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ar son na hAeráide & Comhshaoil**
Department of Communications,
Climate Action & Environment

Ministerial Brief

Energy

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Renewable Energy

Renewable Energy Directive 2009

The 2009 Renewable Energy Directive set Ireland a binding target where at least 16% of our energy requirements should come from renewable sources by 2020. The Directive also requires all Member States to achieve a minimum target of 10% renewable energy in the transport sector by 2020, which is also legally binding. In order to meet our overall 16% requirement, the National Renewable Energy Action Plan (2010) sets out that we aim to achieve 40% in the renewable electricity sector, 12% renewables in the heating sector and the required 10% in transport. The following table shows achievements to date.

Sector	Expected Renewable Energy Share (RES) in 2020	Achieved at end 2018	Comment
Electricity (RES-E)	40%	33.2%	It is estimated that a total of between 4,000 and 4,400 MW of onshore renewable generation capacity will be required to meet the 2020 RES-E target of 40%.
Heat (RES-H)	12%	6.5%	
Transport (RES-T)	10%	7.2% (3.9%)	When allowances for double certification in renewable transport are factored in.
Overall	16%	11%	Projected shortfall is between 1.7 – 3.7% in 2020*

*Complete data from SEAI for Ireland’s energy projections is only available up the end of 2018. The actual shortfall will depend on a range of factors including consumer demand and fuel prices to the end of 2020. It is expected that the final figures regarding 2020 will be calculated by the SEAI in 2021.

Approximately 4,100 MW of renewable generation have executed connection offer contracts with EirGrid and ESBN under the grid connection programme.

Statistical Transfers

The Directive set Ireland a legally binding target of meeting 16% of our energy demand from renewable sources by the end of 2020. This represented a 12.9% increase on Ireland's reference starting point of 3.1% in 2005. Ireland is committed to achieving this target and while good progress has been made to date, especially in renewable electricity, it is accepted that Ireland will not meet the 16% target and the projected overall shortfall is between 1.7 and 3.7% by end 2020. It should be noted that reduced energy demand in 2020 as a result of COVID-19 may mean that this shortfall is slightly lower.

The SEAI has estimated that the contribution of renewables avoided €430 million of fossil fuel imports in 2018.

The Directive sets out arrangements to enable Member States to meet their targets, including the purchase of compliance through a flexibility measure, known as a **statistical transfer**. To date only Luxembourg is known to have utilised this mechanism to date – Luxembourg concluded deals with Estonia and Lithuania in 2017.

European Commission guidance provides that Member States purchasing and selling statistical transfers are required to notify the Commission of the quantity of energy (in ktoe) and price (€/per ktoe or GWh) within 3 months of the end of the year in which the trades have effect (31st March). The Commission then publishes this information. The buying Member State shall disburse the due amount to the selling Member State at the latest by 30 April of the year following the year for which a notification has been made by the selling Member State.

Contingency planning is underway exploring the potential extent, mechanisms and cost of addressing our target within the framework of the Directive. This contingency planning has included bilateral discussions with a number of Member States who are likely to be in surplus, bilateral discussions with DG Energy, legal advice to confirm the mechanism required to conclude a trade i.e. the Memorandum of Understanding that would be required and modelling analysis from SEAI to assist forecasting of the likely shortfall to target in 2020.

Cost of Compliance

The cost of purchasing statistical transfers should any potential shortfall in Ireland's target arise has yet to be established and will depend on a number of factors, particularly the availability of supply and market costs.

Trades in statistical allowances in 2017 between Luxembourg, Lithuania and Estonia suggest costs of the order of €22.5m per percentage point for those transactions. However, no assumption can be made that if Ireland entered into a trading arrangement with these countries, a similar price level would apply. Prices would be subject to negotiation and terms agreed. Indications based on the trades agreed by Luxembourg suggest that purchasing compliance for the Irish state could translate into total costs of the order of €110 million, subject to prevailing market conditions. The projected costs are an outline of what Ireland might expect to pay which has built in some inflation and anticipated tighter market supply in 2020 over the trades that emerged into the public domain in 2017.

At this stage purchases arising would need to be confirmed in 2020, the costs to the Exchequer of acquiring statistical transfers would require further detailed discussion with the Department of Public Expenditure and Reform in the context of the Budget 2021 to secure an appropriate allocation along with timing of any purchase, noting the deadline for completion of all purchases is 31st April 2021.

Purchasing Strategy to Ensure Compliance with 2020 Renewable Energy

Target

Officials are engaging directly with the European Commission to discuss Ireland's progress to date in relation to 2020, the pending shortfall to target and to establish what flexibility might exist in relation to purchasing compliance. This includes whether a case could be made to deploy available Exchequer funds towards domestic schemes (e.g. Support Scheme for Renewable Heat, Electric Vehicles, etc.), rather than purchasing compliance, that would realise additional growth in renewable technologies. This is notwithstanding our 2020 target is legally binding under the 2009 Directive.

There are approximately 14/28 Member States who are unlikely to meet their 2020 targets, including France, Germany, Poland and the Netherlands, and officials are currently engaging with them to establish their compliance strategy and explore ideas for engagement with the Commission.

In parallel, officials have also reached out to a number of Member States who are in surplus with a view to establishing the outlines of potential trades and the associated Memorandum of Understanding, to give effect to the statistical transfer, which would have to be negotiated and approved by Government and the Oireachtas. Thereafter formal notification to the Commission would follow any successful purchases that would go towards our 2020 compliance.

Recast Renewable Energy Directive 2018 (RED II)

In June 2018, the recast Renewable Energy Directive (RED II) was agreed between the European Commission, the European Parliament and the European Council. This new regulatory framework includes a binding renewable energy target for the EU for 2030 of 32% with a review clause by 2023 for an upward revision of the EU level target.

The legislative package does not in itself impose any direct national level target for renewable energy. Instead Member States will set out their national contributions as part of their National Energy and Climate Plans (NECP). In the NECP, Member States will set out the implemented and planned measures and the level of contribution towards the EU 2030 renewable energy target (as well as the 2030 Effort Sharing Regulation national target which in Ireland's case is a 30% reduction in GHG Emissions).

Member States must, from 2021 onwards, maintain the 2020 renewable energy baseline figure (16% in Ireland's case). In addition, Member States should progress along an indicative trajectory (based on a percentage progress towards the national contribution), with reference points in 2022, 2025, and 2027.

If a Member State falls below its baseline or falls below one or more of its national reference points, the Member State will be required to ensure that additional measures are implemented within one year to cover the gap. These measures include:

- Additional measures to increase deployment of renewable energy;
- Increasing the share of renewable energy in the heating sector;
- Increasing the share of renewable energy in the transport sector;
- Making a voluntary financial payment to the EU renewable energy financing mechanism;
and
- The purchase of statistical transfers.

As it is currently projected that Ireland could face a shortfall of around 3% of the 2020 renewable energy target and as any shortfall in the 16% baseline will have to be met post 2020, it is proposed that as part of any potential Inter-Governmental Agreement on statistical transfers with another Member State, consideration be given to including a future option to continue the partnership beyond the 2020 period.

The Governance Regulation (under the Clean Energy Package) sets out that if a Member State does not maintain its baseline share (as measured over a one-year period), the Member State concerned shall take (within one year) additional measures to cover the gap (within one year). This provides a level of flexibility that may negate the need to purchase statistical transfers post 2020.

The inclusion of the post 2020 period in any agreement would have the advantage that the Member State selling statistical transfers could offer Ireland first preference on surplus credits. It would effectively be a form of price hedging which could be beneficial given the challenge to 2030 and the likelihood that statistical transfers post 2020 will be significantly more costly in light of the EU's 32% renewable energy target for 2030. However, statistical transfers are but one of five compliance options that will be available to Member States under RED II. Decisions to be taken post 2020 on the purchase of statistical transfers will be based on an assessment of cost effectiveness of the various compliance options, among other considerations.

It is ultimately the responsibility of each Member State to determine the cost-effective level of renewable energy it should achieve by 2030, as long as it contributes to the achievement of the Union's 2030 target of 32% renewable energy. This will be detailed in the National Energy and Climate Plan. However, given the anticipated level of renewable energy in 2020 (which is forecast to be under the targeted 16%) and the projected increases in energy demand, the development of Ireland's contribution to the EU 2030 renewable energy target will need to take into account cost-effectiveness and Ireland's specific circumstances.

Offshore Wind

Ireland has one of the best offshore renewable energy resources in Europe with a sea area of 900,000 square kilometres - approximately 10 times the size of our landmass.

The Climate Action Plan sets out the actions we need to take to ensure we meet our 2030 climate targets, cut our reliance on fossil fuels and put Ireland on a clear pathway to meeting our 2050 objectives. The Plan details how Ireland will be stepping up ambition in the renewable electricity sector with a target of 70% of our electricity to be generated from renewable sources by 2030.

The renewable energy measures needed to achieve 70% RES-E will be comprised of the following:

- a) at least 3.5 GW of offshore renewable energy
- b) up to 1.5 GW of grid-scale solar energy
- c) up to 8.2 GW total of increased onshore wind capacity (cumulative based on approx. 4GW connected today)

Ireland's coast is one of the most energy productive in Europe, with a long-term potential of 70 GW of ocean energy opportunity (wind, wave and tidal) within 100 km of the Irish coastline.

The development of the offshore renewable energy sector in Ireland cuts across a wide range of sectors from consenting, licensing and infrastructure, to energy markets and international cooperation on renewable energy. A range of State bodies and activities will interact with the sustainable development of offshore renewables. Account must also be taken of legitimate public interest in, and EU and international obligations regarding, the protection of the marine environment.

Ireland's ambitions for the offshore renewable energy sector are contingent on delivering a licensing and regulatory regime for offshore renewable energy. This will provide certainty to project promoters and provide a pathway to realising the necessary investment in offshore renewable energy. This is crucial to our climate ambitions.

In order to realise the ambition for large-scale development of offshore wind, significant progress is required on four key pillars:

- 1) Development Management process;
- 2) Environmental protection and public acceptance;
- 3) Grid development model; and

- 4) Route to market.

Development Management Process

The Marine Planning and Development Management (MPDM) Bill has evolved from the Maritime Area and Foreshore Amendment Bill (MAFA).

MPDM seeks to establish in law a new marine planning system, which is underpinned by a statutory Marine Planning Statement, and guided by the National Marine Planning Framework. It consists of a development management regime from the high water mark to the outer limit of the State's continental shelf with full planning permission to be administered by An Bord Pleanála. It is a modernisation of the Foreshore Consenting regime, which is no longer fit for purpose given the number and range of new sectors looking to make use of our national seabed.

This new regime will replace existing State and development consent regimes and streamline arrangements on the basis of a single consent principle i.e. one state consent (Maritime Area Consent) to enable occupation of the Maritime Area and one development consent (planning permission), with a single environmental assessment.

At present, only offshore renewable energy projects within the limits of the foreshore (12 nautical miles) may be licenced under the Foreshore Act which is administered by the Department of Housing, Planning and Local Government.

Under the new system being proposed, Maritime Area Consents (MAC) will be granted by the Minister for Communications, Climate Action and Environment (MCCAIE) for development types within his/her policy remit. MACs for all other development will be granted by the Minister for Housing, Planning and Local Government.

Overview of the Proposed Offshore Renewable Energy Consent Sequence

Under MPDM

For the future Offshore Renewable Energy (ORE) regime, the MPDM provides flexibility to allow for both a 'centralised/Plan led' and 'decentralised/ Developer led' approach to the development of offshore renewable energy projects. Both of these models or a hybrid of both are feasible options for Ireland to develop ORE and it is crucial that the MPDM Bill provides for the Minister for Communications Climate Action & Environment to accept applications for and award Maritime Area Consents under any of these models.

The Decentralised Approach

National Marine Planning Framework (NMPF) – Strategic Maritime Area Zones are established by Government.

