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**COMMISSION STAFF WORKING DOCUMENT**

**Assessment of the draft updated National Energy and Climate Plan of Cyprus**

*Accompanying the document*

**COMMISSION RECOMMENDATION**

**on the draft updated integrated national energy and climate plan of Cyprus covering the period 2021-2030 and on the consistency of Cyprus' measures with the Union's climate-neutrality objective and with ensuring progress on adaptation**

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# 1 SUMMARY

## 1.1 Overview of key objectives, targets and contributions in the draft updated NECP


The European Green Deal, the fast-evolving geopolitical context and the energy crisis have led the EU and its Member States to more ambitious energy and climate objectives, including as regards diversification of energy supplies. These developments are reflected in the legislative framework adopted under the Fit for 55 package and the REPowerEU Plan.

Cyprus's draft updated national energy and climate plan ('the draft updated NECP' or 'the plan'), submitted on 27 July 2023, partially takes into account this new geopolitical and legislative context.

Table 1: Summary of key objectives, targets and contributions of Cyprus' draft updated NECP

		2020	Progress based on latest available data	2030 national targets and contributions	Assessment of 2030 ambition level
	Binding target for greenhouse gas emissions compared to 2005 under the Effort Sharing Regulation (ESR) (%)		2021: +3.8% 2022: +2.5% <sup>1</sup>	-32%	NECP: -23.1%
	Binding target for net greenhouse gas removals under the Regulation on Land Use, Land Use Change and Forestry (LULUCF)		Reported net removals of – 0.24 Mt CO <sub>2</sub> eq. in 2021	-63 kt (additional removal target) -352 kt (total net removals)	Insufficient ambition, not reaching the target
	National target/contribution for renewable energy:  Share of energy from renewable sources in gross final consumption of energy (%)	16.9% (SHARES) 13% (target)	19%	26.5%	CY contribution of 26.5% is significantly below 33% as required pursuant the formula set out in Annex II of the Governance Regulation
	National contribution for energy efficiency				
	Primary energy consumption	2.2 Mtoe	2.31 Mtoe	No target is reported	CY primary energy consumption projection is of 2,280 ktoe. EED recast

<sup>1</sup> The ESR emissions for 2021 are based on final inventory data and for 2022 on approximated inventory data. However, the final ESR emissions for 2021 and 2022 will only be established in 2027 after a comprehensive review.

					Annex I formula results: 2,038 ktoe
	Final energy consumption	1.9 Mtoe	1.69 Mtoe	No target is reported	CY final energy consumption projection is of 1,880 ktoe. EED recast Annex I formula results: 1,807 ktoe
	Level of electricity interconnectivity (%)	0%	0%	15% <sup>2</sup>	

Source: Eurostat: Cyprus's draft updated national energy and climate plan

## 1.2 Summary of the main observations<sup>3</sup>

The draft updated plan refers to the revised energy and climate targets recently agreed under the **Fit for 55** package and the **REPowerEU**. However, it does not provide convincing explanations on how these targets will be implemented.

**Regarding the reduction of greenhouse gas emissions under the Effort Sharing Regulation (ESR)**, the plan provides emission projections demonstrating that with both existing and additional policies and measures Cyprus is not on track to meet its national greenhouse gas target of -32% in 2030 compared to 2005 levels. According to Cyprus' projections, there is gap of 8.9 percentage points, highlighting the need for more ambitious climate action. Policies and measures are not always properly described in terms of their scope, timing and expected impacts. In the energy sector, the plan does not tackle the still high methane emissions from fuel combustion and remains unspecific on fugitive emissions. Methane emissions from agriculture also show only a minimal decrease by 2030.

**On Land Use, Land Use Change and Forestry (LULUCF)<sup>4</sup>**, the draft updated projections in the plan indicate that Cyprus will fall short of the 2030 ambition, highlighting the need for enhanced climate action. The draft does not clearly set out a pathway to increase the land sector's contribution to the EU's overall enhanced climate target. The draft does not provide a clear implementation timeframe nor quantification of the impacts of specific policies and measures. It also lacks information on the status and progress in ensuring higher tier levels and geographically explicit datasets needed to ensure the robustness of net removal estimates.

<sup>2</sup> Calculated by the European Commission based on the ETNSO-E data (Winter Outlook 2022-2023). The 2030 level represents the general interconnectivity target of 15%. The level of ambition cannot be assessed, because the actual 2030 interconnectivity levels will depend on the implementation of the planned interconnectors and changes in the generation capacity.

<sup>3</sup> In addition to the notified draft NECP, this assessment also considers informal bilateral exchanges, which are part of the iterative process established under the Governance Regulation.

<sup>4</sup> Regulation (EU) 2018/841 of the European Parliament and of the Council of 30 May 2018 on the inclusion of greenhouse gas emissions and removals from land use, land use change and forestry in the 2030 climate and energy framework and amending Regulation (EU) No 525/2013 and Decision No 529/2013/EU (OJ L 156, 19.6.2018, p. 1).

**On Carbon Capture Utilisation and Storage (CCUS)**, the plan does not identify annual CO<sub>2</sub> emissions that can be captured, nor geological CO<sub>2</sub> storage capacity or details on CO<sub>2</sub> transport. The preparation of a national plan for CCS is referenced. The outcomes should be made available, once finalised.

**Concerning the international commitments under the Paris Agreement** the draft updated plan reflects partial progress. Although Cyprus is largely coal-free in the power sector, there is little on the timeline for replacement of coal and coke in the cement industry, nor details on phasing out remaining fossil fuels subsidies.

**Regarding adaptation to climate change**, the draft updated NECP does not contain adequate analysis of the relevant climate vulnerabilities and risks for the achievement of the national objectives, targets, and contributions and the policies and measures in the individual dimensions of the Energy Union. The link to the specific Energy Union objectives and policies, which adaptation policies and measures should support, is not specified and quantified. Adaptation policies and measures to support Cyprus' achievement of national objectives, targets and contributions under the Energy Union, are not properly described in terms of their scope, timing and expected impacts. For instance, measures are not sufficiently outlined in the plan to safeguard the carbon sequestration potential of land use, electricity generation capacity, and residential energy savings, in the face of water stress and scarcity, droughts, floods, forest fires or heatwaves.

For **renewable energy**, the draft updated plan puts forward a contribution of 26.5% of country's gross final energy consumption, which is significantly below the share of 33% resulting from the formula in Annex II of the Regulation (EU) 2018/1999 on the Governance Regulation of the Energy Union and Climate Action ("Governance Regulation"). Overall, the draft updated plan includes indicative trajectories for renewables in the electricity, transport and heating and cooling sectors including renewable shares in industry, buildings and renewable fuels of non-biological origin (RFNBO). The draft plan introduces some new planned measures to achieve the 2030 target for renewable energy; however, most of the policies and measures are continuation of already existing measures. In particular, no details regarding the measures needed to ramp-up renewables in transport in line with the very high ambition needed (e.g., support to Electric Vehicles (EV) deployment) were provided. Overall, the draft plan takes into account Directive (EU) 2018/2001 on the promotion of energy from renewable sources as amended by Directive (EU) 2023/2413 ("revised REDII") to some extent.

For the **energy efficiency**, the draft updated NECP is a rather comprehensive, informative and detailed report. The new ambition of the Directive (EU) 2023/1791 and amending Regulation (EU) 2023/955<sup>5</sup> ("EED recast") is considered in the cumulative energy savings obligation requirement for the period 2021-2030, but no PEC and FEC 2030 national targets are reported. The draft plan presents in detail the planned measures to achieve the 2030 energy efficiency targets, with most measures focusing on the building and transport sectors. However, the expected quantified impact of the measures towards the targets is not often included in the draft updated NECP. The energy efficiency first principle has been considered to some extent throughout the dimensions of the Energy Union. In relation to **buildings**, the draft updated NECP is comprehensive and provides a detailed draft on

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<sup>5</sup> OJ L 231.

updated long-term renovation strategy. However, the section on the roadmap and milestones for 2030, 2040 and 2050, as well as the section on energy savings are missing.

