



Council of the
European Union

068972/EU XXVI. GP
Eingelangt am 20/06/19

Brussels, 20 June 2019
(OR. en)

10517/19
ADD 1

ENER 369
CLIMA 172
COMPET 528
RECH 364
AGRI 321
ENV 630

COVER NOTE

From:	Secretary-General of the European Commission, signed by Mr Jordi AYET PUIGARNAU, Director
date of receipt:	20 June 2019
To:	Mr Jeppe TRANHOLM-MIKKELSEN, Secretary-General of the Council of the European Union
No. Cion doc.:	SWD(2019) 211 final
Subject:	COMMISSION STAFF WORKING DOCUMENT Assessment of the draft National Energy and Climate Plan of Belgium Accompanying the document Commission Recommendation on the draft integrated National Energy and Climate Plan of Belgium covering the period 2021-2030

Delegations will find attached document SWD(2019) 211 final.

Encl.: SWD(2019) 211 final



Brussels, 18.6.2019
SWD(2019) 211 final

COMMISSION STAFF WORKING DOCUMENT

Assessment of the draft National Energy and Climate Plan of Belgium

Accompanying the document

Commission Recommendation

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

{C(2019) 4401 final}

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1. SUMMARY

Main observations¹

- ✓ Belgium is a federal state, where the decision-making power is shared between a Federal government, three Regions (Wallonia, Flanders and the Brussels Capital Region) and three Communities (the Flemish, the French and the German-speaking Community). This division of competence is reflected in the Belgian draft integrated National Energy and Climate Plan (NECP), to which additional plans from the federated entities were annexed for further information. The draft NECP covers all five dimensions of the Energy Union, but the information provided for each dimension varies in length and in detail. Notably, Belgium has reported clear national contributions for 2030 for GHG emissions reduction, energy efficiency (final and primary energy consumption), and renewable energy.
- ✓ Belgium's 2030 target for **greenhouse gas (GHG) emissions** not covered by the EU Emissions Trading System (non-ETS), is -35 % compared to 2005, as set in the Effort Sharing Regulation (ESR)². Adopted policies would lead to 13% reductions and the draft NECP aims at achieving the -35 % target domestically. The final plan would therefore benefit from additional information on the scope, timing and the expected impacts of policies and measures needed, notably in the building and transport sectors, as well as on the intended use of the flexibility with the ETS.
- ✓ The draft NECP expects the **Land Use, Land Use Change and Forestry (LULUCF) sector** to remain a net sink over the period up to 2030. However, the plan would gain in clarity if it included estimates on how many net credits are expected to be generated, applying the accounting rules set out in Regulation (EU) 2018/841. The draft NECP also does not provide quantifiable information nor projections for specific policies and measures related to agriculture, and LULUCF.
- ✓ Belgium proposes an 18.3 % share of energy from renewable sources in gross final consumption of energy in 2030 as contribution to the EU **renewable energy** target for 2030. This level of ambition is significantly below the share of 25 % by 2030 that results from the formula in Annex II of the Governance Regulation, a situation which would also require in the final plan an indicative trajectory that reaches all reference points³ in accordance with the national contribution in the final plan. The final plan would benefit from elaborating further on the policies and measures allowing the achievement of the contribution and on other relevant sectoral measures.
- ✓ For **energy efficiency**, the 2030 national contribution is set on the basis of the projections of the scenario with additional measures at a level of 39 Mtoe in primary energy consumption and 33.1 Mtoe in final energy consumption in 2030. This can be seen as a low level of ambition.
- ✓ Regarding **energy security**, due attention is given to the increasing dependence on gas, renewable energy and energy imports in light of the nuclear phase out. Further information is provided in relation to reinforcing diversification and system flexibility and reducing

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.

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

import dependency. This could be explained in more detail, along with setting clear and measurable objectives and accompanying measures.

- ✓ In relation to the **internal market**, Belgium will have already surpassed the electricity **interconnection level** for 2030, with a level of electricity interconnectivity of 21 % in 2020. Nonetheless, the plan would benefit from including a concrete aim for 2030. Further concrete and quantifiable objectives could be identified to the other aspects of the dimension, providing detailed information on the strategy that will be taken towards 2030. The final plan should also provide additional details on existing and potential measures related to **energy poverty**, the energy-poverty plans and their expected impact, while at the same time completing the analysis on energy poverty as required in the Governance Regulation.
- ✓ **On research, innovation and competitiveness**, the plan provides a clear overview of the extensive research and innovation architecture in Belgium, but more attention could be given to the desired outcome of all these efforts by setting clear and measurable objectives for 2030. The draft NECP would moreover benefit from presenting a comprehensive overview on competitiveness, in particular for the low-carbon technologies sector, including also for energy-intensive industries.
- ✓ The draft plan provides information on **investment needs**, which remains however mainly qualitative and focused on a particular sector or measure. The final NECP would benefit from a comprehensive assessment of overall investment needs to achieve the objectives, as well as information on the national, regional and Union financial sources to be mobilised. This would take full advantage of the role NECPs can play in providing clarity to investors and attracting additional investments in the clean energy transition. The draft NECP does not yet contain an **impact assessment** of planned policies and measures, which is needed in the final plan.
- ✓ The division of competence between the different federated entities in Belgium presents a challenge to arrive at an integrated NECP. When proceeding to the finalisation of the NECP, additional coordination efforts will be needed to present an integrated national vision on how to achieve the objectives of the Energy Union towards 2030, while ensuring overall consistency and coherence with the federal and regional plans. The Inter-federal Energy Pact represents a step in the right direction in presenting a common vision that should be more consistently reflected in the draft NECP. The final NECP will need to contain all elements required by the Governance Regulation, including all information to assess the proposed ambition levels and the adequacy of policies and measures in achieving them. A general reference to annexed plans is not sufficient in this regard.
- ✓ The draft NECP describes numerous **policies and measures** for each dimension of the Energy Union, notably on decarbonisation and energy efficiency. These often present interesting avenues to achieve the objectives and deserve to be explained in more detail, presenting the necessary information on their scope, timeframe and related budget, combined with an assessment of the foreseen impacts, which is currently not always the case. This lack of information renders difficult the assessment of whether the policies and measures will achieve the set ambitions.
- ✓ The draft plan mentions the interactions with **air quality and air emissions policy**, in particular as regards an integrated assessment of air and climate plans for one of the three regions. However, the analysis needs to cover the whole of Belgium, and would benefit from including a quantitative perspective.
- ✓ The issue of a socially just transition could be better integrated throughout by considering social and employment impacts, e.g. shifts in sectors/industries and skills impacts,

