



PLEDGES
PLEDGE LIMITS EVALUATION FOR DECARBONIZATION
GOALS OF THE UE27 STRATEGY



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Pledge Limits Evaluation for Decarbonization: Goals of the EU27 Strategy

Task 1.1

Investigation of the EU27 Member State's present decarbonising strategies and incentives.

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Document info sheet

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List of abbreviations and acronyms

CBAM: Carbon Border Adjustment Mechanism

ESR: Effort sharing regulation

ETS: Emission Trading System

LTS: Long Term Strategy

LTRS: Long Term renovation Strategy

N/A: not addressed

NECPs: National Energy and Climate Plans

SCF: Social Climate Fund

SWD: Staff work Document

Executive summary

Task 1.1 aims to highlight the state of the art in decarbonization policy and incentives strategy for EU27 as a whole and each Member State. The study is mainly based on the evaluations of the Final National Energy and Climate plans (NECPs) published in September 2020 and the analysis of the assessment of recommendations the European Commission gave for improving the plans published in October 2020. At present NECPs represent the main “tool” to promote the EU 27 decarbonization. Moreover, an evaluation of National Long Term Strategy plans has also been carried out to assess the actions/policies each member state has planned for 2050.

Despite the rich and extensive documentation provided by the State Members and the European Commission in describing National Plans (NECPs as well as LTS plans) it is still very difficult to evaluate where and how EU27 as a whole has positioned itself on the path to achieve the Green Deal objectives, named the Fit 55% package, and the achievement of Paris goal of 2050 carbon neutrality. This task aims to fill this gap, proposing a simple but exhaustive methodology that highlights the present barriers and opportunities toward EU27 decarbonization.

INTRODUCTION

EU Green Deal objectives

A step before the EU Green Deal

Already in 2008, the European Union was at the forefront in the fight against climate change with a proposal aimed at a 20% reduction in greenhouse gas emissions, a 20% increase in energy efficiency and a contribution of 20% of renewable sources in the energy mix by 2020. The objectives set for 2020 have been achieved, for example, emissions between 1990 and 2019 fell by 23%, combining this reduction with economic growth of more than 60%. More ambitious goals were therefore set for 2030: a **40%** reduction in emissions, a **32%** contribution from renewable energies and a **32.5%** increase in energy efficiency. At the end of 2019, as required by the European Union Governance Regulation, the Member States sent their National Energy and Climate Plans (NECPs) to the European Commission (EC), for the period 2021-2030, listing their initiatives and their contribution to the aforementioned climate objectives in coherence with the Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action (in short, the Governance Regulation), part of the Clean Energy for all Europeans package (CEP)¹. The energy-climate objectives, national targets and contributions included in the NECPs are non-binding. The only exceptions are the binding national targets on annual greenhouse gas emission reductions over the period from 2021 to 2030.

Green Deal: 2030 and 2050 objectives

At the end of 2019, the European Union was therefore on track to achieve the climate goals that had been set for 2030 within CEP but in December of the same year (2019) the European Commission proposed the *"Green Deal", aiming for a 55% reduction in emissions to 1990 instead of 40%*. The Green Deal was examined by the Council and the European Parliament, and at the end of 2020, the Commission published the assessment² of the cumulative impact of the NECPs of the 27 Member States (based on the Governance Regulation).

After a long legislative process, the objectives of the Green Deal were approved by the Council and the European Parliament in 2021: the Green Deal requires a profound review of the European Union's energy and climate policies to achieve a reduction in emissions of 55% instead of 40%. This revision is contained in the *"Fit for 55"* package also known as the "Green Package" adopted by the Commission on 14 July 2021.

The main elements of the "Fit for 55" package

Fit for 55 will profoundly change the way we use and, in some cases, abuse energy. The package contains 12 initiatives, both amendments to existing legislation and new proposals.

The amendment to the Energy Efficiency Directive reiterates the principle that *energy efficiency* should be the priority and requires the Member States to reduce primary energy by 39% compared to 1990. This target becomes mandatory and will result in a consumption of no more than 1023 million tons of oil equivalent by 2030. A fundamental element of energy-saving *must come from the buildings* for which the funds of the Recovery Plan can be used to improve efficiency.

¹ European Commission. Directorate General for Energy., *Clean Energy for All Europeans*. (LU: Publications Office, 2019) <<https://data.europa.eu/doi/10.2833/21366>> [accessed 28 January 2022].

² European Commission, 'An EU-Wide Assessment of National Energy and Climate Plans' <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2020:564:FIN>>.

The revision of the Directive on renewables increases the objective of the contribution of these sources to the energy mix from 32% to 40% for 2030. The more ambitious objective will be able to count on the reduction of costs for renewables, a reduction that has allowed in 2019 for solar and wind to jointly produce more electricity than coal in the European Union.

The revision of the Emission Trading System ³ (ETS): ETS works according to the principle of limiting emissions for the 10,000 installations covered by the mechanism itself. Emissions are reduced every year and installations can sell or purchase allowances depending on whether they have exceeded or decreased their emissions. The proposed revision of the ETS increases the percentage of annual reduction. *An emissions trading system was also created for land transport and buildings.*

Proposals in the transport sector, with a gradual reduction of CO₂ emissions from cars and vans to reach "zero emissions" in 2035. This would imply that *no new diesel petrol or hybrid vehicle*, is sold from that date. Supporters of the initiative advocate a "Fordian" revolution which, with the mass production of electric vehicles, could drastically lower the price. The proposal is extremely ambitious and has received a very lukewarm reception from both the automotive industry and the Member States.

Carbon Border Adjustment Mechanism ⁴ (CBAM), in practice a CO₂ tax is applied on the import of cement, iron, steel, aluminium, fertilizers and electricity, in case they are not produced with adequate standards to limit emissions. The goal is to protect industries from unfair competition from non-European producers who are not subject to similar environmental standards. The measure should avoid the relocation of certain productions to nations with less stringent environmental standards.

The **"Fit for 55"** package also includes a revision of the Directive ⁵ on the "minimum" taxation of energy products, the Regulation on the use of land and forests which can contribute to emissions by capturing or releasing CO₂ and the "Effort Sharing" Regulation for the reduction of emissions in sectors not covered by the Emissions Trading Scheme.

It is important to underline that the proposal of the "Fit for 55" package is only the initial stage of a round of negotiations with the European Parliament and the Council. The final result should lead to a compromise between the Member States with different energy mixes and different sensitivities to the climate challenge.

Member States National Strategies

National strategies rely mainly on NECPs that have now included the new Fit for 55 objectives. I recall here NECPs are the main reporting requirement under the Governance of Energy Union Regulation and cover successive 10-year periods: from 2021 to 2030; 2031 to 2040 and 2041 to 2050. The reception of Green Deal objectives into NECPs happened with the **EU Climate Law** ⁶, which is **one of the first legal outputs of the EU Green Deal of 2019**: since its entry into force on 29 July 2021. The EU Climate Law established a binding commitment of the Union and its **Member States**

³ European Commission, 'Emission Trading System' <https://ec.europa.eu/clima/eu-action/eu-emissions-trading-system-eu-ets_en> [accessed 19 January 2022].

⁴ European Commission, 'Questions and Answers: Carbon Border Adjustment Mechanism' <https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_3661> [accessed 19 January 2022].

⁵ European Commission, 'Restructuring the Union Framework for the Taxation of Energy Products and Electricity' <https://ec.europa.eu/info/sites/default/files/revision_of_the_energy_tax_directive_0.pdf> [accessed 19 January 2021].

⁶ European Commission, 'European Climate Law', 2021 <<https://eur-lex.europa.eu/eli/reg/2021/1119/oj>> [accessed 30 January 2022].

to achieve a **55% net GHG reduction in 2030** (compared with 1990) and the EU27 as a whole is bound by the objective of **climate neutrality in 2050**.

However, **these two binding targets do not update the European Union Governance Regulation in the same manner**: the overall *climate neutrality* objective (by 2050) is inserted into the Regulation *as a new additional basis* for reporting and evaluation; in contrast, the raised 55% GHG reduction objective describes the new EU climate target for 2030 as a ‘follow-up target’ to the previous Governance Regulation even though it has neither been transferred as consequentially as possible into the Governance Regulation *nor been divided among the Member States*: the target of 40% reduction in emissions was split with the principle of Effort Sharing Regulation, ensuring that Member States with higher GDP per capita have higher emission reduction targets.

National strategies should now be developed according to the new fit for 55 targets and the long-term strategy to achieve Climate neutrality by 2050, which means achieving net-zero greenhouse gas emissions for EU countries as a whole, mainly by cutting emissions, investing in green technologies and protecting the natural environment. The law aims to ensure that all EU policies contribute to this goal and that all sectors of the economy and society play their part.

Regarding 2030 objectives: By 30 September 2023, and every five years thereafter, the Commission shall assess: the consistency of national measures identified, based on the integrated NECPs, national long-term strategies and the biennial progress reports submitted under the Regulation.

Regarding the 2050 objective, from 1 January 2020, and subsequently by 1 January 2029 and every 10 years thereafter, each Member State shall prepare and submit to the Commission its long-term strategy with a 30-year perspective and consistent with the Union’s climate-neutrality objective set in the EU Climate Law (Article 2(1) of Regulation (EU) 2021/1119). Member States should where necessary, update those strategies every five years.

Scope of task 1.1

Task 1.1 aims to highlight the state of the art in decarbonization and incentives strategy for each Member State and EU27 as a whole. The study is mainly based on the *evaluation by the EC of the last available NECPs*, received by the EC in December 2019, and the *Long-Term Strategy plans* received on 30 September 2021.

The final NECPs are the results from previous Draft NECPs (submitted by 31 December 2018, under the Governance Regulation) that were analysed by the Commission with an overall assessment and country-specific recommendations published in June 2019. Taking these recommendations into account, Member States were then required to submit their final NECPs by 31 December 2019. Then, the European Commission published a document on the cumulative impact (*wide assessment*⁷, September 2020) of the final NECPs, following the Regulation and *27 staff working documents*⁸ (SWD, 14 October 2020) that evaluated how the Member states took into account the previous recommendations. SWD are the basis of the task 1.1 investigation (see methodology) for evaluating the state of the art of EU27 Member states’ 2030 strategy. *It’s important to underline the final NECPs have been submitted before entering into force of the EU Climate law, thus the assessment is still in compliance with the Regulation targets (before fit 55% package).*

⁷ European Commission, ‘An EU-Wide Assessment of National Energy and Climate Plans’.

⁸ European Commission, ‘NECPs Individual Assessments’, 2021 <https://energy.ec.europa.eu/individual-assessments_en> [accessed 4 March 2022].

For the Long-Term Strategy (LTS) plans, the Governance Regulation required the Member States to submit their first national long-term strategies to the Commission by 1 January 2020. At the moment, not all the Member States have submitted their LTS yet. The study of the LTS plan is based on the plans received by 30 September 2021. However, a two-page document (*Summary Tables*)⁹ summarizing the main content of each national long-term strategy submitted so far, is available and constitutes the basis of the LTS plans evaluation.

Despite the rich and extensive documentation provided by the State Members and the European Commission in describing National Plans (NECPs as well as LTS plans), it is still very difficult to evaluate where and how EU27 has positioned itself on the path to achieving the Governance Regulation and the more challenging Green Deal objectives (Fit 55% package and the achievement of 2050 carbon neutrality). *This task aims to fill this gap, proposing a simple but exhaustive methodology based on the use of scales (for instance the Likert scale) commonly used to measure quality (or other attitudes, knowledge, values, perceptions or similar).*

The use of a scale allows the translating of EC evaluation judgements - reported in the SWD and the Summary Tables - into scores, highlighting the position of each Member State in respect of the Regulation objectives, as well as the position of the EU27 as a whole, highlighting barriers and opportunities toward EU27 decarbonization and helping in recognizing further actions and policy to boost the green transition.

⁹ Ricardo, 'Long Term Strategy Summary Tables' (<https://ee.ricardo.com/>, 2021) <https://ec.europa.eu/info/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-long-term-strategies_en> [accessed 4 March 2022].

METHODOLOGY

Resources

The 27 SWD are the basis of the present study. They offer a comprehensive and extensive set of information in the form of “judgements”(see ANNEX 2 table within each Member States SDW) that can be easily converted into numerical scales *allowing for converting the EU Commission’s assessments of each Member State into scores that represent the improvement index of the quality of the plan in accomplishing 2030 objectives* (decarbonisation, energy efficiency, energy security, internal energy market, research and innovation and competitiveness).

A similar approach has been used for the *Summary Tables* from Ricardo (Energy & Environment Assessment of the Long-Term Strategies of EU Member States).

A further resource has been used to trace the evolution of the EU27 along with the path to carbonization: the Net Zero 2050¹⁰ Report by Ecologic Institute which assesses the draft NECPs (due by December 2018). This study represents the baseline of the NECPs evolution and the starting point and assesses Draft NeCPsthem according to:

- (1) the adequacy of their national targets (in a Net Zero context)
- (2) the completeness and detail of the policy descriptions,
- (3) the quality and inclusiveness of the drafting process

Any of the previous resources (NECPs, LTS, Net Zero report) evaluate the likely effectiveness of the presented policies.

Methods

Certain research data are qualitative in nature. Data on attitude, opinion or behaviours are qualitative. Motivation, commitment, satisfaction, leadership effectiveness, etc involve attitude measurement based on revealed opinions/judgements. *These qualitative data require measurement scales for being measured*. There is a vast literature^{11,12} that explores the importance of converting qualitative information to measurable data: depending on the observed phenomena several different scales are possible¹³.

However, for the nature of the study, the most performant scale is characterized as being a *semantic interval scale*. The semantic scale¹⁴ rates an adjective or notion and expresses some level of intensity. A semantic differential scale is a survey rating any 'entity' within the frames of a multi-point rating option that are grammatically on opposite adjectives at each end. For example, *love-hate, satisfied-unsatisfied, and likely to return-unlikely to return* with intermediate options in between. The analysis of the European Commission on NECPs and LTS plans’ effectiveness is conducted by

¹⁰ Mathias Duwe and others, *Planning for Net-Zero: Assessing the Draft National Energy and Climate Plans.*, Net Zero 2050 (Berlin, Louvain-la-Neuve, Brussels: Ecologic Institute, 2019) <<https://www.ecologic.eu/16573>> [accessed 31 January 2022].

¹¹ Peter Dunn-Rankin and others, *Scaling Methods* (Psychology Press, 2014).

¹² Rhonda L Hensley, ‘A Review of Operations Management Studies Using Scale Development Techniques’, *Journal of Operations Management*, 17.3 (1999), 343–58 <[https://doi.org/10.1016/S0272-6963\(98\)00051-5](https://doi.org/10.1016/S0272-6963(98)00051-5)>.

¹³ Tom Tullis and Bill Albert, ‘Chapter 6 - Self-Reported Metrics’, in *Measuring the User Experience (Second Edition)*, ed. by Tom Tullis and Bill Albert (Boston: Morgan Kaufmann, 2013), pp. 121–61 <<https://doi.org/10.1016/B978-0-12-415781-1.00006-6>>.

