



Council of the
European Union

068925/EU XXVI. GP
Eingelangt am 20/06/19

Brussels, 20 June 2019
(OR. en)

10525/19
ADD 1

ENER 375
CLIMA 178
COMPET 534
RECH 370
AGRI 327
ENV 637

COVER NOTE

From: Secretary-General of the European Commission,
signed by Mr Jordi AYET PUIGARNAU, Director

To: Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of
the European Union

No. Cion doc.: SWD(2019) 230 final

Subject: COMMISSION STAFF WORKING DOCUMENT Assessment of the draft
National Energy and Climate Plan of Ireland Accompanying the document
Commission Recommendation on the draft integrated National Energy and
Climate Plan of Ireland covering the period 2021-2030

Delegations will find attached document SWD(2019) 230 final.

Encl.: SWD(2019) 230 final



Brussels, 18.6.2019
SWD(2019) 230 final

COMMISSION STAFF WORKING DOCUMENT

Assessment of the draft National Energy and Climate Plan of Ireland

Accompanying the document

Commission Recommendation

**on the draft integrated National Energy and Climate Plan of Ireland covering the period
2021-2030**

{C(2019) 4407 final}

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1. SUMMARY

Main observations¹

- ✓ The Irish draft integrated National Energy and Climate Plan (NECP) builds on the existing national energy and climate policy framework documents, which aim to diversify and decarbonise Ireland's electricity generation sector, with the long-term objective of decarbonising the energy sector and achieving an economic transformation with a carbon neutral agriculture and land use sector by 2050. The draft NECP is structured according to the Governance Regulation², covers all Energy Union dimensions and includes a robust analytical basis, presenting several scenarios with existing and additional measures.
- ✓ Ireland's 2030 target for **greenhouse gas (GHG) emissions** not covered by the EU Emissions Trading System (non-ETS), is -30 % compared to 2005, as set in the Effort Sharing Regulation (ESR)³. With the transport, building and agriculture policies set out in the draft NECP Ireland projects to miss this target by at least 17.5 percentage points. The gap assumes full use of the flexibilities with the ETS and Land Use, Land Use Change and Forestry (LULUCF)⁴ sectors in the ESR⁵, which the draft plan considers as likely. Compliance with the **LULUCF** no-debit commitment is implicit in the intention to produce land credits and use the applicable flexibility.
- ✓ The lack of a clearly identified contribution to the 2030 **renewable energy** target among the four scenarios presented makes it difficult to assess the level of Ireland's ambition. The ambition levels range from 15.8 % to 27.7 %, and are below the share of 31 % in 2030 that results from the formula contained in Annex II of the Governance Regulation⁶. In addition to clarifying Ireland's contribution, the final plan would need to include an indicative trajectory that reaches all required reference points⁷. 15.8 % is also below Ireland's 2020 target of 16 %. The draft NECP includes a comprehensive list of policies

¹ In addition to the notified draft NECP this assessment also considers informal bilateral exchanges, which are part of the iterative process established under the Governance Regulation. It does not take into account the All of Government Climate Action Plan, to be adopted in 2019.

² 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.

³ 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.

⁴ Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework, and amending Regulation (EU) No 525/2013 and Decision No 529/2013/EU.

⁵ Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030.

⁶ Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.

⁷ Pursuant to Article 4(a)(2) of Regulation 2018/1999.

and measures which are not yet sufficiently quantified to allow for a complete assessment of their impact on Ireland's proposed contributions.

- ✓ Ireland has set a very low contribution for **energy efficiency** in 2030 for final energy consumption. Energy consumption is expected to grow compared to the 2020 energy efficiency target and the energy consumption level in 2017, which goes in the opposite direction of what is needed collectively by the EU. On the other hand, Ireland has proposed a comprehensive set of additional measures for energy efficiency which warrant being more detailed in terms of expected energy savings. Opportunities for growth and job creation are not yet fully exploited.
- ✓ The draft NECP contains a limited set of objectives and targets and policies and measures in the **energy security** dimension. The United Kingdom's expected withdrawal from the EU comes across as a key risk for Ireland but due to ongoing uncertainty, the exact impact on market functioning is not yet known. Additional measures could be needed to maintain security of supply and should be further specified in the final plan.
- ✓ Ireland has not indicated the **electricity interconnection** level it aims for in 2030, and once the UK withdraws from the European Union Ireland will have no direct electricity interconnection with the rest of the EU. The impact of the UK's withdrawal on the all-island Single Electricity Market and further market development and integration is not yet known. Ireland has a comprehensive **energy poverty** national plan, which should be accompanied in the final plan with concrete objectives, as required by the Governance Regulation⁸.
- ✓ Ireland has the ambition of becoming an "Energy Innovation Hub" and presents in the draft NECP existing research and innovation programmes. When it comes to the 2030 timeframe, the **research, innovation and competitiveness** dimension of the draft NECP does not yet provide sufficient clarity regarding specific objectives and a description of policies and measures.
- ✓ The National Development Plan 2018-2027 quantifies projected socio-economic infrastructure **investments** for the next decade, including about 0.7 % of current GDP per annum for climate action, including renewable energy, interconnections and energy efficiency. The final NECP would need to provide more detailed information on Ireland's investment needs in light of achieving the 2030 targets, especially as related to the planned policies and measures. This would fully take advantage of the role NECPs can play in providing clarity to investors and attracting additional investments in the clean energy transition.
- ✓ The draft plan refers to **regional cooperation** in the North Seas Energy Cooperation, and the importance for continued regional cooperation with the UK given its decision to withdraw from the EU.
- ✓ The projected use of peat and biomass would make air impacts important to consider. The final plan would also more generally benefit from complementing and quantifying the analysis of interactions with **air quality and air emissions** policy.
- ✓ The issue of a **socially just transition** to a climate neutral economy could be better integrated throughout by considering social and employment impacts, e.g. shifts in

