Finland

1 Overview of key objectives, targets and contributions in the final NECP

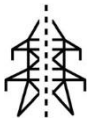
Table 1: Summary of key objectives, targets and contributions of Finland's final updated NECP

		2020	Progress based on latest available data	2030 national targets and contributions	Assessment of 2030 ambition level
	Binding target for greenhouse gas (GHG) emissions compared to 2005 under the Effort Sharing Regulation (ESR) (%)		2022: -22.9% 2023: -27%[249]	-50%	NECP: -45.2% However, FI is expected to meet the 2030 target with ESR flexibilities
	Binding target for net GHG removals under the Regulation on Land Use, Land Use Change and Forestry (LULUCF)		Reported net emissionsof 4.44 Mt CO_2 eq. in 2022	-2.89 Mt CO_2 eq. (additional removal target)	Insufficient ambition based on projections: a gap of 1.22 Mt CO_2 eq compared to the 2030 target
	National target/contribution for renewable energy: Share of energy from renewable sources in gross final consumption of energy (%)	43.9% (SHARES) 38% (target)	2022: 47.7% 2023: 50.7%	62% gross final consumption of energy	Finland's contribution of 62% is in line with the contribution according to the formula set out in Annex II of the Governance Regulation[250]
	National contribution for energy efficiency:				
	Primary energy consumption	35.9 Mtoe	2023: 31.3 Mtoe	n.a. Mtoe[251]	Finland did not provide a primary energy consumption contribution.

[249] The ESR emissions in 2022 are based on 2024 final GHG inventory reports, and 2023 emissions are based on 2024 approximated inventory reports. The percentage reduction is compared with the 2005 emissions as set out in Annex I of Commission Implementing Decision (EU) 2020/2126. However, the final ESR emissions for 2021-2025 will only be established in 2027 after a comprehensive review.

[250] Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action OJ L 328, 21.12.2018, p. 1–77 ('Governance Regulation').

[251] Strictly, the final NECP states that Finland's national energy and climate strategy will be completed in spring 2025. Finland provided values for a WEM scenario instead, which would contribute 30.7 Mtoe primary energy consumption.

					EED recast Annex I formula results: 29,8 Mtoe (Reference Scenario) or 29.7 Mtoe (Updated Reference Scenario).
	Final energy consumption	26.7 Mtoe	2023: 22.2 Mtoe	n.a.[252]	Finland did not provide a final energy consumption contribution. A national contribution of 20.6 Mtoe was submitted by the Commission.
	Level of electricity interconnectivity (%)[253]	29.0%	2024: 15.5%	15%	FI has surpased EU-wide interconnectivit y target

Source: Eurostat; Finland final updated national energy and climate plan

2 CONSIDERATION OF COMMISSION RECOMMENDATIONS ON DRAFT NECP UPDATE

In December 2023, the Commission published a thorough assessment of Finland's draft updated NECP and provided recommendations[254] for the preparation of the final updated NECP. Finland submitted its final updated NECP on 28 June 2024, in line with the deadline of 30 June 2024.[255]

2.1 DECARBONISATION

Based on the projections available in the plan, Finland expects to decrease total GHG emissions (including LULUCF and excluding international aviation) by 51% in 2030, by 71% by 2040 and by 90% by 2050 compared to 1990. These projections are based on a 'with existing measures' (WEM) scenario and do not reflect additional measures.

[252] Strictly, the final NECP mentions a contribution of 20.6 Mtoe but states that Finland's national energy and climate strategy will be completed in spring 2025. Finland provided values for a WEM scenario instead, which would contribute 22.8 Mtoe final energy consumption.

[253] Calculated by the European Commission based on the ETNSO-E data (Winter Outlook 2024). The 2020 figure also covers interconnectors with the neighbouring countries outside the EU. The 2030 level represents the general interconnectivity target of 15%.

[254] SWD(2023) 914 final, and Commission Recommendation of 18 December 2023, C/2023/9604.

[255] Article 14(2) of Governance Regulation.

2.1.1 Effort Sharing Regulation

Finland has partially addressed recommendation 1. The final NECP provides some details on how Finland will meet its ESR target of -50% by 2030 compared to 2005.

