Vodafone welcome the reestablishment of the Taskforce, which has to date delivered strong results to allow for the more efficient deployment of connectivity and digital infrastructure by industry, to the benefit of consumers and businesses across the country.

We would add the following comments on additional areas for consideration as focus for the Taskforce:

- *An immediate review of the Planning Exemptions and Guidelines should be undertaken with reference to telecoms, to support development and the more efficient deployment of infrastructure. These guidelines have not been updated in over 20 years and have not kept pace with the technological advances of the sector.*
- *Vodafone welcomes indications of the development of a national asset registry, but the requirement should be that all state agencies and bodies should be mandated to provide sites from assets, land*

holdings and buildings under their ownership to be assessed for the deployment of infrastructure to support the connectivity.

- *There is opportunity to explore state & industry collaboration, or shared rural network (SRN) to address the issue of voice and data blackspots and assist in further balanced regional and economic development. This would be complimentary to the National Broadband Plan. The provision of critical 4G and 5G coverage will enhance the operation of rural economies and societal supports ensuring key activities such as farming, medical services, rural elderly support schemes and SME business operations can remain connected while travelling in rural areas. We have experience of similar models in other markets, such as the UK and Germany and are certain there is a workable model. We estimate it would cost the State c. €30-50M. Vodafone have been working with our industry partners and engaging with Government to progress a Phase 1 proof of concept rollout model, which we believe, with an allocation of €5m could be implemented in the short to medium-term. The project would ensure all operators had equal opportunity and incentive to serve locations covered in intervention areas – ensuring choice for rural customers. The rationale for a Phase 1 approach is that it ensures key insights and efficiencies to inform overall scalability, cost and timeline which can be considered for subsequent phasing. The immediate benefit through Phase 1, in and of itself, is that it will provide much needed coverage in non-commercial areas currently not serviced.*

Enabler 5 – Regulation

We agree that ensuring best in class regulation and providing regulatory certainty is critically important to encourage investment and promote competition in the provision of digital connectivity. As a responsible business, we are committed to best-in-class standards, however, with half the return on capital for network investment in the past decade, overregulation is becoming a real risk to innovation. Best in class regulation does not mean lots of regulation. To this point, we must emphasise that the regulatory framework must be focused, fit for purpose, must avoid duplication, must commit to tackle the more complex issues and must be agile and adaptive to change. This is not currently the case notwithstanding challenge of the speed of change in the sector and the complexity of issues arising.

In and of itself the telecoms EU framework for regulation, in effect the regulatory toolkit is outdated, and the basic principles have evolved very little from a period when access to connectivity was a privilege as opposed to an expectation. However, Ireland as a country has changed and we have moved at pace in recent years into the digital age. It is clear we are not going to change the EU regulatory model in the short term however, in our new world, we do need to use it in the most effective manner possible to ensure to drive Ireland's position as an EU leader on fixed fibre and 4G/5G mobile connectivity.

Vodafone agree with the position that regulatory certainty is critical to encourage investment and promote competition.

- *Firstly, **regulatory certainty is required on regulated inputs** including prompt and cost-effective access to key spectrum resource. Ireland is a laggard on key spectrum allocations in 700MHz and 2.6GHz. This must be addressed promptly.*
- *The maximum value of spectrum resource is realised when it is put to long term use and **conditions for rollout (including associated regulations) must also be efficient**. When there is no commercial case for rollout, solutions can be achieved at minimal cost to the state to ensure access in more remote areas and regulatory policy should support such initiatives.*
- *Regulatory policy needs to recognise that **investment signals are required at a wholesale level** to encourage network build. The correct signals and **certainty is also important at a retail level** so retail operators can accurately business case long-term business plans to drive uptake and maintain retail services. As the leading FTTH retailer in Ireland Vodafone is of the view that certainty on wholesale pricing is critical. This is especially important in the context of the move from legacy copper infrastructure to fibre.*