distributional effects and revenue recycling. The plan mentions the need for education and training in general terms only, and foresees education or training for certain occupations and sectors, but would benefit from providing more details on these aspects.

- ✓ A list of all **energy subsidies** and actions undertaken and planned to phase them out, in particular for fossil fuels, needs to be included in the final plan.
- ✓ An example of **good practice** is the approach followed to promote regional cooperation, where Belgium has spearheaded a reform of the Pentalateral Energy Forum to modify its scope and governance structure for cross-border cooperation in the frame of the NECPs. Another example is Belgium's significant advancements in electricity interconnectivity, enabling it to reach the EU's 2030 ambition already in 2020. The foreseen overarching emergency plan, mapping risk across energy vectors and ways to address them is another example of good practice. The use of voluntary templates for projections with existing measures and with additional measures is well appreciated. Furthermore, the draft regional plans contain several examples of good practice in involvement of local government, such as the system of 'local energy strategies', or the 'conventions for ecological transition'.

Preparation and submission of the draft plan

Belgium notified its draft National Energy and Climate Plan (NECP) to the European Commission on 31 December 2018. To prepare the draft NECP, a special purpose steering group (NEKP2030) was set up to coordinate inputs from the existing coordination platforms (the National Climate Commission, NKC, and the coordination platform on energy policy, ENOVER/CONCERE). Belgium's submission was composed of a draft NECP accompanied by a draft federal plan, four draft regional plans and a number of additional annexes.

Some elements of the draft NECP have been subject to **consultations with stakeholders** in previous processes (for example on the Inter-federal Energy Pact). Belgium foresees mainly to use existing regional platforms in order to discuss and align its climate strategy with its **neighbouring countries**, notably in the Pentalateral Energy Forum⁴ and the North Seas Energy Cooperation⁵. The consultation of the draft NECP itself with stakeholders is planned for 2019.

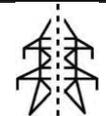
Overview of the key objectives, targets and contributions

The following table presents an overview of Belgium's objectives, targets and contributions under the Governance Regulation⁶:

⁴ Bringing together Belgium, France, Germany, Luxembourg, the Netherlands, Austria and Switzerland.

⁵ Bringing together Belgium, Denmark, France, Germany, Ireland, Luxembourg, the Netherlands, Norway, Sweden and the UK

⁶ 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.

	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) (%)	-10	-15	-35	As in ESR
	National target/contribution for renewable energy: Share of energy from renewable sources in gross final consumption of energy (%)	9.1	13.0	18.3	Below 25 % (result of RES formula)
	National contribution for energy efficiency: Primary energy consumption (Mtoe) Final energy consumption (Mtoe)	49.1 25.2	43.7 26.7	39.0 26.2	Modest Low
	Level of electricity interconnectivity (%)	19	21 ⁷	+/- 30 ⁸	N/A

Sources: EU Commission, ENERGY STATISTICS; Energy datasheets: EU28 countries; SWD(2018)453; European Semester by country⁹; COM/2017/718; Belgian 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

The draft NECP includes Belgium's binding national 2030 target for **GHG emissions reduction in the non-ETS sectors** (-35 % compared to 2005). The draft plan projects that the GHG reduction target would be achieved in the with additional measures scenario, with the most significant reductions taking place in the transport sector (-27 %) and the building sector (-46 %). It does not provide information on the intended use of the flexibility with the ETS of annually maximum 2% of Belgium's 2005 emissions yet.

At the same time, an increase of emissions of about 24 % is foreseen in the with additional measures scenario in the ETS sector, mainly due to the nuclear phase out plans, combined with the fact that coal has already been phased out successfully in Belgium, meaning further reductions in that area are not possible.

The **building sector** has contributed significantly to the 8 % reduction in GHG emissions in sectors not covered by the ETS so far and emissions are projected to decrease further in the with existing measures scenario. The regions plan additional measures too and some have set

⁷ Level indicated in Belgium's draft NECP.