⁸ Pursuant to Article 3.3(d) of Regulation 2018/1999.

sectors/industries and skills impacts, distributional effects and revenue recycling, especially in relation to the transition for carbon-intensive regions. The draft plan makes only general commitments on another enabler of the transition – the development of skills.

- ✓ A list of actions undertaken and planned to phase-out **energy subsidies**, in particular for fossil fuels, needs to be included in the final plan.
- ✓ When it comes to **good practice**, Ireland has developed a National Adaptation Framework (NAF) which specifies the national strategy for adaptation measures in different sectors and by local authorities in their administrative areas. Details are included in the draft NECP, and the over-arching objectives and actions are consistent between the NAF and the draft NECP.

Preparation and submission of the draft plan

Ireland notified its draft NECP to the European Commission on 21 December 2018. The policy framework for the draft NECP comprises the Energy White Paper, which aligns with the principles set out in the EU Energy Union strategy, the National Mitigation Plan and the National Development Plan 2018-2027. The draft NECP also refers to a new climate action plan, which was still under preparation at the time the draft NECP was notified. The Irish All of Government Climate Action Plan contents will constitute additional input for the finalisation of Ireland's NECP by the end of 2019.

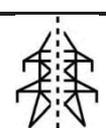
The Irish government has discussed the draft NECP with the Parliamentary Committee on Climate Action, the Climate Change Advisory Council and NGOs. An initial **public consultation** has also taken place. Ahead of the finalisation of the plan, further stakeholder and public consultations will take place, including through the National Dialogue on Climate Action. The newly established Climate Action Regional Offices as well as local authorities and Regional Assemblies will also be involved in the finalisation of the plan.

In preparing the draft NECP, Ireland has made use of the North Seas Energy Cooperation (NSEC) on such aspects as offshore wind development, electricity infrastructure and aggregation of national renewable energy trajectories for offshore wind until 2030. Ireland has also met with counterparts from Northern Ireland to discuss their input to the draft UK NECP and the preparation of Ireland's draft NECP. During the finalisation of the plan, Ireland will engage in additional **regional cooperation**.

Overview of the key objectives, targets and contributions

The following table presents an overview of Ireland's objectives, targets and contributions under the Governance Regulation⁹:

⁹ Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.

	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) (%)	-6	-20	-30	As in ESR
	National target/contribution for renewable energy: Share of energy from renewable sources in gross final consumption of energy (%)	10.7	16	15.8 to 27.7	Below 31 % (result of RES formula)
	National contribution for energy efficiency: Primary energy consumption (Mtoe) Final energy consumption (Mtoe)	14.4 11.8	13.9 11.7	15.9 13.0	Very low Very low
	Level of electricity interconnectivity (%)	7.4 ¹⁰	18	Not provided	N/A

Sources: EU Commission, ENERGY STATISTICS, Energy datasheets: EU28 countries; SWD(2018)453; European Semester by country¹¹; COM/2017/718; Irish draft NECP.

2. ASSESSMENT OF THE AMBITION OF OBJECTIVES, TARGETS AND CONTRIBUTIONS AND ADEQUACY OF SUPPORTING POLICIES AND MEASURES

Dimension decarbonisation

Greenhouse gas emissions and removals

Ireland's binding national 2030 target under the Effort Sharing Regulation (ESR)¹² for **greenhouse gas emissions** in the sectors not covered by the EU Emission Trading System (ETS) is -30 % compared to 2005. The draft NECP also refers to a long-term objective of aggregate reduction of at least 80 % (compared to 1990 levels) in energy-related CO₂ emissions and carbon neutrality in agriculture and land use sectors, while maintaining capacity for sustainable food production.

