Cyprus’

First Biennial Transparency Report

[2025]

under the United Nations Framework Convention on Climate Change and the Paris Agreement.

Nicosia, 2025

PREFACE

This document, Cyprus' First Biennial Transparency Report (BTR-1), marks a significant milestone in our country's commitment to global climate action. As required under the United Nations Framework Convention on Climate Change (UNFCCC) and the Paris Agreement, this report provides a comprehensive and transparent overview of our country's efforts to combat climate change.

The report details our national greenhouse gas (GHG) inventory, analysing trends in emissions and removals from 1990 to 2022. It outlines the policies and measures we have implemented to mitigate emissions and track progress toward our nationally determined contributions (NDCs) under the Paris Agreement. This includes projections of future GHG emissions under various scenarios. By providing a clear and detailed account of our progress, we aim to contribute to the global stocktake and foster greater accountability in our shared fight against climate change.

CONTENTS

List of Tables

List of Figures

1. INTRODUCTION

This document represents Cyprus' first Biennial Transparency Report (BTR-1) required under the United Nations Framework Convention on Climate Change (UNFCCC), as reaffirmed by UNFCCC decision 2/CP.17. It provides a comprehensive overview of climate change-related activity in Cyprus.

As defined in the UNFCCC Modalities, Procedures, and Guidelines[1], the information is structured into:

- Greenhouse gas inventory information;
- National circumstances relevant to greenhouse gas emissions and removals;
- Policies and measures;
- Projections and the total effects of policies and measures;
- Vulnerability assessment, climate change impacts and adaptation measures;
- Financial resources and transfer of technology;
- Research and systemic observation and
- Education, training and public awareness.

For the CTF submission to the UNFCCC, the electronic reporting facility provided by the UNFCCC secretariat has been used as required by UNFCCC decision 19/CP.18.

To avoid unnecessary duplication of information, overlapping contents were concentrated in the eighth National Communication: Those sections of the fourth Biennial report's main body which content-wise would be identical to sections of the eighth National Communication, do thus solely contain a reference to the corresponding section of eighth National Communication.

This communication focuses on the years up to which data is available; i.e. until 2022.

[1] https://unfccc.int/sites/default/files/resource/CMA2018_03a02E.pdf#page=20

2. NATIONAL INVENTORY REPORT OF ANTHROPOGENIC EMISSIONS BY SOURCES AND REMOVALS BY SINKS OF GREENHOUSE GASES

2A. Introduction

This chapter provides key information about the Cyprus' greenhouse gas (GHG) Inventory.

The Republic of Cyprus, as a party to the United Nations Framework Convention on Climate Change (UNFCCC) and to the Paris Agreement, reports annually on GHG inventories for the years from 1990 to the current year (t) minus two (t-2), for emissions and removals **only for the areas under the effective control of the Republic of Cyprus**.

On 20 July 1974, Turkey launched a two-phase military operation in Cyprus (20 July and 14–16 August 1974) that resulted in the occupation of roughly 37% of the island's territory. The conflict caused large-scale population movements: about 180,000–200,000 Greek Cypriots were displaced to the south, while approximately 45,000–60,000 Turkish Cypriots moved to the north in the aftermath, including under arrangements following the Third Vienna Agreement (August 1975).

On November 15, 1983, the Turkish Cypriot leadership unilaterally declared that area an independent state and named it the "Turkish Republic of Northern Cyprus". Even though this act has been condemned by the UN and that no country other than Turkey has recognised this illegal secessionist entity, the situation continues. For further information on this situation please refer to the website of the Ministry of Foreign Affairs of the Republic of Cyprus[2].

That area is not under the effective control of the Republic of Cyprus. Therefore, no data from official sources are available for the activities taking place in the particular areas, thus no emissions can be estimated for any activities.

The GHG data presented in this chapter of the Biennial Transparency Report (BTR) are consistent with the 2024 submission of Cyprus under Art. 26 of Regulation (EU) No 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action and to the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC), under the Convention and the Kyoto Protocol.

Further details are given in the National Inventory Document (NID), which is submitted as a stand-alone document.

2B. Summary of GHG emissions trends

This section provides a brief description of the trends in GHG emissions.

2B.1.1 Trends in total GHG emissions

GHG emissions in 2022 were 8772 Gg CO_2 eq. excluding LULUCF. Total national emissions excluding LULUCF increased by 57.5% between 1990 and 2022 and increased by 0.63% between 2021 and 2022. The total GHG emissions trends for the period 1990–2022 are presented in Table 2-1. Total GHG emissions trends for the period 1990 - 2022 Table and Figure 2-1. Total GHG emissions trends for the period 1990 – 2022 Figure 2-1 in kt CO_2 eq.

Table 2-1. Total GHG emissions trends for the period 1990 - 2022

Total emissions (Gg CO_2 eq.)	**1990**	**2000**	**2005**	**2010**	**2015**	**2020**	**2021**	**2022**
With LULUCF	5417.28	8161.01	9005.18	9195.19	8047.74	8591.97	8216.26	8472.93
Without LULUCF	5570.35	8303.51	9226.01	9460.23	8343.85	8889.01	8514.80	8772.32

[2] https://www.gov.cy/mfa/en/documents/turkish-military-invasion-and-occupation/

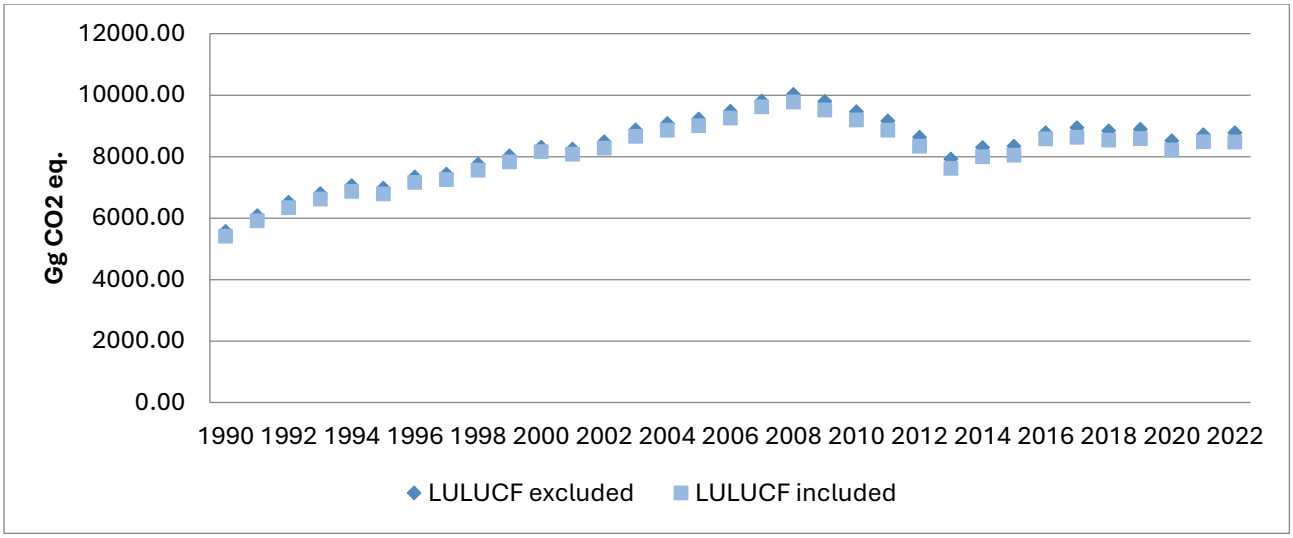


Figure 2-1. Total GHG emissions trends for the period 1990 – 2022

2B.1.2 Emissions trends by gas

Table 2-2 provides an overview on the main trends in Cyprus GHG emissions and removals for 1990–2022 by gas. The most important GHG is CO_2, accounting for 80.4 % of total emissions in 2022. In 2022, CO_2 emissions including LULUCF were 6818 Gg, which was 51.8 % above 1990 levels. CH_4 and N_2O emissions account for 12.72 % and 2.08 % of total GHG emissions respectively in 2022. As a group of gases, fluorinated gases (HFCs and SF_6) are increasing and account for the remaining 4.5 % of total GHG emissions.

Table 2-2. GHG emissions trends by gas for the period 1990–2022

	1990	**1991**	**1992**	**1993**	**1994**	**1995**
CO_2 emissions without LULUCF	4645.47	5133.56	5506.08	5749.71	5991.91	5862.41
CO_2 emissions with LULUCF	4492.34	4966.41	5333.34	5574.47	5807.51	5681.91
CH_4 emissions without LULUCF	776.45	791.35	816.31	847.17	861.39	887.57
CH_4 emissions with LULUCF	776.48	791.45	816.34	847.42	862.04	887.82
N_2O emissions without LULUCF	145.69	146.61	161.94	172.44	170.25	186.14
N_2O emissions with LULUCF	145.72	146.68	162.00	172.62	170.66	186.35
HFCs	NO,NE	NO,NE	23.04	24.62	26.27	28.48
PFCs	NO	NO	NO	NO	NO	NO
Unspecified mix of HFCs and PFCs	NO	NO	NO	NO	NO	NO
SF_6	2.73	3.37	4.01	4.65	5.29	5.93
NF_3	NO	NO	NO	NO	NO	NO
Total (without LULUCF)	5570.35	6074.89	6511.38	6798.58	7055.11	6970.52
Total (with LULUCF)	5417.28	5907.91	6338.73	6623.78	6871.76	6790.49
Total (without LULUCF, with indirect)	5577.93	6081.85	6518.62	6805.88	7062.89	6977.73
Total (with LULUCF, with indirect)	5424.87	5914.87	6345.98	6631.08	6879.54	6797.69
	1996	**1997**	**1998**	**1999**	**2000**	**2001**
CO_2 emissions without LULUCF	6212.35	6298.74	6592.94	6859.51	7102.95	6976.48
CO_2 emissions with LULUCF	6026.26	6113.50	6399.17	6660.99	6953.51	6805.32
CH_4 emissions without LULUCF	909.39	914.78	917.45	919.57	938.34	975.92
CH_4 emissions with LULUCF	909.81	915.40	919.53	919.59	942.81	977.43
N_2O emissions without LULUCF	181.65	178.28	188.53	190.50	191.58	212.62
N_2O emissions with LULUCF	181.96	178.69	189.72	190.62	194.04	213.68
HFCs	33.57	38.61	46.75	53.50	61.52	69.94

PFCs	NO	NO	NO	NO	NO	NO
Unspecified mix of HFCs and PFCs	NO	NO	NO	NO	NO	NO
SF_6	6.57	7.21	7.85	8.49	9.13	9.80
NF_3	NO	NO	NO	NO	NO	NO
Total (without LULUCF)	7343.53	7437.62	7753.51	8031.56	8303.51	8244.76
Total (with LULUCF)	7158.18	7253.41	7563.02	7833.19	8161.01	8076.16
Total (without LULUCF, with indirect)	7350.79	7445.26	7760.95	8039.36	8311.75	8252.74
Total (with LULUCF, with indirect)	7165.43	7261.05	7570.46	7840.98	8169.24	8084.15
	2002	**2003**	**2004**	**2005**	**2006**	**2007**
CO_2 emissions without LULUCF	7167.93	7557.61	7787.51	7959.39	8186.46	8505.3
CO_2 emissions with LULUCF	6965.51	7342.74	7571.69	7737.52	7962.50	8316.7
CH_4 emissions without LULUCF	1003.66	994.65	984.95	960.07	962.62	964.66
CH_4 emissions with LULUCF	1003.70	994.84	985.32	960.19	962.94	967.74
N_2O emissions without LULUCF	219.11	217.58	186.27	172.29	175.30	172.77
N_2O emissions with LULUCF	219.55	218.24	187.17	173.19	176.45	175.41
HFCs	79.29	90.60	107.26	121.85	137.15	153.22
PFCs	NO	NO	NO	NO	NO	NO
Unspecified mix of HFCs and PFCs	NO	NO	NO	NO	NO	NO
SF_6	10.45	11.11	11.76	12.42	11.47	11.78
NF_3	NO	NO	NO	NO	NO	NO
Total (without LULUCF)	8480.4	8871.54	9077.76	9226.01	9473.00	9807.7
Total (with LULUCF)	8278.5	8657.53	8863.21	9005.18	9250.51	9624.8
Total (without LULUCF, with indirect)	8490.0	8882.39	9090.36	9239.21	9486.56	9821.9
Total (with LULUCF, with indirect)	8288.0	8668.37	8875.81	9018.38	9264.07	9639.0
	2008	**2009**	**2010**	**2011**	**2012**	**2013**
CO_2 emissions without LULUCF	8718.07	8474.94	8104.22	7790.62	7264.8	6584.18
CO_2 emissions with LULUCF	8467.00	8195.91	7836.95	7487.76	6969.0	6285.34
CH_4 emissions without LULUCF	963.65	964.60	973.72	972.50	962.52	947.73
CH_4 emissions with LULUCF	963.77	964.78	974.45	973.11	963.21	947.97
N_2O emissions without LULUCF	165.50	162.25	171.56	169.08	165.38	149.62
N_2O emissions with LULUCF	166.62	163.45	173.07	170.56	166.92	150.93
HFCs	171.91	181.74	198.03	216.05	220.76	224.33
PFCs	NO	NO	NO	NO	NO	NO
Unspecified mix of HFCs and PFCs	NO	NO	NO	NO	NO	NO
SF_6	12.09	12.39	12.70	14.36	14.97	15.58
NF_3	NO	NO	NO	NO	NO	NO
Total (without LULUCF)	10031.22	9795.92	9460.23	9162.61	8628.5	7921.43
Total (with LULUCF)	9781.39	9518.27	9195.19	8861.83	8334.9	7624.15
Total (without LULUCF, with indirect)	10043.55	9807.63	9472.71	9170.13	8635.98	7931.44
Total (with LULUCF, with indirect)	9793.71	9529.98	9207.67	8869.35	8342.3	7634.15
	2014	**2015**	**2016**	**2017**	**2018**	**2019**
CO_2 emissions without LULUCF	6952.60	6974.86	7357.90	7479.3	7341.78	7345.38
CO_2 emissions with LULUCF	6651.90	6677.42	7153.73	7170.7	7037.53	7046.62
CH_4 emissions without LULUCF	948.37	955.63	979.11	997.76	1012.02	1032.56
CH_4 emissions with LULUCF	948.64	955.73	987.05	998.02	1012.51	1032.91
N_2O emissions without LULUCF	146.88	152.61	154.81	160.80	163.44	167.43
N_2O emissions with LULUCF	148.20	153.84	160.15	162.11	164.88	168.80
HFCs	231.73	243.96	264.78	285.96	304.75	328.20

PFCs	NO	NO	NO	NO	NO	NO
Unspecified mix of HFCs and PFCs	NO	NO	NO	NO	NO	NO
SF_6	16.18	16.79	15.61	15.80	16.89	15.44
NF_3	NO	NO	NO	NO	NO	NO
Total (without LULUCF)	8295.77	8343.85	8772.20	8939.65	8838.88	8889.01
Total (with LULUCF)	7996.66	8047.74	8581.31	8632.6	8536.57	8591.97
Total (without LULUCF, with indirect)	8303.56	8350.12	8780.10	8947.7	8846.09	8895.86
Total (with LULUCF, with indirect)	8004.45	8054.02	8589.21	8640.7	8543.78	8598.82
	2020	**2021**	**2022**	**Change from 1990 to 2022 (%)**		
CO_2 emissions without LULUCF	6925.65	7081.45	7118.3	53.23		
CO_2 emissions with LULUCF	6625.28	6836.73	6817.6	51.76		
CH_4 emissions without LULUCF	1063.16	1084.03	1077.5	38.77		
CH_4 emissions with LULUCF	1063.58	1089.51	1077.7	38.80		
N_2O emissions without LULUCF	172.74	175.28	174.84	20.01		
N_2O emissions with LULUCF	174.15	179.20	175.91	20.71		
HFCs	334.51	359.20	383.73	100.00		
PFCs	NO	NO	NO	0.00		
Unspecified mix of HFCs and PFCs	NO	NO	NO	0.00		
SF_6	18.74	17.58	17.84	553.28		
NF_3	NO	NO	NO	0.00		
Total (without LULUCF)	8514.80	8717.55	8772.3	57.48		
Total (with LULUCF)	8216.26	8482.22	8472.9	56.41		
Total (without LULUCF, with indirect)	8523.51	8725.57	8778.5	57.38		
Total (with LULUCF, with indirect)	8224.97	8490.24	8479.1	56.30		

2B.1.3 Emissions trends by main source and sink categories

Table 2-3 provides an overview of Cyprus' GHG emissions in the main source categories for 1990 to 2022. Emissions from international aviation and shipping are excluded from national totals and are presented in section 2B.1.3.6. Energy, with 6260 Gg CO_2 eq., continues to be the largest contributor to the total national GHG emissions (71.4% compared to the total without LULUCF). 3115 Gg CO_2 eq. of these emissions is from the production of electricity, while another 2026 Gg CO_2 eq. is from transport.

Table 2-3. Cyprus' GHG emissions by sector for the period 1990–2022 (Gg CO_2 eq.)

	Energy	**IPPU**	**Agriculture**	**LULUCF**	**Waste**	**Total (excl. LULUCF)**	**Total (incl. LULUCF)**
1990	3952.50	727.93	454.74	-153.07	435.18	5417.28	5570.35
1991	4485.04	687.86	461.28	-166.98	440.71	5907.91	6074.89
1992	4808.67	762.12	491.51	-172.65	449.08	6338.73	6511.38
1993	4985.59	833.50	519.70	-174.80	459.80	6623.78	6798.58
1994	5197.89	870.23	514.25	-183.35	472.74	6871.76	7055.11
1995	5105.05	839.72	544.36	-180.03	481.39	6790.49	6970.52
1996	5400.03	904.13	551.74	-185.36	487.64	7158.18	7343.53
1997	5523.11	876.05	541.38	-184.22	497.08	7253.41	7437.62
1998	5865.32	840.12	543.56	-190.49	504.51	7563.02	7753.51
1999	6130.61	852.94	534.94	-198.38	513.07	7833.19	8031.56

	Energy	IPPU	Agriculture	LULUCF	Waste	Total (excl. LULUCF)	Total (incl. LULUCF)
2000	6355.20	882.16	542.91	-142.51	523.24	8161.01	8303.51
2001	6249.67	875.28	586.22	-168.60	533.60	8076.16	8244.76
2002	6410.69	918.25	609.97	-201.94	541.54	8278.50	8480.44
2003	6801.44	932.75	592.67	-214.02	544.68	8657.53	8871.54
2004	6941.75	1014.78	572.69	-214.55	548.53	8863.21	9077.76
2005	7139.72	1003.19	525.54	-220.83	557.57	9005.18	9226.01
2006	7324.45	1059.55	531.15	-222.49	557.86	9250.51	9473.00
2007	7646.31	1072.03	529.50	-182.89	559.92	9624.87	9807.76
2008	7859.01	1093.84	508.12	-249.84	570.25	9781.39	10031.22
2009	7788.16	929.89	500.49	-277.65	577.38	9518.27	9795.92
2010	7551.64	809.86	514.80	-265.04	583.92	9195.19	9460.23
2011	7255.22	811.54	506.90	-300.78	588.96	8861.83	9162.61
2012	6772.66	772.13	484.68	-293.62	599.05	8334.90	8628.52
2013	5849.91	1013.20	449.17	-297.29	609.15	7624.15	7921.43
2014	5997.56	1241.76	437.26	-299.11	619.19	7996.66	8295.77
2015	6121.94	1157.03	441.85	-296.11	623.02	8047.74	8343.85
2016	6498.48	1185.19	462.39	-190.89	626.15	8581.31	8772.20
2017	6581.02	1248.90	476.12	-307.03	633.61	8632.62	8939.65
2018	6515.56	1198.19	481.80	-302.31	643.33	8536.57	8838.88
2019	6570.34	1168.96	495.53	-297.04	654.18	8591.97	8889.01
2020	6063.73	1266.17	531.55	-298.54	653.35	8216.26	8514.80
2021	6225.90	1284.79	546.27	-235.33	660.59	8482.22	8717.55
2022	6260.04	1313.33	533.63	-299.39	665.31	8472.93	8772.32
% Change 1990–2022	58.38	80.42	17.35	95.59	52.88	56.41	57.48

2B.1.3.1 Energy sector

The energy sector in Cyprus relies on fossil fuel combustion to meet the bulk of energy requirements. Final consumption in 2022 amounted to approximately 87 PJ, with 90.9% of the consumption coming from liquid fuels, 1.57% from solid fuels, 2.31% other fossil fuels and 5.2% from biomass. In comparison with 1990, total fuel consumption in 2022 (including biomass) increased by 66%.

The emissions from the energy sector in Cyprus increased by 58.4% during the period 1990–2022. The greatest increase in emissions was between 1990 and 2008 (97%), when the emissions reached their peak (7853 Gg CO_2 eq.). All the emissions in 2022 are from fuel combustion. The contribution of the emissions from the energy sector to the total without LULUCF in 2022 was 71.3% compared to 74.0% in 1990. As compared to 2021, emissions in the energy sector increased by 0.89%.

While energy is mainly responsible for carbon dioxide emissions, it also contributes to methane and nitrous oxide emissions. Fugitive emissions from fuels have not been estimated since 2004 when the refining activities stopped in Cyprus. The contribution of each source and gas to the total emissions of the energy sector over the period 1990 to 2022 are presented in Table 2-4 and Figure 2-2.

Table 2-4. Emissions from the energy sector 1990-2022

Gg CO_2 eq.	**1990**	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**
1. Energy	3953	6355	7140	7552	7255	6773	5850	5998
A. Fuel combustion (sectoral approach)	3952	6354	7140	7552	7255	6773	5850	5998
1. Energy industries	1767	2964	3483	3880	3722	3557	2839	2950
2. Manufacturing industries and construction	503	799	912	700	575	460	540	696
3. Transport	1237	1838	2115	2380	2310	2135	1924	1857
4. Other sectors	434	731	610	571	622	600	521	457
5. Other	11	22	19	21	27	21	27	38
B. Fugitive emissions from fuels	0	1	NO, NA	NO, NA	NO, NA	NO, NA	NO, NA	NO, NA
1. Solid fuels	NO	NO	NO	NO	NO	NO	NO	NO
2. Oil and natural gas and other emissions from energy production	0	1	NO, NA	NO, NA	NO, NA	NO, NA	NO, NA	NO, NA
C. CO_2 transport and storage	NO	NO	NO	NO	NO	NO	NO	NO
CO_2	3922	6294	7095	7510	7214	6734	5816	5964
CH_4	0.5	0.5	0.6	0.6	0.6	0.6	0.5	0.5
N_2O	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1

Gg CO2 eq.	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
1. Energy	6122	6498	6581	6516	6570	6064	6226	6260
A. Fuel combustion (sectoral approach)	6122	6498	6581	6516	6570	6064	6226	6260
1. Energy industries	3033	3311	3298	3353	3293	3033	3088	3115
2. Manufacturing industries and construction	607	600	618	555	568	577	578	583
3. Transport	1925	2037	2103	2116	2141	1918	2053	2026
4. Other sectors	532	526	536	464	543	510	484	512
5. Other	25	25	26	27	26	26	23	24
B. Fugitive emissions from fuels	NO,NA	NO,NA	NO, NA	NO, NA	NO, NA	NO, NA	NO, NA	NO, NA
1. Solid fuels	NO	NO	NO	NO	NO	NO	NO	NO
2. Oil and natural gas and other emissions from energy production	NO,NA	NO,NA	NO, NA	NO, NA	NO, NA	NO, NA	NO, NA	NO, NA
C. CO2 transport and storage	NO	NO	NO	NO	NO	NO	NO	NO
CO_2	6084	6458	6538	6471	6526	6019	6179	6213
CH_4	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.8
N_2O	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

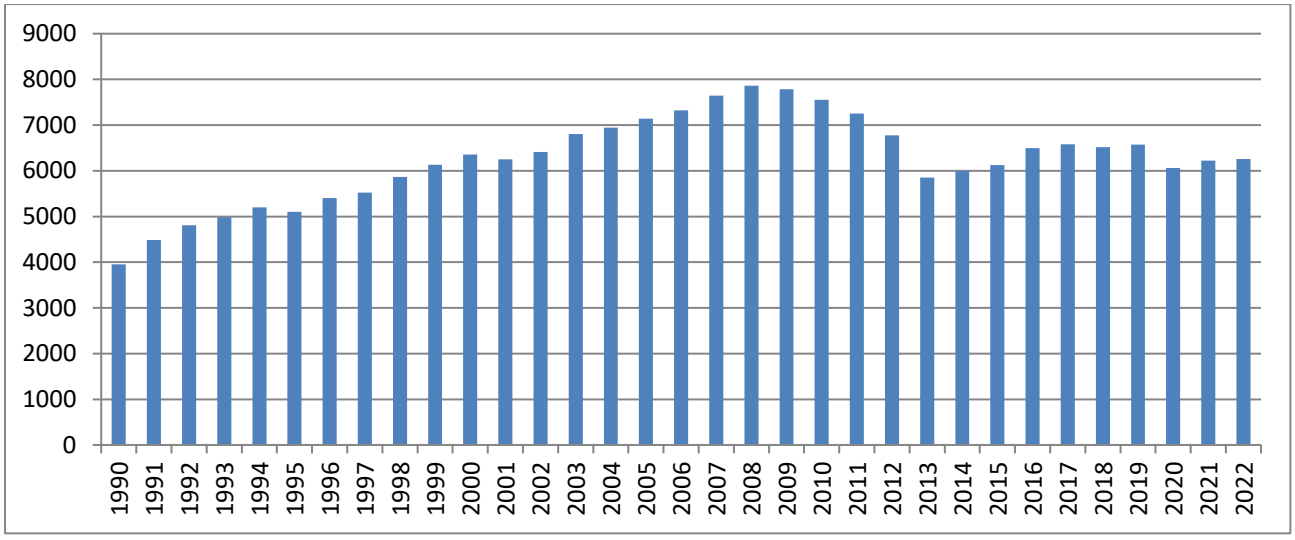


Figure 2-2. Emissions from the energy sector 1990-2022

2B.1.3.2 Industrial processes and product use (IPPU) sector

The industrial processes and product use sector is the second largest source of emissions. In 2022, GHG emissions from Industrial processes accounted for 14.8% of total emissions excluding LULUCF compared to 13.1% in 1990. The emissions increased by 80.6% compared to 1990. 68.5% of the industrial processes emissions were from mineral production, 29.4% from consumption of Halocarbons, 1.7% from Other Product Manufacture and Use and the remaining 0.4% from non-energy products from fuels and solvent use. The total GHG emissions (in Gg CO_2 eq.) from IPPU sector are presented in Table 2-5 and Figure **2-3** below.

Table 2-5. Total GHG emissions (in Gg CO_2 eq.) from Industrial Processes, 1990–2022

	1990	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**
2. Industrial Processes	727.93	882.16	1003.19	809.86	811.54	772.13	1013.20
A. Mineral industry	717.07	802.75	860.47	589.98	571.83	527.64	765.18
B. Chemical industry	NO	NO	NO	NO	NO	NO	NO
C. Metal industry	NO	NO	NO	NO	NO	NO	NO
D. Non-energy products from fuels and solvent use	4.19	4.09	3.46	3.53	3.53	2.96	2.37
E. Electronic industry	NO	NO	NO	NO	NO	NO	NO
F. Product uses as ODS substitutes	NO,NE	61.52	121.85	198.03	216.05	220.76	224.33
G. Other product manufacture and use	6.66	13.80	17.40	18.32	20.14	20.77	21.32
H. Other	NO	NO	NO	NO	NO	NO	NO

	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
2. Industrial Processes	1241.76	1157.03	1185.19	1248.90	1198.19	1168.96	1266.17
A. Mineral industry	985.79	888.12	896.42	938.91	868.24	814.39	902.15
B. Chemical industry	NO	NO	NO	NO	NO	NO	NO
C. Metal industry	NO	NO	NO	NO	NO	NO	NO
D. Non-energy products from fuels and solvent use	2.38	2.47	2.66	2.43	2.44	4.97	4.78
E. Electronic industry	NO	NO	NO	NO	NO	NO	NO
F. Product uses as ODS substitutes	231.73	243.96	264.78	285.96	304.75	328.20	334.51
G. Other product manufacture and use	21.86	22.47	21.33	21.59	22.76	21.39	24.74
H. Other	NO	NO	NO	NO	NO	NO	NO

	2021	**2022**					

2. Industrial Processes	1284.79	1313.33					
A. Mineral industry	896.99	900.39					
B. Chemical industry	NO	NO					
C. Metal industry	NO	NO					
D. Non-energy products from fuels and solvent use	4.96	5.22					
E. Electronic industry	NO	NO					
F. Product uses as ODS substitutes	359.20	383.73					
G. Other product manufacture and use	23.64	24.00					
H. Other	NO	NO					

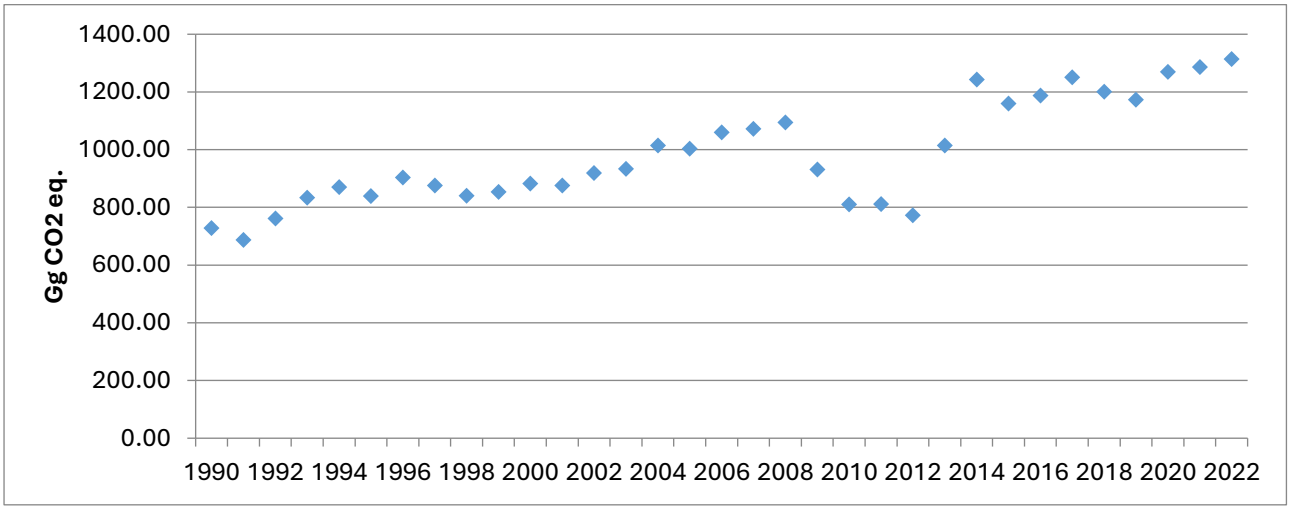


Figure 2-3. Emissions from the IPPU sector 1990-2022

2B.1.3.3 Agriculture sector

The agriculture sector is the third largest source of emissions in Cyprus, and contributed 6.0% to total emissions in 2022, compared to 8.2% in 1990. Emissions increased by 17.3% compared to 1990. Agriculture is responsible for mainly methane and nitrous oxide emissions. In 2022 agriculture contributed 38.3% to the total methane emissions and 70% to the total nitrous oxide emissions. The total emissions by gas and source from agricultural activities for the period 1990–2022 in Cyprus are presented in Table 2-6 and Figure 2-4.

