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Assessment of the final national energy and climate plan of Spain

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1. SUMMARY

Spain's final integrated national energy and climate plan (NECP)¹ sets a 2030 target for **greenhouse gas (GHG) emissions** not covered by the EU Emissions Trading System (ETS), of -26% compared to 2005. This is in line with the target set in the Effort Sharing Regulation (ESR)². As part of achieving its national total GHG target of -23% compared to 1990, Spain **plans to overachieve** its ESR target by 13 percentage points, while complying with the land use, land use change and forestry (LULUCF) no-debit commitment (i.e. accounted emissions do not exceed accounted removals)³. The plan sets out a **comprehensive set of measures** underpinned by mechanisms and allocated responsibilities in all **non-ETS sectors** to achieve this ambitious reduction. In particular, the plan focuses on measures in the transport sector to reduce emissions by one third.

Spain has set its national contribution to the EU level 2030 target at 42% of **renewables** in gross final consumption of energy for 2030, which is very ambitious as it is above the share of 32% that results from the formula in Annex II of the Governance Regulation⁴. Spain plans to achieve the following trajectory: 24% renewable energy share (RES) in 2022, 30% in 2025 and 34% in 2027, in line with the reference points set out in Article 4(a)(2) of the Governance Regulation.

For **energy efficiency**, Spain's contribution to the EU level 2030 target is to reduce its primary energy consumption by 39.5%. This implies a contribution of 98.5 Mtoe for primary energy consumption and 73.6 Million Tonnes of Oil Equivalent (Mtoe) for final energy consumption. The energy efficiency target is considered to be sufficient for both primary and final energy consumption⁵. Spain provided in the final NECP a number of specific actions on buildings, including (i) to renovate 1 200 000 residential buildings by 2030 and (ii) to renovate heating and cooling technical building systems of, on average, 300 000 residential buildings per year. Spain submitted its long-term renovation strategy on 15 June 2020⁶.

In terms of **energy security**, the NECP aims at reducing the level of dependency from 74% in 2017 to 61% in 2030.

On the **internal energy market**, the plan includes sufficient measures to address market integration (including reforming the electricity market), the evolution of the tariff deficits in the electricity and gas sectors and the potential impact from the measures envisaged. The plan sets targets of 10% interconnection capacity by 2020 and 15% by 2030 and puts emphasis on the

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

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

³ 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.

⁴ The Commission's recommendations with regard to the Member States' renewable ambitions are based on a formula set out in this Regulation. The formula is based on objective criteria.

⁵ In line with the methodology as illustrated in the SWD (2019) 212 final.

⁶ Spain submitted the long-term renovation strategy pursuant to Article 2a of Directive 2010/31/EU on the Energy Performance of buildings on 15 June 2020. However, this assessment is only based on the building related elements provided in the final plan.

implementation of key infrastructure projects, notably ‘projects of common interest’ as well as several grid reinforcement projects to accommodate further renewables capacity.

On **research, innovation and competitiveness**, Spain voices intentions to significantly increase overall investment (up to a doubling to 2.5% of GDP annually). The plan properly identifies relevant research and innovation (R&I) objectives (in energy, climate and transport), but without mentioning specific timelines nor quantified targets.

The final plan increases estimated **total investments** for 2021–2030 to EUR 241.4 billion, covering all key sectors and dimensions. The distribution between public and private sector is 20% and 80% respectively. On the distribution areas, there is more emphasis in the final plan on grids and electrification and less on renewables compared to the draft plan. The justification given by the Spanish government is that larger investments in renewables are not needed to achieve the overall contribution of 42%. Details on funding sources are only provided for a few policy examples.

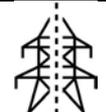
A list of **energy subsidies** and actions undertaken and planned to phase them out, in particular for fossil fuels is included in the final plan. The list appears to be in line with the categories of subsidies identified in recent Commission analyses on energy subsidies. The plan mentions the intention to phase-out some support schemes for renewable energy, combined heat and power and waste, but also to keep capacity mechanisms for fossil fuel fired power plants.

On **air quality** and air emissions policy, the measures contained in the plan are well coordinated with air policy. Impacts of different measures on the reduction of most relevant air pollutants are also well reflected. A quantitative assessment of air pollution reduction and its health impacts is provided and emission reduction projections of GHG and air pollutants are included in the plan and designed in a coherent manner. Also, the link with the national air pollution control programme (NAPCP) is well established, in terms of consistency of the policy priorities, of the underpinning modelling tools and in the choice of the policies and measures selected.

The final plan considers the **just and fair transition aspects** and provides information on social, employment and skills impacts of a transition to a climate neutral economy. The plan notably estimates that 348 000 jobs will be created by 2030, equivalent to a 1.7% net increase in employment. The plan is accompanied by the just transition strategy, which aims to anticipate and manage the consequences for those regions and persons directly linked to technologies that will be progressively displaced as a result of the transition. Spain reports the number of households affected by **energy poverty** and includes a definition of energy poverty and four key indicators to measure it. However, the plan overlooks potential negative social effects other than energy poverty. It does not include measures to tackle the social effects stemming from changes in the labour market demand (apart from those related to the just transition strategy for the extractive industry) or from taxation measures to boost the transition towards electric cars.

There are **examples of good practice** in the Spanish final plan, in particular the quantification of individual energy efficiency measures and the integrated approach to air, climate and energy modelling. Another example is the just transition strategy provided as part of the strategic energy and climate framework.

The table below presents an overview of Spain's objectives, targets and contributions under the Governance Regulation⁷:

	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) (%)	-14	-10	-26	As in ESR, total GHG target implies -39%
	National target/contribution for renewable energy: Share of energy from renewable sources in gross final consumption of energy (%)	17.4	20	42	Sufficiently ambitious (the result of the RES formula is 32 %)
	National contribution for energy efficiency: Primary energy consumption (Mtoe)	124.59	122.6	98.5	Sufficient
	Final energy consumption (Mtoe)	86.88	87.23	73.6	Sufficient
	Level of electricity interconnectivity (%)	6.5%	6.5%	15%	N/A

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

2. FINALISATION OF THE PLAN AND CONSIDERATION OF COMMISSION RECOMMENDATIONS

Preparation and submission of the final plan

Spain **notified** its final national energy and climate plan (NECP) to the Commission on 31 March 2020.