- **The Planning Interest** – The Minister receives applications of Planning Interest for ORE from Developers. The Planning Interest is a time bound provisional interest in respect of proposed development in a specified part of the maritime area. This allows Developers to carry out site investigations.
- **The Development Consent** – Following receipt of a Planning Interest from the Minister, the Developer may seek leave to apply to An Bord Pleanála (ABP) for a Development Consent. Applications are subject to public consultation.
- **The Competitive Process** – The Minister may establish a competitive process for support for projects who have received a Planning Interest and Development Consent by ABP. The terms & conditions of the process will consider arrangements for access to and the charging mechanism for connection to and use of the electricity transmission/ distribution system as set out under section 35 of the Electricity Regulation Act 1999.
- **The Marine Area Consent (MAC)** – The Marine Area Consent is granted by the Minister only to projects that have received a grant of Planning Interest, that have received Development Consent and that are successful in the Competitive Process established by the Minister under Section 39 of the Electricity Regulation Act.

The decentralised approach closely follows the general process set out in the MPDM with the addition of (1) the identification of Strategic Maritime Area Zones for ORE development in line with the National Marine Planning Framework (NMPF) prior to the planning interest stage and (2) a competitive process for subsidy support to occur prior to granting a Maritime Area Consent.

Under the centralised approach, zones will also be identified for ORE development however the Minister for Communications, Climate Action and Environment may designate an entity to undertake grid development which may include site selection and securing necessary permissions in relation to the grid connection to facilitate further ORE development by third party developers.

Under both models, it is intended that the Minister for Communications, Climate Action and Environment will establish a competitive process for the award of financial support under Section 39 (2)(b) of the Electricity Regulation to offshore renewable projects. This competitive process takes

place in advance of the award of a Maritime Area Consent by the Minister for Communications, Climate Action and Environment.

The Department of the Taoiseach chairs the Marine Legislation Group, which assists in overseeing the overall delivery and implementation of this legislation. The finalised General Scheme for the MPDM Bill was published in January 2020. The next steps will be a public consultation and pre-legislative scrutiny.

Environmental Protection and Public Acceptance

The environmental and other impacts of offshore renewables must be managed in line with international obligations and best practice to support maximum social acceptance. In that context, the Department of Housing, Planning and Local Government, working with the Department of Communications, Climate Action and Environment and other stakeholders, will develop statutory marine planning guidelines to support best practice throughout the planning process for offshore renewable energy projects including the development of a specific visualisation assessment in relation to design and layout of proposed developments. These guidelines will, inter alia, provide that where a development consent is applied for in an area already subject to permission, proposals must include a visualisation assessment to inform design and layout.

Grid Development Model

The Department established a Working Group on the Framework for Offshore Electricity Grid to assess the options available for a suitable offshore grid model. Membership of the Group consists of DCCAE, Commission for Regulation of Utilities (CRU), EirGrid and ESB Networks and the Group is chaired by DCCAE.

On behalf of the group, Eirgrid engaged consultants, Navigant, to undertake a study to look at how other Member States approach offshore grid planning and using that evidence base, to examine potential approaches that may be suitable for an Irish context. This report was completed and published on the Department's website alongside an industry/ public consultation which will inform a policy recommendation to Government. The consultation is open until Wed 22 July.

At present, offshore projects are responsible for designing and building the offshore transmission connection between their windfarm and the onshore transmission system. The developers only take their own projects into consideration and this will likely lead to an inefficient offshore grid as multiple projects build out.

Route to Market (Renewable Electricity Support Scheme (RESS))

To support the delivery of the national ambition to further decrease our dependence on fossil fuels the Department is developing a new Renewable Electricity Support Scheme (RESS) which will assist Ireland in meeting its renewable energy contributions out to 2030 (see separate note next).

The cost of offshore wind has been falling globally over the past number of years (driven by technological advances and competitive auction pressures) and accordingly there is increased interest in offshore wind projects off the Irish coast. The Climate Action Plan commits to holding an offshore auction in Q2 2021 pending sufficient competitive applications.

Renewable Energy Feed in Tariff (REFIT)

The REFIT schemes (REFIT 1-3) were designed to provide certainty to renewable electricity generators by providing them with a minimum price for each unit of electricity exported to the grid over a maximum 15-year period.

The last REFIT scheme closed in December 2015 and no payments will be made after 31 December 2032.

REFIT schemes/supports are funded by the Public Service Obligation (PSO) which is paid for by all electricity consumers. The REFIT schemes were designed to incentivise the development of renewable electricity generation in order to ensure Ireland meets its goal of 40% of electricity coming from renewable sources by the end of 2020.

The Terms and Conditions of the three REFIT schemes provide for adjustments to reference prices by way of annual indexation using the annual percentage change in the Consumer Price Index as quoted by the Central Statistics Office, see Table 1 for prices for 2015-2019.

Table 2 gives the installed wind capacity for 2015-2019 and Table 3 gives details of fuel mix for same period.

Table 1: Reference prices in euro per megawatt hour

	Tariffs per MWh	
	2015	2019
REFIT 1		
Large Wind (above 5MW)	69.72	70.349
Small Wind (equal to or less than 5MW)	72.167	72.818
Hydro	88.068	88.862
Biomass Landfill Gas	85.622	86.394
Other Biomass	88.068	88.862
REFIT 2		
Large Wind (above 5MW)	69.72	70.349
Small Wind (equal to or less than 5MW)	72.167	72.818
Hydro	88.068	88.862
Biomass Landfill Gas	85.622	86.394
REFIT 3		
Biomass Combustion	89.314	90.12
Biomass Combustion - Energy Crops	99.822	100.722
Large Biomass CHP (above 1500kW)	126.091	127.228
Small Biomass CHP (equal to or less than 1500kW)	147.106	148.433
Large AD Non CHP (above 500kW)	105.076	106.023
Small AD Non CHP (equal to or less than 500kW)	115.583	116.626
Large AD CHP (above 500kW)	136.598	137.83
Small AD CHP (equal to or less than 500kW)	157.613	159.035

Table 2: Wind Installed Capacities

Wind Installed Capacities (MW)	
Year End	Total
2015	2,440.5
2016	2,788.0
2017	3,305.5
2018	3,660.2
2019	4,127.1

Table 3: Electricity Fuel Mix as Percentage of Demand - Calendar Year Figures

Ireland										
Fuel Type	2015		2016		2017		2018		2019	
	GWh	%	GWh	%	GWh	%	GWh	%	GWh	%
Coal	4,874.4	16.94%	4,695.7	15.9%	3,644.6	12.2%	2,151.7	7.0%	577.6	2.0%
Oil	406.8	1.41%	292.8	1.0%	141.9	0.5%	139.4	0.5%	131.4	0.4%
Peat	2,518.2	8.75%	2,317.9	7.9%	2,164.4	7.2%	2,095.0	6.8%	2,105.9	7.2%
Gas	12,367.5	42.98%	15,328.4	51.9%	15,679.9	52.3%	16,014.0	51.9%	14,815.7	50.7%
Wind	6,573.0	22.84%	6,147.0	20.8%	7,444.0	24.8%	8,639.8	28.0%	9,354.3	32.0%
Hydro	806.5	2.80%	681.0	2.3%	691.6	2.3%	694.1	2.2%	877.5	3.0%
Other	482.0	1.67%	685.4	2.3%	746.0	2.5%	860.7	2.8%	211.6	0.7%
Other Non-Renewables	74.1	0.26%	72.8	0.2%	159.3	0.5%	301.6	1.0%	519.4	1.8%
Net Imports	673.4	2.34%	-711.7	-2.4%	-678.5	-2.3%	-27.7	-0.1%	644.5	2.2%
Total Demand	28,775.9	100.00%	29,509.3	100.0%	29,993.2	100.0%	30,868.5	100.0%	29,238.0	100.0%
Renewables	7,861.5	27.32%	7,513.4	25.5%	8,881.7	29.6%	10,194.6	33.0%	10,443.4	35.7%

Renewable Electricity Support Scheme (RESS)

The scheme is subject to the 2014-2020 EU State Aid Guidelines, which seek to promote a gradual move to market-based support for renewable energy. This will result in a shift from guaranteed fixed prices for renewable generators to a more market oriented mechanism (renewable auctions) where the cost of support will be determined primarily by competitive bidding between renewable generators. The key differences between RESS and REFIT are included below:

Design Differences	REFIT	RESS
Performance penalties for not delivering	N	Y
Competitive Auction i.e. winner and losers	N	Y
Index linked payments	Y	N
Payback to PSO if market prices run higher than	N	Y
Compensation during negative market price periods	Y	N
Community requirements	N	Y

The RESS is an auction-based scheme which invites renewable electricity projects to bid for capacity and receive a guaranteed price for the electricity they generate.

The primary policy objective of RESS is delivery of renewable electricity in a sustainable, cost effective and secure framework. However, there are broader policy objectives delivered under RESS, namely technology diversification and support for community ownership and participation.

The RESS project is being delivered in partnership with CRU and EirGrid. EirGrid will implement and operate the auction with CRU auditing and monitoring the auction process. The auction timeline is included below for the first RESS auction (RESS-1):

The RESS support is a 2 way arrangement. The bid/strike price is compared with a reference market price times the loss adjusted metered output. Generators will be topped up but also pay back

depending on the wholesale market reference price. The support will run for between 14 and 16.5 years depending on how quickly projects energise.

In the auction, projects will be selected in ascending bid price order. The eligibility requirements are based on 'shovel ready' projects. A key element to ensure timely delivery is the inclusion of a performance contract setting out delivery milestones deadlines.

Community Enabling Framework in RESS

An Enabling Framework for Community Participation is being developed as part of RESS and measures included within this Framework may include:

1. A mandatory requirement for all projects looking for support under RESS to offer investment opportunities to local citizens and communities.
2. Within each auction round there will be a ring fenced capacity for community-led projects.
3. Financial supports for community-led projects.
4. Independent legal, technical and financial advice for community-led projects.
5. The establishment of a national community benefit register.
6. A requirement for all projects to pay a community benefit of circa €2/MWh

RESS-1 auction includes a community preference category of up to 30 GWh. This category has been developed specifically to allow communities and citizens to participate in RESS. All projects are also required to establish and administer Community Benefit Funds. There are other community aspects being progressed for future RESS auctions. The Enabling framework will provide supports to community to progress their own projects. This will become increasingly more important in order to build a supply pipeline for future auctions. DCCAE will continue to investigate opportunities to deliver investment opportunities.

Technology Diversity

The new scheme will help realise the Government's policy objective of enhancing security of supply and broadening the renewable energy mix. As renewable technologies mature and costs fall, Ireland is well placed to take advantage and greatly diversify its renewable portfolio.

While the auction approach will provide a route to market for multiple technologies, it will do so in a competitive, cost effective framework. The use of certain 'levers' such as near term delivery dates

and 'single technology caps' will accelerate the broadening of the renewable technology mix and ensure technology diversity within a cost competitive framework.

RESS auctions will be held at frequent intervals throughout the lifetime of the scheme. This will allow Ireland to take advantage of falling technology costs and by not auctioning all the required capacity at once, we will not be 'locking in' higher costs for consumers for the entirety of the scheme.

RESS auctions will be designed in line with trajectory targets identified in Ireland's NECP. In addition, the first RESS auction in 2020 will aim to deliver 'shovel ready' projects, assisting in the early delivery for our trajectory to 2030.

It is proposed that the new RESS will be funded via the Public Service Obligation (PSO) mechanism.

Community Enabling Framework

A cornerstone of the new RESS was the provision of pathways for increased community ownership, participation in, and benefit from, renewable electricity projects.

This commitment to community benefit-sharing is firmly in keeping with established national policy to support community energy projects, a policy which is further underlined in the Climate Action plan.