⁸ Projection included in Belgium's draft NECP.

⁹ 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.

additional objectives (e.g. GHG emissions 24 % below 2005 levels no longer connecting new development projects to the gas grid; New EPC certificates, building passports and renovation roadmaps per building). The increased use of the potential for green heating is foreseen via the promotion of heat pumps and heat networks that make use of renewable heat or waste heat.

Emissions from **transport** in the with existing measures scenario, are still expected to increase. The annexed plans contain a number of additional clearly defined objectives in this regard, based on concrete indicators (such as a 10 % increase in sustainable shipping by 2030), which can contribute to the robustness of the planning exercise. Alternative fuels (including **electromobility**) are planned to be incentivised through measures like tax incentives, support for building refuelling and recharging infrastructure. The draft NECP would benefit from a comprehensive overview of all such objectives contained in the annexed plans.

In the **non-ETS industrial sector** the regions are aiming for further GHG emission reductions through a set of measures promoting enhanced energy efficiency, fuels switching (renewable heat and power) and further reductions of Fluorinated-gases. Some targets have been set at the regional level but most measures described still require further elaboration.

Generally, information on which **policies and measures** are included in the scenario with additional measures, on their specific contribution to the GHG reduction target and on their exact scope, status and timeframe is often lacking. This casts doubts over whether the binding national and the indicative sectorial GHG reductions targets in the draft NECP will be achieved on the basis of the policies and measures set out. It is important that policies and measures be described in sufficient detail to understand their exact nature and expected impact, and it should be clarified for each of the policies and measures whether they are merely a description of a potential avenue, or an actually proposed and confirmed measure.

Regarding **LULUCF**, the draft plan commits to the no-debit commitment for the period 2021-2030, using domestic action, stating that any LULUCF removals would be used to comply with the ESR target by 2030. With respect to the National Forestry Accounting Plan including the national Forest Reference Level submitted by Belgium, as required by Article 8(3) of the LULUCF Regulation¹⁰, the Commission has put forward technical recommendations requesting action on a number of issues, detailed in [SWD \(2019\)213](#).

The draft NECP provides limited information on existing and planned measures, from which it is not clear what net credits are expected to be achieved, as the draft NECP does not apply the accounting rules set out in Regulation (EU) 2018/841. The draft plan expects the LULUCF sector to remain a net sink over the period up to 2030, but does not provide quantifiable information nor projections for specific policies and measures related to agriculture and LULUCF. The draft plan refers to the Common Agricultural Policy as a tool for reducing greenhouse gas emissions from agriculture.

The **adaptation goals** listed in the draft NECP are rather process-oriented and do not refer to the sector goals contained in the adopted national adaptation plan.

¹⁰ 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.

Renewable energy

Belgium proposes a share of 18.3 % renewable energy of gross final energy consumption to the EU renewable energy target for 2030. This proposed contribution is significantly below the share of 25 % by 2030 that results from the formula in Annex II of the Governance Regulation.

The draft NECP does not yet include an **indicative trajectory** for the overall renewable energy target at national level for the years 2022, 2025 and 2027. As this information is provided in most of the annexed plans, it is not clear why this has not been included in the draft NECP. It can however be noted that, according to the scenario with additional measures, the renewable energy share for 2025 will not reach the 43 % milestone (of the national contribution in 2030), as required¹¹.

Estimated sectoral trajectories are provided in some of the annexed plans. These need to be included in the final NECP. The scenario with additional measures provides a short overview of possible shares at national level of renewable electricity of 40.4 %, renewable energy in the heating and cooling sector of 12.7 % and renewable energy in the transport sector of 20.6 %. Also, the estimated trajectories by renewable energy technology between 2021-2030 need to be included in the final NECP to clarify the degree to which they contribute to achieving the targets, expressed in absolute values.

Related to **renewable electricity**, no detailed information is provided on trajectories by technologies in the draft NECP, but some information is available in the annexed plans, either in new capacity or in the expected GWh for photovoltaics, onshore and offshore wind, hydropower, geothermal and biomass. The final NECP would benefit from a clear representation of this data at national level.

The projected share of **renewable energy in the heating and cooling** sector represents a mere 6.3 % increase compared to 2020. It is not explained why this level is below the required 1.3 percentage points as an annual average for Belgium as a whole (even if for one region, measures are outlined to achieve the required 12.7 %). Also the role of waste heat could be clarified.

On the projected share of **renewable energy in transport**, the draft NECP gives an indication of the expected shares of food and feed crop and advanced biofuels in the 2020-2030 period. Belgium proposes a biofuel obligation of 14 % and the electrification of transport, leading to a share of 20.6 % in the scenario with additional measures by 2030. The supply chain for biofuels needs to be better described, explaining how this target will be achieved. The final plan would benefit from including the contributions of all eligible fuels, the limits for conventional fuels produced from food and feed crops, applicable multipliers, the sub-target for advanced biofuels in accordance with Articles 25-27 of the recast Renewable Energy Directive¹², and the respective calculation of the transport target.

Overall, **policies and measures** are set out in the draft NECP and the plans from the federated entities, which often present interesting avenues to achieve the ambition set out, such as the measure to not foresee new gas connections or use heating oil in new residential buildings from 2021 onwards. An additional effort is needed to describe the policies and measures in more detail, including notably on their expected impact. Further detail is also needed on measures that

¹¹ 43 % of the total increase between Belgium's 2020 target and its contribution to the 2030 target.