According to the draft NECP Ireland is likely to use the flexibilities under the ESR¹³. This would allow it to annually transfer allowances of up to 4 % of its 2005 ESR emissions from the EU ETS to achieve its ESR target, plus an additional annual 5.6 % of 2005 emissions attributable to

¹⁰ Level indicated in the Irish draft NECP.

¹¹ https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/european-semester-your-country_en.

¹² Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions.

¹³ Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions.

flexibility through sustainable land use, land use change and forestry (LULUCF). If fully applied these flexibilities would reduce the effort needed in effort sharing sectors to 20.4 % reduction.

However, even with these flexibilities fully used, Ireland will fall short of meeting its non-ETS target in 2030 under the projections provided for the scenarios with existing measures (WEM) and with additional measures (WAM). In the most favourable scenario¹⁴, effort sharing sector emissions in 2030 are projected to be only 12.5 % below 2005, while in the least favourable scenario¹⁵, effort sharing sector emissions would increase by 2.9 % in the same period. The cumulative total limit in the period 2021-2030 is also exceeded in all scenarios (by 42 Mt CO₂eq in the best scenario case). The draft plan recognises that further additional policies need to be developed.

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 ESR¹⁶. With respect to the National Forestry Accounting Plan including the national Forest Reference Level, submitted by Ireland as required by Article 8(3) of the LULUCF Regulation¹⁷, the Commission has put forward minor technical recommendations requesting action on a limited number of issues, detailed in SWD (2019) 213. Afforestation is forecast to contribute 22 Mt CO₂ accounted sink with a further 4.8 Mt CO₂ accounted sink to come from increased soil carbon in cropland and grassland over the period 2021-2030, i.e., fulfilling the maximum flexibility permitted under Article 7 of the ESR¹⁸. However, the draft plan only partly explains how this amount of LULUCF credits would be achieved.

In addition to policies to reduce CO₂ emissions and increase CO₂ sinks, there are also a number of policies and measures in place to address non-CO₂ emissions in the **agriculture sector**. This is the biggest effort sharing sector, with a share of more than 40 % of effort sharing emissions. The final plan would benefit from a more detailed list and description of the main concrete mitigation actions considered for reducing greenhouse gas emissions in the agriculture sector.

Policies and measures supporting the decarbonisation of the **transport** sector beyond the increased use of renewable fuels include the phasing out petrol and diesel passenger cars by 2030 and targeting 500,000 electric vehicles by 2030, with additional charging infrastructure to cater for the planned growth. The final NECP would benefit from including considerations of a suitable regulatory framework to facilitate the necessary investment as well as indicative milestones for the roll-out, including clear timetables for the implementation of different measures.

The draft plan also describes measures to improve energy efficiency in **buildings**, which it highlights as a key sector for decarbonisation, but it is not clear how the measures have been considered in the scenarios with existing measures (WEM) and with additional measures (WAM) for greenhouse gas emission projections.

¹⁴ WAM-high oil prices.

¹⁵ WEM-low oil prices.

¹⁶ Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030.

¹⁷ Regulation (EU) 2018/841 on greenhouse gas emissions and removals from land use, land use change and forestry.

¹⁸ 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 draft plan, including the preparation of sectoral adaptation plans by seven Government departments for 12 key sectors, and increasing awareness around climate adaptation and resilience.

Renewable energy

The draft NECP does not indicate a national contribution to the EU **renewable energy** target for 2030. Instead, it presents four scenarios: two WEM and two WAM, each with a high or low oil price variant. The ambition levels range from 15.8 % to 27.7 %, all of which are below the share of 31 % in 2030 that results from the formula in Annex II of the Governance Regulation¹⁹, 15.8 % is also below Ireland's 2020 target of 16 %. Regarding sectoral targets, the WAM scenarios aim at 55 % of renewable energy in **electricity** being achieved in 2030.

The scenarios are detailed and provide yearly overall renewable energy contribution trajectories, up to 2030 and projections for 2040. The **overall renewable energy trajectories** take into account the projected shortfall to the 2020 target and give an indication of the effort required to catch up, without explicitly indicating whether Ireland intends to close this gap through statistical transfers. The indicative trajectories put forward are not in line with the reference points of 18 % by 2022, 43 % by 2025 and 65 % by 2027²⁰.

Annual trajectories for the **electricity, transport and heating and cooling sectors** are also provided, including renewable technologies, as well as yearly trajectories until 2030 for bioenergy. While these provide an overview of the overall trends, absolute values for the sectoral trajectories (in ktoe) would be necessary to clarify the relationship to consumption levels and energy efficiency targets. The expected year-on-year reductions of the share of renewable electricity, in particular in the WEM scenarios between 2022-2026 would also merit further explanation.

The draft NECP does not refer to the indicative **heating and cooling** annual renewable target but one of the WAM scenarios exceeds it while the other one shows a ramping up that leads up to an annual increase of 1.3 percentage points over 2026-2030. The role of waste heat and cold is not clear.

