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- The NCPC believes that access to reliable, affordable supplies of energy is critical for Ireland's future wellbeing and long-term competitiveness.
- To meet growing demand for energy in Ireland and address increased supply uncertainty, the NCPC believes that there should be an urgent focus on projects to help diversify energy supply sources and investing in upgrading our electricity infrastructure.
- It is crucial that policies to enhance energy security align with the targets set out in the Climate Action Plan 2021 to facilitate Ireland's transition to a low carbon economy.

THE NATIONAL COMPETITIVENESS AND PRODUCTIVITY COUNCIL

The National Competitiveness and Productivity Council's (NCPC) mission is to promote sustainable economic growth and quality employment so that living standards and quality of life improve for all of society. The sustainability and competitiveness of our economy relies on the ability to access reliable, affordable supplies of energy into the long term whilst also pursuing the transition of our energy system to carbon neutrality.

While the NCPC has previously examined energy issues in Ireland¹, it believes that it is timely to re-emphasize the importance of a reliable and competitively priced supply of energy for business and its ability to compete successfully in international markets.

THE IMPORTANCE OF ENERGY SECURITY

The International Energy Agency (IEA) defines energy security as the uninterrupted availability of energy sources at an affordable price². Security of energy supply³ is crucial to Ireland's attractiveness as a place for enterprise investment, job creation and a place to do business. A well-functioning energy sector is also critical to maintaining adequate living conditions and to the overall functioning of Ireland's economy and society⁴.

Current challenges faced by Ireland's energy system have potentially significant implications for Ireland's operating environment, particularly for energy intensive businesses⁵, and Ireland's international reputation as a location for Foreign Direct Investment (FDI).

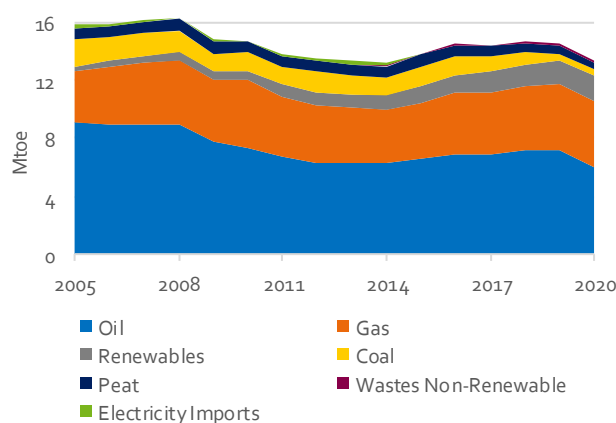
These challenges include the need for a diversified, stable and reliable source of energy supply. Additionally, for

Ireland to meet its renewable electricity targets, considerable investment in the electricity system infrastructure is required but this cost should not unduly burden Irish enterprises. Finally, policies to enhance a secure supply of energy should not impede progress towards the targets set out in the Climate Action Plan 2021.

IRELAND'S ENERGY SECTOR

Ireland is heavily reliant on imported energy (oil, gas, coal, and peat) as its primary energy⁶ source, with oil (45%) and gas (34%) being the largest primary sources for Ireland's energy in 2020. However, the energy sector is going through rapid change, with the share of renewable energy in Ireland's primary supply growing from 2.3% in 2005 to 13.3% in 2020⁷ (see Figure 1).

Figure 1. Primary energy by fuel



Source: SEAI

¹ [competitiveness-challenge-2018.pdf](#)

² [Energy security – Topics - IEA](#)

³ [Energy infrastructure and foreign direct investment in China](#)

⁴ [Is energy security a driver for economic growth? Evidence from a global sample - ScienceDirect](#)