To that end, an Enabling Framework for Community Participation was developed under the auspices of RESS. This framework includes a specific category for community projects entering the RESS auction, and a package of technical and legal supports to assist communities in establishing and delivering such projects. In addition, projects are required to establish a Community Benefit Fund under the terms of the scheme, which will yield significant benefits for the local community. Payments from the Fund, include near-neighbour benefits, of a minimum of €1,000 to those living within 1km, support for entities involved in the promotion of the UN Sustainable Development Goals and supports for local clubs, societies, and not-for-profit entities.

The High Level Design of RESS also made a commitment to *“Mandatory investment opportunities for communities and citizens in all RESS projects.”* This commitment is essentially about shared ownership. It derives from the principle that communities should be able to benefit from developer-led (or private) renewable electricity projects in their locality. While it was not possible to fully design and include a citizen investment scheme in time for the first RESS auction, a Roadmap has now been developed with a view to facilitating citizen investment opportunities in future RESS auctions i.e. after RESS 1.

Wind Energy Guidelines

The current guidelines in force on wind energy development date from 2006.

Updating the Guidelines provides an opportunity to (i) offer a better balance between the concerns of local communities and the need to invest in indigenous energy projects; take account of best international practice and (iii) consider and develop issues relating to community benefit and participation.

Key Provisions of Draft Guidelines

The main proposed changes to the 2006 Guidelines, based on an agreed 'preferred draft approach' are as follows:

- **Noise** from wind farms will now be subject to a limit of 5 decibels above existing background noise up to a maximum permitted noise limit of 43 decibels, day or night. This is a tightening of the 2006 noise standards and is in line with the most up-to-date best international standards, as incorporated in the recent World Health Organisation (WHO) Environmental Noise Guidelines for the European Region, adopted in October 2018. This new standard should help in reducing noise nuisance from wind farms for local residents and communities.
- The **setback distance** for visual amenity purposes is now proposed to be set at 4 times the tip height between a wind turbine and the nearest dwelling curtilage, subject to a mandatory minimum setback distance of 500 metres. To put this into context, a wind turbine of say 180 metres will now have to be at least 720 metres from the nearest dwelling, as against the current minimum requirement of 500 metres in the 2006 Guidelines. This new setback will also be subject to the need to comply with the noise limits mentioned above and should assist in addressing the concerns of local communities regarding wind farm proposals.
- Wind farm developments will be obliged to operate automatic **shadow flicker** control mechanisms.
- Going forward, wind farm developers will also be required to engage in mandatory consultations with local communities at an early stage in the process, at pre-planning stage, and will further be required to prepare a Community Report as part of their planning application.

- It is also proposed that wind farm developers will be required to take the necessary steps to ensure proposed development will be of enduring benefit to the local community by means of new Community Dividend arrangements, such as offering the local community a share in the development, other forms of benefit. This aligns with community commitments under the RESS.
- Arising from the High Court ruling in the O’Grianna case, which determined that wind farms and their grid connection to the national grid must be considered together as one single project for EIA purposes, work on the wind farm element of the project shall not be allowed to commence until the grid connection element has also been granted planning permission and environmentally assessed.

Public Consultation

A public consultation on the proposed revisions as part of the associated Strategic Environmental Assessment (SEA) process, was launched by the Department of Housing, Planning and Local Government in December. The public consultation closed on 19 February and approximately 500 submissions were received. Detailed review and analysis of the submissions is being undertaken by both DHPLG and DCCAE.

A key issue for DCCAE will be to assess the implications for the onshore wind industry based on consultation feedback and for the achievement of 70% RES-E ambition by 2030. The indicative target for onshore wind in the Climate Action Plan is 8 GW of onshore wind by 2030 (cumulative based on approx., 4,000 MW connected today). Industry are particularly concerned by the strict noise limits being proposed, have queried the methodology being applied, and raised concerns on projects that may wish to repower over the coming years (replace existing windfarms with fewer, more powerful turbines).

The SEA process ensures that environmental considerations are fully integrated in the revised Guidelines. It is expected that the revisions to the Guidelines will be finalised and come into effect during 2020 following the completion of the SEA process.

Micro Generation

Solar PV Scheme

In July 2018 a pilot micro generation scheme was launched to support domestic customers who install solar photovoltaic panels in their homes. The grant is available for homes built and occupied before 2011.

The pilot scheme, administered by the SEAI is initially targeting domestic customers, solar PV installations (rooftop solar panels), self-consumption (grant to support installation costs with no tariff for export) and battery storage.

The pilot scheme was subject to a review in late August 2019 and the scheme was closed to applications from 19th December 2019 to 7th January 2020, when it re-opened for applications under new grant rates.

Under this pilot, the SEAI have trialled a new system aimed at streamlining the grant application process and improving the customer experience. Grants are paid in arrears once the work has been carried out and verified as being in compliance with the scheme criteria.

What Has the Pilot Scheme Achieved So Far?

The pilot scheme has been successful in stimulating the deployment of solar PV and energy storage systems into homes. The technology has been widely accepted by consumers, and there is growing demand with many people installing relatively large systems in their homes.

Solar PV Activity	2018 (Scheme Commenced)		31 Dec 2019	
Payments Made	71	€126,750	1,827	€4.28m
Installed Capacity	177 kW		4,941 kW	

In December 2019, following a review of the first 18 months of the scheme, SEAI announced new grant rates as follows:

- Solar PV only
 - Grant of €900 per kWp of PV to a maximum of €1,800 for a 2 kWp system
- Solar PV and Battery
 - Grant of €300 per kWp of PV to a maximum of €2,400 for a 4 kWp system
 - Grant of €600 for a Battery

- New requirement for a post-works BER C certificate

The application rate increased steadily through 2019, from 140/month at the start of 2019 to over 300/month in November prior to the changes. In December SEAI announced changes to the scheme which resulted in a surge of over 900 applications being received. The Scheme has a capital allocation of €3.5m for 2020. A separate submission has been prepared setting out options on how to manage the Scheme this year in light of existing commitments and impact of the December 2019 surge.

Industry

Supply chain has grown to over 100 registered installers. New companies are continuing to register with the scheme.

Standards

Through the scheme, SEAI developed a Code of Practice, which set minimum requirements for good practice installations. Industry associations have welcomed this. SEAI will work with NSAI to develop the future national standard for design and installation of solar PV which will be important to support the continued development of this sector.

Extension of Scheme to Other Sectors

SEAI does not feel that the Solar PV pilot scheme should be extended to other sectors at this time as they operate other support programmes that can incorporate Solar PV, such as:

- Better Energy Communities: a national retrofit initiative with grant support of up to €28 million each year to homeowners, schools, communities, and private sector organisations to achieve energy efficiency, including Solar PV systems, in Irish communities.
- National Retrofit Pilot Scheme: a €17m programme for schools for energy efficiency works in conjunction with the Department of Education
- EXEED: supporting businesses that are planning an energy investment project with grants of up to €500,000 per year.

In relation to the commercial sector, the SME programme within SEAI is undergoing a revamp and there is potential to incorporate some solar PV supports to businesses through this mechanism. The Pilot Scheme is not the appropriate vehicle for extending supports to business.

The Agricultural sector is serviced by the Targeted Agricultural Modernisation Schemes (TAMS) administered by the Department of Agriculture, Food and the Marine. The Programme includes a €10 million renewable energy support scheme for on-farm solar PV and battery energy storage systems. For these reasons it was not recommended that another Scheme is developed to support this sector.

Enduring Microgeneration Framework

Looking ahead it is unclear at this time as to what support mechanism is appropriate for the enduring Microgeneration Support Scheme. The policy options are being examined and progressed via the Microgeneration Working Group established in Q3 2019 under the Climate Action Plan.

The Climate Action Plan contains a holistic set of objectives and commitments covering the Solar PV Scheme, the delivery of an enabling framework for micro-generation and the National Smart Meter Programme, which in combination will tackle existing barriers and establish suitable supports within relevant market segments.

Planning Policy Exemptions

SEAI has found through its interactions with homeowners, businesses and actors in the solar industry that rooftop planning requirements are consistently identified as a barrier to uptake. The existing exemptions are in relation to rooftop solar PV which limit domestic system sizes to around 2kWp without planning permission.

The Department has engaged with the Department of Housing, Planning and Local Government (DHPLG) to review the existing planning exemptions for rooftop solar PV microgeneration. Officials from DHPLG have agreed in principle to a revision to the existing exemptions that will include provision for community buildings, including schools. DHPLG officials are consulting internally and with stakeholders in relation to a proposed new area-based exemption for rooftop solar PV microgeneration. They are to revert with proposed new definitions for community buildings, including schools, in the context of planning exemptions. DHPLG maintain that a proportionate response is required to any revisions to exemptions.

Support Scheme for Renewable Heat

The Support Scheme for Renewable Heat (SSRH) has been developed to financially support the adoption of renewable heating systems by commercial, industrial, agricultural, district heating and other non-domestic heat users.

The primary objective of the Scheme is to contribute to meeting Ireland's renewable energy targets while also reducing greenhouse gas emissions. The Scheme is designed to increase the energy generated from renewable sources in the heat sector by circa three percentage points.

The SSRH includes grant supports for the installation of heat pumps and an operational support for biomass and anaerobic digestion heating systems. The operational support provides a multiannual support payment for up to 15 years based on prescribed tariffs per unit of heat energy.

The SSRH includes a range of qualification criteria and financial safeguards that have been developed to protect the taxpayer.

The Sustainable Energy Authority of Ireland (SEAI) is the administrator of the scheme. This role includes development of the terms and conditions of the scheme (which are subject to the approval of the Minister for Communications, Climate Action and Environment) and the assessment and approval of projects.

The SSRH commenced operation in September 2018 when applications opened for grant supports for the installation of heat pumps. The operation support (i.e. the multi-annual support for biomass and anaerobic digestion heating systems) opened for applications in June 2019.

Budget

The scheme is exchequer-funded with a total allocation of €300 million provided in the National Development Plan. A total of €1.5 million in capital funding has been allocated for the scheme in 2020. This will increase in the coming years as the number of projects accessing the scheme increases.

Each project that is approved for operational support (i.e. multi-annual payments) is assigned a project budget cap which is a limit on the annual payment that the project may receive. The total of the project budget caps for all approved projects cannot exceed an overall annual budget cap which is set by the Minister for Communications, Climate Action and Environment with the agreement of the Minister for Public Expenditure and Reform. The annual budget cap is currently set at €5 million.

Projects Approved to Date

SEAI have received over 90 applications for the scheme. At the end of May 2020, the SEAI had approved a total of 30 projects – of which 2 are for grant supports for the installation of heat pumps and 28 for operational supports. The projects approved for operational support will receive up to €800,000 in annual support.

Annual Tariff Review

The tariffs (i.e. the rates per unit of heat energy) that apply to the operational support are to be reviewed on an annual basis. The first such review is planned to take place in mid-2020 is nearing completion and indications are that it is unlikely to result in adjustments to the tariffs. The annual review will only impact projects that have yet to be approved and will not impact the tariffs that apply to projects already approved.

A separate review process will be carried out on periodic basis to ensure approved and operational projects do not benefit from windfall gains through significant market movements such as a fall in the price of biomass fuels.

Energy in Transport

Renewable Fuels

Ireland plans to increase its renewable energy share in transport by increasing the amount of biofuel deployed and also increasing the penetration of electric vehicles in the transport fleet (see separate note).

Options to decarbonise the transport sector also include the use of alternative fuels such as Compressed Natural Gas (CNG), hydrogen and smarter travel options such as increased public transport, cycling and walking. The Department works extensively with the Department of Transport, Tourism and Sport as well as other stakeholders to support these decarbonisation efforts.

Biofuels

In the short to medium term, the use of biofuels will be the principal means by which Ireland expects to increase the amount of renewable energy in support of decarbonising the transport sector. The biofuel obligation (detailed below) is currently the main factor in reducing Ireland's emissions in the transport sector. The biofuel obligation alone, as it currently stands, will result in a reduction of 200,000 tonnes CO₂ annually in Ireland.