¹⁴ Andrea Ploder and Anja Eder, ‘Semantic Differential’, in *International Encyclopedia of the Social & Behavioral Sciences (Second Edition)*, ed. by James D. Wright, Second Edition (Oxford: Elsevier, 2015), pp. 563–71 <<https://doi.org/10.1016/B978-0-08-097086-8.03231-1>>.

employing qualitative judgments, and judgements that express a degree of the attitude of the plans in accomplishing the desiderated objectives. This is the case of the SDW for the Final NECPs, in which recommendations addressing is rated between “Not Addressed “ and “more than ambitious” addressed, a scale of satisfaction measurement. Similar evaluations are present in the Summary Tables for the LTS assessment. Details are discussed in the next paragraphs.

NECPs assessment

The assessment of the *Draft NECPs* according to the Net Zero Report is discussed in the original document the author does not report their methodology here. Results of the Net Zero Analysis are reported in the Result section.

The author's methods to assess the evolution of NECPs are based on the *Commission Staff Working Documents* regarding the assessment of the **Final NECPs**, published in October 2020. SWDs report two summarizing tables:

- Target Table: that focus on Member State’s objectives, targets and contributions under the Governance Regulation
- ANNEX II: Detailed assessment of how to commission recommendations to improve draft NECPs have been addressed

The target table reports the assessment of the declared targets/contribution in 4 areas:

1. GHG binding reduction target (at 2005) under Effort Sharing Regulations
2. Target the percentage of Renewables sharing in the national gross final energy consumption
3. Energy efficiency in primary energy consumption
4. Energy efficiency in final energy consumption

ANNEX II reports the description of the compliance of the Member State plan concerning the following 11 objectives:

1. non-ETS GHG emissions:
2. EU renewable energy share
3. Energy Efficiency
4. Energy Security
5. Internal energy market
6. Research and Innovation,
7. Regional cooperation,
8. Investment and funding
9. Energy subsidies,
10. Air quality measures
11. Just transition and energy poverty

In both tables, the assessment is expressed according to a qualitative scale based on judgments.

A qualitative approach is useful to guide the further improvements of the single plan, but it is not suitable to highlight which are the most challenging objectives across the countries, how many countries have set policies/actions to achieve a certain objective or how many countries have not, or only partially. Resorting to a numerical interpretation of the Commission assessment will help in realising graphic representations of the path toward the EU27 decarbonization. For this reason, *the authors converted the set of judgments into “scores” according to a “Semantic scale” principle (Table1).*

Concerning the Table targets, the Commission sets the following degree of judgments, reported in table 1, to evaluate the 2030 Ambition level of the 4 targets.

Table 1. Semantic scale judgements to score conversion for the Recommendation assessment of the 2030 goal according to the Regulation

TARGET	Score
more ambitious	7
sufficiently ambitious (including “as in ESR”)	6
adequate	5
not ambitious	4
modest	3
low	2
very low	1
not addressed (N/A)	0

In consequence, the maximum score for each country, in case all targets were more than ambitious, is 7 score x 4 targets =28; if none were addressed the score is 0. Considering each target has the same importance, the range of scoring can be designed as in table 2.

Table 2. Score assignment for the targets

GOALS	Targets score ranges	
fully addressed	24	28
largely addresses	21	24
sufficiently addressed	17	20
partially addressed	12	16
low addressed	9	12
very low addressed	5	8
not addressed	0	4

Then it is possible to classify *the member states' targets' ambition* accordingly (See Appendix A).

Regarding ANNEX II on the detailed assessment of how to commission recommendations on the 11 objectives, the degree of judgement was simplified to 4 levels: N/A, partially, largely, and fully. This is a scale of satisfaction. However, those tables are not the same for every Member State: the 11 objectives are the same, but each objective could require a *different number of recommendations*, depending on whether that objective was satisfied or not part of the Final NECPs. And each recommendation within the same objectives, can be fully, largely partially or N/A. there is a judgement set as “No Recommendation” which means EC was fully satisfied with how that objective is addressed in the Final NECPs, thus also this judgment is considered as fully addressed.

Thus the idea is if all the recommendations within the same objective are fully addressed the objective obtains 1 score (see table 3). It means that within an objective there are 4 recommendations, the full score for each of them is 0,25 and their sum is equal to 1. If only 2 recommendations are fully addressed, while the other two are only partially, the sum of the 2 fully addresses recommendations will be 0,5, while for the two partially addressed, the 0,25 score will be multiplied by 0,5 (or divided by two) and the total score for that objective will be: $0,25+0,25+0,125+0,125=0,75$ final score for the whole objective. The reasoning is based on the conversion table 3.

Table 3 NECPs 11 objectives Judgements conversion in Score

addressing EC Recommendations	score
FULLY	1,00
LARGELY	0,75
PARTIALLY	0,5

N/A	0
-----	---

To clarify further, consider for instance the following table 4 that refers to the Austria Recommendations assessment.

Table 4 SWD Annex II table for Austria, evaluation of EC recommendations

AUSTRIA- Recommendations				
	Recommendations	N of Recommendations per objective	Assessment judgement	score
1	Decarbonization-GHG	2	partially	0,25
			NA	0,00
2	Renewables share	5	fully	0,20
			fully	0,20
			partially	0,10
			partially	0,10
			fully	0,20
3	Energy efficiency	3	partially	0,17
			NA	0,00
			partially	0,17
4	energy security	1	NA	0,00
5	Internal energy market	1	No Recommendation	1,00
6	Research and Innovation	2	Largely	0,38
			partially	0,25
7	Regional cooperation	3	partially	0,17
			partially	0,17
			partially	0,17
8	Investment and funding	2	largely	0,38
			partially	0,25
9	Energy subsidies	3	partially	0,17
			NA	0,00
			partially	0,17
10	Air quality	1	partially	0,50
11	Just transition and energy poverty	2	NA	0,00
			Largely	0,38
	Total score			5,34

Recommendations on Renewables Share are 5. Thus, to obtain the score of 1 (fully) for this objective, all the 5 recommendations should be fully addressed, but they are not: 3 are fully addressed and 2 are partially addressed. Thus, the full score is obtained by dividing 1 by the 5 recommendations, obtaining 0,20 score = fully. Fully score is due for 3 recommendations thus the total is 0,6 score for those 3. To this, 2 partially scores must be added: partially score is obtained by multiplying the fully score $0,2 \times 0,5 = 0,1$ partially score. Thus total score for renewables share is $0,6 + 0,1 + 0,1 = 0,8$. Thus, as a *general rule*, the unit is divided, for each objective, by the correspondent number of recommendations, then with the help of table 3, the full score is proportioned to the correspondent judgements.

1/number of recommendations = "fully" score value based on the number of recommendations

*Fully score * judgement score (table3) = final score for recommendations*

Objective score=sum of scores for each recommendation due to that objective

If a recommendation is N/A, the score is = 0

If a recommendation is "No Recommendations", the score is=1

The EC considers all of them equally important and necessary to be addressed. Therefore, this methodology gives the same importance or weight to all the objectives. In appendix A, the conversion of ANNEX II tables is reported. As score



assignment, with all the objectives fully addressed, EU27 as a whole totalized 27 scores; if all members should address all the objectives largely, the total score will be $27 \times 0,75 = 20,25$; if the Members will address all the objectives partially, the total score for EU27 will be $0,5 \times 27 = 13,5$; below this score, the recommendations are low addressed.

Table 5 Score Range assignment for NECPs Recommendations

Addressing EC Recommendations	scores	
FULLY /NO recommendation		27
LARGELY	>20,25	<27
PARTIALLY	>13,5	<20,25
LOW	>0	<13,5
N/A		0

Long Term strategy assessment

The resources of the LTS plan and their assessment for each State Member are reported in the EC Energy, Climate change, Environment website, which collects the Summary evaluation tables ¹⁵for each country. Those table reports information about the following topics:

1. The overall goal of LTS
2. Scenarios presented in the LTS
3. GHG reductions
4. Renewable energy sources
5. Energy Efficiency
6. Estimated Investment
7. Socio-Economic Impact of transition
8. Adaptation Policies measures
9. Public Consultation
10. The legal status of LTS and targets

Similarly to NECPs assessment, Long Term Strategy plans can be measured with a satisfaction scale method. In the Summary Tables, the previous objectives have been assessed with a “value”. The value expresses: if the objective is addressed with “information/data” (estimations, scenarios, models) or if it is addressed, for instance in terms of policy/actions, with a “yes”, it is considered “satisfying”; if the objectives are limited, they are considered “partially satisfying”; and if they are not addressed with “N/A”, “No”, “Unspecified”, they are considered “not satisfying”. Conversion of values in the score are in table 4: max 1 score if the objective is addressed, 0,5 if is limited addressed, 0 scores if the objective is not addressed, not present (No) or not specified. The tables have the same structure for all the countries.

Table 6. Value and score for the Summary Tables on Member states Long Term Strategies

Addressing EC recommendations: value	score
Quantitative data and information	1

¹⁵ European Commission, ‘National Long Term Strategies’ <https://ec.europa.eu/info/energy-climate-change-environment/implementation-eu-countries/energy-and-climate-governance-and-reporting/national-long-term-strategies_en#strategies>.

yes	1
limited	0,5
N/A or No or unspecified	0

The results of the score assignment are reported in appendix A, the discussion of results in the Results session.

RESULTS

Members State decarbonizing measures: State of the Art

In the following, a discussion on the current evolution trend of Member States NECPs will be carried out comparing an assessment of the Draft NECPs conducted by Ecologic Institute in 2019 (Net Zero 2050) with the assessment of the NECPs (October 2020) by EC.

The comparison aims to highlight the progress in the development of the NECPs plan, evaluate the response of the Member States to the EC recommendations, to assess the commitments promised by the Member States for the Energy Climate 2030 Plans and their position in respect of the more challenging Green Deal objective.

The results also report unprecedented insights on the Final NECPs' commitment toward the 2030 objectives and the LTS strategy commitment toward the 2050 carbon neutrality goal, for each single member state as well as EU27.

NECPs drafts assessment by Ecologic Institute

The report, entitled “Planning for net-zero”¹⁶, was elaborated by the Ecologic Institute and Climate on behalf of the European Climate Foundation. In its 100 pages, it analyzes the individual Energy Climate 2030 Plans one by one, returning a ranking of the nations most committed to the goal of zero emissions. And revealing how to draft NECPs were far from the final goals of Governance Regulation.

The report shows the best NECP is by Spain. The country delivered its commitments to the European Commission several weeks late but holds the highest score (52 out of 100) assigned based on the three indicators: level of ambition, level of detail of the policies and measures described, quality and inclusiveness of the drafting process. Followed by France (47 out of 100), Greece (44) and Sweden (43), Figure 1.

Data in Figure 1 are retrieved by the tables present in the report: Table “Target Adequacy Total” on page 24; Table “Policy Details Total” on page 38; Table “Process quality total” on page 45.

Figure 1 shows “target adequacy” versus “policy details” in the draft plans: 11 countries didn’t show adequacy in the targets nor the policy; 11 Member states planned an adequate number of policies and actions in their plans, but they didn’t have the adequate ambition to achieve the desired targets.

3 member states had efficiently set ambitious targets in their plans, but they are not followed by adequate policies and measures to achieve them.

Only 3 member States, even with tangible differences, had proposed comprehensive plans.

¹⁶ Duwe and others.



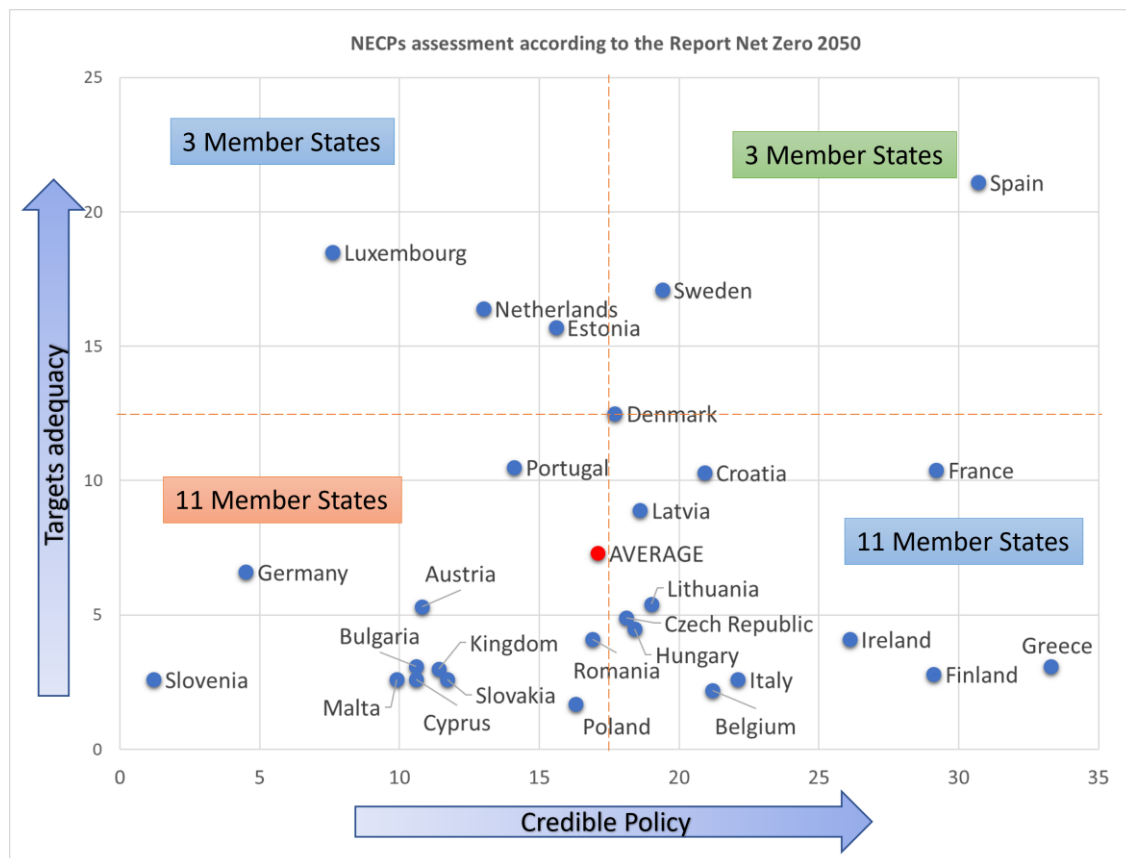


Figure 1 NECPs adequacy and policy details to accomplish Climate Regulation before the Green Deal by the study by Ecologic Institute (BE) in the series Net-zero 2050 Report (2019) ¹⁷

Moreover, Regulation set out binding requirements for public consultations on NECPs that needed to be followed. However, countries slightly adhered to these rules and failed to establish a proper stakeholder consultation that was comprehensive, timely and made the necessary documents publicly available (Figure 2).

¹⁷ Duwe and others.