The plan provides only projections in the 'with existing measures' (WEM) scenario, showing a decrease of 45.2% in 2030 compared to 2005, a gap of 4.8 percentage points compared to the national ESR target. In 2023, GHG emissions from ESR sectors represented 62% of the total in Finland (expected to be 72% in 2030)[256], with transport accounting for the largest, followed by agriculture. Finland is expected to achieve its ESR target with the use of flexibilities. However, Finland has accounting debit gaps under the LULUCF Regulation, which are projected to impact its performance under the ESR. The plan partially complemented the information on policies and measures provided in the draft but the description of their scope, timeline and GHG reduction impact is only partial.

On transport, the plan aims at halving emissions by 2030 compared to 2005 by replacing fossil fuels with alternative fuels, by renewing the vehicle fleet and enhancing energy efficiency. However, the support schemes to purchase natural gas (heavy-duty) vehicles – and for the use of natural gas in transport, risk undermining the target unless covered entirely with biogas.

Emissions from **waste management** have decreased steadily but national measures to reduce emissions from waste incineration have not been implemented. Several measures in the plan are likely to contribute to a reduction in GHG emissions from **agriculture**, the largest source of methane emissions in Finland, but the magnitude remains difficult to estimate. The plan also contains measures to further reduce F-gas emissions efficiently.

The plan refers to the introduction of the emissions trading system for fuel combustion in buildings, road transport and additional sectors (ETS2). The scenario projections do not account for the effect of ETS2, and do not clearly quantify its impact in achieving the ESR target.

2.1.2 LULUCF

Finland has partially addressed recommendation 3. The LULUCF represent 10% of the total GHG emissions in Finland in 2022. The latest reported 2022 figures show that Finland worsened its performance by 9.1 Mt CO_2eq compared to its yearly average in the 2016-2018 reference period. According to the LULUCF Regulation, Finland has to enhance its net removals by -2.89 Mt CO_2eq in 2030 as compared to the reference period. Taking into account its projections for 2030, Finland will still have a gap of 1.22 Mt CO_2eq in 2030. This gap could affect the achievement of the ESR target.

The main driver behind the worsening performance of LULUCF sector, currently a net source of emissions, is the increase of commercial loggings combined with a slower growth in forests. Furthermore, the lack of action for reducing emissions from organic soils, which is the main source of LULUCF emissions, has a big influence in the overall results.

The plan indicates that for LULUCF there are no additional policies compared to the baseline scenario. Nonetheless, the plan mentions several policies, including a Climate Plan for the Land Use Sector, prepared in 2022 and updated in 2024. According to this plan, Finland will reach

[256] The 2023 emissions are based on 2024 approximated inventory reports.

additional net removals of 2 Mt CO_2eq in 2030 and hence comply with the 2030 target. Although these are steps in the right direction, the final measures are still under preparation at the time of submitting the NECP and therefore cannot yet be assessed.

The plan does not provide sufficient information on how public funding (CAP, state aid) and private financing through carbon farming schemes are used to reach the LULUCF target. The draft also lacks information on the status and progress in ensuring higher tier levels and geographically explicit datasets needed to guarantee the robustness of net removal estimates.

2.1.3 Carbon Capture and Storage

Finland has not addressed recommendation 2. The plan does not identify the amount of CO_2 emissions that can be captured by 2030. It mentions that no geological storage sites have been identified in Finland and that there are no large fossil CO_2 point sources suitable for capture. Biogenic sources could be an option, though due to need to develop transport infrastructure to a harbour for transport by ship, CCU is considered as a better option.

2.1.4 Adaptation

Finland has partially addressed recommendation 5. The plan refers to the National Climate Change Adaptation Plan until 2030 (NAP2030), acknowledging the importance of integrating adaptation planning. It embeds adaptation policies and measures in the Energy Union dimensions.

The plan partially outlines the **links to the specific Energy Union objectives and policies** that adaptation policies and measures are meant to support, particularly for the energy security dimension. It outlines several nature-based solutions, including peatland restoration, wetland creation, and sustainable forest management, aimed at enhancing carbon sinks and improving climate resilience. These measures are expected to reduce emissions, improve water retention, prevent floods, and enhance biodiversity, contributing significantly to climate adaptation efforts. However, the impacts and benefits of adaptation policies on other Energy Union objectives have generally not been quantified.

