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CORRIGENDUM
This document corrects document SWD(2020) 906 final of 14.10.2020
- Modifications are introduced in Annex 1 of the report, regarding specifically values and annotations in tables 1 and 2.
- Minor editorial changes throughout the document.
The text shall read as follows :

COMMISSION STAFF WORKING DOCUMENT

Assessment of the final national energy and climate plan of Ireland

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1. SUMMARY

Ireland's final integrated national energy and climate plan (NECP)[1] sets a 2030 target for **greenhouse gas (GHG) emissions** not covered by the EU Emissions Trading System (non-ETS), of -30% compared to 2005 levels, in line with the Effort Sharing Regulation (ESR)[2]. With existing measures (WEM), effort sharing sectors emissions in 2030 are projected to be only 6.6% below 2005 levels. With the additional measures (WAM) scenario presented in the final NECP, effort sharing sectors emissions in 2030 are projected to be 28.6% below 2005 levels. Ireland projects that its emissions over the compliance period of 2021-2030 would be 8.9 Mt CO_2 equivalent below allocations if the land use, land use change and forestry (LULUCF) flexibilty is used as fully as intended. Transport and buildings are projected to make the largest reductions relative to 2005[3], with emissions in agriculture also projected to fall by 7.5% by 2030 and would contribute to a reduction in emissions of around 3 Mt CO_2 equivalent by 2030 when compared with the WEM scenario[4]. Overall, a significant number of the policies and measures identified in the final NECP are more akin to objectives and ambitions than to specific actions, such as: a renovation target whereby 500 000 existing buildings move to a B2 building energy rating; the objective to have 936 000 electric vehicles on the road by 2030; and developing a strategy to achieve at least a 50% improvement in public sector energy efficiency by 2030, for which concrete implemenation measures are yet to be devised.

Ireland's **renewable energy** contribution **to the 2030 EU level target is estimated at 34.1%** of gross final consumption by 2030 thus increasing the objective of 27.7% indicated in the draft NECP. This level is considered as sufficiently ambitious as it goes beyond the minimum share of 31% established under the formula in Annex II of the Governance Regulation[5]. The key policies and measures linked to this target are the newly adopted renewable electricity target of 70% and the accelerated phase-out of coal and peat-fired electricity generation.

Ireland has increased its level of ambition for **energy efficiency** in the final NECP and, as a contribution to the EU level target, intends to achieve 62 171 GWh of primary and 56 159 GWh of final energy savings by 2030 (which translates into 13.7 Million Tonnes of Oil Equivalent (Mtoe) for primary energy consumption nd 11.2 Mtoe for final energy consumption based on the trajectories of the WAM scenario). However, the ambition of the Irish contribution is assessed as being low for both primary and final energy consumption[6]. Ireland aims to introduce more ambitious policies and measures targeting in particular the buildings and transport sectors, and currently intends to deliver the energy savings required under Article 7 of the Energy Efficiency

[1] The Commission publishes this country-specific assessment alongside the 2020 Report on the State of the Energy Union (COM(2020)950) pursuant to Article 13 of Regulation (EU) 2018/1999 on Governance of the Energy Union and Climate Action.

[2] Regulation (EU) 2018/842 of the European Parliament and of the Council of 30 May 2018 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030 contributing to climate action to meet commitments under the Paris Agreement and amending Regulation (EU) No 525/2013.

[3] Emissions in transport are projected to decrease by more than 40% and emissions in buildings are projected to decrease by more than 50%.

[4] The total difference in ESR sectors emissions between the WEM and the WAM amounts to 10.5 Mt CO2 equivalent in 2030.

[5] The Commission's recommendations with regard to the Member States' renewable ambitions is based on a formula set out in this Regulation which is based on objective criteria.

[6] According to the methodology illustrated in the SWD(2019) 212 final.

Directive through a combination of an obligation scheme focusing on energy suppliers and distributors and a range of alternative measures. Ireland has submitted its long-term renovation strategy in October 20202, and the final NECP provides many elements for buildings including indicative interim targets for renovating residential, commercial and public buildings by 2030 as well as relevant policies and measures[7].

Ireland has set a number of high-level objectives for **energy security** and import dependency. These involve measures related notably to: improving energy infrastructure and network resilience; the flexibility of the network; developing interconnections; cybersecurity; increasing indigenous clean energy sources; and maintaining strong regional emergency plans.

Concerning the **internal energy market**, the plan: sets out the objective to maintain the all-island single electricity market and indicates that market reforms will continue. Plans are in place to relieve internal grid congestion to better connect demand and supply on an all-island basis. A national interconnection target has not yet been established due to the continuing uncertainty and challenging circumstances for Ireland surrounding the UK's withdrawal from the EU. Nonetheless, projects are ongoing to establish interconnections with the rest of the EU.

As regards objectives and funding targets related to **research, innovation and competitiveness**, Ireland aims to increase the level of investment in research and development to keep pace with GNP growth rates. Reliance on EU funding is high.

The final NECP does not assess the overall **investment needs** to achieve the objectives and ambition defined under the WAM scenario, though it stresses the need to mobilise private investment. Only broad indications are provided as to how this will be achieved. Some details are provided on specific programmes, funds or projects and their budgets, but this is done in a rather ad hoc manner and it does not cover all policies, measures or ambitions. It is clear that EU funding such as the Connecting Europe Facility will remain an important source of funding for Ireland.

The plan provides information on the interactions with **air quality and air emissions** policy and on synergies and trade-offs induced by some measures. However, the level of details provided could be improved.

A quantitative list of **energy subsidies** which could potentially damage the environment is included in the final plan. The categories and figures in this list have been identified in recent Commission analyses on energy subsidies, although more categories and a higher amount for fossil fuel subsidies appear to exist based on this report.

Multiple facets of the requirements for a **just transition** are acknowledged in the NECP, including: the specific needs of workers and communities affected by the move away from fossil fuels; issues related to the supply and demand of certain skills; and the distributional impacts of carbon pricing or energy poverty.

Ireland will establish a Just Transition Review Group to identify specific needs in this regard. However, aspects of the just transition are not integrated throughout the plan and the social, employment and skills impacts of policies are often not explicitly considered.

[7] https://www.dccae.gov.ie/en-ie/energy/topics/Energy-Efficiency/energy-efficiency-directive/ireland%27s-national-renovation-strategy/Pages/Ireland%27s-Renovation-Strategy.aspx

Ireland does not report on the number of households affected by **energy poverty**. The plan indicates that Ireland is due to review its current strategy on energy poverty in 2020 and new objectives would then be set. Current policies and measures focused on the energy efficiency of households are listed but there is no overview of policies and measures going towards 2030.

As regards **good practice**, Ireland intends to put in place a strong framework for climate policy that would include five-year carbon budgets at national and sectoral level and that would institute carbon neutrality into law by 2050. Ireland has also developed a national adaptation framework (NAF) which outlines the national strategy for adapting measures to different sectors and outlines how local authorities adapt measures in their administrative areas. Details are included in the final NECP, and the over-arching objectives and actions in the NAF and the final NECP are aligned with each other.

The following table presents an overview of Ireland's objectives, targets and contributions under the Governance Regulation[8]:

	National targets and contributions	**Latest available data**	**2020**	**2030**	**Assessment of 2030 ambition level**
	Binding target for greenhouse gas emissions compared to 2005 under the Effort Sharing Regulation (ESR) (%)	-4%	-20%	-30%	As in ESR
	National target/contribution for renewable energy: Share of energy from renewable sources in gross final consumption of energy (%)	11%	12,8%	34.1%	Sufficiently ambitious (31% is the result of RES formula)
	National contribution for energy efficiency: Primary energy consumption (Mtoe)	14.5	13.9	13.7	Low ambition
	Final energy consumption (Mtoe)	12.3	11.7	11.2	Low ambition
	Level of electricity interconnectivity (%)	7,4%	N.A	N.A	N.A.

Sources: European Commission, Energy statistics, Energy datasheets: EU countries; European Semester by country; Ireland's final national energy and climate plan.

[8] Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action, amending Regulations (EC) No 663/2009 and (EC) No 715/2009 of the European Parliament and of the Council, Directives 94/22/EC, 98/70/EC, 2009/31/EC, 2009/73/EC, 2010/31/EU, 2012/27/EU and 2013/30/EU of the European Parliament and of the Council, Council Directives 2009/119/EC and (EU) 2015/652 and repealing Regulation (EU) No 525/2013 of the European Parliament and of the Council.

2. FINALISATION OF THE NECP AND CONSIDERATION OF COMMISSION RECOMMENDATIONS IN THE FINAL PLAN

Preparation and submission of the final plan

Ireland **notified** its final national energy and climate plan (NECP) to the European Commission on 4 August 2020.

A **public consultation** on the draft NECP was launched in late 2018 and closed on 22 February 2019. Ireland has submitted, together with the final plan, a summary of the feedback received from the public. Following a screening process, Ireland has concluded that a strategic environmental assessment is required under Directive 2001/42/EC, and work is currently ongoing with this.