While the draft plan includes a breakdown of the contributing technologies in the **transport** sector, the trajectories indicated do not include multipliers and therefore do not allow to assess them against the targets. In this regard, the final plan needs to put forward the renewable energy in transport calculation according to the requirements set out in the recast of the Renewable Energy Directive²¹. In addition, the discrepancy between the renewable energy share in transport indicated in the draft NECP and the one indicated in Annex I part 2 needs to be clarified.

The draft NECP provides a comprehensive overview of policies and measures in all renewable energy sectors. In the **electricity sector**, the draft NECP indicates that the planned new Renewable Electricity Support Scheme (RESS), which should, subject to State Aid approval, become the main support instrument for renewable energy, is currently being developed and

¹⁹ Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.

²⁰ Pursuant to Article 4(a)(2) of Regulation 2018/1999.

²¹ Article 25-28 of Directive 2009/28/EC of the European Parliament and of the Council of 19 May 2009 on the promotion of the use of energy from renewable.

should start operating in 2019. In addition to assisting Ireland in meeting its contribution to the EU 2030 target, it also aims at supporting community ownership of and participation in renewable electricity projects. However, limited information has been provided on how this scheme will aid in the fulfillment of Ireland's overall renewable energy contribution once this is defined. While the RESS addresses some of uncertainty around the future of support schemes in Ireland, more details on such aspects as a clear calendar or expected volumes of auctions would be key for providing investment certainty. Similarly, the details of the new grant pilot scheme to support micro photovoltaic generation would also need to be clarified.

In the **heating and cooling sector**, the draft NECP provides a clear overview of the new Support Scheme for Renewable Heat (SSRH) which should become an important driver for renewable energy in this sector, including district heating. Clarifying its contribution towards the indicative 1.3 and 1.1 percentage points increase for the overall and district renewable energy in heating and cooling would benefit the final plan.

When it comes to **transport**, the draft NECP complements the set of measures described for the decarbonisation of the sector with an overview of the biofuels obligation and the plans for increasing it further after 2020. Together with the SSRH, the biofuels obligation scheme should stimulate demand for biofuels and biomass.

As regards the enabling framework for renewable energy communities and self-consumption, the final plan is an opportunity to present more detailed measures.

Dimension energy efficiency

Since Ireland has not provided a single value for its national contribution for energy efficiency, the assessment of Ireland's ambition is done on the basis of the two scenarios which follow the international fuel and EU ETS carbon price assumptions recommended by the Commission – with additional measures (**WAM 2**) with high oil prices, compared to with existing measures (WEM 1) with high oil prices²².

Primary energy consumption in 2030 is projected to reach **15.9 Mtoe** in WAM 2 scenario compared to 17.4 Mtoe in WEM 1 (the baseline scenario with existing measures). This represents a 14.6 % increase compared to the 2020 target (13.9 Mtoe), and 10.5 % increase compared to the energy consumption level in 2017²³. Primary energy consumption in WAM 2 is 8.6 % lower than in WEM 1. As for **final energy consumption**, it is also expected to increase in 2030 if compared to the 2020 target (by 11.5 %) and if compared to the latest consumption level in 2017 (by 10.9 %). Final energy consumption in WAM 2 is 3 % lower than in WEM 1.

Overall, taking into account both options provided in the draft plan, Ireland has set an unambitious contribution, which goes in the opposite direction to what is required at EU level to collectively reach the Union's 2030 energy efficiency targets for both primary and final energy consumption. The draft NECP also recognises the shortfall to the 2020 target of approximately 3.77 %, which would require additional measures.

²² The underlying parameters of all 4 scenarios are given in Annex I, Part 2 template, submitted together with the draft NECP.

²³ Source: Eurostat

Ireland has provided projections for **total primary energy demand** in the context of the development of other macro-economic indicators for each of the four draft NECP scenarios²⁴. In all scenarios, population is expected to grow by 8.4 % in 2030 compared to 2020, and in WAM 2 GDP is projected to grow by 30 % in 2030 compared to 2020, which could explain the projected increase of energy demand in the industry and services sectors in the next decade. However, such macro-economic parameters are higher than the ones recommended by the Commission to ensure consistency between the national contributions and the EU28 collective goals (both historical data and projections).

Ireland plans to contribute to its decarbonisation goal by supporting the penetration of **heat pumps**, which would also enhance the efficiency of heating installations. Beyond 2021, Ireland estimates a technical potential to save energy up to 16,000 GWh in the period towards 2030 (without indicating what baseline it refers to), and for comparison the WAM 2 scenario contains projected savings of 39,377 GWh for 2030. This would require a comprehensive set of more expensive measures such as deep retrofits, but it remains unclear how this has been taken into account in the WAM scenarios.