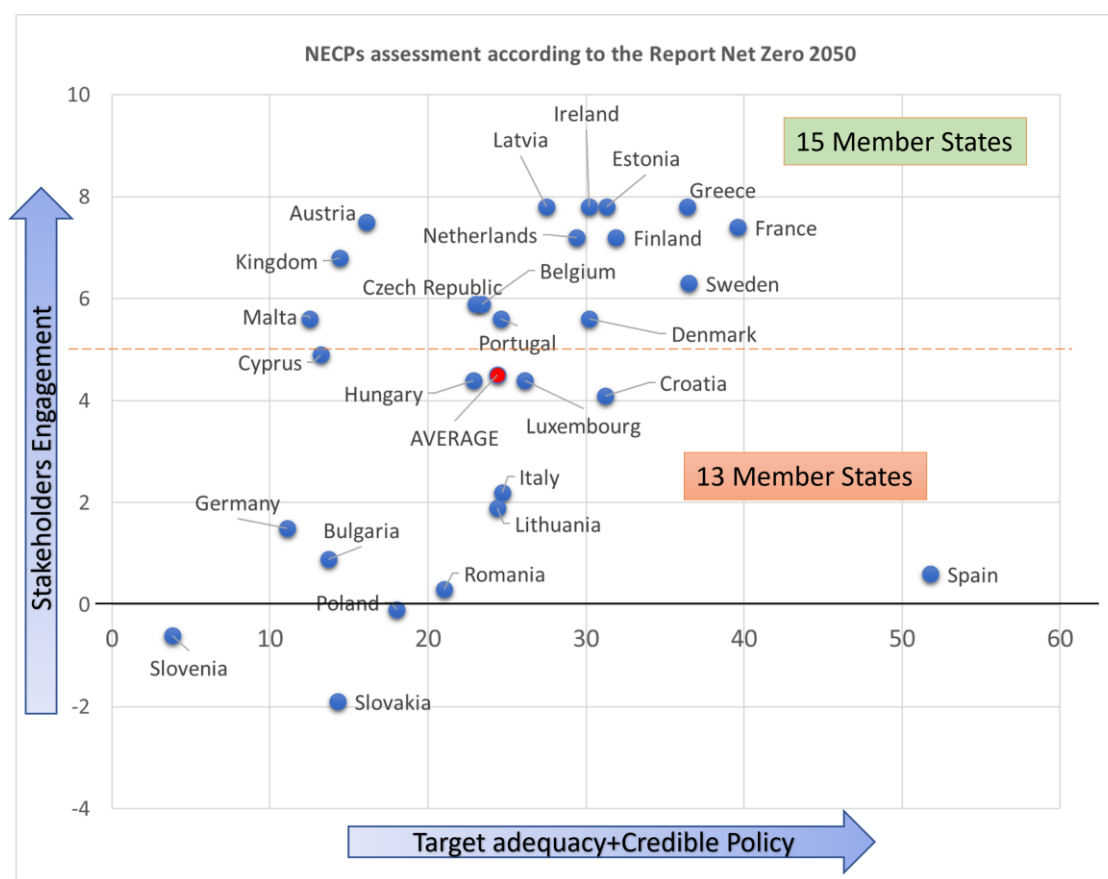


Figure 2 NECPs stakeholder engagement versus adequacy and policy details to accomplish Climate Regulation before the Green Deal. The study by Ecologic Institute (BE) in the series Net-zero 2050 Report (2019)

Final NECPs assessment by European Commission (2020)

Just after the Net Zero Report (May 2019), the Commission published a Communication assessing the 28 draft NECPs (including the UK) in June 2019 (COM/2019/285)¹⁸, together with specific recommendations and a detailed "Staff Working Document"¹⁹ for each EU countries. Final NECPs have been presented at the end of 2019, and the commission gave a wide assessment report on 17 September 2020²⁰. in parallel with the proposals for a new 2030 Climate Target Plan. The 2020 energy union report, published on 14 October 2020, included 27 staff working, one for each State Member (except the UK) with a detailed account of how the previous recommendations (2019 SWD) were reflected in the final NECPs.

In the present study, the SWD 2020 has been analyzed and studied to assess the state of the art in decarbonization strategy. The methodology has been reported in the previous paragraphs. The result of the scores assigned for each target and recommendations for the Member States are reported in Appendix A.

¹⁸ European Commission, 'United in Delivering the Energy Union and Climate Action - Setting the Foundations for a Successful Clean Energy Transition', 2019 <<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52019DC0285>>.

¹⁹ European Commission, 'Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions - SWD', 2019 <https://ec.europa.eu/energy/sites/ener/files/documents/staff_working_documet_en_213.pdf>.

²⁰ European Commission, 'An EU-Wide Assessment of National Energy and Climate Plans'.

The results of the study are organized into 2 parts: results on NEPCs assessment and results on LTS assessment. NEPCs results are in turn split into 3 parts: an examination of Target's ambition level (Target Tables), an examination of the recommendations for the 11 objectives (ANNEX II) and an assessment of NEPCs for the EU27 as a whole.

National Targets ambition level

Targets Ambitions levels for the member states are related to (Target Tables in the SWD):

1. GHG binding reduction target (at 2005) under Effort Sharing Regulations
2. Target the percentage of Renewables sharing in the national gross final energy consumption
3. Energy efficiency in primary energy consumption
4. Energy efficiency in final energy consumption

In figure 3, the score for the NEPCs targets for each member State is presented; the scores are those reported in appendix A, for each country in the first Table titled with the name of the “country – target” (for instance, “Austria-Target”) at the row “total score”. The total score represents the sum of the scores obtained for each target according to the author's methodology (see table 1).

As the main finding, *any of the Member states achieve a score of 24 or more to be considered fully addressing (on average) the EC recommendations*, although no country achieves this.

8 countries, largely address the EU recommendations, 15 partially addressed the recommendations and 2 need to improve their plans according to the EC recommendations.

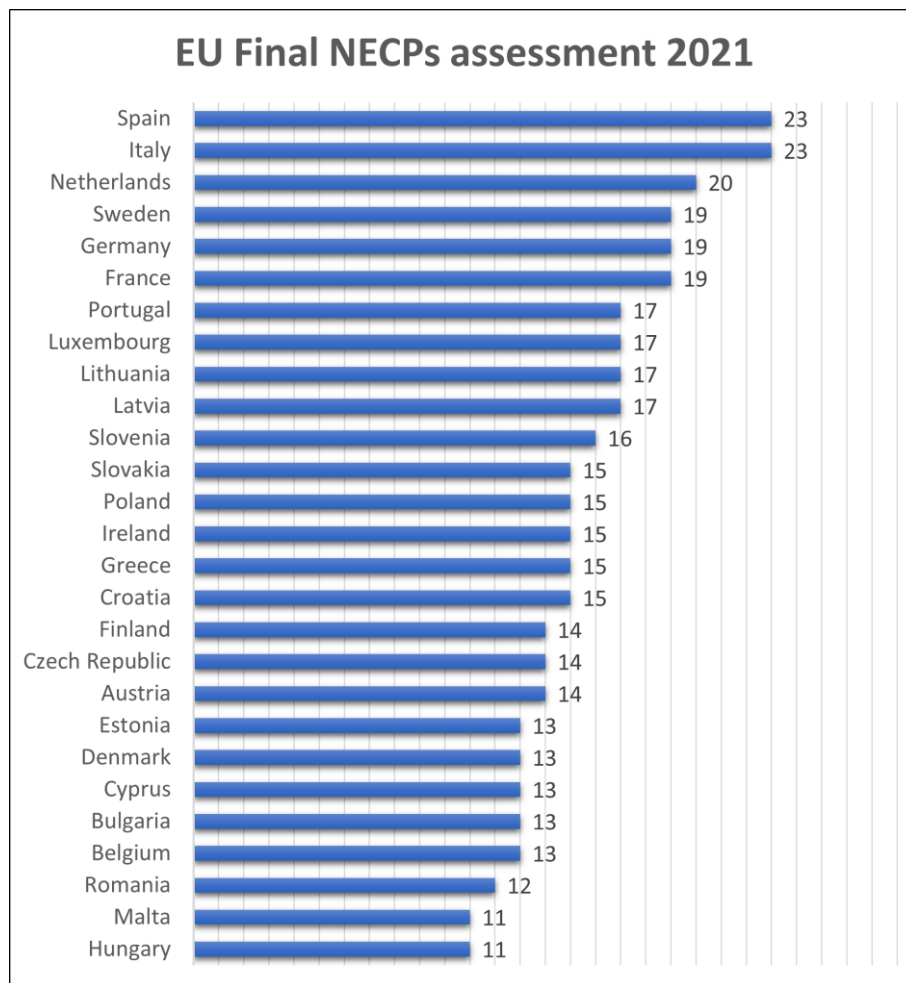


Figure 3 Representation of the level of ambition for the NECPs targets, classified according to the author's methodology.

From the previous Members States totals, GHG targets are compliant with the ESR targets due for 2030 for all the countries. Going in-depth in the analysis, targets adequacy for GHG and Renewable energy are predominantly addressed in comparison to the targets related to efficiency in energy production and consumption. This *finding highlight that the Energy Efficiency First principle* (embedded in the Regulation), which should be a primary target to be achieved for accomplishing an effective decarbonization pattern (Figure 4), *is still not adequately received* by the Member States.

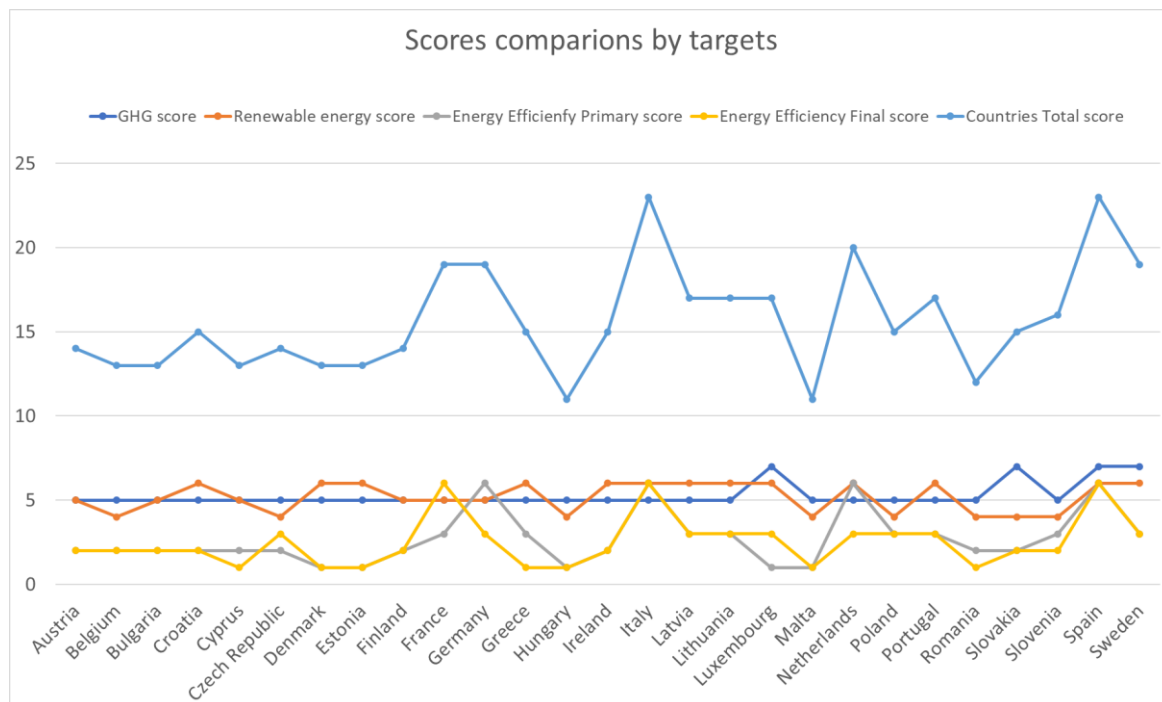


Figure 4. Discrepancies between the adequate targets defined by the Member States for GHG and renewables targets and the less performant targets in Energy Efficiency (Primary and Final).

Assessment of the implementation of EC Recommendations

Aside from the assessment of the ambition level of the targets (Renewable Energy, Energy efficiency, GHG reduction), the EC assessed the members' plans under 11 objectives related to the action/policy each member states plans on how to achieve the targets (to briefly recalled here):

Non -ETS GHG emissions: emissions reduction targets set in the Effort Sharing Regulation (ESR)

EU renewable energy: share of renewable energy under existing and planned measures

Energy Efficiency: implementation of the “Energy Efficiency First” principle into legislation

energy security: the importance of a resilient energy system with appropriate business continuity plans

Internal energy market well-functioning internal energy market provides price signals to guide investment in green energy and technologies, secures energy supplies and enables the least-cost path to climate neutrality through smart technologies

Research and Innovation R&I needs for delivering on climate and energy objectives

Regional cooperation increased cooperation between the Member States and multi-level dialogue

Investment and funding expected investments needed to achieve the various objectives, targets and contributions

Energy subsidies: plan/list of actions to boost renewable; plan of phasing out energy subsidies for fossil fuels

Air quality measures on air pollution, linked to environmental legislation

Just transition and energy poverty: measures to address the social and economic impacts of the transition, focusing on the regions, industries and workers who will face the greatest challenges.

Each topic has been assessed qualitatively by the EC in 4 judgements: fully, largely, partially, and Not Addressed. No recommendations are scored as fully. Each score has been split according to the number of recommendations for each topic (see methods) and see Appendix A for the score's assignment to each Member State.

To refine the analysis, barriers, and opportunity in the decarbonization strategy can be highlighted as the previous 11 points can be sub-grouped as follow:

Table 7 NECPs topics groups according to the author's analysis

GHG Reduction TARGET	ENERGY PROVISIONING	INCENTIVES	SOCIAL IMPACT
non-ETS GHG emissions:	Energy Security	Regional cooperation	Air quality measures
EU renewable energy share	Internal energy market	Investment and funding	Just transition and energy poverty
Energy Efficiency		Energy subsidies	
		Research and Innovation	

This subgrouping allows for analyzing the position of the EU27 as a whole in respect of the 11 objectives. The idea is to sum the scores from the members' states for each objective

In the following Figures (5,6,7, 8) the results of the scoring for each NECPs objective are reported.

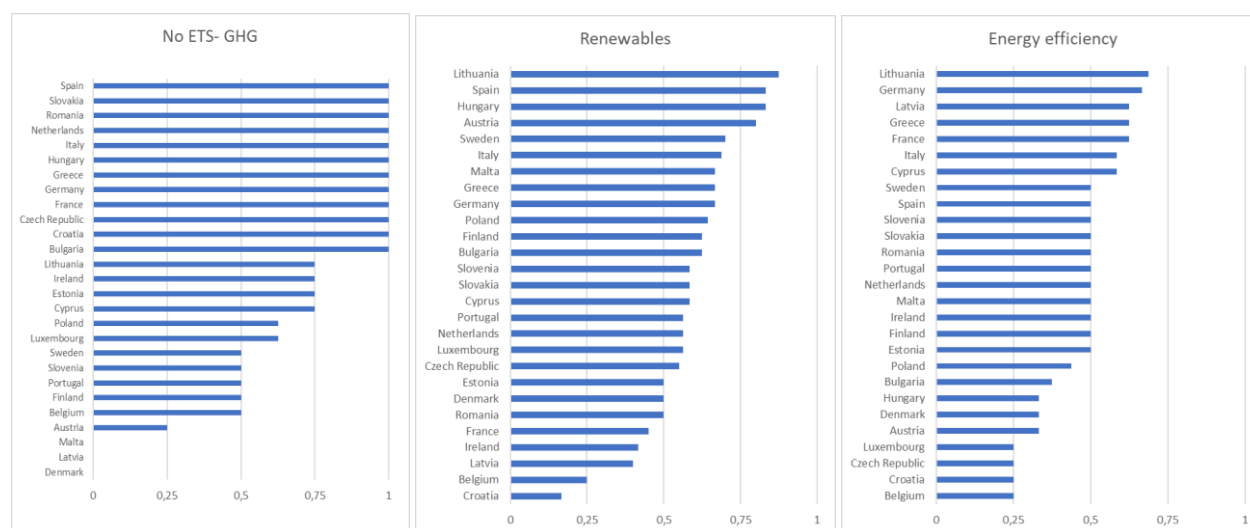


Figure 5. Non -ETS GHG emissions, EU renewable energy and Energy Efficiency recommendations scoring for Members states.