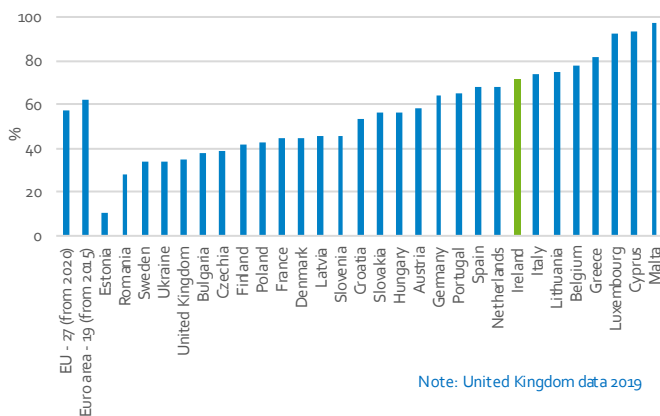
⁵ <https://www.ibec.ie/connect-and-learn/media/2022/03/11/measures-urgently-needed-to-protect-against-exceptional-energy-cost-inflation>

⁶ Primary energy includes the raw fuels that are used for transformation processes such as electricity generation and oil refining.

⁷ [Energy Use Overview | Energy Statistics In Ireland | SEAI](#)

Ireland's import dependency⁸ was 71% in 2020, the 8th highest in the EU and above the EU average of 57% (see Figure 2). This dependency is down from an average of 89% between 2001 and 2015, primarily due to gas coming from the Corrib field in 2015 and the increasing use of indigenous renewable energy. This high import dependency means Ireland is more exposed to external shocks to energy markets, such as the current crisis in Ukraine which has accelerated energy price inflation, with natural gas and oil prices rising to near record levels. As a small open economy, Ireland is acutely exposed to these cost increases and energy supply challenges.

Figure 2: Import dependency of Ireland and European Countries 2020



Source: Eurostat

Energy inputs are crucial to electricity generation, heating and transport. Electricity can be generated from renewable sources such as wind and solar. Consequently, increased use of clean energy sources will reduce our reliance on fossil fuels, as electricity is increasingly being used for transport and heating. This will also enable Ireland to become less dependent on other countries for energy imports, thus enhancing domestic energy security.

Heat was the largest mode of energy use in 2020, accounting for almost 44%, followed by transport at just over 34%, with electricity accounting for the remaining 22%.⁹ However, the share of electricity is set to grow over the next few years as heat and transport become more electrified through developments in residential property infrastructure and modernisation of the vehicle fleet.

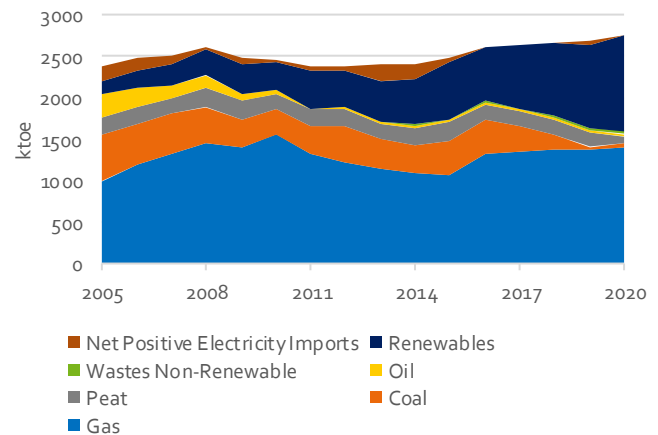
⁸The extent to which an economy relies upon imports in order to meet its energy needs.

⁹Energy Use Overview | Energy Statistics In Ireland | SEAI

¹⁰Introduction | EirGrid Consultation Portal

While natural gas remains the largest fuel source for electricity generation accounting for 57% of primary energy for electricity generation in 2020, the contribution from renewables in electricity generation has been increasing over the past decade (see Figure 3). At present, around 40% of electricity used throughout the year comes from renewable generation¹⁰, with wind generation accounting for 36% of all electricity generated in Ireland in 2020.