Table 2-6. GHG emissions from Agriculture sector, for the period 1990–2022

Gg CO_2 eq.	**1990**	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**
3. Agriculture	**454.74**	**542.91**	**525.54**	**514.80**	**506.90**	**484.68**	**449.17**
A. Enteric fermentation	220.61	251.11	255.88	263.63	270.08	263.38	251.14
B. Manure management	172.45	231.25	212.23	193.35	181.91	165.66	149.33
C. Rice cultivation	NO	NO	NO	NO	NO	NO	NO
D. Agricultural soils	56.90	57.72	55.31	56.33	53.17	54.10	47.27
E. Prescribed burning of savannas	NO	NO	NO	NO	NO	NO	NO
F. Field burning of agricultural residues	2.96	1.16	1.15	0.76	0.83	0.98	0.64
G. Liming	NO	NO	NO	NO	NO	NO	NO
H. Urea application	1.82	1.67	0.97	0.74	0.91	0.55	0.79
I. Other carbon-containing fertilizers	NO	NO	NO	NO	NO	NO	NO
J. Other	NO	NO	NO	NO	NO	NO	NO
CO_2 (Gg)	1.82	1.67	0.97	0.74	0.91	0.55	0.79

CH_4 (Gg)	12.03	14.70	14.24	13.87	13.70	13.01	12.17
N_2O (Gg)	0.44	0.49	0.47	0.47	0.46	0.45	0.41
Total (Gg CO_2 eq.)	**454.74**	**542.91**	**525.54**	**514.80**	**506.90**	**484.68**	**449.17**

Gg CO_2 eq.	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
3. Agriculture	**437.26**	**441.85**	**462.39**	**476.12**	**481.80**	**495.53**	**531.55**
A. Enteric fermentation	249.45	251.32	273.00	286.37	292.99	303.26	329.63
B. Manure management	143.31	140.11	141.35	139.59	139.50	140.83	148.96
C. Rice cultivation	NO	NO	NO	NO	NO	NO	NO
D. Agricultural soils	43.84	49.03	47.38	49.28	48.71	50.54	52.01
E. Prescribed burning of savannas	NO	NO	NO	NO	NO	NO	NO
F. Field burning of agricultural residues	0.24	0.99	0.26	0.47	0.38	0.68	0.73
G. Liming	NO	NO	NO	NO	NO	NO	NO
H. Urea application	0.41	0.40	0.39	0.42	0.22	0.23	0.22
I. Other carbon-containing fertilizers	NO	NO	NO	NO	NO	NO	NO
J. Other	NO	NO	NO	NO	NO	NO	NO
CO_2 (Gg)	0.41	0.40	0.39	0.42	0.22	0.23	0.22
CH_4 (Gg)	11.87	11.89	12.61	12.95	13.16	13.52	14.65
N_2O (Gg)	0.39	0.41	0.41	0.43	0.43	0.44	0.46
Total (Gg CO_2 eq.)	**437.26**	**441.85**	**462.39**	**476.12**	**481.80**	**495.53**	**531.55**

Gg CO_2 eq.	**2021**	**2022**					
3. Agriculture	546.27	533.63					
A. Enteric fermentation	342.12	334.32					
B. Manure management	151.51	146.61					
C. Rice cultivation	NO	NO					
D. Agricultural soils	51.71	51.68					
E. Prescribed burning of savannas	NO	NO					
F. Field burning of agricultural residues	0.63	0.74					
G. Liming	NO	NO					
H. Urea application	0.30	0.27					
I. Other carbon-containing fertilizers	NO	NO					
J. Other	NO	NO					
CO_2 (Gg)	0.30	0.27					
CH_4 (Gg)	15.14	14.72					
N_2O (Gg)	0.46	0.46					
Total (Gg CO_2 eq.)	**626.2**	**533.63**					

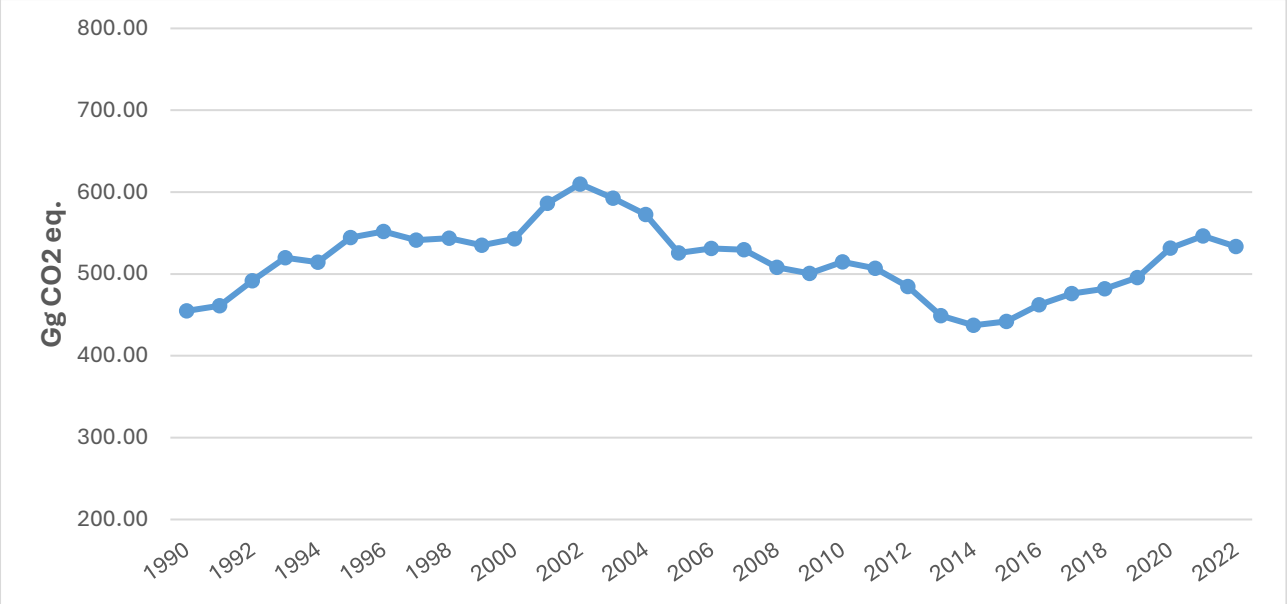


Figure 2-4. Emissions from Agriculture sector, 1990-2022

2B.1.3.4 Waste sector

Emissions from the Waste Sector in 2022 contributed 7.5% of the total emissions without LULUCF, 59.7% to the total methane emissions of the country without LULUCF and 12.6% to the total N_2O emissions without LULUCF. In 2022, 86.4% of the waste sector emissions are from solid waste disposal, 2.8% from biological treatment of solid waste and 10.8% from wastewater treatment and discharge. The emissions from waste have changed considerably between 1990 and 2022 due to changes that are taking place in the waste and wastewater management practices of the country. Recycling and composting have been reducing the amount of waste disposal on land since 2010. The total GHG emissions (in Gg CO2 eq.) from Waste sector are presented in Table 2-7 and Figure 2-5 below.

Table 2-7. Total GHG emissions (in Gg CO_2 eq.) from Waste sector, 1990–2022

Gg CO_2 eq.	**1990**	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**
Total waste	**435.18**	**523.24**	**557.57**	**583.92**	**588.96**	**599.05**	**609.15**
A. Solid waste disposal	295.37	369.73	420.35	482.17	494.71	506.10	518.69
B. Biological treatment of solid waste	NO	NO	NO	4.71	8.55	10.35	8.85
C. Incineration & open burning of waste	NO	NO	NO	NO	NO	NO	NO
D. Wastewater treatment and discharge	139.82	153.51	137.22	97.04	85.70	82.60	81.60
E. Other	NO	NO	NO	NO	NO	NO	NO
CH_4 (Gg)	15.19	18.25	19.48	20.30	20.45	20.78	21.17
N_2O (Gg)	0.04	0.05	0.05	0.06	0.06	0.07	0.06
Total (Gg CO_2 eq.)	**435.18**	**523.24**	**557.5**	**583.9**	**589.7**	**599.7**	**609.81**

Gg CO_2 eq.	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Total waste	**619.19**	**623.02**	**626.15**	**633.61**	**643.33**	**654.18**	**653.35**
A. Solid waste disposal	527.87	533.77	540.47	547.74	554.51	561.03	567.35
B. Biological treatment of solid waste	10.55	11.48	11.63	11.88	15.11	17.94	17.26
C. Incineration & open burning of waste	NO	NO	NO	NO	NO	NO	NO
D. Wastewater treatment and discharge	80.77	77.76	74.05	74.00	73.72	75.21	68.74
E. Other	NO	NO	NO	NO	NO	NO	NO
CH_4 (Gg)	21.52	21.66	21.76	22.02	22.31	22.67	22.66
N_2O (Gg)	0.07	0.07	0.07	0.07	0.08	0.08	0.08

Total (Gg CO_2 eq.)	**620.38**	**624.81**	**627.7**	**635.2**	**644.9**	**656.4**	**656.09**

Gg CO_2 eq.	**2021**	**2022**					
Total waste	**660.59**	**665.31**					
A. Solid waste disposal	571.59	574.88					
B. Biological treatment of solid waste	17.89	18.67					
C. Incineration & open burning of waste	NO	NO					
D. Wastewater treatment and discharge	71.11	71.76					
E. Other	NO	NO					
CH_4 (Gg)	22.86	22.98					
N_2O (Gg)	0.08	0.08					
Total (Gg CO_2 eq.)	**662.56**	**665.31**					

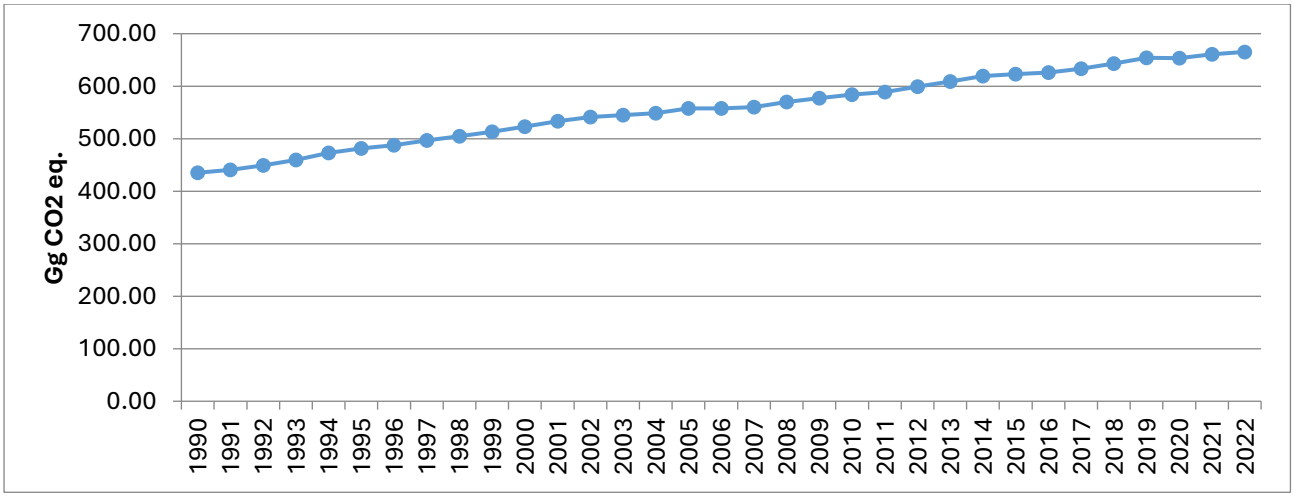


Figure 2-5. GHG emissions from Waste sector for the period 1990-2022

2B.1.3.5 LULUCF

The forest land category is an important contributor to the sink in the LULUCF sector. The land converted to forest land represents a net sink for all inventoried years, while forest land remaining forest land represent sinks for all years, except some specific years in which represents a net source, primarily due to significant forest fire impacts.

Overall, the sink in the total LULUCF increases from -153.1 kt CO_2 eq. in 1990 to -299.4 kt CO_2 eq. in 2022, representing an increase in net removals of 95.3%. The key driver for the increase in net removals is the prohibition of logging. Environmental policies have also resulted in less intensive agricultural practices and an increase in forest and woodland conservation areas for the purpose of preserving biodiversity and landscapes. The emissions and removals from the LULUCF sector by main land-use category for the whole inventory period are presented in Table 2-8 and Figure 2-6.

Table 2-8. Emissions and removals (+/-) from LULUCF categories (kt CO_2 eq.)

Year	Total	FL	CL	GL	WL	SL	OL	HWP
1990	-153.07	1.51	-134.23	-23.05	NO,NE	0.46	0.11	2.14
1991	-166.98	-18.24	-134.77	-23.53	NO,NE	0.45	0.14	8.97
1992	-172.65	-23.54	-135.31	-24.01	NO,NE	0.43	0.17	9.60
1993	-174.80	-11.81	-135.85	-24.49	NO,NE	0.41	0.21	-3.28
1994	-183.35	-23.10	-136.39	-24.96	NO,NE	0.39	0.24	0.46
1995	-180.03	-18.77	-136.93	-25.44	NO,NE	0.37	0.27	0.45
1996	-185.36	-22.26	-137.47	-25.92	NO,NE	0.36	0.30	-0.38
1997	-184.22	-29.88	-138.01	-26.40	NO,NE	0.34	0.33	9.38

1998	-190.49	-27.93	-138.55	-26.87	NO,NE	0.32	0.37	2.15
1999	-198.38	-33.17	-139.08	-27.35	NO,NE	0.30	0.40	0.51
2000	-142.51	9.92	-139.62	-27.83	NO,NE	0.28	0.43	14.30
2001	-168.60	-46.21	-139.61	-28.81	NO,NE	23.09	0.35	22.54
2002	-201.94	-81.47	-139.54	-28.75	NO,NE	23.54	0.35	23.86
2003	-214.02	-94.33	-139.47	-28.69	NO,NE	23.99	0.35	24.02
2004	-214.55	-95.72	-139.40	-28.63	NO,NE	24.44	0.35	24.29
2005	-220.83	-102.58	-139.34	-28.57	NO,NE	24.89	0.35	24.27
2006	-222.49	-103.97	-139.27	-28.52	NO,NE	25.32	0.35	23.42
2007	-182.89	-42.13	-140.99	-28.50	0.44	8.94	0.35	18.81
2008	-249.84	-108.26	-140.81	-28.50	0.45	9.08	0.35	17.64
2009	-277.65	-141.28	-140.62	-28.50	0.47	9.22	0.35	22.51
2010	-265.04	-130.19	-140.04	-28.02	0.48	9.38	0.32	22.82
2011	-300.78	-168.10	-139.46	-27.53	0.50	9.53	0.29	23.79
2012	-293.62	-162.14	-138.88	-27.05	0.52	9.68	0.25	23.78
2013	-297.29	-171.08	-132.03	-23.62	0.45	5.06	0.22	23.50
2014	-299.11	-173.38	-131.42	-23.07	0.46	4.98	0.19	22.91
2015	-296.11	-171.27	-130.81	-22.51	0.47	4.91	0.16	22.73
2016	-190.89	-66.95	-130.25	-21.97	0.47	4.89	0.13	22.57
2017	-307.03	-183.98	-129.69	-21.43	0.47	4.87	0.10	22.41
2018	-302.31	-180.14	-129.12	-20.89	0.47	4.85	0.06	22.24
2019	-297.04	-175.66	-128.51	-20.33	0.49	4.76	0.03	21.96
2020	-298.54	-177.58	-127.92	-19.78	0.50	4.70	NO	21.32
2021	-235.33	-112.90	-127.60	-19.73	0.50	4.29	NO	19.92
2022	-299.39	-177.18	-127.28	-19.68	0.50	3.88	NO	20.21

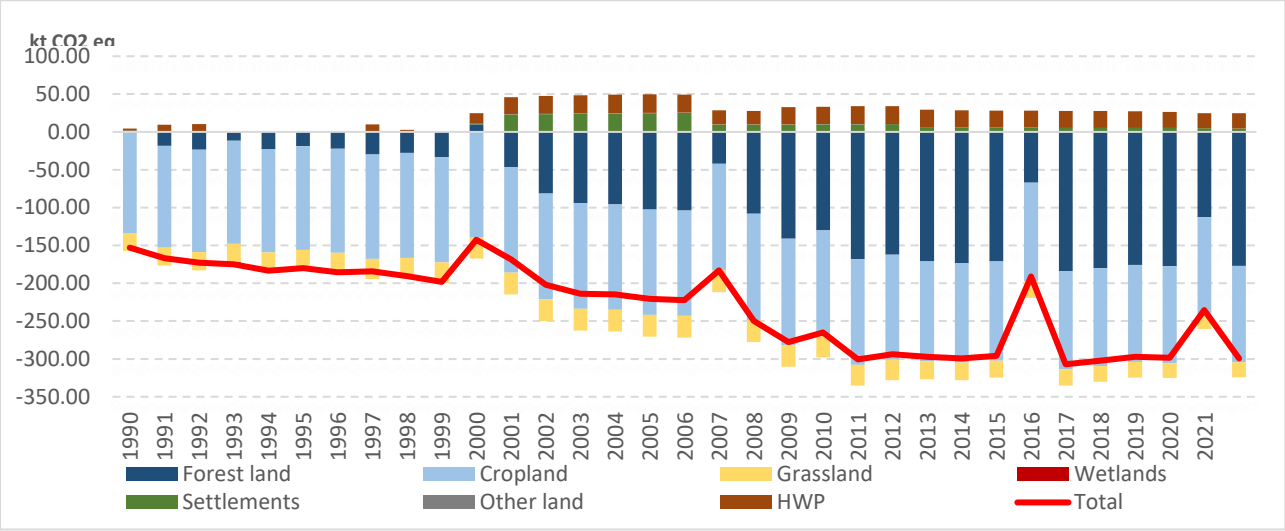


Figure 2-6. Emissions/removals trend in the LULUCF sector in the period 1990-2022

2B.1.3.6 Memo Items

Emissions from flights and vessels of all flags that are engaged in international water-borne navigation that depart in one country and arrive in a different country should be included in international bunkers. Emissions from international bunkers as estimated for the period 1990–2022 are presented in Table 2-9.

Table 2-9. Emissions from international bunkers 1990–2022

Gg CO_2 eq.	**1990**	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**
International bunkers	909	1447	1766	1430	1498	1464	1545	1523
Aviation	724	834	839	835	834	866	837	781
Navigation	185	613	927	595	595	633	627	764
CO_2 (Gg)	901	1434	1750	1416	1485	1451	1530	1509
CH_4 (Gg)	0.02	0.05	0.08	0.05	0.06	0.05	0.06	0.06
N_2O (Gg)	0.03	0.04	0.05	0.05	0.05	0.05	0.05	0.05
Gg CO_2 eq.	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
International bunkers	1533	1800	1820	1912	1928	1214	1369	1715
Aviation	757	884	1006	1045	1035	329	559	794
Navigation	776	917	814	867	893	885	810	921
CO_2 (Gg)	1518	1783	1803	1894	1910	1201	1355	1698
CH_4 (Gg)	0.07	0.08	0.07	0.07	0.07	0.07	0.06	0.07
N_2O (Gg)	0.05	0.06	0.06	0.06	0.06	0.04	0.05	0.06

The resulting emissions from combustion of biomass are presented in Table 2-10 and Figure 2-7.

Table 2-10. Emissions from CO_2 from biomass 1990–2022

	1990	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**
CO_2 from biomass (Gg)	30	57	64	168	189	184	179	169
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
CO_2 from biomass (Gg)	222	236	288	325	320	412	422	415

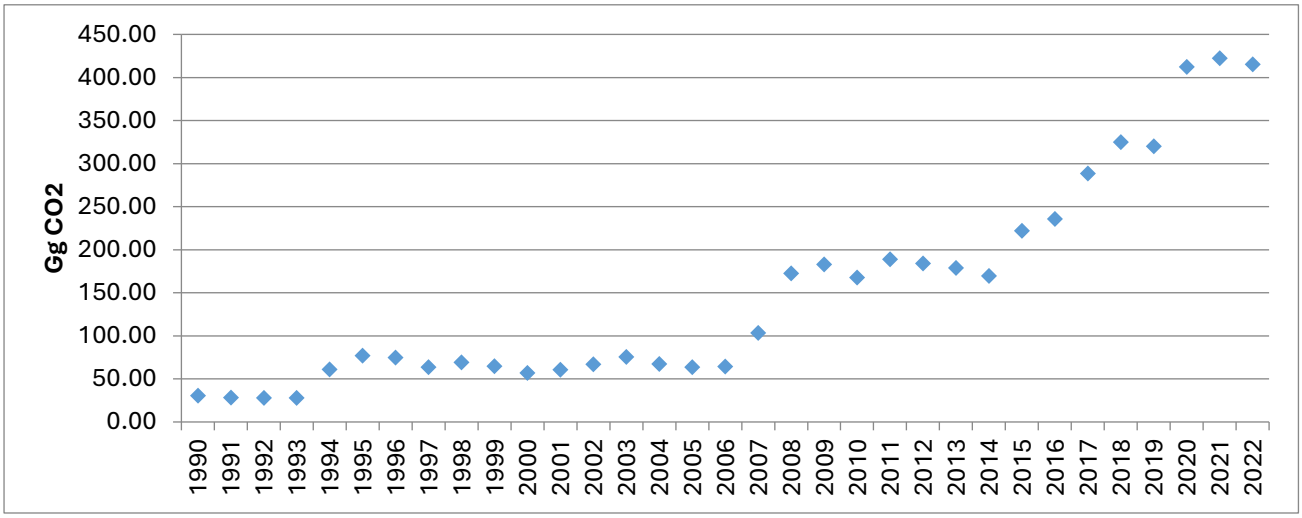


Figure 2-7. Emissions from biomass 1990–2022

3. INFORMATION NECESSARY TO TRACK PROGRESS MADE IN IMPLEMENTING AND ACHIEVING NATIONALLY DETERMINED CONTRIBUTIONS UNDER ARTICLE 4 OF THE PARIS AGREEMENT

3A. National Circumstances and Institutional Arrangements

3A.1 National Circumstances

3A.1.1 Introduction

This chapter reports the national circumstances of the Republic of Cyprus. It illustrates a number of key characteristics that relate directly or indirectly to the greenhouse gas emissions and include energy, transport, land use, climatic conditions and trade patterns. The chapter analyses how these various factors have influenced greenhouse gas emissions to-date and how the historic trends observed might influence emissions going forward.

The Ministry of Agriculture, Rural Development and Environment is the governmental body with the overall responsibility for the preparation, approval and submission of national communications (Contact persons: Dr. Theodoulos Mesimeris and Dr. Nicoletta Kythreotou, UNFCCC National Focal Points). Experts from governmental and non-governmental institutions participated in the preparation of the present biennial technical report as information providers. Additional members of the DoE inventory team, contracted through the Cyprus Institute[3] and serving as national sectoral experts for calculation and reporting of the GHG inventory and projections, are responsible for the preparation of chapters 2, 3, and 4, under the direction of the contact persons at the Department of Environment. These sectoral experts are listed below.

(a) Mr. Demetris Demetriou
Technical Research Scientist for Greenhouse Gases and Air Pollutants Inventory, CARE-C, the Cyprus Institute, address. 20, Konstantinou Kavafi Street, 2121, Nicosia, Cyprus, Tel. +357 22 397 559 Email. d.demetriou@cyi.ac.cy
BSc Mechanical Engineering, MSc Environmental Science, Policy and Management, MSc Environmental Dynamics and Climate Change.

(b) Mr. Marios Christoforides
Technical Research Scientist in Data Scientist, CARE-C, the Cyprus Institute, address 20, Konstantinou Kavafi Street, 2121, Nicosia, Cyprus, Tel. +357 22 397 513 Email. m.christoforides@cyi.ac.cy
BSc Statistics and Financial Mathematics, MSc Statistics and Data Science

(c) Ms. Corey Evans McClintock
Technical Research Scientist in Emissions, Air Quality Modelling and Data Science, CARE-C, the Cyprus Institute, address. 20, Konstantinou Kavafi Street, 2121, Nicosia, Cyprus, Tel. +357 22 397 589 Email. c.mcclintock @cyi.ac.cy
BSc Chemistry, M.Ed Science Education, Graduate Certificate Climate Adaptation and Mitigation

(d) Dr. Constantinos Taliotis
Assistant Professor, EEWRC, the Cyprus Institute, address. 20, Konstantinou Kavafi Street, 2121, Nicosia, Cyprus, Tel. +357 22 397 524 Email. c.taliotis@cyi.ac.cy

[3] The Cyprus Institute (CyI) is a non-profit research and educational institution with a strong scientific and technological orientation, addressing issues of regional interest but of global significance, with an emphasis on cross-disciplinary research and international collaborations. The team of experts is working at the Climate and Research Atmosphere Research Center (CARE-C) and the Energy, Environment and Water Research Center (EEWRC) of the CyI, of which the work and collaborations focus on societally relevant issues related to Atmospheric Science, Climate Change, Energy and Renewables, Environment, Atmosphere and Climate, Water and Natural Resources (www.cyi.ac.cy).

3A.1.2 Geographic profile

Cyprus is an island country, located in the eastern end of the Mediterranean Sea, and the third largest island in the Mediterranean Sea, after the Italian islands of Sicily and Sardinia (both in terms of area and population). The total area of the island is 9,251 km^2. It measures 240 km long and 100 km wide at its widest point. It lies between latitudes 34° and 36° N, and longitudes 32° and 35° E.

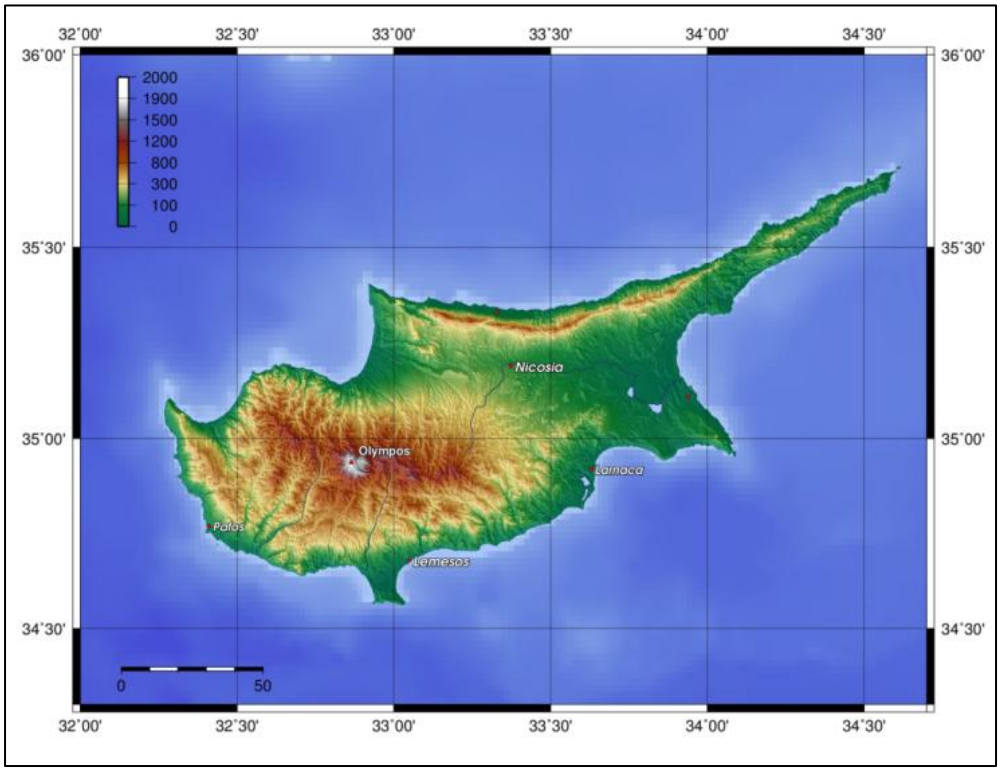


Figure 3-1. Topographic map of Cyprus

The physical relief of the island is dominated by two mountain ranges, the Troodos Mountains and the smaller Kyrenia Range, and the central plain they encompass, the Mesaoria. The Mesaoria plain is drained by the Pedieos River, the longest on the island. The Troodos Mountains cover most of the southern and western portions of the island and account for roughly half its area. The highest point on Cyprus is Mount Olympus at 1,952 m, located in the centre of the Troodos range. The narrow Kyrenia Range, extending along the northern coastline, occupies substantially less area, and elevations are lower, reaching a maximum of 1,024 m.

3A.1.3 Government structure

Cyprus is an independent sovereign Republic with a presidential system of government. The constitution provides for separate executive, legislative and judicial branches of government with independent powers. The President is both Head of State and Government.

Presidency

According to the 1960 Constitution, the President is to be Greek Cypriot elected directly by the Greek Cypriot community and the Vice-President is to be Turkish Cypriot elected directly by the Turkish Cypriot community, for a five-year term of office. The Constitution provides that executive power is exercised jointly by the President and the Vice-President, through a Council of Ministers appointed by them (seven and three ministers respectively).

Both the President and the Vice-President have the right of final veto on decisions of the Council of Ministers and laws or decisions of the House of Representatives concerning foreign affairs, defence and security. In 1964, however, the Turkish Cypriot Vice-President and the three Turkish Cypriot ministers withdrew from the government and since then the government has been functioning by necessity only with Greek Cypriots in all ministries, which have been subsequently increased to eleven. The post of Vice-President remains vacant.

The ministries and deputy ministries are the following: Ministry of Defence, Ministry of Agriculture, Rural Development and Environment, Ministry of Justice and Public Order, Ministry of Energy, Commerce, Industry, Ministry of Foreign Affairs, Ministry of Labour Welfare and Social Insurance, Ministry of the Interior, Ministry of Finance, Ministry of Education, Sport and Youth, Ministry of Transport, Communications and Works, Ministry of Health, Deputy Ministry Of Research, Innovation And Digital Strategy, Deputy Ministry of Tourism, Deputy Ministry of Social Welfare, Deputy of Shipping, Deputy Ministry of Culture.

Council of Ministers

The Council of Ministers exercises executive power in all matters. Each Minister is the head of his or her Ministry and exercises executive power on all matters within that Ministry's domain. The Government Spokesman and the Deputy Minister to the President are also present at the meetings of the Council of Ministers. The Ministers are appointed by the President. The ministries mainly prepare and implement national laws.

Local Authorities

Cyprus is separated into 6 districts: Nicosia (Lefkosia), Limassol (Lemesos), Pafos, Larnaca, Ammochostos and Keryneia (Figure 2.2). Each district has a District Officer, who reports to the Minister for the Interior. Keryneia are not under the effective control of the Republic of Cyprus, whereas Ammochostos is partially under the effective control of the Republic of Cyprus.

There are two types of local authorities: Municipalities and Communities, which are governed by separate laws. In principle, Municipalities constitute the form of local government in urban and tourist centres, while Communities constitute the local structure in rural areas. Mayors and Community Presidents are elected directly by the residents for a five-year term.