As for the **energy security dimension**, the draft updated plan contains adequate objectives and measures to reduce the risk exposure of the Cypriot energy system. In particular, the arrival of natural gas on the island thanks to future domestic resources, the opening of an LNG terminal and to the building of gas interconnections with Europe's mainland and Israel allow Cyprus to diversify its energy supplies and to reduce its dependence on imported oil. However, it is not clear how this increase in natural gas consumption in the island is compatible with EU and national climate ambitions as well as with the REPowerEU objectives (in particular, phasing out Russian gas consumption in the EU by 2027). The draft plan to build power storage capacity is also a positive ambition to strengthen the resilience of the electricity system.

**For internal market**, the draft plan emphasized the work for the implementation of the EuroAsia interconnector to end isolation of the Cypriot energy system. Secondly, the draft updated plan does not include a timeline within which a fully competitive and liberalised market will be functioning in Cyprus. In addition, while the draft updated plan includes some objectives regarding aggregation, participation of demand response and flexibility services in the electricity market, it is still unclear how those services will be encouraged or facilitated while the completion of the internal market is still ongoing.

**As regards energy poverty**, the draft updated plan includes a list of categories of vulnerable consumers and quotes estimates of the number of households in energy poverty at 19.3%<sup>6</sup> of the population, but without a clear measurable target. The plan also includes measures to address energy poverty, while it recognises that measures to empower consumers still needs to be improved. The draft updated plan contains an analysis (based on 2015 data) of the impact that energy costs have on household incomes, including for the most vulnerable. Cyprus sets an obligation for achieving a part of the energy savings target through energy efficiency measures for consumers affected by energy poverty, without specifying the measures to achieve the target.

For the **research, innovation, competitiveness and skills dimension**, the Cypriot draft updated NECP mentions targets and planned investments for clean energy research, innovation, and competitiveness but includes only limited information on policies and measures. The draft updated plan does not report a quantitative projection of Cyprus' ambition in R&I for 2030 and 2050, nor objectives for public and private spending in clean energy R&I. The draft updated plan includes little information on investments needed to strengthen the manufacturing basis for net-zero technologies and to reinforce the resilience of industrial supply chains. Moreover, while the plan provides information on measures to improve the digitalisation of the energy system, it does not include dedicated targets, measures and associated funding for digitalisation, recyclability and circularity, and skills.

**Just transition is addressed in a limited manner** in the draft updated NECP. While there is information on total impacts on employment of the climate and energy transition, the plan lacks information on social and skills consequences, including distributional impacts. The plan does not elaborate on policies and measures to tackle these issues except for mentioning a few actions. Some inconsistencies appear with the Territorial Just Transition

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<sup>6</sup> This figure will be updated in a forthcoming study to better account for the new EU legislation on energy efficiency and the specificities of Cyprus.

Plan (TJTP) regarding the phasing out of the capacity of Dhekelia power plant. Resources specifically devoted to supporting the just transition are not listed in detail. Finally, the draft plan does not provide information for the preparation of the Social Climate Plan and how the consistency of the two plans would be ensured.

**On its strategic alignment with other planning tools**, the draft updated NECP seems to be consistent with the Recovery and Resilience Plan (RRP). Reforms and investments included in the national RRP are identified throughout the document, associated with each of the individual measures proposed by Cyprus in its NECP. On 1 September 2023, Cyprus submitted the amended RRP and REPowerEU chapter, which the Commission endorsed on 16 November. The plan also appears to be overall aligned with the latest **European Semester Country Specific Recommendations** and reflects the challenges to be addressed by the country mainly to enhance diversification and reduce their dependency on fossil fuels by taking specific actions in renewable energy and energy efficiency reforms.

The draft updated plan includes information on the expected **investment needs** to implement the existing and planned policies and measures. The description of the **sources of financing** is limited, with funding sources and estimates of the financial needs not provided for several measures.

For the **analytical base**, the draft updated plan is based on solid quantitative analysis, including both bottom-up and top-down tools. The model tool used does not allow to measure potential impact on public finances. The macroeconomic assessment is overall clear, but it could be further developed.

## **2 PREPARATION AND SUBMISSION OF THE DRAFT UPDATED NECP**

### **2.1 Process and structure**

The draft updated plan was notified to the Commission on 27 July 2023, almost one month after the deadline. The draft updated plan is generally well developed and overall follows the structure provided by the Annex I template, covering all five dimensions, and including objectives, targets, or contributions for each, backed by policies and measures and underpinned by an analytical basis, including an impact assessment.

The draft updated plan also provides evidence that, in line with the Whole of Government approach, Cyprus reached out and worked together with all relevant authorities to update the draft plan, considering synergies and trade-offs across different portfolios.

The involvement of cities and local authorities is described in relation to several dimensions and sectors addressed by the draft updated NECP (decarbonisation, energy efficiency, research and innovation, buildings, transport, renewables, circular economy). However, Cyprus has not yet established a multilevel energy and climate dialogue in an appropriate format (e.g., annual conference on the future of the green transition).

### **2.2 Public consultation**

The public participation procedure outlined in the draft updated plan ensured to a certain extent early public participation before decisions were taken and throughout the decision-making process, even if an important part of the consultation is still to take place before

finalising the updated NECP. While the online consultation that is still ongoing is open to the public, the draft updated plan does not identify a wide range of interest groups, nor does it explain how they are encouraged to take part. Few communication channels and mechanisms to notify and reach out to the public were implemented.

The time frame for the public to prepare and participate effectively was sufficient but there was room for improvement as regards the quality of engagement with the public. That said, the necessary information was provided on the NECP's key objectives, targets and contributions. The public and stakeholders were informed of the regulatory context for the review, and the decision-making procedure followed for the update. The draft updated NECP also contains a clear and detailed summary of the public's views but not how they were considered and addressed, or why they were not.

The plan is unclear on how Social Partners were consulted during the drafting process, which hinders the assessment on the fulfilment of a "whole-of-society" approach, as stated in the Council Recommendation on ensuring a fair transition towards climate neutrality.

### **2.3 Regional consultations for the preparation of the draft updated NECP**

The draft updated plan notes that there have been various consultations with neighbouring countries. Yet, the results of those consultations are not explained in the draft updated plan.

## **3 ASSESSMENT OF THE AMBITION OF OBJECTIVES, TARGETS AND CONTRIBUTIONS AND ADEQUACY OF SUPPORTING POLICIES AND MEASURES**

### **3.1 Decarbonisation dimension**

#### *3.1.1 Greenhouse gas emissions, removals and storage*

The draft updated NECP mentions the increased climate targets included in the Effort Sharing Regulation (ESR) and LULUCF Regulation, as part of the 'Fit for 55' legislative package.

The draft updated plan does not specify a clear goal by when Cyprus will reach **climate neutrality**. It does not include concrete pathways up to 2050. With existing measures (WEM) and with additional measures (WAM) projections are performed with a time horizon of 2040. Projections submitted in March 2023 under Art. 18 of the Governance Regulation show net GHG emissions (i.e., including LULUCF and excluding international aviation) of 4 million tonnes of CO<sub>2</sub> equivalent (CO<sub>2</sub> eq.) by 2050 considering existing measures.<sup>7</sup> This is equivalent to a projected reduction in 2050 of 34%, compared to 1990. In the most recent years, net GHG emissions in Cyprus have been rising. The information provided in the draft updated plan does not allow for a full assessment as to whether progress by Cyprus is consistent with the achievement of the EU climate-neutrality objective. However, based on all the available information, progress by Cyprus towards the EU climate-neutrality objective appears insufficient. Cyprus plans to update the projections with additional measures in the final updated plan.

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<sup>7</sup> In March 2023, Cyprus did not submit GHG emission projections under the WAM scenario.