Figure 5 shows GHG emission targets is fully and partially addressed for most of the Member states; *renewables sharing* implementations plans are partially and largely addressed by the most, but no one of the Members States fully addresses this objective; moreover, energy efficiency plans should support the previous two goals, are mainly partially addressed by the most of Member States.

We can also note that *renewables sharing recommendations are the larger in numbers for each member state: this is evident looking at the graduality of renewables scoring: more are the recommendations per objective, smoother is the scoring profile*. This fact also evidences that a high number of recommendations denotes most NECPs have not yet a clear plan for renewables implementation.

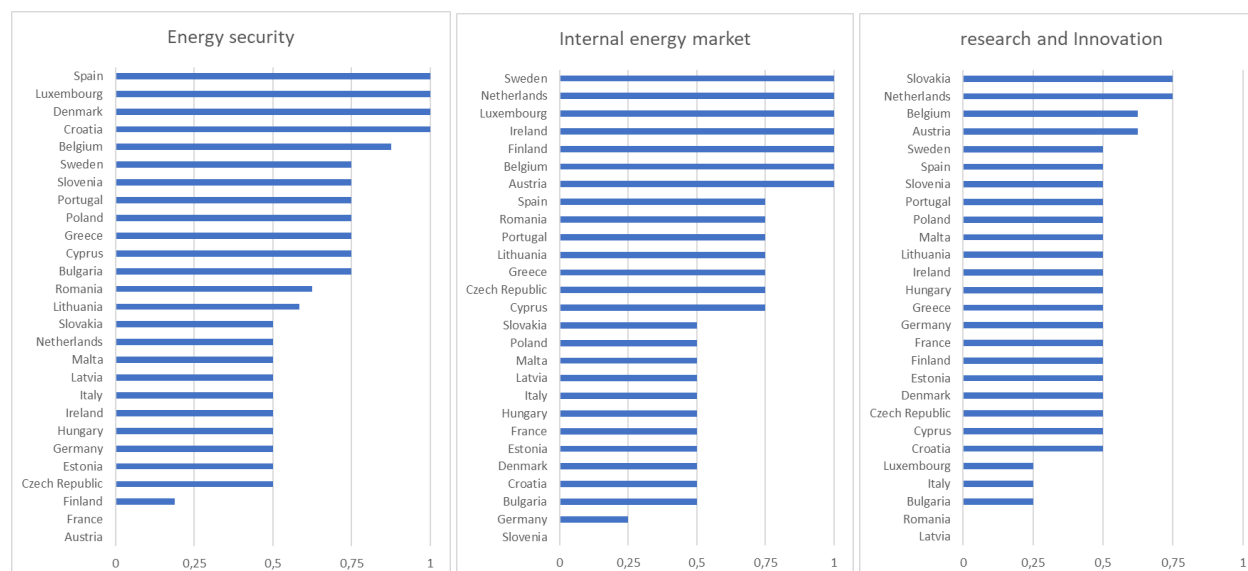


Figure 6. Energy Security, Internal Energy market and research and innovation recommendations scoring for each member States

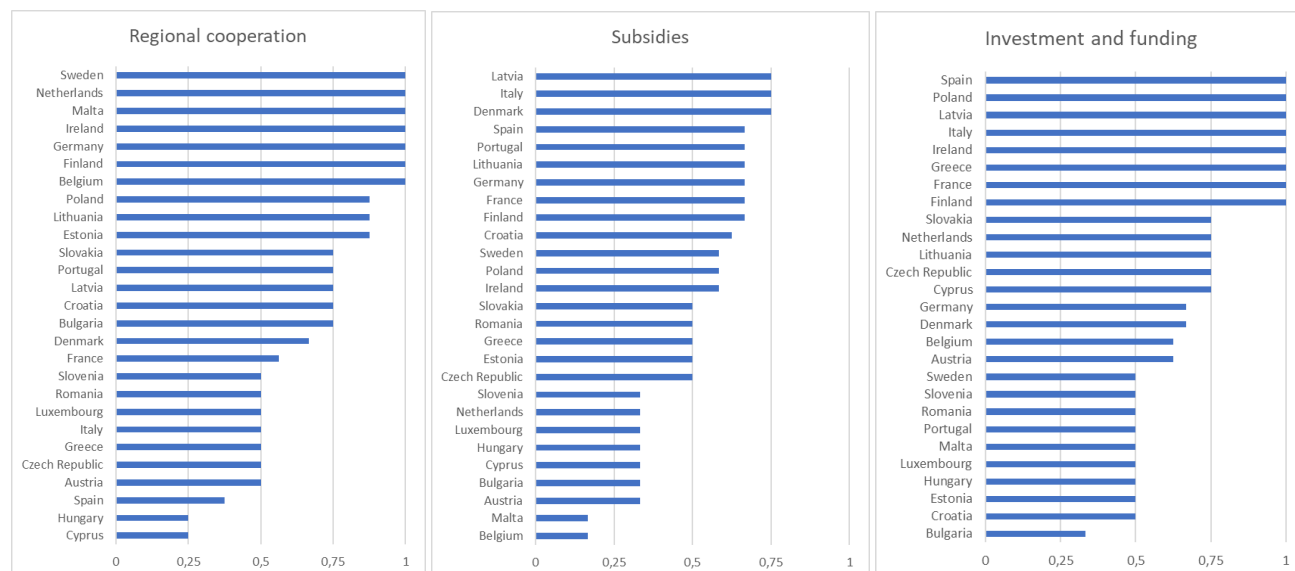


Figure 7 Regional cooperation, Subsidies and Investment and funding recommendations scoring for each Member state



Figure 8 Air quality and Just transition and poverty recommendations scoring for the member states.

At first glance, *none of the member states fully address (score=1) recommendations on Renewables, Energy Efficiency, Research and Innovation, Subsidies, Just Transition and Poverty*. A very few countries (4, Lithuania, Spain, Austria, Hungary) address *renewables* implementation with a score between 0,75 – 1(almost Fully); *Energy Efficiency* is addressed by 7 countries (Lithuania, Germany, Latvia, Greece, France, Italy, Cyprus) with a score between 0,5-0,75(largely); 4 countries 0,5-0,75 (largely, Slovakia, Netherlands, Belgium, Austria), for *research and innovation*; 13 Member states address *Subsidies* with 0,5-0,75 and only Spain addresses Just Transition and poverty >0,75 while other 8 Members (Malta, Lithuania, France, Cyprus, Belgium, Ireland, Luxembourg, Greece) with a score between 0,5-0,75.

These results evidence Member States are still adopting weak measures for the implementation of Energy Efficiency to decarbonize the society.

Still low is the effort to cut subsidies for fossils and to raise subsidies for renewables and greener energy production. Research and innovation investment should be increased in all sectors. On the other hand, most of the Member states have set an *ambitious non-ETS – GHG emission* reduction target; *Regional cooperation* is on average well planned (between 0,5-1) for 17 Member States, the same for the *Investment and funding*. Internal energy market, energy security and air quality have been addressed more than partially only by a half of the 27 Member states.

:

Table 8 Objectives score as the contributions from each member state.

Objectives	Scores
GHG	19,00
Renewables	15,79
Energy efficiency	12,71
Energy security	16,52
Internal energy market	18,00
research and Innovation	12,50
Regional cooperation	18,98
Investment and funding	18,98

Subsidies	19,17
Air quality	15,81
Just transition and poverty	13,58

Based on scoring reported in Table 7, Figure 9 shows that *GHG target reduction* is appropriately set and focused on the 2030 objective: renewables targets are, on average, largely set while the energy efficiency target, as already commented is not still sufficiently set to achieve the desired decarbonization target. This fact mainly evidences the countries are mobilizing for renewables implementations but without doing a commensurate effort to make more efficient the present energy provisioning sector more. Looking at the new green technologies to produce energy is surely a positive signal, however disregarding the efficiency of the present production processes, which can't turn off rapidly, decreases the possibility of achieving the desired 2030 GHG reduction target.

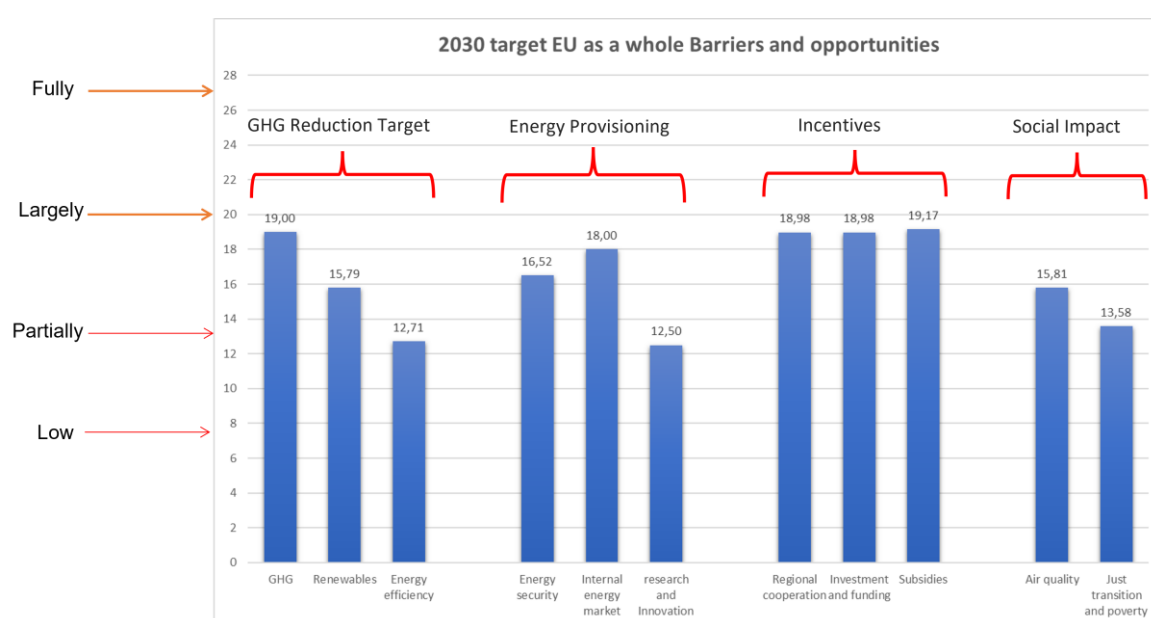


Figure 9 Barriers and opportunities in achieving the 2030 decarbonization goal based on current NEPCs.

About *Energy provisioning* systems, Energy security plans for resilient energy provisioning are promoted by most countries as well as Internal energy market investment plans in green energy and technologies; on the other side Research and Innovation are still partially addressed in the average of the Member States, highlighting, as similarly to the targets objectives, a weakness in the strategy: resources are invested in new technologies, but R&I importance, on which the development of new technologies relies on, is still partially considered by the member States.

The incentives section is characterized by the presence of new incentives and action for green solutions and oppositely by the slowness in abandoning fossil fuels subsidies. Member States have complied with the recommendation on the description and listing of energy subsidies, but the quality of information varies from general descriptions (21 countries) to extensive and quantified grant lists (6 countries). Only 6 countries have set a timetable for the phasing out of some of the existing fossil fuel subsidies. Regional cooperation within each Member State should be reinforced to valorize territorial implementation of the green solution: the Member States should promote regional projects, such as offshore wind power and rapid charging networks. To do this, they will have to use the recovery funds, the regional aid funds, as well as the EU renewable energy funding mechanism, making full use of the regional forums and the Social Climate Fund

(as part of the revision of the EU emissions trading system - EU ETS - under the Fit for the legislative package, the European Commission is proposing to extend emissions trading to the building and road transport sectors).

For instance, the fit for 55 package includes a regulation establishing a new social climate fund²¹ (SCF) in consequence of the establishment of an ETS for transport & building, Member states should report in their NECPs (see Incentive section). The SCF aims to help vulnerable households, micro-businesses and transport users meet the costs of the green energy transition in the buildings and road transport sector and should be reported in the NECPs.

Moreover, in the first months of 2021, all member states ratified the EUR 750bn Next Generation EU²² recovery fund.

Finally, in July 2021 the European Commission approved the first National Recovery and resilience plans²³ submitted by the member states as the basis for spending the resources.

The detailed funding analysis of EU27 economic capability of investment in mitigation will be discussed in task 1.2 "Investigation of the EU27 Member State's GDP and GDP/capita, ranking according to their capability of investment in mitigation".

²¹ European Commission, 'Social Climate Fund', 2021 <https://ec.europa.eu/clima/eu-action/european-green-deal/delivering-european-green-deal/social-climate-fund_it>.

²² European Union, 'Next Generation EU', 2021 <https://europa.eu/next-generation-eu/index_en#ecl-inpage-36>.

²³ 'National Recovery and Resilience Plans' <https://ec.europa.eu/info/business-economy-euro/recovery-coronavirus/recovery-and-resilience-facility_en#national-recovery-and-resilience-plans>.

NECPs assessment: remarks

To have a term of comparison in the evolution of the NECPs capacity to achieve the desired target, Figure 10 reports the Adequacy of the target versus the policy credibility, similarly to what was proposed in the NET Zero Document.

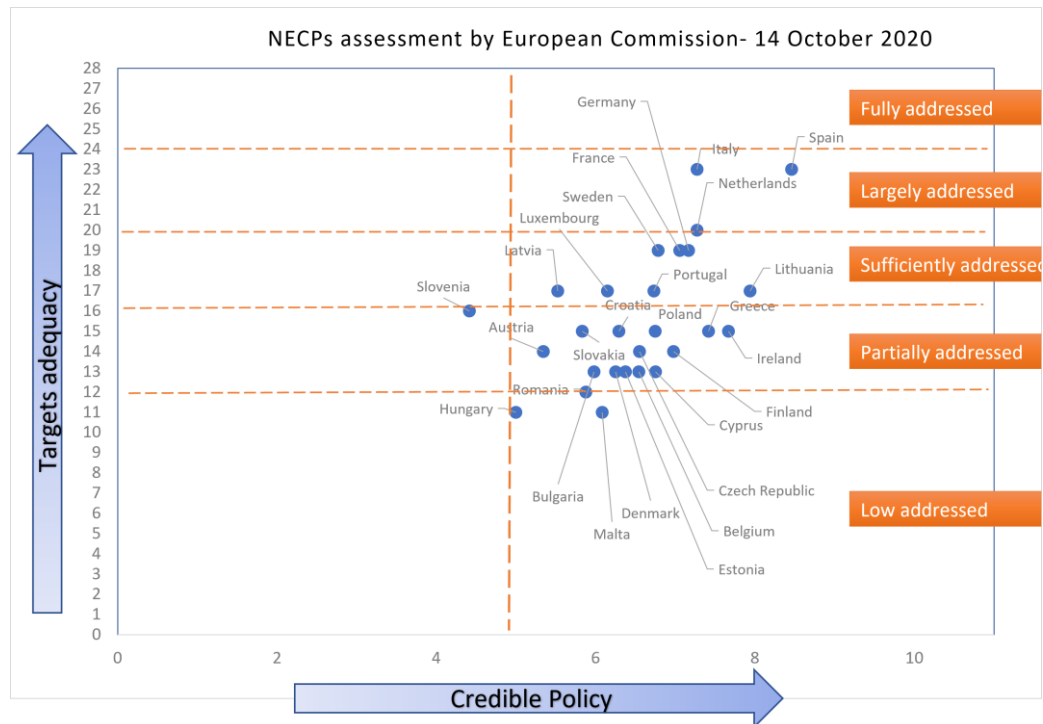


Figure 10 Final NECPs assessment by EC based on SWD 2020.