¹² As required by Articles 25-27 of Directive 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. The calculation of the target needs to be in shares and absolute values of ktoe, and needs to take into account biofuels, bio-liquids as well as biomass fuels consumed in transport, where produced from food and feed crops, share of advanced biofuels and multipliers for electricity of road (x4) and rail (1.5) and if this will be implemented as an obligation on fuel suppliers.

are mentioned in order to support the deployment of self-consumption and renewable energy communities, as well as information on administrative simplification¹³.

Dimension energy efficiency

On **energy efficiency**, it is explained in the draft NECP that the 2030 national contribution is set on the basis of the projections of the scenario with additional measures at a level of 39 Mtoe in **primary energy consumption** and 33.1 Mtoe in **final energy consumption** in 2030.

Overall, these **national contributions** reflect a low level of ambition taking into account the need to increase efforts at EU level to collectively reach the Union's 2030 energy efficiency target. The contribution requires a 20.6 % reduction of primary energy consumption or 8.2 % of final energy consumption compared to 2017. Compared to the 2020 target, primary energy consumption is 10.8 % lower, but this is mainly due to switching from nuclear generation capacity to gas capacity. Expressed in **final energy consumption**, the level is in fact 1.8 % above the 2020 target, which goes in the opposite direction compared to the EU as a whole.

A first indication of cumulative amount of energy savings for the period 2021-2030 is provided, which appears to be in line with the recommended methodology.

The required basic elements of the long-term renovation strategy¹⁴ are only partially provided (in all but one of the draft regional plans). This information needs to be provided in the final NECP, ahead of the long-term renovation strategy to support the renovation of the national stock due 10 March 2020.

The total floor area of government's buildings to be renovated or equivalent annual energy savings to be achieved from 2021 to 2030¹⁵ is currently only consistently reported in one of the draft regional plans. A clear description at national level is needed in the final NECP.

The draft NECP indicates that ambitions will be mostly achieved through the residential, tertiary and transportation sectors. The set of **policies and instruments** described in the draft NECP and the annexed plans to achieve this seems well articulated and comprehensive. The several measures mentioned at federal and regional level that are planned to incentivise more efficient organisation of the mobility system and to reducing transport demand would benefit from more details on how they would be developed.

The final NECP would benefit from presenting a single comprehensive overview and associated overarching impact assessment. In order to enable a proper assessment of the adequacy of the measures to achieve the set ambitions, there is a need to present additional clarity on whether they are already planned, or simply considered, and under which timeframe they would be implemented. For existing measures, there is a need to clarify in more detail their exact nature and expected impact beyond 2020 including notably whether they will be continued until 2030, as this is not clear for all measures.

For example, the plan mentions a wealth of measures at federal and regional level that are planned to incentivise more efficient organisation of the mobility system (e.g. spatial planning, incentivising multimodality and modal shift, investments in rail infrastructure, intelligent transport systems, digitalisation and automation, company car taxation, behavioural change, etc.).

¹³ 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.

¹⁴ The indicative milestones, the roadmap with measurable progress indicators, an estimate of the expected energy savings and wider benefits and the contribution of the renovation of buildings to the Union's energy efficiency target.

¹⁵ Article 5 of the 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.

Specific focus is given to reducing transport demand. More details on how related policies will be developed would be welcome.

Dimension energy security

Belgium will increasingly depend on gas and renewable energy and rely on cross-border interconnections to ensure security of supply in light of its **nuclear phase out**. The final NECP would benefit from a more detailed explanation of the policies and measures supporting the cross-border dimension and the potential impact on energy prices and costs and security of supply, based on concrete indicators. A foreseen adjustment to market functioning to ensure cost-efficiency is briefly mentioned and could be explained in more detail.

In relation to the planned capacity mechanism, more details are needed on the regional approach taken to assess and plan resource adequacy, reflecting also the draft plans of neighbouring countries. This is currently done only until 2023-2024, when there will still be almost 4 GW of nuclear capacity available in Belgium¹⁶. The foreseen 3rd Generation Assessment Study covering also 2029-2030 will be useful in this regard. Considering that the scenarios with existing measures and with additional measures foresee nuclear generation capacity to be replaced mainly with gas generation, thus triggering an increase of emissions, an assessment of the complementarity and impacts on the ETS of the policies to manage the phase out is also to be provided¹⁷.

As regards the diversification of energy sources and supply from third countries and the reduction of import dependency, it should be noted that the draft plan foresees an increase in overall import dependency from 71 % in 2020 to 85 % in 2030.

On oil, the draft NECP notes that significant volumes will continue to be needed between 2021-2030 and diversification is mainly foreseen through biofuels, while reduced demand is foreseen through measures in the transport sector and energy efficiency. The final NECP would benefit from a clear overview of these measures and their foreseen impact on oil consumption, notably on biofuels.