Biofuels can be manufactured from a range of feedstocks including starch based crops (e.g. wheat), oil crops (e.g. rapeseed) or waste materials such as used cooking oil and animal fats from the meat industry. Typically biofuels are deployed blended with fossil fuels. Petrol in Ireland is generally made up of 95% gasoline and 5% bioethanol (called E5) and fossil diesel is blended with FAME (biodiesel) up to a limit of 7% (called B7). Other common types of biofuels are biomethane, which can be blended with or used in place of natural gas in CNG/LNG vehicles, bioLPG and Hydrotreated Vegetable Oil (HVO) which is a renewable diesel.

The Biofuels Obligation Scheme (BOS) is the main support for biofuels in Ireland. The scheme requires suppliers of road transport fuels to include a proportion of biofuels in their fuel sales each year. Fuels suppliers are also required to demonstrate that the biofuel they deploy to meet their obligations satisfy strict sustainability requirements.

Since its introduction in 2010, there has been a significant increase in the amount of sustainable biofuel deployed in Ireland with over 216 million litres of biofuels placed on the market in 2018.

From January 2019, the biofuel obligation rate was increased from 8% by volume to 10% and this has resulted in 260 million litres of biofuels being placed on the market in 2019. The obligation rate was further increased to 11% from January 2020 and this is expected to result in an additional 70 million litres of fossil fuel being replaced with biofuel annually.

Currently, the level of blending of biofuels is restricted by technical and other issues. The Fuel Quality Directive permits the blending of fossil diesel with up to 7% FAME. Though the Fuel Quality Directive allows for 10% bioethanol with gasoline (called E10), there are concerns that some older petrol vehicles are not compatible with blends higher than E5. These barriers are referred to as 'blend walls'.

For diesel, alternative biofuels such as Hydrotreated Vegetable Oil (HVO) could provide a solution. HVO can be used in higher blends than B7 or as a 'drop in' fuel. However, there is a limited supply of HVO available internationally and the demand for the fuel is high. It is currently significantly more expensive than FAME.

For petrol, E10 will need to become available. However, there may be a requirement to keep E5 available as a 'protection grade'. This could provide difficulties in terms of forecourt infrastructure, pricing and availability of E10. It would also require a comprehensive information campaign.

As set out in the Climate Action Plan, a public consultation took place in 2019 in order to inform changes that will be made to the Biofuels Obligation Scheme for the coming decade. The consultation closed in November and 42 responses were received, which are currently being assessed.

Hydrogen

Though not currently deployed as a transport fuel in Ireland, hydrogen also has significant potential for the transport sector. An industry group, Hydrogen Mobility Ireland, was set up early in 2019 and published a [Hydrogen Roadmap for Irish Transport](#) in October 2019. The group has wide representation including from industry, academia, semi state and the policy side with DCCAE and DTTAS participating in an observer status. The group is continuing to progress its work programme in 2020 with a view to extending its remit into 2021.

Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG)

Interest in the use of Compressed Natural Gas (CNG) and Liquefied Natural Gas (LNG) is also increasing and there may be funding, from the Climate Action Fund, for a renewable CNG

(biomethane) project that is being run in a rural location (see separate CAF note). GNI is also supporting the roll out of more CNG stations nationwide. There are currently few public or private CNG stations in Ireland: 2 in Dublin and 1 each in Cork and Shannon. The next station to be opened will be in Tipperary and in 2019 alone a total of 8 GNI CNG stations were contracted for. It is planned that 6 of these will be delivered in 2020 though there is still a risk of delay due to COVID 19 restrictions for construction projects. By 2025 GNI aims to have 23 public CNG stations in operation. There will also be approx. 40 private CNG stations by this time.

Electric Vehicles

As part of the Climate Action Plan, the Government set a target to have 936,000 electric vehicles (including battery electric vehicles and plug-in hybrid electric vehicles) on Irish roads by 2030. This is equivalent to one-third of the circa 2.8 million vehicles currently on the road in Ireland.

This is an ambitious target which will require very significant and sustained growth from the current level of c 19,000 electric vehicles. The number of electric vehicles (EVs) in Ireland doubled in 2018, albeit from a very low base, and numbers have doubled again in 2019. This is a promising start but there remains a number of challenging policy, expenditure and supply factors that will have to be managed over the coming years. It is expected that, with the introduction of more models of EVs with longer drive ranges by an increasing number of manufacturers, Ireland's current trend will continue, however Government measures will still be needed to reach the ambitious target of 936,000.

For context, the transport sector accounts for 20% of Ireland's greenhouse gas emissions. As such Ireland's transport sector must transition away from the use of oil swiftly and this will entail a move from conventionally fuelled vehicles (petrol and particularly diesel) to cleaner alternatives, particularly zero-emission technologies such as full battery electric vehicles (EVs) but also other lower-emission fuels like those powered by compressed natural gas or hydrogen.

€36 million was allocated in 2020 for the promotion of EVs. The Department, through the Sustainable Energy Authority of Ireland (SEAI), provides the:

- Purchase grant of up to €5,000 for new battery electric vehicles (BEVs) and plug-in hybrid electric vehicles (PHEVs) – budget of €30m;
- Home Charger Grant Scheme – budget of €4m; and
- Public Charge Point Scheme – budget of €2m.

Other incentives available include:

- VRT relief of up to €5,000 for the purchase of BEVs and up to €2,500 for PHEVs;
- Benefit-in-Kind tax relief for battery electric vehicles;
- Grants of up to €10,000 for EVs for the taxi sector (plus an extra €2,500 if taxi is made wheelchair accessible) – administered by NTA ;
- Accelerated Capital Allowances for businesses;

- Low rate of annual motor tax; and
- Tolling reductions of 50% for battery electric vehicles and 25% for plug-in hybrid electric vehicles.

These measures have helped increase the uptake of EVs in Ireland and have gone some way to bring the lifetime cost of an EV closer to that of a petrol or diesel car. This is particularly important for families or every day commuters considering the switch to EVs. Early adoption of EVs by Irish consumers will pay increased dividends, from a climate change perspective, over the course of the next 10 years and sustained and high level support for EV uptake will be critical for this.

The cost of these measures has increased in recent years and, based on current trends, modifications will need to be made to the above financial supports so as to make the limited expenditure as effective and efficient as possible.

DPER analysis indicates that the cost of the battery, as part of the up-front vehicle purchase cost, is currently the biggest factor in the gap between the total cost of electric vehicle ownership compared to an internal combustion engine. Government financial support has therefore focused on reducing this up-front cost as much as possible and a grant of up to €5,000 is available. Electric Ireland has calculated that for an average Irish driver there is approx. 80% per annum saving on running an EV compared to an internal combustion engine, which when applied to a 1.4l Ford Focus petrol would equate to a saving of over €1,200 per year. On running costs alone then, a new Nissan Leaf versus a new Ford Focus could recoup the difference in up-front costs in 3.6 years. EV road tax and servicing costs differences would further lower this recoup period and as the EV market develops further the up-front costs will decrease also.

Ireland's EV Charging Network

A network of over 700 publicly accessible charge points is already available including circa 100 fast chargers, which are mainly found on national routes. The majority of these chargers have been rolled out by the ESB through its eCars programme. The Climate Action Fund (see separate note), has also allocated up to €10 million to a project from ESB eCars that will further enhance its current network and complete a nationwide EV charging network capable of facilitating large-scale electric vehicle uptake over the next decade. This support will in particular upgrade over 500 standard chargers and, crucially, will result in an increase in the number of fast chargers which will be mainly located along the motorway network. Anecdotally, the Department is aware that this CAF intervention is spurring private industry to increase and/or quicken their expansion of their EV charging points. In particular, forecourt companies are looking to increase their market share of EV

charging points. Smaller companies, focused on industrial estates or fleet owners are also exploring entering the market more.

Charging while at home accounts for around 80% of EV recharging in Ireland and it is best practice, internationally, to promote home charging as the most common and cheapest form of EV charging. Home charging is both convenient and cost effective for the EV owner and is also more likely to take place at off-peak times (than charging at public charge-points), which is more beneficial in terms of the electricity grid and the uptake of renewable electricity. The Department will seek to maintain this high level of home charging into the future, which it is noted is a distinct difference with how people refuel their petrol or diesel cars.

The EV Home Charger Grant Scheme has been in operation since January 2018 to support the installation of home chargers for purchasers of new and second-hand BEVs and PHEVs. The grant supports the cost of installation of a home charger up to a maximum of €600. The Department is currently examining ways to expand the Home Charger Grant to include dwellings with shared parking (such as apartments).

Since September 2019, the Public Charge Point Scheme has been in place to provide funding to local authorities for the development of on-street public chargers. The primary focus of this scheme is to provide support for the installation of infrastructure which will facilitate owners of EVs, who do not have access to a private parking space but rely on parking their vehicles on public streets, to charge their EVs near their homes. Infrastructure installed could also provide the opportunity for people visiting the area to park and charge their EVs.

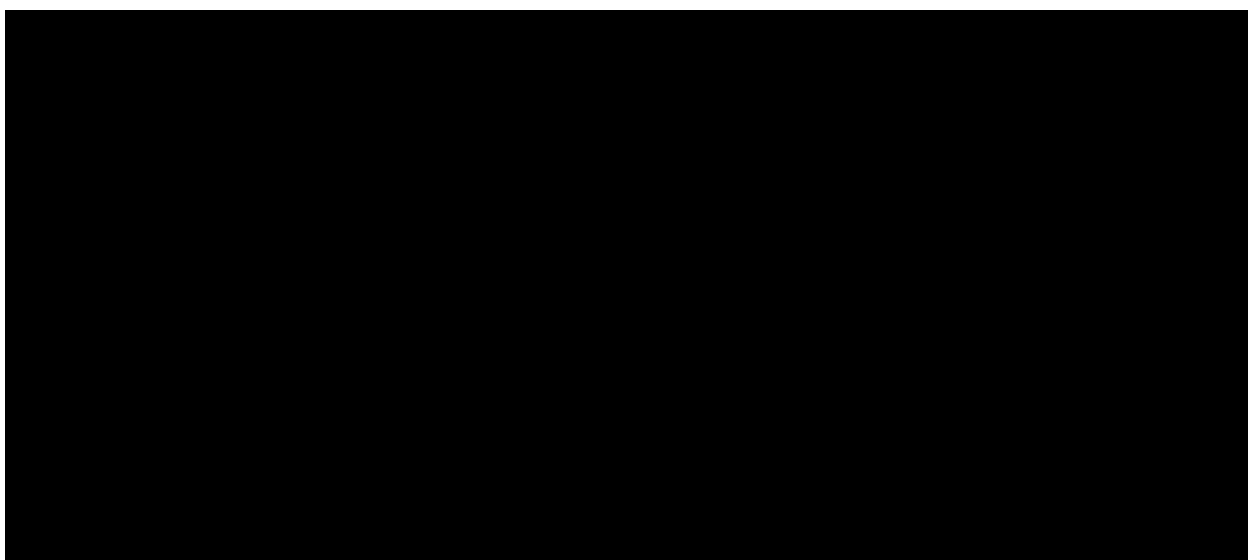
Private industry is also looking into investing into EV charging infrastructure and this will become a more prominent feature in the decade ahead.

Retrofitting

Residential Retrofit Targets

Context and Climate Action Plan Retrofit Targets

The Climate Action Plan sets a target of reducing the greenhouse gas emissions from the residential sector from 6Mt CO₂e in 2017 to 3-4Mt CO₂e in 2030. The Plan indicates that this will be achieved by upgrading 500,000 homes to a Building Energy Rating of B2/cost optimal equivalent or carbon equivalent by 2030, as well as the installation of 400,000 heat pumps to replace older heating systems. As evident from the chart below, this represents a very significant increase in both the number and depth of retrofit delivery, over and above current activity.