Figure 10 can be qualitatively compared to figure 1, the assessment methodology of EC is different in metrics but not in the concept: in the net Zero Study Draft NECPs present a concentration of countries below the targets adequacy (22 Countries) and only half of them drafted credibly policies to achieve low ambition targets.

Figure 10 shows that most Countries are now moved toward the implementation of credible policies, even with some different degree of completeness, and the ambition of the target is still partially addressed. However, 11 countries rise to at least a sufficient level of targets' ambition.

Long-term strategies received (as of 30 September 2021)

Long Term Strategies for the Member States must cover, with a perspective of at least 30 years, the following 10 objectives, already mentioned in the methods section, and here grouped, as similarly for NEPCs, into 4 categories:

Table 9. EU27 main objectives to be achieved with the Long-Term Strategy

STRATEGY	TARGETs	INVESTMENTS	POLICY
Overall goal LTS	GHG reductions	Estimated Investment	Adaptation Policies measures
Scenarios presented in the LTS	Renewable energy sources	Socio-Economic Impact of transition	Public Consultation
	Energy Efficiency		The legal status of LTS and targets

Member States need to draw up and submit national long-term renovation strategies, broken down to action at regional and local levels. At present (March 2022) 5 Member States have not yet presented their long-term strategies. The present study in the state-of-the-art Long Term Strategy (EU27 carbon neutral by 2050) is based on the Long Terms strategy national documents received by 30 September 2021²⁴ and gives a general overview of how the objectives in table 7 are addressed by each Country (Figure 11,12,13,14). The assessment is based on the scale scoring in Table 4 (Methods).

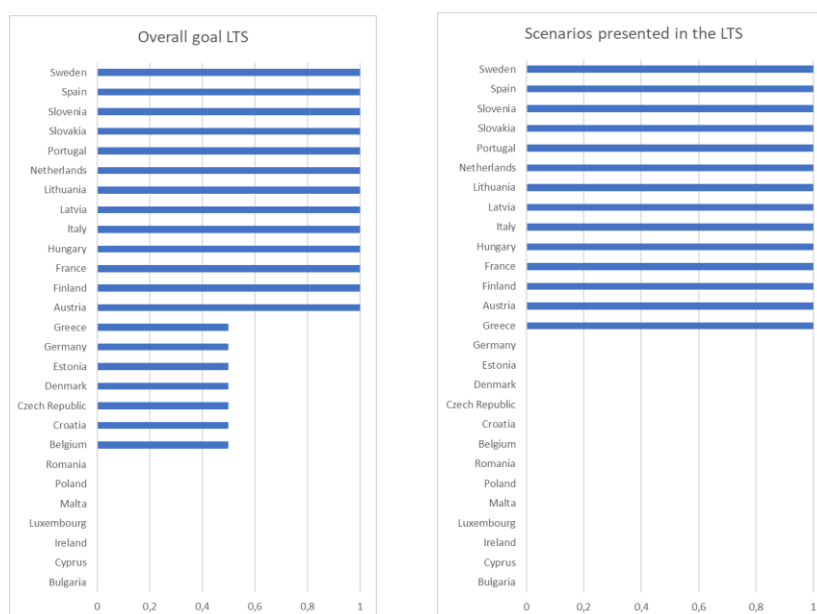


Figure 11. Member States strategy assessment: most the countries have set an overall goal for the LTS but not all are followed by scenarios.

²⁴ European Commission, 'National Long-Term Strategies'.

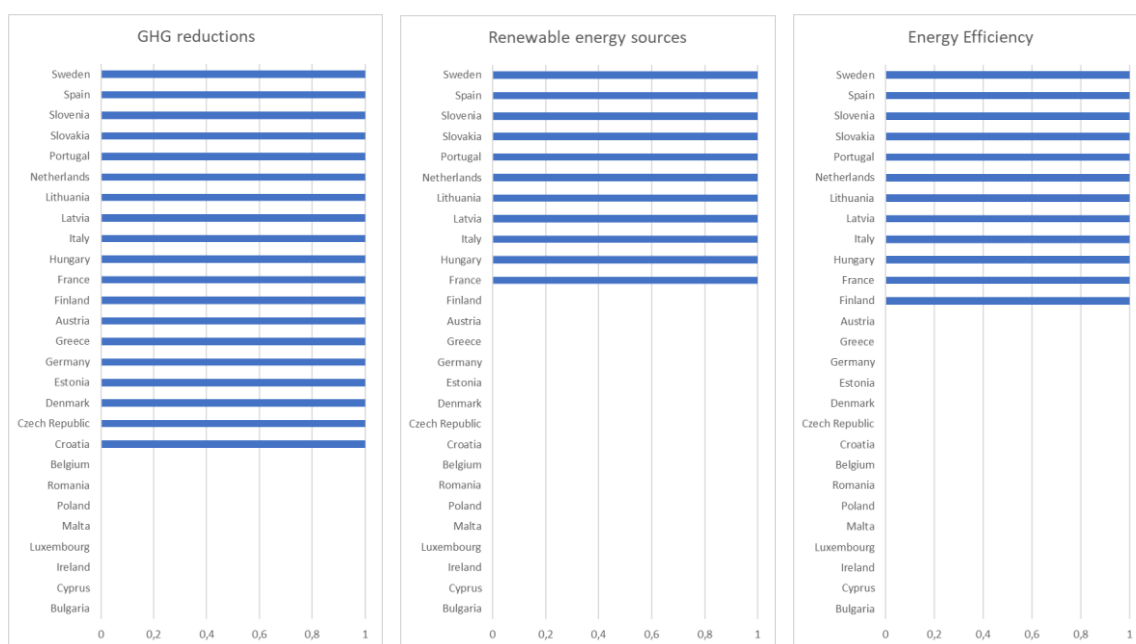


Figure 12 Long-Term strategy targets; GHG reduction targets have been evaluated by 19 countries; Renewable sharing is addressed only by 11 countries and Energy efficiency measures by 12 countries.

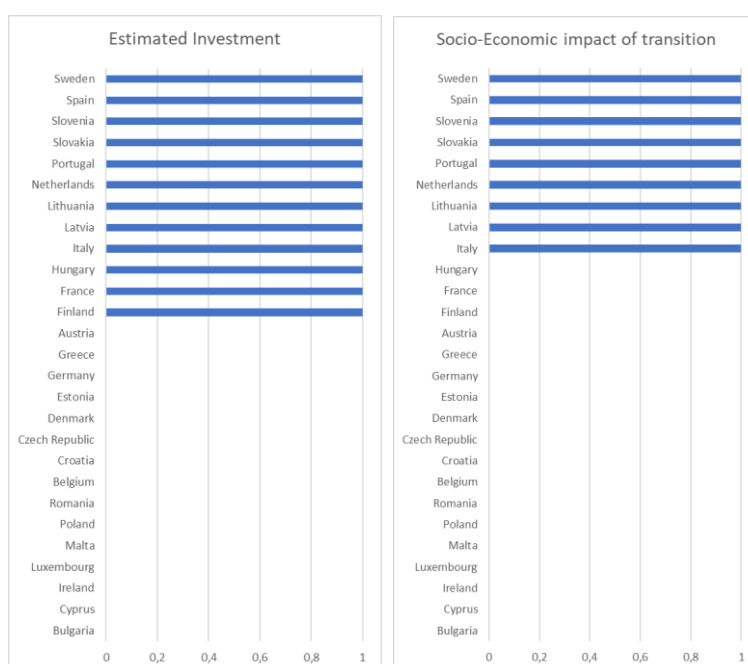


Figure 13 Less than half of the member States drafted estimation on Investment for the LTS; only 9 countries assess a possible increase/decrease of GDP due to the climate neutrality goal.

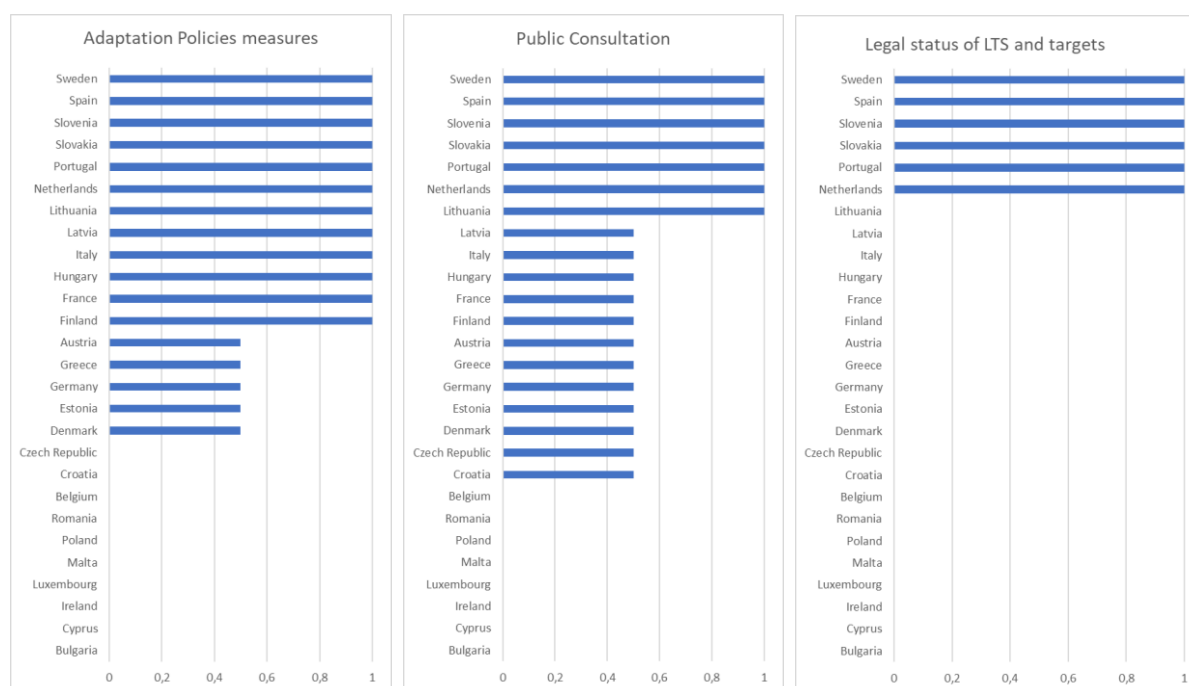


Figure 14 Long term Adaptation and policies measures are addressed by more than half of the Members states, some are linked to national measures; public consultations have been partially addressed and the receipt of LTS in national plans is still very limited.

Long Term **Strategy** (Figure 11) shows the number of Members States that have fully or partially addressed the requirement of establishing a clear goal of neutrality by 2050 as well as the scenarios that should be followed to achieve the goal. While most of the countries have set a clear or a partially defined goal, scenarios are fully addressed only by 14 Countries.

About **Targets**, Figure 12 reports the Members States' assessment for the LT's scenarios: GHG reduction target has been set by the most, however, similarly to 2030 NEPCs, the implementation of targets about sharing renewables in total final energy consumption and "Energy Efficiency First" is still limited to a half of the countries.

Investments can include boosting measures to Sustainable Finance, dedicating finance for decarbonization scenarios, and public and private investment in specific economic sectors. Economic impact concerns both economic (GDP) and employment benefits, increase in energy provisioning's independency, limiting the use of fossil fuels, and lowering emissions in urban areas. Figure 13 shows investments and their likely impact on national GDP are still not addressed by most of the Member States.

Policy assessment (Figure 14) shows that 17 Countries have partially or fully considered some adaptation policies in their plans, concerning environmental protection, the energy system, transport, mobility, etc., and the impact of climate change on regions. In the development of future policy, Public Consultation has been considered by 18 Countries to collect views and opinions on the technological and socio-economic pathways to be explored for a long-term EU strategy to reduce greenhouse gas emissions.

As a final remark, Long Term strategies have been addressed, by the EU27 as a whole, only partially. Countries have a clearer vision of the objectives, while the scenario EU27 should follow to achieve those objectives is still fading. The degree of reception of the LTS policy in National policies is still low. Adaptation measures and public consultations have been addressed only partially.

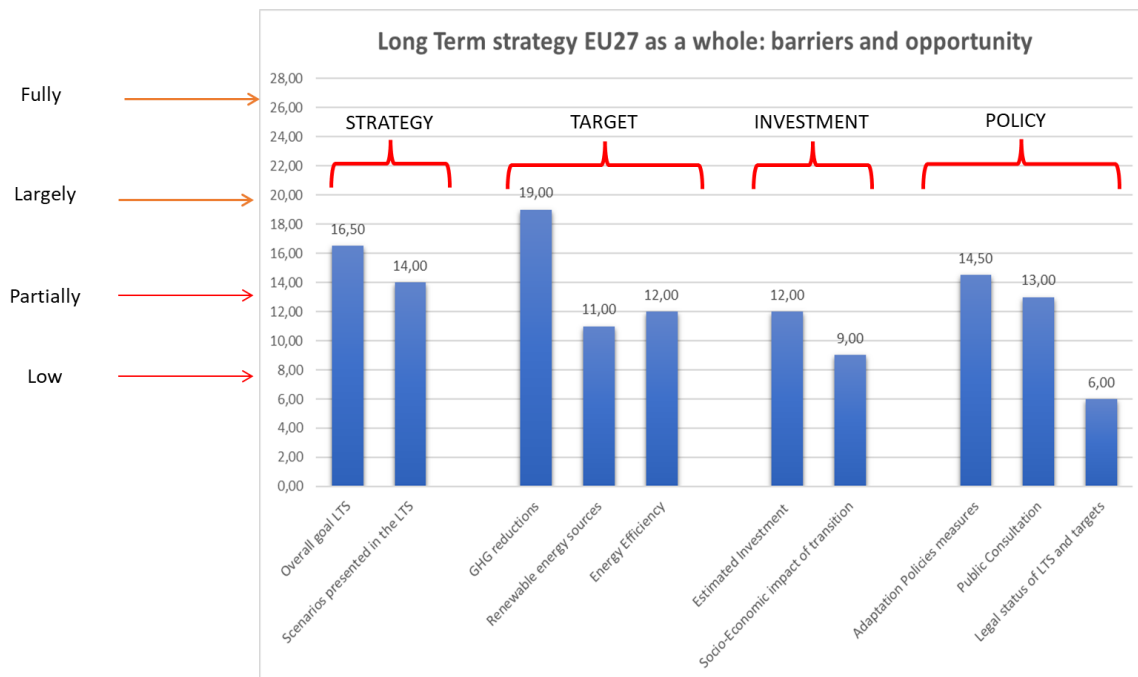


Figure 15 Long Term Strategy EU27 as a whole: evaluation of the state of the art in accomplishing EU long-term Strategy to achieve carbon neutrality by 2050.