Any Community may become a Municipality by local referendum subject to the approval of the Council of Ministers, provided it has either a population of more than 5,000, or has the economic resources to function as a Municipality. The main responsibilities of Municipalities are the construction, maintenance and lighting of streets, the collection, disposal and treatment of waste and environmental protection and improvement. The functions of Communities are generally similar to those of Municipalities, although structurally different. The government provides to most Communities essential administrative and technical assistance through its District Offices.

Currently, there are 39 municipalities and 485 communities, of which 9 and 132 respectively are not under the effective control of the Republic of Cyprus.

Legislature

House of Representatives

Legislative authority is exercised by a unicameral House of Representatives. Its members are elected for a five-year term. At the time of its establishment the House consisted of 50 members, 35 of whom were to be Greek Cypriots and 15 Turkish Cypriots. In 1985 the number of seats was increased to 80, 56 allocated to Greek Cypriot members and 24 reserved for Turkish Cypriot deputies. Following the withdrawal of the Turkish Cypriot members in 1964, the House has been functioning only with the Greek Cypriot members.

The Maronite, Armenian and Latin religious groups, which vote as part of the Greek Cypriot community, elect one additional representative each from their ranks. These non-voting representatives attend meetings, but do not participate in the House deliberations. They are consulted on issues of particular interest to their respective group.

Given the vacancy in the Vice- President's office, the House President serves as Acting President of the Republic in the case of temporary absence or temporary incapacity of the President of the Republic.

Judiciary

The administration of justice is exercised by the Republic's separate and independent judiciary. Under the 1960 Constitution and other legislation in force, the following judicial institutions have been established: The Supreme Court, The Assize Courts and District Courts.

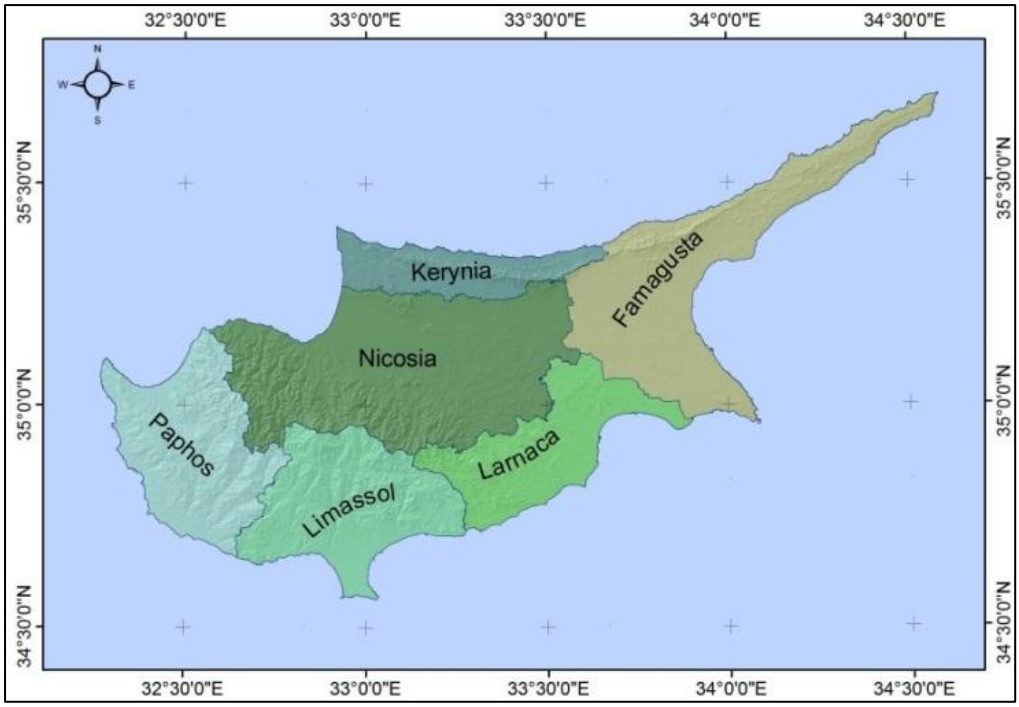


Figure 3-2. The six administrative districts of Cyprus

Legislature

House of Representatives

Legislative authority is exercised by a unicameral House of Representatives. Its members are elected for a five-year term. At the time of its establishment the House consisted of 50 members, 35 of whom were to be Greek Cypriots and 15 Turkish Cypriots. In 1985 the number of seats was increased to 80, 56 allocated to Greek Cypriot members and 24 reserved for Turkish Cypriot deputies. Following the withdrawal of the Turkish Cypriot members in 1964, the House has been functioning only with the Greek Cypriot members.

The Maronite, Armenian and Latin religious groups, which vote as part of the Greek Cypriot community, elect one additional representative each from their ranks. These non-voting representatives attend meetings, but do not participate in the House deliberations. They are consulted on issues of particular interest to their respective group.

Given the vacancy in the Vice- President's office, the House President serves as Acting President of the Republic in the case of temporary absence or temporary incapacity of the President of the Republic.

Judiciary

The administration of justice is exercised by the Republic's separate and independent judiciary. Under the 1960 Constitution and other legislation in force, the following judicial institutions have been established: The Supreme Court, The Assize Courts and District Courts.

Independent Officers and Bodies

There are also independent officers and bodies which do not come under any ministry, including the: Attorney-General and Auditor-General who head the Law Office and Audit Office respectively; Governor of the Central Bank; Ombudsman (Commissioner for Administration); Public Service Commission; Education Service Commission; Planning Bureau; Treasury; Commission for the Protection of Competition; Commissioner of Electronic Communications and Postal Regulation; Commissioner for Personal Data Protection; Commissioner for the Protection of Children's Rights; Law Commissioner; Commissioner for the Environment; Commissioner for the Reform of the Civil Service; Commissioner for Humanitarian Affairs; Commissioner for Volunteering and

Nongovernmental Organisations; Tenders Review Authority; Internal Audit Service; Cyprus Radio Television Authority; Cyprus Securities and Exchange Commission.

Member of the European Union

On 1 May 2004 the Republic of Cyprus became a full member of the EU. Accession to the EU was a natural choice for Cyprus, dictated by its culture, civilisation, history, its European outlook and adherence to the ideals of democracy, freedom and justice.

The application of the EU laws and regulations (the acquis communautaire) is suspended in the area under military occupation by Turkey, pending a solution to the occupation and forcible division of the country. Meanwhile, the government, in cooperation with the EU Commission, has been promoting arrangements to facilitate increased economic transactions between the two communities and improve the standard of living of Turkish Cypriots, who are also victims of Turkey's military aggression against Cyprus.

While Cyprus has a lot to benefit from EU membership, it also has a lot to offer as a member state. Strategically situated at the crossroads of Europe, the Middle East, North Africa and Asia, Cyprus is becoming an even more important regional business centre, as well as an international communications and transport hub. It is also a prospective energy (natural gas) provider for Europe.

Given its modern infrastructure, sound legal system, tax incentives, low crime rate and well-educated labour force, Cyprus is a favourite regional operations platform for European and other international companies.

Since its accession to the EU, Cyprus has undergone significant structural reforms that have transformed its economic landscape. Trade and interest rates have been liberalised, while price controls and investment restrictions have been lifted. Private financing has been introduced for the construction and operation of major infrastructure projects and monopolies have been abolished.

Cyprus held the Presidency of the Council of the European Union for the first time from July – December 2012.

3A.1.4 Population[4]

In general, aggregate increases in population are drivers for increasing consumption, energy use and greenhouse gas emissions. The population of the Government controlled area is estimated at 920,211 at the end of 2022, compared to 896,000 at the end of 2020, recording an increase of 2.7%.

3A.1.5 Climate[5]

Cyprus has an intense Mediterranean climate with the typical seasonal rhythm strongly marked in respect of temperature, rainfall and weather generally. Hot and dry summers from mid-May to mid-October and mild, rainy, rather changeable, winters from November to mid-March are separated by short autumn and spring seasons of rapid change in weather conditions.

The central Troodos massif, rising to 1951 metres and, to a less extent, the long narrow Kyrenia mountain range, with peaks of about 1,000 metres, play an important part in the climate of Cyprus. The predominantly clear skies and high sunshine amounts give large seasonal and daily differences between temperatures of the sea and the interior of the island which also cause considerable local effects especially near the coasts.

During the summer, the island is mainly under the influence of a trough of low pressure extending from the great continental thermal low centred over southwest Asia. It is a season of high temperatures with almost cloudless skies. Rainfall is almost negligible, but isolated thunderstorms sometimes occur which give rainfall amounting to less than 5% of the total in the average year.

In winter Cyprus is near the track of fairly frequent depressions which mainly cross the Mediterranean Sea from west to east. These depressions give periods of unstable weather conditions usually lasting from two to five days

[4] Mrs. Maria Matsi, Economic Officer, Ministry of Finance, Michael Karaoli & Gregori Afxentiou, 1439 Nicosia; Tel.: +35722601231; email: mmatsi@mof.gov.cy

[5] S. Papachristodoulou, Met. officer, Department of Meteorology, Nikis 28, 1086 Nicosia; Tel.: +35722802915; e-mail: mpanayiotis@ms.moa.gov.cy

and produce most of the annual precipitation. Snow occurs rarely in the lowlands and on the Kyrenia range, but falls frequently every winter on ground above 1,000 metres usually occurring by the first week in December and ending by the middle of April.

Precipitation

The mean annual precipitation varies from year to year and from place to place. The lowest mean annual precipitation for Cyprus was 213mm in 1972–73 and the highest was 800mm in 1968–69. The mean annual precipitation for the period 1961–90 is 503mm. The wettest months are normally December, January and February and the driest are July, August and September.

Statistical analysis of rainfall in Cyprus reveals a decreasing trend of rainfall amounts in the last 116 years. Annual precipitation in Cyprus has on average decreased by about 100mm in the last 85 years (see Figure 3-3).

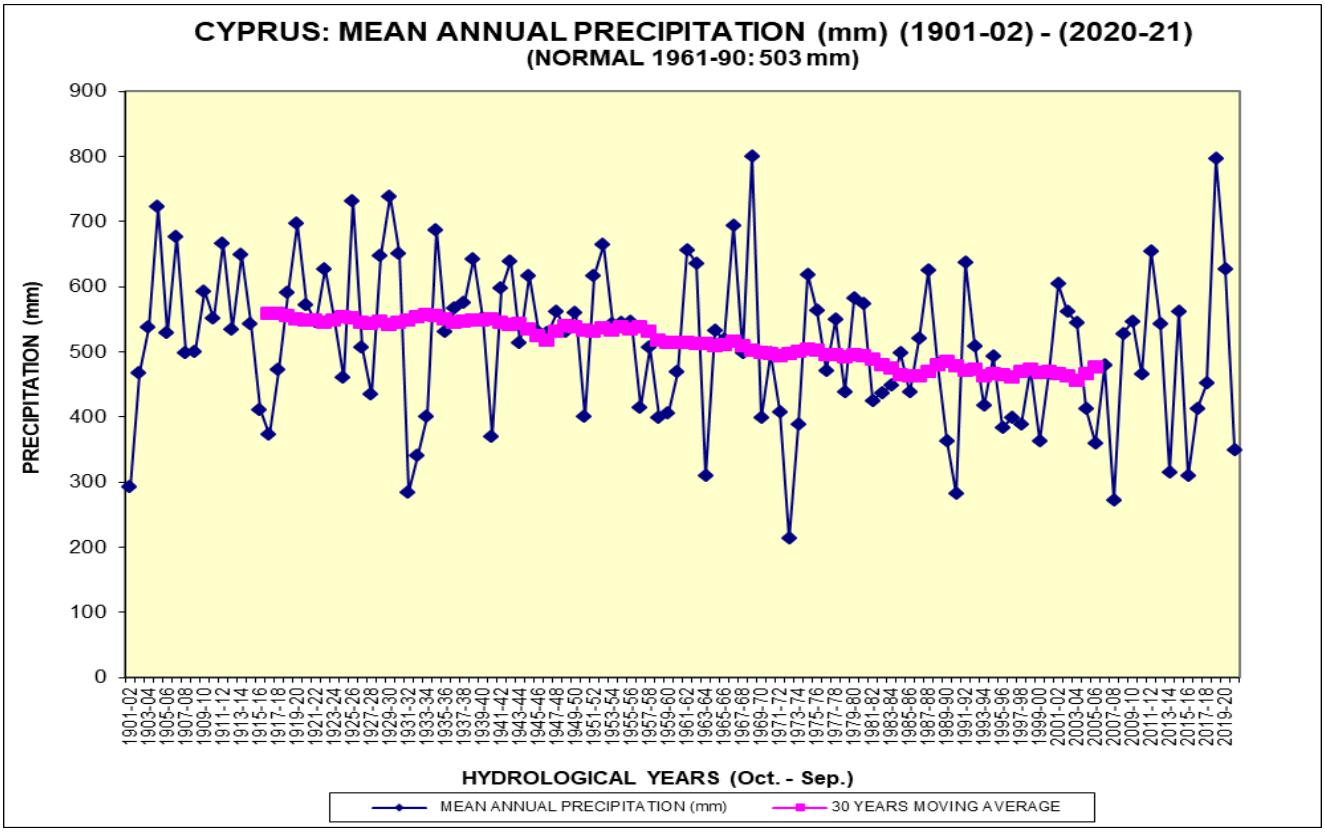


Figure 3-3. Mean annual precipitation in Cyprus 1901-02 – 2020-21 (normal 1961-90: 503 mm)

During the recent years, it has been observed that even though the total annual amount of rainfall does not change significantly, the annual distribution of rainfall has changed considerably, showing extreme rainfall years large amounts of rain alternating with periods of drought (Michaelides et al. 2009).

Temperature

Cyprus has a hot summer and mild winter, but this generalization must be modified by consideration of altitude, which lowers temperatures by about 5°C per 1,000 metres and of marine influences which give cooler summers and warmer winters near most of the coastline and especially on the west coast.

The annual mean temperature for Cyprus varies from year to year, from 16.1°C to 19.7°C, with an average of 17.5°C. The year 2010 was the warmest ever recorded in Cyprus. The years 1961, 1965 and 1967 were the coldest in the last 73 years.

The seasonal difference between mid-summer and mid-winter temperatures is quite large at 18°C inland and about 14°C on the coasts. Differences between day maximum and night minimum temperatures are also quite large

especially inland in summer. These differences are in winter 8 to 10°C on the lowlands and 5 to 6°C on the mountains increasing in summer to 16°C on the central plain and 9 to 12°C elsewhere.

The average annual temperature in Cyprus, both in urban and in rural areas, presents an increasing trend. The greater increase in temperature in the towns is due to the urbanization effect, however, the fact that an increase is also observed in rural areas, it is indicative of the general increase in temperature in our area as well as globally. In Nicosia the average annual temperature increased from 18.9°C in the first 30-year period of the century to 20.9°C in the last 30-year period, an increase of 2.0 °C (see Figure 3-4).

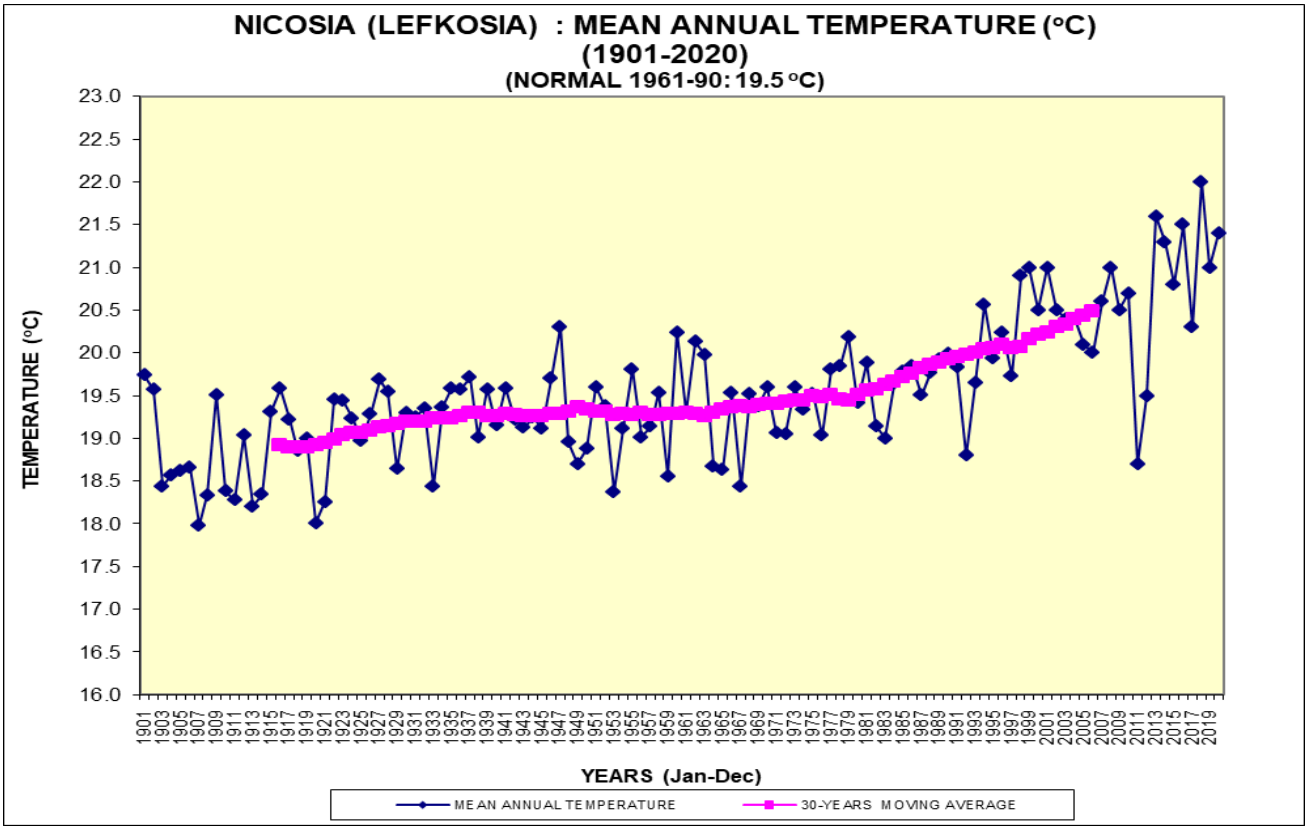


Figure 3-4. Mean annual temperature for Nicosia 1901-2020 (normal 1961-90: 19.5 °C)

Wind

Over the eastern Mediterranean generally surface winds are mostly westerly or south-westerly in winter and north-westerly or northerly in summer. Usually of light or moderate strength, they rarely reach gale force.

Over the island of Cyprus however winds are quite variable in direction with orography and local heating effects playing a large part in determination of local wind direction and strength. Temperature differences between sea and land which are built up daily in predominant periods of clear skies (mainly in summer), cause considerable sea and land breezes. Whilst these are most marked near the coasts they regularly penetrate far inland.

Gales are infrequent over Cyprus but may occur especially on exposed coasts with winter depressions. Small whirlwinds are common in summer appearing mostly near midday as "dust devils" on the hot dry central plain. Very rarely vortices, approaching a diameter of 100 metres or so and with the characteristics of water spouts at sea and of small tornadoes on land occur in a thundery type of weather. Localized damage caused by these has been reported on a few occasions but in general Cyprus suffers relatively little wind damage.

Sunshine

All parts of Cyprus enjoy a very sunny climate compared with most European countries. In the central plain and eastern lowlands the average number of hours of bright sunshine for the whole year is 75% of the time that the sun

is above the horizon. Over the whole summer six months there is an average of 11.5 hours of bright sunshine per day whilst in winter this is reduced only to 5,5 hours in the cloudiest months, December and January.

Even on the high mountains the cloudiest winter months have an average of nearly 4 hours bright sunshine per day which goes up to 11 hours during June and July.

3A.1.6 Economy[6]

The economic profile of a country has a strong link to greenhouse gas emissions, with the overall level and types of economic activity, strongly correlated to energy use. However, this is also dependent on factors such as energy efficiency and the structure of the economy.

The economy of Cyprus can generally be characterised as small, open and dynamic, with services constituting its engine power. Since the accession of the country to the European Union on 1 May 2004 the subsequent participation to the ERMII in 29 April 2005 and finally membership to the EURO area as of January 1st 2008, its economy has undergone significant economic and structural reforms that have transformed the economic landscape. Interest rates have been liberalised exchange rates and monetary policy was undertaken by the ECB, while other wide-ranging structural reforms have been promoted, covering the areas of competition, the financial sector and the business sector.

According to the national statistics (Cystat), the tertiary sector (services) is the biggest contributor to GVA, accounting for about for about 83.2% in 2022. This development reflects the gradual restructuring of the Cypriot economy from an exporter of minerals and agricultural products in the period 1961-73 and an exporter of manufactured goods in the latter part of the 1970s and the early part of the 80s, to an international tourist, business and services centre during the 1980s, 1990s and the 2000s. The secondary sector (construction, manufacturing, mining and quarrying) accounted for around 15.5% of GVA in 2022. The primary sector (agriculture and fishing) is continuously shrinking and only reached 1.3% of GVA in 2022. The main economic indicators over the past five years, as provided in December 2024, are shown below in Table . Note that the real GDP growth rate shown below is the most recent data, and thus different to what was applied in the projections forecast.

Table 3-1. Main economic indicators[7]

	2018	**2019**	**2020**	**2021**	**2022**
GDP (in € mln) nominal	21,808	23,401	22,374	25,680	29,416
Real GDP growth rate	6.3%	5.9%	-3.2%	11.4%	7.4%
Per capita GDP in PPS, (EU-27 = 100)	91	93	91	94	94
Rate of Inflation HICP	0.8%	0.5%	-1.1%	2.3%	8.1%
Unemployment Rate	8.4%	7.1%	7.6%	7.1%	6.2%

The private sector, which is dominated by small and medium-sized enterprises, has a leading role in the production process. The government's role is mainly to support the private sector and regulate the markets in order to maintain conditions of macroeconomic stability and a favourable business climate, via the creation of the necessary legal and institutional framework and secure conditions of fair competition.

Before the emergence of the global economic crisis Cyprus had enjoyed a track record of satisfactory economic growth, low unemployment and relatively stable macroeconomic conditions. Over the years 2003 to 2008, real GDP rose at an annual average rate of 4.3 per cent propelled by buoyant investment and growth of private consumption and exports. Consumption was supported by annual employment growth averaging nearly 3.5 per cent over this period, attributable mainly to large inflows of migrant labour, particularly from other EU countries. During this

[6] Mrs. Maria Matsi, Economic Officer, Ministry of Finance, Michael Karaoli & Gregori Afxentiou, 1439 Nicosia; Tel.: +35722601231; email: mmatsi@mof.gov.cy

[7] Ministry of Finance (GDP, Real GDP Growth Rate); Eurostat (Per capita GDP in PPS); CyStat (Rate of Inflation HICP, Unemployment Rate)

period, per capita income in Cyprus converged rapidly with the EU-27, with GDP in euro per capita terms reaching €21.196 in 2004, or 100 per cent of the EU average in purchasing power parity terms.

The average annual growth in the five years (2008–2012) was 0.1 per cent, while inflation stood at 2.7 per cent and unemployment (as a percentage of the economically active population) at 7 per cent over that period. During that period the international economic crisis affected Cyprus indirectly mainly through lower external demand in tourism, whilst investment was also affected by lower external demand for housing by foreigners.

However, the crisis highlighted large existing imbalances in the economy stemming from the banking sector's large exposure in the Greek economy, domestic overexpansion in the property market and its overall size relative to the economy. At the same time persistent "twin deficits" in the fiscal and current account elevated the economy's vulnerability. Following the loss of market access in May 2011, the government of Cyprus requested financial assistance from its Eurozone partners and the IMF in June 2012. After a period of negotiations, a decision was taken by the Eurogroup and the Executive Board of the IMF in March and April 2013 for a 3-year Macroeconomic Adjustment Programme (the "MAP") to March 2016 of €10 billion financing via the European Stability Mechanism and the IMF.

The MAP agreed with Programme Partners addressed short- and medium-term challenges in the financial, fiscal and structural areas. The programme aimed at bringing back macroeconomic stability through the restoration of market confidence in the financial system, continuing with the ongoing fiscal consolidation process and implementing structural reforms to support competitiveness and sustainable and balanced growth, allowing for the unwinding of macroeconomic imbalances. The MAP was ambitious and addressed fundamental challenges of the Cyprus economy by promoting major reforms in the banking and fiscal areas as well in structural matters. The key programme objectives were:

- to restore the soundness of the Cypriot banking sector and rebuild depositors' and market confidence by thoroughly restructuring and downsizing financial institutions and strengthening supervision;
- to continue the on-going process of fiscal consolidation in order to correct the excessive general government deficit by 2016, in particular through measures to reduce current primary expenditure, and maintain fiscal consolidation in the medium-term, in particular through measures to increase the efficiency of public spending within a medium-term budgetary framework, enhance revenue collection and improve the functioning of the public sector; and
- to implement structural reforms to support competitiveness and sustainable and balanced growth, allowing for the unwinding of macroeconomic imbalances, in particular by reforming the wage indexation system and removing obstacles to the smooth functioning of services markets.

Cyprus authorities successfully completed the three-year macro-economic adjustment program leading to an overall transformation of the production sectors of the economy.

The Cyprus economy, following the recession in 2014 had presented a positive growth path of five consecutive years, with an average annual real growth of 5.6% during the period 2015-2019. In 2020 due to the outbreak of the COVID-19 crisis the economy went into recession contracting at a rate of -3.2%. In 2021-2022, the economy rebounded significantly with a growth rate of 11.4% and 7.4% equivalently. In 2023 though, following the sanctions on Russia, the economy presented a slowdown with a growth rate of 2.6%. Robust economic activity levels are anticipated to be maintained over the medium-term.

Inflation in 2023 was reduced to 3.9% after increasing by 8.1% in 2022. Inflation is mainly driven by developments in international oil prices, with a significant impact on domestic prices of energy products. In the medium-term it will hover around 2%.

In the labour market, unemployment has declined from its peak of 16.1% of the labour force in 2014 to 7.1% in 2019 following good economic performance. In 2020 it was increased only to 7.6% and this was due to the timely and targeted measures taken by the Government to mitigate the repercussions caused by the pandemic. In 2021-2022, following the strong economic recovery it reduced to 7.1% and 6.2% and in 2023 it was reduced further to 5.8%. In the short to medium-term, it is expected to have a downward trend due to improved economic activity.

In 2023, the budget balance recorded a surplus of 2.0% of GDP from a surplus of 2.6% of GDP in 2022. This positive outcome, was attributed to the significant economic performance. Consequently, in 2023 the general government gross debt to GDP ratio has marked a significant decrease reaching 73.6% of GDP from 81.0% in 2022.

In the longer term, the recent explorations for hydrocarbon reserves that have taken place in the Exclusive Economic Zone of Cyprus have revealed positive prospects for the development of the industry, which will have significant implications for the Cyprus economy.

3A.1.6.1 Trade patterns[8]

Cyprus' external trade continues to be a determining factor for the country's economic well-being, given the small size of the domestic market and the high degree of openness of the economy. The island depends heavily on international markets, not only for consumer demand and industrial inputs, but also for its energy supplies, which has historically resulted in persistent trade deficits. This structural feature has not changed in recent years, despite the gradual diversification of trade partners and the expansion of export activities.

In 2024 (January–December), the total value of imports reached €12,412.1 million, while exports amounted to €4,154.9 million, leading to a trade deficit of €8,257.2 million. The previous year, 2023, imports had been even higher at €13,179.8 million, with exports at €4,709.4 million, and a slightly larger deficit of €8,470.4 million. By comparison, 2022 registered €11,290.0 million in imports and €4,189.0 million in exports, resulting in a deficit of €7,101.0 million. These figures underline the continuing imbalance between imports and exports, which reflects structural characteristics of the Cypriot economy rather than short-term fluctuations. It should be noted that, as specified by CYSTAT, the totals also incorporate transfers of economic ownership of vessels and aircraft, which have a visible impact on the overall trade values.

The European Union remained by far the main source of supply in 2024, accounting for €7,221.5 million, or around 58% of total imports. Within the Union, Greece was the most important partner (€2,926.4 million), followed by Italy (€957.3 million), Germany (€707.4 million) and the Netherlands (€526.4 million). This distribution highlights the central role of intra-EU trade and the continued reliance of Cyprus on neighbouring European markets for a wide range of goods.

On the export side, dispatches to the EU reached €1,046.8 million in 2024, corresponding to about 25% of total exports. The largest EU destination was Greece (€323.0 million), with other European partners such as Germany, Italy and the Netherlands also absorbing smaller but significant shares. Exports outside the Union remain particularly important for Cyprus. In 2024, Libya was the top partner with €786.7 million, followed by Lebanon with €316.4 million, while the United Kingdom absorbed €204.5 million. This geographic pattern reflects the island's strong historical and commercial ties to the wider Eastern Mediterranean and the Middle East, as well as to traditional markets in Europe.

A closer look at the structure of imports destined for home use in 2024 shows that consumer goods dominated with €3,570.7 million (33.8%), followed by intermediate inputs at €2,807.0 million (26.6%), transport equipment and parts at €2,180.7 million (20.7%), fuels and lubricants at €1,035.4 million (9.8%), and capital goods at €769.7 million (7.3%). This composition illustrates the heavy weight of consumption needs and industrial inputs in shaping Cyprus' import profile, as well as the ongoing reliance on imported fuels despite progress in renewable energy deployment.

Overall, the most recent figures confirm both the opportunities and vulnerabilities of the Cypriot economy. On the one hand, Cyprus has managed to maintain and even expand its export base, strengthening links with key partners in both the EU and the wider region. On the other hand, the trade deficit remains high and structural, reflecting the island's dependence on imported goods and energy. This underlines the importance of policies that support export diversification, sustainable energy production, and higher value-added domestic output, as part of a long-term strategy to improve the resilience of the Cypriot economy.

[8] Trade Policy and Bilateral Relations, Trade Service, Ministry of Energy, Commerce, Industry and Tourism, 6 Andrea Araouzou Street, Nicosia; Tel.: +357 22 867123; Fax: +357 22 375120; email: ts@mcit.gov.cy

3A.1.7 Energy[9]

The energy sector in Cyprus[10]

Cyprus is the southernmost region of the European Union at the crossroads of three continents, with a dominant position in the Mediterranean and South East. In general Cyprus presents the energy problems common to most islands:

(a) Isolated energy system.
(b) High rates of economic and social development involving high rates of growth in energy demand.
(c) High cost of energy supply.
(d) High dependence on petroleum products - small supply security.
(e) Seasonal variations in energy demand.
(f) Maximum operation of the system of production and distribution of electricity in peak load demand.
(g) Strict limitations of protection and promotion of the island environment that act as a disincentive to develop initiatives in energy investments.