Ireland has proposed in its draft NECP a comprehensive set of **policies and measures** for energy efficiency, even though energy demand is set to increase. The Energy Efficiency Obligation Scheme (EEOS) is expected to deliver the largest share of savings of 8,589 GWh²⁵ by 2030, followed by the investment scheme on energy efficiency in buildings. A number of new measures are listed with the expected impact provided for most of them²⁶. In addition, clarification of how the measures listed contribute to the achievement of the savings obligation under Article 7 of the Energy Efficiency Directive²⁷ would be necessary.

Ireland pledges in its draft plan that a new Public Sector Energy Strategy focusing on 2030 will be developed during 2019 (published in 2020) which will set a new target for the public sector for 2030.

Ireland included only general information related to policies and measures for buildings that could be implemented as part of its long-term renovation strategy.

The plan is focused on support to alternative powertrains in road transport. It would benefit from covering measures that address similarly the better organisation of the transport system and hence address energy efficiency of transport, including incentives for modal shift, multimodality, intelligent transport systems and investments in public transport infrastructure.

Overall, on the basis of the information provided, it is difficult to judge the effect of the planned policies and measures on the ambition level of the 2030 contributions.

²⁴ Described in Annex I, Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.

²⁵ The unit is not specified in the Annex 2 on policies and measures, Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action; GWh is therefore assumed.

²⁶ See Annex 2 (voluntary policies and measures template), Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.

²⁷ 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.

Dimension energy security

Ireland's key energy security issues stem from its peripheral location, the uncertainty associated with the UK's decision to leave the European Union as well as Ireland's changing energy mix. The draft NECP explains that Ireland intends to cease using coal for electricity generation by 2025, as well as ceasing to harvest peat for electricity generation before 2030. At the same time, the draft plan indicates that the role of gas in the energy mix could increase for heat, transport and electricity, including as a back-up for intermittent generation sources. Currently Ireland relies on natural gas for approximately 50 % of its electricity generation.

With the opening of the domestic Corrib gas field, Ireland's overall import dependency fell from 95 % in 2015 to 73 % in 2017, and in the same year natural gas represented the largest indigenous energy source (58.7 % of total domestic production). Once the field is depleted²⁸, Ireland will once again be almost fully reliant on imports from the UK to meet its gas demand. Ireland also depends on its connection to the UK to meet the gas security of supply standard.

The draft NECP includes qualitative **objectives** such as improving source and route diversification for both electricity and gas, increasing indigenous production of clean energy sources, ensuring close cooperation at EU and regional level, and examining the potential role of Carbon Capture and Storage (CCS) in facilitating the high level of natural gas in the energy mix. Similarly worded policies and measures have also been provided. Nevertheless, the scope of the changes and challenges Ireland is facing raises questions regarding the sufficiency of the proposed objectives and measures.

For instance, a clearly defined target for renewable energy would help quantifying the objective on increasing indigenous production. This, along with the energy efficiency contribution would serve to reduce the overall consumption and import dependency, to some extent offsetting the diversification challenge once the planned closures of coal and peat plants take place between now and 2030. While the draft NECP lists the further development of interconnectors, e.g. via Projects of Common Interest (PCIs), as a relevant remedial measure, it would benefit from indications on other approaches considered for improving the flexibility of the electricity system, for instance electricity storage or demand response.

Regarding gas, the current cooperation between the UK and Ireland is very good, but it is unclear if additional measures will be needed once the UK has withdrawn from the EU. While the draft NECP includes an objective of gas supply and route diversification, pointing to the possibility of exploring the potential role of liquefied natural gas (LNG) and gas storage, more concrete and quantifiable measures would need to be provided in the final plan.

When it comes to oil, Ireland has no domestic production and therefore relies on coordination with the UK and other European neighbours. It is unclear if additional measures will be needed to continue this cooperation once the UK has withdrawn from the EU.

Dimension internal energy market

Currently Ireland only has electricity interconnection with the UK, with a level of 7.4 %. Once the UK has withdrawn, Ireland will have no direct electricity interconnection with the rest of the

²⁸ The draft NECP projects a lifetime of 15 years for the field, with the high level of production expected to taper off significantly in the next couple of years.

EU, until the completion of the Celtic Interconnector between Ireland and France, expected in 2025.

Ireland's National Policy Statement on Electricity Interconnection²⁹ which the draft NECP refers to, states that according to a 2009 study, Ireland's transmission network "could safely absorb a level of renewable production generation of up to 42 % of total electricity generated without affecting security of supply," while higher levels would require significant additional interconnection or energy storage. Furthermore, according to recent scenario planning by the Irish transmission system operator (TSO), Ireland requires 500-1950 MW of interconnection by 2030, depending on the level of its renewable energy ambitions.