Finland has provided further clarification on their overall approach to adaptation policy, with streamlining in sectoral and local planning, and in other national plans.

2.1.5 Fossil Fuels

Finland has partially addressed recommendation 20. The plan mentions the Territorial Just Transition Plans (TJTPs) commitment to reduce peat use by 50% by 2030 but does not explain how to achieve this target nor the necessary measures and resources to support the peat phase-out. The plan does not sufficiently explain the alignment between the TJTPs and NECP.

The plan indicates that there are no clear fossil fuel subsidies nor established definitions for them[257]. Nonetheless, it lists some fossil fuel subsidies, such as tax reductions or exemptions for natural gas and diesel used in transport, for which no phase-out is foreseen.

[257] The Commission 2024 study and Report on Energy subsidies in the EU identify the existence of fossil fuel subsidies.

2.2 RENEWABLES

Finland has addressed recommendation 6. The plan includes an increased contribution of the renewable energy share to 62% in gross final energy consumption by 2030, which is in line with the level resulting from the formula in Annex II of the Governance Regulation. The updated trajectory for achieving the contribution is also provided, with the specific reference points of 49% for 2025 and 54% for 2027 respectively also included, which correspond to the trajectory calculated in line with the increased EU 2030 renewable energy target of 42.5%.

Finland has partially addressed recommendation 7. The plan provides information on projections for offshore wind beyond 2030, with an outlook up to 2050. Finland indicates that it endeavours to reach an indicative target 5% of innovative renewable energy for newly installed renewable energy capacity by 2030. Finland also aims to increase the share of renewable energy in the industry sector by 1.6 pp annually until 2030 including referring to the specific target of renewable fuels of non-biological origin (RFNBOs) for industry (stating that the achievement of RFNBO targets in 2030 and 2035 is highly dependent on new investments that are under development). However, the plan does not include a specific target in buildings to contribute to the sectoral target, even though the 85% of renewable share and waste heat in 2030 indicates a target would most likely be reached. Finland sets out a combined target for advanced biofuels and RFNBOs in transport stating that the minimum binding level for RFNBOs in transport will be reached (29% in 2030).

Finland has partially addressed recommendations 8 and 10. Regarding the RFNBO in industry, the plan mentions ongoing projects (planning phase or under construction) and points out that Finland is currently assessing the need for additional measures to use RFNBOs to reach the target, such as new legislation which will be implemented in May 2025 together with other measures required by Directive (EU) 2018/2001 (the 'revised RED II')[258].

On permitting, speeding up permitting processes and predictability in governmental procedures are mentioned as principal elements to strengthening competitiveness in Finland. However, the plan does not describe how Finland plans to designate the renewables acceleration areas. The uptake of power purchase agreements is well outlined, in particular concerning new wind power projects. The final plan also provides additional information on measures to promote self-consumption and renewable energy communities. The plan lacks details on the procedural steps and timelines for most policies and measures in particular on industry-related measures notably RFNBOs and on guarantees of origin. Finland includes measures to promote the sustainable production of biomethane.

Finland has addressed recommendation 9. The plan provides projections on biomass by type used for 2020-2030. It also provides some information on the compatibility of the projected use of forest biomass for energy production with Finland's obligations under the revised LULUCF Regulation. Finally, Finland includes measures to promote the sustainable production of biogas, but does not quantify the target, feedstock to be used and the market for resulting byproducts.

[258] Directive (EU) 2018/2001 on the promotion of energy from renewable sources, as amended by Directive (EU) 2023/2413

2.3 ENERGY EFFICIENCY DIMENSION

Finland has not addressed recommendation 11. Finland did not include[259] an indicative national contribution to the Union's binding final energy consumption target for 2030 for final energy consumption[260] nor an indicative national contribution to the Union's indicative primary energy consumption target for primary energy consumption[261].