The draft updated plan does not reflect the required ambition under the **Effort Sharing Regulation (ESR)**, as the policies and measures in the plan are not likely to collectively suffice to reach Cyprus’ obligations under the ESR, which sets Cyprus’s 2030 emissions reduction target to -32% by 2030, compared to 2005 levels. The draft updated plan projects emissions from the effort sharing sectors in Cyprus to be above their 2030 target both with existing (WEM) and with additional planned measures (WAM), highlighting the need for more ambitious climate action. Cyprus reports that in the WEM scenario, emissions under the ESR are expected to be at -9.7%. In the WAM scenario, Cyprus expects these to fall to -23.1%, resulting still in a shortfall of 9 percentage points compared to their ESR target. In 2021, Cyprus’s ESR emissions exceeded their Annual Emission Allocations (AEAs) by 0.36 Mt CO<sub>2</sub> eq.

Member States have flexibilities under the ESR to comply with their targets. No specific use of ESR flexibilities is mentioned by Cyprus. To assess whether Member States comply, the use of saved AEAs from previous years is taken into account.

Table 2: ESR target and projections in Cyprus's draft updated NECP

<b>ESR target and projections<sup>8</sup></b>					
	<b>2030 target*</b>	<b>2021 performance (inventory data) *</b>	<b>2022 performance (approximated data) *</b>	<b>2030 WEM projection*</b>	<b>2030 WAM projection*</b>
<b>CY</b>	-32%	3.8%	2.5%	-9.7%	-23.1%
<b>EU</b>	-40%	-14.5%	-16.9%	-27%	-32%

\*Compared to the 2005 emissions as set out in Annex I of Commission Implementing Decision (EU) 2020/2126.

**The draft updated plan does not fully reflect the increased ambition of the LULUCF Regulation** and the 2030 national target requiring Cyprus to deliver additional -0.063 Mt CO<sub>2</sub> eq. net removals to reach the value of total -0.352 Mt CO<sub>2</sub> eq. of net removals in 2030. According to the projections submitted, Cyprus will only achieve -0.325 Mt CO<sub>2</sub> eq. by 2030, which falls short if compared to the 2030 target of -0.063 Mt, highlighting the need for more ambitious climate action. Moreover, Cyprus’ draft updated NECP does not set out a clear pathway to increase the contribution of the land sector to the overall EU’s enhanced climate target and, even considering planned measures, the projected contribution by 2030 is the same as in the WEM scenario.

**The draft updated plan only briefly describes the policies and measures to support the LULUCF sector.** The plan notes that the policies and objectives for this sector will be presented in the final revision of the plan. The forest land sector is the main sub-category that contributes to the sink in the LULUCF sector.

The draft updated plan still refers to the Rural Development Programme, with no reference to the **CAP Strategic Plan**, including several measures related to land use, which could contribute to reducing the country’s emissions and increase land-based carbon removals.

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<sup>8</sup> The comparison between the ESR target and projected emissions does not take into account the flexibilities available for Member States under the ESR to comply with their 2030 targets. The ESR emissions will be comprehensively reviewed in 2027 (for the years 2021-2025) and 2032 (for the years 2026-2030).

For instance, the objective of planting 300.000 trees by 2030 is mentioned. However, the draft plan does not provide the implementation timeframe, the source of funding and, most importantly, the quantification of the impacts of those policies and measures.

The draft updated plan does not provide information on the status and progress to be made in ensuring the enhancements to higher tier levels/geographically explicit datasets for the **monitoring, reporting and verification**, in line with the provisions under Regulation (EU) 2018/1999. Overall, Cyprus does not clearly present how its policies and measures for the LULUCF sector will contribute to the long-term transition to climate neutrality by 2050.

The draft updated plan refers to the **EU Circular Economy Package** and in particular waste management objectives. The plan outlines the new Cypriot 2022-2028 Municipal Waste Management Plan and the Solid Waste Management Plan, which include several measures to increase reuse and recycling, strengthening separate collection and upgrading the infrastructure for the management of organic and mixed waste. The latter plan with an estimated budget of EUR 82 million is co-financed by the LIFE Programme, the Recovery and Resilience Fund, the Structural Funds, and the EEA/Norway Mechanism.

The draft updated plan includes policies and measures for improved access to **zero and low-emission mobility**. Several measures are envisaged to boost energy efficiency and RES penetration as well as modal shift towards public and non-motorised transport and electrification of cars. Cyprus also acknowledges the importance of the introduction of ETS2 in road transport as of 2027, but the quantification of impacts will only occur in the final updated plan. However, Cyprus still expects increases in estimated journeys by private vehicles (from 75% to 82% compared to the previous NECP) and a corresponding decrease in travel by alternative means of transport (from 25% to 18%), whereas only 8% of the vehicle fleet would be electrified by 2030 despite a target of 100% electrification of newly registered cars in 2030. Some measures may not have the large potential expected (biofuels are capped by the current engines).

The draft updated plan includes roadmaps and measures for the production and deployment of **sustainable aviation fuels** (SAF) and/or **sustainable maritime fuels**. The plan also includes measures for the electrification and the introduction of zero-emission technologies and related infrastructure, ports and airports, and modal shift towards low-carbon modes (e.g., fiscal measures or environmentally harmful subsidy reforms, deployment of infrastructure for zero-emission aircrafts, shore-power infrastructure at ports). The co-benefits of these measures for air quality are explained and quantified.

The plan does not identify any annual CO<sub>2</sub> emissions that can be **captured, nor any geological CO<sub>2</sub> storage capacity**. Cyprus is currently exploring the possibility to open part of its territory for exploration in view of CO<sub>2</sub> storage, especially in offshore depleted and depleting hydrocarbon formations. The plan references the preparation of a national plan for CCUS.

The draft updated plan pays some attention to mitigating **non-CO<sub>2</sub> emissions** in different sectors, such as **methane** emissions in waste management (e.g., new 2022-2028 Municipal Waste Management Plan; recovery of biogas from the 113 uncontrolled waste disposal sites), and emissions of **F-gases** in industry and households (e.g., recovery of cooling gas; improvement of skills and education in the construction and energy efficiency sectors). However, the plan does not pay attention to mitigating methane emissions from agriculture, including both enteric fermentation and manure management. The plan could link the

mitigation of the latter to the production of biogas and bio-methane, which the plan mentions as an alternative fuel to achieve low-emission mobility. In addition, the plan does not pay attention to mitigating **N<sub>2</sub>O** emissions, including agricultural soils and manure management. Moreover, the quantified projections indicate several worrying trends. While methane emissions decline in both the WEM and WAM scenarios, N<sub>2</sub>O and F-gases see a stagnation or even rise in both scenarios. These shortcomings are problematic, because non-CO<sub>2</sub> emissions accounted for 42% of all greenhouse gas emissions within the ESR sectors in 2021, and in the context of the gap towards the ESR target outlined earlier in this section. HFCs from refrigeration and air conditioning are particularly problematic, as they accounted for 9%. While the draft updated plan does not include any specific targets on agricultural emissions, it states that additional measures are under consideration to achieve the overall ESR target and may be included in the final revision of the NECP. The focus is on sharing best practices on innovative methane abatement technologies, animal nutrition and breeding management.

The draft updated NECP partially reflects progress towards **international commitments under the Paris Agreement**. The power sector in Cyprus is largely coal-free. The draft updated plan reports the replacement of the coal and coke consumed in the cement industry by renewable energy sources (mainly biomass), but without providing a concrete timeline and milestones. Furthermore, it states that Cyprus does not provide any fossil fuels subsidies and consequently there is no mention of a timeline for their phasing out. However, based on available information, there are still active fossil fuel schemes in Cyprus.

On 14 September 2022, Cyprus submitted to the Commission its **national long-term strategy**. The strategy does not indicate a clear goal of achieving climate-neutrality by 2050. In March 2023, Cyprus reported on the status of implementation of its initial NECP, including progress towards the Union's climate-neutrality objective. However, Cyprus did not indicate a target year to achieve its climate-neutrality objective.