Spain carried out a public consultation on the draft plan between 22 February and 1 April 2019. Spain has not submitted a summary of the public's views and of how those views have been taken into account in the final energy and climate plan. Spain did carry out a strategic environmental impact assessment (SEA) on the NECP under Directive 2001/42/EC. A public consultation on the SEA, which includes the final plan, was launched on 23 January 2020 and should have ended on 25 March 2020. However, the consultation deadline was extended until 11 June 2020 due to the COVID-19 crisis. Spain indicated that it would modify the final plan if

⁷ 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.

the results of the public consultation on the SEA required it. As of 1 September 2020, no modifications had been submitted by Spain.

Consideration of Commission recommendations

In June 2019, the Commission published eight recommendations on the Spanish draft plan. Annex II to this staff working document provides a detailed account on how the Commission recommendations have been reflected in the final NECP. Overall, the final NECP **largely addresses** most of the Commission recommendations. The main changes introduced in the final plan are the following:

On **renewables**, Spain has **largely addressed** most of the recommendations. It has included a 3-point trajectory for the overall renewable target, has provided further details on measures to reduce administrative burden and on the enabling frameworks for renewable self-consumption and renewable energy communities, has clarified how Article 24 of the Renewable Energy Directive (EU) 2018/2001 will be applied, and has introduced a share for advanced biofuels compatible with the level required in the Renewable Energy Directive. However, there are several points raised in the recommendations that have not been addressed. The final plan does not describe a 3-point trajectory for each sector (electricity, heating and cooling, and transport) nor does it describe a technology trajectory for the heating and cooling and transport sectors. On transport, the plan does not provide absolute values for each type of relevant renewable source, nor does it analyse the effect of multipliers or reflect the phase out of the contribution of high indirect land-use change-risk biofuels, bioliquids and biomass fuels produced from food and feed crops. The target level set in the Spanish draft law on climate change and energy transition is 35%, which is not consistent with the 42% target set in the final plan. Last but not least, even if measures to further exploit waste and residues are mentioned, the sustainable supply of biomass, by feedstocks and origin, and its impact on the LULUCF sink is not properly assessed. This is particularly worrying in view of the water stress and other severe climate change impacts.

On **energy efficiency**, Spain **partially addressed** the recommendation to further develop measures to achieve the expected energy savings. Such measures must deliver a multiplication of energy savings compared to 2014–2020 period and the challenges of such significant upscaling would need to be properly taken into account. However, an assessment of the contribution of measures towards the national contribution is not clearly indicated and detailed information about the measures contributing to the energy savings obligation is missing. On buildings, the information provided is much improved and includes indicative milestones for 2030 residential and public buildings and relevant policies and measures. However, other aspects such as those on how the energy efficiency first principle would be implemented, and on measures to implement the energy savings obligation are also lacking.

On **energy security**, Spain **fully addressed** the recommendation to specify the measures supporting the energy security objectives on diversification and reduction of energy dependency, including measures ensuring flexibility, as well as information on phase-out from nuclear. In particular, the plan contains additional information on responsibilities and actions for each measure and clarifies the role of increased energy efficiency and renewables, as domestic sources of energy, in improving the security of energy supply. Based on the analysis of the accompanying socioeconomic analysis, Spain reviewed the evolution of energy dependency, which is expected to drop from 74% in 2017 to 61% in 2030.

On the **internal energy market**, Spain **largely addressed** the recommendation to define forward-looking objectives and targets on market integration. In particular measures to address the projected evolution of the tariff deficits in the electricity and gas sectors and potential impact from the measures envisaged. In particular, the final plan better outlines the reform of the electricity market and provides for the cancellation of the historical deficit of the energy system by 2028. The final plan also promotes the participation of all resources, including demand side flexibility, aggregation, additional storage capacity for 2030 and better integration of renewables, promoting active consumers and energy communities as well as a dedicated plan to deploy electric vehicles in 2021-2025.

On **research, innovation and competitiveness**, Spain **did not address** the recommendation to further clarify national objectives and funding targets as well as underpin such objectives with detailed policies and measures. Quantifications have not been provided on these issues.

Spain **partially addressed** the recommendation to intensify the existing good **regional cooperation** with France and Portugal to address internal energy market and energy security areas, in particular cross-border and cross-regional interconnections. However, when mentioning regional cooperation energy projects or measures, there is no specific focus on renewable energy or energy efficiency.

Spain **largely addressed** the recommendation to list all **energy subsidies**, including fossil fuels and actions undertaken as well as plans to phase them out. The plan includes a catalogue of energy subsidies in the form of tax breaks for renewable energy, combined heat and power and waste to be phased-out by 2024, as well as capacity mechanisms to be kept until 2035. However, total subsidies have not been estimated.

Spain **largely addressed** the recommendation to better integrate **just and fair transition and energy poverty**. More specifically, the plan addresses the impacts on the coal and carbon intensive regions, and integrates the national strategy for the energy transition. The final plan also includes a thorough assessment of **energy poverty** issues. However, regarding the impact of these measures on employment and social aspects, the NECP provides only an update of figures already mentioned in the 2019 draft plan and the measures on the just transition strategy focus on workers affected in the coal-mining sector and coal-fired power plants. On skills, the chapter on impact does not provide sufficient detail.

Links with the European Semester

In the context of the European Semester framework for the coordination of economic policies across the EU and of the country report 2019⁸, Spain received one country-specific recommendation⁹ in relation to climate and energy, in particular to “focus investment-related economic policy on fostering innovation, resource and energy efficiency, upgrading rail freight infrastructure and extending energy interconnections with the rest of the EU, taking into account

⁸ The Annex D to the 2019 Country report also sets out priority investments for the 2021-2027 cohesion policy, substantially contributing to the clean energy transition.

⁹ Recommendation for a Council Recommendation on the 2019 National Reform Programme of Spain and delivering a Council opinion on the 2019 Stability Programme of Spain, COM(2019) 509 final.

regional disparities”. In the 2020 country report¹⁰ adopted on 20 February 2020, the Commission found that Spain achieved limited progress on this recommendation.