Malta included an indicative national contribution of 0.8 Mtoe to the Union's binding final energy consumption target for 2030. This contribution is not in line with Article 4 of Directive (EU) 2023/1791 ('EED recast')[262], nor equal to the corrected indicative national contribution that the Commission submitted to Malta in March 2024 under Article 4(5) of that Directive. There is still a gap of 16.9% compared to the indicative results of the 2020 reference scenario and a gap of 22.4% compared to the indicative results of the updated 2020 reference scenario.

Malta included an indicative national contribution to the Union's indicative primary energy consumption target for 2030 of 1.0 Mtoe for primary energy consumption. This contribution is not in line with Article 4 of EED Recast. There is still a gap of 16.2% compared to the target calculated with respect to the indicative results of the 2020 reference scenario, and a gap of 26.8% compared to the target calculated with respect to the indicative results updated 2020 reference scenario.

Finland included the amount of energy consumption reduction of 11.9 ktoe per year to be achieved by all public bodies, which is also disaggregated by sector, but Finland did not report the total floor area of heated and cooled buildings owned by public bodies to be renovated yearly, nor the corresponding yearly energy savings to be achieved[263]. Finland did not set out policies and measures neither to achieve the reduction of energy consumption from public bodies nor the renovation of public buildings. Finland included the amount of cumulative energy savings of 16.12 Mtoe to be achieved over the period from 1 January 2021 to 31 December 2030 and an explanation on how the annual savings rate and the calculation baseline were established.

Finland has addressed recommendation 12. Finland set out complete policies and measures to achieve the national contributions on energy efficiency and to achieve the required amount

[259] Strictly, the Final NECP states that Finland's national energy and climate strategy will be completed in spring 2025.
[260] Finland provided values for a WEM scenario instead, which would contribute 22.8 Mtoe final energy consumption. With existing measures there is still a gap of 10.68% compared to the target calculated with respect to the indicative results of the 2020 reference scenario, a gap of 11.71% compared to the indicative results of the 2020 updated reference scenario and a gap of 10.68% compared to the corrected indicative contribution.
[261] Finland provided values for a WEM scenario instead, which would contribute 30.7 Mtoe primary energy consumption. With existing measures there is still a gap of 3.1% compared to the indicative results of the Article 4 and Annex I (REF2020 scenario), and a gap of 3.3% compared to the indicative results of the Article 4 and Annex I (updated REF2020 scenario).
[262] Directive EU 2023/1791 on energy efficiency and amending Regulation (EU) 2023/955 (recast).

[263] However, it reported the total obligation by 2030, equal to 28375 ktoe (330.8 GWh)

of cumulative end-use energy savings. In the plan, Finland specified how the energy efficiency first principle will be implemented. Finland specified some[264] energy efficiency financing programmes and support schemes.

Finland has partially addressed recommendation 13. Finland did not include an updated ambition level[265] to ensure a highly energy efficient and decarbonised national building stock by 2050. The final plan contains **intermediate milestones for 2030 and 2040** for the renovation of residential and non-residential buildings. Finland included energy savings milestones for the buildings stock but **did not detail the impact in terms of energy savings** of each new measure related to buildings, nor provide sufficient information in terms of funding, costs, energy and emissions savings. The plan contains information on policies and measures addressing deep renovation with a specific focus on vulnerable consumers, as well as decarbonisation of heating or installation of renewables in buildings.

2.4 ENERGY SECURITY DIMENSION

Finland has partially addressed recommendation 14. On gas, the plan provides estimations for the evolution of natural gas consumption, which is expected to decrease from 76 PJ in 2020 to 27 PJ in 2030 and 16 PJ in 2040.

For electricity, the plan provides details on the various options to secure long-term supply of alternative nuclear materials, including nuclear fuel, to the Loviisa nuclear power plant (Russian VVER design) and clarifies the operator's commitment to ensure diversified fuel supply. The plan does not contain information on the measures for long-term management of nuclear waste. However, the information is covered in the 4th national report on waste management submitted in August 2024. The plan does not set an objective target for energy storage, but the Government's strategy is to increase the deployment of energy storage and some partial investment subsidies are available.