Consideration of Commission recommendations

In June 2019, the Commission issued nine recommendations for Ireland's final plan[9]. Annex II to this staff working document offers a detailed account on how the different elements of Commission recommendations have been reflected in the final NECP. Overall, the final NECP **largely addresses** most of the Commission recommendations. The main changes introduced into the final plan are set out below.

On **greenhouse gas emissions in non-ETS sectors**, Ireland **largely addressed** the recommendation to put forward additional measures, notably in the building and transport sectors, to cost-effectively reduce the significant projected gap to its 2030 greenhouse gas target for sectors not covered by the EU emissions trading system of -30% compared to 2005 levels. The final NECP fully integrates the ambition, objectives, policies and measures as planned under the recently adopted climate action plan 2019. The WAM scenario projects a decrease of 28.6% in effort sharing sector emissions by 2030 and that cumulative emissions in 2021-2030 would be 8.9 Mt CO_2 equivalent below allocations if the LULUCF flexibility is used fully. In addition, Ireland indicates that it will seek to reduce overall GHG emissions by 7% per year on average over 2021-2030, which would likely imply that effort sharing sectors emissions will drop by over 30%. Ireland indicated that it would revise the NECP to align it with this 7% objective. However, a significant number of the policies and measures identified in the final NECP are more akin to objectives and ambitions than to specific actions, many of which have yet to be defined.

On **renewables**, Ireland **largely addressed** the recommendations to: increase its share of renewable energy of at least 31%; include an indicative trajectory that reaches all the reference points under Article 4(a)(2) of Regulation (EU) 2018/1999; put forward detailed and quantified policies and measures; and ensure that the renewable energy target for 2020 is fully met and maintained as a baseline from 2021 onwards.

While the final plan includes a minimum of 34.1% of renewable energy overall by 2030, it is not in line with the expected trajectory waypoints due to the longer timeframe of large offshore wind projects. The plan provides a yearly timetable setting out how the existing policies in the electricity, heating and cooling and transport sectors will deliver on the overall renewables share.

[9] Commission Recommendation of 18 June 2019 on the draft integrated national energy and climate plan of Ireland covering 2021-2030 (2019/C 297/07).

On **energy efficiency**, Ireland **partially addressed** the Commission recommendations to: substantially increase its energy efficiency ambition; include policies and measures that would deliver additional energy savings by 2030; express the final contribution as a specific value; and detail the underlying methodology used to estimate energy savings while indicating the amount of investment required.

The final plan increased its level of ambition for energy efficiency (62 171 GWh in primary energy savings) by 2030. However, it remains low compared to the level of effort needed at the EU level. The plan also provides additional information on planned policies and measures even though most of them do not indicate what the planned impact would be in terms of energy savings. The final plan presents different targets and relevant measures for renovating the existing buildings stock which will be further detailed in the national long-term renovation strategy.

On **energy security**, Ireland **fully addressed** the recommendation to specify the measures supporting the energy security objectives on diversifying and reducing energy dependency in particular in the gas and oil sector in light of uncertainties related to the UK's withdrawal from the EU. In particular, Ireland has significantly increased the level of oil storage that it holds on the island and now holds a strategic oil reserve that could last for 90 days, to be used in the event of a supply disruption. In relation to preparedness for emergencies, Ireland plans to work with EU partners and the UK to identify and put in place any measures and arrangements required in order to maintain effective cooperation with the UK on emergency preparedness and response for gas and electricity, including solidarity in case of an emergency.

On **research, innovation and competitiveness**, Ireland **partially addressed** the recommendation to clarify the national objectives and funding targets. In particular, Ireland updated its national research priorities for 2018-2023, focusing on energy, climate action and sustainability. It also adopted a research & development intensity target of 2.5% of GNP, to be achieved by 2020.

Ireland **largely addressed** the recommendation to build on existing **regional cooperation** as part of the North Seas Energy Cooperation and the Clean Energy for EU Islands Initiative, and to ensure continued regional cooperation with the UK on emergency and security of supply.

Ireland partially **addressed** the recommendation to list the actions carried out and plans to **phase out energy subsidies,** in particular for fossil fuels**.** It stated that the support mechanism for peat generation ceased at the end of 2019. In addition, Ireland stated in its plan the commitment to model the impacts, both in terms of the economy and emissions, of removing fossil fuel subsidies.

Ireland fully **addressed** the recommendation to complement **analysis on air quality.** The final NECP presents trends in air pollutants emissions taking into account NECP measures, as well as more general qualitative impacts of planned NECP measures on air pollution and health. The NECP mentions the synergies and trade-offs between clean air and climate policies: the planned phase-out of coal and peat used for electricity generation should have positive clean air impacts. However, solid biomass use for heat generation is planned to increase, which can raise concerns over air pollution.

Finally, Ireland **partially addressed** the recommendation to better integrate **just and fair transition** aspects and actions to fight **energy poverty**. In particular Ireland will produce and

adopt a five-year just transition strategy based on the work of a Just Transition Review Group and its collaborations with stakeholders. Specific measures in the budget 2020 will also address the consequences of the closure of peat-fired power plants and the cessation of peat extraction by the semi-state company Bord na Móna. The carbon tax revenue will also contribute towards a just transition in the Midlands. However, the NECP still lacks concrete information on the social, employment and skills impact of the transition.

Links with the European Semester

In the context of the European Semester framework for the coordination of economic policies across the EU and of the country report 2019[10], Ireland received one country-specific recommendation[11] on climate and energy, in particular to 'focus investment-related economic policy on low carbon and energy transition, the reduction of greenhouse gas emissions, sustainable transport, water, digital infrastructure and affordable and social housing, taking into account regional disparities […]'. In the 2020 country report[12] adopted on 20 February 2020, the Commission found that Ireland had achieved some progress on this recommendation.

Due to the COVID-9 crisis, the European Semester country-specific recommendations for 2020 addressed Member States' responses to the pandemic and made recommendations to foster economic recovery. In particular, they focused on the need to start mature public investment projects as soon as possible and promote private investment, including through relevant reforms, notably in the digital and green sectors. In this context, Ireland received a country-specific recommendation[13] stressing the importance of focusing investment on 'the green and digital transition, in particular on clean and efficient production and use of energy, sustainable public transport, water supply and treatment, research and innovation and digital infrastructure'.

The Governance Regulation requires Member States to ensure that their national energy and climate plans take into consideration the latest country-specific recommendations issued in the context of the European Semester. In turn, Ireland's national energy and climate plan has the potential to support the implementation of the European Semester recommendations, as it identifies the necessary investments needs and financial sources to meet them.

3. ASSESSMENT OF THE AMBITION OF OBJECTIVES, TARGETS AND CONTRIBUTIONS AND IMPACT OF SUPPORTING POLICIES AND MEASURES

Decarbonisation

Greenhouse gas emissions and removals

Ireland's binding national 2030 target under the Effort Sharing Regulation (ESR)[14] for **greenhouse gas emissions** in the sectors not covered by the EU Emission Trading System (ETS) is -30% compared to 2005. Ireland's final integrated national energy and climate plan is based on

[10] The Annex D to the 2019 Country report also sets out priority investments for the 2021-2027 cohesion policy, substantially contributing to the clean energy transition.

[11] Recommendation for a Council Recommendation on the 2019 National Reform Programme of Ireland and delivering a Council opinion on the 2019 Stability Programme of Ireland, COM(2019) 507 final.

[12] Commission staff working document, Country Report Ireland 2020, SWD/2020/506 final.

[13] Recommendation for a Council Recommendation on the 2020 National Reform Programme of Ireland and delivering a Council opinion on the 2020 Stability Programme of Ireland, COM(2020) 507 final.

[14] Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions.

the Irish climate action plan 2019 which puts in place a decarbonisation pathway to 2030 that would be consistent with a net zero target for Ireland by 2050. Under the programme for government ('Our Shared Future'), the current government is committed to putting the net zero ambition by 2050 into law via a climate action bill, which was introduced in the Dáil (the lower house of the Irish Parliament) within its first 100 days in office. In addition, the climate action bill will propose a strengthened governance framework for climate action, which will include a requirement to establish five-yearly carbon budgets at the aggregate and sectoral levels.

The programme for government also indicates that Ireland will commit to reduce overall GHG emissions by 7% per year on average over 2021-2030, leading to a reduction in emissions of 51% between 2020 and 2030, equivalent to a 45% reduction between 1990 and 2030[15]. This commitment is mentioned in the preface of the final plan, which indicates that a subsequent revision will bring the plan in line with the 7% annual target, backed up with additional policies and measures. The final plan, however, only integrates the objectives, policies and measures of the climate action plan 2019.

The final NECP indicates that Ireland will fully use the LULUCF flexibility under the ESR, which amounts to 26.8 Mt CO_2 equivalent over 2021-2030[16]. It also indicates in very broad terms the targets and commitments that would yield the necessary reduction through LULUCF actions. The final plan stipulates that Ireland can avail of a transfer of up to 4% of its 2005 ESR emissions annually from the EU ETS to achieve the ESR target, as the government formally requested full use of the ETS flexibility in December 2019. However, the emissions trajectories under the NECP do not assume that flexibility will be used. If fully applied both flexibilities would reduce the effort needed in effort sharing sectors to a 20% reduction compared to 2005.