Due to the COVID-19 crisis, the European Semester country-specific recommendations for 2020 addressed Member States’ responses to the pandemic and made recommendations to foster economic recovery. In particular, they focused on the need to front-load mature public investment projects and promote private investment, including through relevant reforms, notably in the digital and green sectors. In this context, Spain received a country-specific recommendation¹¹ stressing the importance of focusing investment on “the green and digital transition, in particular on fostering research and innovation, clean and efficient production and use of energy, energy infrastructure, water and waste management and sustainable transport”.

The Governance Regulation provides that Member States should ensure that their national energy and climate plans take into consideration the latest country-specific recommendations issued in the context of the European Semester. Spain’s national energy and climate plan can support the implementation of the recommendations formulated in the context of the European Semester, in particular through its identification of necessary investment needs and financial sources to deliver them.

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

Decarbonisation

Greenhouse gas emissions and removals

The final NECP sets an economy-wide 2030 target of 23% GHG emission reductions compared to 1990, excluding LULUCF and states that this can be achieved through the measures envisaged. For 2050, the stated objective is climate neutrality, or at least 90% GHG emission reductions compared to 1990. The final plan confirms the intention of phasing out coal and decommissioning the remaining coal power plants by 2030.

It is worth highlighting that the plan translates the 2030 GHG target into a reduction of effort sharing sector emissions by 39% in 2030 compared to 2005, 13 percentage points higher than the binding target of -26% set in the Effort Sharing Regulation (ESR)¹². The plan includes estimates of ESR annual emission allocations in graph form, projecting gradually increasing overachievements. Based on the “with existing measures” scenario (WEM) provided, existing measures would lead to a 16% emission reduction compared to 2005. Therefore, significant additional measures are needed and planned to achieve the EU and national objectives. The final

¹⁰ Commission Staff Working Document Country Report Spain 2020, SWD/2020/508 final.

¹¹ Recommendation for a Council Recommendation on the 2020 National Reform Programme of Spain and delivering a Council opinion on the 2020 Stability Programme of Spain, COM(2020) 509 final.

¹² Regulation (EU) 2018/842 on binding annual greenhouse gas emission reductions by Member States from 2021 to 2030.

plan refers to the commitment under the LULUCF Regulation¹³ that accounted emissions should not exceed accounted removals.

For the largest effort sharing sector, **transport**, with a share of effort sharing emissions of around 40%, Spain aims to reduce emissions by 27 Mt CO₂eq by 2030 (33% compared to 2017). The plan is to achieve this through a more efficient organisation of the transport system (e.g. promote a modal shift towards less emitting modes of transport, promote the use of the most efficient transport modes, promote the renewal of car fleets), and through an increased uptake of renewable sources of energy, in particular electricity and advanced biofuels. It is worth highlighting that specific measures to achieve this have been identified, e.g. low emission zones in every big city (extended to those with more than 50 000 inhabitants as of 2023), and that the quantitative impact of certain measures on energy savings has been calculated. On electromobility, the plan aims at having 5 million electric passenger cars and light duty vehicles on the market in 2030. New vehicles in these categories should have zero emissions by 2040. This will be supported by grants to purchase electric vehicles and infrastructure development.

Policies and measures for **agriculture** – the second largest effort sharing sector in terms of GHG emissions – are clearly described, although it is not always clear whether these policies and measures are existing or planned. They are estimated to achieve a 18% emissions reduction in agriculture and livestock compared to 2005. The plan refers to the common agricultural policy as a tool for reducing greenhouse gas emissions from agriculture.

Policies and measures for the **LULUCF sector** are also described. It is estimated that they will lead to additional removal of around 1 Mt MtCO₂-eq, mainly in forest land. The final plan also provides an estimate of the LULUCF balance in accounting terms, including Spain's estimated forest reference level, for which Spain submitted a national forestry accounting plan as required by Article 8(3) of the LULUCF Regulation¹⁴. It concludes that a significant volume of LULUCF credits, larger than the LULUCF flexibility of 29.1 MtCO₂, would be generated over the period 2021-2030. The plan considers LULUCF and agriculture in Spain, indicating a reduction target for agriculture of 18%. It also includes a detailed list of measures for the decarbonisation of agriculture, focusing on land use planning, nutrient and manure management and for enhancing agricultural sinks by promoting conservation agriculture and soil cover. However, Spain does not intend to use the LULUCF flexibility for ESR compliance.

The plan also includes policies and measures for the **fluorinated gas** (F-gas) and **waste** sectors. They are estimated to result in a 33% and 28% reduction compared to 2005 in these sectors, respectively.

On **climate change adaptation**, the final plan indicates that the preparation of a new national adaptation plan (NAP2) was launched in 2019, defining objectives, criteria, fields of implementation and measures to promote resilience and adaptation to climate change in Spain for the period 2021-2030. In the plan, Spain considers potential impacts of climate change risks on the energy system. Resilience to climate change is one of the research priorities, and the 2017-2020 national plan for research and innovation provides for research on adaptation to climate change, which must be continued under the plan for 2021-2024.

¹³ Regulation (EU) 2018/841 on greenhouse gas emissions and removals from land use, land use change and forestry.

¹⁴ Regulation (EU) 2018/841 on greenhouse gas emissions and removals from land use, land use change and forestry.

Renewable energy

The national contribution to the 2030 EU renewable energy target is specified in the plan and the **renewable share** is set at 42% in gross final consumption of energy which is sufficiently ambitious and above the share of 32% that results from the formula in Annex II of the Governance Regulation. However, the target level set in the Spanish draft law on climate change and energy transition is 35%.

For the indicative trajectories, the plan adds reference points for 2022 (24%), 2025 (30%) and 2027 (34%) towards the overall 42% target in 2030. These reference points comply with the requirements of the Governance Regulation (at least 18% of the total increase in the renewables share for 2030 by 2022, at least 43% by 2025, and at least 65% by 2027).