- *To achieve best in class regulation **ComReg, as sector regulator, has a central role** to enable and assist efficient industry collaboration to the benefit of all. The benefits of collaboration were demonstrated when industry came together with ComReg to ensure capacity was available through temporary spectrum measures, that commitments could be made maintain connectivity and to ensure that regular updates on connectivity into government. It demonstrated what can be achieved effectively and efficiently when the objective is clear.*
- **Regulatory burden is an issue.** *The number of different regulations in development impose significant operational and financial demands on the sector. This is at a time when competition has never been more intense and when organisations, using over the top services on regulated networks, do not face the same regulatory load. In the last year alone, industry have worked with government on regulations related to the Network and Information Security Directive, the Electronic Communications Code, and the Electronic Communications Security Measures, amongst others. The combined impact of additional obligations has the potential to further harm the case for investment.*
- **Best-in-class regulation should not be intrusive.** *Regulatory positions on compliance with obligations must be clear and developed in consultation with industry.*
- *The benefits of private and public investment in connectivity will place Ireland in the top tier of EU countries for fibre rollout and 5G rollout in the coming years. **Regulation must now adapt to ensure continued support for the ongoing network investment demands, to support agility and innovation in the sector and balance what can at times seem competing objectives from stakeholders be they consumers, business, governments, operators, or regulators.** As stakeholders we have a common goal which is to do good and to do good business for a fair return to the benefit of the Irish economy, society, and its citizens.*
- **The requirement for best-in-class regulation is broad and extends beyond sectoral regulation.** *The impact of planning, local authority engagement, efficient access to state assets for infrastructure, taxation, power, rural development etc. all impact on investment. A particular example is the tax policy position regarding the unavailability of tax relief on the purchase of spectrum licenses, our industries single biggest expenditure, where Ireland is an outlier. Its unavailability may impact Ireland realising our Digital Decades programme targets, as well as impacting digital infrastructure and 5G rollout, and thus our attractiveness as an FDI location. If we do not look at addressing these issues, it risks the proper implementation of the Digital Strategy.*

Enabler 6 – Network Integrity, Security and Modernisation

Europe's digital sovereignty, security and prosperity is dependent on keeping pace with our main competitors on digital connectivity. On the current trajectory, we are falling badly behind.

Vodafone – as a European champion with services reaching more than 61 percent of the EU population – believes there needs to be a discussion on ways to address the severe investment shortfall in 5G infrastructure across much of the EU.

The COVID-19 pandemic has laid bare the importance of fast and reliable connectivity for all. In a digital age, connectivity is the foundation of Europe's future growth, social inclusivity, and competitiveness. We welcome the ambition within Ireland's Digital Connectivity Strategy, however, in order to achieve the ambition, set out in these documents, and to drive and enable the digital transition across the Irish and European economy and society, we must unleash the full potential of sustainable private sector investment in 5G infrastructure.

We are currently on a trajectory to reach the 60% transformational 5G (i.e., 5G built right) target ten years after China. The result is we risk falling behind on an entire generation of new strategic technologies built on 5G.

The major challenge facing European telecoms operators is a lack of scale. Unlike China and the USA, Europe's market is fragmented, unable to support the very large capital requirements needed for transformational 5G.

Return on capital for network investment has already halved in the past decade. The sector is at risk of takeovers by private equity focused on fast returns rather than long term infrastructure investments. Europe needs to build scale through digital powerhouses to compete and sustainably invest in infrastructure.

This also has implications for our cybersecurity. During the pandemic, we also saw a significant rise in phishing and ransomware attacks, and malign state and non-state actors continue to develop new disruptive technologies aimed at undermining our cybersecurity. Given the heightened threat environment as a result of the situation in Ukraine, these issues are all the more pressing as we actively engage with security agencies across our footprint, constantly protecting, defending, and monitoring our systems to ensure the safety of critical national infrastructure.

Many European operators, however, lack the much-needed scale to sufficiently invest in network security. Cybercrime was estimated to have cost the world over one trillion dollars in 2020. In order to drive higher investments in security in the long term, greater emphasis on security must be backed up with economic policies and regulations that put a premium on telco quality and prioritises investments in security. Operators must have the resources to block existing attacks and secure networks against emerging hybrid threats.