The final NECP provides detailed GHG projections for the scenarios with existing measures (WEM) and with additional measures (WAM). As a key element, the WAM scenario assumes that the Irish carbon tax will rise to EUR 80 per tonne of CO_2 by 2030 while the WEM scenario keeps the carbon tax fixed at current levels of EUR 20.

Under the WEM[17] scenario, effort sharing sectors emissions in 2030 are projected to be 7% below 2005. If only the LULUCF flexibility is to be used fully, Ireland projects that its emissions over the 2021-2030 compliance period would exceed allocations by 50.8 Mt CO_2 equivalent[18]. Under the WAM scenario, effort sharing sectors emissions in 2030 are projected to be 29% below 2005, and Ireland projects it would comply over 2021-2030 without needing to fully use the LULUCF flexibility[19]. If Ireland were unable to generate LULUCF credits (i.e. accounted removals in excess of accounted emissions), emissions would exceed allocations by 17.6 Mt CO_2 over 2021-2030.

The final NECP indicates that, under the climate action bill, Ireland would adopt five-yearly carbon budgets at the national level following a recommendation from a strenghtened and

15 This compares to a projected increase of 7.6% in overall GHG emissions between 1990 and 2030 under the WEM scenario and a projected decreased of 15.8% under the WAM scenario.

16 Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions.

17 The WEM includes policies and measures in place by the end of December 2018, therefore excluding the climate action plan.

18 Excess emissions over allocations are projected at 32 Mt CO_2 equivalent if the ETS flexibility is also used.

19 Excess allocations over emissions are projected at 27.8 Mt CO_2 equivalent if the ETS flexibility is also used.

independent Climate Action Council. Target ranges and trajectories will then be set at the sectoral level.

Compliance with the **LULUCF no-debit commitment** is implicit in the intention to produce land credits and fully use the applicable LULUCF flexibility under Article 7 of the ESR[20]. Afforestation and (to a lesser extent) forest management is stated to contribute 21 Mt CO_2 accounted sink with a further 5.8 Mt CO_2 accounted sink stated to come from improved management to grassland, tillage land and non-agricultural wetlands over 2021-2030. This improved sink would allow for the maximum flexibility allowed under Article 7 of the ESR[21]. However, while the plan explains in broad terms how this amount of LULUCF credits would be achieved, it does not describe the contribution within LULUCF; the WAM and WEM scenarios show identical aggregate values. The ambition to deliver LULUCF credits is therefore unclear, especially given that the plan also states that emissions from the LULUCF sector will be higher in 2030 than in 2005.

Agriculture is the biggest effort sharing sector. It accounts for more than 40% of effort sharing emissions, which are projected to increase by 7.7% between 2005 and 2030 under the WEM scenario and decrease by 7.5% under the WAM scenario. The planned measures and objectives include: (1) supporting diversification to develop sustainable and circular value chains and business models for lower carbon intensity farming, including organic and bio-based products; (2) improving farming practices, including beef genetics, extended grazing and better nitrogen use efficiency; and (3) upskilling farmers. The plan refers to the common agricultural policy as the main support instrument.

Emissions in **transport** are projected to decrease by 14% and 42.1% between 2005 and 2030 under the WEM and WAM scenarios, respectively. The planned measures and objectives, which the climate action plan also elaborated upon, include a target of 936 000 electric vehicles on the roads by 2030, building charging stations to stay ahead of demand and planned legislation to ban the sale of new fossil fuel cars from 2030. A range of tax and financial support measures are in place or planned to encourage the uptake of electric vehicles and the construction of charging stations, including through the recently established Climate Action Fund. Beyond promoting low-emission transport, Ireland aims to make growth less transport intensive through better land and urban planning, remote working and greater modal shift. In terms of sustainable public transport, the national development plan commits to providing public investment worth EUR 8.6 billion over 2018-2027.

Emissions in the **residential sector** are projected to decrease by 26.8% and 59.6% between 2005 and 2030 under the WEM and WAM scenarios, respectively. Emissions in the **tertiary sector**, mainly related to buildings, are projected to decrease by 8.7% and 44.6% between 2005 and 2030 under the WEM and WAM scenarios, respectively. Planned measures and objectives include: (1) renovating 500 000 homes, also via grouped renovations; (2) installing 600 000 renewable heating sources; and (3) the upskilling of contractors in deep retrofit and near-zero emissions buildings. The plan also indicates a target of 50% improvement in public sector energy efficiency.

[20] Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030.

[21] Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030.

Ireland's over-arching **climate adaptation** objectives are consistent with the national adaptation framework. The main climate adaptation policies are summarised in the final NECP, including the preparation of sectoral adaptation plans by 7 government departments for 12 key sectors, and increasing awareness around climate adaptation and resilience.

As of 1 September 2020, Ireland had not notified its national long-term strategy to the Commission as required under Article 15 of the Governance Regulation.

Renewable energy

The national contribution to the 2030 EU renewable energy target is specified in the plan and the **renewable share** is set at 34.1% in gross final consumption of energy in 2030. This is considered sufficiently ambitious as it is above the share calculated by the formula in Annex II of the Governance Regulation. The indicative trajectory does not reach all reference points[22] including the baseline which is lower than the Renewable Energy Target for 2020.

In the **electricity** sector, Ireland aims to use renewable energy sources to cover 70% of its electricity consumption by 2030. This will be achieved in particular by introducing a new renewable energy support scheme which will help achieve the 70% renewable electricity target. This scheme will include specific elements supporting renewable energy at community level and photovoltaics by 2030. Ireland has set an ambitious target of at least 3.5 GW of offshore wind to be operational by 2030. Furthermore, although the plan contains a broad commitment to improve the connection process for offshore wind and upgrade the transmission network, it has not mentioned the specific need for coordinated planning between these elements in order to reduce the need for curtailment and ensure that electricity can flow from the coast to centres of demand. Ireland will also support corporate renewable power purchase agreements, which should cover at least 15% of the overall electricity demand by 2030. These policies and measures are considered sufficient to achieve the target. However, the fact that a large share of the target is expected to be delivered by large offshore wind projects with longer time frames puts Ireland below its overall indicatinve trajectory especially during the first half of the target period. The final plan outlines specific policies and measures aiming at addressing regulatory and economic barriers to this development of offshore wind. The final plan also describes proposed measures to overcome administrative burden and measures on the enabling frameworks for renewable energy self-consumption and renewable energy communities.

For **heating and cooling**, the share increases from 7.8% in 2020 to 15.1% in 2025 and again to 24% in 2030, which is above the indicative 1.1 percentage points as an annual average calculated for 2021 to 2025 and 2026 to 2030 respectively, without including the role of waste heat as specified in the final plan. Ireland highlights that district heating and cooling remains at 0.8% of heat consumption. The key policies and measures in the heating and cooling sector are the support scheme for renewable heat with a budget of EUR 300 million as well as additional support to heat pumps through building regulations and support schemes. However, it is difficult to assess how these policies and measures will help to achieve the target.

When setting the **transport** target in the final plan, as set out in Articles 25-27 of Directive 2018/2001[23], the contributions of all eligible fuels are given, amounting to 13.4% by 2030 despite

[22] Pursuant to Article 4(a)(2) of Regulation 2018/1999.

[23] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.

multipliers not being applied. The final plan also provides trajectories for feedstock listed in Part A and Part B of Annex IX of Directive 2018/2001[24], including feedstocks produced from food or feed crops. The key policies and measures to achieve this are the gradual increase of the biofuels obligation, which should result in a doubling of the level of biofuels in petrol and diesel compared to 2020 and support for other low-emission fuels. Ireland also includes the objective of putting 936 000 electric vehicles on the road by 2030, although the specific steps to achieve this ambition have not yet been developed. Ireland also includes estimated trajectories on the bioenergy demand sector and biomass supply. These policies and measures are considered credible in relation to achieving the target. The plan could better elaborate on how this expansion is expected to impact biodiversity and carbon sinks.

Energy efficiency

Ireland increased its ambition level for energy efficiency for 2030 in the final NECP. However, it remains low compared to the level of effort needed at EU level. Ireland set its **national contribution for energy efficiency** in primary energy savings (62 171 GWh) by 2030. According to the WAM scenario trajectories, primary energy consumption equals 13.7 Mtoe and final energy consumption equals 11.2 Mtoe in 2030.

The plan provides descriptive information on **policies and measures** beyond 2020 targeting in particular the buildings and transport sectors, focusing on actions at local level. Most of the policies and measures are already in place and will continue to be strengthened, e.g. strengthened building codes aimed at achieving the near-zero energy building levels (as required by the Energy Performance of Buildings Directive). The plan does not discuss the (potential) energy efficiency gains from a more efficient drinking water provision and wastewater treatment (the former is not mentioned and the latter only in passing).

These policies and measures are considered credible in relation to achieving the EU target as they aim at improving energy efficiency across different sectors, and they have been developed in a comprehensive way to increase the impact. However, the final plan lacks information on the impacts expected from these measures.