The plan modifies some of the sectoral shares for 2030 that were indicated in the draft plan. The renewables share in the electricity sector has increased from 74% to 86%, but the 31% renewables share in heating and cooling is lower (34% in the draft plan). The renewables share in the transport sector is expected to reach 28%, which is higher than the 22% indicated in the draft plan. In addition, the plan has raised the share of advanced biofuels and biogas to a 3.7% in 2030, in order to comply with the minimum 3.5% set out in the Recast of the Renewables Directive (REDII). These new shares are in line with REDII. However, regarding the values relevant to calculate the transport target, even if the final plan includes absolute values for renewable energy (excluding renewable electricity) in transport, it does not provide absolute values for each type of relevant renewable source, does not explain the effect of multipliers, and does not reflect the phase out of the contribution of high indirect land-use change risk biofuels, bioliquids as well as biomass fuels produced from food and feed crops.

The final plan is robust, and rather detailed regarding renewables. However, impacts are still calculated per sector and energy source, rather than per measure.

In the **electricity sector**, it is envisaged to install 59 GW from 2021 to 2030 mainly through the organisation of auctions (3 000 MW every year), together with measures to facilitate the penetration of renewables in the grid such as increasing storage capacity by 6 GW and facilitating response demand through demand aggregators. The plan also sets a framework to boost self-consumption and proposes measures to facilitate the development of renewable energy communities.

For **heating and cooling**, the final plan includes measures to promote the use of renewable heating and cooling systems, including the revision of the technical code for buildings, the use of guarantees of origin and the use of support schemes.

In the **transport sector**, the final plan describes measures to promote the use of electricity and biofuels, indicating that a general obligation on fuel suppliers and a specific one for supplying advanced biofuels will be established. The plan does not reflect the phase out of the contribution of high indirect land-use change risk biofuels, bioliquids as well as biomass fuels produced from food and feed crops.

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

Energy efficiency

Spain's national contribution for energy efficiency in 2030 is 98.5 Mtoe for primary energy and 73.6 Mtoe for final energy consumption. Both contributions are considered as sufficient.

The plan provides descriptive information on policies and measures beyond 2020 targeting all sectors. These policies and measures are considered sufficient in relation to the achievement of the national contribution. However, further clarification on their impact on annual energy consumption is needed.

Spain presents the **cumulative savings** to be achieved under Article 7 of the Energy Efficiency Directive¹⁵ with a cumulative amount of 36 809 ktoe. The target calculation was not carried out in line with Article 7(1) (b) of that Directive – the proper baseline was not used. The target was calculated based on national statistics and it is unclear how these differ from the Eurostat data. However, the difference between the two values is relatively small.

The cumulative energy savings target will be achieved mostly through a combination of the Energy Efficiency Obligation Scheme and policy measures, spanning across all sectors. These policies and measures are considered sufficient in relation to the achievement of the target. However, the calculation of the estimated energy savings is not provided and the fact that the total amount of estimated energy savings is equal to the target raises uncertainty.

On energy efficiency in **buildings**, the plan includes a number of specific actions as well as a quantitative objective to renovate 1 200 000 residential buildings by 2030. It also includes renovating heating and cooling technical building systems of on average 300 000 residential buildings per year. For buildings owned and occupied by central government, the intention is to go beyond the 3% annual renovation target enshrined in EU legislation. However, the information remains generic and lacks detail. While the financing mechanisms for building renovation in line with Article 2a of the Energy Performance Building Directive are outlined, specific data are missing (e.g. m² of buildings, energy savings, energy savings/m², investments) which would enable a comprehensive evaluation of the ambition, effectiveness and feasibility of the measures.

Energy security

Maintaining a high level of security of energy supply is a priority in the ongoing transformation of the energy system, with an objective of 86% renewable electricity system and increasing share of domestic renewable energy. When considering risks, the plan does take into account the plans of the other connected Member States, as well as specific risks of non-peninsular territories such as the Canary and Balearic islands and the autonomous cities of Ceuta and Melilla.

On **diversification of sources and routes**, the plan explains that, while Spain's import dependency for oil and gas is higher than the EU average source, diversification is one the highest in the EU. Following the measures envisaged in 2021-2030, Spain's import dependency would go from 73% in 2017 to 61% in 2030.

¹⁵ 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.

On **oil and gas**, the plan acknowledges the importance of holding strategic stocks and refers to the contingency and emergency plans in place. Moreover, it contains specific suggestions about how to improve the relevant plans and rules.

The plan envisages significant further measures and investments in energy **storage** and network infrastructure and mentions energy efficiency technologies and the use of domestic renewable sources as key technologies to improve security of energy supply. The plan addresses the response to emerging risks and describes past and future actions on cyber-security and protection of critical infrastructures. The planned policies and measures are considered sufficient in relation to the achievement of the objectives, because of the combination of measures and technologies, based on the socioeconomic assessment.

The plan introduces policies to maintain sufficient capacities in all the parts of the **nuclear supply** chain and to ensure security of fuel supply in order to guarantee that electricity supply is not affected by the phased closure of the national nuclear power park. To set the 2030 objective scenario, brief nuclear energy generation outages due to planned or incidental unavailability are taken into consideration.

The plan makes sufficient links with the **emergency plans** for gas, electricity and oil, provided for by the applicable sectoral rules.

Internal energy market

Spain sets an **interconnection level** of 15% for 2030, which corresponds to the target set at EU level. The plan lists current projects of common interest, which will increase interconnectivity. An analysis on how the rising electricity demand affect the level of electricity interconnectivity and the need for infrastructure is included.

Given the electricity sector target of 42% renewable electricity in 2030, an overview of the development of the different sources of **flexibility** that is necessary to integrate the rising share of renewable energy into the electricity system is provided. To this end, the plan lays down integrated planning for the safe operation of decarbonised energy system (*‘Planificación para la operación en condiciones de seguridad de un sistema energético descarbonizado’*), with cross-cutting measures relevant for the whole energy sector aiming at system integration, allowing the participation of renewables in ancillary and balancing services, managing of hydraulic resources, design of ad hoc capacity mechanisms open to all generation forms, including energy storage and demand management, and, in general, developing energy storage as key for the electricity supply.