Figure 3: Electricity generated by fuel



Source: SEAI

To move towards the goal of achieving net zero greenhouse gas emissions by 2050, Ireland has committed to ambitious targets to move away from fossil fuel use towards renewable energy sources. This is reflected in the Climate Action Plan 2021, which has set a target of increasing the proportion of renewable electricity to 80% by 2030, including an increased target of up to 5 Gigawatts of offshore wind.¹¹

ELECTRICITY INFRASTRUCTURE

Adequate infrastructure is critical to the reliability of energy supply.¹² As a result of the growing integration of renewable energy and the implementation of broader technological innovation, the electricity system in Ireland is undergoing a major transformation which requires many infrastructural and operational requirements to be upgraded to facilitate this shift.

To meet renewable electricity targets, Ireland will have to increase the amount of renewable generation on the Irish power system in a safe and secure manner. The grid was originally designed for conventional generation, such as

¹¹[gov.ie - Climate Action Plan 2021 \(www.gov.ie\)](https://www.gov.ie/en/publications/2021-07-14-climate-action-plan-2021/)

¹²[The Economics of Energy Security \(istor.org\)](https://www.istor.org/)

coal, natural gas or oil generation, making high levels of wind or solar generation more difficult to manage because of variability. Improving and upgrading the grid is a significant task that requires major investments in transmission stations, underground cables, or overhead lines carried by pylons. On the 18 December 2020, the Commission for Regulation of Utilities (CRU) published its Price Review 5 (PR5) Determination papers which will play an important role in the delivery of this investment.¹³

The cost of this considerable investment will ultimately be borne by electricity customers through expected increased electricity costs. The NCPC believes that this investment is essential for Ireland to meet its decarbonisation targets and to ensure Ireland's energy security into the future. However, along with being efficient, the scale of the energy transition that is required needs to be just, fair, and equitable. It is crucial that higher costs avoid negatively impacting Irish businesses by unduly increasing their cost base and eroding competitiveness.

As an island with limited natural traditional energy resources, Ireland is a price taker on the international markets for energy. Consistent with European energy policy, the electricity and gas markets in Ireland are commercial, liberalised, and competitive. The Government has no statutory function in the monitoring or setting of electricity prices, with the main thrust of Government policy on energy costs focused on ensuring a competitive market, supports for energy efficiency, and social protection policies to reduce the burden on lower income households.

To support businesses to become more energy efficient thereby improving their cost base, the Department of the Environment, Climate and Communications (DECC) provides several incentives. These are operated through SEAI and include the recently announced Micro-generation Support Scheme (MSS) framework which will act as an incentive for businesses to develop renewable energy sources and receive payment for any excess renewable energy they export to the grid, thereby reducing their energy costs and enhancing cost competitiveness.

In the 2021 World Energy Trilemma Index¹⁴, Ireland scored in the top 25% of countries in Energy Equity and Environmental Sustainability, but only between 50% and 75% of countries in Energy Security. The report noted that the top three countries¹⁵ for Energy Security benefit from close energy market integration with their respective neighbours, and that greater interconnectivity with neighbouring grids can improve system resilience and address weather variability.

In 2019, the IEA noted that interconnectors, such as the North-South Interconnector project and the Celtic Interconnector project¹⁶ offer ways for Ireland to gain flexibility to electricity markets for the integration of a high share of intermittent renewables.¹⁷ The proposed Greenlink Interconnector is expected to be commissioned in 2024 and will provide a new grid connection between Ireland and Wales.¹⁸ In earlier documents the NCPC has also called for the completion of the North-South interconnector to improve the security of supply and serve as a key enabler of economic growth and improved competitiveness of Irish businesses.¹⁹

ENERGY SUPPLY

The NCPC has previously drawn attention to the need to diversify our sources of energy supply to ensure energy security and competitiveness of Irish enterprise.²⁰ In particular, the dominance of gas is a risk both to the physical security of supply and in terms of exposure to price variation. The current crisis in Ukraine has highlighted Europe's dependence on imported gas from Russia. The European Commission has acknowledged this, stating 'developments in energy markets in recent months, and especially the dramatic change in our security situation in recent weeks, require to drastically accelerate the clean energy transition and thereby increase Europe's energy independence.'²¹ The threat of an immediate reduction of Russian gas imports has led to steep increases in oil and gas prices.