Ireland notified its intention to achieve the **cumulative amount of energy savings** of 5.18 Mtoe to the European Commisison under Article 7 of the Energy Efficiency Directive[25]. This will be achieved through a combination of an energy efficiency obligation scheme (EEOS) and alternative policy measures, although the scheme is subject to ongoing consultation. Policies and measures planned under Article 7 are considered sufficient to achieving the energy savings obligation by 2030 given the expertise gained from implementing the EEOS in the obligation period 2014-2020.

With regard to buildings, Ireland has set a specific target to renovate 500 000 buildings by 2030, and also aims at stricter energy performance requirements for new buildings and deep renovation, which would come in combination with measures to promote the necessary reskilling (for contractors and other industry players). In the public sector measures include: i) 30% reduction in CO_2eq emissions; ii) 50% improvement in public sector energy efficiency by 2030; iii) public

[24] Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources.

[25] Directive 2012/27/EU of the European Parliament and of the Council of 25 October 2012 on energy efficiency as amended by Directive (EU) 2018/2002.

buildings should have B building energy rating by 2030; and iv) putting in place energy performance officers in each public sector body, who are accountable for energy management and performance and should oversee and be responsible for achieving the energy goals in that body. Other measures refer to: commercial buildings: one third of all commercial buildings should have a B building energy rating by 2030; promotion of heat pumps: 600 000 heat pumps to be installed over 2021-2030; ban oil boilers from 2022; the installation of gas boilers from 2025 in all new dwellings; and installation of smart-ready electricity meters in every house by 2024.

These planned policies include the retrofitting of the social housing stock (increasing energy performance for some 30% buildings that are over 40 years old) with local authorities expected to play a central role. **Ireland has not yet submitted its long-term renovation strategy** under the Energy Performance of Buildings Directive. Ireland has subsequently submitted the strategy.[26]

Ireland also plans to develop a smart finance initiative to provide a competitive funding offer with State support (EUR 4.5 billion) to fund energy efficiency improvements across the residential and public sector.

A set of measures will aim at developing a national policy framework for district heating through planning, regulation, financing and research actions including learning from the existing pilot schemes. Ireland also plans to make the transport sector more sustainable via the uptake of electric vehicles which would also help increase energy efficiency in the sector.

Energy security

Maintaining a high level of security of supply is a priority in the ongoing transformation of Ireland's energy system, with an objective to achieve an **electricity** system that is 70% renewable by 2030 and increase the share of domestic renewable energy. As regards **gas** and electrcity, the plan puts in place measures to maintain the resilience of Ireland's gas and electricity systems to 2030 and beyond. Ireland expects to rely increasingly on natural gas when coal and peat are no longer part of its energy mix from 2025. Therefore, a review of the security of energy supply of Ireland's natural gas and electricity systems to 2030 is being carried out. Following the UK's exit from the EU, Ireland has also committed to working closely with EU partners and the UK to put in place a framework for regional cooperation in relation to emergency preparedness and response.

Concerning the oil sector, Ireland holds a strategic oil reserve that could last for 90 days, to be used in the event of a supply disruption. Ireland is also currently developing an oil emergency allocation plan to enable the allocation of oil to ensure the continuation of societal functioning in a scenario where oil availability be limited. It will also cooperate with the Department of the Economy in Northern Ireland on the all-island aspects of oil security, in particular around the use of import infrastructure on an island-wide basis, if the capacity to move product through a major oil terminal is disrupted.

Ireland also plans to further develop the electricity networks, ensuring that the energy system remains safe, secure and ready to meet increased demand. The plan envisages further investments

[26] https://www.dccae.gov.ie/en-ie/energy/topics/Energy-Efficiency/energy-efficiency-directive/ireland%27s-national-renovation-strategy/Pages/Ireland%27s-Renovation-Strategy.aspx

in network infrastructure although does not specifically provide details on how these plans will be scaled up to achieve the ambitous renewables targets. On resource adequacy, Ireland has an all-island Capacity Remuneration Mechanism which will ensure security of electrcity supply and deliver required investments. In addition, the state-owned electric power transmission operator EirGrid has developed a range of system services to ensure that the high penetration of renwables can be accomodated from a technical perspective. The plan outlines the current national cyber security strategy and explains how the National Cyber Security Centre is working with the energy sector. The NECP provides a realistic assessment of energy security and the planned policies and measures are comprehensive and sufficient enough to achieve the objectives.

Internal energy market

The plan does not indicate an **interconnectivity level** for 2030 given the uncertainty and challenging circumstances for Ireland surrounding the UK's withdrawal from the EU. It stresses that once the UK leaves, Ireland will have no direct electrical interconnection with the rest of the EU. The plan highlights three interconnector projects listed as projects of common interest which will increase Ireland's interconnectivity. By providing a direct electricity link with mainland Europe, the Celtic Interconnector with France, once operational, will directly connect Ireland to the EU's Internal Energy Market following the UK's withdrawal from the European Union.

Given the electricity sector target of 70% renewable electricity by 2030, the plan provides an overview of the development of the different sources of **flexibility** that is necessary to integrate the rising share of renewable energy into the electricity system. The all-island's single electricity market will be maintained and market reforms in line with the Capacity Remuneration Mechanism market reform plan will continue. In particular, to enable the ambitious renewables target, Eirgrid's DS3 system services programme will continue to be developed and refined although more attention is needed for the competitive tendering of such services. Projects are ongoing to relieve existing internal grid congestion to better connect demand and supply on an all-island basis. The plan also contains a broad commitment to review infrastructure needs to meet the renewables targets but, given the ambitious target of at least 3.5 GW of offshore wind to be operational by 2030, action is needed urgently to ensure that the market functions well, to reduce the need for curtailment and ensure that electrcity can flow from the coast to centres of demand.

The final plan includes policy objectives and measures related to the **internal energy market** (e.g. measures to ensure the non-discriminatory participation of new market participants, including storage and the different flexibility sources in all energy markets). It also includes descriptions of the renewables support scheme and Capacity Remuneration Mechanism which will both operate with close links to the electrcity market. These measures are considered compatible and sufficient enough to achieve the objective of a well-functioning electrcity market.

The final plan provides a detailed description of policy objectives in relation to smart meters, consumer participation in the energy system, consumer protection and system flexibity. Specific objectives have also been included for energy communities and aggregation under the decarbonisation component of the final plan. However, specific objectives or targets are still lacking for i) demand response (aside from a reference to the roll-out commitments as regards demand side unit participation), ii) storage, iii) real time prices and iv) retail market development (there is no detailed assessment of the present situation). In relation to these objectives, the plan formulates credible measures and policies for energy communities (information provision, capacity building, training, etc.), mostly building on the existing policy framework in place for

'sustainable energy communities'. Overall, however, detailed information (e.g. clear legislative steps) is still lacking for measures and policies to (further) improve competitiveness in the retail market, and ensure consumer protection and engagement; the plan merely provides a description of the monitoring tasks of the national regulatory authority. As for measures related to non-discriminatory participation of renewable energy, demand response and storage, the plan states that these will adhere to the Clean Energy Package, without giving any further detail. As regards demand response measures, the plan indiates that approriate measures have already been taken and demand response is already present in the market.

On **energy poverty**, Ireland reports the number of households affected. It puts forward a general indicative objective to alleviate the burden of energy poverty on the most vulnerable people in society, as well as a measurable target reduction of 2% or less by 2020 combined with a target contribution to achieve the EU 2020 poverty target of lifting at least 200 000 people out of 'combined poverty' as required by the Regulation (EU) 2018/1999. While the final plan does not formulate any concrete or measurable indicative objectives for beyond 2020, Ireland promises that these objectives will be updated when the energy poverty strategy is reviewed in 2020. As regards the measures and policies Ireland has in place to address energy poverty, the final plan builds on the already comprehensive energy poverty strategy outlined in the draft plan, and puts forward additional measures and policies to improve Ireland's energy poverty situation, such as: i) additional funding for energy efficiency in low income households and social housing; ii) upgrading (social) housing stock; and iii), the intention to develop energy poverty indicators. These policies and measures are considered credible as regards achieving the formulated objectives.

Research, innovation and competitiveness

The plan identifies the challenge of increasing the level of investment in **research and innovation** in order to keep pace with Ireland's GNP growth rates; however, it does not set a specific target for 2030. Ireland's national development plan launched four new 'Project Ireland 2040' funds, with EUR 4 billion over a ten-year period. One of the four, the Climate Action Fund, will be fully dedicated to activities relevant to Ireland's NECP. A detailed technology analysis (currently ongoing) will assist with prioritising the targeting of energy research & innovation investment so as to achieve targets in 2030 and 2050.

The production and use of **hydrogen** is expected to have a key role to play in Ireland's transition to a low carbon economy and society. Focus will be given to the potential of green hydrogen and its role in sectors which are difficult to decarbonise with existing technologies, such as heavy vehicles and maritime traffic.

Competitiveness is highly important to Ireland, but the country has not set measurable objectives. A future 'Jobs initiative' is being developed specifically to support small and medium-sized enterprises (SMEs).

The final plan mentions current collaborations involving Ireland such as those with the North Seas Energy Cooperation, **the strategic energy technology (SET) plan** (Irish research calls are aligned with its priorities) and the International Energy Agency (IEA).