Notes on COVID 19

The EC assessment, both for NECPs and LTS plans, considers the context of recovery from COVID-19. National energy and climate plans are both policy tools and investment programs, providing businesses and investors with a forward-looking framework. They provide a solid basis for the Member States to plan their green recovery and sustainability strategies, as well as to achieve the broader goals of the European Green Deal, a clean and circular economy and zero pollution by 2050.

CONCLUSION

The present main tools EU27 adopted to put the members' States on the right path to decarbonization are National Energy Climate Plans that aim to achieve the Green Deal Objectives set by 2030, and Long Term strategy plans that aim to build scenarios and strategies to achieve carbon neutrality by 2050.

Both documents (NECPs and LTS) provide extensive information on the state of the art of decarbonization pathways; the present study furnishes a simple methodology to summarize and quantify that information with a simple scaling approach able to quantify the compliance of the plans in the respect of the objectives.

The study shows the commitments promised by the Member States in the draft NECPs (May 2019) were insufficient to put the EU on the right path to 2030 and 2050. After the revision and the recommendations of the EU Commission, Final NECPs (2020) shows that - on average, the member states have done a step forward in focusing on the targets committed by the Green Deal, although the actions/policies to achieve them are still only partially addressed. In particular

- 1) Both In NECPs and LTS, targets are on average well assessed, while the principle of Energy Efficiency First, which is one of the most important leverage to achieve the decarbonization, is not sufficiently addressed; the Member States seem to privilege investment implementation of new technologies
- 2) In NECPs despite Energy provisioning showing a good plan in terms of the energy market and energy security, insufficient attention is given to Research and development, even though countries establish clear targets in renewable sharing and other green production targets.
- 3) In NECPs, incentives and subsidies are on average addressed: however, many EU member states still do not have a coal phase-out plan by 2030. Other countries are planning to replace coal with natural gas and are pushing for using EU funds to co-finance investments in natural gas infrastructure.
- 4) In NECPs the evaluation of the social impact of the transition is still partially addressed.
- 5) In LTS, most of the planned objectives are still partially or low addressed; as for the NECPs, the 2050 targets are generally clearly set, even the scenarios to achieve them. On the other side, financial estimations, the socio-economic impact of the transition and overall long-term policy are not yet sufficiently set.
- 6) Building sector decarbonization has been prioritized among all the other actions.
- 7) The COVID-19 crisis unexpectedly brings the EU very close to reaching the 2020 energy efficiency targets, but this is not the result of structural changes, it will lead to a rebound in energy consumption, which means that additional energy efficiency efforts and investments are needed.
- 8) The recent crisis in Ukraine will affect the energy market and the energy provision for the EU, especially for natural gas, even at the moment it's still unclear how.

It is also important to highlight NECPs and LTS objectives (55% cutting emission in respect to 1990 and being carbon neutral by 2050) is the basis of the achievement of National Determined Contributions EU updated in 2020²⁵. The EU has been at the forefront of international efforts to fight climate change. It was a crucial part of ratifying the Paris Agreement and should continue to show global leadership.

In final remarks, the study highlights that member states have correctly received the importance of achieving decarbonization targets, but there are still several resistances in how to implement actions and policies to achieve them. The EU Commission allocated several funds to overcome difficulties and disparities, but it seems not sufficient to speed up the transition process. A further effort is necessary as “EU as a whole” to guide the Member states in planning the next steps toward effective decarbonization.

²⁵ European Union, ‘Update of the NDC of the European Union and Its Member States’, 2020 <https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/European%20Union%20First/EU_NDC_Submission_December%202020.pdf>.



APPENDIX A

Appendix A reports the EU 27 Countries 'tables for scoring NEPCs and LTS.

Austria

AUSTRIA – NEPCs targets						
National target contribution	latest available data (oct 2020)	2020 target	2030 target	Ambition level	Scores	EU NEPCs 2030 targets
GHG	-11	-16	-36	As in ESR (adeq)	5	40
Renewable's energy	33,4	34	46	adequate	5	32
Energy Efficiency primary	30	31,5	29	low	2	32,5
Energy Efficiency final	25,6	25,1	25	low	2	
Electric grid interconnectivity	15,3	10	15			
Total score					14	

Austria - LTS	value	score
Overall goal of LTS	climate neutrality	1
Scenarios presented in the LTS	1 scenario	1
GHG reductions	modelling	1
Renewable energy sources	modelling	1
Energy Efficiency	modelling	1
Estimated Investment	N/A	0
Socio-Economic impact of transition	N/A	0
Adaptation Policies measures	yes	1
Public Consultation	yes	1
Legal status of LTS and targets	no	0
Total		7

AUSTRIA-NEPCs Recommendations				
	Recommendations	N of Recommendations per Policy	quality of assessment	score
1	Decarbonization-GHG	2	partially	0,250
			NA	0,000
2	Decarbonization renew	5	fully	0,200
			fully	0,200
			partially	0,100
			partially	0,100
			fully	0,200
3	Energy efficiency	3	partially	0,167
			NA	0,000
			partially	0,167
4	energy security	1	NA	0,000
5	Internal energy market	1	NA	1,000
6	Research and Innovation	2	Largely	0,375
			partially	0,250
7	Regional cooperation	3	partially	0,167
			partially	0,167
			partially	0,167
8	Investment and funding	2	largely	0,375
			partially	0,250
9	Energy subsidies	3	partially	0,167
			NA	0,000
			partially	0,167
10	Air quality	1	partially	0,500
11	Just transition and energy poverty	2	NA	0,000
			Largely	0,375
				5,342

Belgium

BELGIUM - targets						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
National target contribution						
GHG	-11	-16	-36	As in ESR (adeq)	5	40
Renewable's energy	33,4	34	46	adequate	5	32
Energy Efficiency primary	30	31,5	29	low	2	32,5
Energy Efficiency final	25,6	25,1	25	low	2	
Electric grid interconnectivity	15,3	10	15			
					14	

Belgium LTS	value	score
Overall goal of LTS	not clear goal	0,5
Scenarios presented in the LTS	0 scenario	0
GHG reductions	modelling	1
Renewable energy sources	N/A	0
Energy Efficiency	N/A	0
Estimated Investment	N/A	0
Socio-Economic impact of transition	N/A	0
Adaptation Policies measures	yes	1
Public Consultation	limited	0,5
Legal status of LTS and targets	no	0

3

BELGIUM- Recommendations			
Recommendations	N of Recommendations per Policy	quality of assessment	score
Decarbonization-GHG	2	part	0,250
		partially	0,250
Decarbonization Renew	6	NA	0,000
		NA	0,000
		partially	0,083
		NA	0,000
		partially	0,083
		partially	0,083
Energy efficiency	2	NA	0,000
		partially	0,250
energy security	2	largely	0,375
		Fully	0,500
Internal energy market	1	No Racc	1,000
Research and Innovation	2	partially	0,250
		largely	0,375
Regional cooperation	1	fully	1,000
Investment and funding	2	partially	0,250
		largely	0,375
Energy subsidies	3	NA	0,000
		NA	0,000
		partially	0,167
Air quality	1	partially	0,500
Just transition and energy poverty	2	largely	0,375
		largely	0,375
			6,542

Bulgaria

BULGARIA - NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NECPs 2030 target
National target contribution						
GHG	21	20	0	As in ESR (adeq)	5	-40
Renewable's energy	20,5	21,4	27,09	adequate	5	32
Energy Efficiency primary	18,34	16,9	17,5	low	2	32,5
Energy Efficiency final	9,9	8,67	10,3	very low	1	
Electric grid interconnectivity	7,1	11,3	15			
					13	

Bulgaria LTS		
	value	score
Overall goal of LTS		0
Scenarios presented in the LTS		0
GHG reductions		0
Renewable energy sources		0
Energy Efficiency		0
Estimated Investment		0
Socio-Economic impact of transition		0
Adaptation Policies measures		0
Public Consultation		0
Legal status of LTS and targets		0

0

Bulgaria- NECPs Recommendations			
Recommendations	N of recc	score	
Decarbonization-GHG	1	No racc	1,000
Decarbonization renew	6	fully	0,167
		fully	0,167
		partially	0,083
		partially	0,083
		largely	0,125
		NA	0,000
Energy efficiency	4	NA	0,000
		partially	0,125
		partially	0,125
energy security	1	Largely	0,750
Internal energy market	1	Prtially	0,500
Research and Innovation	2	NA	0,000
		partially	0,250
Regional cooperation	1	largely	0,750
Investment and funding	3	partially	0,167
		partially	0,167
		NA	0,000
Energy subsidies	3	partially	0,167
		NA	0,000
		partially	0,167
Air quality	4	fully	0,250
		partially	0,125
		largely	0,188
		NA	0,000
Just transition and energy poverty	3	partially	0,167
		partially	0,167
		partially	0,167
			5,979

Croatia

CROATIA targets

	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
National target contribution						
GHG	-1	11	-7	As in ESR (adeq)	5	-40
Renewable's energy	28	20	36,4	Sufficiently ambit	6	32
Energy Efficiency primary	8,2	10,7	8,23	low	2	32,5
Energy Efficiency final	6,9	7	6,85	LOW	2	
Electric grid interconnectivity	7,1	11,3	15			
					15	

Croatia LTS

	value	score
Overall goal of LTS	not clear goal	0,5
Scenarios presented in the LTS	3 scenarios	1
GHG reductions	modelling	1
Renewable energy sources	modelling	1
Energy Efficiency	modelling	1
Estimated Investment	estimation	1
Socio-Economic impact of transition	N/A	0
Adaptation Policies measures	yes	1
Public Consultation	yes	1
Legal status of LTS and targets	yes	1
		8,5

CROATIA Recommendations

Recommendations	N of recc	score	
Decarbonization-GHG	1	No racc	1,000
Decarbonization renew	3	NA	0,000
		NA	0,000
		partially	0,167
Energy efficiency	2	NA	0,000
		partially	0,250
energy security	1	NA	1,000
Internal energy market	1	Partially	0,500
Research and Innovation	1	partially	0,500
Regional cooperation	2	largely	0,375
		largely	0,375
Investment and funding	2	partially	0,250
		partially	0,250
Energy subsidies	3	largely	0,375
		partially	0,250
		NA	0,000
Air quality	1	partially	0,500
Just transition and energy poverty	2	partially	0,250
		partially	0,250
			6,292

Cyprus

Cyprus – NECPs Targets						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NECPs 2030 target
National target contribution						
GHG	0	-5	-24	As in ESR (adeq)	5	-40
Renewable's energy	13,9	13	22,9	adequate	5	32
Energy Efficiency primary	2,55	2,5	2,4	low	2	32,5
Energy Efficiency final	1,86	1,9	2	Very Low	1	
Electric grid interconnectivity	not interc	not interc	200%			
					13	

Cyprus LTS			value	score
Overall goal of LTS				0
Scenarios presented in the LTS				0
GHG reductions				0
Renewable energy sources				0
Energy Efficiency				0
Estimated Investment				0
Socio-Economic impact of transition				0
Adaptation Policies measures				0
Public Consultation				0
Legal status of LTS and targets				0
				0

Cyprus - NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		3	Largely	0,250
			largely	0,250
			largely	0,250
Decarbonization renew		6	partially	0,083
			partially	0,083
			partially	0,083
			largely	0,125
			partially	0,083
			largely	0,125
Energy efficiency		3	partially	0,167
			largely	0,250
			partially	0,167
energy security		1	largely	0,750
Internal energy market		1	largely	0,750
Research and Innovation		2	partially	0,250
			partially	0,250
Regional cooperation		2	partially	0,250
			NA	0,000
Investment and funding		2	fully	0,500
			partially	0,250
Energy subsidies		3	partially	0,167
			NA	0,000
			partially	0,167
Air quality		1	largely	0,750
Just transition and energy poverty		2	largely	0,375
			largely	0,375
				6,750

Czech Republic

Czech Republic – NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
National target contribution						
GHG	-4	-9	-14	As in ESR (adeq)	5	-40
Renewable's energy	15	13	22	UNAMBITIOUS	4	32
Energy Efficiency primary	40,4	43,341,43	2,4	low	2	32,5
Energy Efficiency final	25,3	23,9	23,65	MODEST	3	
Electric grid interconnectivity	26,6	29,6	44%			
					14	

Czech Republic - LTS	value	score
Overall goal of LTS	not clear goal	0,5
Scenarios presented in the LTS	7 scenarios	1
GHG reductions	modelling	1
Renewable energy sources	N/A	0
Energy Efficiency	N/A	0
Estimated Investment	estimation	1
Socio-Economic impact of transition	N/A	0
Adaptation Policies measures	yes	1
Public Consultation	limited	0,5
Legal status of LTS and targets	no	0
		5

Czech Republic - NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	No racc	1,000
Decarbonization renew		5	partially	0,100
			partially	0,100
			partially	0,100
			largely	0,150
			partially	0,100
Energy efficiency		2	NA	0,000
			PARTIALLY	0,250
energy security		3	partially	0,167
			partially	0,167
			partially	0,167
Internal energy market		2	largely	0,375
			largely	0,375
Research and Innovation		2	partially	0,250
			partially	0,250
Regional cooperation		1	partially	0,500
Investment and funding		2	partially	0,250
			fully	0,500
Energy subsidies		3	Largely	0,250
			largely	0,250
			NA	0,000
Air quality		1	largely	0,750
Just transition and energy poverty		2	partially	0,250
			partially	0,250
				6,550

Denmark

Denmark NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
National target contribution						
GHG	-19	-20	-39	As in ESR (adeq)	5	-40
Renewables energy	35,7	30	55	suff amb	6	32
Energy Efficiency primary	17,8	17,5	18,3	very low	1	32,5
Energy Efficiency final	14,8	15,2	15,8	very low	1	
Electric grid interconnectivity	51	N/A	N/A			
					13	

The draft NECP integrates the long-term dimension

Denmark LTS	value	score
Overall goal of LTS	not clear goal	0,5
Scenarios presented in the LTS	7 scenarios	1
GHG reductions	modelling	1
Renewable energy sources	N/A	0
Energy Efficiency	N/A	0
Estimated Investment	estimation	1
Socio-Economic impact of transition	N/A	0
Adaptation Policies measures	yes	1
Public Consultation	limited	0,5
Legal status of LTS and targets	no	0
		5

Denmark NECPs Recommendations			
Recommendations	N of recc	Score	
Decarbonization-GHG	3	NA	0,000
		NA	0,000
		NA	0,000
Decarbonization renew	4	Partially	0,125
		Partially	0,125
		Partially	0,125
		Partially	0,125
Energy efficiency	3	NA	0,000
		Partially	0,167
		Partially	0,167
energy security	1	Not racc	1,000
Internal energy market	1	Partially	0,500
Research and Innovation	1	Partially	0,500
Regional cooperation	3	Largely	0,250
		Largely	0,250
		Partially	0,167
Investment and funding	1	Fully	1,000
Energy subsidies	3	Largely	0,250
		Largely	0,250
		Largely	0,250
Air quality	1	Partially	0,500
Just transition and energy poverty	1	Partially	0,500
			6,250