The draft NECP includes very few concrete **objectives on market integration**, which could be partially explained by the uncertainty associated with the UK leaving the EU. For example, Ireland has stated the objective of remaining coupled with other EU electricity markets to as great an extent as possible as well as maintaining the trading arrangements in the Single Electricity Market (SEM) on the island of Ireland. It is not yet clear how this will be ensured.

When it comes to ensuring **electricity system adequacy and flexibility**, the draft NECP mentions the Delivering a Secure, Sustainable Electricity System (DS3) work stream programme, which is designed to ensure that the TSO can securely operate the system incorporating increasing amounts of variable renewable generation. This is a welcome inclusion in the draft NECP, and more information could be provided on the background, objectives and challenges. It would also be important to better understand how the procurement works for these system services, as well as whether or not they are being competitively tendered, including the respective timeline.

Ireland has a comprehensive **energy poverty** national plan with a number of measures in place to support the energy poor consumers including through energy efficiency measures and targeted financial support. Nevertheless, the draft NECP does not refer to concrete energy poverty objectives, and it is not clear if a dedicated assessment of energy poverty as required by the Governance Regulation³⁰ has been carried out. This assessment, which is expected to build on existing social policy and other relevant policies, could serve as an indication of what specific objectives would be warranted in the final plan.

Dimension research, innovation and competitiveness

The draft NECP states Ireland's ambition of becoming an "Energy Innovation Hub" and presents an overview of existing **research and innovation** programmes and their areas of attention. The Energy Research Strategy, published in 2016, identifies key tasks for the Irish energy research system, of which a noteworthy example is investigating and addressing the "various technological and behavioural barriers to the uptake of new energy efficient and low carbon technologies."

The final NECP would benefit from clarifying how the various research and innovation programmes presented add up to form a consistent research and innovation strategy, as well as

²⁹ <https://www.dcae.gov.ie/en-ie/energy/publications/Pages/National-Policy-Statement-on-Electricity-Interconnection.aspx>.

³⁰ Pursuant to Article 3.3(d) of Regulation 2018/1999.

providing clear objectives and targets to be achieved by 2030. In particular, given that Ireland deems Carbon Capture and Storage (CCS) the most promising technology available to decarbonise the electricity generation sector, more information could be provided in the final plan on any potential next steps following the CCS feasibility study and the 5 year CCS review process.

An **overall target** for **research and development** intensity has been provided in the draft plan, but it is not clear how much of this is related to the Energy Union. It is also not clear what the target is for public funding by 2030, even though the draft NECP states that there is an intention to significantly increase the amount of public funding invested in energy research and development.

Similarly, a description of various cooperation fora is provided. The policies and measures stemming from them and how they contribute to achieving research and innovation objectives by 2030 would need to be better explained.

As regards the **Strategic Energy Technology (SET) Plan**, while Ireland is leading two SET Plan actions, the draft NECP does not include figures and concrete information on how the targets set in the respective Implementation Plans are aligned with the national energy and climate targets for the period 2021-2030.

When it comes to financing measures, a generic description of existing government programmes is provided. The final plan would need to explain how they aim to contribute to achieving the 2030 objectives.

The NECP would benefit from presenting a comprehensive analysis on where the low-carbon technologies sector, including for decarbonising energy and carbon-intensive industrial sectors, is currently positioned in the global market, highlighting areas of competitive strengths and potential challenges. Measurable objectives for the future should be defined on that basis, together with policies and measures to achieve them, making appropriate links to enterprise and industrial policy.

3. COHERENCE, POLICY INTERACTIONS AND INVESTMENTS

The draft NECP contains concrete, well-developed examples of interactions between the decarbonisation and energy efficiency dimensions. On the other hand, it overlooks interactions with the air quality, biodiversity and circular economy policies.

A noteworthy statement reveals that electricity savings, which additional policies could deliver, would be outweighed by the expected growth in electricity demand arising from increased economic activity and data centre demand in particular. This would merit further consideration in the final NECP, also in relation to the National Digital Strategy that Ireland is currently developing.

The draft NECP states that Ireland will cease using coal for electricity generation by 2025, which will have a positive impact on greenhouse gas emission reduction. At the same time, the impact on the electricity system generation adequacy and security of supply would also need to be assessed, taking into account Ireland's ambition level for renewable energy and corresponding need for flexibility.

Climate change impacts are not mentioned as risks in the energy security dimension, although Ireland's National Adaptation Plan includes measures for the energy sector. The final plan would also need to explain how the very significant increase in biomass use for energy will be combined with the policy on land and forestry, which relies upon increasing removals, and how it will impact air quality.

The final plan would also benefit from consideration of **circular economy and biodiversity**, referring to national strategies and action plans and raising their benefits and potential trade-offs in terms of greenhouse gas emission reduction and adaptation. The impact of the land use and forestry policies described in the draft plan on biodiversity could be further elaborated.