In 2019, the IEA stated Ireland's high reliance on a limited amount of gas infrastructure raises concerns for security of gas supply in Ireland.²² Currently, Ireland has a domestic source of natural gas supply at the Corrib gas field, located approximately 83 km off the northwest coast of Ireland, and it also imports natural gas via the UK through two

¹³ [Price Review 5 Electricity Networks - Commission for Regulation of Utilities \(cru.ie\)](https://www.cru.ie/price-review-5-electricity-networks)

¹⁴ A comparative ranking of 127 countries' energy systems, & an assessment of a country's energy system performance, reflecting balance & robustness in the 3 Trilemma dimensions of Energy Security, Energy Equity, & Environmental Sustainability of Energy Systems.

¹⁵ Canada, Finland and Romania.

¹⁶ [The Project \(eirgridgroup.com\)](https://eirgridgroup.com/)

¹⁷ [Energy Policies of IEA Countries Ireland 2019 Review.pdf.](#)

¹⁸ [Greenlink Interconnector | energy infrastructure | Ireland and Wales competitiveness-challenge-2018.pdf](#)

¹⁹ [competitiveness-challenge-2018.pdf](#)

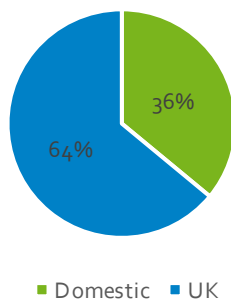
²⁰ [resource.html \(europa.eu\)](#)

²¹ [resource.html \(europa.eu\)](#)

²² [Energy Policies of IEA Countries Ireland 2019 Review.pdf](#)

interconnector pipes in Moffat, Scotland. The gas supply at Corrib is expected to be largely depleted within the next five to eight years, which means Ireland will become more reliant on its gas imports to facilitate secure supplies of energy. According to Gas Networks Ireland, Ireland imported around 64% of its gas from the UK in 2020 (see Figure 4).

Figure 4: Breakdown of Ireland's natural gas supply 2020



Source: Gas Networks Ireland

44% of the UK's natural gas supply in 2020 came from domestic production, with the rest from: Norway (32%), LNG Imports (22%), Continental Imports, i.e. Netherlands and Belgium (1.6%) and Green (0.5%).²³ It is expected that by 2030 over 90% of all of Ireland's natural gas needs will be imported via the UK²⁴, thus reducing supply diversity. Furthermore, it is estimated that by 2030 the UK will need to import around 75% of its own gas supplies because of a decline in North Sea production. These gas imports would likely come from countries outside Europe, meaning the gas supply route to Ireland would be longer, increasing the risk of supply disruption and price volatility.

The intended increased use of renewables in the energy system adds to the challenge of ensuring a stable and reliable electricity supply, because the balance between available supply and peak demand becomes very tight when there is limited wind generated power. Renewable generation that is predominantly wind powered can vary between 1% and 70% on a given day, making the supply of electricity less stable. Similar conditions in Northern Ireland and Great Britain limit the capacity for interconnection to mitigate these risks. This increases the likelihood of more frequent system alerts²⁵, system emergencies and potentially electricity customers losing power.

The deployment of indigenous renewable energy rather than imported fuel sources can significantly enhance Ireland's energy security of supply. In addition, increasing local renewables can help dampen electricity price volatility.²⁶ There are several Government schemes which will help reduce Ireland's reliance on imported fuel sources. The Renewable Electricity Support Scheme (RESS) is Ireland's flagship policy to deliver on the 80% target.²⁷ The DECC has committed to frequent auctions and an acceleration of the connection of new renewables to the grid. The Climate Action Plan 2021 also includes a commitment to develop a support scheme for small-scale non-domestic renewable electricity generators. This will be progressed by DECC in 2022 and is expected to become available in 2023.