4. COHERENCE, POLICY INTERACTIONS AND INVESTMENTS

The final NECP explores several **interlinkages** and synergies between the different dimensions of the plan. The plan notably contains specific, well-developed examples of interactions between

decarbonisation and other dimensions, including energy efficiency. It assesses the impact of the decarbonisation of heat and transport on local air pollution and the associated benefits in terms of health, while also recognising that biomass combustion for renewable heat can increase air pollution. The plan also highlights the opportunities that the climate and energy transition can bring about, including in terms of tapping into Ireland's large offshore wind potential, retrofitting homes and developing new technologies, which can generate employment and business opportunities. The plan states that Ireland will cease using coal for electricity generation by 2025, which will have a significiantly positive impact on greenhouse gas emission reductions. Ireland will also close two of its three peat-fired power plants by the end of 2020, with the third likely to seek planning authorisation to move to 100% biomass in 2023. The impact on the electricity system's generation adequacy and security of supply will need to be assessed, taking into account Ireland's ambitious level of a 70% share for renewable electricity by 2030 and the corresponding need for flexibility. The risks to energy security posed by climate change are recognised in the plan, which indicates that the policies and measures for mitigation and adaptation serve to offset those risks. The national adaptation plan includes measures for mitigating climate risks in the energy sector.

Ireland generally commits to apply the 'energy efficiency first' principle in all proposals, decisions and investments flowing from the NECP although without specifying details on how it will do this except in the area of efficient planning on promoting public transport and modal shift.

The final plan does not assess the overall **investment needs**, which could be fulfilled by either the public and private sector, to achieve the objectives and ambition defined under the WAM scenario. It stresses the need to mobilise private investment, including by leveraging resources from the commercial state sector and other public bodies, and to promote innovation in the financial sector. However, only broad indications are provided as to how this will be achieved, focusing mainly on the role of the Strategic Banking Corporation of Ireland and the Ireland Strategic Investment Fund. No indication is provided on the scale of the private investment that will need to be mobilised.

More details are provided on specific programmes, funds and projects and their budgets. This includes, in particular, EUR 21.8 billion for climate action under the national development plan 2018-2027, of which EUR 7.6 billion is direct government spending. Ireland plans to mobilise EUR 13.7 billion for the energy system (renewables, interconnections), with EUR 3.8 billion allocated for housing retrofit and energy efficiency in public buildings. In addition, the government intends to provide EUR 8.6 billion of direct government funding for sustainable mobility. It is important that sustainable urban mobility plans address accessibility challenges for persons with disabilities. The national development plan predates the climate action plan, yet the authorities indicate that the cumulative costs of the commitments included in the latter, which is significantly more ambitious in terms of climate and therefore has greater investment needs, will be delivered within the normal budgetary process and the national development plan ceilings. The final NECP also refers to the EUR 500 million Climate Action Fund, which will leverage public and private investment to achieve climate and energy targets. The plan does not explore the possibility of using support from the EU Structural Funds and InvestEU, or blending opportunities. Funding needs for individual projects or measures are also identified, though in a rather ad hoc and limited manner.

The final NECP does not include a clear **macroeconomic assessment**. While it refers to positive economic effects in general terms, it is not explained why there is no overall integrated

assessment of the comprehensive package of policies and measures on either the macroeconomic impacts (GDP, jobs and government fiscal balance) or on the overall social, health and environmental impacts.

The description of existing **energy subsidies,** particularly for fossil fuels appears not to be based on internationally used definitions. A timeline to phase out energy subsidies, apart from the support mechanism for peat generation, is not mentioned in the final plan.

The final plan provides information and analysis on **air quality** and reductions of air pollutant emissions policy and states that the Irish National Air Pollution Control Programme (NAPCP) is being updated to reflect the policies and measures set out in the NECP. This will have to be confirmed once the updated NAPCP is submitted**.**

Multiple facets of the requirements for a **just transition** are recognised in the final NECP, including the specific needs of workers and communities affected by the move away from fossil fuels, issues related to the supply and demand of certain skills, the distributional impacts of carbon pricing and energy poverty. However, the final plan still lacks further detail on the impact of the planned transition policies and measure on society, employment and skills especially in coal and carbon-intensive regions. The final plan does, however, identify the expected impact of the Just Transition Fund on employment, i.e. it is anticipated that investment into energy efficiency will support over 400 environmentally sustainable jobs, with up to a further 100 jobs through expanded peatlands rehabilitation. Ireland will establish a Just Transition Review Group within the National Economic and Social Council to identify specific needs among cohorts of workers, businesses, communities and other specific groups of people. This work will feed into a five-year just transition strategy to be adopted by the government. As part of Budget 2020, Ireland also set up a EUR 6 million Just Transition Fund for the Midlands covering investments in retraining and reskilling and helping local communities and businesses adjust to the closure of two peat power plants.

The final NECP indicates that Ireland will draw up a revised national policy on waste to be in line with **circular economy** principles. A public consultation was launched in 2019 focusing on, among other things, fast fashion, food waste, non-recyclable plastic, incentives for using recyclable materials in construction and raising awareness on waste. The circular economy and its potential for GHG emissions reduction is well integrated in the plan, but not quantified. Further quantification efforts would be welcome in future NECPs, in line with the most recent scientific evidence.

The plan acknowledges the contribution of **biodiversity** to health, well-being and sustainable development. It stresses that the planned increases in reforestation, afforestation and ecosystem restoration will take place while protecting and increasing the levels of biodiversity. Biodiversity is mainstreaming in the Irish decision-making and well integrated in the plan, with concrete examples such as restoration of peatlands, payment for ecosystem services or natural capital accounting.

Trajectories on **bioenergy demand and on biomass supply** by feedstocks and origin and an assessment of its sources of forest biomass and its impact on the LULUCF sink have not been estimated. Anyway, Ireland plans several actions with the scope of ensuring that biomass is harvested from sustainable resources, e.g. with replanting, expansion of forestry, etc. Where demand exceeds available domestic supply biomass, it will be imported from third countries from sustainable sources which also must satisfy the requirements of the EU timber regulation. A

National Bioeconomy Implementation Group is set up to examine sectoral coherence and potential of harnessing the value from side-streams from both agriculture and forestry.

5. GUIDANCE ON THE IMPLEMENTATION OF THE NATIONAL ENERGY AND CLIMATE PLAN AND THE LINK TO THE RECOVERY FROM THE COVID-19 CRISIS

Ireland needs to swiftly proceed with implementing its final integrated national energy and climate plan as notified to the Commission on 4 August 2020. This section provides some guidance to Ireland for the implementation phase.

This section also addresses the link between the final plan and the efforts to recover from after the COVID-19 crisis, by pointing to possible priority climate and energy policy measures Ireland could consider when developing its national recovery and resilience plan in the context of the Recovery and Resilience Facility[27].

Guidance on the implementation of the national energy and climate plan

With the additional measures presented in the plan, **emissions from the effort sharing sectors** in 2030 are projected to be 28.6% below 2005 levels and Ireland would need to generate significant credits under the LULUCF flexibility to ensure that emissions over the compliance period of 2021-2030 remain below allocations. Achieving the planned reduction in emissions, in particular in agriculture, buildings and transport, requires further specific measures to implement what currently remains at the level of broader objectives and ambitions. Ireland needs to clarify its ambition to deliver **LULUCF** credits, and it would need to be backed up with specific measures. Finally, Ireland is invited to clarify how and when it intends to revisit its NECP in light of the stated objective to reduce overall GHG emissions by 7% per year on average in 2021-2030.

The Irish contribution to the EU 2030 renewables target is sufficiently ambitious when compared to the share calculated by the formula in Annex II of the Governance Regulation, whereas the ambition of Ireland's contribution to the 2030 energy efficiency target is assessed as being low. Ireland's plan therefore leaves still scope to further develop and improve policies and measures on both renewables and energy efficiency so as to contribute more to the EU climate and energy targets and strengthen the green transition.

On **renewables**, Ireland committed to increase the share of renewables in gross final energy consumption to 34.1% in 2030. Considering the importance of offshore wind projects in Ireland's 70% renewable electricity target, it is important that efforts are made to ensure that the regulatory and enabling framework for offshore renewable energy is implemented without delay. As regards renewable heat, while the indicated target is sufficiently ambitious, the policies and measures to achieve this target, and in particular the expected investment needs and corresponding budgets, are not clearly defined. Specific steps to achieve the ambitious target of 936 000 electric vehicles on the road by 2030 are also not clearly explained. The final plan would also need to explain how

[27] On 17 September 2020, the Commission has put forward the Annual Sustainable Growth Strategy 2021 (COM(2020) 575 final), as well as guidance intended to help Member States prepare and present their recovery and resilience plans in a coherent way. The guidance is without prejudice to the negotiations on the proposal for a Regulation on the Recovery and Resilience Facility in the European Parliament and the Council (Commission staff working document. Guidance to Member States – Recovery and resilience plans, SWD (2020) 205 final).

the very significant increase in biomass use for energy will be combined with the policy on land and forestry, which relies upon increasing carbon removals, and how it will impact air quality. Ireland is invited to clarify whether and how it intends to meet its current 16% target in renewable energy for 2020, and to explore the use of cooperation mechanisms and of the EU's renewable energy financing mechanism to reach that target and maintain it beyond 2020.