### *3.1.2 Adaptation*

Cyprus has not identified in its draft updated NECP the relevant **climate vulnerabilities and risks** that may threaten the achievement of national objectives, targets and contributions in any of the five dimensions. It notes that energy is one of the areas where climate change is important for the country, reflected accordingly in its national adaptation strategy. However, it does not specify which risks are considered relevant to the sector, nor the possible channels of impact or the policies and measures in place or foreseen (nature-based or otherwise) to address climate risks.

Cyprus did not identify adaptation goals in its initial NECP of 2019.

The draft updated NECP does not outline and quantify **adaptation goals** and policies they support. Neither does it do so on national adaptation policies and measures to support the achievement of national objectives, targets and contributions under the Energy Union. These would include measures that will safeguard the carbon sequestration potential of land use (decarbonisation dimension), electricity generation capacity (energy security dimension), or residential energy savings (energy efficiency dimension) in the face of water stress and scarcity, droughts, floods forest fires or heatwaves.

No planned and implemented **nature-based solutions** were described and their actual or expected impacts in terms of climate adaptation (e.g., protection against desertification, urban heat, floods, etc.). A particular emphasis should be placed on water, notably on the resilience of energy systems to structural or seasonal water scarcity. Innovative approaches such as insurance policies and fiscal measures addressing the climate protection gap, shall also be outlined, as well as investments aimed at preserving biodiversity that would contribute to climate adaptation.

### 3.1.3 Renewable energy

**The renewable energy contribution proposed in the draft updated NECP is a share of 24.3% of the national gross final consumption of energy in 2030** under the WEM scenario and 26.5% under the WAM. This contribution is significantly below the share of 33% resulting from the formula in Annex II of the Governance Regulation. The scenarios are detailed and provide yearly overall renewable energy contribution trajectories, up to 2030 and not till 2040. The indicative trajectory to reach both - the contribution of 24.3% and contribution of 26.5% in 2030 - is provided. The contribution of 26.5% based on WAM are as follows: for 2022 renewables share of 18.5%, for 2025 the share is 21.4% and for 2027 the share is 22.9%<sup>9</sup>. The submitted reference point for 2022 is above the trajectory (15%) calculated in line with the EU 2030 renewable energy target of 32%, which was in force at that time; however, for 2025 and 2027 the reference points (22% and 26% respectively) are below the trajectory calculated in line with the increased EU 2030 renewable energy target of 42.5%<sup>10</sup>.

**The renewable electricity generation is projected to reach 31.5% in 2030** in the WAM, while in the WEM the renewables share reaches 28.2%, with solar power becoming the main source of renewable electricity (889 MW of installed capacity (in the WAM scenario), followed by onshore wind (169.5 MW of installed capacity). Bioenergy is expected to be the third major renewable energy source with 27 MW of installed capacity in 2030, compared to 12 MW in 2023). The wind power capacity (onshore) remains almost the same in 2030 compared to 2023 from 157.5 MW in 2023 to 169.5 MW. Two pumped hydro plants with a total capacity of 80 MW are planned to be installed in 2028 – 2029. Cyprus includes only the yearly estimated capacities per technology in electricity sector without specifying their share. The draft updated plan does not include information on the **innovative target for renewable energy deployment**. Cyprus states that the development of solar thermal power systems with a storage system is expected to take place well beyond 2030, and the use of hydrogen in the power sector is not expected by 2030.

**The use of renewable energy in the heating and cooling sector is projected to reach a share of 48.2% in 2030** under WAM scenario, while in WEM scenario, the share reaches 45.2%. This increase is mainly related to the solar thermal systems and heat pumps in buildings. The estimates of the overall average increase of renewable energy share in heating and cooling do not follow the methodology outlined in Article 23 of revised REDII

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<sup>9</sup> Reference points of 18% by 2022, 43% by 2025, and 65% by 2027 pursuant to Article 4(a)(2) of Regulation 2018/1999 pursuant to Article 4(a)(2) of Regulation 2018/1999.

<sup>10</sup> Given that the provisionally agreed RED was not yet in force by the deadline of the submission of the draft NECPs, the value for 2022 has been compared to the trajectory values calculated on the basis of the 2030 EU renewable energy target of 32%. The reference points for 2025 and 2027 are compared to the trajectory calculated on the basis of the increased EU target of 42.5% in line with the revised RED.

(an increase of the renewable energy share in gross final energy consumption in heating and cooling expressed in percentage points). The corresponding annual increase is below the binding target of 0.8 and 1.1 percentage point average increase over the periods 2021-2025 and 2026-2030 respectively, and significantly below the indicative top up resulting in a 1.6 percentage point average increase over 2021-2030. An estimate of 1% in 2030 for waste heat use in heating and cooling sector is included, but no explanation is provided on the role of waste heat and cold and in the accounting of renewable electricity in achievement of the target in heating and cooling, neither on its impacts on the target setting and achievement.

The use of renewable energy in the **industry sector** is expected to reach 30.15% (under WAM) over the 2021-2030 period due to the use of biomass and waste energy for industrial heat production together with an increase of PV electricity. Cyprus provided an estimate for an increase of renewables use in industry by an average of 1.71% for the period 2021-2025, an increase by 5.34% for 2026-2030, thus achieving the average indicative annual increase target of 1.6% set in the revised REDII. The renewable energy share in **buildings** is expected to reach 47.94% in 2030 under the WAM with the major share coming from the solar energy (both photovoltaic and solar thermal). Cyprus has not provided a target for district heating and cooling as it does not have yet in place district heating and cooling systems. Cyprus mentions that under the WAM, there is a possibility of installation of a district heating and cooling system in 2029, but with a very small contribution to the RES share in the heating and cooling sector.

**In the transport sector, the share of renewable energy is projected to reach 11.9%** (RES-T) under WEM, and under WAM, Cyprus estimates reaching 14.6% (RES-T) by 2030. In the plan, Cyprus pledges that this level will be achieved due to the addition of biofuels to petrol, the steady increase in the uptake of electric vehicles and the use of biofuels in aviation. A reduction of 8.2% of GHG emissions is estimated in the transport sector by 2030. For the transport sub-targets the main measures are the introduction of supply obligation for the consumption of renewable fuels or renewable electricity as well as measures to promote electrification. The draft updated plan lacks details when it comes to limitation of the contribution of conventional biofuels, in accordance with Article 26 of the Directive 2018/2001/EC on renewable energy. The draft updated NECP sets a target that 8% of the passenger car fleet (85,000 new and used vehicles) of categories M1, N1 and L should be purely electric by 2030. In addition, a target of 25% of new vehicle registrations in 2025 and 100% in 2030 is set for electric vehicles. Extensive details about measures related to electro-mobility (both relating to vehicles and to charging infrastructure) are included in the draft updated NECP; however, those relate mostly to existing measures.

The draft updated NECP does not provide information on the capacity of electrolyzers in 2030 given that the demand and thus the need for **renewable hydrogen production** is not expected to take place before 2030. The draft updated NECP does not include details regarding a target of RFNBO for industry, neither it sets specific measures for RFNBO use industry as required by the revised REDII.

Regarding **international partnerships** to facilitate imports of renewable hydrogen, no information is included in the draft updated NECP. This could be explained by the fact that Cyprus does not plan to use hydrogen for energy or non-energy purposes in domestic industry until 2030. Some information regarding the pathway for oil-based transport fuel substitution through electrification and renewable hydrogen in land transport is mentioned.

Cyprus includes a reference to the planned regional development of EastMed pipeline between Cyprus, Greece and Israel, which in the future could be used for the transport of hydrogen (instead of natural gas which is now the case) to Europe from the East Mediterranean countries. It does not clarify though whether it refers to green hydrogen.