The issue of a **socially just transition** to a climate neutral economy could be better integrated throughout by considering social and employment impacts, e.g. shifts in sectors/industries and skills impacts, distributional effects (and energy poverty) and revenue recycling. The draft plan makes only general commitments on another enabler of the transition – the development of skills. On renewable energy in particular, the draft plan only indicates that specific measures on training will be considered in 2019.

When it comes to the energy efficiency first principle, the draft NECP includes footnotes, stating that policies and measures regarding energy security and the internal energy market shall reflect the principle, but other than that does not elaborate how it has been taken into account. The final NECP would benefit from a clarification of whether energy efficiency requirements are set as criteria for renewables support eligibility in the electricity sector, heating and cooling sector or other areas.

The draft NECP refers to the investment priorities of EUR 21.8 billion for climate action for the 2018-2027 period (i.e. about 0.7 % of current GDP per annum over the next decade), as set out in the National Development Plan (NDP). More than half of this (EUR 13.7 billion) is planned investment in the energy system (renewable energy, interconnections), and support for energy efficiency and housing retrofit should account for half of the government budget funding (EUR 3.8 billion). The overall level of investment in socio-economic infrastructure projected under the NDP amounts to EUR 115.9 billion (or about 3.6 % of current GDP per annum), of which EUR 8.6 billion (i.e. about 0.3 % of current GDP per annum) are allocated to sustainable mobility. EUR 7.6 billion of the total EUR 21.8 billion investment for climate action are expected to come from the government budget, with the remaining investment made by Ireland's semi-state companies and the private sector. The NDP also includes a commitment to establish a new EUR 500 million Climate Action Fund to leverage public and private investment. The final plan could elaborate on how these investment needs were assessed and how they are related to the planned policies and measures, in addition to specifying how Ireland expects to attract private sector investment.

It is positively noted that the draft NECP draws a link between the 55 % renewable energy target in the scenarios with additional measures (WAM) and the need to invest in the electricity grid to accommodate this level of variable generation. Complementing these considerations with concrete figures would strengthen the final plan. Investments needed to complete the two planned electricity interconnectors have been included in the draft NECP, as well as considerations of risk factors.

Links with the European Semester

Identifying financing needs and securing the necessary funding will be key to deliver on energy and climate objectives. The Commission had addressed that question as part of the 2019 European Semester process. Based on the 2019 Country Report for Ireland, published on 27 February 2019³¹, the European Commission's recommendation for a Council recommendation for Ireland issued on 5 June 2019³², in the context of the European Semester, highlights in particular the need to invest in 'low carbon and energy transition, the reduction of greenhouse gas emissions, sustainable transport'. When preparing its overview of investment needs and related sources of finance for the final plan, Ireland should take into account these recommendations and links to the European Semester.

The draft plan includes relevant information on **energy subsidies**, including fossil fuels. Based on internationally used definitions, energy subsidies were also identified in Ireland in the European Commission report on Energy Prices and Costs in Europe³³. It would also be important that national policies, timelines and measures planned to phase out energy subsidies, in particular fossil fuel subsidies, are included in the final plan.

4. REGIONAL COOPERATION

The UK's decision to leave the EU is the key issue with cross-border relevance for Ireland. While the exact impact is not yet known, Ireland has flagged in its draft NECP the importance of continued regional cooperation with the UK on emergency preparedness and response for electricity and gas security of supply.

Furthermore, the draft NECP refers to the North Seas Energy Cooperation (NSEC) where continued cooperation would be highly beneficial for further cost-effective deployment of offshore wind capacity and interconnection in the North Seas region. This would contribute to meeting the Energy Union objectives of decarbonisation, market integration and ensuring security of supply.

The draft NECP also states that Ireland's linkages to e.g. Horizon 2020 and SET Plan will assist it in effectively responding to the impact of the UK's withdrawal from the EU on Irish competitiveness.

In May 2017, the Clean Energy for EU Islands Initiative was launched, aiming at accelerating the clean energy transition by helping islands reduce their dependency on energy imports and making better use of locally available renewable energy sources. It also provides a forum for exchange of best practices and aims to promote modern and innovative energy systems and reduce greenhouse gas emissions on islands. Although Ireland is a signatory to the political declaration for this initiative, it has not mentioned this in the draft NECP. Ireland could consider doing so in its final plan, and enhance cooperation with other Member States and island regions.

³¹ Commission SWD(2019) 1006 final.

³² COM(2019) 507 final.

³³ Commission Staff Working Document Accompanying the Document Report from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Energy prices and costs in Europe, COM(2019) 1.

5. COMPLETENESS OF THE DRAFT PLAN

Information provided

The structure of Annex I of the Governance Regulation³⁴ has been followed and voluntary templates, including on policies and measures, have been provided.