In the oil sector, the plan contains forecasts on oil consumption until 2050 and describes possible measures to ensure the adequacy of the oil infrastructure in the long run (refineries, oil stocks).

2.5 INTERNAL ENERGY MARKET DIMENSION

Finland has partly addressed recommendation 15. Finland does not elaborate on the quantification of flexibility needs but it includes policies and measures that enhance flexibility. The plan provides estimates for the demand side response capacity in different energy markets and notes that it is expected to increase.

Regarding storage, Finland informs that there are several planned storage projects under development (for instance, batteries and pumped hydro), the estimated combined capacity of which is approximately 5 GW. Finland explains that while there are currently no specific

[264] The report is focused on information and communication about financing.
[265] The Finnish NECP explicitly points out that "no need for a quick update was detected" with respect to the targets from the 2020 Long-Term Renovation Strategy.

targets for energy storage capacity, the Government's strategy is to increase its deployment, including through the National Battery Strategy 2025.

Finland has partly addressed recommendation 16. The assessment of the households affected by energy poverty is limited, with the only indicator being the number of non-payment records regarding electricity bills. Finland did not provide a specific measurable reduction target but provided additional details on existing measures to address poverty and energy efficiency. While there is information on some financial resources of the structural energy measures, there is no overview of all relevant financial resources nor of potential further measures to address energy poverty.

2.6 RESEARCH, INNOVATION AND COMPETITIVENESS

Finland has partially addressed recommendation 17. The final plan includes high level targets and objectives in research, innovation and competitiveness to deploy clean technologies, establishing a pathway for 2030 to support the decarbonisation of industry and promote the transition of businesses towards a net zero and circular economy.

Policies and measures include an initiative called Growth Engines, a cooperation network supporting new business activities. The objectives on R&I expenditure are set at 4% by 2030 (both public and private, for all sectors). However budgetary information is limited to budgets from 2018-2019.

The plan does not put forward concrete policies and measures to promote the development of net-zero projects, including those relevant for the energy intensive industries. However, the Finnish Government is preparing an eight-year plan on R&D funding and other aspects related to RDI policy.

The plan does not describe a predictable and simplified regulatory framework for permitting procedures for manufacturing, nor how access to national funding will be simplified where relevant. The plan partly provides information on some policies and measures for the digitalisation of the energy system, focussing on the rollout of smart meters. The plan does not provide measures on the development of clean-energy-related skills, and to facilitate open trade for resilient and sustainable supply chains of key net-zero components and equipment.

Finland does not provide clear competitiveness targets and measures for regional cooperation in R&I, nor information on measures and investments to bridge potential skills gaps for the energy transition. The role of circular economy for decarbonisation is generally well integrated.

2.7 FINANCING THE ENERGY AND CLIMATE TRANSITION

Finland has not addressed recommendation 18. The plan provides estimates of the total investments in the clean energy transition planned by individual businesses (EUR 257 billion), covering various sectors. It also includes dedicated information on the decarbonisation of the transport sector. However, it does not provide an estimate of total investment needs, nor a breakdown by funding source (public/private). A description of the types of instruments used or envisaged is only included for specific measures. The assessment is only based on a bottom-up analysis. The information provided in the plan is not sufficient to estimate whether there is a potential financing gap with respect to the investment needs, or how this would be filled.

Finland has partially addressed the need to provide a robust assessment of the macroeconomic impact of the planned policies and measures. The macro-economic assessment included in the plan focuses only on expected labour market developments and challenges while discussing these in qualitative terms.

2.8 JUST TRANSITION

Finland has partially addressed recommendation 22. The plan provides some general information on the impact of the transition to climate neutrality on skills, based on a study funded by the Finnish Government. However, it does not include an analysis of the social, employment and skills impacts of the transition on the planned objectives, policies, and measures to support a just transition. Moreover, the plan does not specify the form of support, the impact of initiatives or the resources available, except for the Just Transition Fund (JTF) and a small amount from ETS revenues. The analysis focuses on the JTF and the Territorial Just Transition Plans (TJTPs). In terms of alignment with TJTPs, the plan mentions the commitment to reduce peat use by 50% by 2030 as a TJTPs commitment.