The **policies and measures** to support the achievement of the proposed objectives and contributions for renewable energy lack sufficient details. Overall, Cyprus has put forward a few new measures to achieve the updated sectoral targets and its contribution and is aware that further increase of renewables deployment, mainly in the **power sector** to develop PV systems (commercial and self-consumption). Cyprus recognises the need for investments in the uptake of solar energy, biomass-biogas projects for energy production and for a new wind farm with a capacity of 12 MW. Until the Cypriot electricity market is fully operational, the Ministry of Energy, Commerce and Industry is preparing special support plans for hybrid RES projects (RES with storage) which will operate through one way or two-way contracts for difference (CfD) in combination with tender procedures. The framework for implementing the above projects was announced and the first phase of the public consultation was until end of July 2023 (Aid Plan for Renewable Energy Sources (RES) projects, EUR 10 million to EUR 40 million (JTF, RES and ES Fund, etc.)). Cyprus does not indicate any measures as regards Guaranties of Origins. The draft updated plan lacks information on measures to simplify and accelerate permit-granting procedures for solar energy. As regards renewable power purchase agreements, the amendment of the Electricity Market Rules is needed in order to allow such contracts to be concluded. Until the above is completed, the Ministry of Energy, Commerce and Industry will proceed with specific support plans so that the various RES producers can also conclude agreements with Supply Department of EAC.

Individual and collective **self-consumption of renewable energy** is considered as a means to achieve the objectives and Cyprus has taken important measures over the last few years, which will continue under the draft updated NECP. Cyprus refers to the RepowerEU chapter of the updated RRP under which the creation of a regulatory framework for self-consumption and energy communities is planned. Cyprus estimates that the first renewable energy communities will be implemented by the end of 2024 on the basis of the interest expressed by municipal authorities, mainly private owners of multi-apartment buildings and by commercial consumers in participating in those communities. However, quantitative targets for self-consumption and for energy communities are not included in the plan and measures for promoting individual and collective self-consumption as well as renewable energy communities are not sufficiently described. Cyprus has not indicated in its draft updated plan that it has put in place a dedicated strategy on **energy system integration** but refers to measures aimed at increasing the flexibility of the energy system by further increasing deployment of renewable energy sources, especially for the electricity system, and encouraging demand response and storage. For example, Cyprus aims to develop battery storage systems with an estimated capacity of 50 MW by 2030. However, those measures are not sufficiently described.

Measures for **renewable heating and cooling** include the continuation of financial incentives for installing or replacing solar domestic hot water systems as well as support schemes for energy efficiency in buildings continue, including subsidies for renewable heating and cooling systems (solar thermal, heat pumps, geothermal systems, etc. Cyprus plans to introduce new measures to further promote high-efficiency heat pumps for heating and cooling). Moreover, some pilot projects on Cumulative Solar Collection (CSP)

technology for heat storage and solar cooling have been developed with promising results, which however are not expected to make its contribution before 2030. Measures regarding district heating and cooling are not included, since there is no infrastructure developed at the moment in Cyprus. The draft updated NECP mentions the goal to promote renewable-based electrification of **industrial processes**, which will be achieved via the installation of renewable systems in industrial premises combined with energy efficiency measures. Moreover, the increase of renewable energy use in **industry** will be ensured with the use of biomass and waste energy for industrial heat production (cement factory). However, those measures are not further described. The scenarios examined by Cyprus estimate that there will be no use of hydrogen for energy or non-energy purposes in domestic industry by 2030.

When it comes to **bioenergy**, in Cyprus, there is no domestic biofuel production. Moreover, Cyprus reported that no forest biomass is used or projected to be used in Cyprus for energy purposes (except for small quantities of wood used in fireplaces). Cyprus mentioned in the draft updated NECP that domestic production of waste-based biofuels will be promoted through support programmes, which are expected to be operational in the coming years. Therefore, no LULUCF impacts are expected. However, the draft updated plan does not provide information in terms of sustainability, or the origin and type of the waste that is planned to be used for the production of renewable energy. Sustainable biomethane is mentioned marginally under a portfolio of measures (promotion of alternative fuels) to reduce energy consumption by the transport sector, along renewable hydrogen, without providing any numbers. The draft updated NECP contains tables showing the projections for the estimated bioenergy demand up to 2030 (showing a slight decrease in bioenergy demand in the heating sector after 2025 and towards 2030), as well as trajectories for the capacities and demand in the RES-E, RES-T, and RES-H&C sectors. In the industry sector, coal is gradually replaced by waste biomass. When it comes to the evolution of the supply of primary energy, the NECP includes a projection of an increase of biomass/biofuels towards 2030 (from 118 ktoe in 2021 to 163 ktoe in 2030).

Cyprus states that it is working on further simplifying the **permitting procedures**, such as mapping out and developing a ‘Digital One Stop Shop’ as part of the National Recovery and Resilience Plan. The draft updated plan does not include though any reference to a **mapping of the areas** necessary to achieve the national contribution to the Union’s 2030 renewable energy target or on the designation of renewables acceleration areas and dedicated infrastructure areas. For streamlining of administrative procedures and time limits for granting permits, the draft updated plan includes a reference to the creation of a contact point regarding investments in renewable energy as well as a digital platform for the permitting procedure, which however seem to relate to already existing obligations under the RED II. The draft updated plan refers to the measure of exempting from the obligation to obtain planning and building permits for installation of solar technologies (photovoltaic and solar thermal) on roofs. The draft updated plan makes a reference to exploring a possibility to develop offshore renewable plants. Specifically, the installation of offshore wind farms is expected to take place in 2049 reaching 100 MW by 2050 in the WAM scenario. Cyprus indicates that the above capacity and implementation timetables for offshore wind farms in the Cypriot Exclusive Economic Zone (EEZ) may be amended in the final updated plan, based on the results of ongoing studies. No information on other measures to streamline administrative procedures for the specific sectors and technologies

were provided in the draft updated NECP. The draft updated plan does not contain information on the additional human resources dedicated to permitting.

### 3.2 Energy efficiency (including buildings) dimension

Energy savings are presented as part of the draft updated plan. Cyprus' corrected national projection is 2.28 Mtoe for primary energy consumption (compared to 2.04 Mtoe according to the EED recast Annex I formula results) and 1.88 Mtoe for final energy consumption (compared to 1.81 Mtoe according to the EED recast Annex I formula results). Cyprus' reported 2030 projections for **primary and final energy consumption** deviate from the theoretical results stemming from the formula in the EED recast Annex I by 12% and 4% respectively.<sup>11</sup> The projection for 2030 is set almost at an equal level as compared to the Cyprus 2020 energy efficiency targets<sup>12</sup>.

The target on reducing total final energy consumption of all public bodies is well described in the draft updated NECP and includes enough information regarding the measures planned. However, there is no information on whether public transport or armed forces are included or excluded from the obligation. In the plan, Cyprus opted for the alternative approach for implementing the provisions on **exemplary role of public bodies' buildings** of Article 5 EED (Article 6 of the EED recast) in line with the 2014-2020 period. The draft updated NECP mentions that the annual target has been recalculated based on the changes in central Government building stock. The annual target has been calculated assuming that the 3% of the public buildings will be renovated from energy class E to energy class B.

The draft updated NECP provides satisfactory information on what measures will be used to deliver the **energy savings obligations** required post-2020 under Article 7 EED (Article 8 of the EED recast). The policies and measures contained in the draft updated plan under the energy efficiency dimension are sufficiently described but they do not include an adequate estimation of energy savings. The total 2021-2030 cumulative **energy savings requirement** under Article 7 EED (Article 8 of the EED recast) is 349.04 ktoe. The target has been recalculated based on the increased ambition of the EED recast while the former target was equal to 243.04 ktoe. The updated draft NECP adopts a mixed approach, including both an energy efficiency obligation scheme and alternative measures. The expected contribution of each measure (alternative measures) towards the target is not quantified. However, the contribution of some of the measures in% towards the former target has been mentioned while it is stated that a residual 78% is to be distributed due to the increased target of 349.04 ktoe. There is also a value for energy poverty under energy savings obligation reported equal to 67.36 ktoe (19.3% of the total target). However, the specific measures to achieve the energy poverty value are pending.