Since its independence in 1960, Cyprus has relied on oil for all its energy related needs: electricity generation, transport, and heating and cooling. In the absence of any domestic oil production, there has been high vulnerability to fluctuating oil prices. After robust growth rates in the 1980s (average annual growth was 6.1%), economic performance in the 1990s was mixed: real GDP growth was 9.7% in 1992, 1.7% in 1993, 6.0% in 1994, 6.0% in 1995, 1.9% in 1996 and 2.3% in 1997. This pattern underlined the economy's vulnerability to swings in tourist arrivals (i.e., to economic and political conditions in Cyprus, Western Europe, and the Middle East) and the need to diversify the economy. Declining competitiveness in tourism and especially in manufacturing acted as a drag on growth prior to actualization of structural changes. This greatly affected the energy sector.

There was widespread use of solar water heaters for several decades throughout the island, with additional renewable energy technologies for electricity generation implemented in recent years. However, on the whole, the traditional system of electricity generation has dominated for over the past 40 years and has been based on monopolised ownership of a few, large, centralised and inflexible generation plants. Even though it has served well historically, recent years have increasingly exposed its vulnerability, be it from the risk of consequences of generation incidents, be it from the emergence of rather high swing load during the day and year due to the lack of base consumption and the high tertiary activity during the day in summer months, or be it simply to volatility to global oil price fluctuations.

A key challenge for Cyprus is therefore its continued high dependency on fossil fuels for energy. The primary energy consumption in 2022 was 2.48 million tonnes of oil equivalent (Mtoe). In 2022 Cyprus held the largest shares of oil and petroleum products in gross available energy (86.6%) in not only the EU-27, but also in the EU Region[11]. Final consumption in 2022 amounted to approximately 87 PJ, with 90.9% of the consumption coming from liquid fuels, 1.57% from solid fuels, 2.31% other fossil fuels and 5.2% from biomass. In comparison with 1990, total fuel consumption in 2022 (including biomass) increased by 66%[12]. All the oil consumed is from imports. In the case of solid fuels, overall consumption increased by 85% between 1990 and 2004, due to the thriving of the construction industry. From 2004 until 2008 the consumption of solid fuel was stable, while after 2008, it decreases substantially to reach 1990s levels, as renewables and alternative fuels are consumed from cement industry.

Gross inland consumption in 2022 is also significantly higher as compared to 1990, increasing from 1618 ktoe to 2571, with an 6.7% increase from 2021 to 2022[13]. Although this consumption is relatively low compared to other

[9] Ministry of Energy, Commerce, Industry and Tourism; 1421 Nicosia; Tel.+35722409303; email: energyservice@meci.gov.cy
[10] Strategic Energy Hub, 2021, Energy: Oil and Gas, available at http://www.cyprusprofile.com/en/sectors/energy-and-environment (accessed 20/12/2021)
[11] "Figure 6: Gross available energy by fuel, 2022." https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_statistics_-_an_overview#Gross_available_energy.
[12] "Cyprus 2024 National Inventory Report (NIR)." Department of Environment, Ministry of Agriculture, Rural Development and Environment, UNFCCC 20 Sep 2024.
[13] Cyprus Energy Balance, 2023, Eurostat.

EU-countries, Cyprus had the fifth highest greenhouse gas emissions per capita in 2022[14]. Renewables and other measures to decrease fossil fuel reliance and the resultant high per capita emissions are thus of prominent interest for Cyprus.

Since 2015, electricity from renewable sources is no more promoted through feed-in-tariff schemes. Since 2013 is in operation a net metering, net-billing and self-consumption scheme and since 2022 a virtual net-metering scheme. Moreover, in the period 2018-2019 two schemes operated regarding the installation or RES units mainly PV parks that will eventually participate in the competitive electricity market.

Access of electricity from renewable energy sources to the grid is granted according to the principle of non-discrimination. Grid development is a matter of central planning (Transmission Grid Development Plan 2021-2030 by the Cyprus TSO). In addition, renewable heating and cooling (RES H&C) is promoted by support schemes offering subsidies to households for the installation of solar thermal systems.

However, the country's national grid system has certain intrinsic and technical limitations affecting RES penetration, and reliability of the energy system. The lack of electricity interconnections to the trans-European electricity networks, limits the amount of intermittent renewable energy that can be connected to the electricity system, and the lack of natural gas interconnections does not allow the supply of Cyprus with electricity produced from natural gas, a fuel that significantly contributes to the reduction of greenhouse gas emissions. In addition, there is a lack of centralised storage capability.

To tackle these problems the country is exploring ways to introduce smart grids in the national network and is on the look-out for projects that could facilitate energy storage, and ventures that have production on a 24-hour basis. Also, the EuroAsia Interconnector could bring more solutions in its wake.

In 2020 the Renewable Energy Sources (RES) share in gross final consumption of energy in Cyprus was 16.88%[15], exceeding the national mandatory target of 13% RES in 2020, as set in the Directive 2009/28/EC[16]. RES rose from 2020, accounting for 19.43% share in gross final consumption of energy in 2022. This share comes from the use of solar water heaters, the installation of PV systems, wind parks, biomass/ biogas units and biofuels for transport sector, in combination with the use of heat pumps and biomass use for heating. In fact, the island is one of the highest users per capita in the world of solar water heaters in households, with over 90% of households equipped with solar water heaters and over 50% of hotels using large systems of this kind. With almost year-round sunshine, and other renewable technologies in place, Cyprus certainly has plenty of energy to harness, but competitive energy storing capabilities are crucial to fully tap into its solar potential and facilitate better RES penetration.

There continues to be much ground to cover in terms of renewable energy production, but international interest in developing the sector in Cyprus has been on the rise. In this respect, the production of renewable energy is expected to experience considerable growth in coming years, and significant investment is required in order for Cyprus to achieve its targets – opening the field for companies with expertise in renewables.

The introduction of natural gas was supposed to mark a major turning point in Cyprus' energy sector, helping to curb emissions by shifting consumption away from heavy fuel oil and diesel. The engineering, construction, operation, and maintenance contract for the LNG import terminal at Vasilikos was awarded in 2019, but the project has since suffered a number of serious delays. As of mid-2025, critical design and material defects, especially in the jetty works, have raised safety concerns.

[14] "Net greenhouse gas emissions [sdg_13_10]: Total (excluding LULUCF and memo items, including international aviation), Tonnes per capita. " Compiling Agency: Eurostat, 05.09.2024. https://ec.europa.eu/eurostat/databrowser/product/page/sdg_13_10. Source of data: European Environment Agency (EEA) under UNFCCC reporting.
[15] Cyprus Energy Balance, 2020.
[16] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance), OJ L 140, 5.6.2009, p. 16–62

Although earlier reports anticipated completion by the end of 2025, and even April 2026[17] in revised timetables, the official timeline remains uncertain. The natural gas infrastructure company (ETYFA) has appointed a new consultant who is currently reviewing all unfinished onshore infrastructure, the jetty, and the associated technical plans.

At the present moment, availability of natural gas via the Vasilikos terminal is not expected before 2026, and this date is still provisional pending the outcome of the safety reviews, contractor re-contracts, and the delivery of missing components for the floating storage and regasification unit (FSRU)..

Other projects aim to end Cyprus' energy isolation. Cyprus is promoting the project of common interest «EuroAsia Interconnector», an electricity interconnection which is aiming to start commissioning in in the first half of 2026, and the electricity interconnection between Cyprus, Egypt and Greece, following the trilateral MOU that has been signed in October 2021. In addition, the promotion of the project of common interest «EastMed Pipeline», an offshore/onshore natural gas pipeline connecting East Mediterranean resources to Greece via Cyprus and Crete is aiming to start commissioning in Q3 2027. These projects will effectively contribute to the internal energy market integration, security of energy supply by enhancing diversification of sources and routes and reduction of GHG emissions by allowing the countries in the region to use natural gas deposits and increase the RES electricity production, in the case of EuroAsia Interconnector.

There is also the possibility of Cyprus being able to exploit its own reserves. Exploratory activities have taken place over the years, with the most recent occurring in January 2025[18].

It follows, from the outline above, that energy use is the largest source of GHG emissions Cyprus. The emissions from the energy sector in Cyprus increased by 58.4% during the period 1990–2022. The greatest increase in emissions was between 1990 and 2008 (97%), when the emissions reached their peak (7853 Gg CO_2 eq.). All the emissions in 2022 are from fuel combustion. The contribution of the emissions from the energy sector to the total without LULUCF in 2020 was 71.3% compared to 74.0% in 1990. The following sections provide a high-level overview of the most relevant factors to the continued dominance of emissions from energy. Climate policy drivers have had some impact on changes in the national energy system to-date (for-example leading to improvements in energy efficiency or increases in the share of renewables), although to a large extent these have been driven by other factors. Historic trends in GHG emissions from energy-related activities are shown in later sections. However, the impacts of future climate policy in the energy sector are likely to be far more significant, particularly as a result of the new EU Climate and Energy package. These will lead to more sizeable shifts in energy use towards renewables as well as an overall impact on primary and final energy consumption due to improvements in energy efficiency; these effects should become more noticeable within these indicators in coming years.

3A.1.7.1 Energy Supply

Total primary energy consumption in Cyprus rose over the period from 1990 despite continued efforts to improve energy efficiency. Trends in the consumption of different energy types within the total have changed significantly since 1990, as shown in Figure 3-5.

Figure 3-6 compares primary energy consumption by fuel type in Cyprus between 1990 and 2022. Although fossil fuels continue to dominate primary consumption, renewables have the most marked increase with primary consumption increased approximately by 50 times from 1990 levels. The overall increase in total primary energy consumption has also acted to counteract some of the environmental benefits from fuel switching.

[17] https://in-cyprus.philenews.com/insider/cyprus-lng-terminal-vasilikos-delays-design-flaws-technip/?utm_campaign=philenews_block&utm_medium=phil_feed&utm_source=chatgpt.com

[18] https://www.reuters.com/business/energy/exxonmobil-launches-promising-exploration-well-off-cyprus-president-2025-01-24/

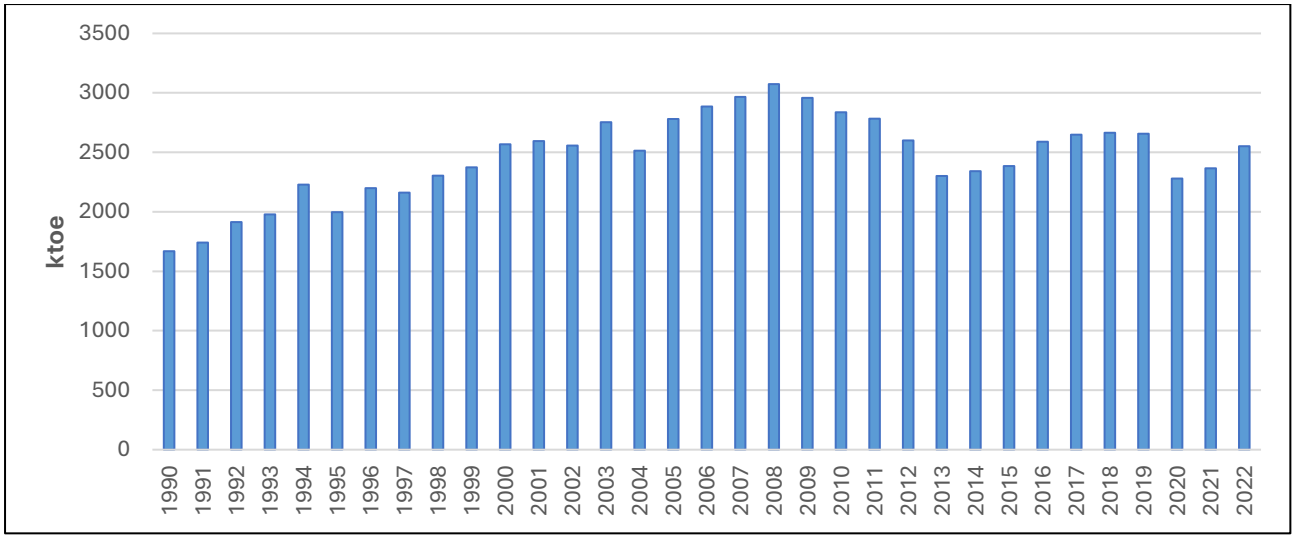


Figure 3-5. Primary consumption of fossil fuels in ktoe, 1990-2022[19]

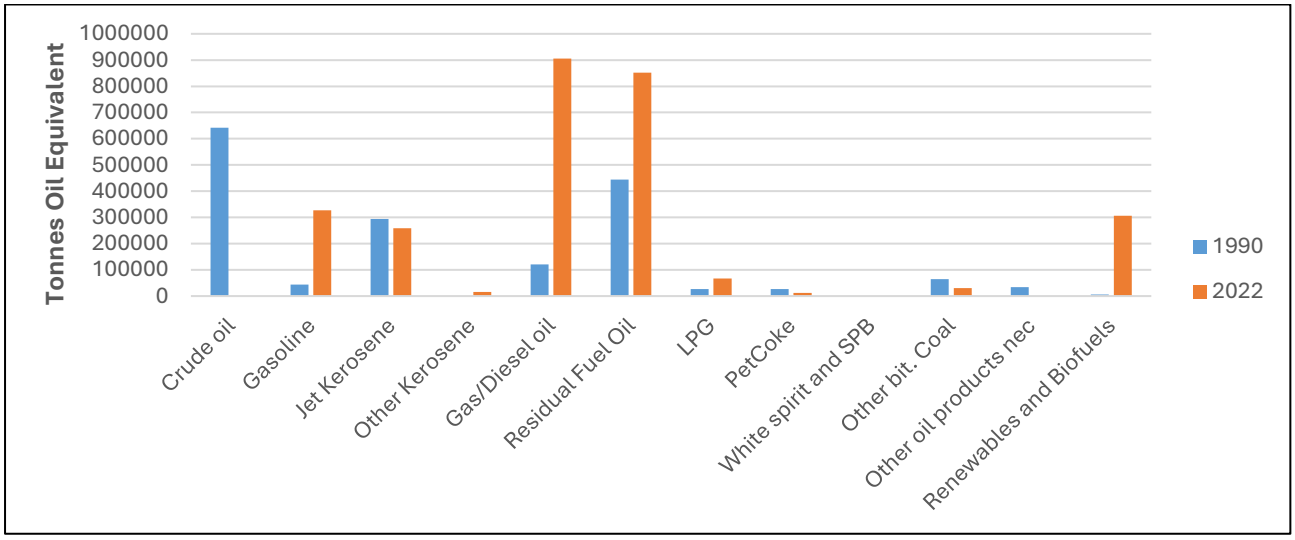


Figure 3-6. Primary energy consumption by fuel for Cyprus, 1990 and 2022[20]

The final energy needs of the economy of Cyprus for 2022 represent 72%[21] of the country's primary energy consumption. There are very significant energy losses linked to the transformation and distribution of useful energy (e.g. as electricity) to the end users. Energy losses broadly depend on the average efficiency of conventional thermal power stations and CHP plants and the penetration of non-thermal renewables.

Overall, the generation mix of electricity in Cyprus has become less carbon intensive since 2008, when the first combined cycle unit for the production of electricity entered in operation and the contribution of renewable sources started to be significant. RES accounted for 16.96% of electricity production in 2022, up from 14.84% in 2021. RES power production increased by 17.6% in 2022 compared to 2021; from 760 GWh in 2021 to 894 GWh in 2022. In 2022 the electricity from RES was approximately 67% from photovoltaic systems, 26% from wind parks and 7% from biomass/biogas units[22]. The share of primary energy met by renewables has increased steadily over time to 13.3%

[19] Cyprus Energy Balance, Eurostat. https://doi.org/10.2908/NRG_BAL_C

[20] Cyprus Energy Balance, Eurostat. https://doi.org/10.2908/NRG_BAL_C
[21] Cyprus Energy Balance, Eurostat. https://doi.org/10.2908/NRG_BAL_C
[22] "Share of energy from renewable sources (nrg_ind_share)". https://ec.europa.eu/eurostat/data/database?node_code=nrg_ind_share.

of total primary energy consumption in 2022. Figure 3-7 shows the contribution of renewables to primary energy consumption over time.

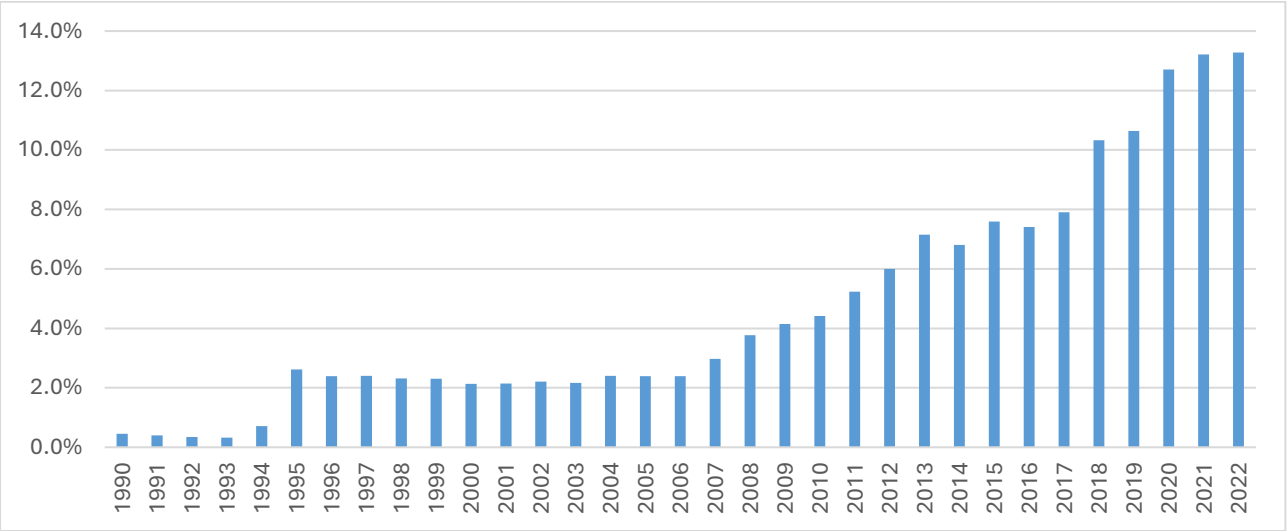


Figure 3-7. Share of renewable energy in total primary energy consumption in percent, 1990–2022[23]

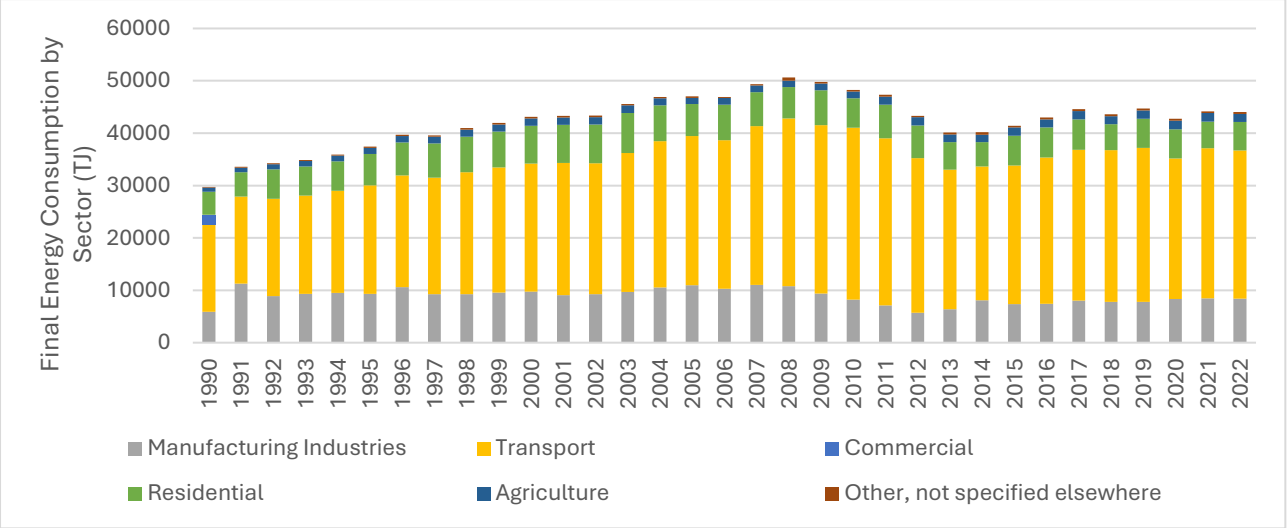


Figure 3-8. Final energy consumption by sector in ktoe, 1990–2022 (Including Biomass and Renewables)[24]

3A.1.7.2 Energy consumption in different sectors

Final energy consumption in Cyprus (including biomass and renewables) increased by about 89% between 1990 and 2022. The consumption of electricity produced from conventional fuels increased by 86% between 1990 and 2022. This is having a significant impact on GHG emissions. The Services sector has also increased its energy consumption markedly, by 444% since 1990, which correlates with an increasing share of GVA coming from this sector. Households are also one of the largest consumers of final energy in the EU. Space heating and cooling are the most significant components of household energy demand, and can vary substantially from year to year depending on climatic conditions. Final energy consumption in industry has fallen since 1990, largely as a result of a shift towards less energy-intensive manufacturing industries, as well as the continuing transition to a more

[23] Cyprus Energy Balance, Eurostat. https://doi.org/10.2908/NRG_BAL_C

[24] Cyprus Energy Balance, Eurostat. https://doi.org/10.2908/NRG_BAL_C

service-oriented economy. A breakdown of final energy consumption by non-energy sectors is shown in

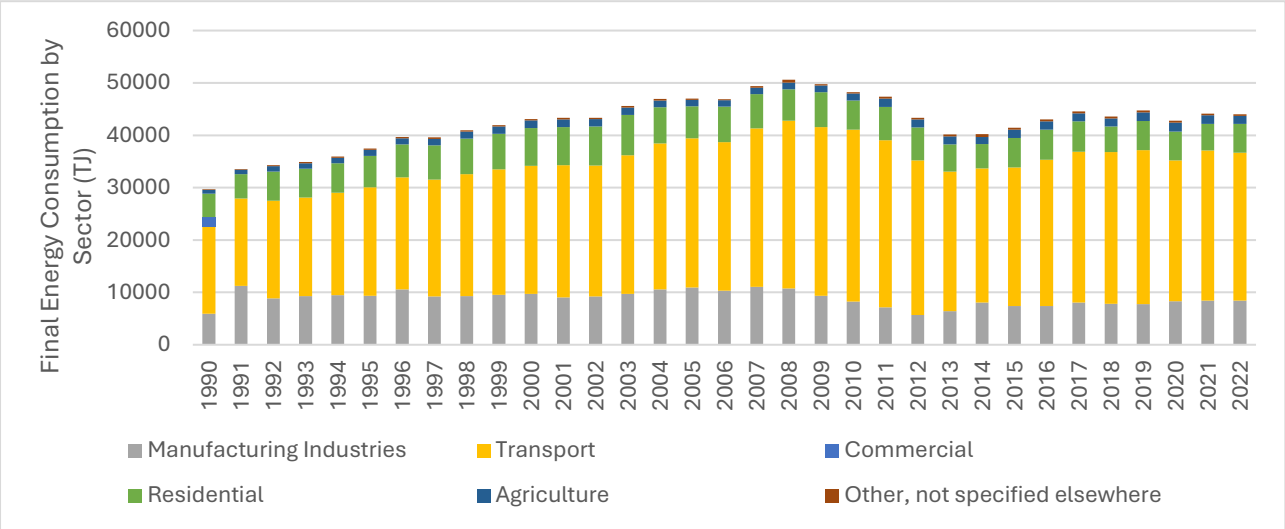


Figure 3-8.

3A.1.7.3 Liberalisation of energy markets

The Cyprus Energy Regulatory Authority (CERA) has worked towards the full opening of the electricity market and enabling the consumers in exercising their right to choose their own supplier. CERA has approved the Trade and Settlement Rules which are based on a 'net pool' model, i.e. a combination of bilateral agreements with centralized day-ahead, intra-day (at a later stage) and balancing markets. In addition, CERA has issued Regulatory Decisions with respect to the functional and accounting unbundling of the vertically integrated Electricity Authority of Cyprus. Although originally expected to be completed in 2023, the latest indication is that the market will be fully liberalised in 2025.

3A.1.7.4 Energy prices

The graph below, taken from the latest NECP, shows how the average end-user prices of electricity have varied from 1990-2018 for industry, commerce, households and agriculture in Cyprus. More recent data was not available at the time of reporting.

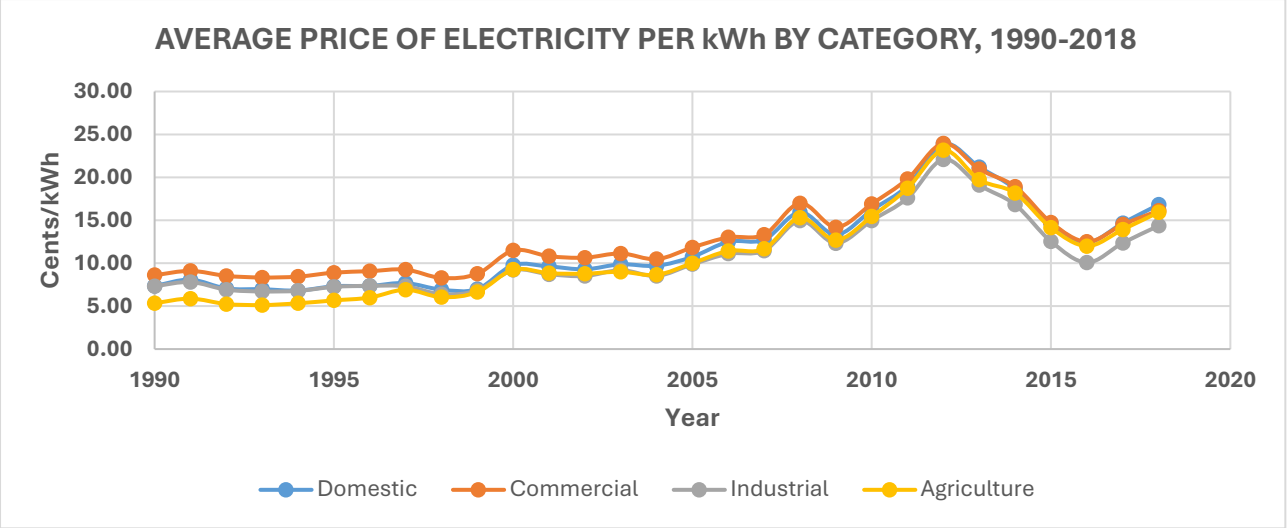


Figure 3-9 Change in average end-user energy prices in Cyprus compared to the gross disposable income for households, commerce, industry and agriculture, 1990-2018

3A.1.8 Building stock and urban structure

Energy consumption for space heating or cooling within buildings forms a significant component of the country's energy consumption. The level of energy consumption within buildings is primarily affected by: the thermal properties of the building (in terms of insulation, building type – e.g. flat/house); the efficiency of the heating or cooling system; and the stock/efficiency of the appliances used. In general, newer dwellings are likely to be more energy efficient than older buildings.

As noted in Annex III of the NECP (Long-term Building Renovation Strategy), Cyprus' building stock is relatively new, as most buildings were built between 1980 and 2008. However, the absence of any policy measures at the time of building these buildings has led to the majority of existing buildings being poorly energy efficient. This is reflected in the final energy consumption of the buildings sector, where it has increased dramatically since the late 90s, with a slight decline in 2013 as a consequence of the economic crisis. For a full overview of the building stock, please see Annex III of the NECP.

The building sector has one of the highest potentials for improved energy efficiency and measures to reduce the space heating/cooling demand in buildings represent a significant part of this potential. Many of these measures (such as improved insulation) are highly cost-effective, but a number of other barriers to their implementation exist. These are being addressed by a number of the policies related to end-use energy efficiency which can be found in Sections 3D.1.1.3 and 3D.1.1.5–3D.1.1.7

3A.1.8.1 Building Permissions

From the data for the period 1995-2022 (as shown in Figure 2.13), it is noticeable that the maximum number of building permissions issued was in 2006 (9.794) and the minimum in 2014 (4.933). A steep upward trend is recorded during the period 2000-2006, from then on the number of building permissions issued started to decrease, reaching the minimum number recorded in 2014. From 2015, the number of building permissions issued increased slightly.

In 2022, 7,604 building permissions were issued, representing a decrease of 6.9% from 2021 when 8,164 building permits were issued. Of the 7,604 permits issued in 2022, 5,210 (68.5%) were residential, 1,160 (15.2%) non-residential buildings, 515 (6.8%) Civil Engineering projects, 529 (6.9%) concerned the division of plots and 190 building permissions (2.5%) were issued for road construction projects.

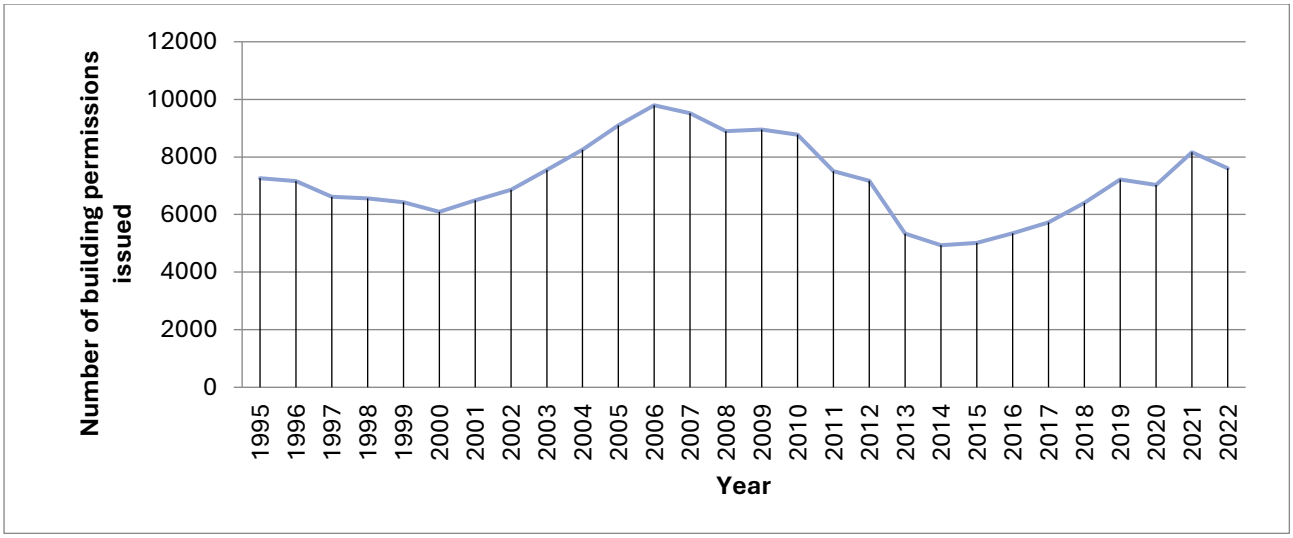


Figure 3-10. Building Permissions Authorised, 1995-2022 (Source: Construction and Housing Statistics 2024, Cyprus Statistical Service)

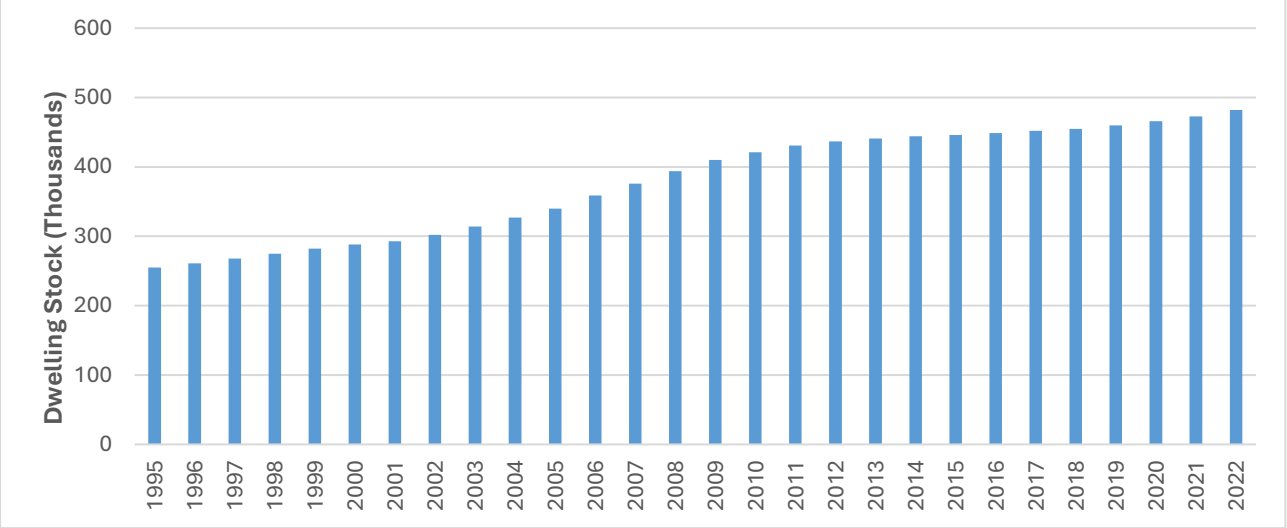


Figure 3-11. Total dwelling stock and occupied living quarters, 1995-2022 (Source: Construction and Housing Statistics 2022, Cyprus Statistical Service)

3A.1.8.2 Dwelling Stock

According to the Cyprus Statistical Service (Source: Construction and Housing Statistics 2022), the dwelling stock at the end of 2022 increased by 1.9% and reached 482,000 units from 473,000 units in 2021. Figure 3-11 presents the total dwelling stock during the period 1995-2022.