The plan provides a sufficient overview of current **market conditions** for gas and electricity, in particular regarding levels of competition and liquidity of markets. The final plan includes policy objectives and measures related to the internal energy market that are considered as sufficient in relation to the achievement of the objectives.

The plan promotes the participation of all resources, including demand side flexibility and the active role of aggregators by 2020-2021 as well as additional storage capacity for 2030. Furthermore, the plan provides a comprehensive overview on Spain’s new framework set up in April 2019, to remove key obstacles including administrative, technical and economical procedures, allowing and promoting active consumer and energy communities, better integrating renewables, better protecting consumers, as well as a dedicated plan for deploying electric vehicles in 2021-2025. The plan also describes general measures to ensure information to consumers and companies, but it does not include specific objectives. Furthermore, after completing the roll out of smart metering in December 2018, the plan includes the development

of incentives to system operators to purchase flexibility and balance services. National targets to take on board flexibility criteria into the network planning are generic and widely spread during 2020-2030.

On **energy poverty**, the NECP reports the number of households affected and provides a summary of the objectives and measures envisaged in the 2019-2024 strategy against energy poverty (ENPE) (adopted in April 2019). It is an ambitious plan to tackle energy poverty, and the Spanish government has already started to implement it. Spain has the objective of halving the share of households in situation of “hidden energy poverty.” This indicator is defined as households whose total expenditure on energy is less than a half of the national median. According to the 2019-2024 strategy against energy poverty, the share of “hidden energy poverty” was 11.5% in 2017, and the objective is to reach 5.7% by 2025.

These policies and measures are considered sufficiently credible in relation to the achievement of the target. The plan includes a definition of energy poverty and four key indicators to measure it, very similar to these used by the European Observatory of Energy Poverty (EPOV). Furthermore, it presents a quantification of these indicators for 2017 and sets a reduction of at least 25% for each poverty indicator by 2025. The plan also sets out 19 measures which would be closely monitored by the Institute for Energy Diversification and Saving (IDAE), the annual publication of these indicators and a comparative assessment with other Member States.

Research, innovation and competitiveness

Spain aims to increase the weight of research and innovation in national economic activity. From the respective investment, a significant share – yet to be determined – will be dedicated to energy and climate.

Although the objectives are not accompanied by specific timelines or quantified targets, the policies and measures go in the right direction. The plan highlights various actions on R&I, with different policy mechanisms including various programmes and funds yet to be launched.

The plan refers to its renewable hydrogen roadmap (RH2), where Spain considers renewable hydrogen as a key technology to increase the production of renewable electricity and renewable gases, targeting 4 GW of hydrogen electrolysis capacity in 2030. According to its NECP, Spain considers renewable hydrogen as a key technology to increase the production of renewable electricity and gas in parallel, and to decarbonise its energy supply. According to the NECP, 15 hydrogen projects were financed under the energy research & innovation programme (2014-2016) for a total budget of EUR 1.9 million.

Spain links its national research programmes to the **strategic energy technology (SET) plan** thematic areas, outlining the relationship between their national R&I programmes and the SET plan working groups. While Spain does not provide a precise allocation of the national funds, the description allows an understanding of how the SET plan contributes to the achievement of their national energy and climate objectives.

Spain highlights its advantage as one of the European countries with the highest renewable energy potential, complemented by a business, technology, innovation and knowledge base in this area, internationally leading companies and a significant industrial fabric in renewable energy. As such, Spain aspires to be one of the EU’s leading countries in terms of the energy transition. It announces that a **industrial development plan** will be drawn up to analyse the countries potential and map existing technological, industrial and knowledge capabilities for the energy transition.

There are no policies and no measures directly linked to **competitiveness**. The measures under the research, innovation and competitiveness mostly address improving the efficiency and effectiveness of R&I funding and programmes and networks of excellence at national and European level, and strengthening international presence and cooperation on decarbonisation. However, they also include, green innovation (i.e. eco-innovation) procurement, strengthening public risk capital for technology transfer in energy and climate and cutting red tape, which can have a more direct positive effect on the competitiveness of businesses.

4. COHERENCE, POLICY INTERACTIONS AND INVESTMENTS

The objectives of the Spanish NECP appear to be broadly coherent with the different parts of the plan, in particular on decarbonisation and energy efficiency. The final plan integrates the description of the **interactions** of the relevant policies and measures. Notably, the plan explains the interactions of the planned phase-out of coal-fired power plants and part of nuclear power generation by 2030 with the security of electricity supply. Furthermore, detailed information is provided on how climate change risks might affect energy supply (e.g. effect on biomass resources and hydropower of reduced availability of water, and the effect on the energy network of extreme weather events), in relation to the second national adaptation plan (NAP2) that will set out measures for the energy sector. Information is also included on adaptation co-benefits for energy efficiency. The co-benefits between the envisaged action on management and use of biomass, biodiversity and climate change adaptation are mentioned. In particular, biodiversity is well integrated in the final plan, presenting measures positive for climate and biodiversity, like ecosystems restoration. However, the use of bioenergy is expected to increase significantly.

The final plan also takes stock of the **interactions with air quality and air emissions policy**, from both a policy and methodological point of view. The projections of GHG and air pollutants emissions have been developed in a consistent way and the link with the national air pollution control programme (NAPCP)¹⁶ is established. Trade-offs between this programme and the NECP are also described, as regards the increasing use of biomass for building heating, with some mitigation measure taken in the NECP to reduce negative impacts on air pollution. The presentation of the air pollutants emissions and health effects of the proposed climate and energy measures gives added value to the plan. The integrated approach to air, climate and energy modelling and policies in Spain can be considered good practice.

The final plan mentions the transition to a “resource efficient, circular and low-carbon economy.” It acknowledges the complementarity between the **circular economy** and decarbonisation, in line with the circular economy strategy approved in 2019. However, while describing several policies and practices that relate to circular approaches, the actual analysis and integration between decarbonisation and the circular economy will be part of the announced long-term strategy (long-term decarbonisation roadmap). The long-term strategy would benefit from a quantification of their impacts on GHG emissions reduction, in line with the most recent scientific literature.