The updated draft updated NECP presents in detail the planned measures to achieve the 2030 energy efficiency goals, but not their expected savings (except the contribution of some measures in% towards the former energy savings obligation cumulative target). The new measures adopted after 2020 and the new planned measures to reach the higher 2030 target are well presented in the updated draft updated NECP. The updated draft updated

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<sup>11</sup> According to Article 4(4) EED recast, a Member State shall ensure that its contribution in Mtoe is not more than 2.5% above what it would have been had it resulted from the EED recast Annex I formula.

<sup>12</sup> The comparison has been done among reported targets by CY and the 2020 targets as included in the NEEAP 2017 (2.2 Mtoe PEC, 1.9 Mtoe FEC).



NECP also includes measures reflecting the ‘**energy efficiency first principle**’. There is a range of measures presented covering all sectors. However, the main focus seems to be on buildings and the transport sector.

The updated draft updated NECP of Cyprus also includes an updated **long-term renovation strategy (LTRS)** of May 2023. However, the roadmap for 2030, 2040 and 2050 is not yet developed. Therefore, the updated ambition of the 2020 long-term renovation strategy can be observed but not properly quantified. Nonetheless, over 40 measures of different types (regulatory, economic, informative, education, planning, etc.) and their detailed descriptions are reported on building renovations. The expected impact is reported only for some cases. The long-term renovation strategy entails measures such as renovation programs and investments in non-residential and residential buildings as well as encouraging energy upgrade in the public sector. New measures, related to the draft long-term renovation strategy are listed, address several topics from the development of a new online platform for digital one-stop shop for RES projects and building renovation to smart metering infrastructure, to the establishment of new or amended regulations and reforms, etc. The ambition of these measures cannot be compared with long-term renovation strategy measures in the previous NECP, as these were not clearly listed there.

The main identified obstacles preventing the wider uptake of energy efficiency measures (such as limited funding, limited interest of final consumers in energy efficiency investments, lack of incentives between tenants and building owners, a non-fully functioning market for energy services) will be adequately addressed in the post-2023 period. Measures will include, inter alia, changes to the current legislative framework, development of guidance documents, targeted actions to raise public awareness of the benefits of energy efficiency interventions, such as information campaigns and training for selected groups. Emphasis has been placed on standardising procurement procedures for energy services in the public sector.

### **3.3 Energy security dimension**

Cyprus is a small and isolated energy system as it is not interconnected with the rest of the European energy market. It relies on petroleum products - that are entirely imported - for more than 80% of its energy needs. Fossil fuels still accounted for 88% of the gross available energy in 2021<sup>13</sup>. The possibility to diversify the current energy supply is very limited. Yet, according to the draft updated plan fossil fuel share in the energy mix should decrease to around 77% by 2030. Fossil fuels imports from Russia are also limited, however (25% of crude oil in particular<sup>14</sup>). Cyprus has managed to substantially reduce its energy import dependency on third countries, from 48% to 31%<sup>15</sup>.

As regards long-term objectives, the draft updated plan identifies LNG imports and the building of new gas interconnections with Europe’s mainland as the main priority in terms of increasing energy security, ending the country’s energy isolation, however with no clarity or assessment included on how this would work together with climate neutrality goals. In addition, the draft updated plan also highlights that hydrocarbon exploration activities in the Exclusive Economic Zone are ongoing with the aim of strengthening the

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<sup>13</sup> Eurostat data.

<sup>14</sup> Joint Research Centre, [https://economy-finance.ec.europa.eu/system/files/2023-06/ip237\\_en.pdf](https://economy-finance.ec.europa.eu/system/files/2023-06/ip237_en.pdf).

<sup>15</sup> Eurostat data.

hydrocarbon potential of the island and therefore of increasing the use of domestic energy sources (no estimations of the potential production are provided in the plan, and production from these sites should not start before 3 years).

Cyprus does not currently consume any **natural gas** since the relevant infrastructure is still under construction. A key objective is to introduce natural gas to the island, both through LNG and through pipeline, by building the necessary infrastructure, notably the CYPRUSGAS2EU Project of Common Interest, by the beginning of 2024. The Eastmed Pipeline, connecting Cyprus with the Greek mainland and Israel, will also contribute to diversifying the national gas supply. Consequently, the draft updated plan foresees a swift ramping up of natural gas in the Cypriot energy mix, as it is expected to become the primary energy source, comprising 31.7% of the primary energy mix in 2030<sup>16</sup> (according to the plan, primary energy consumption should be of 2.3 Mtoe in 2030).

Natural gas will also become the first source for electricity generation, potentially providing more than two thirds of the gross electricity generation. It is not clear from the draft updated NECP how the increased use of natural gas is compatible with climate ambitions. In terms of renewable gases, Cyprus aims at increasing the capacity of biomass/biogas plants for electricity generation from the current 12 MW to 27 MW in 2030, while no hydrogen use for electricity generation is foreseen before 2030.

Given the current lack of gas in the energy mix, Cyprus is not required to apply the obligations to reduce gas demand by 15% and to fill natural gas storage by 80% in 2022 and 90% in 2023 set out respectively by Regulation (EU) 2022/1369 Regulation (EU) 2022/1032.

As regards **security of electricity supply**, the draft updated plan mainly aims at enhancing the flexibility of the national energy system through measures to exploit domestic energy sources. Almost all domestic energy sources come from renewable energy sources, demand response and storage. There is currently no energy storage in Cyprus, but the draft plan notably envisages the development of 80 MW pumped storage and 25 MW lithium-ion batteries capacities by 2030. Yet, the plan does not refer to a dedicated overarching strategy for the deployment of power storage. In addition, power generation capacities are expected to increase, notably through the commissioning of two new Combined Cycle Gas Turbines (CCGT) plants with respective capacities of 160 MW and 260 MW by 2026. Lastly, the Eurasia interconnector project, which is planned to connect the Cypriot power grid to the Greek and the Israeli ones, is also planned to considerably contribute to security of electricity supply.

**Oil products** comprise 85% of the Cyprus energy mix in 2021 (93% in 2015) including for electricity production. The country has no refinery and is fully dependent on deliveries of oil products from third countries. Measures for oil supplier diversification are not included in the NECP but appear to be in place (top 3 suppliers are Israel, USA, Saudi Arabia in 2021). Cyprus mainly aims to lower its dependence on oil products by decreasing oil consumption through energy efficiency measures, by increasing the share of renewable energy sources and by substituting oil with natural gas, especially in electricity generation.

The draft updated plan does not contain **cybersecurity measures** nor objectives related to the supply of **critical raw materials** necessary to the energy transition. The draft plan does

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<sup>16</sup> In the scenario with additional measures.

not address the impacts of climate change on the energy security. It does not address critical infrastructures protection neither.

Since there is no natural gas consumption, the draft updated plan does not describe the measures in case of a security of gas supply crisis in the country.

### 3.4 Internal energy market dimension

**In terms of electricity interconnectivity**, since Cyprus is still an isolated energy system, and therefore is not interconnected to the EU energy market, it has put an emphasis on a crucial **interconnection project**, the EuroAsia interconnector between Israel, Greece and Cyprus which both will end the isolation from the Union's electricity grid of Cyprus while at the same time facilitate the integration of renewable energy sources and enhancing security of supply. This project is also linked to concrete objectives for 2030.

**On the internal energy market**, the draft updated plan indicates that Cyprus is in the process of establishing an integrated electricity market (the "Envisaged Competitive Electricity Market") and that the relevant legislative framework already exists. However, the draft updated plan stresses that the current electricity market in Cyprus cannot support either flexibility services or aggregation and that such services would only be able to participate in the market once the latter becomes fully functional and competitive. Moreover, while the draft updated plan mentions that the envisaged "Competitive Electricity Market" provides for non-discriminatory participation of demand response, it does not include any concrete measures to incentivise participation of demand response, neither a concrete timeline within which the Cypriot electricity market will be fully competitive and liberalised.