Achievement of the targets will be supported by the Project Ireland 2040 financial allocation of €3.7 billion to 2027. While this is clearly a significant level of Exchequer investment, it is generally acknowledged that reliance on Exchequer finance alone will not be sufficient to meet the level of retrofit and heat pump installation required.

Retrofit Taskforce

Delivering on the retrofit targets is a complex programme of work with a wide range of interlinkages and interdependencies. A truly all of government approach with effective collaboration will be required to deliver the programme. A Retrofit Taskforce with cross Departmental and agency membership has been established to oversee the design and development of a new integrated retrofit delivery model and the overall plan for achieving our targets.

Key activity/areas of progress since January include:

- Extensive collaborative working across the Department and SEAI with support from external consultants;
- Workshop with 40 stakeholders from the supply chain and financiers held;
- Series of bilateral meetings held with key stakeholders and Departments;
- Workshop with consumers/homeowners held;
- Review of international experience of retrofit programmes undertaken;
- Meetings of the Taskforce, Delivery subgroup and Finance subgroup;



High-Level Design to Deliver on Our Retrofit Target

The Taskforce is assessing a range of potential approaches across the 4 dimensions/pillars that will form the core of the retrofit solution.

- i. Customer/homeowner propositions to improve awareness and drive demand
 - A network of one-stop-shops that deliver simple customer journeys and coordination with contractors and finance providers as well as minimising hassle;
 - Proactive and targeted marketing campaigns targeted at identified segments;
 - Appropriate regulation.
- ii. Financial/funding models for each consumer segment/cohort to address high payback periods and ability to pay upfront costs
 - Exchequer funding;
 - Low cost loans (including consideration of a loan guarantee scheme), green mortgages, 'pay as you save' etc;
 - Tax incentives.
- iii. Supplier scale-up and contracting
 - Drive confidence in long-term attractiveness of retrofit market;

- Consistency and confidence in one-stop-shop offerings through clear standards and establishment of contractual obligations;
 - Changes to the existing apprenticeship and education programmes and other initiatives to up-skill the existing workforce and bring in new entrants;
 - Foster aggregation and standardisation;
 - Stimulate innovation.
- iv. Programme governance and roadmap
- Appropriate entity with responsibility for driving achievement of our national retrofit targets;
 - Performance monitoring and evaluation mechanisms established.

Next steps

The Climate Action Plan set a deadline of end-Q3 2020 to publish the Retrofit Task Force Report.

Work is also underway in relation to how these plans can best act as an economic stimulus.

SEAI Residential and Communities Schemes

Better Energy Homes

The Better Energy Homes scheme provides grants to homeowners to improve energy efficiency of their homes by financing part of the cost of attic insulation, wall insulation, heating controls upgrade, solar thermal solutions, heat pump systems, and Building Energy Rating (BER) assessments. The indicative budget for the Scheme for 2020 is €22.5 million (€21m capital and €1.5m current). SEAI has introduced a number of measures to counter the effect of the COVID restrictions, including a new desktop-based work inspection regime and deferral of post-work BER assessment certificates. The latter means that payments to applicants can continue even though the compulsory post-works BER assessments cannot take place at the moment. A new online contractor training platform was also developed in May with the first training session attended by approx. 140 participants. This is the first in a series of training sessions.

Looking to the future, the Department is also engaging with the SEAI in relation to a “bundling of measures” approach that will be offered to homeowners and will support a move to deeper levels of retrofit. This change will cut down on the administrative burden for the homeowner and will also promote the concept of whole house retrofits leading to more fuel switching. Support for single, shallow measures will still be available under the scheme.

Warmer Homes scheme

The Warmer Homes Scheme provides free energy upgrades to lower income households. There are currently 6,156 homes at various stages of the process. The average waiting time is currently 18 months. This year’s budget of €52.8million was the highest ever allocation for the scheme, with the aim of reducing those waiting times for lower income households. However, the impact of the COVID-19 restrictions will likely increase this waiting time further.

This scheme is designed to provide retrofits for households in energy poverty, many of whom are older people and/or have chronic respiratory conditions. Therefore while it is the case that we would like to see retrofit resuming when safe to do so, all works on all homes remain postponed and should remain postponed under further guidance is issued by SEAI.

SEAI is continuing to process all new application for future works.

Warmth and Wellbeing Scheme

This scheme is available exclusively to lower income households in the pilot area postcodes in Dublin where there is a person living with a chronic respiratory condition. All works on all homes remain postponed and should remain postponed under further guidance is issued by SEAI. SEAI are continuing to process all new application for future works. Contractors should continue to take every precaution necessary to protect themselves, their staff and their clients.

Better Energy Communities

The BEC Scheme funds community based partnerships to improve the energy efficiency of the building stock in their area – homes, community facilities and businesses. The budget for the Better Energy Communities (BEC) Scheme in 2020 has been increased to €22m – with €4m of the allocation to be used for a new ‘homes only’ aggregation strand under the scheme to advance the concept of aggregated home retrofit delivery with no requirement to include other types of buildings. Successful projects are being notified but the pace of retrofit work will be impacted as a result of Covid.

Deep Retrofit Pilot Scheme

The Deep Retrofit Pilot Scheme was launched in 2017 as a time bound pilot to investigate the challenges and opportunities of deep retrofit in Ireland. The scheme closed for applications in July 2019. A number of projects are still underway and will be completed in 2020. Homes upgraded under the scheme have all been improved to an A3 Building Energy Rating. Government funding of 50% of the cost (including project management and consultancy costs) was made available (with uplift to 95% of the cost for those at risk of energy poverty). Initial findings from the pilot are available on SEAI's website: <https://www.seai.ie/grants/home-energy-grants/deep-retrofit-grant/key-findings/>

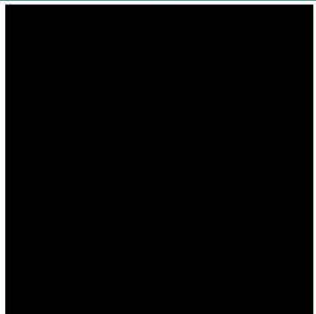
Impact of COVID-19 on Retrofit

Covid-19 restrictions meant that retrofit works, in common with many other activities in the wider economy, were paused for a number of weeks.

As the wider construction sector continues to recommence operations, it is anticipated that retrofitting works will also now recommence. The SEAI is continuing to process new grant applications for future works and grant payment requests for works already completed as quickly as possible.

SEAI will also now engage directly with its panel of retrofit contractors providing services under the Warmer Homes Scheme, to agree a timeline, protocols and processes for resumption of works on homes under the scheme which can be categorised as lower risk. The SEAI hopes to conclude this process very speedily and recommence works under the scheme within Phase 2 of the Roadmap for Reopening Society and Business. Notices on this scheme and other schemes administered by the SEAI can be found [on their website](#).

Summary of SEAI Grant Schemes

Homeowner Grants	Applicant	Grant mechanism	Outputs in 2019	Status	Waiting List	Next Steps
Home Energy grants: Contributing to the costs of insulation, heat pumps, heating controls and solar thermal upgrades.	Homeowner	Online or post Pre-approval, procure works from registered contractor, claim grant after works	18,531 homes 40,700 measures €24 million Exchequer spend	Open since 2009 SEAI has grant aided 237,717 homes since 2009	n/a	Introduce an offering for a bundle of measures that will achieve a B2 BER
Solar PV grant: Grant for solar PV panels and battery systems	Homeowner	Online or post Pre-approval, procure works, claim grant after works [Previously operated as rebate scheme – claim after works without prior application.]	1,896 homes (systems)	Open since 2017	1,698 applications in process or open	Changes were introduced in December 2019, now only homes that have a C rating can apply – in line with the energy efficiency first approach
Free upgrades for eligible homes (Warmer Homes Scheme): A nationwide scheme delivering free energy efficiency improvements to the homes of people who are in receipt of certain welfare payments.	Homeowner	Post only Apply. If eligible survey and works are managed by SEAI through panel of procured contractors.	3,142 homes upgraded €39.8 million Exchequer spend	Open since 2000 141,021 homes delivered to date	Approximately 6,000 homeowners on the waiting list Waiting time of over 18months	

Homeowner Grants	Applicant	Grant mechanism	Outputs in 2019	Status	Waiting List	Next Steps
<p>Warmth and Wellbeing Scheme: Pilot programme with the HSE to improve the living conditions of vulnerable people with chronic respiratory conditions. Limited to a number of areas in southwest Dublin.</p>	Homeowner	Post only Apply. If eligible survey and works are managed by SEAI through panel of procured contractors.	<p>340 homes upgraded</p> <p>€8.3 million Exchequer spend</p>	Limited geographic pilot since 2016	<p>Approx. 400 on waiting list</p> <p>Waiting time of 12 months</p>	
<p>Deep Retrofit: The Pilot Programme was introduced to inform the future delivery of deep retrofit in Ireland to incorporate deep measures to achieve a minimum uplift of 150kWh/m2/yr to an A rating on the BER Scale, incorporating a fabric first approach and the deployment of renewables. The aggregator model part of the pilot with minimum of 5 homes required per application with grant support available for private and fuel poor homes</p>	Project Owner (Aggregator)	<p>Online Application Form Application form. Evaluated relative to criteria and offered above min threshold. SEAI contract issued to the Project Owner Works procured and managed by the Project owner. Claim after works completed.</p>	<p>111 Homes Completed</p> <p>259 Homes (51 projects) offered upgrades</p> <p>€ 6 million Exchequer spend</p>	Closed for applications – works ongoing with the pilot programme to close out in 2020.	n/a	Evaluation of the scheme and incorporate the learnings into the new approach for retrofitting.

Communities	Applicant	Grant mechanism	Outputs in 2019	Status	Waiting List	Next Steps
Community Energy Grants: (Better Energy Communities) SEAI assists community energy projects through capital funding, partnerships, and technical support to deliver energy savings to homeowners, communities, and private sector organisations.	Project co-ordinator	Application form. Evaluated relative to criteria and offered above min threshold. Works procured and managed by co-ordinator. Claim after works completed.	2019 – 57 Projects supported – 695 Homes completed 475 Non domestic buildings completed €20.5 million Exchequer spend	2020 call for applications is now closed. Applications are being evaluated. BEC is open since 2012 following a successful pilot and has delivered retrofits to 18,200 homes and 2570 non domestic buildings	n/a	€4 million of the BEC 2020 allocation will be used for a new ‘homes only’ aggregation strand under the scheme, intended to advance the concept of aggregated home retrofit delivery. The new scheme will also allow innovative financing approaches to be trialled via a one-stop-shop approach
Community – Aggregated Housing Strand	Project Aggregator	Open to Local Authorities & housing bodies in 2019 to target aggregated groups of houses to a B2 – Cost optimal retrofit – this is being expanded to include private homes in 2020	73 homes under this strand included in the 696 figure above	2020 call for applications is now closed. Applications are being evaluated.	n/a	
Better Energy Finance (Pay as you Save / Salary Incentive)	Project Co-ordinator	Application form for employees / groups of homes. Evaluated relative to criteria and offered above min threshold. Works procured and managed by co-ordinator. Claim after works completed.	125 Homes supported €600,000 Exchequer spend	Open (joined with Community Housing Strand) 376 Homes supported through this scheme since it commenced in 2016	n/a	

<p>Community – Network Development – Climate Action Plan target of 1500 Sustainable Energy Communities in the National Network – Currently 345 Communities in the Network.</p>	<p>Community Champions</p>	<p>Communities apply to be part of the SEAI national communities’ network and receive mentoring and assistance to help them to understand their sustainable energy usage, develop a plan of action and get on the pathway to achieve their sustainable energy ambitions.</p>	<p>The SEAI Communities Network grew from 235 to 345 in 2019</p>	<p>Open – ongoing</p>	<p>n/a</p>	<p>The network will aim to increase membership to 500 in 2025 in line with the Climate Action Plan objectives.</p>
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Public Sector

Public Sector 2020 Energy Targets

The Public Sector has a target to achieve 33% energy efficiency improvement by 2020. In 2017, the Public Sector Energy Efficiency Strategy was launched to further support the sector in delivering on its energy targets. The latest published figures (for end 2018) show the sector achieved a 27% efficiency improvement with cumulative energy spend savings of over €1.3 billion and 4.58 million tonnes of avoided emissions. This reflects two sustained years of significant improvement in performance across the sector where performance prior to the publication of the Strategy had plateaued.