On **energy efficiency**, considering still rather low level of ambition, Ireland would benefit from adopting and implementing additional policies and measures that would deliver additional energy savings by 2030.

Improving energy efficiency in buildings has great potential for speeding up energy savings and contributing to the recovery of the economy after the COVID-19 pandemic. Building on the momentum of the **'Renovation Wave'** initiative[28], there is scope for Ireland to intensify efforts to improve the energy performance of the existing building stock with specific measures, targets and actions, while giving due attention to energy poverty. Further support for renovating public and private buildings could be provided through increased public funding and by leveraging EU and national budgets with private money, combining grants, lending, guarantees and loan subsidies. Ireland is expected to provide a robust and comprehensive long-term renovation strategy, in accordance with Article 2a of the Energy Performance of Buildings Directive, which can contribute to the energy efficiency target and the recovery of the economy after the COVID-19 pandemic. The long-term renovation strategy is prescribed to set out a roadmap for decarbonisation by 2050 with ambitious milestones for 2030 and 2040 and 2050, measurable progress indicators, expected energy and wider benefits, measures and actions to renovate the building stock, and a solid finance component with mechanisms for mobilising public and private investment.

In terms of **energy security**, introducing measures to address cyber security and their implementation will improve resilience and flexibility of the energy sector.

Concerning the **internal energy market**, Ireland has introduced a capacity mechanism to address generation adequacy concerns. In line with Article 20 of Regulation (EC) No 2019/943, Ireland proposed measures to improve the market's functioning via a dedicated implementation plan notified to the Commission. A swift follow-up on such measures and the Commission's opinion on this plan is crucial to support the required reforms[29].

Ireland would benefit from setting out clear indicators to track the achievement of milestones towards its **research and innovation and competitiveness** objectives. Over time, the gathering of granular research, innovation and competitiveness data will be useful in strengthening this process. Ireland would also benefit from further strengthening the link between the competitiveness objective and the policies and measures to put in place for the different sectors by 2030.

The final energy and climate plan does not assess the overall (public and private) **investment needs** to achieve the objectives and ambition defined under the WAM scenario. It provides only broad indications as to how private investment will be mobilised. In terms of climate-related investments by the public sector and semi-state companies, the plan refers to the national

[28] Communication 'A Renovation Wave for Europe – greening our buildings, creating jobs, improving lives', COM(2020)662 and SWD(2020)550.
[29] C(2020) 2657 final

development plan, which predates the climate action plan and therefore reflects significantly lower climate ambition and therefore lower investment needs. A thorough assessment of investment requirements by households and firms, e.g. in energy generation and infrastructure, renovation and low-emission transport, would help achieve the objectives set under the final national energy and climate plans and facilitate the design of policies and measures to mobilise private finance. Furthermore, it would be warranted to revisit the national development plan in light of the raised ambition of the energy and climate plan and climate action plan respectively.

Ireland has been rather proactive on **regional cooperation**, notably in the context of the North Seas Energy Cooperation. Ireland is invited to continue ongoing efforts with a view to intensifying exchanges and initiatives that will facilitate the implementation of its national energy and climate plan, in particular as regards relevant cross-border issues[30]. Ireland is encouraged to explore the potential of the Clean Energy for EU Islands Initiative. Ireland is also invited to better exploit the potential of the **multilevel climate and energy dialogues** to actively engage with regional and local authorities, social partners, civil society organisations, business community, investors and other relevant stakeholders, and to discuss with them the different scenarios envisaged for its energy and climate policies.

Concerning the **just and fair transition**, Ireland would benefit from setting a clear vision of what the actual consequences of planned **transition** policies and measures would be in order to ensure its NECP is implemented effectively.

Ireland is encouraged to build on a dedicated assessment of **energy poverty**, based on existing social policy and other relevant policies, as required by the Regulation (EU) 2018/1999 to identify what specific objectives would be warranted for 2020-2030. Ireland is encouraged to consult the Commission Recommendation of 14 October 2020 on energy poverty and its accompanying staff working document providing guidance on the definition and quantification of the number of households in energy poverty and on the EU-level support available to Member States' energy poverty policies and measures. Energy poverty could be, among other measures, addressed through specific support to socially innovative solutions and social enterprises that work on addressing this challenge (e.g. energy-awareness campaigns, retraining unemployed as energy advisors, supporting green installations by cooperatives, buying energy-saving appliances for social enterprises to rent out). It will be important to ensure the upskilling of the workforce in the construction sector.

Ireland is invited to extend and update the identification and reporting on **energy subsidies** and intensify action to phase them out, in particular for fossil fuels. The green transition in Ireland would receive a further boost from rapid phase-out of the fossil fuel subsidies identified in the NECP and recent Commission analyses. This would improve the further development and implementation of concrete plans with associated timelines, coupled with measures to mitigate the risk of households' energy poverty.

For all investments implementing the national energy and climate plan, Ireland is invited to ensure these are in line with national, regional or local plans for **air pollution** reduction, such as

[30] In this context, the Commission will help address related issues in a strategic manner in its upcoming Strategy for Offshore Renewable Energy by identifying key actions in the area of maritime planning, upscaling technologies, and a new approach to infrastructure planning and offshore renewables capacity building.

the National Air Pollution Control Programme (NAPCP), and relevant air quality management plans

In implementing its plan, Ireland is invited to make the **best possible use of the various funding sources available**, combining scaled-up public financing at all levels (national and local, as well as EU funding) and leveraging and crowding in private financing. Tables 1 and 2 of Annex 1 provide an overview of EU funding sources which should be available to Ireland during the forthcoming multiannual financing period (2021-2027), and EU funding addressed to all Member States and companies. For the forthcoming period, the European Council has committed to the mainstreaming of climate action into all EU programmes and instruments and to an overall target of at least 30% of EU funding to support climate objectives. At the same time, EU expenditure should be consistent with the Paris Agreement and the 'do no harm' principle of the European Green Deal. At the EU level, funding will be available for Ireland from the Innovation Fund, and will also be based on revenues from the auctioning of allowances under the EU Emissions Trading System.

Link to the recovery from the COVID-19 crisis

The vast majority of Member States' final national energy and climate plans were drafted before the COVID-19 crisis, and the present Staff Working Document assesses Ireland's plan in that context. Nevertheless, the implementation of Ireland's final integrated national energy and climate plan will need to fully take into account the context of the post-COVID-19 recovery.

In the context of the Recovery and Resilience Facility, which is expected to be operational on 1 January 2021, **Ireland's final plan constitutes a strong basis for it to design the climate and energy-related aspects of its national recovery and resilience plan**, and to deliver on broader European Green Deal objectives.

In addition, the Commission strongly encourages Member States to include in their recovery and resilience plans investment and reforms in a number of 'flagship' areas. In particular, the 'Power up', 'Renovate' and 'Recharge and refuel' flagships are directly related to energy and climate action and to the final national energy and climate plans. Investments and measures under the 'Reskill and upskill' flagship, in particular as regards green technologies, are also essential to foster the climate and energy transition in all Member States.

In particular, **mature investment projects outlined in the plan, as well as key enabling reforms that address inter alia, investment–barriers, should be frontloaded as much as possible**. The link between investments and reforms is of particular relevance for the national recovery and resilience plans, to ensure a recovery in the short to medium term and strengthening resilience in the longer term. In particular, Member States' recovery and resilience plans should effectively address the policy challenges set out in the country-specific recommendations adopted by the Council.

In addition, **the Commission strongly encourages Member States to include in their recovery and resilience plans investment and reforms in a number of 'flagship' areas[31].** In particular, the 'Power up', 'Renovate' and 'Recharge and refuel' flagships are directly related to energy and climate action and to the contents of the final national energy and climate plans. Measures under

[31] Cf. Annual Sustainable Growth Strategy 2021 (COM(2020) 575 final), pp. 9-12.

the ‘Reskill and upskill’ flagship are also essential to foster the climate and energy transition in all Member States.

In turn, the Recovery and Resilience Facility will provide opportunities to accelerate Ireland’s green transition while contributing to economic recovery. In order to follow the European Council’s commitment to achieve a climate mainstreaming target of 30% for both the multiannual framework and Next Generation EU, **Ireland’s recovery and resilience plan will have to include a minimum of 37% expenditure related to climate**. Reforms and investments should effectively address the policy challenges set out in the country-specific recommendations of the European Semester, and will have to respect the principle of ‘do no harm’.

Based on Ireland’s final national energy and climate plan, and on the investment and reform priorities identified for it in the European Semester, **the Commission services invite Ireland to consider the following climate and energy-related investment and reform measures:, while developing its national recovery and resilience plan:**

- Measures to improve the energy efficiency of the built environment through the deep retrofitting of buildings as well as social housing; measures to support investments in renewable energy generation and to promote the uptake of heating systems based on renewable energies; measures aimed at strengthening and expanding the transmission and distribution lines, including electricity interconnections with neighbouring countries;
- Measures to support the shift towards sustainable modes of transport, including decarbonised public transport in urban areas;
- Reforms to put in place the new planned governance framework and long-term objectives for climate policy.