The importance of a high performing, resilient and secure network infrastructure was also highlighted by the degree to which Ireland could pivot to ensure the impact of Covid was reduced, and the economy and society has, despite challenges, continued to function remotely. It demonstrates the importance of sound policy and regulation that drives and supports investment in our national network infrastructure.

A particular example is the tax policy position regarding the unavailability of tax relief on the purchase of spectrum licenses, our industries single biggest expenditure, where Ireland is an outlier. Its unavailability may impact Ireland realising our Digital Decades programme targets, as well as impacting digital infrastructure and 5G rollout, and thus our attractiveness as an FDI location. If we do not look at addressing these issues, it risks the proper implementation of the recently announced, 'Ireland – Digital Framework'.

Vodafone is committed to accelerating much-needed investments in connectivity to close the gap and make Europe a 5G leader. However, this will not be enough without policy action to deliver a suitable market environment. As with the European Chips Act, it will be especially important for the European Commission to review how it interprets EU Competition policy, so that it can support the powerhouses needed.

Without these changes, our fear is that Europe's situation of underinvestment is likely to continue. Billions of euros of EU Recovery (RRF) investments may be squandered in a market fundamentally unfit for the digital age. The result will be a Europe that is less sovereign, less competitive, and less secure.

Enabler 7 – Research and Innovation

Vodafone Ireland recognises the need to facilitate and promote research and innovation in the sector and agrees that partnerships across industry and the State are needed.

Vodafone is a key investor in the development of future digital infrastructures, solutions and services that favour socioeconomic progress. By way of an example, in January of this year, Vodafone opened the doors of a new centralised European Research and Development Centre in Malaga, Spain, which will specialise in developing new technology solutions and digital services based on unified communications, the Internet of Things (IoT), Edge Computing, Mobile Private Networks (MPN) and Open RAN.

We are investing €225 million over five years in the centralised hub, creating more than 600 direct, highly skilled jobs and helping Spain to continue to attract digital talent and set an international benchmark in the creation of products and services based on innovation and new first-rate technologies.

By combining the advantage of its geographical scale and bringing together the best technological talent, Vodafone aims to use the centre to develop and launch new products and services faster, cheaper and in

multiple countries at the same time. It forms part of Vodafone's plan to add nearly 7,000 software engineers across Europe by 2025, through a combination of recruitment, re-skilling existing employees and insourcing.

Vodafone will also partner with universities, vocational training schools, local companies, and institutions to promote the creation of an innovation hub around the Centre and multiply its impact in the region.

Early projects at the Centre will focus on IoT and the development of technologies for different markets, including smart devices for consumers, connected homes and smart cities, as well as new platforms for digital businesses. Vodafone will also lead its network innovation work from the Centre, focusing on new applications for 5G, the development of Open RAN, and the increasing role of artificial intelligence (AI) and automatic learning in networks.

A second R&D centre will open in Dresden, Germany, later this year.

Enabler 8 – Smart Cities/Towns, Rural Communities and Transport Corridors

Achieving a fair and sustainable transition to a climate neutral society by 2050 will require action and investment in digital solutions across multiple sectors. And with cities comprising the large majorities of our populations, managing them as efficiently as possible will be key to building greener, more inclusive, and economically resilient societies.

As a global digital leader, and the largest provider of the Internet of Things in the world, Vodafone is best positioned to drive green transition through digital connectivity and improve lives as it enables urban digitalisation.

Governments around the world have committed to ambitious targets regarding greening and decarbonisation. Ireland has committed to net zero greenhouse gas emissions by 2050, with a 51% reduction by 2030.

Meeting these targets, while striving for an economically robust and inclusive society, will rely on continued technological advances. But in many cases, both private and public investment in infrastructure is not yet at the level necessary to drive these changes.

And with over 60% of Ireland's population living in urban areas cities, managing urban life efficiently will be a key component of improving the quality of our citizens and creating a more sustainable, greener, and future-ready society.