Public Sector 2030 Targets

The Climate Action Plan (2019) set new targets for the sector to be achieved by 2030 which include:

- A more ambitious 50% energy efficiency improvement;
- The introduction of a new carbon target of 30% reduction;
- Public buildings to achieve a B Building Energy Rating (BER) of “B”.

Public Sector Energy Retrofits

Since 2017, DCCAE has been funding a series of Pathfinder Partnership Retrofit Programmes aimed at delivering energy upgrades in central government buildings and schools. This aim of these Programmes is to test retrofit approaches, build capacity and develop a scalable retrofit model to roll out a large scale Retrofit Programme for the whole of the public sector.

The National Development Plan (NDP) has allocated €750m for public sector energy retrofits with further funding for schools and third level building energy renovations. In order to establish the total cost of achieving the 2030 B BER target, Ireland secured support from the EU’s Structural Reform Support Service (SRSS) for a consultancy exercise to develop a framework to support this public sector renovation objective.

EU Structural Reform Support Service Project

The overall aim of the EU SRSS project (overseen by DCCAE with DPER) is to support the design of a comprehensive retrofitting programme for public sector buildings in Ireland, which will help deliver our public sector energy efficiency and emission reduction targets with a focus on the 2030 B BER

target. The exercise will also incorporate an assessment of the total level of investment required to achieve the 2030 targets and recommendations for the optimal mix of funding options including Energy Performance Contracting to reach the necessary objectives. In addition, a Guidance Report for public sector bodies will be developed to assist them build strong business cases for key projects. The project is currently underway and a final report and recommendations is due by end 2020.

Supply

Electricity & Natural Gas Security of Supply

Energy policy seeks to balance three core priorities – namely sustainability, security of supply and competitiveness. Secure supplies of energy are critical to support society and the economy. Ensuring the security of energy supply of our gas and electricity networks is therefore a key priority.

Natural Gas

Natural gas provides over 30% of Ireland's energy needs, heating and powering 700,000 homes and businesses and generating over 50% of electricity.

The natural gas network is owned and operated by Gas Networks Ireland (GNI) which is a commercial State Body. GNI is the Transmission System Operator (TSO) for transmission of gas by gas shippers, and is also the Distribution System Operator (DSO) for the distribution of the gas to the end customer. The gas market is regulated by the Commission for Regulation of Utilities (CRU) which regulates the prices gas shippers and suppliers pay to use the natural gas grid.

Natural gas in Ireland is currently supplied by a combination of domestic production and imports from the UK. Domestic production is primarily from the Corrib gas field. Production from the Kinsale gas fields is expected to cease this year. Natural gas output from the Corrib gas field is passed its peak and will continue to decrease in the coming years.

Natural gas is imported via two pipelines (owned by GNI (UK), which is a subsidiary of GNI) both of which connect to the UK gas network at Moffat in Scotland. There is currently no gas storage in Ireland and no other import routes for natural gas. There are two proposed liquefied natural gas (LNG) projects which, if either were to be developed, would enhance gas security of supply by allowing natural gas to be imported by an alternative route via ship. These projects (one located in Shannon and the other in Cork) have been the subject of significant public discourse and concern. This is primarily related to the potential import of fracked gas (natural gas produced using hydraulic fracturing) and its associated greenhouse gas emissions.

In 2019, 53% of the natural gas used in Ireland was imported from the UK. By the middle of this decade, in the absence of alternative sources of gas, Ireland's dependence on UK imports is expected to further increase to approximately 80% and to well over 90% by 2030. It should be noted that these imports come from a single source in Scotland (albeit via two pipelines).

While demand for natural gas in the heat sector is not expected to increase significantly, demand in the electricity sector will increase up to the middle of the decade before decreasing by 2030 as increased levels of renewable electricity are added to the system.

In summary, natural gas use in Ireland is seeing increasing demand in the medium term, decreasing indigenous production and increasing dependence on imports from a single source.

Electricity

The electricity network is owned and operated by ESB which is a commercial State Body. EirGrid is the Transmission System Operator (TSO) and is responsible for the operation of the network. ESB Networks (which is part of the ESB) is the Distribution System Operator (DSO) and is responsible for the connections to the majority of consumers. Similar to the gas market, the electricity market is regulated by the Commission for Regulation of Utilities (CRU) which sets the prices electricity suppliers pay to use the network. The all-island single electricity market operates across Ireland and Northern Ireland and sets the rules under which the wholesale electricity market operates.

The Climate Action Plan set out the policies and measures necessary to put Ireland on a pathway to achieve its 2030 emission reduction target consistent with net zero emissions by 2050. These policies and measures include:

- 70% of electricity to be generated from renewable sources (primarily wind and solar) by 2030;
- an early and complete phase-out of coal- and peat-fired electricity generation;
- electrification in the heat sector with 600,000 heat pumps to be installed (400,000 in existing buildings) by 2030; and
- electrification in the transport sector with 936,000 electric vehicles to be on the road in Ireland by 2030.

The electrification of heat and transport together with growth of data centres is expected to lead to increased demand for electricity over the coming years.

Electricity Generation

The phase-out of peat from electricity generation will commence at the end of 2020 with the closure of the ESB-owned Shannonbridge and Lough Ree power stations. A third power station in Edenderry, owned by Bord na Mona, uses a combination of circa 40% biomass and 60% peat. Edenderry power

station has planning permission to operate until 2023 after which peat will not be used to generate electricity in Ireland.

The Climate Action Plan sets out that the burning of coal at Moneypoint, Ireland's only coal-fired power station, will end by 2025. There is limited generation of electricity at Moneypoint due to the power station not being 'in merit' – i.e. the cost of generating electricity is higher than the market price. In January 2020, SEAI data shows that Moneypoint generated less than 0.2% of the electricity generated in Ireland.

In 2018 there was a 44% reduction in the level of coal used in electricity generation at Moneypoint compared to the previous year. This was followed by a further estimated reduction of over 70% in 2019. Given the very limited operation of Moneypoint, it is expected that closure will take place (for commercial reasons) in advance of the 2025 target.

The phase-out of peat and coal will lead to an electricity system that is highly dependent on a combination of natural gas power stations and wind energy. As wind energy is not dispatchable (i.e. may not be available when needed), the security of electricity supply is becoming increasingly dependent on natural gas for power generation. This means that for Ireland there is a clear interdependence between gas and electricity security of supply.

The development of new dispatchable generation capacity (i.e. power stations) is incentivised through a capacity market that is part of the all-island single electricity market. Capacity market auctions allow existing and new power stations to compete for payments that ensure there is sufficient dispatchable generation capacity. New generation capacity that has been successful in the capacity auctions to date has been natural gas powered. While the capacity auctions are designed to provide appropriate future generation capacity to meet demand, the auctions do not ensure the security of supply of the fuel used.

It is therefore expected that, in parallel to Ireland's demand for electricity increasing, the security of electricity supply will become more dependent on gas which will be the principal source of dispatchable generation supporting variable renewable sources such as wind and solar.

Brexit

The Department, in conjunction with the Department of Foreign Affairs and Trade, is working to ensure the post Brexit EU/UK framework provides for continued security of supply of natural gas and electricity from the UK to Ireland (including in emergency situations such as supply shortages).

The EU's negotiating mandate recognises the importance of energy security and sets out the intention that the envisaged EU/UK partnership should include mechanisms to ensure as far as possible security of supply and efficient trade over interconnectors.

Review of Security of Supply

Given the increased dependence of Ireland's electricity system on the supply of natural gas in the period to 2030 and the increased dependence of those supplies on imports from a single source, it is considered an appropriate time to review the security of energy supply of Ireland's gas and electricity systems. This also must take into account the need to fully decarbonise (i.e. reach net zero emissions) by 2050. The Department is therefore carrying out such a review with a focus on the period to 2030 in the context of ensuring a sustainable pathway to 2050.

This review will include a full updated technical analysis of the security of supply challenges and a public consultation. The procurement of this technical analysis is currently being progressed.

The output of the technical analysis will help inform a public consultation that is expected to be carried out in early 2021.

Following this public consultation, policy recommendations will be provided to the Minister.

International

Development and Finalisation of the National Energy & Climate Plan (NECP)

NECPs are the framework within which EU Member States have to plan their climate and energy objectives, targets, policies and measures to the European Commission. The [Governance of the Energy Union and Climate Action Regulation](#) (entered into force on 24/12/2018), within which the NECP framework sits, consolidates the existing patchwork of planning, monitoring and reporting obligations Member States have under the different pieces of EU legislation across energy, climate and other Energy Union related policy areas. Member States must develop NECPs on a ten year rolling basis, with an update halfway through. The NECPs covering the period from 2021 to 2030 will have to ensure that the Union's 2030 targets for greenhouse gas emission reductions, renewable energy, energy efficiency and electricity interconnection are met.

Member States are required to develop integrated NECPs that cover the five dimensions of the energy union for the period 2021 to 2030 (and every subsequent ten year period) based on a common template, submit a draft NECP by 31 December 2018 and submit the final plans by 31 December 2019 to the European Commission and report on the progress they make in implementing their NECPs, mostly on a biennial basis.

Member States whose progress on expanding renewable energy is lagging or who fail to maintain their 2020 baseline share of renewable energy (for Ireland this is 16%) are legally obliged to implement additional measures within one year to make up for the gap. Such additional measures include contributing to a Renewable Energy financing mechanism set up at Union level, national measures to increase deployment of renewable energy and statistical transfers.

Format of the NECP

The Governance Regulation sets out the structure and template NECPs are to follow together with obligations in relation to consultation. The [draft NECP](#) was approved by Government in December 2018 and submitted to the European Commission by the deadline of 31 December 2018. The European Commission then engaged in an iterative process with Member States and issued [recommendations](#) to the Member States on their draft NECP on 18 June 2019. The final plan was due to be submitted by 31 December 2019.

The NECP is large, technical in nature and repetitive by design. It is not designed to be a report that can be picked up and read in a 'book' type format. The Energy Union focuses on five mutually supportive dimensions as follows:

- **Security, Solidarity and Trust:** Diversifying Europe's sources of energy and ensuring energy security through solidarity and cooperation between Member States.
- **A fully-integrated internal energy market:** Enabling a free flow of energy throughout the EU through adequate infrastructure and without any technical or regulatory barriers – an efficient way to secure supply and give consumers the best energy deal.
- **Energy Efficiency first:** Improved energy efficiency will reduce our dependency on imports, reduce overall energy usage, reduce emissions and drive jobs and growth.
- **Climate Action:** Decarbonising the economy. An ambitious climate policy is integral to creating the Energy Union. Actions include the EU Emissions Trading Scheme (EU ETS), strong but fair national targets outside the ETS to cut greenhouse gas emissions, a roadmap towards low emission mobility and an energy policy which makes the EU world leader in renewables.
- **Research, innovation and competitiveness:** Supporting breakthroughs in low carbon and clean energy technologies by prioritising research and innovation to drive the transition of the energy system and improve competitiveness.

The NECP template covers the five dimensions of the Energy Union and requires Member States to set out their objectives, targets and contributions to each of the five dimensions. They are also required to set out the underpinning policies and measures in each of the five sections. In addition, the NECP requires in depth analytical modelling of the energy system, on a year by year basis from 2021 to 2030 with a look out to 2040, including a comparison between current and planned policies and measures.