Increased development of other renewable energy sources, such as solar power, battery storage²⁸, biomethane²⁹, or green hydrogen^{30,31}, could play a part in enhancing the security of Ireland's energy supply. As a complement to wind, solar power electricity output is naturally highest when wind is usually at its lowest³². Solar PV deployment in Ireland has been low compared to other European markets such as Germany and the UK, however Ireland has significant solar resources and a strong solar PV export sector.³³

The Government's Micro-generation Support Scheme (MSS) is targeting support for 380MW of installed micro-generation capacity, to contribute to the target of up to 2.5GW of solar renewables under the Climate Action Plan. The DECC, as set out in the Climate Action Plan 2021, has also committed to developing a storage policy that supports the 2030 targets and aligns with our renewable gas ambition, security of supply, and flexibility policy drivers. In combination, the CRU will review the regulatory treatment of storage, including licensing, charging and market incentives.

Gas Networks Ireland and EirGrid's Long Term Resilience Study³⁴ published in 2018 determined that either a fixed or floating LNG (liquefied natural gas) terminal could 'lead to a significant improvement in Ireland's security of supply position'. Ireland has no LNG import infrastructure at present. Direct imports of gas into Ireland (for example through an LNG import facility) could be an option to

²³ [progress \(nationalgrideso.com\)](https://www.nationalgrideso.com/progress)

²⁴ [gov.ie - Gas \(www.gov.ie\)](https://www.gov.ie/gas)

²⁵ [Grid Alerts Explained \(eirgridgroup.com\)](https://www.eirgridgroup.com/grid-alerts-explained)

²⁶ [Quarterly Economic Commentary \(esri.ie\)](https://www.esri.ie/quarterly-economic-commentary)

²⁷ [Renewable Electricity Support Scheme](https://www.renewableireland.ie/renewable-electricity-support-scheme)

²⁸ [NEWS IESA](https://www.news.ie/sa)

²⁹ [The Future of Renewable Gas in Ireland | Gas Networks Ireland](https://www.gasnetworksireland.ie/the-future-of-renewable-gas-in-ireland)

³⁰ [Green Hydrogen strategy essential for Ireland to meet net zero emissions targets \(windenergyireland.com\)](https://www.windenergyireland.com/green-hydrogen-strategy-essential-for-ireland-to-meet-net-zero-emissions-targets)

³¹ The Minister for the Environment, Climate and Communications has stated that a strategy focussing on the development of green hydrogen will be included in Climate Action Plan 2022.

³² [Irish Farmers Journal Solar | Deloitte Ireland | Energy and Resources](https://www.irishtimes.com/business/energy-environment/irish-farmers-journal-solar-deloitte-ireland-energy-and-resources)

³³ [A Brighter Future: Solar PV in Ireland - Solar Business Hub | Resources](https://www.solarireland.com/a-brighter-future-solar-pv-in-ireland-solar-business-hub-resources)

³⁴ [Long Term Resilience Study 2018](https://www.gasnetworksireland.ie/long-term-resilience-study-2018)

diversify supply, but this would only be viable if the tariff for such a facility was less than the pipeline transport cost between Britain and Ireland.

GOVERNMENT AND EUROPEAN COMMISSION VIEWPOINTS ON SECURITY OF SUPPLY

Political pressures and environmental concerns make this specific part of energy policy particularly contentious for the Government. In a policy statement on the Security of Electricity Supply, published on 30 November 2021, the DECC highlighted the importance of gas for secure supplies of energy to facilitate the energy transition towards renewables. The DECC stated that 'the development of new conventional generation (including gas-fired and gasoil/distillate-fired generation) is a national priority and should be permitted and supported to ensure security of electricity supply and support the growth of renewable electricity generation.'

Detailed exploration of the options to diversify Ireland's energy supply is necessary to identify the most effective way forward for Ireland. The DECC has initiated a medium-term Security of Supply review across both electricity and gas systems and appointed a consultant to provide detailed analysis of options. This will include an assessment of the increasing dependence on imported natural gas from a single UK source.