By integrating information and communication technology (ICT), as well as various physical devices connected to the IoT (Internet of Things) network, Smart Cities optimise the efficiency of city operations and connect to citizens to ultimately build back better in a way that also ensures the green transition that is required.

The result of this greater connectivity is smart ecosystems ranging from smart agriculture to smart logistics, smart cities, and smart energy. All of these systems rely on technology such as IoT, machine learning, artificial intelligence, and Big Data to develop and commercialise new applications. Some examples include:

- Smart agriculture, which enables farmers to manage their crops and livestock more efficiently and sustainably through connected monitoring devices and farming equipment, leading to a 20% reduction of raw materials use.
- Smart logistics, which embeds IoT technologies in vehicles to optimise route management, vehicle maintenance and driver behaviour, leading to 30% reductions in fuel consumption.
- Smart Cities, which improve the efficiency of energy-intensive services such as public transport, road networks and street lighting, exemplified by a 68% reduction in energy use in Spanish cities.
- Smart Meters, which enable households and businesses to monitor and reduce their energy use, lowering energy bills and the environmental impact of energy production.
- Smart Manufacturing, which enables factories to be more efficient, reduce wastage and have a lower environmental impact through emissions and pollution reduction.

These smart ecosystems all require fast, secure, and reliable connectivity to gather and process data, which makes 5G deployment a key driver of success in this area. Adding IoT, edge computing and the further application of Big Data solutions, these emerging technologies could be transformative for Smart Cities, in particular.

To enable a truly digital green transition, governments must provide:

- *Financial support: the government must invest in 5G infrastructure, ensuring coverage in both urban and rural areas, allowing companies to use greening IoT and other digital solutions.*
- *Digital know-how and skills: digital skills, which we elaborate on below, should be at the top of governments' agendas to ensure that digital solutions are in place to ensure efficient resource use and productivity management.*

Regarding Smart Transport Corridors, improving mobile broadband connectivity, and particularly 5G networks, along road and rail travel corridors can enable new mobility technologies such as connected autonomous vehicles. This will drive a range of benefits from greater efficiency, safety, and capacity of existing transport infrastructure.

Improved connectivity along transport routes will generate broader benefits for the surrounding areas, potentially attracting additional investment and leading to agglomeration benefits outside established urban and industrial centres.

While the investment needed to develop 5G travel corridors is large, the benefits can be expected to significantly outweigh these costs.

Additional Enablers - Energy Prices

Vodafone has made a representation to the CRU as part of their current network tariff review, requesting a review of its electricity tariffs due to concerns that telecommunications operators are disproportionately contributing to the recovery of electricity network costs compared to similar heavy energy users. The principles which underpin our tariff rates have not been updated since 2004, long before the market opened up to competition in 2010, and so fail to recognise the unique nature of the telecommunication industry's electricity demand and indeed, the unique contribution it makes. Because of this, we believe it prudent that the current electricity tariff guidelines be updated to ensure that Vodafone can continue to support the roll-out of critical infrastructure across Ireland.

The existing rules which govern Vodafone's electricity tariffs are determined by the ESB's 'Rules for Application of DUoS Tariff Group' (DG Rules), which controls the tariff groups that all electricity customers belong to. Currently, each of Vodafone's 1,558 radio sites around Ireland are categorised under category DG5b, with DG5b customers described as low voltage businesses with a grid connection maximum import capacity of between 3kVa – 49kVa. Considering Vodafone's entire radio sites infrastructure consumes in the region of 46 GWh per annum across an integrated nationwide network with 99% coverage, it's clear that our tariff grouping fails to reflect the true nature of our business.

The issue relates to the fact that Vodafone's 1,558 radio sites across Ireland are treated as individual customers, meaning it enjoys no such economy of scale consumption benefits when it comes to our tariffs, which are evident in other tariff groupings, particularly large energy users (DG7).