Summary of Key EU Targets

Under the Renewable Energy Directive which is part of the EU Clean Energy Package, the EU has agreed an EU wide target of 32% of all energy consumed in the EU to be from renewable sources by 2030. Member States are required to decide an appropriate contribution at national level towards the achievement of the EU's 32% target and to set out the national contribution to the EU target in the NECP. The European Commission then assess whether the combined contributions from all Member States are sufficient to achieve the overall EU target.

Under the Energy Efficiency Directive which is part of the EU Clean Energy Package, the EU has agreed an overall EU target of 32.5% energy efficiency to be achieved by 2030. Member States are required to decide an appropriate contribution at national level towards the achievement of the EU target and to set out that contribution in the NECP. The EU has set an electricity interconnection objective of 15% to 2030.

Under the Paris Agreement, the EU committed to a reduction of at least 40% in greenhouse gas emissions by 2030, relative to 1990 levels. The European Council agreed in October 2014 that this EU objective should be achieved by reductions in the Emissions Trading System (ETS) sector of 43% and the non-ETS sector of 30%, relative to 2005 levels. The "Effort Sharing Regulation" (ESR) sets out binding emission reduction targets for Member States in sectors falling outside the scope of the EU ETS for the period 2021-2030.

Flexibility options are built into the Effort Sharing Regulation. These would allow Ireland to transfer 4% of credits from the EU Emissions Trading System (ETS) to assist in the achievement of the ESR target, plus an additional 5.6% attributable to sustainable land use, land-use change and forestry (LULUCF). If exercised, collectively, these flexibilities would combine to reduce Ireland's effective 2030 emissions target to 20.4%.

Draft NECP

In accordance with the Governance Regulation, Ireland's first draft National Energy & Climate Plan (NECP) was submitted to the Commission in December 2018 further to Government approval.

The draft NECP was designed to take on board existing and planned policies and measures and to reflect amongst other things:

- Project Ireland 2040 and the accompanying National Development Plan (NDP) 2018-2027;
- The range of new measures across sectors set out in the NDP;
- The policies and measures under the National Mitigation Plan;
- The requirement to include growth forecasts, policies and measures in long-term planning;
- Detail on a year by year basis from 2021 to 2030 and looking out to 2035 and 2040;
- The trajectory to a long-term decarbonised energy system.

Four scenarios were developed as a sensitivity test for the NECP. These included two "with existing measures" scenarios and two "with additional measures" scenarios each modelling with a high and low oil price scenario.

The two 'with additional measures' scenarios are the scenarios that included the NDP measures. Both scenarios, which included full delivery all of the NDP measures and made use of all available flexibilities, show a sensitivity analysis that Ireland will miss its 2030 non-ETS targets by between 7 and 40 MT CO₂-eq. over the 2021-2030 period . These scenarios could reach between 24% and 28% overall renewable energy by 2030 with concerted action on policy development and delivery. The modelling showed Ireland achieving between 24.7% and 25.1% on energy efficiency by 2030.

Below: Summary table of modelling results as set out under the draft NECP

	NECP1 <i>With Existing Measures (WEM)</i> High oil price	NECP2 <i>With Additional Measures (WAM)</i> High oil price	NECP3 <i>With Existing Measures (WEM)</i> Low oil price	NECP4 <i>With Additional Measures (WAM)</i> Low oil price
	2030	2030	2030	2030
*Energy Efficiency %	18.7	24.7	18.9	25.1
RES-E %	41.2	53.8	39.6	55.0
RES-H %	19.2	26.3	12.9	18.3
RES-T % <i>(regulation)</i>	4.0 (10.4)	9.3 (25.4)	4.0 (9.7)	9.3 (24.4)
<i>Overall RES %</i>	19.2	27.7	15.8	23.7
Total GHG Emissions Mt CO ₂ eq	64.6	55.2	66.8	59.7
<i>ETS</i>	20.6	14.1	18.4	14.4
<i>Non-ETS</i>	44.0	41.1	48.4	45.3
Prices	EU Energy Reference Scenario (2016) Prices (constant 2013 values)	EU Energy Reference Scenario (2016) Prices (constant 2013 values)	BEIS 2017 low fossil fuel prices.	BEIS 2017 low fossil fuel prices.
Policies and measures (PAMs)	Includes policies in place prior to the end of 2017.	Includes anticipated impact of all NDP announced and active or additional PAMs.	Includes policies in place prior to the end of 2017.	Includes anticipated impact of all NDP announced and active or additional PAMs.

Summary of Cion Assessment of NECPs Generally

Further to the assessment of the draft NECPs, Cion issued recommendations to all Member States in June 2019. The recommendations cover all aspects of the plans. In particular Cion requested the majority of Member States to increase their ambition on renewable and efficiency. Under current draft plans, instead of at least 32%, the share of renewable energy would reach between 30.4% and 31.9% in 2030 at Union level. Regarding energy efficiency, the aggregate assessment shows a substantial gap with the Union target levels of primary and final energy consumption of at least 32.5 % by 2030. For primary energy consumption, the gap ranges from 118 to 43 Mtoe which correspond to attaining 26.3 % to 30.2 %, while for final energy consumption the gap ranges from 85 to 26 Mtoe, which corresponds to attaining 26.5% to 30.7 %.

Summary of Commission's Recommendations to Ireland

The Commission's Recommendations noted that with the transport, building and agriculture policies set out in the draft NECP Ireland projects to miss this target by at least 17.5 percentage points. The gap assumes full use of the flexibilities with the ETS and Land Use, Land Use Change and Forestry (LULUCF) sectors in the ESR, which the draft plan considers as likely. The recommendations noted that the lack of a clearly identified contribution to the 2030 renewable energy target among the four scenarios presented made it difficult to assess the level of Ireland's ambition. The ambition levels range from 15.8% to 27.7%, and are below the share of 31% in 2030 that results from the formula contained in Annex II of the Governance Regulation (According to the formula contained under the Governance Regulation, Ireland should propose a contribution for renewable energy of at least 31%). In addition to clarifying Ireland's contribution, the final plan would need to include an indicative trajectory that reaches all required reference points.

The Commission noted Ireland has set a very low contribution for energy efficiency in 2030 for final energy consumption. The Commission sought further detail to be included in the final plan regarding a number of objectives, policies and measures across the five dimensions.

Further to the Governance Regulation, Ireland is obliged to take account of these recommendations in finalising the NECP. As part of the iterative process, provided for under the Governance Regulation, the Commission and Member States engaged in further dialogue regarding the finalisation of their NECPs, notably by discussing the Commission's assessment and recommendations in the respective Council Working Party and by means of technical cooperation meetings, bilateral exchanges and technical expert assistance.

Climate Action Plan 2019

Government published the All of Government Climate Action Plan in June 2019. The Plan outlines in detail 183 actions that will be delivered across Government to ensure deeper and quicker decarbonisation of our economy takes place. Further analytical work has also been undertaken by relevant Departments and Agencies to update the original underpinning framework on the draft NECP. Together with the Commission recommendations and the responses to our public consultation, these have informed the final NECP which better reflects our new, increased levels of energy efficiency, higher renewable energy ambitions and map out a clear path to delivering on Ireland's carbon reduction targets for 2030 and beyond. All of the Climate Action Plan policies and measures have been incorporated into the modelling underpinning the final NECP.

Some of the key sectoral energy targets, policies and measures from the Climate Action Plan and incorporated into the final NECP are set out below:

- **Electricity:** Increase reliance on renewables from 30% to 70% adding 12GW of renewable energy capacity (with peat and coal plants closing) with some of this delivered by private contracts.
- Put in place a coherent support scheme for micro-generation with a price for selling power to the grid.
- **Buildings:** Introduce stricter requirements for new buildings and substantial refurbishments.
- Design policy to get circa 500,000 existing homes to upgrade to B2 Building Energy Rating (BER) and 400,000 to install heat pumps.
- **Transport:** Accelerate the take up of EV cars and vans so that we reach 100% of all new cars and vans being EVs by 2030. This will enable achieving our target of 936,000 EVs on the road by 2030. This means approximately one third of all vehicles sold during the decade will be Battery Electric Vehicle (BEV) or Plug-in Hybrid Electric Vehicle (PHEV).
- Make growth less transport intensive through better planning, remote and homeworking and modal shift to public transport.
- Increase the renewable biofuel content of motor fuels.
- Set targets for the conversion of public transport fleets to zero carbon alternatives.

Approach to the Final Plan

The initial modelling results, set out in the table below, utilise only the LULUCF flexibility and not the ETS flexibility and are in compliance with our annual and cumulative emission ceilings. In order to ensure compliance with the emission limits amendments were made to run rates of certain technologies (heat pumps, retrofits, EVs). Therefore, in order to ensure compliance with the annual, and cumulative, binding emission limits set for each year over the period 2021-2030, it is proposed that the final NECP will put forward, as Ireland's contribution to the EU wide targets, projections based on full implementation of the Climate Action Plan, a low oil price scenario and use the low EirGrid electricity demand growth assumption.

Modelling of the impacts of plans, policies and measures is a key component of the NECP structure. The macroeconomic figures used for the plan came from the ERSI and CSO. SEAI's National Energy Projections from 2018 to 2030 illustrate possible future trends in energy supply and demand relative to European Union (EU) and national energy targets. The projections are based on the macroeconomic relationships between energy use, economic growth, energy prices and energy policies and measures. The results are underpinned by the ESRI economic outlook, the most recent energy balances and an assessment of the anticipated impacts of sustainable energy policies, measures and ambitions compiled by SEAI. In modelling the NECP with additional measures energy projections scenario (low oil price with varying carbon tax) SEAI have matched the modelling to the CAP targets and McKinsey analysis assumptions as closely as possible. The greenhouse gas emissions projections are prepared by the EPA and take into account projected activity data provided by a number of key data providers including updated energy projections provided by SEAI.

The ramp rates are front loaded to meet with the requirement to stay within carbon emission limits on a yearly basis. They will be challenging to deliver as this approach does not accord with the funding expectations from the NDP, which have higher capital levels in later years rather than in the earlier years. The ability of the market to be able to deliver such steep ramp up rates is also likely to be an issue.

Below: Initial energy projections under final NECP

	DRAFT NECP <i>With Additional Measures (WAM)</i> High FF Prices	DRAFT NECP <i>With Additional Measures (WAM)</i> Low FF Prices	FINAL NECP <i>With Additional Measures (WAM)</i> Low FF Prices
Electricity demand growth (% per annum 2021 - 2030)	3.0%	3.6%	2.3%
Transport activity growth (approximate % per annum, 2021-2030)	2.7%	3.4%	2.0%
Road transport energy demand growth with transport measures (% per annum 2021 - 2030)	0.2%	1.1%	-3.4%
Oil price assumption (start and end price 2021 - 2030) (\$/boe)	97-126	43-52	51-60
Carbon tax in 2030 (€/t)	34	34	80
Overall RES % in 2030	27.7%	23.7%	34.1%
RES-E (Electricity)	53.8%	55.0%	70.0%
RES-T (Transport) (without multipliers)	9.3%	9.3%	13.4%
RES-H (Heat)	26.3%	18.3%	24.0%
Energy Efficiency Savings in 2030 (%)	24.7%	25.1%	38.9%
Shares of Total Final Consumption in 2030			
Electricity	28.8%	25.1%	28.8%
Heat	31.9%	33.2%	38.7%
Transport	39.4%	41.7%	32.5%

Below: Initial Renewable Energy Growth Trajectories under final NECP

Trajectory level	Year	Reference Point Year (%) Trajectory Figure	SEAI Forecast
	2020	16	12.8
	2021		13.9
(18%)	2022	19.3	15.5
	2023		17.0
	2024		18.6
(43%)	2025	23.8	21.3
	2026		24.6
(65%)	2027	27.8	27.4
	2028		30.0
	2029		31.8
(100%)	2030	34.1	34.1

Next Steps

The final NECP was due for submission by end 2019. Germany submitted its final NECP on 12 June 2020 meaning that Ireland is the only Member State yet to submit the final Plan to the Commission.