On **just and fair transition**, the plan puts more emphasis on these issues, substantiating its approach, objectives and means to achieve them. The plan acknowledges the need to focus on the most “vulnerable” zones and introduces references to the 2019-2021 emergency action plan for

¹⁶ Required under Directive (EU) 2016/2284 on the reduction of national emissions of certain atmospheric pollutants

coal regions and closing plants (*‘Plan de Acción Urgente para comarcas de carbón y centrales en cierre’*), and to the Just Transition Agreements (*‘Convenios de Transición Justa’*).

The NECP assesses **investment needs** by sector. The total investments to achieve the plan’s objectives amount to EUR 241 412 million between 2021 and 2030, including EUR 196 000 million of additional investments compared to the trend scenario (without additional policies). The main sectors are: (i) energy efficiency: 35% (EUR 83 540 million), (ii) renewables: 38% (EUR 91 765 million), and (iii) networks and electrification: 24% (EUR 58 579 million). However, it is not clear how these amounts have been calculated: most (80%) is private investment and 20% is public investment in energy saving and efficiency measures, in the electrification of the economy and in actions associated with the promotion of sustainable mobility and modal shift. Part of the public investment is planned to come from European funding. As for public funding, not many details are given except for the energy renovation of houses (around EUR 1.2 million) and the electricity interconnections with France, with EUR 5.5 billion and EUR 800 million of European funding respectively. The energy and climate plan provides a good summary of the macro-economic impact of the planned policies and measures and an extended list of annexes with the methodology and data.

The description of existing **energy subsidies, in particular for fossil fuels**, appears to be based on internationally used definitions. Timelines to phase out energy subsidies, are described for renewable energy, combined heat and power (CHP) and waste and capacity mechanisms for fossil fuels.

Although the application of the **energy efficiency first principle** has not been explained in the plan, the principle has been recognised in general terms. Energy efficiency is considered as important and its overarching impacts have been identified mostly for decarbonisation, emphasising that the ambition can be achieved only in combination with for example, energy efficiency measures. Moreover, the principle has been recognised for renewable energy and to a certain extent for energy security. The direct link between the energy efficiency and renewable energy targets has been identified as well as the effect of reduced energy consumption on energy imports.

The final plan fully complies with **data transparency** requirements and partially with the use of European statistics.

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

Spain needs to swiftly proceed with implementing its final integrated national energy and climate plan, as notified to the Commission on 31 March 2020. This section provides some guidance to Spain for the implementation phase.

This section also addresses the link between the final plan and the efforts to recover from after the COVID-19 crisis, by pointing to possible priority climate and energy policy measures Spain

could consider when developing its national recovery and resilience plan in the context of the Recovery and Resilience Facility¹⁷.

Guidance on the implementation of the national energy and climate plan

In the plan, Spain sets out that with the additional measures specified, emissions in the effort sharing sectors would reduce by 39% by 2030 compared to 2005, which is 13 percentage points more than the binding target of 26% set in the Effort Sharing Regulation.

The Spanish contribution to the EU 2030 renewables target is very ambitious when compared to the share resulting from the formula in Annex II of the Governance Regulation, whereas the contribution to the 2030 energy efficiency target is sufficiently ambitious. However, Spain's plan still leaves scope to further develop and strengthen policies and measures on both renewables and energy efficiency in order to contribute more to the EU climate and energy targets and strengthen the green transition.

Spain plans to have an ambitious share of **renewable energy** in its gross final energy consumption (42%) for 2030. To achieve this goal, Spain would benefit from aligning targets set in national legislation with those set in the NECP. Full implementation of the detailed policies and measures indicated in the NECP should allow Spain to achieve a substantial increase in renewables¹⁸. Further reflection on how to improve the integration of the energy system could also help to make this increase more cost-effective.

On **energy efficiency**, a detailed elaboration of all the elements laid down in Annex III of the Governance Regulation would be beneficial for ensuring the achievement of the energy saving obligation under Article 7 of the Energy Efficiency Directive. In addition, the policy framework would benefit from implementing the energy efficiency first principle in related policy areas, by fully taking into account co-benefits of energy efficiency measures when considering them for reaching other objectives.

The improvement of energy efficiency in buildings has much potential for speeding up energy savings and contributing to the recovery of the economy after the COVID-19 pandemic. Building on the momentum of the **Renovation Wave** initiative¹⁹, there is scope for Spain to intensify efforts to improve the energy performance of the existing building stock with concrete measures, targets and actions with due attention to energy poverty. Considering Spain's need for deep renovation of private and public buildings, further support could be provided through increased public funding and by leveraging EU and national budgets with private money, in particular by combining grants, lending, guarantees, loans and subsidies. Spain would need to underpin the substantial energy saving potential of the existing building stock by implementing the long-term

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

¹⁸ The Commission will adopt in November 2020 a strategy on Offshore Renewable Energy, which will provide a vision and a series of policy initiatives for steering up to 2050 a massive, cost-effective and sustainable scale up of offshore renewable energies and related value-chains in the whole EU.

¹⁹ Communication 'A Renovation Wave for Europe – greening our buildings, creating jobs, improving lives', COM(2020)662 and SWD(2020)550.

renovation strategy, in line with Article 2a of the Energy Performance of Buildings Directive.²⁰ Energy poverty could be, among other measures, addressed through specific support to socially innovative solutions and social enterprises that work on addressing this challenge (e.g. energy-awareness campaigns, retraining unemployed as energy advisors, supporting green installations by cooperatives, buying energy-saving appliances for social enterprises to rent out). It will be important to ensure the upskilling of the workforce in the construction sector.

On **energy security**, Spain would benefit from developing measures supporting the energy security objectives, including measures ensuring system resilience and flexibility, focusing on the deployment of renewable energy in the non-peninsular territories. Moreover, in view of the planned nuclear phase-out in Spain, it would be very important to maintain the existing nuclear fuel fabrication capacity in the country to ensure the continued viability of the related EU industry, the technological leadership of the EU in the nuclear domain and to be competitive on the world market.