The above mentioned measures are indicative in nature and not meant to be exhaustive. They aim to orient reflections in the development of the national recovery and resilience plan. They do not prejudge the position of the Commission on the actions to be proposed. This position will, inter alia, need to comply with the agreed legislative text on the Recovery and Resilience Facility.

ANNEX I: POTENTIAL FUNDING FROM EU SOURCES TO IRELAND, 2021-2027

Table 1: EU funds available, 2021-2027: commitments, EUR billion

Programme	Amount	Comments
Cohesion policy funds (ERDF, ESF+, Cohesion Fund)	1.2	In current prices. Includes funding for European territorial cooperation (ETC). Does not include amounts transferred to the Connecting Europe Facility.
Common agricultural policy – European Agricultural Fund for Rural Development, and direct payments from the European Agricultural Guarantee Fund.	10.6	In current prices. Commitments under the multi-annual financial framework.
Recovery and Resilience Facility	1.3	In 2018 prices. Indicative grants envelope, sum of 2021-2022 and estimated 2023 commitments. Based on the Commission's summer 2020 GDP forecasts.
Just Transition Fund	0.1	In 2018 prices. Commitments both under the multi-annual financial framework (MFF) and Next Generation EU.
ETS auction revenue	0.9	Indicative: average of actual 2018 and 2019 auction revenue, multiplied by seven. The amounts in 2021 to 2027 will depend on the quantity and price of auctioned allowances.

Table 2: EU funds available to all Member States, 2021-2027, EUR billion

Programme	Amount	Comments
Horizon Europe	91.0	In current prices. Includes Next Generation EU credits.
InvestEU	9.1	In current prices. Commitments both under the multi-annual financial framework (MFF) and Next Generation EU. Includes the InvestEU fund (budgetary guarantee to public and private investment) and the advisory hub (technical advice). Does not consider appropriations available to beneficiaries through implementing partners, such as the European Investment Bank.
Connecting Europe Facility • Transport • Energy	 24.1 5.8	In current prices. The commitment for transport includes the contribution transferred from the Cohesion Fund. Excludes Connecting Europe Facility Military Mobility funding for dual use infrastructure.
Recovery and Resilience Facility	360.0	In 2018 prices. Non-allocated commitments for loans. Loans for each Member State will not exceed 6.8% of its gross national income.
Technical Support Instrument	0.9	In current prices.
Programme for Environment and Climate Action (LIFE)	5.4	In current prices.
European Agricultural Fund for Rural Development	8.2	In current prices. Commitments under Next Generation EU.
Innovation Fund	7.0	Approximation: 7/10 of the allocations of ETS allowances to provide revenue to the Innovation Fund for 2021-2030 and assuming a carbon price of EUR 20 per tonne.

Note to both tables

The figures provided by programmes under the EU budget include both the proposals under the forthcoming multiannual financial framework, and the reinforcement of these under the Next Generation EU instrument outside the EU budget, unless indicated differently.

The figures quoted in this document are based on the conclusions of the European Council of 17-21 July 2020. They however do not prejudge the outcome of the ongoing discussions between the European Parliament and the Council on the elements of the recovery package, such as the Multiannual Financial Framework, the sectoral programmes, their structure and budgetary envelopes, which will be concluded in accordance with their respective adoption procedure.

For most of the above funds, support to the climate and energy transition is one objective among others. However, for the forthcoming period, the European Council has committed to the mainstreaming of climate action into all EU programmes and instruments and to an overall target of at least 30% of EU funding to support climate objectives. EU expenditure should also be consistent with the Paris Agreement and the 'do no harm' principle of the European Green Deal.

Some of the programmes listed in Table 2 provide funding through open calls to companies, not public administrations.

ANNEX II – DETAILED ASSESSMENT OF HOW COMMISSION RECOMMENDATIONS HAVE BEEN ADDRESSED

Recommendations		Assessment	
Decarbonisation - GHG	Put forward additional measures, notably in the building and transport sectors, to cost-effectively reduce the significant projected gap to its 2030 greenhouse gas target for sectors not covered by the EU emissions trading system of -30% compared to 2005.	Largely addressed	The final NECP fully integrates the ambition, objectives, policies and measures as planned under the recently adopted climate action plan 2019. The WAM scenario projects a decrease of 28.6% in effort sharing sector emissions by 2030 and that cumulative emissions in 2021-2030 would be 8.9 Mt CO_2 equivalent below allocations if the LULUCF flexibility is used fully. In addition, Ireland indicates that it will seek to reduce overall GHG emissions by 7% per year on average over 2021-2030, which would likely imply a reduction in emissions from effort sharing sectors in excess of 30%. Ireland indicated that it would revise the NECP to align it with this 7% objective. The Irish government has committed to increasing the price of carbon to EUR 100 per tonne by 2030. The Government has also stated that all revenues raised by the increases in carbon tax will be ring-fenced to support climate action and protect those most vulnerable. Over the next decade more than EUR 6 billion will be raised to be support these measures.
Decarbonisation - renewables	Put forward, as Ireland's contribution to the Union's 2030 target for renewable energy, a share of renewable energy of at least 31% as indicated by the formula in Annex II under Regulation (EU) 2018/1999.	Fully addressed	The NECP puts forward a renewable energy target of 34.1% – Ireland's contribution to the 2030 targets.

	Include an indicative trajectory in the final integrated national energy and climate plan that reaches all the reference points pursuant to Article 4(a)(2) of Regulation (EU) 2018/1999 in accordance with that share, in view of the need to increase the level of efforts for reaching this target collectively.	Not addressed.	The proposed trajectory will not be in line with the trajectory waypoints as set out in the Governance Regulation. Ireland states that this is primarily due to the fact that large projects, particularly offshore wind projects, cannot be constructed in shorter timeframes and will not become operational in Irish waters until mid-decade.
	Put forward detailed and quantified policies and measures that are in line with the obligations laid down in Directive (EU) 2018/2001 of the European Parliament and Council (8), to enable a timely and cost-effective achievement of this contribution.	Partially addressed	Besides those previously outlined in draft NECP (e.g. new renewable electricity support scheme and microgeneration schemes) few new policies and measures in this area are provided although some updated details are included. However, policies and measures are still generally lacking in detail and clear timeframes.
	Ensure that the renewable energy target for 2020 set in Annex I of Directive 2009/28/EC of the European Parliament and of the Council (9) is fully met and maintained as a baseline from 2021 onwards, and explain how it intends to meet and maintain such baseline share.	Not addressed	2020 target of 16% will be missed in 2021 in both WEM and WAM scenarios.
	Put forward trajectories and corresponding measures in the heating and cooling sector and the transport sector to meet the indicative target included in Article 23 of Directive (EU) 2018/2001 and the transport target in Article 25 of Directive (EU) 2018/2001.	Partially addressed	The share of renewable heating and cooling is increases by more than 1.3% annually, assuming the WAM scenario is targeted trajectory. Supporting measures provided. Trajectories for renewable energy in transport supplied in NECP are different to Annex 1 Part 2 templates; the trajectory in NECP deemed more realistic. The contributions of all eligible fuels are given, amounting to 13.4% by 2030 even though multipliers were not applied.
	Put in place measures to overcome administrative burden and detailed information on measures on the enabling frameworks for renewable self-consumption and renewable energy communities, in line with Articles 21 and 22 of Directive (EU) 2018/2001.	Partially addressed	Some measures to reduce administrative burden in particular as regards planning and permitting offshore renewable energy. Some measures on the enabling frameworks for renewable energy self-consumption and renewable energy communities (e.g. increase the number of sustainable energy communities to 1 500) although lacking in detail.

Energy efficiency	Substantially increase its energy efficiency ambition by lowering the level of both final and primary energy consumption in absolute terms in view of the need to increase the level of efforts to reach the Union's 2030 energy efficiency target.	Partially addressed	Ireland notified a higher ambition level to the Commission in its final NECP. Under the WAM scenario both final and primary energy consumption in 2030 are 14% lower in the final NECP and increased its estimated amount of energy savings by 2030. However, the ambition still remains low compared to the efforts at EU level. Ireland currently intends to deliver 5.2 Mtoe of energy savings over 2021-2030, as required under Article 7 of the Directive 2012/27/EU through a combination of an obligation scheme on energy suppliers and distributors and alternative policy measures. This is still subject to ongoing consultation. The estimated level of savings and the planned approach for meeting the savings obligation are provided in the voluntary guiding template under Directive 2012/27/EU. The voluntary guiding template has not been submitted yet.
	Support this with policies and measures that would deliver additional energy savings by 2030.	Fully addressed	Additional policies and measures are provided. The final NECP provides many measures related to buildings. The national development plan has indicated funding of EUR 4.5 billion for energy efficiency improvements across the residential and public sector. The long-term renovation strategy has not been submitted yet. Budget 2020 – announcement of ring-fenced revenue from increases in the carbon tax for climate action, including to fund energy efficiency in low income households and social housing.
	Express the final contribution as a specific value for both primary and final energy consumption.	Partially addressed	Ireland's further commitment for 2030 is set out in the climate action plan (2019) which will intensify effort and investment aiming for Ireland to deliver primary energy savings of 62 171 GWh by 2030. No value provided for final energy consumption.
	Detail the underlying methodology to estimate energy savings.	Not addressed	Underlying methodology used to estimate energy savings not clearly laid out in the NECP – figure taken from climate action plan 2019.