Estonia

Estonia – NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NECPs 2030 target
National target contribution						
GHG	17	11	-13	As in ESR (adeq)	5	-40
Renewables energy	30	30	55	suff amb	6	32
Energy Efficiency primary	17,8	17,5	18,3	very low	1	32,5
Energy Efficiency final	14,8	15,2	15,8	very low	1	
Electric grid interconnectivity	51	N/A	N/A			
					13	

Estonia – LTS	value	score
Overall goal of LTS	partial	0,5
Scenarios presented in the LTS	2 scenarios	1
GHG reductions	modelling	1
Renewable energy sources	N/A	0
Energy Efficiency	N/A	0
Estimated Investment	N/A	0
Socio-Economic impact of transition	assessment	1
Adaptation Policies measures	yes	1
Public Consultation	limited	0,5
Legal status of LTS and targets	yes	1
		6

Estonia – NECPs Recommendations			
Recommendations	N of recc	score	
Decarbonization-GHG	1	Largely	0,750
Decarbonization renew	5	partially	0,100
		partially	0,100
		partially	0,100
		partially	0,100
		partially	0,100
Energy efficiency	2	partially	0,250
		partially	0,250
energy security	1	partially	0,500
Internal energy market	1	partially	0,500
Research and Innovation	2	partially	0,250
		partially	0,250
Regional cooperation	2	fully	0,500
		largely	0,375
Investment and funding	1	partially	0,500
Energy subsidies	1	partially	0,500
Air quality	1	largely	0,750
Just transition and energy poverty	2	partially	0,250
		partially	0,250
			6,375

Finland

FinalIndia – NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NECPs 2030 target
National target contribution						
GHG	-11	-16	-39	As in ESR (adeq)	5	-40
Renewables energy	41,2	38	51	adequate	5	32
Energy Efficiency primary	32,7	35,9	38,4	very low	2	32,5
Energy Efficiency final	25,8	26,7	24,9	very low	2	
Electric grid interconnectivity	29	18	15%			
					14	

Finland – LTS	value	score
Overall goal of LTS	clear goal	1
Scenarios presented in the LTS	3 scenarios	1
GHG reductions	modelling	1
Renewable energy sources	modelling	1
Energy Efficiency	modelling	1
Estimated Investment	assessment	1
Socio-Economic impact of transition	assessment	1
Adaptation Policies measures	limited	0,5
Public Consultation	yes	1
Legal status of LTS and targets	no	0
		8,5

Finland – NECPs Recommendations			
Recommendations	N of recc	score	
Decarbonization-GHG	1	partially	0,500
Decarbonization renew	4	fully	0,250
		partially	0,125
		partially	0,125
		partially	0,125
Energy efficiency	4	partially	0,125
		partially	0,125
		partially	0,125
		partially	0,125
energy security	2	Largely	0,188
		NA	0,000
Internal energy market	1	No recc	1,000
Research and Innovation	1	partially	0,500
Regional cooperation	1	fully	1,000
Investment and funding	1	No recc	1,000
Energy subsidies	3	largely	0,250
		largely	0,250
		partially	0,167
Air quality	1	partially	0,500
Just transition and energy poverty	1	partially	0,500
			6,979

France

France – NECPs Target						
National target contribution	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
GHG	-14	-14	-37	As in ESR (adeq)	5	-40
Renewables energy	16,6	23	33	adequate	5	32
Energy Efficiency primary	239,5	219	202,2	modest	3	32,5
Energy Efficiency final	148,9	131,4	120,9	sufficient	6	
Electric grid interconnectivity	-	-	16,50			
					19	

France – LTS	value	score
Overall goal of LTS	clear goal	1
Scenarios presented in the LTS	3 scenarios	1
GHG reductions	modelling	1
Renewable energy sources	modelling	1
Energy Efficiency	modelling	1
Estimated Investment	assessment	1
Socio-Economic impact of transition	assessment	1
Adaptation Policies measures	limited	0,5
Public Consultation	yes	1
Legal status of LTS and targets	no	0
		8,5

France – NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	No recc	1,000
Decarbonization renew		5	fully	0,200
			NA	0,000
			largely	0,150
			NA	0,000
			partially	0,100
Energy efficiency		2	partially	0,250
			largely	0,375
energy security		1	NA	0,000
Internal energy market		1	partially	0,500
Research and Innovation		2	partially	0,250
			partially	0,250
Regional cooperation		4	fully	0,188
			NA	0,000
			fully	0,188
			fully	0,188
Investment and funding		1	No recc	1,000
Energy subsidies		3	largely	0,250
			largely	0,250
			partially	0,167
Air quality		1	NA	1,000
Just transition and energy poverty		1	partially	0,250
			fully	0,500
				7,054

Germany

Germany – NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
National target contribution						
GHG	-8	-14	-38	As in ESR (adeq)	5	-40
Renewable's energy	16,5	18	30	adequate	5	32
Energy Efficiency primary	291,7	127,6	216	sufficient	6	32,5
Energy Efficiency final	215,4	194,3	185	modest	3	
Electric grid interconnectivity	11,4	11,4	not prov			
					19	

Germany LTS	value	score
Overall goal of LTS	limited	0,5
Scenarios presented in the LTS	no scenarios	0
GHG reductions	modelling	1
Renewable energy sources	N/A	0
Energy Efficiency	N/A	0
Estimated Investment	N/A	0
Socio-Economic impact of transition	N/A	0
Adaptation Policies measures	no	0
Public Consultation	limited	0,5
Legal status of LTS and targets	unspecified	0
		2

Germany – NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	Fully	1,000
Decarbonization renew		3	partially	0,167
			largely	0,250
			largely	0,250
Energy efficiency		3	largely	0,250
			largely	0,250
			partially	0,167
energy security		1	partially	0,500
Internal energy market		2	partially	0,250
			NA	0,000
Research and Innovation		2	partially	0,250
			partially	0,250
Regional cooperation		2	fully	0,500
			fully	0,500
Investment and funding		3	partially	0,167
			largely	0,250
			largely	0,250
Energy subsidies		3	largely	0,250
			largely	0,250
			partially	0,167
Air quality		1	fully	1,000
Just transition and energy poverty		2	partially	0,250
			NA	0,000
				7,167

Greece

Greece – NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
National target contribution						
GHG	-28	-4	-16	As in ESR total higher reduct	5	-40
Renewables energy	18	18	35	suff ambit	6	32
Energy Efficiency primary	22,64	22,68	20,55	modest	3	32,5
Energy Efficiency final	16	16,93	16,51	low	1	
Electric grid interconnectivity	10	13	21,00			
					15	

Greece LTS	value	score
Overall goal of LTS	limited	0,5
Scenarios presented in the LTS	4 scenarios	1
GHG reductions	modelling	1
Renewable energy sources	modelling	1
Energy Efficiency	modelling	1
Estimated Investment	assessment	1
Socio-Economic impact of transition	N/A	0
Adaptation Policies measures	no	0
Public Consultation	limited	0,5
Legal status of LTS and targets	no	0
		6

Greece – NECPs recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	NO RECC	1,000
Decarbonization renew		3	largely	0,250
			partially	0,167
			largely	0,250
Energy efficiency		2	largely	0,375
			partially	0,250
energy security		2	largely	0,375
			largely	0,375
Internal energy market		2	largely	0,375
			largely	0,375
Research and Innovation		1	partially	0,500
Regional cooperation		5	partially	0,100
			partially	0,100
			partially	0,100
			partially	0,100
			partially	0,100
Investment and funding		1	NA	1,000
Energy subsidies		3	partially	0,167
			partially	0,167
			partially	0,167
Air quality		1	partially	0,500
Just transition and energy poverty		1	partially	0,250
			largely	0,375
				7,417

Hungary

Hungary – NECPs target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
National target contribution						
GHG	-10	10	-7	As in ESR	5	-40
Renewables energy	12,5	13	21	unAmbitious	4	32
Energy Efficiency primary	24,5	24,1	no target	very low	1	32,5
Energy Efficiency final	18,5	14,4	18,7	very low	1	
Electric grid interconnectivity	50	55	60,00			
					11	

Hungary LTS	value	score
Overall goal of LTS	climate neutrality	1
Scenarios presented in the LTS	3 scenarios	1
GHG reductions	modelling	1
Renewable energy sources	modelling	1
Energy Efficiency	modelling	1
Estimated Investment	assessment	1
Socio-Economic impact of transition	assessment	1
Adaptation Policies measures	yes	1
Public Consultation	yes	1
Legal status of LTS and targets	yes	1
		10

Hungary – NECPs recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	No recc	1,000
Decarbonization renew		6	partially	0,083
			partially	0,083
			fully	0,167
			fully	0,167
			fully	0,167
			fully	0,167
Energy efficiency		3	NA	0,000
			partially	0,167
			partially	0,167
energy security		1	partially	0,500
Internal energy market		1	partially	0,500
Research and Innovation		2	partially	0,250
			partially	0,250
Regional cooperation		2	Largely	0,250
			NA	0,000
Investment and funding		3	Largely	0,250
			largely	0,250
			NA	0,000
Energy subsidies		3	partially	0,167
			partially	0,167
			NA	0,000
Air quality		1	NA	0,000
Just transition and energy poverty		2	NA	0,000
			partially	0,250
				5,000

Ireland

Ireland– NECPs target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
National target contribution						
GHG	-4	-20	-30	as in ESR	5	-40
Renewables energy	11	12,8	34,1	suffic	6	32
Energy Efficiency primary	14,5	13,9	13,7	low	2	32,5
Energy Efficiency final	12,3	11,7	11,2	low	2	
Electric grid interconnectivity	7,4	N/A	N/A			
					15	

Ireland LTS	value	score
Overall goal of LTS		
Scenarios presented in the LTS		
GHG reductions		
Renewable energy sources		
Energy Efficiency		
Estimated Investment		
Socio-Economic impact of transition		
Adaptation Policies measures		
Public Consultation		
Legal status of LTS and targets		
		0

Ireland- NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	Largely	0,750
Decarbonization renew		6	fully	0,167
			NA	0,000
			partially	0,083
			NA	0,000
			partially	0,083
			partially	0,083
Energy efficiency		5	partially	0,100
			fully	0,200
			partially	0,100
			NA	0,000
			partially	0,100
energy security		2	partially	0,250
			partially	0,250
Internal energy market		1	No recc	1,000
Research and Innovation		2	partially	0,250
			partially	0,250
Regional cooperation		2	fully	0,500
			fully	0,500
Investment and funding		1	No recc	1,000
Energy subsidies		3	largely	0,250
			partially	0,167
			partially	0,167
Air quality		3	Largely	0,250
			largely	0,250
			largely	0,250
Just transition and energy poverty		3	partially	0,167
			fully	0,333
			partially	0,167
				7,667

Italy

Ireland NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NECPs 2030 target
National target contribution						
GHG	-18	-13	-33	As in ESR	5	-40
Renewables energy	17,8	17	30	suff ambit	6	32
Energy Efficiency primary	147,2	158	125,1	suff	6	32,5
Energy Efficiency final	116,5	124	103,8	suff	6	
Electric grid interconnectivity	7,4	N/A	N/A			
					23	

Italy LTS	value	score
Overall goal of LTS	climate neutrality	1
Scenarios presented in the LTS	3 scenarios	1
GHG reductions	modelling	1
Renewable energy sources	modelling	1
Energy Efficiency	modelling	1
Estimated Investment	NA	0
Socio-Economic impact of transition	assessment	1
Adaptation Policies measures	yes	1
Public Consultation	yes	1
Legal status of LTS and targets	No	0
		8

Ireland NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	No recc	1,000
Decarbonization renew		4	partially	0,125
			largely	0,188
			largely	0,188
			largely	0,188
Energy efficiency		3	partially	0,167
			partially	0,167
			largely	0,250
energy security		3	partially	0,167
			partially	0,167
			partially	0,167
Internal energy market		1	partially	0,500
Research and Innovation		2	NA	0,000
			partially	0,250
Regional cooperation		2	partially	0,250
			partially	0,250
Investment and funding		1	No recc	1,000
Energy subsidies		1	largely	0,750
Air quality		1	fully	1,000
Just transition and energy poverty		2	partially	0,250
			partially	0,250
				7,271

Latvia

Latvia NECPs Target						
National target contribution	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
GHG	8	17	-6	As in ESR	5	-40
Renewables energy	40	40	50	suff ambit	6	32
Energy Efficiency primary	4,7	5,4	4,1	modest	3	32,5
Energy Efficiency final	4,2	4,5	3,6	modest	3	
Electric grid interconnectivity	7,4	N/A	N/A			
					17	

Latvia LTS	value	score
Overall goal of LTS	climate neutrality	1
Scenarios presented in the LTS	0 scenarios	0
GHG reductions	Target	1
Renewable energy sources	NA	0
Energy Efficiency	Target	1
Estimated Investment	assessment	1
Socio-Economic impact of transition	assessment	1
Adaptation Policies measures	No	0
Public Consultation	Limited	0,5
Legal status of LTS and targets	Unspecifged	0
		5,5

Latvia NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	NA	0,000
Decarbonization renew		5	fully	0,200
			partially	0,100
			partially	0,100
			NA	0,000
			NA	0,000
Energy efficiency		2	Largelly	0,375
			partially	0,250
energy security		1	partially	0,500
Internal energy market		1	partially	0,500
Research and Innovation		2	NA	0,000
			NA	0,000
Regional cooperation		1	largely	0,750
Investment and funding		1	No recc	1,000
Energy subsidies		3	largely	0,250
			largely	0,250
			largely	0,250
Air quality		1	partially	0,500
Just transition and energy poverty		2	partially	0,250
			partially	0,250
				5,525

Lithuania

Lithuania NECPs Target							
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target	green deal
National target contribution							
GHG	7	15	-9	As in ESR	5	-40	55
Renewables energy	24	23	45	suff ambit	6	32	40
Energy Efficiency primary	6,3	6,5	5,5	modest	3	32,5	39
Energy Efficiency final	5,5	4,3	4,5	modest	3		
Electric grid interconnectivity	7,4	N/A	N/A				
					17		

Lithuania LTS		
	value	score
Overall goal of LTS	climate neutrality	1
Scenarios presented in the LTS	0 scenarios	0
GHG reductions	modelling	1
Renewable energy sources	modelling	1
Energy Efficiency	NA	0
Estimated Investment	NA	0
Socio-Economic impact of transition	NA	0
Adaptation Policies measures	yes	1
Public Consultation	no	0
Legal status of LTS and targets	no	0
		4

Lithuania NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	Largely	0,750
Decarbonization renew		4	fully	0,250
			fully	0,250
			Largely	0,188
			largely	0,188
Energy efficiency		4	partially	0,125
			largely	0,188
			largely	0,188
			largely	0,188
energy security		3	fully	0,250
			partially	0,167
			partially	0,167
Internal energy market		1	largely	0,750
Research and Innovation		1	partially	0,500
Regional cooperation		2	largely	0,375
			fully	0,500
Investment and funding		1	largely	0,750
Energy subsidies		3	partially	0,167
			largely	0,250
			largely	0,250
Air quality		1	largely	0,750
Just transition and energy poverty		2	partially	0,250
			fully	0,500
				7,938

Luxembourg

Luxembourg NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
National target contribution						
GHG	-10	-20	-40	more ambitious	7	-40
Renewables energy	9,1	11	25	suff ambit	6	32
Energy Efficiency primary	4,46	4,48	N/A	N/A	1	32,5
Energy Efficiency final	4,35	4,24	3,06	suff ambit	3	
Electric grid interconnectivity	-	270	400			
					17	

Luxembourg LTS	value	score
Overall goal of LTS	climate neutrality	0
Scenarios presented in the LTS	0 scenarios	0
GHG reductions	modelling	0
Renewable energy sources	modelling	0
Energy Efficiency	NA	0
Estimated Investment	NA	0
Socio-Economic impact of transition	NA	0
Adaptation Policies measures	yes	0
Public Consultation	no	0
Legal status of LTS and targets	no	0
		?