On the **internal energy market**, Spain is encouraged to further develop specific measures and clear and measurable milestones to deliver on the objectives contained in the final plan concerning the full integration of the electricity and gas markets and the development of new energy technologies, and by guaranteeing non-discriminatory access to new market entrants. Spain is also encouraged to pay particular attention to the impact of regulatory measures on tariffs.

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

Spain estimates that a total of EUR 241 billion over the period 2021-30 are needed to achieve the objectives of the NECP, which would be distributed as follows: (i) energy efficiency EUR 83.5 billion, (ii) renewable energy EUR 91.8 billion, (iii) grids 58.6 billion EUR, and (iv) non-energetic sectors (other measures) EUR 7.5 billion. Most (80%) are private investments. However, it is unclear, what will trigger those investments. 20% is public investment in energy saving and efficiency measures, in the electrification of the economy and in actions associated with the promotion of sustainable mobility and modal shift. Part of the public investment is planned to come from European funding.

Spain is invited to continue ongoing efforts on **regional cooperation** with a view to intensifying exchanges and initiatives that will facilitate the implementation of its national energy and climate plan, in particular as regards relevant cross-border issues. The involvement in the TEN-E High-Level Group for south-west Europe would enable Spain to continue developing interconnections in the future. Spain is invited to further explore the possibilities within the clean energy for EU islands initiative to advance the clean energy transition on its islands. Spain is also invited to better exploit the potential of the **multilevel climate and energy dialogues** to actively engage and discuss with regional and local authorities, social partners, civil society organisations,

²⁰ Spain notified the long-term renovation strategy in accordance with Article 2a of Directive 2010/31/EU on the Energy Performance of buildings on 15.06.2020.

business community, investors and other relevant stakeholders and to discuss with them the different scenarios envisaged for its energy and climate policies.

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

For all investments implementing the national energy and climate plan, Spain is invited to ensure these are in line with national, regional or local plans for **air pollution** reduction, such as the National Air Pollution Control Programme (NAPCP), and relevant air quality management plans

As regards **energy poverty**, Spain is encouraged to consult the Commission Recommendation of 14 October 2020 on energy poverty and its accompanying staff working document providing guidance on the definition and quantification of the number of households in energy poverty and on the EU-level support available to Member States' energy poverty policies and measures. In implementing its plan,

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

Link to the recovery from the COVID-19 crisis

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

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

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

effectively address the policy challenges set out in the country-specific recommendations adopted by the Council.

In addition, **the Commission strongly encourages Member States to include in their recovery and resilience plans investment and reforms in a number of ‘flagship’ areas²¹**. In particular, the ‘Power up’, ‘Renovate’ and ‘Recharge and refuel’ flagships are directly related to energy and climate action and to the final national energy and climate plans. Investments and measures under the ‘Reskill and upskill’ flagship, in particular as regards green technologies, are also essential to foster the climate and energy transition in all Member States.

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

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

- Measures supporting building renovation and developing renewable energy, especially in heating and cooling and transport; measures aimed at strengthening and expanding the transmission and distribution lines including electricity interconnections with neighbouring countries;
- Measures promoting sustainable transport, including improving e-mobility infrastructure and shifting freight from road to rail;
- Measures promoting the circular economy, water management, flood prevention and waste water treatment.

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

²¹ Cf. Annual Sustainable Growth Strategy 2021 (COM(2020) 575 final), pp. 9-12.

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

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

Programme	Amount	Comments
Cohesion policy funds (ERDF, ESF+, Cohesion Fund)	35.4	In current prices. Includes funding for European territorial cooperation (ETC). Does not include amounts transferred to the Connecting Europe Facility.
Common agricultural policy – European Agricultural Fund for Rural Development, and direct payments from the European Agricultural Guarantee Fund.	41.9	In current prices.
Recovery and Resilience Facility	59.2	In 2018 prices. Indicative grants envelope, sum of 2021-2022 and estimated 2023 commitments. Based on the Commission’s summer 2020 GDP forecasts.
Just Transition Fund	0.8	In 2018 prices. Commitments both under the multi-annual financial framework (MFF) and Next Generation EU.
ETS auction revenue	1.3	Indicative: average of actual 2018 and 2019 auction revenues. The amounts in 2021 to 2027 will depend on the quantity and price of auctioned allowances.

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

Programme	Amount	Comments
Horizon Europe	91.0	In current prices. Includes Next Generation EU credits.
InvestEU	9.1	In current prices. Commitments both under the multi-annual financial framework (MFF) and Next Generation EU. Includes the InvestEU fund (budgetary guarantee to public and private investment) and the advisory hub (technical advice). Does not consider appropriations available to beneficiaries through implementing partners, such as the European Investment Bank.
Connecting Europe Facility <ul style="list-style-type: none"> • Transport • Energy 	24.1 5.8	In current prices. The commitment for transport includes the contribution transferred from the Cohesion Fund. Excludes Connecting Europe Facility Military Mobility funding for dual use infrastructure.
Recovery and Resilience Facility	360.0	In 2018 prices. Non-allocated commitments for loans. Loans for each Member State will not exceed 6.8% of its gross national income.
Technical Support Instrument	0.9	In current prices.
Programme for Environment and Climate Action (LIFE)	5.4	In current prices.
European Agricultural Fund for Rural Development	8.2	In current prices. Commitments under Next Generation EU.
Innovation Fund	140.0	Approximation: 7/10 of the allocations of ETS allowances to provide revenue to the Innovation Fund for 2021-2030 and assuming a carbon price of EUR 20 per tonne.