The plan lacks the analytical basis needed for the preparation of the Social Climate Plan, such as information on the estimated impact of ETS2 and the identification of vulnerable groups, albeit including some initial reflections on the latter. Finland also provides limited information on how it intends to organise the preparation of its Social Climate Plan. However, the plan only partly explains how the policy framework identified in the NECP will contribute to the preparation of Finland's Social Climate Plan and how the consistency of the two plans will be ensured.

2.9 PUBLIC CONSULTATION

Finland has partially addressed recommendation 23. Finland organised two rounds of public consultation in the preparation of the NECP. The first consultation was organised from 14 April to 18 May 2022 as part of the preparations of the National Climate and Energy Strategy, the Medium-term Climate Change Policy Plan and the Climate plan for the Land Use Sector of Finland, containing the targets and policy measures set in the draft updated NECP delivered in 2023. The consultation for the final plan was organised from 22 May to 10 June 2024, close to the submission date (30 June). Finland received 107 comments for the strategy and 57 comments for the final plan. The plan provides a summary on the content of the comments of both consultations and how the comments were considered in the NECP.

2.10 REGIONAL COOPERATION

Finland did not receive Commission recommendations on regional cooperation.

2.11 ANALYTICAL BASIS

Finland has not addressed recommendation 21. The final plan includes updated projections compared with the draft plan but does not provide WAM projections on how the energy system will develop. The plan mentions that a WAM scenario is being developed and will be published in 2025.

The plan references a description of the analytical framework, with projections reaching 2040. It embeds economic, social, employment and skills impacts. The methodologies used are described in detail in referenced documents.

2.12 STRATEGIC ALIGNMENT, COHERENCE AND INTERACTION WITH OTHER PLANNING INSTRUMENTS AND POLICIES

Finland has partially addressed recommendation 19. The final updated NECP covers sufficiently the main reforms and investments of the Recovery and Resilience Plan (RRP) that contribute to the implementing the objectives, targets and contributions of the Energy Union.

3 GUIDANCE ON THE IMPLEMENTATION OF THE NATIONAL ENERGY AND CLIMATE PLAN

The Commission encourages Finland to ensure a timely and complete implementation of the measures needed to achieve its national climate and energy targets. Finland is invited to pay particular attention to the following main elements:

- On **ESR**, finalise the design of additional measures to reduce emissions in the effort sharing sectors, in line with the government's preparation of a new energy and climate strategy and the third medium-term climate change policy plan. Analyse the projected impact of the additional measures on GHG emissions.
- On **LULUCF**, implement additional policies to reduce emissions from organic soils and increase forest sink. Policies should focus on sustainable forest management practices, promoting afforestation and reforestation. Implement measures to reduce emissions from drained organic soils. Establish a robust monitoring system to track the effectiveness of these policies. Develop geographically explicit datasets and higher tier levels to ensure the accuracy of net removal estimates.
- On **adaptation**, use relevant ongoing local, national and sectoral processes to detail their contribution to the different Energy Union dimensions.
- Clarify the list of existing **fossil fuel subsidies** and set a roadmap and specific measures for their gradual phase-out.
- On **industry**, support investments in innovative technologies, including CCUS. Ensure that raw materials are sourced sustainably, strengthening recycling and energy efficiency, especially for the pulp and paper industry.
- On **energy efficiency**, put in place measures to achieve the higher ambition by 2030 for primary energy consumption. Diversify energy efficiency measures for **transport** beyond fiscal measures. Set up a strategy to support and monitor the proper implementation of the efficiency first principle.
- On **buildings,** ensure that the ambition level in the building sector is in line with 2050 decarbonisation efforts and clarify policies and financing of energy efficiency measures with clearly identified budgets and expected outcomes in terms of energy and emissions savings.
- Continue efforts to **diversify nuclear fuel supplies** for its VVER reactors and ensure the long-term supply of spare parts and maintenance services.

- Improve data quality for vulnerable households and **energy poverty**, both quantitative and qualitative, to identify fit for purpose measures to reduce energy poverty.
- Develop a comprehensive **just transition strategy** that analyses the social and employment impacts of the transition and allocates appropriate resources.