3A.1.9 Transport

3A.1.9.1 Transport

Both freight and passenger transport, have continued to grow strongly since 1990 with continued growth in GHG emissions. According to the available information, there is no clear relation between freight or passenger transport with GDP. The transport sector is now the largest consumer of energy in Cyprus after electricity production and the issue of growing greenhouse gas emissions from this sector needs to be addressed.

3A.1.9.2 Freight transport

According to CYStat, data for freight transport are available since 2002. The demand has decreased gradually until 2015, mainly to the changes in the economy of the country after 2008. For the period 2016-2021 the demand for freight transport has increased at a low rate. All the freight transport in Cyprus takes place via road.

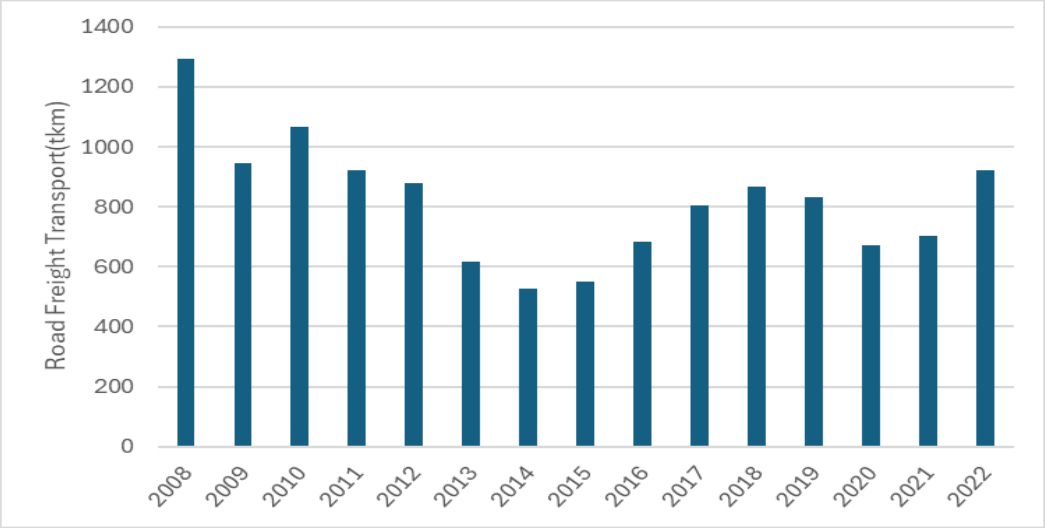


Figure 3-12. Growth in road freight transport 2008- 2022

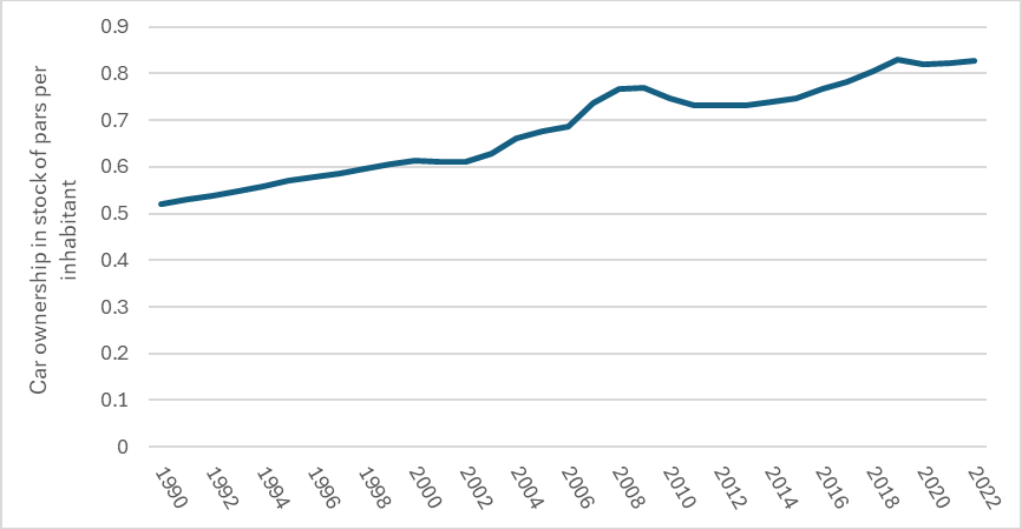


Figure 3-13. Level of car ownership in stock of cars per inhabitant, 1995 -2022

3A.1.9.3 Passenger transport

Since 1990 the demand for passenger transport in Cyprus has been increasing. It appears that the desired outcome, of a gradual decoupling in passenger transport from GDP, has not yet been observed. Given the continuing upward trend in demand, a reduction in absolute carbon emissions in this sector will need to come primarily via improved vehicle efficiency, modal shift to less energy intensive transport modes, and the shift to less carbon intensive transport fuels (e.g. sustainably produced biofuels or low carbon electricity).

3A.1.9.4 Prices of transport fuels[25]

Road-fuel prices in Cyprus rose markedly from the early 1990s to 2014 due to global oil cycles and higher domestic taxation. VAT, introduced in 1992, has applied at 19% since January 2014. Direct comparisons with 1990 prices are not like-for-like because fuel specifications changed materially over time: leaded grades were phased out and both petrol and diesel have been limited to 10 ppm sulphur since 2009.

After a nominal peak around 2014, pump prices fell during 2014–2016 with the decline in crude oil, then surged again in 2022 following the global energy shock before easing; current levels in 2025 remain below those peaks.

Excise policy has also evolved. During the 2022–2024 cost-of-living period, Cyprus temporarily reduced excise duties on motor fuels, including cuts of €0.0833 per litre on unleaded petrol and diesel between November 2023 and March 2024, following earlier reductions and extensions in 2022–2023. As of 2025, Cyprus remains among the lowest excise jurisdictions for unleaded petrol in the EU and broadly aligns with the EU minimum excise framework for road fuels.

For 2025 retail prices, official weekly bulletins indicate unleaded 95 around €1.35–€1.40 per litre and automotive diesel around €1.45–€1.47 per litre in early September 2025, subject to weekly changes in global oil and currency markets.

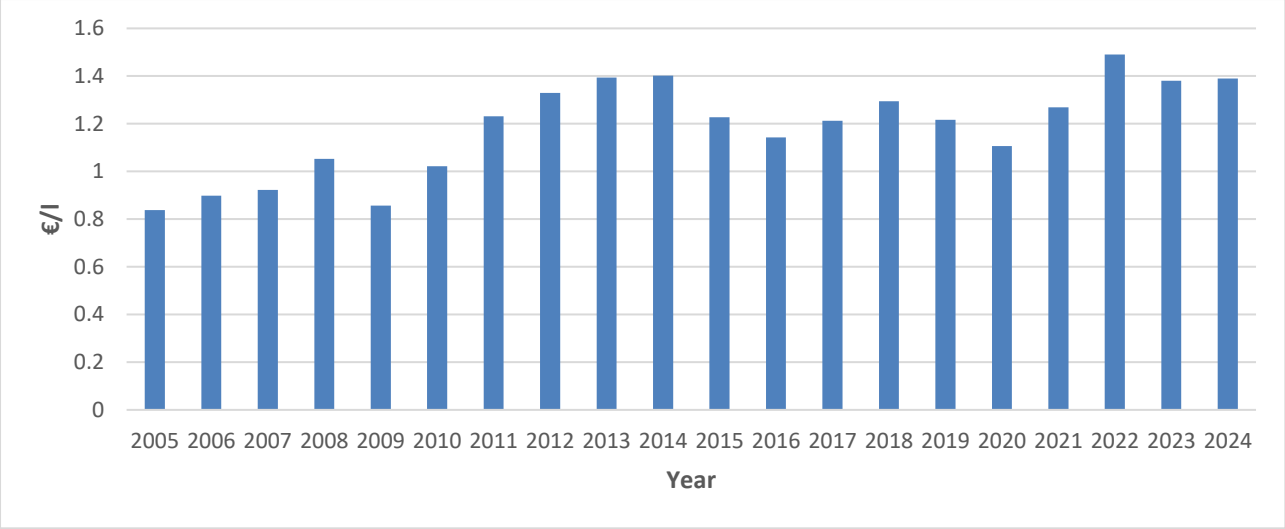


Figure 3-14. Average road transport fuel prices including taxes in €/litre, 2005-2024

3A.1.10 Industry

Cyprus, after its independence in 1960, demonstrated a successful economic performance in terms of full employment and economic stability, apart from some isolated events. The underdeveloped rural economy inherited from colonialism was transformed into a modern economy with dynamic services, light industry, a very good agricultural sector and advanced physical and social infrastructure. From being traditionally agricultural, Cyprus embraced industrial development in the 1960s and today specializes in the manufacture of medium and high-technology products and semi-customized small-batch products. Industry grew in a sheltered environment with tariffs and quotas which have been introduced to protect local production.

Major events, that have affected the growth and structure of the economy and specifically of the industrial sector were, the Turkish invasion in 1974, accession to the World Trade Organization (WTO), the Customs Union Agreement with the EU in 1988 and eventual membership to the EU in 2004.

[25] Energy Service, Ministry of Energy, Commerce, Industry and Tourism; 1421 Nicosia;
Tel.+357 22 409303; email: energyservice@mcit.gov.cy

The Protocol for the Customs Union and Accession to the EU provided for the elimination of all restrictions to trade and increased competition in the local market. This had a major impact on the industrial sector which had to face fierce competition both from EU markets and third countries.

1990-2002

In 2002, distribution of Value Added in Manufacturing by Industry, showed Food, beverages and tobacco, as the largest group contributing 38,8% to the manufacturing value added, registered a 1,0% increase in volume of production. This was mainly due to the increase of domestic demand. Following were the subsectors of: Basic Metals and Metal Products, Machinery and Electrical and Optical Equipment and Manufacture of Transport Equipment, Other Non – Metallic Mineral Products, Refined Petroleum Products, Chemicals and Chemical Products and Rubber and Plastic Products, Manufacturing n.e.c, Pulp Paper and Paper Products; Publishing and Printing, Wood and Wood Products, Textiles and Textile Products and Manufacture of Leather and Leather Products. Large increases were recorded in the exports of pharmaceutical products, plastic products, dairy products and perfumes and toilet preparations. Decreases were recorded in the exports of cigarettes, wearing apparel, footwear, electricity distribution and control apparatus, kitchen furniture and jewellery and related articles.

2004-2009

On May 1st 2004, Cyprus, together with nine other countries, formally takes its place alongside the 15 member-states of the European Union. During 2004, the Cyprus economy exhibited an accelerated rate of growth, in contrast to the conditions of subdued growth observed during the previous two years. The gradual improvement of the overall confidence climate, following the accession of Cyprus to the EU, and the improved external environment of Cyprus, which positively affected the external demand for goods and services, constituted the main contributing factors towards this development. The significant increase of the oil price in international markets constituted a restraining factor towards further growth of the Cyprus economy. In summary, the Cyprus economy exhibited conditions of acceleration of economic activity in 2004, mainly due to the strengthening of domestic demand and in particular private consumption demand and investment demand in machinery and transport equipment as well as construction works.

2009-2022

In 2009, the Cypriot economy began to shrink as the economic crisis in Europe and elsewhere began to bite. The industrial sector has been hit the hardest. Local investment was negatively affected by the financial crisis in 2013 where industry found it difficult to secure funding from the local banks.

Cyprus has no heavy industry, and the expansion of its light industry is limited by the lack of raw materials and the size of the domestic market. Cyprus is radically restructuring its manufacturing base and actively seeking to attract new high-tech and knowledge-based industries. Main growth industries have been in ICT sector manufacturing parts, instruments and electronics, as well as consumer products such as food and cosmetics. Cyprus' key industrial products are pharmaceuticals, food, beverages, chemicals, mineral products, machinery and equipment. Of these, only pharmaceuticals and non-metallic minerals have experienced growth in recent years. Today, manufacturing contributes approximately 5% of GDP and accounts for 9% of people in employment.

The majority of manufacturers are small and medium-sized enterprises (SMEs), which employ less than 10 workers. This makes the sector flexible and open to innovation. The government is seeking to improve SMEs' access to finance and overseas markets, and to maximize the commercial potential of local research and development in order to open up untapped areas of productivity.

Within the sphere of competencies and duties of the Ministry of Energy, Commerce and Industry (MECI) in regards to enterprises and manufacturing industry many actions are being implemented, which align with the European Union (EU), United Nations (UN) and United Nations Industrial Development Organization (UNIDO) policies, strategies and goals such as the New Industrial Policy of Cyprus 2019 and grant schemes and financial incentives/aid in different industrial areas.

MECI in collaboration with both the public and private sectors, completed the preparation of the New Industrial Policy for 2019-2030 as well as the first Action Plan covering the period 2019-2022. The New Industrial Policy aims to re-launch of the Cypriot economy through the promotion and strengthening of industrial production and investment, as part of the strategic framework for a sustainable economic growth model, based on the regeneration of existing industrial sectors and the development of new sectors and technologies through the promotion of research, technological development and innovation. In line with the European Commission's Renewed Industrial Policy Strategy, the implementation of the New Industrial Policy is structured around six strategic pillars:

- Creating Infrastructure for Sustainable Development and Production.
- Improving the Conditions of the Industrial/Business Environment.
- Digitization of Industry.
- Developing New Skills and Strengthening/Upgrading Existing Skills.
- Strengthening Access to Financing.
- Strengthening Access to Markets, Exports and Investments.

The industrial processes are the second largest source of GHG emissions. The emissions from the industrial processes increased by 80.6% during the period 1990-2022. After the dip in emissions from 2008 to 2009, due to the economic crisis described above, the sector eventually rebounded and emissions have steadily increased. The contribution of the emissions from the industrial processes to the total without LULUCF in 2022 was 14.8% compared to 13.1% in 1990. Emissions from mineral consumption accounted for 68.5%, while consumption of Halocarbons contributed to 29.4% of the industrial processes' emissions in 2022.

3A.1.11 Waste

Municipal and Solid Waste Management

The national municipal waste Management Plant of 2015-2021 (MWMP) contained quantitative and qualitative targets and enumerates specific measures and actions to be taken in order for the EU targets to be reached. An updated version of the MWMP starting in 2022 until 2028 includes further measures, actions and procedures to enable Cyprus' transition to a zero-waste economy. One of the quantitative targets is that no more than 95,000 tonnes of biodegradable waste to be disposed in landfills (represents the 35% target of the 1999/31/EC directive). Also, the Legal Measures will be focused on the:

- Development of local waste prevention and management schemes
- Mandatory obligation for establishing separate collection systems by local authorities,
- Establishment of extended producer responsibility (EPR) in streams other than packaging waste,
- Establishment of a landfill tax/levy,
- Banning the disposal of certain waste streams from entering into landfills (e.g. green waste, high calorific value waste, etc)

The adaptations of the strategy that are envisaged:

a) One Sanitary Landfill and one Residual Sanitary Landfill (supplementing MBT unit at Koshi) were constructed and operated (both meet the requirements of directive 99/31/EC). The MBT unit was constructed and operated from 01/04/2010 servicing Larnaca - Ammochostos districts. The Plant was designed in a way that a high separation of recycled and biodegradable material is achieved. Another I.W.M.P (Integrated Waste Management Plant) servicing Limassol district is expected to be operated by the year 2018.
b) The construction of the Green Point Network (22 collection points for the depositing of various waste streams out of households – bulky waste, green, textile, furniture, wood, etc.) is competed. The 4 Green Points, servicing Paphos district are operated.
c) Separate collection at source was promoted at households, from the existing collective system for the packing waste servicing also and all types of paper, created under the packaging directive while the competent authority promotes the separate collection from other household streams such as other organic waste eg. food and green waste.
d) The construction works for the rehabilitation/restoration of the old non approved landfills, which are closed at Paphos and Larnaca - Ammochostos districts, were completed. The preparation of studies/documents

regarding the rehabilitation/restoration of the 20 non sanitary landfills of Nicosia district and the 44 sanitary landfills of Limassol district, will be completed within 2018 and after that the construction works will begin.

A comprehensive study was undertaken in 2005 for the elaboration of a Strategic Plan, an Environmental study and a Feasibility study for the restoration and management of landfills. The purpose of the study was to record all landfills, assess their status and level of risk, create a restoration priority list based on pollution risk assessments, undertake the appropriate environmental studies as well as feasibility studies for the restoration of the prioritized landfills. These studies were a necessary step for the restoration of all landfills recorded.

Two (2) landfills are still active in Cyprus but arrangements are made in order to be closed and restored. According to recent data, these two landfills are feeded with approximately 155.000 ton and 200.000 ton of municipality waste each year respectively (reference year 2012).

Sixty-two (62) non sanitary landfills are planned to be restored appropriately within the following years. According to the preliminary study contacted in 2005, these landfills contain approximately 597.269 m3 of solid waste excluding 2 major landfills that have not been closed yet.

Fifty-three (53) landfills have been restored the last five years and are being monitored. During their restoration a total of 4.902.000 m3 of solid waste were reallocated and properly buried using composite liners and leakage collection systems.

The EU landfill directive is fully harmonized in the national legislation but not fully implemented. Cyprus didn't manage to seize of the operation of non-compliant landfills by 2009. Moreover, Cyprus has rehabilitated only 46% of its closed landfills.

Waste captures 7.5% of the total GHG emissions following an increasing trend since 1990. The most important activity of the sector leading to the increasing number of emissions is solid waste disposal. The rise in the GHG emissions is highly associated with the increasing population. Thus, even if the management of waste has improved significantly in the last decades the GHG emissions continue to increase.

3A.1.12 Agriculture[26]

Until 1974, the agricultural sector was one of the most important sectors of Cyprus' economy. Over the period 1960-1974 the agricultural sector had the largest contribution to Gross Domestic Product, ranging from 16% to 21%, and provided employment to more than 30% of the economically active population. Agricultural production almost doubled in the period 1960-1974 and the added value of the agricultural sector showed an average annual growth rate of about 8%.

Following the Turkish invasion (1974), the agricultural sector suffered severely since the Turkish occupying forces occupied an area that accounted for 46% of total agricultural production and 47% of livestock production. At the same time, the population that was concentrated in the less productive areas of Cyprus was displaced from the occupied areas.

Cyprus' economy, mainly from 2000 until today, is characterised by the growth of the tertiary sector (services) and the shrinking of the other two sectors of the economy (primary and secondary). Indicatively, agriculture accounts for 1.8% of GDP and employs 2.8% of the labor force.

Agricultural income, although it showed increasing trends in the period 2000-2002, with the accession of Cyprus to the EU in 2004 and the implementation of the Common Agricultural Policy (CFP) is decreasing, with the decrease being particularly pronounced in recent years, especially in small which highlights the need to redesign Cyprus' agriculture with emphasis on improving its competitiveness and exploiting its comparative advantages (high quality, early products, etc.).

The competitiveness of the agricultural sector and productivity depend largely on their structural characteristics. The total utilized agricultural land decreased by 24% between 2003 and 2010. In addition, 81% had a size of less

[26] Mr. George Theophanous, Agriculture Officer, Department of Agriculture, Ministry of Agriculture, Rural Development and Environment; Loukis Akritas Avenue, 1412 Nicosia; Tel: +357 22464028; Fax: +357 22305494; email: gtheophanous@da.moa.gov.cy

than 3 hectares and cultivated 22% of the agricultural land used, while the remaining 19% had a size of more than 3 hectares and cultivated 78% of the agricultural land used. This structural development is mainly the result of a change in the operating environment of the agricultural sector after EU accession, particularly the reduction of protectionism, the abolition of price support, the decoupling of production aid, the simultaneous reduction of prices and subsidies, rising input costs, opening markets and the functioning of the agricultural sector in a highly competitive environment. However, the impact of climate change, and more specifically drought, should not be overlooked.

The agriculture sector has shrunk considerably over the past decades, as well as its contribution to the GDP, combined with the fisheries and forestry sectors. Nevertheless, the importance of agriculture socially and environmentally is great, as can be seen from the amounts allocated annually by the state to support this sector. Indicatively, between 2014 and 2020, the Agricultural Payments Agency made payments of € 243,000,000 (53%from Community funds) whereas all payments made by the Agency to farmers since 2004 amounted over a€ 1 billion.

In addition to the above, the agricultural sector in Cyprus is already experiencing the impact of climate change, which has caused, among other things, the degradation of agricultural land, the reduction of agricultural production, the increase in damage caused by extreme weather events (prolonged droughts, the lack and degradation of water resources).

Agriculture captures 6% of the total GHG emissions in 2022. Even though the emissions from agriculture increased by 17.3% during the period 1990-2022, the overall contribution of the emissions from agriculture to the total without LULUCF decreased in 2022 (6%) compared to 1990 (8.2%). Enteric fermentation is the most important activity of the sector leading to the increasing number of emissions. Enteric fermentation is the only activity of the sector following an increasing trend since 1990, while other activities such as manure management, agricultural soils and field burning of agriculture residues show decreasing trends.

3A.1.13 LULUCF

Wild vegetation in Cyprus is classified in two major categories: a) forest and b) Other Wooded Land (OWL, which includes maquis and garrigue), which are either of state or private ownership. These two categories account for 41.7 % (386,190 hectares) of the total land area. The change of forest cover is almost invariable the last 16 years. Analytical data are shown on Table 3-2. (Data taken from FRA 2020- Cyprus Country Report).

Table 3-2. Wild vegetation in Cyprus

	1999		2005		2010		2012		2015		2020	
Category of Vegetation	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%
Forests	171610	18.5	172851	18.5	172841	18.7	172778	18.7	172700	18.7	172530	18.7
Other Wooded Land (OWL)	213860	23.1	213865	23.1	213285	23.1	213389	23.1	213490	23.1	213570	23.1
Total	385470	41.7	386716	41.8	386126	41.7	386167	41.7	386190	41.7	386100	41.8

When considering the LULUCF sector as aligns with IPCC reporting, six categories of land are considered. Figure 3-15 shows a breakdown of Cyprus land cover according to these main categories for 2022.

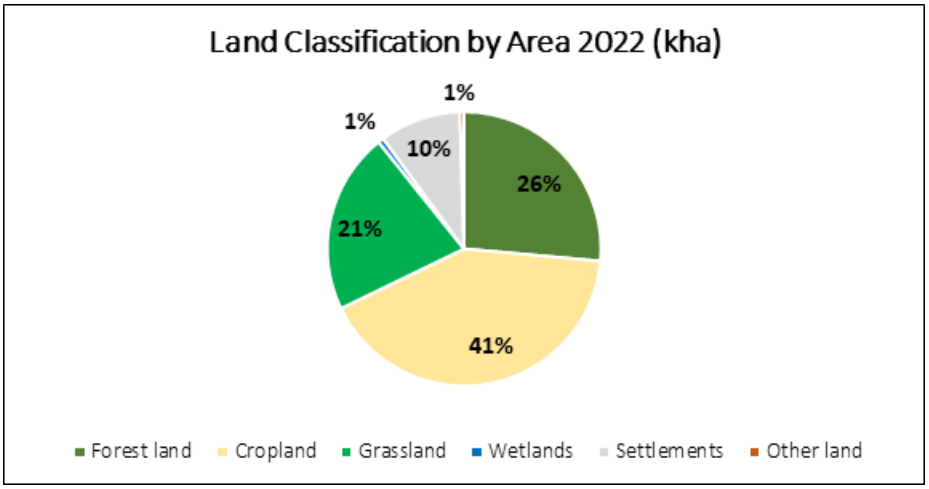


Figure 3-15. Area by LULUCF land use category for 2022.

In 2022, cropland accounted for 41% of total land cover, followed by forest land and grassland at 26% and 21%, respectively. Figure 3-16 shows removals by land use category in 2022. Settlements, wet lands, and other lands are not shown as they have small net emissions. Figure 3-17 shows the emission/removal trends in LULUCF by land category type from 1990 onward. CO_2 is by far the dominant greenhouse gas related to emissions and removals in LULUCF.

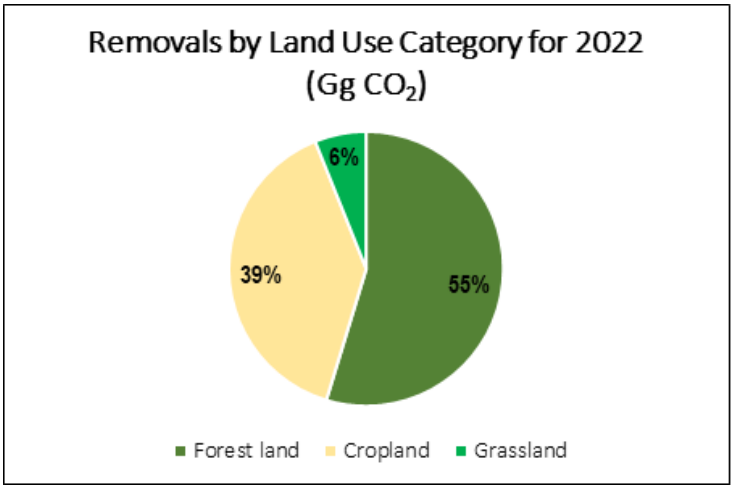


Figure 3-16. Diagram of removals (Gg CO2) equivalent by land use category for 2022.

Excepting years with large wildfires, as shown in

Figure **3-18** shows there is a net removal of GHG emissions from LULUCF, with this sink having increased from 1990 and its continued planned increase an important component of achieving national targets for GHG reductions in 2030 and beyond. Cyprus has a target of 32% reduction in GHG emissions by 2030 relative to 2005 under the updated Effort Sharing Regulation, but is only expected to achieve 26% from the ESR sectors in the WAM scenario. The growth of the LULUCF sink is key. If from 2020 to 2030 the sink continues average growth at a slightly higher rate (increase of sink by average of -4.97 GgCO2/year) than from 1990 to 2020 (increase of sink by average of -4.85 GgCO2/year), the resultant projected removal of 352 GgCO2 eq in 2030 would close the gap and permit the achievement of the 32% reduction.

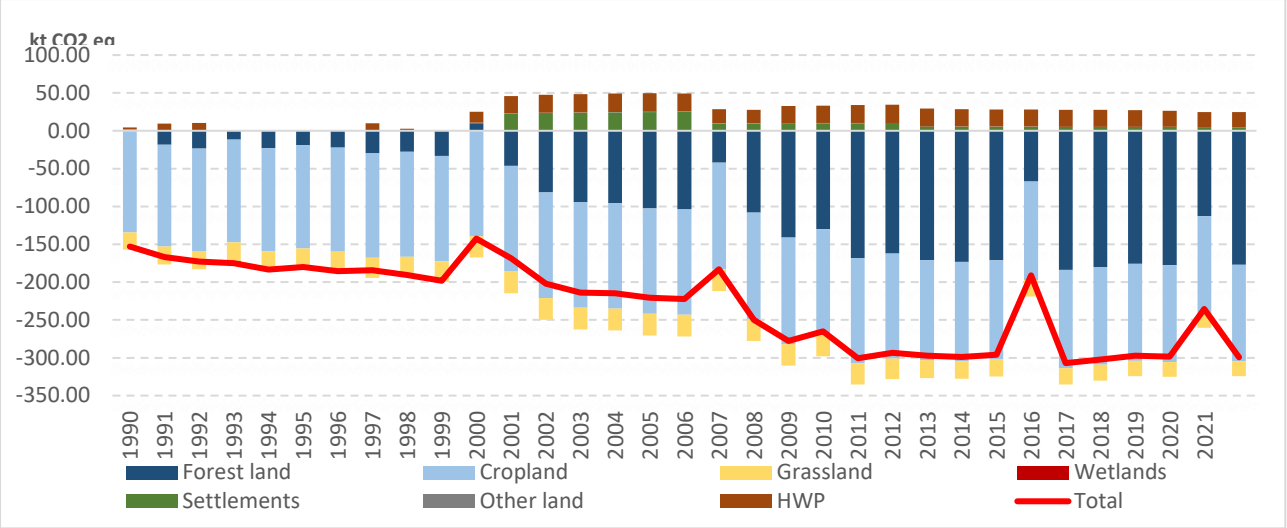


Figure 3-17. Emissions/removals trend in the LULUCF sector in the period 1990–2022

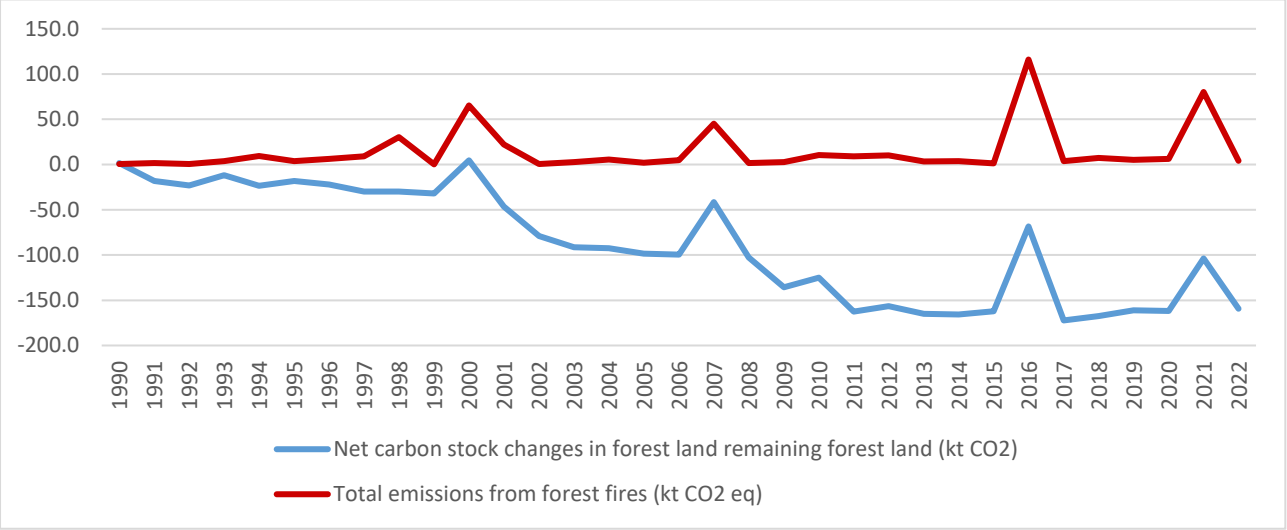


Figure 3-18. Forest land remaining forest land: Net carbon stock changes (blue line) and emissions from forest fires (red line) during the period 1990 – 2022.