On gas, the draft NECP notes that the dependency will increase in the future. Reference is made to improving **interconnectivity** and open markets without trade barriers to improve the situation, and to electrification, hydrogen, biofuels and e-fuels. It appears however that these measures will have limited impact on net imports of gas, as these are foreseen to increase by about 28 % in the scenario with additional measures. It would thus be beneficial if the final plan were to present clear and measurable objectives in relation to these areas (for example as to how Belgium foresees to facilitate development, deployment and market integration of new technologies) and associated measures, clearly indicating their expected impact. Further information could also be added on LNG initiatives and cross border projects and their impact on security of supply. Some are mentioned as part of Fluxys' foreseen investment projects for 2018-2027 (totalling around EUR 142 million) but no details are provided.

Regarding objectives to address constrained or interrupted supply of an energy source, the draft NECP refers to the various risk-evaluations undertaken by national and European actors. Reference is also made to the development of the necessary risk preparedness plans, preventive action plans and emergency plans – required under EU law – together with the intention to develop an over-arching emergency plan across energy vectors. Said plan will map out potential spill-over effects and can be seen as a good practice. As the draft NECP states cybersecurity as an

¹⁶ PLEF SG2 Generation Adequacy Assessment 2018, page 41.

¹⁷ Annex I, Section 3.1.3. of the Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.

issue being considered, it would be good to set out concrete objectives and corresponding policies and measures on this issue.

On increasing flexibility of the national energy system, general reference is made to centralised and decentralised storage and demand management, as well as to imports of hydrogen and methane. The final plan would benefit from clear and measurable objectives on these potential avenues, accompanied with measures to ensure their achievement. **Interconnections** are also referred to as a useful tool – for which Belgium will in 2020 indeed already be significantly above the 15 % electricity **interconnection level** for 2030.

Dimension internal energy market

As regards **electricity connectivity**, Belgium will have already surpassed the electricity interconnection level for 2030, with a level of electricity interconnectivity of 21 % in 2020 which is a very positive development. The draft NECP also notes that further projects are under consideration by the Transmission System Operator, based on on-going consultations and impact assessments, which would lead to a level of electricity interconnectivity of about 30 % by 2030 if implemented. The final NECP would benefit from setting a concrete aim for 2030, specifically considering the link made in the draft NECP to increasing system flexibility and managing the nuclear phase out.

As regards **energy transmission infrastructure**, an overview is provided on planned electricity transmission network reinforcements included in the draft Federal Development Plan of the Transmission System Operator. This draft Development Plan provides a good overview on the needs as assessed up to 2030, taking into account the renewable energy target set by Belgium (range of 18 to 20 %). As regards to gas, reference is made to the indicative investment programme of the transmission system operator for the year 2018- 2027, which appears not publicly available. The final NECP would thus benefit from further information on the content of said programme and its link with security of supply as already mentioned earlier. As the draft plan regularly refers to the possibility of using hydrogen or Carbon capture and storage (CCS) and carbon capture and utilisation (CCU) to meet decarbonisation targets, the final NECP would benefit from setting out the plans for the development of the associated transmission infrastructure, or the process and timeline for developing such plans. Further explanations on the mentioned potential admixture of green or synthetic hydrogen in the gas networks would also be welcome.

As regards the **internal market**, information is provided on market coupling, referring to the December 2018 Memorandum of Understanding without setting out the content thereof or other essential information, such as the levels of congestion at interconnectors and measures aiming at increasing tradeable capacity at interconnectors. When it comes to such elements as the envisaged further development of wholesale and retail market competition and strategies to contain possible problems resulting from the market power of the dominant electricity supplier, Belgium has not yet communicated clear objectives. Objectives are yet to be provided on the non-discriminatory participation of renewable energy, demand response and storage. On consumer participation, some information is provided on smart meter deployment, though without providing clear objectives to be achieved. On electricity system adequacy, the draft NECP includes a general statement that the federal and regional governments will ensure a continued development of new storage systems and demand side response – without quantifying this ambition or providing a clear timeframe. Objectives to protect energy consumers or improve competitiveness in the retail energy sector are yet to be included.

Concerning **energy poverty**, the draft NECP proposes to address it primarily through energy efficiency measures. This is foreseen to be done through dedicated energy-poverty plans by each of the federated entities addressing their respective responsibilities. The draft NECP hints at a

number of promising existing and potential future measures such as financing of renovations and awareness-raising aimed at triggering behavioural change. The final NECP would benefit from further details on these measures, the energy-poverty plans and their desired impact, while at the same time completing the NECP with the required analysis on energy poverty¹⁸.

Dimension research, innovation and competitiveness

A wide range of research and innovation programmes and instruments at both federal and regional levels are reported in the draft NECP, giving a clear overview of the extensive research and innovation architecture in Belgium.

The draft plan identifies general research domains that could receive attention towards 2030, such as on sustainability, energy security, industry 4.0 and competitiveness, as well as specifically on nuclear energy and the construction of MYRRHA. The final NECP would benefit from the identification of more precise research and innovation **objectives** to be achieved by 2030 at national level in these domains, indicating which of the mentioned initiatives pursue these objectives, what are the dedicated financing measures attributed to them, and how they add up to form an integrated research and innovation strategy that supports the Belgian NECP's goals.

Belgium has put forward a national funding target of 3 % of GDP for **research and innovation** in general (1 % public, 2 % private) which is in line with the Europe 2020 ambition. There is a need to clarify which portion of this would be dedicated to energy and climate matters (as is done in one of the draft regional plans). Further information on measures enabling the achievement of the 2 % private funding target would be welcome.