	An indication of required investments to implement energy efficiency policies is also needed.	Partially addressed	The national development plan has indicated that EUR 4.5 billion will be used in funding for energy efficiency improvements across the residential and public sector. No overall figure is provided however.
Energy security	(i) Specify the measures supporting the energy security objectives on diversification and reduction of energy dependency („)	Partially addressed	Ireland has specified key measures in the plan. A review is being carried out on the security of energy supply of Ireland's natural gas and electricity systems. The review is focused on the period to 2030 in the context of ensuring a sustainable pathway to 2050. Ireland is supporting efforts to increase indigenous renewable sources in the energy mix, including wind, solar and bioenergy. Ireland is facilitating infrastructure projects, including private sector commercial projects, which strengthen its security of supply and are in keeping with its overall climate and energy objectives. In light of uncertainties related to the UK's withdrawal from the EU, Ireland will work closely with its EU partners to maintain existing good regional cooperation between Ireland and the UK in relation to emergency preparedness and response. The National Cyber Security Council (NCSC), having due regard to the Commission recommendation, is working with providers of critical national infrastructure to improve the overall level of cybersecurity in the energy sector. Some measures are not clearly outlined in any detail or are still only partially developed.
	(ii) in particular in the gas and oil sector in light of uncertainties related to the withdrawal of the United Kingdom from the European Union.	Partially addressed	Ireland states that 'a review of the security of energy supply of Ireland's natural gas and electricity systems is being carried out. The focus of the review is the period to 2030 in the context of ensuring a sustainable pathway to 2050.' In terms of oil, 'The Department is currently developing the Oil Emergency Allocation Plan (OEAP) to enable the allocation of oil to ensure the continuation of societal functioning in a scenario where oil availability is limited.' Also, 'while the UK will no longer attend the EU's Oil Coordination Group, Ireland will continue to cooperate with the UK on matters of oil security through our joint membership of the International Energy Agency (IEA).'

Internal energy market	No recommendation		
Research innovation and competitiveness	Further elaborate on the national objectives and funding targets research, innovation and competitiveness, specifically related to the Energy Union, to be achieved between now and 2030, so that they are readily measurable and fit for purpose to support the implementation of targets in the other dimensions of the integrated national energy and climate plan.	Partially addressed	The plan identifies the challenge of increasing the level of investment in research and innovation to keep pace with its GNP growth rates. However, it does not set a specific target for 2030 and in general its objectives are not readily measurable, so it is unclear whether they are fit for purpose. The draft NECP stated that the government has adopted a research and development intensity target for Ireland of 2.5% of GNP, to be achieved by 2020. However the final NECP states that 'reaching the 2.5% of GNP intensity rate target presents a very significant challenge.' Instead the target is now 'to increase the level of investment in RDI to keep pace with GNP growth rates.' Ireland's national development plan launched four new 'Project Ireland 2040' funds, with EUR 4 billion over a ten-year period. One of the four, the 'Climate Action Fund', will be fully dedicated to activities relevant to Ireland's NECP. A detailed technology analysis (currently ongoing) will assist with the targeting of energy research & innovation investment prioritisation with a view of achieving targets in 2030 and 2050. **Competitiveness** is very important to Ireland, but it does not have measurable objectives. A future 'Jobs initiative' is being developed especially to support small and medium enterprises (SMEs). The North Seas Energy Cooperation and **the SET plan** (Irish research calls are aligned with its priorities) and IEA current collaborations are mentioned.
	Underpin such objectives with specific and adequate policies and measures, including those to be developed in cooperation with other Member States, such as the Strategic Energy Technology Plan.	Partially addressed	Some specific policies and measures provided e.g. Innovation 2020 = five-year strategy on research and development of science and technology Regarding the SET plans the NECP states: 'Through Ireland's active participation in Europe's SET-Plan Steering Group and within individual SET-Plan Implementation Groups, research calls are aligned with SET-Plan priorities. This enables better alignment

			of Irish research priorities with research and innovation programmes both at EU level and across other member states. This also increases co-operation between national programmes to avoid duplication of research.'
Investments and funding sources	No recommendation	n.a.	-
Regional cooperation	Build on the framework of the North Seas Energy Cooperation and the Clean Energy for EU Islands Initiative in order to deliver on the renewables target and ensure timely implementation of ongoing interconnection projects.	Fully addressed	Ireland has stated that it works together with the other North Seas Energy Cooperation countries on the possibilities to create concrete cooperation projects. Besides joint offshore wind projects that would be connected to and supported by several Member States, this includes the work on possible 'hybrid' solutions that would use cross-border solutions for connecting offshore wind farms to the grid and seek synergies with interconnection capacity between countries, and on the corresponding market arrangements.
	In light of the United Kingdom's decision to leave the European Union, provide for measures to ensure continued regional cooperation with the UK on emergency preparedness and response for electricity, and security of supply for gas and oil.	Fully addressed	Ireland states its intention for 'continued regional co-operation with the UK on emergency preparedness and response for electricity and gas security of supply.' The objective states that: 'Following the withdrawal of the United Kingdom from the EU, engage with our EU partners to put in place an EU/UK framework for continued necessary regional cooperation between Ireland and the UK on matters related to gas and electricity security of supply, including emergency preparedness and response and solidarity in an emergency situation.' It also states: 'while the UK will no longer attend the EU's Oil Coordination Group, Ireland will continue to cooperate with the UK on matters of oil security through our joint membership of the International Energy Agency (IEA).'
Energy subsidies	List all energy subsidies.	Largely addressed	In comparison with the draft plan, the quantitative figure on 'environmental subsidies and similar transfers' has been updated in the final plan according to figures from 2019. A qualitative description of the newly introduced support scheme for renewables has been included in the plan.

	List in particular fossil fuels subsidies.	Partially addressed	A quantitative list as well as a description of potentially environmentally damaging subsidies is included in the final plan. More categories, as well as a higher number of fossil fuel subsidies, have been identified in recent Commission analyses on energy subsidies.
	List actions and plans to phase out energy subsidies, in particular for fossil fuels	Partially addressed	Actions and plans are not fully developed at this stage. The plan states the commitment to model the impacts of removing fossil fuel subsidies both in terms of the economy and in terms of emissions.
Air quality	Present the impacts on air pollution	Largely addressed	Projections in Air Pollutant Emissions section provided could be clearer on which scenario they relate to. Qualitative impacts of planned NECP measures on air pollution and health has also been provided.
	For the various scenarios, providing underpinning information,	Largely addressed	The NECP includes a section presenting air quality context and priorities and states that Ireland's first National Clean Air Strategy is currently being developed and an updated version of the NAPCP is being prepared to reflect the policies and measures set out under Climate policy.
	and considering synergies and trade-off effects.	Largely addressed	Synergies and trade-offs between clean air and climate policies are presented: the NECP plans the phase-out of coal (by 2025) and peat (by 2028) used for electricity generation, which should have positive clean air impacts. Solid biomass use for heat generation is planned to increase in the additional measures scenario, which can raise concerns over air pollution. Several energy efficiency measures with positive air impacts are foreseen, in particular in the building and heating sectors.
Just transition and energy poverty	Integrate just and fair transition aspects better, notably by providing more details on social, employment and skills impacts of planned policies and measures.	Partially addressed	There are some consideration for a just transition e.g. 'A Just Transition Review Group will be established within the National Economic and Social Council (NESC) as part of its working group structures. Through this Group, NESC will review the ongoing transition and identify specific transition needs among cohorts of workers, enterprises, communities and specific groups of people.' However, aspects of a just transition are not integrated into policies and measures throughout and social, employment and skills impacts of policies are not often explicitly taken into account.

	The final plan should particularly address the impact of the transition on the populations living in carbon-intensive regions.	Fully addressed	Carbon-intensive regions are considered in the plan. Ireland indicates that the ending of peat harvesting in the Midlands will have significant implications for employment in the region and the government has been successful in having this region included in the Platform for Coal and Other Carbon-Intensive Regions in Transition, which supports regions affected by climate policy. Ireland indicates that the Just Transition Fund will be devoted to those priorities identified by local communities. It is anticipated that investment undertaken in energy efficiency will support over 400 environmentally sustainable jobs, with up to 100 more jobs through expanded peatlands rehabilitation. The carbon tax revenue will contribute towards achieving a just transition in the Midlands, through retraining and reskilling, bog restoration and housing improvements. Increases in the carbon tax will also help fund energy efficiency in low income households and social housing.
	Complement the approach to addressing energy poverty issues with indicative objectives for reducing energy poverty as required by the Regulation (EU) 2018/1999.	Partially addressed	Ireland states that between 2016 and 2019 the level of energy poverty dropped from 28% to 17.4%. However, Ireland has no objective to reduce energy poverty besides the target to 'Alleviate the burden of energy poverty on the most vulnerable in society through actions focused on improving the efficiency of homes.' Ireland states that the strategy is due to be reviewed in 2020 and new objectives will be set then, where appropriate.