3A.2 Institutional Arrangements

3A.2.1 Institutional arrangements for tracking progress in the European Union

The EU's Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action ('Governance Regulation')[27] establishes a governance mechanism and specific arrangements to track the progress of the Union and its Member States towards the implementation and achievement of the EU's climate and energy targets and commitments under the UNFCCC and the Paris Agreement. These arrangements include the monitoring of GHG emissions and removals, the reporting of policies and measures, projections of GHG emissions and removals and progress on adaptation to climate change.

Under the Governance Regulation, the EU has established a Union Inventory System to ensure the timeliness, transparency, accuracy, consistency, comparability and completeness of the data reported by the EU and its Member States. This inventory system includes a quality assurance and quality control programme, procedures for

[27] Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action, http://data.europa.eu/eli/reg/2018/1999/oj.

setting emission estimates, and comprehensive reviews of national inventory data to enable the assessment of compliance towards climate goals.

Each EU Member State compiles its GHG inventory in accordance with the requirements of the Paris Agreement[28] and the relevant Intergovernmental Panel on Climate Change (IPCC) guidelines[29]. Inventory data on GHG emissions and removals, including information on methods, are submitted electronically using a reporting system managed by the European Environment Agency (EEA). The submitted data are subject to quality control procedures and feed into the compilation of the GHG inventory of the EU. Net GHG emissions, calculated from emissions and removals reported in the GHG inventory of the EU, are the key information used for tracking progress towards the EU NDC target of a least -55% net emission reduction by 2030 compared to 1990.

Given the scope of the EU NDC related to international aviation and navigation, a specific share of international aviation and navigation emissions as reported in the GHG inventory data is calculated based on the Joint Research Centre's Integrated Database of the European Energy System (JRC-IDEES)[30]. Details on the methodology applied to identify GHG emissions from international aviation and navigation in the scope of the EU NDC, which are added to the national totals from the EU GHG inventory, are given in Annex 2 to this BTR.

Under the Governance Regulation each Member State must report to the Commission biennially on the status of implementation of its integrated national energy and climate plans (NECPs). This process allows the Commission to ensure that the EU and the Member States remain on track to achieve the climate-neutrality objective and progress on adaptation. Under the Governance Regulation, Member States further operate national systems for policies and measures and projections and submit and report standardised information, which is subject to quality and completeness checks. Based on the submitted data, the EEA compiles projections of GHG emissions and removals for the EU. The EU-wide information is summarised annually in the Climate Action Progress Report[31] by the European Commission and in the 'Trends and projections' report by the EEA.[32] Both the Union and the national systems are subject to continuous improvements.

The national energy and climate plans (NECPs) were introduced by the Governance Regulation.

For Member States, the NECP for 2021-2030 play a key role to enabling the tracking of progress towards the 2030 climate and energy targets. The update of the NECPs provides an opportunity for Member States to assess their progress, identify gaps and revise existing measures or plan new ones where needed.

Member States were due to submit their final updated NECPs, taking account of the Commission's assessment and recommendations, by 30 June 2024.

3A.2.2 Institutional arrangements for tracking progress in Cyprus

Cyprus is faced with the challenge of developing its economy in a way that reduces greenhouse gas emissions, while taking appropriate measures and actions to adapt to climate change.

Climate change is a horizontal issue requiring the involvement and activation of almost all Ministries of Cyprus, including the Ministry of Agriculture, Rural Development and Environment, the Ministry of Energy, Trade, Industry and Tourism, the Ministry of Foreign Affairs, the Ministry of Transport, Communications and Works, the Ministry of

[28] Chapter II of the annex to decision 18/CMA.1, https://unfccc.int/documents/193408; and decision 5/CMA.3, https://unfccc.int/documents/460951.
[29] 2006 IPCC Guidelines for National Greenhouse Gas Inventories, https://www.ipcc-nggip.iges.or.jp/public/2006gl/; and on a voluntary basis: 2019 Refinement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories, https://www.ipcc.ch/report/2019-refinement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories/.
[30] European Commission, Joint Research Centre, Rózsai, M., Jaxa-Rozen, M., Salvucci, R., Sikora, P., Tattini, J. and Neuwahl, F., JRC-IDEES-2021: the Integrated Database of the European Energy System – Data update and technical documentation, Publications Office of the European Union, Luxembourg, 2024, https://publications.jrc.ec.europa.eu/repository/handle/JRC137809.
[31] Climate Action Progress Report 2024, https://climate.ec.europa.eu/document/download/d0671350-37f2-4bc4-88e8-088d0508fb03_en?filename=COM_2024_498_F1_REPORT_FROM_COMMISSION_EN_V4_P1_3729454.PDF
[32] Trends and Projections in Europe 2024, https://www.eea.europa.eu/en/analysis/publications/trends-and-projections-in-europe-2024https://www.eea.europa.eu/en/newsroom/news/eea-trends-and-projections

Labour, Welfare and Social Insurance, the Energy Regulatory Authority and the Local Authorities. As a result, the role of the Environment Department of the Ministry of Agriculture, Rural Development and Environment as a national coordinator is upgraded and strengthened. Additionally, an important factor in the effort is the continuous improvement of the institutional framework.

Climate change mitigation is one of the main targets identified in the Cypriot strategy for sustainable development launched by MARDE in 2007[33]. The objective of the strategy is the development of a set of principles for the formulation of an action plan in line with international challenges, and in accordance with EU policy directions and adjusted to the specific national circumstances.

Strategic planning

In February 2014, the House of Parliament voted the Law on Fiscal Responsibility and Budget Systems (FRBSL) no. 20(I)/2014, which covers a wide range of issues related to Management of Public Finance. The goal was to introduce new principles for budgeting that strengthen the flexibility of economic operators and the transparency of the use of state resources, achieving measurable results. In this context, ministries have been asked to implement new procedures for the preparation of a medium-term strategy plan and budgeting on the basis of those activities to achieve their objectives.

The importance of climate change mitigation (and adaptation) for Cyprus is highlighted through its inclusion as the first target of the strategic plan of the Department of Environment and as one of the strategic goals of the Ministry of Agriculture, Rural Development and Environment[34].

National Policies and measures

Given that Cyprus was a non-Annex I party to the UNFCCC until 2013, national policies and measures for the reduction of greenhouse gas emissions were developed for the first time in 2007 for the implementation of EU Decision 280/2004[35]. Ever since, policies and measures are reviewed, revised and updated every 2 years. The involved ministries are presented in Table . The sections that follow present the policies and measures by sector.

Table 3-3. Involved ministries to climate change mitigation policies and measures

Ministry	Issues
Ministry of Agriculture, Rural Development and Environment	Agriculture, Forestry, Land use
Ministry of Energy, Trade, Industry and Tourism	Energy
Ministry of Transport, Communications and Works	Transport
Ministry of Finance	National budgets
Ministry of Interior	Land use

The National Energy and Climate Plan (NECP), which was recently adopted by Cyprus and submitted to the European Commission, constitutes a strategic plan for Cyprus on Climate and Energy issues and comprises a detailed roadmap for achieving concrete Energy and Climate Goals by 2030. The NECP presents and analyzes policy priorities and measures in a wide range of economic and development activities and constitutes a reference document for the next decade.

The strategic objective is the energy and climate goals set by the NECP until 2030 to make a decisive contribution to achieve a drastic reduction in greenhouse gas emissions while achieving the necessary energy transition in the most economically competitive way for the national economy.

3A.2.2.1 Overview of Policy-making Process

The Department of Environment (DoE), of the Ministry of Agriculture, Rural Development and Environment is the main governmental body entrusted with the development and implementation of environmental and climate policy

[33] http://www.un.org/esa/agenda21/natlinfo/countr/cyprus/nsds_2007en.pdf
[34] http://www.moa.gov.cy/moa/agriculture.nsf/Stratigikos%20Sxediasmos%202016-2018%20EL%20-%20YpOik%20150901.pdf
[35] Decision No 280/2004/EC of the European Parliament and of the Council of 11 February 2004 concerning a mechanism for monitoring Community greenhouse gas emissions and for implementing the Kyoto Protocol

in Cyprus. DoE is responsible, among others, for the formulation of policies concerning environmental protection and climate change, for the coordination of implementation efforts and to ensure compliance with the current EU and national legislative framework. Other entities responsible for integrating climate policy within their respective fields are the following:

- Energy Service, Ministry of Energy, Commerce and Industry (fuels, RES, Energy efficiency)
- Department of Public Works, Ministry of Transport, Communication and Works (sustainable mobility)
- Department of Electromechanical Services, Ministry of Transport, Communication and Works (electro-mobility (alternative fuels) infrastructure)
- Department of Agriculture, Ministry of Agriculture, Rural Development and Environment (agricultural policy)
- Department of Forests, Ministry of Agriculture, Rural Development and Environment (forests policy)
- Department of Environment, Ministry of Agriculture, Rural Development and Environment (waste management, animal waste management)
- Local authorities

Policies and measures, as well as all other issues and actions regarding mitigation were discussed within the framework of an inter-ministerial committee, comprising representatives from all competent Ministries. Final approval of policies and measures related to climate change mitigation rested with the Council of Ministers.

In January 2020, MARDE and the Ministry of Energy, Commerce and Industry published Cyprus' National Energy and Climate Plan pursuant to article 3 of Regulation (EU) 2018/1999. The National Energy and Climate Plan (NECP) is Cyprus' government's strategic plan for climate and energy issues, setting out a detailed roadmap regarding the attainment of specific energy and climate objectives by 2030. The NECP stresses Cyprus' priorities and development potential in terms of energy and climate change issues and aims to serve as the key tool for drawing up the national energy and climate policy in the next decade, taking into account the Commission's recommendations. The final update to the NECP was published in December 2024.

3A.2.2.2 Legislative Arrangements and Administrative Procedures for the Implementation of Climate Change Policies

In response to the emerging evidence that climate change could have a major global impact, the United Nations Framework Convention on Climate Change (henceforth the Convention) was adopted on 9 May 1992 and was opened for signature in Rio de Janeiro in June 1992.

Cyprus ratified the Convention as a non-Annex I Party in 1997 (Law No. 19(III)/97).

In that framework, the third meeting of the Conference of the Parties (COP) to the Convention, held in Kyoto (1-11 December 1997), finalised the negotiations related to the establishment of a legal instrument; the Kyoto Protocol on Climate Change. The Protocol provides a foundation upon which future action can be intensified and introduced, for the first time, legally binding commitments for developed countries to reduce emissions of greenhouse gases. Detailed rules for the implementation of the Protocol were set out at the 7th Conference of the Parties (in Marrakech) and are described in the Marrakech Accords adopted in 2001.

The Protocol entered into force on 16 February 2005, after its ratification from 141 Parties (with the exception of USA and Australia) including developed countries with a contribution of more than 55% to global CO2 emissions in 1990. Cyprus ratified the Kyoto Protocol in 2003 (Law 29(III)/2003).

With respect to the EU target under the 1st commitment period of the Kyoto Protocol (i.e. reduction of emissions at 8% for the period 2008–2012), the EU has stated that this will be achieved jointly by EU Member-States under the provisions of Article 4 of the Protocol. The Burden-Sharing agreement between all Member States was finalized during the Environment Council in June 1998 and entered into force with Decision 2002/358/EC concerning the approval, on behalf of the European Community, of the Kyoto Protocol. Cyprus was not a Member State of the EU at the time and therefore did not undertake any commitment at EU level.

In 2011 however, Cyprus requested to change its status under the UNFCCC and join Annex I, which was approved in 2012.

In Doha, Qatar, on 8 December 2012, the "Doha Amendment to the Kyoto Protocol" was adopted. The amendment includes:

- New commitments for Annex I Parties to the Kyoto Protocol who agreed to take on commitments in a second commitment period from 1 January 2013 to 31 December 2020;
- A revised list of greenhouse gases (GHG) to be reported on by Parties in the second commitment period; and
- Amendments to several articles of the Kyoto Protocol which specifically referenced issues pertaining to the first commitment period and which needed to be updated for the second commitment period.

Cyprus ratified the Doha Amendment in 2015 (Law 16(III)/2015).

The Paris Agreement which was agreed in 2015, builds upon the Convention and–for the first time– brings all nations into a common cause to undertake ambitious efforts to combat climate change and adapt to its effects, with enhanced support to assist developing countries to do so. As such, it charts a new course in the global climate effort. Its central aim is to strengthen the global response to the threat of climate change by keeping a global temperature rise this century well below 2°C above pre-industrial levels and to pursue efforts to limit the temperature increase even further to 1.5°C.

Cyprus ratified the Paris Agreement in 2016 with Law 30(III)/2016.

The Paris Agreement requires all Parties to put forward their best efforts through "nationally determined contributions" (NDCs) and to strengthen these efforts in the years ahead. This includes requirements that all Parties report regularly on their emissions and on their implementation efforts.

The EU and its Member States committed to a binding target of an at least 40% domestic reduction in greenhouse gas emissions by 2030 compared to 1990, to be fulfilled jointly, as set out in the conclusions by the European Council of October 2014.

As stated in chapters 3 and 4, the EU and its Member States committed to achieving a joint quantified economy-wide greenhouse gas emission reduction target of 20 per cent below the 1990 level by 2020, and has substantially overachieved this reduction target, rendering the emission reduction obligations fulfilled.

In December 2020, as part of the European Green Deal EU leaders agreed on a more ambitious goal for cutting greenhouse gases—reducing them by 55% by 2030, rather than 40% and the EU and its member states submitted an updated NDC to the UNFCCC secretariat.

The general framework for monitoring and evaluation of policies and measures till 2020 was based on the Monitoring Mechanism Regulation of the EU (MMR, no. 525/2013). This Regulation aims in the improvement of the quality of the data reported and assist the EU and Member States with the tracking of their progress towards emission targets for 2013 - 2020.

The MMR was replaced by the Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action for the period 2021–2030. Regulation (EU) 2018/1999 contains provisions about the tracking of the progress accomplished towards reaching mitigation targets, including specific templates for the monitoring and evaluation of policies and measures, the reporting of GHG projections, projection parameters and indicators, etc. In addition, it contains provisions for progress reports about the status of integrated national energy and climate plans, national adaptation actions, financial and technology support provided to developing countries, energy security, energy market, energy poverty, research, innovation and competitiveness; and about the monitoring and evaluation of policies and respective targets on renewable energy and energy efficiency.

The formulation of climate policy in Cyprus follows EU policy. A key step towards the formulation and implementation of any EU policy is to carry out an Impact Assessment of the proposed policy or key policy changes. The Impact Assessment outlines a process that prepares evidence for political decision-makers on the advantages and disadvantages of possible policy options. The Impact Assessment is carried out by the Directorate General who takes the lead on a particular policy. The Impact Assessment process is an important element of implementing the EU's commitments under Article 4.2(e) (ii) of the UNFCCC to "identify and periodically review its own policies and practices which encourage activities that lead to greater levels of anthropogenic emissions of greenhouse gases not controlled by the Montreal Protocol than would otherwise occur".

Information about policies and measures for the reduction of GHG emissions, GHG inventory and projections, legislative arrangements and enforcement and administrative procedures that are in place to meet the national commitments under the Kyoto Protocol are publicly accessible through the following websites:

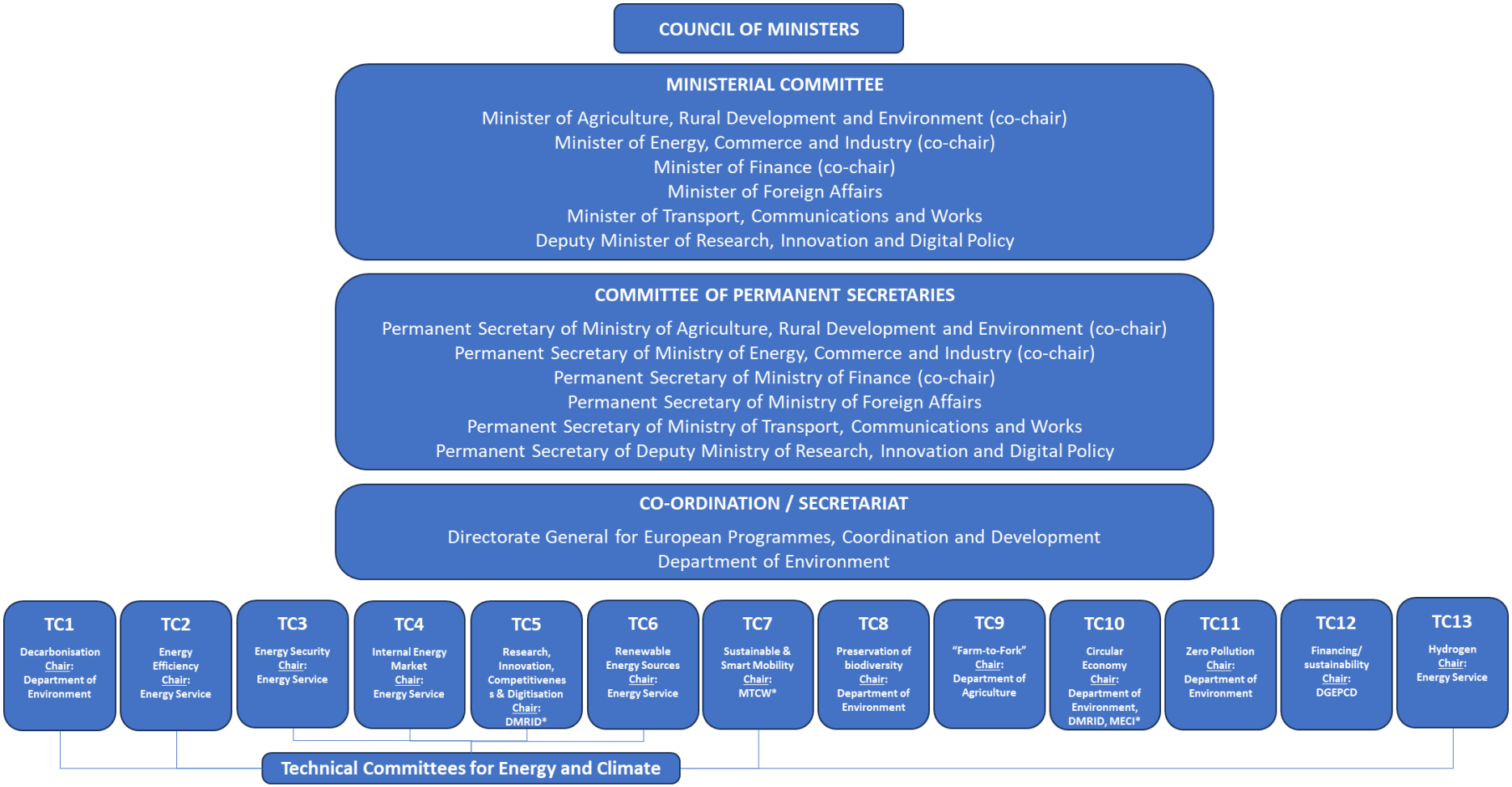
- www.moa.gov.cy/environment (official website of the Department of Environment, containing information about national GHG inventories, legislation, emission trading system, national allocation plans, etc., available in greek language)
- www.meci.gov.cy (official website of Ministry of Energy, Commerce and Industry, containing information about national strategy and policies about energy, renewable energy sources, biofuels, etc., available in greek language).
- https://unfccc.int/ghg-inventories-annex-i-parties/2020 (UNFCCC website, containing GHG inventories); https://unfccc.int/NC7 (UNFCCC website, containing latest national communications)
- Information provided through EU's websites as http://cdr.eionet.europa.eu/cy/eu and http://dataservice.eea.europa.eu/PivotApp/pivot.aspx?pivotid=475.

3A.2.2.3 A description of the national system for reporting on policies and measures and for reporting on projections pursuant to Article 13(1a) of Regulation (EU) 525/2013

For the purposes of implementing the Regulation on the Governance of the Energy Union and Climate Action (No. 2018/1999) and in particular to set out the necessary foundation for a reliable, inclusive, cost-efficient, transparent and predictable Governance that ensures the achievement of the 2030 and long-term objectives and targets of the Energy Union in line with the 2015 Paris Agreement on climate change following the 21st Conference of the Parties to the United Nations Framework Convention on Climate Change through complementary, coherent, and ambitious efforts by the Union and its Member States, while limiting administrative complexity, a new structure for national climate and energy governance has been approved by the Council of Ministers (15/11/2017 decision no. 83.709).

The core of this structure (Figure 4.1), the "National Governance System for Climate and Energy", is a Ministerial Committee, consisting of the Minister of Agriculture, Rural Development and Environment, the Minister of Energy, Commerce and Industry, the Minister of Finance and the Minister of Transport, Communications and Works. The Ministerial Committee is co-chaired by the Minister of Agriculture, Rural Development and Environment and the Minister of Energy, Commerce and Industry. This committee has to propose the National Energy and Climate Plan to the Council of Ministers which takes the final decision. The proposal of the NECP is prepared by the Technical Committee, which consists of the Permanent Secretaries of the same Ministries. The Technical Committee also monitors the implementation of the NECP and makes proposals for its revisions when necessary. The Technical Committee is co-chaired by the Permanent Secretary of the Ministry of Agriculture, Rural Development and Environment and the Permanent Secretary of the Ministry of Energy, Commerce and Industry. The Technical Committee is consulted by the following seven Expert Working Groups: Decarbonisation, Energy Efficiency, Energy Security, Internal Energy Market, Research, Innovation and Competitiveness, Renewable Energy and Transport. Transport is an additional working group created due to the significant contribution of the sector to the national emissions. Each Working Group has a coordinator. All working groups with the exception of decarbonisation are the responsibility of the Ministry of Energy, Commerce and Industry; Decarbonisation is the responsibility of the Department of Environment of the Ministry of Agriculture, Rural Development and Environment. The secretariat of the National Governance System for Climate and Energy is held by the Department of Environment.

This structure evolved after the publication of the Green Deal, to the National Governance System for Development Strategy in relation to the European Green Agreement, with a Council of Ministers' Decision (13/11/2020 no. 90.370) The new governance system incorporated in its structure in addition to the climate and energy issues, all the organisations involved in the implementation of the issues included in the green deal. The new structure is presented in Figure 3-19. All the working groups associated with climate and energy continue the same manner of operation as presented above.



* where: DMRID = Deputy Ministry of Research, Innovation and Digital Policy; MTCW = Ministry of Transport, Communications and Works; MECI = Ministry of Energy, Commerce and Industry DGEPCD = Directorate General for European Programmes, Coordination and Development

Figure 3-19. Diagram of the National Governance System for the Implementation of the Green Deal.

3A.2.2.4 Legal arrangements in place for preparation of reports on policies and measures and of projections

No legal arrangements in place for preparation of reports on policies and measures and of projections other than the Council of Ministers Decisions no. 83.709 of 15/11/2017 and no. 90.370 of 13/11/2020.

3A.2.2.5 Procedural and administrative arrangements and timescales in place for the preparation of reports on policies and measures and of projections, to ensure the timeliness, transparency, accuracy, consistency, comparability and completeness of the information reported

The Department of Environment of the Ministry of the Agriculture, Rural Development and Environment is responsible for ensuring the timeliness of the Reporting. No later than six months before the deadline of the Reporting, a kick-off meeting between the decarbonisation working group members is organized to launch the work. A date is set by which the decarbonisation working group members provide a list of their respective policies and measures to be included in the Reporting, along with a distinction between the WEM (With Existing Measures) and WAM (With Additional Measures) scenarios. The Department of Environment then checks the lists to ensure completeness and that there are no overlaps.

Two to three months before the deadline of the Reporting, the decarbonisation working group members provide their respective information concerning the policies and measures and projections to the Department of Environment, which compiles all the information into the reporting tools and a single paper report. This schedule leaves enough time to perform the remaining QA/QC activities. The Reporting is prepared in a transparent manner. The Reporting is based on the latest version of National Energy and Climate Plan. Key assumptions and policy measures are described and published in a background report to the projections. Furthermore, the Reporting uses publicly available data to a large extent. Not all data can be published, however, due to being confidentially reported by companies. Out of the assumptions, methods and models used by expert organizations in evaluating policies and measures or used in making the projections, many are publicly available or have been described in public sources.

Accuracy is ensured through several measures. First, all the expert organizations providing information are to as large an extent as possible, and most of the methods and models have been used before in national and international reporting. Third, projections follow the greenhouse gas source and sink categorization recommended by the European Commission on the 2006 IPCC Guidelines for National Greenhouse Gas Inventories and revised UNFCCC CRF tables for inventory reporting; Fourth, effect on mitigation of climate change as well as costs and benefits are assessed for such individual or groups of policies and measures that the assessments can be done in an accurate manner giving practical information, taking into account the reasonable amount of work and available data. Furthermore, the QA/QC procedures are strictly followed.

Consistency and comparability are ensured through several measures. The Reporting is based on the National Climate and Energy Plan and its scenarios. At an early stage of preparing the PaMs (Policies and Measures), a common framework is determined for the baseline scenario. The framework is determined in a collaborative manner between the ministries mentioned in previous sections and it is approved by the ministerial committee of the national energy and climate governance system. The framework comprises several parameters related to economic growth, population growth, international climate policy, and price of energy. The framework also includes assumptions on the future use of different sources of energy and waste treatment. All ministries use the common framework while contributing to the Plan and its baseline scenario. Furthermore, under the coordination of Department of Environment, interrelated assumptions are discussed and decided between the relevant ministries and government agencies. These procedures ensure the consistency and comparability of the assumptions and results between the different sectors in the Strategy.

Common parameters provided by the European Commission for the Reporting are used whenever applicable. As the Reporting also strongly relies on the latest version of the National Energy and Climate Plan, the above-mentioned PaMs making process improves the consistency and comparability of the information used in the Reporting. In the case that the Reporting requires extending or updating assumptions affecting several sectors, the decarbonisation working group members agree on these together. Sector-specific assumptions that are not available in the above-mentioned sources are selected based on the expertise of the decarbonisation working

group members or the expert organizations and rely on other relevant strategies, plans and research reports as much as possible. To classify policies and measures under the WEM and WAM projections, a cut-off date is agreed by the decarbonisation working group. Across the different sectors, the reported policies and measures that are implemented on or before the cut-off date belong to the WEM projection and those implemented after the cut-off date or being in planning phase to the WAM projection.

The Department of Environment then checks the lists to ensure completeness and that there are no overlaps. Furthermore, the projections follow the greenhouse gas source and sink categorization recommended by the European Commission on the 2006 IPCC Guidelines for National Greenhouse Gas Inventories and revised UNFCCC CTF tables for inventory reporting).

3A.2.2.6 Description of the links to arrangements on integrated national energy and climate reports pursuant to Art. 17 of Regulation (EU) 2018/1999

To collect data related to policies and measures and projections, the structure prepared for the preparation of the NECP and reporting on progress other dimensions of the Energy Union, e.g. processes to foster consistent use of energy-related data for the development of policies and measures and projections and for integrated progress reporting are applied.

3A.2.2.7 Description of the process for selecting assumptions, methodologies and models for making projections of anthropogenic greenhouse gas emissions

Sectoral experts from the Department of Environment and other key agencies are responsible for selecting the assumptions, methods and models to use for the projections. The Department of Environment experts work closely and interact regularly with other key experts on energy, agriculture, industrial processes, forestry and land use change and waste modelling in order to establish an appropriate set of assumptions and methods. The experts document the data sources, methods and assumptions. Improvement opportunities are regularly identified and documented which includes input from external experts. The Department of Environment manages a list of improvements which is reviewed and prioritised on a regular basis for implementation. Changes to processes are documented in the methodology report.

3A.2.2.8 Description of procedures for the official consideration and approval of the Member States national system for policies and measures and projections

All the involved institutions participating to the decarbonisation technical committee of the national governance system for climate and energy have nominated an expert for every reporting preparation period whose responsibility is to provide the necessary data for the report. Institutional experts take part in the quality assessment process and give the final approval concerning the information in the reporting tools and final report to be submitted.

3A.2.2.9 Information on relevant institutional administrative and procedural arrangements for domestic implementation of the EU's nationally determined contribution, or changes to such arrangements

The domestic implementation of the EU’s nationally determined contribution is monitored through regular meetings of the Decarbonisation Working group of the national governance system. Issues, such as budgets, proposals to EU funds are discussed along with different practical issues that may come up during the implementation of the measures.

3A.2.2.10 Description of the stakeholder engagement undertaken in relation to the preparation of policies and measures and projections

All the relevant stakeholders are kept informed through participation in the meetings of the relevant working group of the governance system that will contribute later to the decarbonisation working group.

3A.2.2.11 Information pursuant to article 37(2)(b) of IR (EU) 2020/1208

According to article 37(2)(b) of IR (EU) 2020/1208, Member States shall report information on planned additional national policies and measures, or groups of measures, envisaged with a view to limiting GHG emissions beyond their commitments under Regulation (EU) 2018/842 and Regulation (EU) 2018/841.

At the moment there are no policies and measures that have been adopted or planned that are envisaged with a view to limiting GHG emissions beyond national commitments under Regulation (EU) 2018/842 and Regulation (EU) 2018/841.

3A.2.2.12 Description of the Alignment with the National Inventory System

There are certain parameters that ensure the alignment of projections with the national inventory:

- Data sources: the data sources are the same for both the inventory and the projections
- Methodology: the methodology applied for projections is the latest submitted inventory methodology for 2024
- Experts: the experts involved in the preparation of the inventory are the same as the experts involved in the preparation of the projections

In case discrepancies are identified between the inventory and the projections, QA/QC procedures are applied to achieve the best possible calibration between the two data sets.

3A.2.2.13 Description of the quality assurance and quality control activities for reporting of policies and measures and projections

All the expert organizations providing information for the reporting are well-established and have their own QA/QC procedures. Furthermore, the ministries are responsible for the quality of information on their respective policies and measures and projections and perform further checks where applicable, such as comparison to other estimates. The Department of Environment is responsible for collecting and combining all the information and for performing further quality checks. For example, the Department of Environment compares the sectoral projections to the scenarios of the latest Energy and Climate Plan as well as compares the compatibility of the WEM and WAM projections with the effects of policies and measures. The Department of Environment also checks the completeness and that the reporting requirements are met. Sensitivity analyses for projections are carried out for factors being especially significant in terms of greenhouse gas emissions, and they are described in detail in the report accompanying each round of the Reporting. After the reporting tools and paper report have been compiled by the Department of Environment, they are sent to the decarbonisation working group for approval and afterwards to the network of officials for final approval.