Luxembourg NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		2	Largely	0,375
			partially	0,250
Decarbonization renew		4	partially	0,125
			partially	0,125
			Largely	0,188
			partially	0,125
Energy efficiency		2	partially	0,250
			NA	0,000
energy security		1	No recc	1,000
Internal energy market		1	No reccc	1,000
Research and Innovation		2	partially	0,250
			NA	0,000
Regional cooperation		2	largely	0,250
			largely	0,250
Investment and funding		1	partially	0,500
Energy subsidies		3	partially	0,167
			NA	0,000
			partilly	0,167
Air quality		1	partially	0,500
Just transition and energy poverty		2	partially	0,250
			largely	0,375
				6,146

Malta

Malta NECPs Target							
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target	green deal
National target contribution							
GHG	32	5	-19	as in ESR	5	-40	55
Renewables energy	8	10	11,5	non ambit	4	32	40
Energy Efficiency primary	0,8	0,8	1,1	very low	1	32,5	39
Energy Efficiency final	0,7	0,6	0,8	very low	1		
Electric grid interconnectivity	24	24	24				
					11		

Malta LTS	value	score
Overall goal of LTS	climate neutrality	0
Scenarios presented in the LTS	0 scenarios	0
GHG reductions	modelling	0
Renewable energy sources	modelling	0
Energy Efficiency	NA	0
Estimated Investment	NA	0
Socio-Economic impact of transition	NA	0
Adaptation Policies measures	yes	0
Public Consultation	no	0
Legal status of LTS and targets	no	0
		0

Malta NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	NA	0,000
Decarbonization renew		6	NA	0,000
			fully	0,167
			fully	0,167
			partially	0,083
			partially	0,083
			fully	0,167
Energy efficiency		2	partially	0,250
			partially	0,250
energy security		1	partially	0,500
Internal energy market		1	partially	0,500
Research and Innovation		2	partially	0,250
			partially	0,250
Regional cooperation		1	No recc	1,000
Investment and funding		1	partially	0,500
Energy subsidies		3	partially	0,167
			NA	0,000
			NA	0,000
Air quality		1	Fully	1,000
Just transition and energy poverty		1	largely	0,750
				6,083



Netherlands

Netherlands - NECPs Target							
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NECPs 2030 target	green deal
National target contribution							
GHG	-20	-16	-36	as in ESR	5	-40	55
Renewables energy	26	14	27	suff amb	6	32	40
Energy Efficiency primary	64,73	no targ	46,6	suff	6	32,5	39
Energy Efficiency final	50,27	no spec target	43,9	modest	3		
Electric grid interconnectivity	24	24	24				
					20		

Netherlands LTS	value	score
Overall goal of LTS	clear goal	1
Scenarios presented in the LTS	0 scenarios	0
GHG reductions	modelling	1
Renewable energy sources	NA	0
Energy Efficiency	NA	0
Estimated Investment	NA	0
Socio-Economic impact of transition	NA	0
Adaptation Policies measures	limited	0,5
Public Consultation	limited	0,5
Legal status of LTS and targets	yes	1
		4

Netherlands NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	No recc	1,000
Decarbonization renew		4	partially	0,125
			partially	0,125
			largely	0,188
			partially	0,125
Energy efficiency		3	largely	0,250
			largely	0,250
			NA	0,000
energy security		1	partially	0,500
Internal energy market		1	No Recc	1,000
Research and Innovation		1	Largely	0,750
Regional cooperation		1	fully	1,000
Investment and funding		1	largely	0,750
Energy subsidies		3	partially	0,167
			partially	0,167
			NA	0,000
Air quality		1	partially	0,500
Just transition and energy poverty		2	largely	0,375
			NA	0,000
				7,271

Poland

Poland - NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NECPs 2030 target
National target contribution						
GHG	21	14	7	as in ESR	5	-40
Renewables energy	11,3	15	22	not amb	4	32
Energy Efficiency primary	100,9	96,4	91,3	modest	3	32,5
Energy Efficiency final	71,8	71,6	67,1	modest	3	
Electric grid interconnectivity	4	4	8,7			
					15	

Poland LTS		
	value	score
Overall goal of LTS	clear goal	0
Scenarios presented in the LTS	0 scenarios	0
GHG reductions	modelling	0
Renewable energy sources	NA	0
Energy Efficiency	NA	0
Estimated Investment	NA	0
Socio-Economic impact of transition	NA	0
Adaptation Policies measures	limited	0
Public Consultation	limited	0
Legal status of LTS and targets	yes	0
		0

Poland - NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		2	largely	0,375
			partially	0,250
			NA	0,000
Decarbonization renew		7	partially	0,071
			fully	0,143
			partially	0,071
			fully	0,143
			partially	0,071
			partially	0,071
Energy efficiency		4	NA	0,000
			partially	0,125
			partially	0,125
			largely	0,188
energy security		1	largely	0,750
Internal energy market		1	partially	0,500
Research and Innovation		1	partially	0,500
Regional cooperation		2	fully	0,500
			largely	0,375
Investment and funding		1	no recc	1,000
Energy subsidies		3	largely	0,250
			partially	0,167
			partially	0,167
Air quality		1	partially	0,500
Just transition and energy poverty		3	partially	0,167
			partially	0,167
			NA	0,000
				6,747

Portugal

Portugal - NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NECPs 2030 target
National target contribution						
GHG	-16	1	-17	as in ESR	5	-40
Renewables energy	30,3	31	47	suff ambv	6	32
Energy Efficiency primary	22,6	22,5	21,5	modest	3	32,5
Energy Efficiency final	16,9	17,4	14,9	modest	3	
Electric grid interconnectivity	8	10	15			
					17	

Portugal LTS	value	score
Overall goal of LTS	climate neutrality	1
Scenarios presented in the LTS	3 scenarios	1
GHG reductions	modelling	1
Renewable energy sources	modelling	1
Energy Efficiency	modelling	1
Estimated Investment	assessment	1
Socio-Economic impact of transition	assessment	1
Adaptation Policies measures	Limited	0,5
Public Consultation	Limited	0,5
Legal status of LTS and targets	no	0
		8

Portugal- NECPs Recommendation				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	partially	0,500
Decarbonization renew		4	largely	0,188
			NA	0,000
			partially	0,125
			fully	0,250
Energy efficiency		3	partially	0,167
			partially	0,167
			partially	0,167
energy security		1	No recc	1,000
Internal energy market		1	largely	0,750
Research and Innovation		2	partially	0,250
			partially	0,250
Regional cooperation		2	fully	0,500
			partially	0,250
Investment and funding		3	largely	0,250
			largely	0,250
			NA	0,000
Energy subsidies		3	partially	0,167
			largely	0,250
			largely	0,250
Air quality		1	partially	0,500
Just transition and energy poverty		2	partially	0,250
			partially	0,250
				6,729

Romania

Romania- NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
National target contribution						
GHG	14	19	-2	as in ESR	5	-40
Renewables energy	23,9	24	30,7	non amb	4	32
Energy Efficiency primary	32,6	43	32,3	low	2	32,5
Energy Efficiency final	23,6	30,3	25,7	very low	1	
Electric grid interconnectivity	9,3	10	15,4			
					12	

Romania LTS	value	score
Overall goal of LTS	clear goal	0
Scenarios presented in the LTS	0 scenarios	0
GHG reductions	modelling	0
Renewable energy sources	NA	0
Energy Efficiency	NA	0
Estimated Investment	NA	0
Socio-Economic impact of transition	NA	0
Adaptation Policies measures	limited	0
Public Consultation	limited	0
Legal status of LTS and targets	yes	0
		0

Romania- NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	No recc	1,000
Decarbonization renew		6	partially	0,083
			partially	0,083
			partially	0,083
			partially	0,083
			partially	0,083
Energy efficiency		2	partially	0,250
			partially	0,250
energy security		2	Largely	0,375
			partially	0,250
Internal energy market		2	largely	0,375
			largely	0,375
Research and Innovation		2	NA	0,000
			NA	0,000
Regional cooperation		2	partially	0,250
			partially	0,250
Investment and funding		3	partially	0,167
			partially	0,167
			partially	0,167
Energy subsidies		3	partially	0,167
			partially	0,167
			partially	0,167
Air quality		1	partially	0,500
Just transition and energy poverty		2	partially	0,250
			partially	0,250
				5,875

Slovakia

Slovakia- NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
National target contribution						
GHG	-5	13	-12	ambitious	7	-40
Renewables energy	11,9	14	19,2	un ambit	4	32
Energy Efficiency primary	32,6	43	32,3	low	2	32,5
Energy Efficiency final	23,6	30,3	25,7	low	2	
Electric grid interconnectivity	9,3	10	15,4			
					15	

Slovakia LTS	value	score
Overall goal of LTS	climate neutrality	1
Scenarios presented in the LTS	2 scenarios	1
GHG reductions	modelling	1
Renewable energy sources	NA	0
Energy Efficiency	NA	0
Estimated Investment	assessment	1
Socio-Economic impact of transition	assessment	1
Adaptation Policies measures	yes	1
Public Consultation	Limited	0,5
Legal status of LTS and targets	unspecified	0
		6,5

Slovakia- NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	No recc	1,000
Decarbonization renew		6	partially	0,083
			fully	0,167
			partially	0,083
			partially	0,083
			partially	0,083
			partially	0,083
Energy efficiency		2	partially	0,250
			partially	0,250
energy security		1	partially	0,500
Internal energy market		1	partially	0,500
Research and Innovation		1	partially	0,500
Regional cooperation		1	largely	0,750
Investment and funding		1	largely	0,750
Energy subsidies		3	largely	0,250
			largely	0,250
			NA	0,000
Air quality		1	NA	0,000
Just transition and energy poverty		2	partially	0,250
			NA	0,000
				5,833

Slovenia

Slovenia- NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
National target contribution						
GHG	-7	4	-15	more amb	7	-40
Renewables energy	21,1	25	27	un ambit	4	32
Energy Efficiency primary	6,8	7,1	6,4	modest	3	32,5
Energy Efficiency final	5	5,1	4,7	low	2	
Electric grid interconnectivity	83,6	no spec target	no spec target			
					16	

Slovenia LTS		
Overall goal of LTS	climate neutrality	1
Scenarios presented in the LTS	2 scenarios	1
GHG reductions	modelling	1
Renewable energy sources	modelling	1
Energy Efficiency	modelling	1
Estimated Investment	assessment	1
Socio-Economic impact of transition	NA	0
Adaptation Policies measures	Limited	0,5
Public Consultation	Limited	0,5
Legal status of LTS and targets	NO	0
		7

Slovenia- NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	partially	0,500
Decarbonization renew		6	partially	0,083
			largely	0,125
			partially	0,083
			partially	0,083
			partially	0,083
			largely	0,125
Energy efficiency		2	partially	0,250
			partially	0,250
energy security		1	largely	0,750
Internal energy market		1	NA	0,000
Research and Innovation		2	partially	0,250
			partially	0,250
Regional cooperation		2	partially	0,250
			partially	0,250
Investment and funding		1	partially	0,500
Energy subsidies		3	partially	0,167
			partially	0,167
			NA	0,000
Air quality		1	NA	0,000
Just transition and energy poverty		2	partially	0,250
			NA	0,000
				4,417

Spain

Spain- NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NECPs 2030 target
National target contribution						
GHG	-14	-10	-26	amb as esr	5	-40
Renewables energy	17,4	20	42	suff amb	6	32
Energy Efficiency primary	124,59	122,6	98,5	suff	6	32,5
Energy Efficiency final	86,88	87,23	73,6	suff	6	
Electric grid interconnectivity	83,6	no spec target	no spec target			
					23	

Spain LTS	value	score
Overall goal of LTS	climate neutrality	1
Scenarios presented in the LTS	2 scenarios	1
GHG reductions	modelling	1
Renewable energy sources	modelling	1
Energy Efficiency	modelling	1
Estimated Investment	assessment	1
Socio-Economic impact of transition	assessment	1
Adaptation Policies measures	yes	1
Public Consultation	yes	1
Legal status of LTS and targets	yes	1

Spain- NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	No recc	1,000
Decarbonization renew		3	fully	0,333
			partially	0,167
			fully	0,333
Energy efficiency		1	partially	0,500
energy security		1	fully	1,000
Internal energy market		1	largely	0,750
Research and Innovation		1	partially	0,500
Regional cooperation		2	largely	0,375
			NA	0,000
Investment and funding		1	No recc	1,000
Energy subsidies		3	largely	0,250
			largely	0,250
			partially	0,167
Air quality		1	No recc	1,000
Just transition and energy poverty		3	partially	0,167
			fully	0,333
			fully	0,333
				8,458

Sweden

Sweden- NECPs Target						
	latest available data (oct 2020)	2020 target	2030 target	ambition level		EU NEPCs 2030 target
National target contribution						
GHG	-25	-17	-40	More amb	7	-40
Renewables energy	54,6	49	65	suff amb	6	32
Energy Efficiency primary	47	43,4	40,2	modest	3	32,5
Energy Efficiency final	32	30,3	29,7	modest	3	
Electric grid interconnectivity	83,6	no spec target	no spec target			
					19	
Sweden LTS						
	value		score			
Overall goal of LTS	climate neutrality		1			
Scenarios presented in the LTS	0 scenarios		0			
GHG reductions	modelling		1			
Renewable energy sources	NA		0			
Energy Efficiency	modelling		1			
Estimated Investment	NA		0			
Socio-Economic impact of transition	NA		0			
Adaptation Policies measures	yes		1			
Public Consultation	Limited		0,5			
Legal status of LTS and targets	yes		1			
			5,5			

Sweden- NECPs Recommendations				
Recommendations	Policy assessment	N of recc	score	
Decarbonization-GHG		1	partially	0,500
Decarbonization renew		5	fully	0,200
			partially	0,100
			fully	0,200
			partially	0,100
			partially	0,100
Energy efficiency		1	partially	0,500
energy security		1	largely	0,750
Internal energy market		1	No recc	1,000
Research and Innovation		1	partially	0,500
Regional cooperation		1	fully	1,000
Investment and funding		1	partially	0,500
Energy subsidies		3	largely	0,250
			fully	0,333
			NA	0,000
Air quality		1	largely	0,750
Just transition and energy poverty		1	NA	0,000
				6,783

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