Belgium has been active in the **Strategic Energy Technology (SET) Plan**. In order to ensure coordination between the different federated entities in implementing the SET plan, the BELSET platform was created which appears to be a promising initiative. The draft NECP would benefit from further explanations as to the result of this coordination effort, notably as to how the SET Plan implementation priorities and targets are translated into concrete objectives and measures, including financing.

As regards **competitiveness**, the Belgian draft NECP notes it has not established objectives to date. The NECP would benefit from presenting a comprehensive overview on competitiveness of not only the energy-intensive industries but also the low-carbon technology sector, providing a concrete analysis on the position 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. This could build on some of the positive elements presented in the annexed plans, related for example to identifying and addressing barriers to the deployment of low carbon products, to the calibration of economic support instruments to enabling positive business cases for innovative solutions, as well as to support initiatives to industries providing expertise and advice on how to reduce their energy consumption.

3. COHERENCE, POLICY INTERACTIONS AND INVESTMENTS

The division of competence in Belgium between six governments presents a **challenge in terms of policy coordination**. Several coordination mechanisms already exist (such as the National Climate Commission, NKC, and the coordination platform on energy policy, ENOVER/CONCERE). With a view to drafting the NECP, a special purpose steering group (NEKP2030) was set up.

¹⁸ Required by Article 3.3.d of the Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.

The draft NECP refers to the Inter-federal Energy Pact setting out the ambition of Belgium towards 2030 and 2050. Such a common vision document agreed at ministerial level and validated by the respective governments can be considered a logical starting point in achieving an integrated NECP in the Belgian context. However, the draft NECP does not fully align to the ambitions set out in the Pact. To illustrate, sectoral targets for renewable energy (8 GW solar, 4.2 GW onshore wind and 4 GW offshore wind) were not fully retained, which seems odd considering the scenario with additional measures foresees that these will be over-achieved. The objective to achieve 3.5 GW of storage capacity by 2030 (30 to 40 % of which by 2025) was also not taken up. Neither was the objective to have 50 % zero emission vehicles of all new vehicles sold by 2030 (only present in one of the draft regional plans), with sufficient charging stations to supply the entire country, i.e. 1 public station for every 10 electric vehicles. Also in innovation, a specific target for funding to energy and climate research and innovation (5 % to 10 % of overall research and innovation funding) was not retained. It would be important to clarify this apparent incoherence, also in light of the national Long Term Strategy for 2050.

As it stands, the draft NECP often presents a summary of information contained in the annexed plans, without always demonstrating how the different elements presented are combined into a common vision on how to ensure the transition to a low carbon society in Belgium. Moreover, the approach leads to lack of coherence between elements proposed, such as for example on hydrogen¹⁹. It also leads to opportunities for synergies not being exploited, such as for example the exercise of conversion to high caloric gas which could be explored as an opportunity to stimulate replacement of appliances by low carbon and energy efficient solutions. Substantial effort and political willingness are therefore needed to achieve a more integrated National Energy and Climate Plan, which would in turn constitute a useful tool to facilitate cooperation between the different authorities in achieving the climate and energy transition.

The draft plan could be further improved by explicitly highlighting interactions between the **decarbonisation and energy efficiency** dimensions and the other dimensions. For example, the final NECP could describe future projections of sustainable supply of biomass for energy purposes and its impact on the LULUCF sector. Also, coherence on adaptation could be improved by reflecting the objectives from Belgium's national adaptation plan on mitigating the impact of climate change risks on energy supply (e.g., wildfires, storms destroying biomass resources and power networks) in the various dimensions of the plan. Information could be provided on the adaptation co-benefits for energy efficiency, such as in the thermal management of buildings.

At the same time, a number of potentially promising avenues are included in the annexed plans that are worth exploring further. For example, the draft plan includes several references to the **circular economy**, and raises the need for coordination between policies. It provides several examples of strategies, action plans and specific actions, but would benefit from a further integration of these measures. The draft plan also mentions the interactions with **air quality and air emissions policy**, in particular as regards an integrated assessment of air and climate plans from one of the regions. This part of the analysis should be strengthened for all regions, including from a quantitative perspective.

¹⁹ Certain plans from the federated entities propose hydrogen as a solution to decarbonise personal or public transport. At the same time, no information is provided on infrastructure projects for hydrogen such as transport or storage, and the draft NECP does not specify any objectives with regards to research and innovation in hydrogen, deeming this 'too soon' and requiring agreement first of all four federated entities on the way ahead (while research and innovation efforts would normally be expected prior to deployment of a technology).

The final plan will benefit from a further reflection on the role of biodiversity and ecosystems for climate mitigation and adaptation as the draft plan has limited information on interactions with **biodiversity** policy, synergies and trade-offs.

Additional attention could be given to explaining how the **energy efficiency first principle** has been considered, notably on how specific policies and measures support the implementation of this principle in the different dimensions of the Energy Union.