The **decarbonisation dimension** of the draft NECP is mostly complete with respect to the required information. On **greenhouse gases**, the draft plan does not present the estimate for the trajectory for 2021-2030 with quantified annual limits under the Effort Sharing Regulation³⁵, although it is used to calculate the gap to projected emissions over the period.

The main shortcoming regarding **renewable energy** is the absence of a clearly identified national contribution to the 2030 EU target. The draft NECP presents four scenarios, each of which includes yearly trajectories for renewable electricity, heating and cooling and transport, for each renewable energy technology and for types of bioenergy. For forest biomass, an assessment of its source and impact on the LULUCF sink is yet to be provided.

Planned capacities are generally described but are not split between new capacities and repowering. The comprehensive list of policies and measures presented could be further improved by more systematically including indications of the expected impact. The final plan also needs to take into account the latest developments of the main renewable energy support schemes that are being currently rolled out, as well as the All of Government Climate Action Plan, in order to provide investment certainty.

It is well noted that additional information on the specific measures to introduce one or more contact points, streamline administrative procedures, provide information and training, and facilitate the uptake of power purchase agreements (PPAs) will be provided in the final plan.

Similarly, due to four scenarios being provided without specifying the national contribution for 2030, the draft NECP is incomplete regarding **energy efficiency**. Apart from clearly indicating Ireland's contribution for 2030, the final plan would need to clarify the methodological approach taken in setting the contribution. The draft plan includes the expected impact of most measures, but the methodology for how the savings have been calculated is yet to be provided. The draft NECP also includes a provisional calculation of the amount of energy savings to be achieved for the 2021-2030 period (60,500 GWh, converted to 5.2 Mtoe) under Article 7(1)(b) which is in line with the Energy Efficiency Directive³⁶. On the other hand, the total floor area to be renovated or energy savings to be achieved by 2030 under Article 5 of the Energy Efficiency Directive³⁷ are not provided.

In relation to the energy performance of buildings, only cost-optimal requirements for the residential sector are available. The draft NECP includes general information related to policies

³⁴ Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.

³⁵ Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030.

³⁶ 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.

³⁷ 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

and measures for buildings that could be implemented as part of a long-term renovation strategy, however the compulsory elements have not yet been provided and would need to be included in the final plan.

While the **energy security** dimension includes a description of objectives and corresponding measures, in light of Ireland's renewable energy ambition, more information would be needed in the final plan on ensuring the future electricity generation adequacy, including the role of demand response and storage. For gas, references are needed to existing preventive action and emergency plans, as well as information on measures to meet the security of supply standards. The final plan could also address topics becoming more relevant for energy security in a 2030 perspective, such as cybersecurity.

When it comes to the **internal market** dimension, Ireland has not indicated the interconnection level it aims for in 2030. Some information has been provided on the functioning of the national retail and wholesale gas and electricity markets. For a full assessment, additional core quantitative parameters would be needed, as well as clear objectives and verifiable policies and measures. Additional information on the aspects concerning market integration is required, in particular on system flexibility, as well as objectives for energy poverty.

The draft NECP includes a description of the main priority areas for **research, innovation and competitiveness**, without providing concrete measurable objectives to be achieved by 2030, deployment objectives for the post-2030 period, or associated funding targets. The final plan would need to specify them, as well as putting forward policies and measures for meeting the objectives and targets. Cooperation with other Member States as well as financing measures also need to be addressed.

Robustness of the Irish draft National Energy and Climate Plan

All of the required elements of the **analytical basis** are present in the draft plan. It reports projections both with existing measures (WEM) and with additional measures (WAM), using the voluntary templates. Some of the sources or tables and graphs can be inferred from the text. They include data provided by the International Energy Agency, Eurostat and national sources.

The **WEM** and **WAM** projections cover the five dimensions of the Energy Union, and the relevant variables have been reported. Additional information would be desirable on (i) non-greenhouse gas air pollutants, (ii) energy-related investment needs. The draft NECP indeed omits entirely the required information about the projected air pollutants emissions under the planned policies and measures.

All key parameters have been provided, including information on data sources. Models and tools are mentioned in the document and references. The **transparency** of the final plan could be further improved by providing more details on the modelling approach and on the following parameters: (i) the number of passenger kilometres for all modes, (ii) technology cost projections and (iii) heating degree-days.

Most of the required elements of the **impact assessment** have also been included. The voluntary template attributes most of the policies and measures to the WEM or WAM scenario and provides information on the quantitative impact of some measures. The impacts of planned policies and measures on other Member States are also addressed. The final plan should

complete the assessment of macroeconomic and, to the extent feasible, the health, environmental, employment and education, skills and social impacts, including just transition aspects.

The model based projections are largely robust. Both the macro-economic and the energy system modelling include sensitivity analyses based on different fuel price trajectories, one of which follows the international fuel and EU ETS carbon price assumptions recommended by the Commission. Key model parameters are in line with EUROSTAT figures with the exception of gross domestic product.