On 8 March 2022, the European Commission proposed an outline of its 'REPowerEU' plan for more affordable, secure and sustainable energy in Europe. The EU currently imports 90% of its gas consumption, with Russia providing around 45% of those imports, in varying levels across Member States. The plan aims to make Europe independent from Russian fossil fuels well before 2030, starting with gas. The plan will seek to diversify gas supplies, speed up the roll-out of renewable gases and replace gas in heating and power generation.³⁵ On 10 and 11 March, EU leaders invited the European Commission to put forward a plan to ensure security of supply and affordable energy prices during the next winter season by the end of March.³⁶

The NCPC believes that diversifying our energy sources is crucial to ensure a secure supply of energy and enhance Ireland's competitiveness. It is also critical that future policies in this area are aligned with the need to continue with the transition away from fossil fuel dependence so

that this does not negatively impact commitments agreed to in the Climate Action Plan 2021.

ENERGY DEMAND

Effective management of energy demand is imperative for domestic energy security as it can considerably decrease pressure on the grid and reduce electricity costs for customers. Energy bills are a largely inflexible component of a business's cost base; and in certain energy intensive manufacturing sectors, they are a key driver of cost-competitiveness. Controlling price volatility where possible is important to avoid undermining business confidence, tightening margins and dampening investment as businesses factor in higher costs and cost uncertainty. Ultimately, this price volatility risks eroding Ireland's competitiveness.

There is expected to be significant growth in demand for electricity in Ireland over the coming decade, driven by the electrification of the heat and transport sectors, as well as from large industry and data centre demand. EirGrid has forecasted growth of between 28% in the median demand scenario and 43% in the high demand scenario³⁷. EirGrid's recently published strategic document, 'Shaping our Electricity Future', sets out a roadmap of the key developments from a networks, engagement, operations and market perspective needed to support the transition of the electricity sector.³⁸

DATA CENTRES

Ireland has proved a popular location for data centres which securely store and manage the data that keeps much of our information-based economy and society moving. According to EirGrid and SONI, demand from data centres could account for 23% of all electricity demand in Ireland by 2030 in their median demand scenario.³⁹ Additionally, in January 2022, the CSO reported that metered electricity rose from 5% in 2015 to 11% in 2020 (see Figure 5).

Data centres have the potential to bring advantages to the economy, through the generation of employment and FDI. For example, a 2018 study⁴⁰ commissioned by IDA, estimated that data centres in Ireland employ 1,800 people directly, with a further 1,900 employed annually in related construction activities.

³⁵https://ec.europa.eu/commission/presscorner/detail/en/ip_22_1511

³⁶ [20220311-versailles-declaration-en.pdf \(europa.eu\)](#)

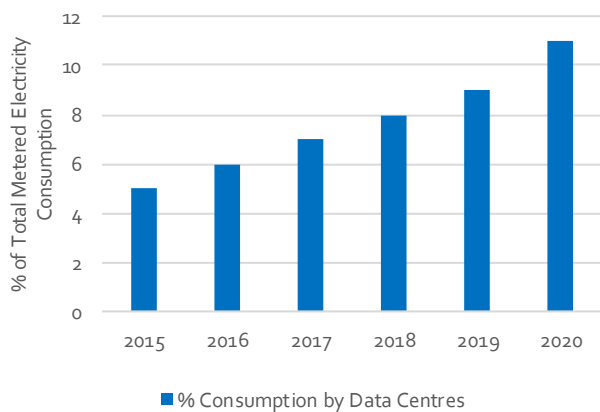
³⁷ [All Island Generation Capacity Statement](#)

³⁸ [Shaping Our Electricity Future Roadmap.pdf \(eirgridgroup.com\)](#)

³⁹ [All Island Generation Capacity Statement](#)

⁴⁰ Economic Benefits of Data Centre Investment in Ireland.