Secondly, the draft updated plan lack of details on the concrete measures envisaged for the development of aggregation services, and to facilitate the participation of flexibility services procured by the Transmission System Operator (TSO) and the Distribution System Operator (DSO). Additional details regarding concrete measures Cyprus aims to implement to accelerate the deployment of electricity storage are also missing together with monitoring indicators to quantify the advancement and relevant progress towards the materialisation of the national targets.

Regarding **energy poverty**, the draft updated plan identifies that in 2020, 20.9% of the population reported that were unable to adequately heat their homes during winter, while 9.2% that were unable to pay their energy bills. As the plan reports, according to Eurostat, in 2019 the percentage of energy poverty in the country was 19.3% of the population.

Despite these figures, the plan does not analyse whether these figures are considered significant and does not establish a national objective to reduce energy poverty.

In addition, the draft updated NECP mention the challenges related to energy poverty on several angles. For instance, there is a sub-target for energy poverty under the energy savings obligation pursuant to Article 8 EED recast, amounting to 67.36 ktoe to be achieved among energy poor households (19.3% of the overall energy efficiency target). However, the specific measures to achieve this sub-target are pending. Furthermore, there is no reference to national objectives and a concrete timetable to develop specific measures, as well as the link between energy efficiency and social policies and measures. Potential synergies with measures to develop demand response, accelerate building renovation and

energy savings in a targeted manner to have direct effect on households on energy poverty and empower vulnerable consumers are nonetheless not sufficiently considered.

On **consumer empowerment** Cyprus plan to install 400,000 smart meters until the first half 2026. The smart metering system is expected to empower consumers to participate actively in the market, as well as to support demand response measures, RES penetration and improve network management. An objective to introduce dynamic price contracts by the end of September 2024, offered by at least one supplier. The draft updated plan also refers to various measures to support vulnerable consumers (e.g., reduced electricity tariffs, incentives to install photovoltaic systems, incentives to improve energy efficiency in homes, protection from disconnection). The plan would benefit from data concerning the expected results of those measures and number of consumers affected.

### **3.5 Research, innovation, competitiveness and skills dimension**

#### *3.5.1 Research and innovation*

Cyprus reported on the national **target** for research and innovation (R&I) in specific clean energy technologies in qualitative terms only. The description of the **policies and measures** is clear. The Council of Ministers adopted the revised Smart Specialisation Strategy, which sets out the priorities for research and innovation for the period 2023 – 2030. The priority areas include amongst others the Digital Technologies and Innovative Materials, and renewable energy sectors. The policies contribute to Cyprus' overall 2030 target to reduce greenhouse gas emissions by 32%.

Cyprus mentions its intention to increase investments in R&I. Yet, the only investment increase mentioned in the draft updated NECP is for renewables and energy efficiency under REPowerEU, i.e., from EUR 30.5 million to EUR 76.5 million. The draft updated plan does not specify how much funding will be dedicated to R&I and therefore also does not detail the split between public and private contributions to the overall funding. The draft updated NECP does not report on quantitative targets and objectives for 2030 and 2050 with regards to clean energy R&I.

Most new Cypriot measures set out in the draft updated NECP relate to R&I in energy efficiency and mobility. Extensive measures on R&I in renewables already existed in the initial NECP. The new element in renewables is the exploration of the possibility for offshore wind (deployment target of 100 MW by 2050) and hydrogen production from renewable energy sources. The continuation of the alignment of the national fund for research with the priorities of the SET plan is mentioned in the Cypriot draft NECP.

The cooperation taking place between Cyprus and other Member States in R&I is mainly implemented through projects funded by the Horizon Europe research programme. The draft updated NECP also reports that Cypriot universities and research institutes take part in the informal SET Plan working group.

#### *3.5.2 Competitiveness*

While competitiveness is mentioned in all chapters of the Cypriot draft updated plan, there is no specific chapter grouping the proposed activities and their allocated budget. Cyprus is currently not manufacturing significant numbers of commercially available components for clean energy technologies, and it is not planning on doing so in the future. There is no

information on how Cyprus will ensure the resilience of its supply chains to reach its energy and climate targets.

Cyprus reports that the new industrial policy 2019-2023 seeks to contribute to the achievement of sustainable development and production through the upgrading of energy efficiency and the integration of renewable energy sources into productive and industrial infrastructure.

The draft updated NECP indicates that Cyprus plans to promote the digitalisation of its energy system. Digitalisation is mentioned in several parts of the draft updated NECP but without providing any specific information on targets or the planned investments into the digitalisation of its energy system. If not set yet, the country could consider measures such as developing, deploying, testing and piloting, reuse of waste heat from data centres, consumers empowerment, addressing the carbon footprint of digital technologies or cooperation between energy and digital players.

Cyprus has not integrated the notions of recyclability and circularity and the need to reduce dependency, and effectively diversifying the sourcing of imported raw materials, components required to manufacture clean energy technologies.

### 3.5.3 Skills

Cyprus defined the development of new skills and upskilling as one of the six strategic pillars in its new industrial policy 2019-2023, which aims at fostering the country's growth and competitiveness. The draft updated NECP identified skills shortages for the development of strategic sectors, in particular R&I in new energy technologies, building renovations combined with energy efficiency measures and digitalisation. In terms of policy measures the draft updated plan mentions the national action plan on "Modern professional development for the green and digital transitions" to promote green and digital skills but does not elaborate on it. In addition, digital skills are at the centre of the National action plan 2021-2025. The reported objective of the National action plan, which is part of Cyprus' Digital Strategy 2021-2025, is to create a digitally mature society that can take active part in the digital economy.

## 4 JUST TRANSITION

Just transition aspects are **addressed in the draft updated plan in a limited manner**. Cyprus quantifies the total employment impacts of the energy and climate transition in the scenarios but social and skills impacts, or any other distributional impacts on vulnerable groups, are lacking. Furthermore, the plan provides inadequate analytical basis for the preparation of the Social Climate Plan (SCP), as assessed in Chapter 7.

The draft updated plan does not elaborate on strategies and measures, neither national nor sectorial, to address **access and preservation of employment and access to affordable and inclusive education, training and life-long learning** linked to the transition, apart from training schemes for energy efficiency installers and the national action plan on "Modern professional development for the green and digital transitions". It also lacks further analysis of the situation of vulnerable consumers and energy poor households, as mentioned in Chapter 3.

**Social protection systems and affordable access to essential services for all**, including tax incentives and benefits, in the context of the transition are not covered in detail. As assessed in chapter 7, the phasing out of Dhekelia power plant seems postponed compared with the commitments in adopted TJTP and impacts on other measures are not clear. Finally, the plan does not elaborate on the **resources** specifically devoted to supporting the just transition, in addition to the Just Transition Fund and Social Climate Fund, although relevant actions are implemented with the support of various EU funds.

## 5 REGIONAL COOPERATION

The plan does not foresee a strategic role for regional cooperation, despite the crucial importance due to its energy isolation. Cyprus will examine the possibility of concluding an agreement on a statistical transfer of renewable energy with another Member State. Moreover, in May 2023 Cyprus has submitted its interest to be a host state in the EU Renewable Energy Financing Mechanism for the development of offshore renewable energy projects in combination with hydrogen production for which it will include an update in the final NECP in 2024. Several cooperations and joint projects with Greece, Egypt and Israel are mentioned across the plan such as the “EuroAsia Interconnector”.

## 6 INTERNAL COHERENCE AND POLICY INTERACTIONS WITHIN THE NECP

The draft updated NECP reflects the synergies between the 5 dimensions of the Energy Union. The focus is put on the electricity demand increase that is expected from the injection of renewable energy sources into the energy mix and the increased demand for electric vehicles (EV). Home upgrades are also expected, through installation of PV and these are combined with energy efficiency measures. In terms of energy security, diversifying the energy mix is expected to play a role as well as diversifying the fuel mix in the transport sector including an increase of biofuels. The draft updated plan should look include more information on its efforts in RI&C to digitalise its processes and simplify administrative measures regarding consistency across energy unions.