3A.2.2.14 National Long-Term Low GHG Development Strategy

The Long-Term Low Greenhouse Gas emission (GHG) Development Strategy for 2050 is a Roadmap for the Republic of Cyprus on Climate and Energy, as part of the country's participation in the collective European goal of a successful and sustainable transition to a climate-neutral economy by 2050.

An update to the Long-Term strategy was released in 2022[36]. The strategic goal is to participate in the commitment towards a climate-neutral economy at EU level and to contribute to the European Green Deal promoted by the European Commission.

With the completion of the elaboration and adoption of the National Energy and Climate Plan (NECP), which analyses the energy and climate goals set by the country as well as the Policy Priorities and the measures for their implementation, the Government is also investigating the optimal policies and measures towards the year 2050 for the achievement of specific climate goals in order to determine the framework for the long-term climate strategy of the country for the year 2050.

Adopting and participating in the European Commission's strategic long-term vision for a prosperous, modern, competitive and climate-neutral economy by 2050, the Government aligns itself with the Climate Neutrality

[36]https://www.moa.gov.cy/moa/environment/environmentnew.nsf/all/8D6EF81F38772607C225829400343871/$file/LTS_FINAL.pdf?openelement

Strategy, planning the implementation of innovative but realistic technology applications, funding and research, while ensuring social justice in the context of a fair transition.

It is clear that the long-term strategy is complementary to the NECP, which is the central strategic plan under which specific energy and climate policy measures are implemented. In this context, the long-term strategy presupposes the achievement of the relevant objectives of the NECP.

The 2030–2040 decade should be a decade of choosing the appropriate technological solutions for adoption that are mature at the time, but also of continuing successful policies and measures that will contribute to achieving the goals of 2050, with even greater intensity and rate of implementation. New energy technologies or even fuels that will be available on competitive market terms are, in any case, a technical condition for the period after 2030, which will ultimately determine the relative rates of transition to 2050. The goal is to achieve climate neutrality mainly through further exploitation of existing policies, deployment of new technologies and utilization of local and international progress on Research & Technology.

3A.2.3 Institutional arrangements for the implementation of the NDC in the European Union

The EU and its Member States have set up a comprehensive system for the implementation of the EU climate change mitigation targets. The European Climate Law[46] sets the goal of climate neutrality by 2050 and the intermediate target of reducing net greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels. These targets cover emissions and removals that are regulated in the Union law.

To ensure that the EU and its Member States achieve their target, the 2030 Climate and Energy Framework was put in place. The main policies of this framework are the EU Emissions Trading System (EU ETS)[37], which caps GHG emissions in energy, industry, aviation and maritime transport; the LULUCF Regulation which includes national net removal targets for the LULUCF sector; and the Effort Sharing Regulation (ESR) which establishes national reduction targets for GHG emissions not covered by the EU ETS or the LULUCF Regulation i.e. domestic transport (excluding aviation), buildings, agriculture, small industry and waste. The implementation of the ESR is supported by additional sectoral policies and measures (details can be found in this BTR in the chapter on mitigation policies and measures). The legislative acts under the 2030 Climate and Energy Framework require the European Commission and the EU Member States to set up the institutional arrangements for implementing the specific policies and measures.

The revised EU ETS Directive increases the level of ambition in the existing system from 43% to 62% emissions reductions by 2030, compared to 2005 levels and extend the system to also apply to international maritime transport. A separate carbon pricing system will apply to fuel combustion in road transport and buildings and small-emitting sectors (ETS2) with a 42% emission reduction target compared to 2005 across the sectors covered. The amended Effort Sharing Regulation (ESR) increased, for the sectors that it covers, the EU-level GHG emission reduction target from 29% to 40% by 2030, compared to 2005, which translates in updated 2030 targets for each Member State. The new LULUCF Regulation sets an overall EU-level objective of 310 Mt CO_2 equivalent of net removals in the LULUCF sector in 2030.

The ESR sets national targets for the reduction of GHG emissions in the Member States by 2030. Member States are also subject to gradually decreasing annual emission limits for each year from 2021 to 2030. The annual progress towards the national targets under the Effort Sharing Legislation is assessed by comparing GHG emission levels from the sectors covered by the ESR with the relevant annual emission allocations under the legislation (AEAs). To achieve compliance under the ESR, Member States are permitted to use flexibility options to a certain extent.

Progress in the implementation of these policies and measures is monitored under the Governance Regulation. Relevant information which is reported regularly and archived at the EEA include GHG inventories, approximated

[37] This refers to the ETS1, i.e. the Emission Trading System for stationary sources (Chapter III of the ETS Directive) and for aviation and maritime transport (chapter II of the ETS Directive). Note that the 'Emissions trading system for buildings, road transport and additional sectors' (ETS2), added in 2023 as Chapter IVa of the ETS Directive, forms an instrument under the Effort Sharing Regulation (ESR).

GHG inventories for the previous year, information on policies and measures, projections, and progress towards the implementation of integrated National Energy and Climate Plans (NECP). This information helps the EU and its Member States to correct their course if progress towards the targets of the 2030 Climate and Energy Framework is behind schedule. As an example, the European Commission assesses the drafts of new or updated NECPs and provides recommendations for improved planning and implementation. In addition, the reported information is subject to quality checks, and the GHG inventories reported by EU Member States are subject to comprehensive reviews in 2025, 2027 and 2032.[38]

All EU legislation, including the legislation under the 2030 Climate and Energy Framework, is subject to a stakeholder engagement process. So-called 'better regulation tools' ensure that policy is based on evidence and the best available practice[39]. During the preparation of legislative proposals, the European Commission invites citizens, businesses and stakeholder organisations to provide their views on the subject of the new legislation. These comments are documented in a dedicated portal[40], and the European Commission reports on how it takes these comments into account in the development of the legislative proposals. Furthermore, the Governance Regulation sets requirements for Member States to ensure that the public is given early and effective opportunities to participate in the preparation of the NECPs.

3A.2.4 Institutional arrangements for the implementation of the NDC in Cyprus

This information is included in the sections presented in 3A.2.2.

3B. Description of a Party's nationally determined contribution under Article 4 of the Paris Agreement, including updates

Under their updated NDC[41] the EU and its Member States, acting jointly, are committed to a legally binding target of a domestic reduction of net greenhouse gas emissions by at least 55% compared to 1990 by 2030. The term 'domestic' means without the use of international credits.

The NDC consists of a single-year target, and the target type is 'economy-wide absolute emission reduction'. The scope of the NDC covers the 27 Member States of the EU.

The 17 October 2023 updated NDC scope is supplemented by additional information to clarify the precise amount of international aviation and maritime emissions which are covered under the EU NDC. Details on the EU NDC can be found in Table 3-4 and in the Annexes in Section 3G.

Table 3-4.Description of the NDC of the EU

Information	Description
Target and description	Economy-wide net domestic reduction of at least 55% in greenhouse gas emissions by 2030 compared to 1990. The term 'domestic' means without the use of international credits.
Target type	Economy-wide absolute emission reduction.
Target year	2030 (single-year target)
Base year	1990
Base year value	Net greenhouse gas emissions level in 1990: 4 699 405 kt CO_2eq.
Implementation period	2021-2030
Geographical scope	EU Member States (Belgium, Bulgaria, Czechia, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, the Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland,

[38] Consolidated text (2023) of Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action, https://eur-lex.europa.eu/eli/reg/2018/1999/2023-11-20.
[39] Decision-making process, https://ec.europa.eu/info/strategy/decision-making-process/how-decisions-are-made_en.
[40] Have your say – Public consultation and feedback, https://ec.europa.eu/info/law/better-regulation/have-your-say_en.
[41] The update of the nationally determined contribution of the European Union and its Member States, https://unfccc.int/sites/default/files/NDC/2023-10/ES-2023-10-17%20EU%20submission%20NDC%20update.pdf.

Information	Description
	Sweden) including EU outermost regions (Guadeloupe, French Guiana, Martinique, Mayotte, Reunion, Saint Martin (France), Canary Islands (Spain), Azores and Madeira (Portugal)).
Sectors	Sectors as contained in Annex I to decision 5/CMA.3: Energy, Industrial processes and product use, Agriculture, Land Use, Land Use Change and Forestry (LULUCF), Waste. ***International Aviation:*** Emissions from civil aviation activities as set out for 2030 in Annex I to the EU ETS Directive are included only in respect of CO_2 emissions from flights subject to effective carbon pricing through the EU ETS. With respect to the geographical scope of the NDC these comprise emissions in 2024-26 from flights between the EU Member States and departing flights to Norway, Iceland, Switzerland and the United Kingdom. ***International maritime Navigation:*** waterborne maritime navigation is included in respect of CO_2, methane (CH_4) and nitrous oxide (N_2O) emissions from maritime transport voyages between the EU Member States.
Gases	Carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulphur hexafluoride (SF_6), nitrogen trifluoride (NF_3)
LULUCF categories and pools	The included LULUCF categories and pools are as defined in decision 5/CMA.3.
Intention to use cooperative approaches	The EU's at least 55% net reduction target by 2030 is to be achieved through domestic measures only, without contribution from international credits. The EU will account and report for cooperation with other Parties in a manner consistent with the guidance adopted by CMA1 and any further guidance agreed by the CMA.
Any updates or clarifications of previously reported information, as applicable	The information on the NDC scope contains clarifications/further details compared to the information provided in the updated NDC of the EU.

Note: This table is identical to table 'Description of a Party's nationally determined contribution under Article 4 of the Paris Agreement, including updates,' which has been submitted electronically together with this BTR. This table is also annexed to this BTR.

Source: Updated NDC of the EU[42]

3B.1 National climate targets

Regulation (EU) 2018/842

The following targets are included in the BTR of Cyprus for information purposes only, and in no way replace the official NDC described in 3B and reported in the CTF.

The culmination of the collective efforts that took place in recent years to reduce greenhouse gas emissions and hence to tackle climate change effectively by the global community is the historic agreement reached in Paris in December 2015 at the 21st Session of the Parties to the United Nations Framework Convention on Climate Change. The Paris Agreement entered into force on 4 November 2016. Cyprus completed the ratification process of the Paris Agreement on 4 January 2017. The effects of climate change are becoming increasingly felt both in Europe and globally. These are expected to be particularly serious for Cyprus, as climate change is already evident; over the last 100 years there has been an increase in average temperature and a decrease in average annual rainfall. The effects of climate change will not only continue but will also increase over the next decades.

[42] The update of the nationally determined contribution of the European Union and its Member States, https://unfccc.int/sites/default/files/NDC/2023-10/ES-2023-10-17%20EU%20submission%20NDC%20update.pdf.

Cyprus' binding national greenhouse gas emissions target in accordance with the amendment to Regulation (EU) 2018/842 is -32% by 2030 compared to 2005, and concerns the energy, industrial processes and product use, agriculture and waste sectors, as determined in accordance with Regulation (EU) No. 2018/1999, excluding greenhouse gas emissions from activities listed in Annex I to Directive 2003/87/EC. The target is single-year, economy wide absolute emission reduction, for the gases CO_2, CH_4, N_2O, HFCs, and SF_6 (PFCs and NF_3 emissions do not occur in Cyprus). The intention is to achieve the target through domestic measures, using the LULUCF flexibility. It is not planned to use international credits at this time, but such a need will be re-evaluated in the future. Original and adjusted Annual Emission Allocations for Cyprus, in accordance with Decision (EU) 2020/2126[43] and its amendment Decision (EU) 2023/1219[44], are shown below in Table 3-5Table . Amended AEAs for 2026 to 2030 will not be finalized until after the comprehensive review of the inventory data submitted for 2021, 2022 and 2023.

Table 3-5. Original and Adjusted Value of the Annual Emission Allocation in Tonnes of CO_2 Eq.

AEAs	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Original	4072960	3980718	3888477	3796235	3703993	3611752	3519510	3427269	3335027	3242785
Revised	4072960	3980718	3845808	3710898	3575989	-	-	-	-	-

Regulation (EU) 2018/841

Cyprus' commitments in the field of land use, land use change and forestry (LULUCF), which contribute to the achievement of the objectives of the Paris Agreement and the Union's greenhouse gas emission reduction target for the period from 2021 to 2030, as set out in Regulation (EU) 2018/841, are -352 kt CO_2e in 2030 net greenhouse gas removals.

Methane Strategy

The European Commission presented an EU strategy to reduce methane emissions in 2021. This strategy sets out measures to reduce methane emissions in Europe and internationally. It presents legislative and non-legislative actions in the energy, agriculture and waste sectors, which account for around 95% of methane emissions related to human activity worldwide.

To reduce methane emissions in the energy sector, an obligation to improve the detection and repair of leaks in gas infrastructure has been proposed and legislation to ban common flaring and venting practices will be considered. The proposal for a Regulation is under discussion.

At this stage, efforts are being made to improve the reporting of emissions from agriculture through better data collection and to promote emission reduction opportunities with the support of the Common Agricultural Policy. The main focus is on the exchange of best practices on innovative methane reduction technologies, animal nutrition and breeding management. Targeted research on technology, nature-based solutions and dietary changes is also being promoted. The use of organic human and agricultural waste and residue streams for the production of biogas, bio-materials and biochemicals is also being considered.

In the waste sector, improving the management of landfill gas from old and new sites is being considered, exploiting its potential for energy use while reducing emissions. Minimising the disposal of biodegradable waste to landfills is crucial to avoid methane formation and this has been taken into account in national planning.

Cyprus also has a long-term GHG emissions strategy, updated in 2022[45]. Two evaluations by external consultants regarding the measures necessary for the Republic to achieve climate neutrality by 2050 are described in section 2.1.1.ii of the December 2024 Final Update to the NECP.

Updates or clarifications of previously reported information regarding climate targets

[43] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32020D2126
[44] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023D1319
[45]

A summary of initial and new national climate targets is available in Table 1.2 of the NECP.

There are periodical recalculations to the inventory data with the annual national inventory report, which are described in full therein.

3C. Information necessary to track progress made in implementing and achieving its nationally determined contribution under Article 4 of the Paris Agreement

3C.1 Indicator, definitions, methodologies and progress

3C.1.1 Indicator

For the tracking of progress towards implementing and achieving the NDC of the EU, an indicator is used which has the same unit and metric as the NDC base year and target values. The chosen indicator is 'annual total net GHG emissions consistent with the scope of the NDC in CO_2eq'. Table 3-6 provides more information on this indicator.

Table 3-6. Indicator for tracking progress

Information	Description
Selected indicator	Annual total net GHG emissions consistent with the scope of the NDC in CO_2eq.
Reference level and base year	The reference level is total net GHG emissions of the EU in the base year (1990). The reference level value for the EU is 4 699 405 kt CO_2eq.
Updates	This is the first time the reference level is reported, hence there are no updates. The value of the reference level may be updated in the future due to methodological improvements to the EU GHG inventory and to the determination of international aviation and navigation emissions in the NDC scope.
Relation to the NDC	The indicator is defined in the same unit and metric as the target of the NDC. Hence it can be used directly for tracking progress in implementing and achieving the NDC target.
Definitions	Definition of the indicator 'annual total net GHG emissions in CO_2eq': Total net GHG emissions correspond to the annual total of emissions and removals reported in CO2 equivalents in the latest GHG inventory of the EU. The totals comprise all sectors and gases listed in the table entitled 'Reporting format for the description of a Party's nationally determined contribution under Article 4 of the Paris Agreement, including updates.' Indirect CO2 emissions are included from those Member States that report these emissions.

Note: The information in this table is identical to the information in Common Tabular Format (CTF) tables 1 ('Description of selected indicators') and 2 ('Definitions needed to understand the NDC'), which were submitted electronically together with this BTR.

Source: The reference level is based on the Annual European Union GHG inventory 1990-2022.

3C.1.2 Methodologies and accounting approach

The EU use the following accounting approach for tracking progress towards the joint EU NDC: annual GHG data from the national GHG inventory of the EU, complemented for international aviation and navigation with estimations from the Joint Research Centre's Integrated Database of the European Energy System[46] . The total net GHG emissions are provided in the scope of the EU NDC and are compared to the economy-wide absolute emission reduction target as defined in the NDC. The EU will account for its cooperation with other Parties in a manner consistent with guidance adopted by the CMA.

As far as emissions and removals from the LULUCF sector are concerned, net emissions are used for tracking progress towards the 2030 target of the NDC based on all reported emissions and removals.

[46] European Commission, Joint Research Centre, Rózsai, M., Jaxa-Rozen, M., Salvucci, R., Sikora, P., Tattini, J. and Neuwahl, F., JRC-IDEES-2021: the Integrated Database of the European Energy System – Data update and technical documentation, Publications Office of the European Union, Luxembourg, 2024, https://publications.jrc.ec.europa.eu/repository/handle/JRC137809.

Details on methodologies and accounting approaches consistent with the accounting guidance[47] under the Paris Agreement can be found in CTF table 3 ('Methodologies and accounting approaches'), which was submitted electronically together with this BTR.

3C.1.3 Structured summary – status of progress

An important purpose of the BTR is to demonstrate where the EU and its Member States stand in implementing their NDC, and which progress they have made towards achieving it. The most recent information on GHG emissions and removals in the scope of the NDC constitutes the key information for tracking this progress. Table 3-7 summarises the current status of progress.

Table 3-7: Summary of progress towards implementing and achieving the NDC

	Unit	Base year value	Values in the implementation period			Target level	Target year	Progress made towards the NDC
			2021	2022	2030			
Indicator: Total net GHG emissions consistent with the scope of the EU NDC	kt CO_2eq	4 699 405	3 272 650	3 205 223	NA	(at least 55% below base year level)	2030	The most recent level of the indicator is 31.8 % below the base year level.

NA: Not Applicable.

Note that an annual emissions balance consistent with chapter III.B (Application of corresponding adjustment) will be provided in a subsequent BTR upon finalisation of relevant further guidance by the CMA, based on the annual information reported under Article 6.2.

Note: More detailed information can be found in CTF table 4 ('Structured summary: Tracking progress made in implementing and achieving the NDC under Article 4 of the Paris Agreement'), which has been submitted electronically together with this BTR.

Source: The indicator values are based on the Annual European Union GHG inventory 1990-2022.

Based on the GHG inventory data and data on international aviation and navigation for 2022, the EU and its Member States reduced net GHG emissions by 31.8 % compared to 1990. The EU and its Member States made progress towards implementing and achieving their NDC. The legal and institutional framework is in place to make further progress in the years ahead and to achieve the NDC target by 2030.

3D. Mitigation policies and measures, actions and plans, including those with mitigation co-benefits resulting from adaptation actions and economic diversification plans, related to implementing and achieving a nationally determined contribution under Article 4 of the Paris Agreement

As described in sections 3A.2–3A.4, national policy is governed chiefly by the National Energy and Climate Plan. The Long-Term Low Greenhouse Gas emission (GHG) Development Strategy for 2050 is another important component of national policy, described in section 3A.13.

The following section presents the actions, policies and measures on a sectoral basis.

3D.1 Sectoral Policies and Measures

3D.1.1 Sectoral Policies and Measures: Energy

The GHG emissions of the energy sector, excluding transport, accounted for 48.3% of emissions in 2022. Since it has 1990 accounted for the largest portion of emissions since 1990, the energy sector must contribute the most to the reduction of greenhouse gases of Cyprus. While energy is mainly responsible for carbon dioxide emissions, it also contributes to methane and nitrous oxide emissions. Fugitive emissions from fuels have not been estimated

[47] Decision 4/CMA.1, Further guidance in relation to the mitigation section of decision 1/CP21, https://unfccc.int/documents/193407.

since 2004 when the refining activities stopped in Cyprus. Full details of the circumstances and outlook for energy sector are presented in national circumstances section 3A.1.7, while an overview of the national climate targets related to energy are provided in Table 3-8.

The import of natural gas, and its initial use for electricity production, is expected to considerably reduce emissions. Increased use of renewables, promotion of energy efficiency, and upgrades to the grid are also key aspects of policy planning for emission reduction. Policies are described in more detail in the following sections. The competent authority in relation to energy policies is the Energy Service of the Ministry of Energy, Commerce, Industry and Tourism.

Table 3-8. Initial and revised national energy targets for the period 2021-2030 in the context of EU policies[48]

Pillar	**Initial goals**		**New goals (Fit-for-55)**		**Scenario with existing measures**	**Scenario with additional measures**
	EU	**Cyprus**	**EU**	**Cyprus**	**Cyprus**	**Cyprus**
Emission reduction (2030 compared to 2005)	-40%	-24%	-55%	-32%	-10%	-2 6 %
Increase in land use absorptions	-	-	310 Mt	0.352 Mt	0.325 Mt	0.352 Mt
Renewable Energy Sources (in gross final consumption)	32%	23%	42.5%	33%	28.78	33.17%
Energy Efficiency (improvement compared to expected forecast)	32.5% compared to the 2007 reference scenario		11.7% compared to the 2020 reference scenario			
Primary energy consumption		2.4 Mtoe		2.03 Mtoe	2.34 Mtoe	2.13 Mtoe
Final energy consumption		2.0 Mtoe		1.8 Mtoe	1.99 Mtoe	1.80 Mtoe
Cumulative energy savings in end-use		243.04 ktoe		349.04 ktoe	Achievement (476.65 ktoe)	
Cumulative energy savings in end-use for consumers affected by energy poverty.	-	-		52.7 ktoe	Achievement (53.35 ktoe)	

3D.1.1.1 Internal Energy Market and Energy Security

Several policies and measures address the improvement of the internal energy market and energy security. The details of these policies are summarized iTable 3-9 and Key Information Box 3.1. Additional details are available on the introduction of natural gas in the following sub-section.

[48] Taken from Table 1.2 of the NECP

Table 3-9. Main policies and measures related to internal energy market and energy security

Measure number	Measure/policy name	Description	Status of Implementation	Application period
67	Project of Common Interest Great Sea Interconnector (Electricity Interconnectivity of Cyprus)	Great Sea Interconnector (former EuroAsia Intercionnector) is a future cross border interconnector between Crete, Cypriot, and Israel Transmission Systems via the world's longest submarine HVDC power cable.HVDC onshore converter stations with rated capacity of 1000 MW (first phase) , 2000 MW second phase) will be located at the connection points. It is a leading Project of Common Interest of the European Union and also priority Electricity Highway Interconnector Project. The Interconnector is an energy highway bridging Asia and Europe.	Planned	2025–2029
68	Development of natural gas network pipeline infrastructure in Cyprus	The project involves the development of natural gas network pipeline infrastructure network from the regasification facility in Vasilikos area to Electricity Authority of Cyprus (EAC) Power Plants and the other IPPs which are within 5 km radious from the LNG infrastructure.	Planned	2023–
69	Cyprus Transmission System Operator (TSO) Ten Year Network Development Plan 2019-2028 according to Article 63 of the Laws for the Regulation of the Electricity Market from 2003 to 2017.	The Transmission TYNDP (T-TYNDP) analyses the investments to be carried out during the ten-year period between 2018 and 2027 for the development and the secure operation of the transmission electricity system. The TYNDP takes into consideration the total yearly demand forecast for the period 2016-2025 as well as the maximum forecasted demand for each transmission substation. The TYNDP is implemented by the Transmission System Owner.	Implemented	2019–2028
70	Regulatory Decision 05/2017 on the Implementation of a Binding Schedule for the Full Implementation and Operation by the Distribution System Operator (DSO) of the Meter Data Management System (MDMS).	MDMS enables the registration and entry of the meters in a particular registry. The meter readings of all consumers are registered and communicated to respective suppliers. Manages the supplier switching process.	Implemented	2017–2020
71	Regulatory Decision 02/2018 on the Implementation of a Binding Schedule for the Mass Installation	AMI offers the necessary observability, monitoring and recoverability of data and measurements of electric energy and power at the customer's connection point. AMI increases the accuracy of load	Implemented	2021–2027

Measure number	Measure/policy name	Description	Status of Implementation	Application period
	and Operation by the Distribution System Operator (DSO) of Advanced Metering Infrastructure (AMI).	and demand forecasting, improves the system analysis, enables the load and demand management and in effect the optimisation of the operation of the Distribution System. AMI aids at managing EV Charging, PV System management and generation monitoring, optimisation of RES generation forecasting, maximises RES penetration, enables remote DSO operations (connections/ disconnections, meter reading), aids at the reduction of non-technical losses.		
72	Project of Common Interest "EastMed Pipeline" with an MoU signed in 2017 between Cyprus, Greece and Israel for the acceleration of its implementation.	EastMed Pipeline, with overall cost of €6 billion, is aiming to connect the Eastern Mediterranean energy resources and European energy markets (Israel, Cyprus and Greece). Consisting of a 2000 km offshore/onshore gas pipeline, it is designed to transport gas with an initial capacity up to 20bcm/y. According to Article 24 of the TEN E Regulation (no. 2023/869), it shall maintain PCI status (forthcoming 7th list in November 2025) until Cyprus is fully connected to the EU gas network. A prerequisite is the exclusive transport of hydrogen by 2036.	Planned	2026–2030
73	Financial assistance for the Preparation of the Natural Gas Market in Cyprus- Cynergy programme	CYnergy takes as a focal point the LNG Import Terminal (CyprusGas2EU) to be developed in Cyprus and aims at developing a comprehensive strategy for the introduction and use of Natural Gas by the sectors of transport and energy in Cyprus (involves market related, technical & financial, commercial and environmental studies)	Expired	2016–2020
74	Regulatory Decision 01/2017 on the Implementation of a Binding Schedule for the Full Commercial Operation of the New Electricity Market Model.	The introduction of Forward and Day-Ahead Markets and at a later stage an Intraday market in order to allow for new RES, IPPs and Suppliers to compete in generating and supplying electricity to final customers. Forward market is based on bilateral over the counter trading between suppliers and generators. The incumbent's bilateral prices will be fixed at its Wholesale Regulated Tariff. Day-Ahead Market will be centrally operated by the Cyprus Transmission System Operator (TSOC), who is also the Market Operator), obligatory for conventional generators for their available capacity not contracted in the Forward Market or allocated to cover Replacement Reserve.	Implemented	2017–2025

Measure number	Measure/policy name	Description	Status of Implementation	Application period
		The energy offer cap will be Administratively Defined by the Regulator. The minimum energy offer by the incumbent is equal to its generator's minimum variable cost. Integrated Scheduling Process will be used for preallocating balancing activation instructions to Balancing Responsible Parties (before real time Balancing) and procuring frequency ancillary services (FCR, aFRR, mFRR). ISP may modify the Unit Commitment (GUC). Schedule.Real time Balancing inherits ISP GUC. Dispatch instructions will be issued by the TSOC during real time balancing.		
75	Regulatory Decision on Storage Systems that are installed before the metering point.	The (draft) Regulatory Decision permits the participation in the electricity market of licensed storage systems installed before the meter that are not combined with consumption of energy locally and calls the TSOC to amend the Market and Network Rules to enable their non-discriminatory participation in the market. The TSOC should also define the minimum capacity and technical characteristics of a storage system to be able to participate in the electricity market as a dispatched unit. The (draft) Regulatory Decision also calls the TSOC, in cooperation with the DSO, to take into consideration when drafting the Transmission - TYNDP any developments regarding the provision of services by storage systems in combination with the rate of RES development, the benefits due to loss reduction, investment avoidance and/or upgrading of the network and/or the Transmission and Distribution Substations. The Transmission TYNDP should also include storage systems before the metering point. The Regulatory Decision calls the TSOC to amend Market and Network Rules in order to allow for the provision of services by storage systems related to the operation of the transmission and distribution systems, to suggest network charges applicable during their charging cycle in the case that such systems offer services to the TSOC and/ or DSO related to the operation of the transmission and/or distribution system.	Implemented	2020–2021
76	Amend the national law to enable operation of the electricity market	The Law allows for the operation of the Net-Pool market electricity model. The Net-Pool market model is in compliance to the EU Target	Expired	2019–2021

Measure number	Measure/policy name	Description	Status of Implementation	Application period
	and make the Market Operator/TSO independent from the vertically integrated electricity company	Model. The category of "Aggregators" is intriduced to allow for the combination of load and energy, including energy from storage systems. It also creates the category of "Storage Systems" and allows for the licensing of aggregators, storage systems and BRPs. The Regulator is authorized to decide on simplified licensing procedures for self-consumption, RES, suppliers and non-connected generation systems. Strengthens clauses related to the Distribution System Owner, Distribution System Operator. Foresees for the independence of the Cyprus TSO from the incumbent by providing to the former the necessary resources and autonomy in decision making related to its budget and personnel. Provides for a certification process for the TSO independence. Broadens the duties and responsibilities of the TSO to include Market Operation and provides to the MO/TSO the authority to enforce Market Rules. Strengthens clauses related to the Transmission TYNDP. The Law also concentrates previously scattered clauses on Universal Service under a dedicated Article.		
77	Amend Trade and Settlement Rules and Transmission and Distribution Rules to allow for Demand Response in the market according to Art. 15(8) Directive 2012/27/EU	Technical modalities will be defined in order for the national law, as harmonized with the Directive, to be applied in practice.	Implemented	2020–2021
78	Minesterial Orders (no. K.D.P. 307/2023, 308/2023, 309/2023 and 310/2023) regarding the energy poverty, the categories of vulnerable customers of electricity and the measures to be taken to protect such customers.	Based on the provisions of Directive 2009/72/EC that «each Member State shall define the concept of vulnerable customers which may refer to energy poverty and, inter alia, to the prohibition of disconnection of electricity to such customers in critical times..», the Minister of Energy, Commerce, Industry & Tourism, after consultation with the Cyprus Energy Regulatory Authority (CERA) and the Minister of Labour, Welfare and Social Insurance, has issued an Order (no. K.D.P. 289/2015) regarding the energy poverty, the categories of vulnerable customers of electricity and the measures to be taken to protect such customers. The Order determines the categories of vulnerable consumers of electricity. Additionally, the	Implemented	2006–

Measure number	Measure/policy name	Description	Status of Implementation	Application period
		above Order defines the measures to protect vulnerable categories of electricity customers as follows: (a) reduced prices on electricity tariffs (special electricity tariff 08) which is based on a Ministerial Decision (no. K.D.P. 286/2016), (b) financial incentives (depending on the available budjet) for installing a net-metering Photovoltaic system , (c) financial incentives (depending on the available budjet) for upgrading the energy efficiency of their houses, (d) safeguarding the continuous supply of electricity, during critical periods, to those vulnerable consumers that uninterrupted power supply is essential for reasons related to their health"		
79	Project "LNG Import Terminal."	Introduction of Natural Gas to Cyprus via the development of the Cyprus LNG Import Teminal - Design and Constuction of the Cyprus LNG Import Teminal and 20 years for Operation and Maintenance.	Implemented	2019–2026
80	Single Action Plan for the restoration of the electrical system after power blackout	Cyprus Transmission System Operator (TSOC) submits to Cyprus Energy Regulatory Authority (CERA) whenever it is considered necessary an updated action plan for the restoration of the electrical system after power blackout. The Action Plan includes among other issues the steps/actions to be taken by the TSOC and the Power Plants themselves, the critical support staff, alert mechanisms, means of communication and any other possible actions for the implementation of the Plan. The Action Plan is in force since 2014 and since then several revisions have been made. it is expected that in 2019 the TSOC will submit to CERA revised version of the Action Plan.	Implemented	2014
81	Ministerial Decision ΚΔΠ 212/2014 for holding of emergency oil stocks equivalent to 90 days of net imports of petroleum products.	The Cyprus Organization for the Storage and Management of Oil Stocks (KODAP) is the Central Stockholding Entity of Cyprus established by “The Maintenance of Oil Stocks Law of 2003” (N.149(I)/2003)”. According to this law, KODAP is responsible for the maintenance of the national oil stocks equivalent to 90 days of net imports. In the event of a major supply disruption, the Minister of Energy, Commerce, and Industry may implement the emergency	Implemented	2014

Measure number	Measure/policy name	Description	Status of Implementation	Application period
		procedures and measures provided by the law, including the release of emergency oil stocks. NEC		
89	Regulatory Decision no. 03/2022 "On the Establishment of Basic Principles for the Formation of the Ten-Year Network Development Plan for the Transmission System".	Aim to include in the TYNDP-T the most important transmission infrastructure, including the necessary infrastructure for the penetration of Renewable Energy Sources – Electricity (RES-E) and electricity storage systems.	Adopted	2024–2033
90	Regulatory Decision no. 03/2022 "On the Establishment of Basic Principles for the Formation of the Ten-Year Network Development Plan for the Distribution System"	Aim to include in the TYNDP-T the most important distribution infrastructure, including the necessary infrastructure for the penetration of Renewable Energy Sources – Electricity (RES-E), the development of electromobility and electricity storage systems.	Adopted	2023–2032
91	Amend TSRs, TRs and TDS for the provision of ancillary services by storage facilities	The specification of products for the provision of high-performance ancillary services (eg fast primary frequency regulation, synthetic inertia), from electricity storage facilities.	Adopted	2024–2025
92	Regulatory Decision to define the framework required for end customers to have the right to operate as active customers and/or self-consumers.	Regulatory framework in order to activate the right of final customers to act as active customers.	Planned	2024
93	Regulatory Decision to define regulatory framework for citizen energy communities	Regulatory framework on promoting and setting Citizen Energy Communities and RES Communities	Planned	2024
94	Regulatory Decision to define regulatory framework for the participation of demand response through aggregation	Regulatory framework to enable the participation of demand response in the electricity market.	Planned	2025

Box 3.1. Key information

Competent authority
Energy Service, Ministry of Energy, Commerce, Industry and Tourism

Other involved authorities
- Cyprus Energy Regulatory Authority
- Public Natural Gas Company (DEFA)
- Electricity Authority of Cyprus
- Department of Environment

Type
Political, legislative

Relevant EU legislation
- (EU) 2024/1788 Internal Markets for Renewable Gas, Natural Gas, and Hydrogen
- (EU) 2022/869 Guidelines for trans-European Energy Infrastructure
- (EU) 2019/944 on common rules for the internal market for electricity
- (EU) 2019/942 on Cooperation of Energy Regulators
- (EU) 2019/941 on risk-preparedness in the electricity sector
- (EU) 2018/1999 on the Governance of the Energy Union and Climate Action

National legislation
- Κ.Δ.Π. 165/2020
- Κ.Δ.Π. 212/2014
- Κ.Δ.Π. 307/2023, 308/2023, 309/2023, 310/2023
- 2021 Law Regulating the Electricity Market, L.130(I)/2021
- Draft "Regulatory Framework for the promotion and facilitation of the development of CECs and RECs"
- Regulatory Decision to define regulatory framework for the participation of demand response through aggregation
- Regulatory Decision 05/2017 on the Implementation of a Binding Schedule for the Full Implementation and Operation by the Distribution System Operator (DSO) of the Meter Data Management System (MDMS)
- Regulatory Decision 02/2018 on the Implementation of a Binding Schedule for the Mass Installation and Operation by the Distribution System Operator (DSO) of Advanced Metering Infrastructure (AMI)
- Regulatory Decision 01/2017 on the Implementation of a Binding Schedule for the Full Commercial Operation of the New Electricity Market Model.
- Regulatory Decision on Storage Systems that are installed before the metering point.