Figure 5. Data Centres Metered Electricity Consumption



Source: CSO Ireland

Data centres also offer predictable, stable connections to the grid and they tend to be in industrial areas with existing grid capacity. Furthermore, they can facilitate adequate demand management of electricity by providing flexibility in their demand through reducing consumption in times of system constraint.⁴¹

However, the forecast growth of data centres in Ireland represents a challenge to Ireland's security of electricity supply and emissions targets. In 2019, the IEA stated that the Irish Government's strategy to establish Ireland as a preferred location for the global digital and data hosting industry, could result in strongly growing electricity demand, which makes fast decarbonisation of the electricity system a necessity.⁴²

On 8 June 2021, while the CRU acknowledged the potential benefits data centres bring to the economy, it noted that the large increase in electricity demand associated with data centres poses significant challenges to Ireland's electricity network and security of supply.⁴³ Thereafter, on 23 November 2021, the CRU stated that it 'reserves the right to impose a moratorium on data centre connections in future if it deems necessary to do so, to protect security of supply'.⁴⁴ Subsequently, on 30 November 2021, the DECC stated 'the connection of large energy users to the electricity grid should take into account the potential impact on security of electricity supply and on the need to decarbonise the electricity grid'.⁴⁵

Unlocking the flexibility of large electricity demand users will be a key challenge as the electricity system is decarbonised. Energy demand, including data centres,

will be expected to operate within sectoral emissions ceilings and further signals will be required to locate demand where existing or future electricity grid is available and close to renewable energy generation.

In the Climate Action Plan 2021, the Government has committed to reviewing its policy statement on data centres to ensure that the sector will be in alignment with sectoral emissions ceilings and will support renewable energy targets.⁴⁶ The Council welcomes the Government's commitment to reviewing this statement and looks forward to its early publication.

CONCLUSION

The NCPC believes access to reliable, affordable supplies of energy is critical for Ireland's future wellbeing and long-term competitiveness.

To meet growing demand for energy in Ireland and address increased supply uncertainty, the Council believes that there should be an urgent focus on projects to help diversify energy supply sources and investing in upgrading our electricity infrastructure.

Furthermore, it is crucial that policies to enhance energy security align with the targets set out in the Climate Action Plan 2021 to facilitate Ireland's transition to a low carbon economy. This will have a positive impact on Ireland's economy and society overall, helping to secure Ireland's competitiveness into the future.

Further Reading: The Council's annual flagship publication, *Ireland's Competitiveness Challenge 2021*, was published in September 2021 and made 20 targeted and actionable recommendations to Government on how best to address the challenges facing the Irish economy. The *Challenge* report and Government response are available at: www.competitiveness.ie.

This Bulletin has been issued by the Chair, Dr Frances Ruane, and was prepared by Karen Hogan in the NCPC Secretariat.

⁴¹ [CRU21060-CRU-consultation-on-Data-Centre-measures.pdf](https://www.cru.ie/consultations/2021/06/08/cru-consultation-on-data-centre-measures.pdf)

⁴² [Energy Policies of IEA Countries: Ireland 2019 Review – Analysis - IEA](https://www.iea.org/countries/Ireland/2019-review-analysis)

⁴³ [CRU21060-CRU-consultation-on-Data-Centre-measures.pdf](https://www.cru.ie/consultations/2021/06/08/cru-consultation-on-data-centre-measures.pdf)

⁴⁴ [Data Centre grid connection - Commission for Regulation of Utilities](https://www.cru.ie/consultations/2021/11/23/data-centre-grid-connection-commission-for-regulation-of-utilities)

⁴⁵ [Policy Statement on Security of Electricity Supply](https://www.cru.ie/consultations/2021/11/30/policy-statement-on-security-of-electricity-supply)

⁴⁶ The Government, through the Department of Enterprise, Trade and Employment, published a statement on its Data Centre strategy in 2018, setting out the role and significance of Data Centres in Ireland wider enterprise policy objectives.