Vodafone's individual radio sites are part of a comprehensive ecosystem with inter-site dependencies, which cannot deliver the service it is designed for unless all are operating together. Simply put, an outage at one radio site has knock-on impacts across the entire ecosystem. Because of this and given Vodafone's planned investment in Ireland's telecommunications infrastructure over the coming years to support the State's connectivity, digitalisation, and indeed climate ambitions, it is vital that a new tariff category is introduced to reflect our contribution and crucially, to ensure consumers can reap the benefits of an increasingly connected, digital and efficient world.

4. The Department welcomes any views on the State structures, agencies and resources needed to oversee and ultimately secure the delivery of the Digital Connectivity Strategy.

In order to deliver on the digital ambitions as set out in the Strategy document, we would recommend that consideration be given to the establishment of a Taskforce led jointly by the Department of Enterprise, Trade and Employment and the Department of the Taoiseach, consisting of senior officials from these Departments, as well as the Departments of the Environment, Climate and Communications and Public Expenditure and Reform. Relevant state agencies such as the IDA, Enterprise Ireland and Science Foundation Ireland should also form membership of the Taskforce.

There is also a need for greater specificity and greater clarity on the 'how', and the need for a 'roadmap' which takes into account our starting point, and economic and social situation. There must be clearer timelines which are linked to the implementation of the Strategy. A clearly defined set of KPIs is required to deliver against the Strategy, and these should be benchmarked. This Taskforce should then in turn report into the Cabinet Committee referenced in the Strategy on progress, which should also be published on a quarterly basis.

5. The Department welcomes any views on how to ensure a sufficiently skilled workforce, with the necessary competence and experience, is available to industry and the State so that Digital Connectivity Strategy can be delivered? The Department would welcome suggestions on the State's role in encouraging the development of this workforce?

The pandemic has accelerated society's reliance on connectivity and adoption of digital ways of living and working and exposed the many sectors and communities which lack the necessary skills to participate in a digital society.

Although Ireland performs above EU average for advanced digital skills (e.g., ICT Specialists, female ICT specialist and ICT graduates) the basic digital skills of the population are a little lower than the EU average - 53% against 56%.¹

Ireland allocated €64 million of the National Recovery and Resilience Fund to Human Capital, or around 20% of its digital budget, which is above the EU average of 17%. In 2020, the proportion of ICT specialists increased sharply and is above the EU average, however, in 2020, 53% of enterprises reported hard-to-fill vacancies for jobs requiring ICT specialist skills² - meaning investment in digital skills will be essential to digital adoption and mitigating the digital divide.

We acknowledge the ongoing initiatives aimed at upskilling and reskilling in higher education, further education and the training sector (Springboard+, Skills to Advance, EXPLORE, etc.), as well as the ICT Skills Action Plan and the new 10-year Adult Literacy, Numeracy and Digital Literacy Strategy, and feel strongly that it is now more important than ever to have a strategic vision for digital education and skills, building back better on the learnings of the pandemic to create a more resilient, innovative educational system and unlock future job opportunities.

Vodafone's connectivity and footprint in Europe enable us to run initiatives and programmes to boost digital skills, with a focus on those who risk being left behind.

To help build digital education systems equal and accessible for all, we are investing in networks across Europe and have already built end-to-end digital learning solutions for students and teachers, giving them the connectivity and digital tools to learn whilst developing digital skills.

We are connecting 1.5 million students across 3,700 educational institutions in Europe with our ready-made digital classroom - Connected Education. Created by Vodafone Business Ventures with global leading partners, it is an end-to-end solution for educational establishments that guarantees access to technology for students, teachers, and schools, helping them to connect securely to a better future. It also enables teachers to host lessons in or outside of the classroom and use interactive tools. We recently produced a case study illustrating how Connected

¹ <https://digital-strategy.ec.europa.eu/en/policies/desi-ireland>

² Analyse one indicator and compare countries — Digital Scoreboard - Data & Indicators (digital-agenda-data.eu)

Education allowed students and teachers at St Mary's Secondary School for Girls in Baldoyle, Dublin, used the technology to stay connected through the pandemic.³ Our ambition is to connect 5 million students globally by 2025.