The information that is provided in the NECP on **investment needs** is mainly qualitative and focusing on a particular sector or measure. For example, the draft NECP includes a reference to the National Pact for Strategic Investment, a report by a strategic committee set up by the Prime Minister's office, which estimates the energy related investment needs at EUR 60 billion over the period 2017 to 2030 (or around 1 % of GDP per annum). However, there is no clear correspondence between this pact and the measures foreseen in the draft NECP. The NECP would benefit from a comprehensive assessment of the overall investment needs to achieve the objectives of the NECP, as well as information on the financial sources to be mobilised. Some investment needs could partly be covered by EU funds, in particular cohesion policy funding, notably in line with the investment analysis for 2021-2027 of the 2019 European Country Semester Report for Belgium and with any other relevant legislation.

Links with the European Semester

Identifying financing needs and securing the necessary funding will be essential to deliver on Belgium's energy and climate objectives. The Commission had addressed this question as part of the 2019 European Semester process. Based on the 2019 Country Report for Belgium, published on 27 February 2019²⁰, the 2019 European Semester country-specific recommendations to Belgium issued on 5 June 2019²¹ highlight the need to invest in 'sustainable transport, including upgrading rail infrastructure, the low carbon and energy transition' and to 'tackle the growing mobility challenges, by reinforcing incentives and removing barriers to increase the supply and demand of collective and low emission transport'. When preparing its overview of investment needs and related sources of finance for the final plan, Belgium should take into account these recommendations and links to the European Semester

As regards **energy subsidies**, the required description of existing energy subsidies needs to be provided in the NECP.²² One of the annexed plans sets the objective to achieve an agreement across the federated entities on fiscal reforms with a view to the energy transition. This is a positive ambition, notably considering commitments in the G7 and G20 on phasing out fossil fuel subsidies, which are still at a substantial level in Belgium.²³ This ambition could be presented more clearly in the final NECP, including the national policies, timelines and measures planned to phase out energy subsidies including on fossil fuels. Consideration could be given in this regard to preventing sudden impacts of shifting prices on consumers by ensuring a gradual phase out with long term visibility for consumers. Specific attention also could be given to mitigating the impact on vulnerable consumers through energy poverty measures, including where these are part of social policy.

²⁰ SWD(2019) 1000 final.

²¹ COM(2019) 501 final.

²² Required by section 4.6.4 of Annex I of the Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.

²³ 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, p. 215.

The issue of a **socially just transition** could be better integrated throughout the NECP by considering social and employment impacts, e.g. shifts in sectors/industries and skills impacts, distributional effects (including on energy poverty) and revenue recycling. The plan mentions the need for education and training in general terms only, and foresees education or training for certain occupations and sectors, but would benefit from providing more details on these aspects.

The draft regional plans have several **examples of good practice** in terms of involvement of citizens and local government, such as the system of 'local energy strategies' or the 'Conventions for Ecological Transition'. Building on these examples, the final NECP would benefit from further details on measures to support cities and communes in their decarbonisation efforts as well as the involvement of other stakeholders, including NGOs and citizens.

4. REGIONAL COOPERATION

In the draft NECP, Belgium sets out its intention to cooperate with neighbouring countries in existing fora – such as the Pentalateral Energy Forum, the North Seas Energy Cooperation and the Green Growth Group – on topics of common interest, as well as through bilateral cooperation.

Belgium has been taking a leading role in expanding the Pentalateral Energy Forum to act as a forum for regional cooperation regarding the development and monitoring of the draft NECP. The political declaration signed on 4 March 2019 by the Ministers of Energy of Austria, Belgium, France, Germany, Luxembourg, the Netherlands and Switzerland provides a political mandate in this respect. The approach taken, including the setting up of a dedicated Committee to coordinate regional cooperation on the draft NECPs in particular on issues with substantial cross-border effects can be regarded as a good practice that can inspire other Member States. Regional cooperation has a key role in assessing regional system adequacy as foreseen in the Electricity regulation²⁴. This will become even more important in the light of increasing shares of renewable energy and the corresponding need for system flexibility.

The platform for exchanges provided by the North Seas Energy Cooperation allowed developing concepts for potential joint wind offshore projects and coordinated electricity infrastructure.

Further regional cooperation, notably on mobility and research and innovation, could be warranted, in order to create synergies in addressing common challenges.

The final NECP would also benefit from including existing sectorial cooperation across borders. One such example is the "Trilateral strategy for the chemical industry" setting out cross-border cooperation between the Netherlands, Flanders and North Rhine-Westphalia. The setting up of a joint industry-academia-government partnership under this strategy to coordinate development and implementation of climate and energy related policies is a good practice, as it enables dynamically and efficiently tackling the common challenges, creating synergies while endeavouring to preserve a level playing field.

It is expected that Belgium will clarify how the results of regional cooperation are taken into account in their final NECP.

5. COMPLETENESS OF THE DRAFT PLAN

Information provided

The draft NECP submitted by Belgium follows the structure of Annex I of the Governance Regulation covering all five dimensions of the Energy Union, at least partially.

²⁴ Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity.

On **greenhouse gas emission reduction** in the **decarbonisation dimension**, the information needs to be completed, most notably by providing a sufficiently substantiated explanation on how the presented policies and measures will be adequate and consistent to achieve the 2030 targets under the Effort Sharing and Land Use, Land Use Change and Forestry (LULUCF)²⁵ Regulations. Compulsory information on the estimated binding Effort Sharing Regulation GHG emission limits and trajectory in 2021-2030 is not yet included. The correct accounting rules for LULUCF are not applied, making it impossible to assess whether Belgium will achieve its LULUCF commitment.