Once Government approval is secured, we will conduct a final, third public consultation (first public consultation held in October 2018 and second public consultation held in February 2019) and revise the NECP to update submissions received. It is then intended to secure Government approval of final NECP and formally submit the final plan to the Commission.

The Commission have undertaken to assess Member States overall contribution to the EU target by Summer 2020.

International Energy Agency

IEA Background

Ireland is a founding member of the IEA which is an agency of the OECD. Founded in 1974, the IEA was initially designed to help countries co-ordinate a collective response to major disruptions in the supply of oil. While this remains a key aspect of its work, the IEA has evolved and expanded significantly. Today, the IEA is at the heart of global dialogue on energy, providing authoritative analysis through a wide range of publications.

The IEA examines the full spectrum of energy issues including oil, gas and coal supply and demand, renewable energy technologies, electricity markets, energy efficiency, access to energy, demand side management and much more. Through its work, the IEA advocates policies that will enhance the reliability, affordability and sustainability of energy in its 30 member countries and beyond.

IEA Ministerial meetings are held every two years. The most recent Ministerial meeting was held in December 2019. The Governing Board and the Standing Long Term Cooperation Group of the IEA meet four times per annum.

The In-Depth Review Process

Approximately every four years, the policies of individual member countries are reviewed in-depth by a team of peers led by the IEA. The IEA has been conducting in-depth energy policy reviews of its member countries since 1976. As a core activity, the process of review by peers not only supports member countries' energy policy development and mutual learning, but it also encourages exchange of international best practice and experience. The latest in-depth review of Ireland's energy policy was carried out by the IEA in 2018.

The IEA conducted two reviews of Irish energy policy in 2018 - an In-depth review and an energy emergency response review. Ireland's energy Emergency Response Review was finalised in late 2018 and presented to the IEA in November 2018. It is not a publicly available publication. The In-depth review arises from a successful IEA mission which took place end May/early June 2018 during which they had a packed agenda of meetings from across the energy spectrum, public, private and not for profit organisations. The In-depth review of Ireland's energy policies is a public document. The review was finalised in April 2019.

The review acknowledged the significant change and progress made in recent years in the Irish energy sector. It recognised the significant transformation that has taken place since the 2012 review, noting for example that Ireland now has the third highest share of wind generated electricity

in the IEA. It highlights that EirGrid has managed to achieve 65% instantaneous penetration of wind on an isolated grid system through the DS3 programme, a significant technical achievement. The commissioning of the Corrib natural gas project since the last review has had a significant impact on Ireland's levels of energy import dependence and energy security and the economy has recovered significantly from where it was at during the last IEA review. The review notes that there has been good progress on energy efficiency through several funded programmes and fairly good progress on renewable energy, less so on emissions in the non-ETS sector. The importance of additional electrical interconnection is recognised as is the importance of continuing to maintain beneficial energy relationships with the UK.

The recommendations are in line with existing strategic energy policy direction and are very much in line with the step change in our climate ambition as highlighted in the Climate Action Plan.

Global Energy Efficiency Conference and Global Commission

Ireland hosted the IEA fourth annual Global Conference on Energy Efficiency in Dublin on 24 June 2019. The IEA's annual conference draws a large international audience and brings together Ministers, CEOs, heads of international organisations and other senior leaders to advance global progress on energy efficiency.

The conference theme was Modernising Energy Efficiency through Digitalisation, with a focus on the next generation of efficiency policies using digital technologies and data analytics. The event featured senior representatives from major technology companies to outline how innovative technologies can enhance global energy efficiency.

The IEA proposed the establishment of a high level global panel of leaders to identify key immediate policy actions to accelerate energy efficiency progress. The IEA act as secretariat and provide analytical and drafting support. The goal a one year process leading to a concise list of clear, actionable recommendations to Governments.

The membership of the Global Commission is comprised of government ministers, top business executives and thought leaders from around the world. Minister Bruton accepted the IEA invitation to be a member of the Commission. The Taoiseach agreed to be named as Honorary Patron of the Global Commission. The IEA stated that they would expect no active participation other than his endorsement. This lends extra political weight to the Commission and also offers Ireland a high global profile in this important issue. The first meeting of the IEA Global Commission for Urgent Action on Energy Efficiency was held in Paris on 4 December 2019.

IEA 2019 Ministerial Meeting

For the first time in 10 years, IEA members agreed a joint Ministerial Communiqué. Some of the stand out messages from the Communiqué are:

1. **Accession** – Lithuania is commencing the IEA accession process and Colombia look to be next on the list.
2. **Association** – member countries have agreed to an outline of a Framework for Strategic Partnership, which serves as the next step in Association and could eventually lead to membership for non-OECD countries, provided the IEP is amended appropriately. The IEA are in consultation with India on the Framework for Strategic Partnership.
3. **Energy Security**
 - Oil - the IEA will continuing to assess the potential of the IEA stockholding system.
 - Gas – the IEA will foster the development of diversified, resilient, secure, competitive, transparent and flexible markets through regular reporting on natural gas and LNG market developments.
 - Electricity - the IEA will work to build more secure, sustainable, flexible and resilient power systems by sharing best practices in policies, market designs and system operation to integrate increasing shares of variable renewables, foster diverse generation mixes and flexibility options as well as demand-side response.
 - Cyber Security – the IEA will identify ways countries can share best practices, including management of energy sector cybersecurity risks, approaches to regulation and incentives to enhance cybersecurity.
4. **Energy Transitions** – the IEA will strengthen its work in this area to support decision-makers on how to accelerate low-emission solutions and promote clean, sustainable, affordable, resilient and safe energy technologies for reaching both near and long-term objectives. This work includes the development of IEA Energy Efficiency work programme and the IEA's support of the recently established Energy Efficiency Hub.

Clean Energy Package

The EU was an early mover on clean energy: it was the first major power in the world to set, in 2009, ambitious energy and climate targets for 2020 (20% greenhouse gas emission reduction, 20% in renewable energy and 20% energy efficiency).

With the 2015 Paris Climate Agreement, the EU pledged to move further ahead and achieve greenhouse gas emission reductions of at least 40% by 2030. In order to respond to this challenge and continue to lead the global energy transition, the Commission proposed in 2016 a set of ambitious new rules called the "[Clean Energy Package for all Europeans](#)".

With the Clean Energy Package the Commission addressed all 5 dimensions of the Energy Union:

- Energy security;
- The internal energy market;
- Energy efficiency;
- Decarbonisation of the economy;
- Research, innovation and competitiveness.

It is composed primarily of the following elements:

1. **Energy efficiency first:** The revised Energy Efficiency Directive (EU) 2018/2002 came into force in December 2018. The revamped directive on energy efficiency sets a new, higher target of energy use for 2030 of 32.5%, with a possible upward revision in 2023. This and the new Energy performance of buildings directive maximizes the energy saving potential of smarter and greener buildings. This sector is crucial to the clean energy transition, as buildings are the largest energy consumers, accounting for 40% of final energy consumption and 36% of greenhouse gas emissions in Europe. By accelerating the renovation rate of buildings and exploiting all smart technologies available, this sector can contribute to a carbon-neutral and competitive economy.
2. **More renewables: The revised Renewable Energy Directive (EU) 2018/2001**, which establishes a binding EU target of at least 32% for 2030 with a review for increasing this figure in 2023. This came into force in December 2018. The renewable energy target has been fixed, with specific provisions to foster public and private investment, in order for the EU to maintain its global leadership on renewables. This will drive an acceleration of clean energy uptake in all sectors, and facilitate public and private investment in the years ahead.

3. **A better governance of the Energy Union:** The new Governance Regulation (EU) 2018/1999 includes the requirement for Member States to draw up integrated National Energy and Climate Plans (NECP) for 2021 to 2030, which will outline how to achieve the targets. This came into force in December 2018. The NECP template covers the five dimensions of the Energy Union and requires Member States to set out their objectives, targets and contributions to each of the five dimensions. The NECP requires in depth, robust, analytical modelling of the energy system, on a year by year basis from 2021 to 2030 with a look out to 2040. The final NECP was due to be submitted to the Commission by 31st December 2019. Once Government approval is secured, we will conduct a final, third public consultation and formally submit the final plan to the Commission.
4. **More rights for consumers:** the new rules make it easier for individuals to produce, store or sell their own energy, and strengthen consumer rights with more transparency on bills, and greater choice flexibility.
5. **A smarter and more efficient electricity market:** The remaining legislative acts in the Clean Energy Package, relating to electricity market design (the Electricity Directive and three Regulations, on Electricity Regulation, Risk Preparedness and ACER, respectively) were adopted in May 2019. This part of the package seeks to establish a modern design for the EU electricity market, adapted to the new realities of the market and better placed to integrate a greater share of renewables.

In addition to the legislative acts of the package, the Commission also proposed a number of non-legislative initiatives, in particular to ensure a fair and just transition where nobody and no region is left behind.

The Coal Regions in Transition Initiative

Coal accounts for nearly a quarter of the total electricity production in the EU. It is also a significant economic driver, providing jobs to around 230,000 people in mines and power plants across 31 regions and 11 EU countries.

While coal remains a central fuel in the European energy mix, the transition to cleaner forms of energy and innovative technologies, is imperative to meet the EU's commitment to reduce CO₂ emissions by at least 40% by 2030. The declining use of coal has led to mines closing down in a number of regions across Europe. While EU coal regions share many commonalities, their paths towards decarbonisation differ widely.

Ireland was admitted to the European Commission's Platform for Coal Regions in Transition in 2019. The platform works as an open forum, gathering all relevant parties, local, regional and national governments, businesses and trade unions, NGOs and academia. It promotes knowledge sharing and exchanges of experiences between EU coal regions, and represents a unique bottom-up approach to a just transition, enabling regions to identify and respond to their unique contexts and opportunities.

The Clean Energy for EU Islands Initiative

There are more than 2200 inhabited islands in the EU. Despite having access to renewable sources of energy, such as wind and wave energy, many of them depend on expensive fossil fuel imports for their energy supply. As part of the 'Clean energy for all Europeans' package, the Clean energy for EU islands initiative provides a long term framework to help islands generate their own sustainable, low-cost energy. This will result in:

- reduced energy costs and greatly increased production of renewable energy and the construction of energy storage facilities and demand response systems, using the latest technologies
- better energy security for islands, which will be less reliant on imports
- improved air quality, lower greenhouse gas emissions, and less impact on islands' natural environments
- the creation of new jobs and business opportunities, boosting islands' economic self-sufficiency

The initiative was launched in May 2017 in Malta, where the European Commission and 14 EU countries (Croatia, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Malta, Portugal, Spain, and Sweden) signed a political declaration.

Measures to Define and Better Monitor Energy Poverty in Europe

It is estimated that more than 50 million households in the EU experience energy poverty as a result of energy inefficient buildings and appliances, high energy expenditures, low household incomes and specific household needs. This leaves them in a vulnerable position that can expose them to respiratory and cardiac illnesses, as well as have an adverse effect on their mental health, due to low temperatures or stress over unaffordable energy bills.

The EU is committed to tackling energy poverty by its roots and protecting vulnerable consumers, and made it a policy priority in the Clean Energy for all Europeans Package, adopted in 2019.

Significantly, a common definition on energy poverty was agreed for the first time in these new EU rules, which require that EU countries monitor the situation in their countries and introduce specific national objectives on energy poverty in their national energy and climate plans (NECPs).

The Commission launched, in January 2018, the Energy Poverty Observatory (EPOV) which aims to support informed decision-making at local, regional and national level by providing a user-friendly and open-access resource. It promotes public engagement on the issue of energy poverty, as well as serve to disseminate information and good practice among public and private stakeholders.

The Commission also facilitates the exchange of best practices regarding vulnerable energy consumers via the Citizen's Energy Forum, established in 2008.