We can digitally enable fair and inclusive education for the next generation and foster the right skills for jobseekers. But we must step up collaboration and partnership between governments, educational institutions, and the private sector to fix the wider problems facing students and teachers.

To better prepare people for the digital economy and society, Ireland needs:

- *A clear and strategic vision for digital education and skills, which has been evidenced by a number of government skills' initiatives, particularly the launch of NALA in November 2021. This will enable the building of a more resilient end-to-end educational system and unlock job opportunities.*
- *Funding to promote education and skills development. The RRF is clear that this is essential for both the development of the next generation, as well as to provide digital skills, reskilling and requalification for the active labour force.*
- *A secure end-to-end digital education service. Education institutions must prioritise the delivery of services that include connectivity, devices, content, classroom management tools, training, and managed services.*
- *Investments and national policy reforms. Supported by the EU recovery package and guided by the objectives of Digital Education Action Plan 2021-2027, the ICT Skills Action Plan and the 10-year NALA plan, the Irish Government should aim to transform national educational systems and build the necessary skills of the future by leveraging the power of digital.*

There is a need to commit to investing in and to foster and attract necessary digital talent; enable everyone to gain the necessary skills and realise their potential in a digitalised recovery.

In addition, as our services and communities are increasingly moving online, it is more important than ever to ensure no-one is left behind on the journey to a digital world. To combat this, we in Vodafone Ireland launched a digital skills programme for the elderly, "Hi Digital", with our partners in ALONE and Active Retirement Ireland. To make sure older people feel more confident in using technology and be able to live at home independently and be a part of their wider community.

Hi Digital is a step-by-step course designed for anyone who needs a bit of help developing their digital skills, particularly those who have rarely or never been online (often 65+ years old).

A free online course developed by Vodafone Ireland Foundation, in partnership with NGOs Active Retirement Ireland and ALONE, Hi Digital consists of bite-size lessons organised around key digital themes including: The basics of internet access and how to use online devices; An essential guide to apps and features that can enhance daily life and combat isolation.

Participants can work independently or alongside a mentor (a volunteer from Active Retirement Ireland) over a number of weeks to complete all of the lessons. Others may have assistance from their children, grandchildren, or other people from their community.

6. The Department welcomes any other general observations and views on the State's Digital Connectivity Strategy and how it can be improved?

On the topic of a potential Universal Service Obligation for broadband, Vodafone would question the benefit in introducing such an obligation, and instead would point to the need for partnership between the private sector and public sector to plug connectivity gaps and ensure nobody is left behind.

The importance and essential nature of connectivity has been highlighted in the last 18 months in every facet of life including its importance in allowing business to continue to work remotely, to enable communication

³ <https://www.vodafone.com/news/inclusion/misan-harriman-connected-education>

between family and friends and to provide critical core socio-economic elements such as education and healthcare provision.

The Digital Connectivity Strategy recognises the impact on and benefits to, economies and societies of mobile voice, data, and broadband connectivity, however, Ireland has more to do to develop its connectivity infrastructure if these policies are to succeed.

A gap remains in providing services to address areas of Ireland which have poor connectivity, resulting in a negative impact on business and tourism in our rural regions.

There are a number of factors which have impacted on and prevented the issue from being tackled in Ireland including, the fact that Ireland has amongst the most dispersed population and highest proportions of rural dwellers in Europe, with well over a third of our population (1.7 million) living in settlements of less than 1,500 people and in the countryside, with this proportion increasing to half of the population if smaller towns and villages are included.

These factors coupled with geography and difficult topography of the particular environments has to date made the business case for investment in servicing these areas prohibitive. In these rural areas, there is a limited commercial case for market-driven private investment to achieve an enhancement to coverage and quality of service. But we can't ignore these areas. Instead of introducing a Universal Service Obligation, now is the time to accelerate state and industry collaboration to assist in further balanced regional and economic development, to plug these gaps and bridge the digital divide.

ENDS