On **renewable energy**, a specific national contribution for the 2030 EU target was included. The other required sectoral trajectories and technology trajectories are not yet comprehensively covered. Planned capacities are only provided for the electricity sector, without split between new capacity and re-powering. There is no information on the increase of 1 percentage point of the share of renewable energy in district heating and cooling and on related infrastructure. The draft plan does not provide trajectories for the bioenergy demand, disaggregated between heat, electricity and transport in Mtoe. There are no trajectories on biomass supply (by feedstocks and by origin), no trajectories for forest biomass, and no assessment of its source and impact on the LULUCF sink. There is no information on measures regarding power purchase agreements (PPAs) and related to the enabling framework to promote and facilitate development of renewable self-consumption.

On **energy efficiency**, a first indication of the cumulative amount of energy savings for the period 2021-2030 is provided. Indicative trajectories for Belgium's contribution in terms of absolute level of primary and final energy consumption for 2021-2030, as well as conversion factors used, are yet to be included. The mandatory elements on the long-term renovation strategy, as well as information on cost-optimal levels of the minimum energy performance requirements and on total floor area of government's buildings to be renovated are only partially provided. In the analytical basis, the cost-benefit analysis regarding the current potential for the application of high-efficiency cogeneration and efficient district heating and cooling are still to be included, as is information on cost-optimal levels²⁶.

On **energy security**, the draft NECP provides a descriptive account of potential avenues to increasing diversification of energy sources and supply from third countries, reduce import dependency from third countries and increase flexibility of the national energy system. The final NECP would benefit from including clear, quantified objectives, including associated timeframes, as well as detailed measures to achieve them.

On the **internal market**, Belgium expects to meet the 15 % 2030 **interconnectivity level** in 2020. On electricity and gas infrastructure, the draft plan sets out currently planned projects. On market development and market integration, the required elements for the wholesale and retail markets are either not provided, or the objectives reported are not specific and related time frames are often lacking. Objectives and strategies to further develop competition in the market are not yet included. On energy poverty, the draft NECP provides a description of current measures in place, but does not include the analysis required by Article 3.3.d of the Regulation and no clear and quantified objectives have been defined.

On **research, innovation and competitiveness**, the draft NECP mainly identifies research domains that could potentially receive attention, without setting specific objectives to be achieved by 2030. Funding targets are defined for overall research and innovation efforts, but not

²⁵ Regulation (EU) 2018/841 on greenhouse gas emissions and removals from land use, land use change and forestry.

²⁶ To note that the draft Walloon plan largely provides the required information. It would be useful to clarify whether the requirements include minimum standards for NZEBs.

specifically for Energy Union related research at national level. The draft plan does not include specific national 2050 objectives related to the promotion of clean energy technologies or national objectives related to the deployment of low carbon technologies. Also objectives related to competitiveness are not included, except for a reference to the setting up of an energy norm. No analysis has been provided as regards the current situation of the low-carbon-technologies sector, current levels of public and private research and innovation spending, current number of patents and researchers (except in one annexed plan) and the breakdown of current price elements. Finally, it appears no information is provided on elements under the responsibility of the Communities as the draft NECP is based only on federal and regional contributions.

As regards policies and measures, the Belgian draft plan provides a summary of additional policies and measures, but no overview of existing ones (which appear in draft regional plans only, three of which do not follow the structure of Annex I of the Governance Regulation). Several compulsory elements are still to be included, such as for renewable energy²⁷. Additional information on each policy and/or measure, such as quantified objective, expected result, indication on the timeline would also facilitate the assessment of the Commission. An assessment of the overall investment needs or information on the financial sources to be mobilised to achieve the targets and objectives is not included.

Robustness of the draft Belgian National Energy and Climate Plan

The draft plan addressed most of the required elements of the **analytical basis**. It reports both with existing measures and with additional measures projections, using the voluntary templates. The draft plan does not include an impact assessment of planned policies and measures. The draft plan uses EUROSTAT data, when available.

The **with existing measures** and **with additional measures projections** largely cover the five dimensions of the Energy Union. Additional information would be desirable on: (i) numerical values for all variables beyond 2030, (ii) the differentiation of sectoral GHG emissions between those covered by the EU ETS and those falling under the Effort Sharing Regulation, (iii) non-GHG air pollutants, (iv) the current interconnection level and a breakdown of imports of electricity per Member State, and (v) energy-related investment needs. It also needs to be clear which policies and measures are taken into account in the projections.

The draft plan provides information on the key parameters used for deriving projections i.e. population, the number of households and heating degree-days. However, more information would be desirable on assumptions regarding (i) GDP, (ii) international fuel prices and ETS carbon prices, (iii) technology costs. Sources for the parameters and assumptions and a description of models and tools would further improve transparency.

The 2005 base year values of the projections are largely compatible with those reported by EUROSTAT. The projections do not seem to take into account the evolution of prices or costs (for fuel, CO₂, technologies) or macro-economic parameters (such as GDP). More information on the choice of the modelling approach would be helpful.

The draft NECP does not contain an **impact assessment** of planned policies and measures. The assessment in the final plan should include an assessment of the macroeconomic impacts and, to the extent feasible, the health, environmental, employment and education, skills and social impacts, including just transition aspects.

²⁷ Point 3.1.2 of Annex I of the Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action.