Note to both tables

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

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

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

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

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

Recommendations		Assessment	
Decarbonisation - GHG	No recommendation	n.a.	-
Decarbonisation - renewables	Underpin the welcome level of ambition of a 42% renewable energy share for 2030 as Spain's contribution to the Union's 2030 target for renewable energy by detailed and quantified policies and measures that are in line with the obligations requested in Directive (EU) 2018/2001 of the European Parliament and Council and enabling a timely and cost-effective achievement of this contribution.	Fully addressed	The final NECP confirms the national contribution of 42% share of renewable energy in gross final consumption in 2030. The final plan is more robust quite detailed on renewables.
	Include an indicative trajectory that reaches all the reference points under Article 4(a)(2) of Regulation (EU) 2018/1999.	Partially addressed	Interim points for 2022 and 2027 have been included in the trajectory for the overall share of renewables, but not for the sectoral shares.
	Provide further details on measures to reduce administrative burden and on the enabling frameworks for renewable self-consumption and renewable energy communities in line with Articles 21 and 22 of Directive (EU) 2018/2001.	Fully addressed	The plan sets a framework to boost self-consumption and proposes measures to facilitate the development of renewable energy communities.
Energy efficiency	Explore further on how the current measures would need to be further developed to achieve their ambition towards achieving the expected energy savings, and to address potential in the building stock. Such measures will have to deliver a multiplication of energy savings compared to current achievements and the challenges of such significant upscaling would need to be properly taken into account.	Partially addressed	Spain has proposed policies and measures that would ensure the achievement of the national contribution and the cumulative energy savings target. Further clarification on the estimated impacts of the policies and measures on energy consumption and detailed information on measures contributing to the energy savings obligation was not provided. The information provided on the renovation of the building stock is much improved while further information is presented in the long-term renovation strategy.

Energy security	Further develop measures supporting the energy security objectives on diversification and reduction of energy dependency, including measures ensuring flexibility, as well as information on phase-out from nuclear.	Fully addressed	The final plan contains further information on responsibilities and actions for each measure and clarifies the role of increased energy efficiency and renewables, as domestic sources of energy, in improving the security of supply.
Internal market	Define forward-looking objectives and targets concerning market integration, in particular measures to address the projected evolution of the tariff deficits in the electricity and gas sectors and potential impact from the measures envisaged. Outline a strategy and timeline for progressing towards fully market-based prices.	Largely addressed	The final NECP sufficiently outlines the electricity market reform and provides for the cancellation of the historical deficit of the energy system by 2028. Information on specific targets and instruments, such as the Bono Social and consumers associated for both, electricity and gas are still lacking.
Research, innovation and competitiveness	Further clarify national objectives and funding targets in research, innovation and competitiveness, specifically related to the Energy Union, to be achieved between now and 2030, so that they are readily measurable and fit for purpose to support the implementation of targets in the other dimensions of the integrated national energy and final plan. Underpin such objectives with specific and suitable policies and measures, including those to be developed in cooperation with other Member States, such as the Strategic Energy Technology Plan.	Partially addressed	The plan identifies well relevant R&I objectives (in energy, climate and transport), but without specific timeline nor quantified targets. For a substantial part of the objectives concrete support policies or measures are presented, still for most of them the timeline and dedicated funding mechanisms are not clarified. As regards competitiveness, no specific and measurable objectives are defined yet, however, an Industrial Development Plan will be drawn up. The cooperation with the Strategic Energy Technology (SET) Plan is clearly addressed and its priorities interlinked with the Spanish NECP priorities, but it is not clear how these will be implemented.
Investment needs and funding sources	No recommendation	n.a.	-

Regional cooperation	Intensify the existing good regional cooperation with France and Portugal to address the internal energy market and energy security areas, in particular cross-border and cross-regional interconnections.	Largely addressed	The final NECP is more detailed on the measures envisaged to carry out the cross-regional and cross-border projects with France and Portugal. On energy security for example, one measure mentioned in the NECP is to improve coordination with France and Portugal by organising regular meetings to address energy security issues. On the energy internal market, the NECP provides complementary information on how the projects with France and Portugal will be planned. It refers explicitly to the 2021-2026 transport network plan. Information is limited regarding the Annex D recommendation on small-scale infrastructure and small grids in a cross-border context, on scale and more generally, on the analysis at sub-national level.
	Consider strengthening measures related to regional cooperation in renewable energy and energy efficiency.	Not addressed	When mentioning regional cooperation energy projects or measures, there is no specific focus on renewable energy or energy efficiency.
Energy subsidies	List all energy subsidies.	Largely addressed	The final NECP represents a meaningful upgrade of the draft plan on energy subsidies. Spain has included a list of subsidies for renewable energy and combined heat and power, in force at the date of the submission of the final plan.
	List in particular fossil fuel subsidies.	Largely addressed	The plan includes a catalogue of energy subsidies in the form of tax breaks capacity mechanisms for fossil fuel fired power plants.
	List actions and plans to phase out energy subsidies, in particular for fossil fuels.	Partially addressed	Actions and plans to phase out energy subsidies, are described for renewable energy, CHP and waste, as well as for a capacity mechanism for fossil fuel fired power plants. Actions and plans to phase-out the rest of the reported (fossil fuel) energy subsidies appears to be missing.
Air quality	No recommendation	n.a.	-

Just transition and energy poverty	Integrate just and fair transition aspects better, notably by providing more details on social, employment and skills impacts of planned objectives, policies and measures.	Partially addressed	The final plan dedicates a whole paragraph to the subject in the policies and measures chapter. However, regarding the impact of these measures on employment and social aspects, the NECP provides only an update of figures already mentioned in the 2019 draft. The measures described in the NECP referring to the just transition strategy only target workers affected in the coal-mining sector and coal-fired power plants. From a distribution perspective, measures envisaged are expected to mostly benefit low-income households: allowances for the rehabilitation of dwellings, boost of self-consumption, extension of the heating social tariff. On skills, the chapter on impact does not say much more, but the NECP introduces a focus on measures linked to training professionals in renewable energies.
	More specifically, the plan should address the impacts on the coal and carbon intensive regions, and integrate the national strategy for the energy transition.	Fully addressed	The NECP acknowledges the need to focus on the most “vulnerable” zones. It introduces references to the 2019-2021 emergency action plan for coal regions and closing plants (<i>‘Plan de Acción Urgente para comarcas de carbón y centrales en cierre’</i>), and to Just Transition Agreements (<i>‘Convenios de Transición Justa’</i>), which were launched before the Green Deal.
	Include a dedicated assessment of energy poverty issues, along with any related objectives or specific policies or measures.	Fully addressed	The final NECP provides much more detail on the measures envisaged to fight against energy poverty, including a precise description of the national strategy against energy poverty (adopted in April 2019 after the draft NECP was submitted to the Commission) and quantitative objectives until 2025.