## 7 STRATEGIC ALIGNMENT WITH OTHER PLANNING INSTRUMENTS

**Cyprus has formally submitted its RRP amendment including a REPowerEU chapter on 1 September and the Commission endorsed it on 16 November.** The draft updated plan of Cyprus explicitly mentions the REPowerEU Chapter and the amended RRP on several occasions. The draft plan compares the trajectories to be achieved by 2030 to the ones to be implemented in the RRP and clarifies which part of the NECP ambition is related to the RRP. The draft plan appears to be consistent with the national RRP. Reforms and investments included in the national RRP are identified throughout the document, associated with each of the individual measures proposed by Cyprus in its NECP.

The draft updated plan spells out clearly **air quality** challenges and the policy landscape on air pollution, while presenting projections for the emissions of the main air pollutants regulated under Directive 2016/2284 as part of the scenarios analysed. It is not explained in a clear manner how the draft updated plan is aligned with the clean air **National Air Pollution Control Programme** (NAPCP) and whether projections submitted are coherent with those under Directive 2016/2284. There is also a lack of transparency on some of the

numbers on air pollutants provided, notably to explain assumptions driving the drop in SO<sub>2</sub> emissions from 2024 to 2025.

The draft updated plan is partially consistent with the adopted **Territorial Just Transition Plan** (“TJTP”). The inconsistencies refer to Electricity Sector Capacity Forecasts (MW) for the Dhekelia plant, which in the draft updated NECP remain unchanged until 2028, while the TJTP states that there will be a reduction in emissions by 16% by 2026 and zero emissions by 2050. The amount relative to the capacity of storage technologies presented in the draft updated plan appears different from the output indicator in the Cyprus Just Transition Plan (285 MW/h storage by 2029). Finally, under the heading "Impact analysis" where two scenarios are examined, although scenario (a) includes the JTF with EUR 179 million under existing measures, scenario (b) presents an additional amount for the JTF (EUR 96 million) under additional measures which is not fully clear.

Compared to the **National Adaptation Strategy**, the plan is less detailed and less ambitious on the respective actions.

The plan provides inadequate analytical basis for the preparation of the **Social Climate Plan (SCP)** that will address the impacts of the new emissions trading system for fuel combustion in buildings, road transport and additional sectors (ETS<sub>2</sub>) on vulnerable households, transport users and micro enterprises. Although it is acknowledged that the new ETS<sub>2</sub> will have a considerable impact on emission reductions through increased retail prices of fossil fuels, and even if an analysis of the distributional effects of the planned policies and measures is presented, the analysis is not focused specifically on the ETS<sub>2</sub> effects on the vulnerable groups to be supported by the Social Climate Fund (SCF). Measures are not planned for the identification of transport poverty, nor are reduction targets mentioned. The financing opportunities under the Fund are mentioned, with a reference to the possible compensation of the vulnerable households and vulnerable businesses or to finance actions to mitigate the negative effects of increases in energy costs. The plan outlines reforms and policy framework in the sectors of buildings and road transport that are relevant for the future SCP. However, this draft plan does not explain how the SCP will build on the NECP update and how the consistency between the two plans will be ensured. No information is included on the governance of the Fund.

In the draft updated plan, Cyprus does not provide the quantification of the climate impacts of measures currently included in the **CAP Strategic Plan (CSP)**, thus the plan does not explain whether the CSP is in line with the new LULUCF and ESR targets and whether additional measures are necessary.

In the draft updated NECP, Cyprus addresses the 2022 and 2023 **country-specific recommendations** to enhance diversification and reduce their dependency on fossil fuels by taking specific actions such as shortening and simplifying permitting procedures to accelerate the deployment of renewables and pursuing efforts on energy efficiency including on manufacturing processes and decarbonisation of industry. Moreover, the draft plan includes actions to upgrade Cyprus electricity transmission and distribution infrastructure to allow a higher roll out of renewables and to focus on energy storage facilities to ensure flexibility and security of supply.

## **8 FINANCING THE ENERGY AND CLIMATE TRANSITIONS**

### **8.1 Investments needs**

The draft updated plan includes information on the expected investment needs to implement the planned policies and measures up to 2030 for all five dimensions of the Energy Union, with a focus on energy- and transport-related investments. The investment needs are broken down by public (national and European) and private. Moreover, they are given for both the WEM and WAM scenarios. The investments needs are allocated to policy areas relevant to the five dimensions, such as RES, sustainable mobility and rehabilitation of landfills. The draft updated plan also includes information on the energy efficiency investments in buildings and industry. Value could be added by detailing further how the investment needs arise.

### **8.2 Funding sources**

The description of funding sources varies significantly between dimensions. In the decarbonisation dimension, the draft updated plan outlines the funding sources to implement the planned key policies and measures, including for those to improve the just transition, distinguishing public, national (state-aid) and the EU financing, including EU funding programmes like RRF and InvestEU as well as the Innovation Fund, as well as private funds. This is also true for the dimensions energy efficiency, energy security and the internal energy market. For the dimension of research, innovation and competitiveness the reference to funding sources is rather generic, as it only mentions potential available source and EU funding programmes.

The draft updated NECP does not contain information on the sources of finance for individual policies and measures. An overview table gathering all the budgetary information of the different policies and measures was not provided. The elements of information provided differ in detail which makes it difficult to assess the existence of potential funding gaps.

## **9 ROBUSTNESS OF THE ANALYTICAL BASIS OF THE DRAFT UPDATED NECP**

Overall, the draft updated plan is based on solid quantitative analysis, including both bottom-up and top-down tools. The methodologies used for both projections (WEM and WAM) and impact assessment of specific policies and measures are clearly referenced, while a detailed explanation of the models is missing.

The draft updated plan describes both WEM and WAM scenarios, with detailed projections for the relevant sectors of the economy, including industry, the energy system and transport. The projections cover the period until 2040 and provide an ETS/ESR split. The analysis is based on the OSeMOSYS energy system model as well as a dynamic input-output model, and partly based on the parameters recommended by the Commission, except for GDP growth and fuel prices. The draft updated plan provides a sensitivity analysis using the Commission's recommended input parameters for fuel prices. The projections are based on a quantitative analysis. The data sources are clear, but the source for fuel prices is not very transparent ("national authorities", "hydrocarbon companies").



Other data, such as population growth, CO<sub>2</sub> price as well as primary and final energy consumption are in line with Eurostat and other relevant sources. The analysis is suited to assess the expected impact of the plan, in particular the most important policies and measures introduced by the plan. However, the analytical basis of the plan does not include a detailed assessment of the impact of policies and measures on the achievement of the GHG mitigation targets contained in the plan in the transport sector.

The assumptions used for the analysis are documented and in line with the best practices in the field except for fuel prices. The top-down analysis described above is complemented by a bottom-up analysis on e.g., the building sector and energy poverty. The methodology is based on workshops and stakeholder interviews. The draft updated plan also includes a quantitative analysis of the expected impacts of targets and policies on the environment, health and air pollution. The analysis is based on output data from the energy system model. The analysis is relatively well documented and credible. The different analytical tools presented in the plan are well integrated. The plan analyses the main results in a comprehensive manner, leading to a solid and nuanced assessment of the relevant trade-offs. The new ETS for buildings, road transport and additional sectors (ETS 2) has been considered in the projection scenarios.

The draft updated NECP contains a macro-economic assessment. The methodology used to derive the assessment is overall clear. However, the assessment could be further developed. The dynamic input-output modelling framework focuses on the impact of higher investment, which boosts GDP and employment but does not allow capturing the effects of higher taxes related to the transition. Based on the above methodology, investments under the WAM scenario are expected to increase GDP in 2030 by about 0.2% and employment by around 0.2% annually (1000 new jobs in 2030). The sectors of economic activity to be mostly benefited are a) metal products, b) chemical and plastic products, c) construction and d) mining and quarrying. The WAM scenario forecasts an increase in consumer prices by 2%, 9% and 10% for electricity, transport fuels and fuels heating, respectively. However, these increases are not expected to significantly affect the distribution of income among households. The model used does not allow to measure potential impact on public finances.