Policies, measures and actions towards attainment
- See PaMs 67–82, 90–94

3D.1.1.1.1 Introduction and Use of Natural Gas in the Internal Market for Electricity Production

As noted in section 3A.1.7, natural gas supply for electricity production is contingent on the completion and safe commissioning of the LNG import terminal at Vasilikos. The earlier expectation for first gas by end-2025 has been overtaken by project developments; following technical and design findings and a comprehensive review now under way, the authorities indicate that the timeline is under revision, with earliest availability not before 2026, subject to the outcome of engineering verifications, contracting arrangements and delivery of remaining FSRU components.

Once operational, natural gas is expected to be used first in power generation and subsequently in other sectors (commercial, industrial, and selected transport uses). Beyond the direct emissions benefit of substituting heavy fuel oil and diesel, additional reductions are anticipated through higher conversion efficiency enabled by newer gas technologies and improved system operation. The infrastructure owner for the terminal is the Natural Gas Infrastructure Company.

The development of Cyprus's gas market framework follows EU rules. In 2024, the EU adopted the Gas & Hydrogen Package—Directive (EU) 2024/1788 (recast) and Regulation (EU) 2024/1789—which together set common rules for

the internal markets for renewable gas, natural gas and hydrogen. The Directive repeals Directive 2009/73/EC and must be transposed by 5 August 2026; the Regulation is directly applicable. Cyprus has historically relied on derogations for "isolated" and "emergent" markets in its national framework, a status reflected in CERA's re.

Box 3.2. Key information

Competent authority
Energy Service, Ministry of Energy, Commerce, Industry and Tourism

Other involved authorities
- Cyprus Energy Regulatory Authority
- Public Natural Gas Company (DEFA)
- Electricity Authority of Cyprus
- Department of Environment

Type
Political, legislative

Relevant EU legislation
– Directive (EU) 2024/1788 on common rules for the internal markets for renewable gas, natural gas and hydrogen
– Regulation (EU) 2024/1789 on the internal markets for renewable gas, natural gas and hydrogen
– Regulation (EU) 2024/1787 on the reduction of methane emissions in the energy sector
– Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate

ActionNational legislation
- Κ.Δ.Π. 115/2006
- Ν. 183(Ι)/2004 as amended

Policies, measures and actions towards attainment
- See PaMs 68, 73, 79

3D.1.1.2 Promotion of Renewable Energy Sources

The energy policy of Cyprus is harmonized with the European Union goal of promoting the use of energy from renewable sources, as a major step towards the reduction of global warming and climate change phenomena[49].

The EU RE Directive[50] set out specific national targets to be achieved by each individual Member State, regarding the share of RES generated in each Member State by the year 2020. Cyprus reached 16.88%, exceeding its 13% target. The new EU Directive 2023/2413 sets a collective EU mandatory target of 42.5% RES, with a goal of reaching 45%[51]. Cyprus' original target of 23% RES in gross final energy consumption for 2030 has been raised to at least 33%. There is an EU-wide target for 49% renewable energy in buildings by 2030, with an appropriate national target to be set by each member state. In industry, annual rate of renewable energy is targeted to increase by 1.6%. There is also a mandatory target for the use of renewable fuels of non-biological origin (green hydrogen) of 42 % of hydrogen used for final energy and non-energy purposes in industry by 2030 and 60 % by 2035.

Despite its exceedance of the 2020 gross final energy consumption target, considerable effort must be made to achieve the new target of 33% for 2030. Regarding the measures and policies established in the previous NECP for the promotion of RES and the achievement of national targets, the Plan for self-consumption of electricity from RES continues successfully through the categories of net-metering and net-billing and the installation of PV parks within the framework of the Plans for electricity production from RES within the framework of the Transitional Electricity Market. The categories of virtual net-metering and virtual billing were also implemented . net - billing) that provide the possibility of installing a PV system in a different location from the serviced premises. Grant programs will continue for both residential and non-residential consumers. The further penetration of RES in the electricity sector will be achieved through increased investments in photovoltaic systems (commercial and self-consumption

[49] http://www.investcyprus.org.cy/en/growth-sectors/cyprus-investment-sectors/energy-sector
[50] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (Text with EEA relevance), OJ L 140, 5.6.2009, p. 16–62
[51] http://data.europa.eu/eli/dir/2023/2413/oj

systems) as well as biomass-biogas exploitation projects for energy production and wind farms. Increased funding is provided for vulnerable consumers and residents of mountain areas, with significant investments also planned to upgrade the network and introduce smart metering. A Support Plan for hybrid RES projects (RES with storage) is under preparation which will operate through tenders and Contracts for Difference. The Strategic Environmental Impact Assessment details the mapping of suitable areas for RES, and the plan its implementation is described in section 3.1.2. of the NECP.

An overview of the policies and measures for the promotion of RES is provided in Table 3-10. Key information for cross-cutting measures are presented below in Box 3.3 Key Information, while an overview of the key information for renewable energy sources in electricity production and renewable energy sources for heating and cooling are presented in the following sub-sections.

Table 3-10. Summary list of the most important measures and policies for the promotion of RES

Measure number	Measure/policy name	Description	Status of Implementation	Application period
1	Plan for the production of electricity from RES for own consumption –	Support scheme for the installation of photovoltaic systems with a capacity of up to 10,4 kW for all consumers (residential and non-residential), using the net-metering method. The scope of the net-metering measure is to provide the option to all electricity consumers to cover all or part of their electricity consumption from a PV system. The generated RES electricity is subtracted from building's electricity consumption. Consumers pay only for the difference between the energy consumed from the grid and energy produced (net electricity used from the grid) plus a fee that reflects the cost of the electricity grid to support continuous supply and taxes (VAT, RES levy). Any exceeded electricity production is transferred for use in the next billing period (next month or two months). There are no fees for the produced electricity that is consumed in the self-consumer's premises and is not fed into the grid.	Implemented	2013-2027
2	Plan for the production of electricity from RES for own consumption – Net-billing	Support scheme for the installation of net-billing RES systems with capacity up to 8 MW for all electricity consumers (commercial and industrial premises, public buildings, households etc). The implementation of the measure started in 2018 as national policy to promote RES electricity and reduce the cost of electricity for the commercial and industrial consumers. The scope of the measure is to provide an option to medium and large scale electricity consumers to cover all or part of their electricity consumption from RES.The generated RES electricity that is not self-consumed is credited to the consumer in the respective purchase price of electricity from RES	Implemented	2018 - 2030

Measure number	Measure/policy name	Description	Status of Implementation	Application period
		and that amount is subtracted from the cost of the electricity purchased from the grid. Any credits for an excees production that is not used in a certain billing period are transfered for use in the next billing period (month or two months).Fees applied that reflects the cost of the grid to support continuous supply and taxes (VAT, RES levy). There are no fees for the produced electricity that is consumed in the self-consumer's premises and is not feed into the grid.		
3	Support scheme for the production of electricity from renewable energy sources for own use Category Self-consumption	Support scheme for the installation of photovoltaic systems and biomass/biogas systems with a capacity of 10 kW to 10 MW using the self-consumption method in commercial and industrial establishments and public buildings. Self-consumption of RES electricity was introduced in 2013 in the Support scheme for the production of electricity from renewable energy sources for own use. The scope of the measure was to provide an option to medium and large-scale electricity consumers to cover all or part of their electricity consumption from RES. In this case the consumer gets no credit for the generated RES electricity that is not self-consumed internally in its premises. Fees applied that reflects the cost of the grid to support continuous supply and taxes (VAT, RES levy). In 2018 the net-billing category was introduced as an alternative option to self-consumption for industrial and commercial consumers.	Expired	2013-2018
4	Support scheme for the production of electricity from renewable energy sources for own use. Category C: Stand -alone RES systems	A support scheme for the installation of Stand-alone PV and other RES systems not connected to the grid for all consumers. The capacity of the system is based on the annual electricity consumption of the user.	Implemented	2004-
5	Plan for electricity production from RES for own use. Category D: Virtual net-metering	Support scheme for the installation of photovoltaic systems with a capacity of up to 10,4 kW for residential	Implemented	2021 -202 7

Measure number	Measure/policy name	Description	Status of Implementation	Application period
		consumers and 20kW for agriculture consumers, using the virtual net-metering method. In this category the PV systems are installed in a different place from the building /premises that will cover its electricity consumption. The scope of the category is to provide the option to electricity consumers that do not have available space in their building to installed a PV system (e.g. multi-apartment building), to cover all or part of their electricity consumption from a PV system. The generated RES electricity is subtracted from building's electricity consumption. Consumers pay only for the difference between the energy consumed from the grid and energy produced from the PV plus a fee that reflects the cost of the use of the electricity grid and taxes (VAT, RES levy). Any excessed electricity production is transferred for use in the next billing period (month or two months).		
6	Plan for electricity production from RES for own use. Category E: Virtual net-billing	Support scheme for the installation of photovoltaic systems with a capacity of up to 150kW for all consumers, using the virtual net-billing method. In this category the PV systems are installed in a different place from the building /premises that will cover its electricity bill. The scope of the category is to provide the option to electricity consumers that do not have available space in their building to installed a PV system (e.g. hotels, multi-apartment building), to cover all or part of their electricity consumption from a PV system. The generated RES electricity that is feed to the grid is credited to the consumer in the respective purchase price of electricity from RES and that amount is subtracted from the cost of the electricity purchased from the grid. Any credits for an excess production that is not used in a certain billing period	Planned	2023 -2027

Measure number	Measure/policy name	Description	Status of Implementation	Application period
		are transferred for use in the next billing period (month or two months). Fees applied that reflects the cost of the use of the grid and taxes (VAT, RES levy)		
7	Sponsorship plan to encourage the use of RES in homes	Financial support is given for the installation of net-metering or virtual net-metering PV systems in existing residential buildings for which the application for a building permit was filed before 01.01.2017. Higher grant is provided for residential consumers in mountain areas. The Scheme is funded from the Renewable Energy Sources and Energy Conservation Fund.	Implemented	2018 - 2030
8	Grant scheme to encourage the use of RES in homes for vulnerable consumers	Financial support is given for the installation of net-metering or virtual net-metering PV systems in houses of vulnerable electricity consumers (families with low income, disability persons etc.). Higher grant is provided to vulnerable consumer compered to non-vulnerable (see PaM 7) The Scheme is funded from the Renewable Energy Sources and Energy Conservation Fund.	Implemented	2013 - 2030
9	Sponsorship scheme for the installation of a PV system for charging electric and hybrid (plug-in) vehicles in homes	The Grant Scheme is a measure to promote the use of RES electricity in transport. The Scheme provides financial incentives, for the installation of Photovoltaic Systems (up to 2kW), chargers and batteries in existing residences for the charging of electric or plug-in hybrid vehicles. In addition, the Scheme seeks to collect information on the charging of electric vehicles and/or hybrid plug-in vehicles in Cyprus.	Implemented	2020 -2030
10	Grant scheme for the installation or replacement of a solar hot water production system in residences	Grant Scheme for the installation or replacement of solar water heating systems in existing housing. The measure is in operation since 2004.	Implemented	2004 - 2030
11	Rural development program of the Ministry of Agriculture, Rural Development and Environment	Subsidy is granted under the scheme for actions that involve installation of PV systems used to generate energy for own use in agricultural holdings/enterprises.	Implemented	2014 - 2030

Measure number	Measure/policy name	Description	Status of Implementation	Application period
		Subsidy is also granted for purchasing energy storage systems (batteries).		
12	Support scheme for the installation of net-metering photovoltaic systems with capacity up to 20kW, in public schools buildings.	The measure provides the regulatory framework for the installation of around 5MW of photovoltaic systems in all public schools building (where is not already installed a PV system). The PV systems operate under the net-metering category. Each PV system could have a power up to 20kW. The measure required the thermal insulation of the roof tops of the school buildings were the PVs installed. The installation of PVs was implemented under a contract of the Ministry of Education, Culture, Youth and Sports with the Electricity Authority of Cyprus.	Expired	2017 - 2022
13	Support scheme for the installation of RES systems that will operate in the competitive electricity market	The Scheme covers the installation of commercial plants producing electricity from Renewable Energy Sources (RES) that will participate in the competitive electricity market. The produced electricity is sold to the Electricity Authority of Cyprus at the respective purchase price of electricity from RES, as set my Cyprus Energy Regulatory Authority, up until one year after the operation of the competitive electricity market. The scheme covered the installation of commercial PV systems, wind parks, solar concentrated station, biomass/biogas stations and wave energy systems.	Expired	2016-2018
14	Support scheme for Electricity Generation from Renewable Energy Sources (RES) within the context of the transitional regulation of the electricity market, to be included eventually in the competitive electricity market	The Scheme covers the installation of commercial RES plants for electricity production that operate within the context of the Transitional Regulation of the Electricity Market. After the operation of the competitive electricity market the RES systems will transferred in the competitive electricity market.	Implemented	2019-
15	Incentives for encouraging the use of RES in different types of developments	On 01/07/20, the Minister for Interior issued the Order 1/2020 (Use of Renewable Energy Sources in relation	Implemented	2014-

Measure number	Measure/policy name	Description	Status of Implementation	Application period
		to various types of developments), under Article 6 of the Town and Country Planning Act. The Order is setting out incentives and/or requirements for encouraging the use of RES in different types of developments. According to this Order, new buildings and buildings that are being renovated are given the opportunity to increase the building ratio by 5%, in cases where they are of energy class A and at least 25% of all their energy needs are covered by renewable sources, provided that the application for planning permits was submitted before 30 June 2020, or they are of energy class A and the maximum consumption of primary energy does not exceed 50 kWh per square meter per year, provided that the application for planning permit will be submitted from 1 July 2020 until 31 July 2025.		
16	Certification of small-scale RES system installers	Installer training programs for PV and solar thermal systems up to 30 kW	Implemented	2015 -2030
17	Research and innovation programs in the sector of RES	Participation in various research programs regarding the promotion of research, technological development and innovation in the sector of renewable energies in the topics of energy storage systems, green hydrogen, upgrade of national electric grid, implementation of CSP units, solar desalination etc.	Expired	2018-2022
18	Support scheme for the production of electricity from RES-Feed-in Tariffs for RES installations	The operation of the feed-in-tarrif (FIT) scheme started in 2004 as a national policy to get both environmental benefits and introduce the use of RES in electricity. The scheme provides a fixed selling price for each RES technology for a period of 15 or 20 years.RES feed-in tariffs was in dependence of RES type and unit capacity and was calculated for an internal return rate of 12%. In 2013 the selling price of the electricity from large scale photovoltaic parks (with total capacity	Expired	2004-2013

Measure number	Measure/policy name	Description	Status of Implementation	Application period
		50MW) was set after a tender. The measure stops in 2013.		
19	Support scheme for the promotion of renewable energy sources and energy saving	The measure was in operation from 2004 until 2013. Through the support scheme financial support was provided for the installation of solar water heater, solar space heating systems, geothermal systems and biomass heaters in residential and non-residential buildings.	Expired	2004-2013
20	Support scheme for storage units	The scheme will operate in two periods. In the first period, financial support will be provided for the installation of storage systems (batteries) in existing photovoltaic, wind, and biomass systems that operate under a feed-in-tariff contract, or in the net-billing or self-consumption categories. In the second period, financial support will be provided for the installation of storage systems (batteries) in photovoltaic parks operating under the Transitional Regulation of the Electricity Market. The budget of the Plan will range from EUR 10 million up to EUR 40 million (JTF, RES and Energy Fund, etc. The Plan will operate on the basis of tendering procedures and contracts for difference when the electricity market is operational.	Planned	2023-
21	Renewable Energy Communities	Implementation of an enabling framework to promote and facilitate the development of Renewable Energy Communities according to the provisions of article 22 in RED II	Adopted	2023-
22	Installation of PV in governmental buildings	Installation of PV Systems in Governmental buildings and army units for self-consumption	Planned	2023-
23	Improve forecasting modelling tool for Weather to Energy production	Development of a forecasting tool to improve the prediction of intermittent Renewable Energy Sources to the electricity Grid (wind parks, solar PV). The software analyses statistical data regarding the weather condition and RES electricity production from	Expired	2018-2019

Measure number	Measure/policy name	Description	Status of Implementation	Application period
		past periods and in combination with climate predictions from other metrological software, provides information of RES power production predictions base on weather. The tool can be used from RES producers and Grid Operators for better prediction of RES production and the management of the grid operation. The tool has been developed, in the framework of the technical assistance "Technical support to improve the penetration of renewable energy sources and energy efficiency in Cyprus" provided by the European Commission – Structural Reform Support Service (SRSS) and in collaboration with the Italian institute Ricerca sul Sistema Energetico (RSE).		
24	Framework for Repowering of existing RES systems	Development of a framework for the repowering of existing RES plants that will have their license expire (based on the provisions of Article 16 (6) of RES Directive 2001/2018/EC)	Adopted	2023-
25	Support Scheme for RES in order to promote innovation and reduce CO2	Projects that were selected for financing in the context of the European Commission's funding programme NER300: Development of two concentrated solar thermal plants for electricity production and storage units and smart grid. The projects were not implemented and the funding was cancelled.	Expired	2021-2022
26	Create localised tools for selecting the appropriate PV size and scheme	Development of a software tool that can be used for the sizing of a photovoltaic system based on the consumer's electricity demand profile. This software tool can be used by professionals, such as energy consultants that are responsible for designing solar PV systems, as well as by end-users, to indicate the system size (in kW) needed in each case. The software covers all the categories of the "Support Scheme for the production of electricity from renewable energy sources for own use" (net-metering, net-billing, stand-	Expired	2019-2019

Measure number	Measure/policy name	Description	Status of Implementation	Application period
		alone PVs). The software was developed in the framework of the technical assistance “Technical support to improve the penetration of renewable energy sources and energy efficiency in Cyprus” provided by the European Commission – Structural Reform Support Service (SRSS) and in collaboration with the Italian institute Ricerca sul Sistema Energetico (RSE).		
27	Statistical Transfer (RES)	Establishment of a statistical transfer agreement with other member states, according to the provisions of article 8 of RED II Directive (EU) 2018/2001. The measure will apply in case of non-achievement of national RES obligations or in case of excess RES share.	Planned	2024-
28	Energy Storage, Further analysis for both behind the meter and central storage for further Penetration of RES	The STORES project aims at analyzing the operation of numerous PV plants using a storage system to improve their self-consumption ratio, in the countries participating in the program. The technical information received are use in the development of policies and regulation regarding energy storage. The project has been completed in 2020."	Expired	2019-2020
29	Replacement of the conventional transport fuels with biofuels	According to Ministerial Order ΚΔΠ 11/2020, obligation is imposed on all transport fuel suppliers, to mix bio fuels, that meet the sustainability criteria, with conventional transport fuels (petrol and diesel) in order that the average annual biofuel energy content of conventional fuels reach 7,3% of the total energy content of the conventional fuels they place on the market.	Implemented	2011-
30	Strategic Environmental Impact Assestment Study regarding the new integrated Spatial Policy for projects that utilize energy from	Implementation of a Strategic Environmental Impact Assessment for the Spatial Planning of Renewable Energy Projects in the sector of electricity (photovoltaic, wind systems). The results of the	Expired	2021-2021

Measure number	Measure/policy name	Description	Status of Implementation	Application period
	renewable sources in the field of Electricity Generation.	assessment will be taken in to account for the update of the licensing and spatial planning regulations for RES projects by the competent authorities (Ministry of Interiors, Town Planning and Housing Department. Environmental Department)		
31	Digital One-Stop Shops for RES projects permitting	In accordance with the provisions of Article 16 of the REDII Directive (EU) 2018/2001): 1) Carry out a study to evaluate existing permitting procedures for RES projects to optimise the legislative, regulatory and administrative framework. 2) Creation of the One-stop-shop (One-stopshop), which concerns RES investments. 3) Preparation of a digital platform for the electronic submission and evaluation of applications for authorisation of RES projects. 4) Exemption from the obligation to obtain a planning and building permit for the installation of solar technologies (photovoltaic and solar thermal) on ceilings. The responsibilities of the OSS are to provide information, coordination, and guidance to applicants for RES projects, as well as to facilitate the entire administrative procedure for the authorization of RES projects.	Adopted	2023

Box 3.3. Key Information

Competent authority
Energy Service, Ministry of Energy, Commerce, Industry and Tourism
Other involved authorities
- Cyprus Energy Regulatory Authority
- Transmission System Operator
- Ministry of Finance
- Department of Town Planning and Housing, Ministry of Interior
- Department of Environment, Ministry of Agriculture, Natural Resources and Environment

Type
Legislative, voluntary
National legislation
- Amendment to Spatial Planning for Renewable Energy Sources
- Law No. 112(I)/2013 on the promotion and encouragement of the use of renewable energy sources which has repealed the old one (N.33(I)/2013)
- Law 110(I)/2011 establishing a European emissions trading system and other relevant issues

Relevant EU legislation
- Directive 2023/2413/EC of the European Parliament and of the Council of 18 October 2023 amending Directive (EU) 2018/2001, Regulation (EU) 2018/1999 and Directive 98/70/EC as regards the promotion of energy from renewable sources, and repealing Council Directive (EU) 2015/652
- Directive (EU) 2018/2001 of the European Parliament and of the Council of 11 December 2018 on the promotion of the use of energy from renewable sources
- Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity from renewable energy sources in the internal electricity market (Directive 2001/77/EC is repealed by Directive 2009/28/EC from 1 January 2012. Moreover, from 1 April 2010, Article 2, paragraph 2 of Article 3 and Articles 4 to 8 will be deleted)
- Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC
- Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community

Policies, measures and actions towards attainment
- PaMs 1–31

3D.1.1.2.1 Renewable Energy Sources in Electricity Production

The consumption of fossil fuels by energy industries in 2022 (41 PJ) increased by 75.9% compared to 1990 (23.3 PJ)[52]. After 2005, when the refinery stopped its operations, the emissions from energy industries were entirely caused by the production of electricity (1A1a), apart from a small contribution from other energy industries in 2020 and 2022 (less than 1%). Emissions from energy industries account for 35.5% of total national emissions without LULUCF for 2022, while in 1990 the contribution was 30.3%. The total GHG emissions from energy industries in 2022 (3.1 Tg CO2 eq.) increased by 76.3% compared to 1990 (1.8 Tg CO2 eq). During the period 2009–2013, a decreasing trend of emissions was observed, attributed to the penetration of renewable energy technologies to the energy mix, and to the economic recession that the country is facing since 2010. The trend changes in 2014 to an increasing trend with an annual average of 4%. All units producing electricity in Cyprus for public use running on conventional fuels are operated by the Electricity Authority of Cyprus. The main fuel used for the generation of electricity is HFO, followed by gas oil. The renewable energy share in electricity production amounted to 16.96% in 2022. Electricity production is regulated by the Emissions Trading System.

Cyprus has a national target of increasing RES in industry by 1.6% annually. Under the WAM scenario, it is projected to increase by 0.16% from 2021-2025, and 1.26% from 2026 until 2030. While this falls short of the national target,

[52] "Cyprus 2022 National Inventory Report (NIR)." Department of Environment, Ministry of Agriculture, Rural Development and Environment, 06 Apr 2022.

focus is given on improving the energy efficiency of industries, as it is projected that the final energy demand of the sector will decrease by 14% from 248 ktoe in 2022 to 213 ktoe in 2030. Table 3-11 shows the annual increase in the RES share until 2030.

Table 3-11. Progress and annual increase in the share of RES in industry until 2030 in the WAM Scenario

Year	Percentage of RES in industry (%)	Annual increase in the percentage of RES in industry	Average
2020	20.87%		
2021	26.94%		0.16% (2021-2025)
2022	22.51%	6.07%	
2023	19.49%	-4.43%	
2024	19.93%	-3.02%	
2025	21.69%	0.44%	
2026	23.75%	1.76%	1.26% (2026-2030)
2027	24.38%	2.06%	
2028	25.24%	0.64%	
2029	26.81%	0.86%	
2030	27.98%	1.57%	

RES share in total energy consumption in industry is estimated to reach 28% in 2030, due to biomass, waste to energy for industrial heat production and an increase in use of electricity from photovoltaic systems. The traditional fossil fuels of coal and coke are gradually replaced in industry by renewable sources, mainly biomass.

Box 3.4. Key information

Competent authority
Energy Service, Ministry of Energy, Commerce, Industry and Tourism
Other involved authorities
- Cyprus Energy Regulatory Authority
- Transmission System Operator
- Ministry of Finance
- Department of Town Planning and Housing, Ministry of Interior
- Department of Environment, Ministry of Agriculture, Natural Resources and Environment

Type
Legislative, voluntary
National legislation
- Law No. 112(I)/2013 on the promotion and encouragement of the use of renewable energy sources which has repealed the old one (N.33(I)/2013)
- Law 110(I)/2011 establishing a European emissions trading system and other relevant issues

Relevant EU legislation
- Directive 2023/
- Directive 2018/
- Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity from renewable energy sources in the internal electricity market (Directive 2001/77/EC is repealed by Directive 2009/28/EC from 1 January 2012. Moreover, from 1 April 2010, Article 2, paragraph 2 of Article 3 and Articles 4 to 8 will be deleted)
- Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC
- Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community

Policies, measures and actions towards attainment
-See PaMs 1–28, 30–31

3D.1.1.2.1 Renewable Energy Sources for Heating and Cooling

Heating and cooling emissions for industrial, housing and tertiary sectors, contributed 7% to the emissions of the energy sector in 2020, and 5% to the total emissions of the country (excluding LULUCF)[53]. Although they make a much lower contribution to emissions than electricity, their growth is mandated by national targets that form a significant shift to renewables. According to the final update to the NECP, there is a mandatory annual increase of 0.8% of RES in the heating-cooling sector from 2021 until 2025, and a 1.1% annual increase from 2026 to 2030. RES in heating and cooling in was 42.59% in 2021 and 41.56% in 2022[54].

The main technologies that were traditionally used in Cyprus for heating and cooling are oil-burning central heating and air-conditioning split units. Most of the RES in heating and cooling is due to solar energy exploitation through the widespread use of solar thermal systems for water heating. The contribution of biomass is also important, especially in the residential sector, as is the contribution from heat pumps. In addition, biomass from waste is used for heating in industry. RES in heating cooling increases to 49.3% for WEM and 53.6% for WAM in 2030.

The measures promoted are predominately associated with the promotion of solar thermal systems and heat pumps in buildings, while energy efficiency measures in the heating and cooling sector also play an important role; please see sections 3D.1.1.3 and 3D.1.1.4.

Box 3.5. Key information

Competent authority
Energy Service, Ministry of Energy, Commerce, Industry and Tourism
Other involved authorities
- Department of Town Planning and Housing, Ministry of Interior
- Department of Environment, Ministry of Agriculture, Natural Resources and Environment
- Department of Labour Inspection, Ministry of Labour and Social Insurance

Type
Legislative, voluntary
National legislation
- Law No. 112(I)/2013 on the promotion and encouragement of the use of renewable energy sources, which has repealed the old one (N.33(I)/2013)
- Law No. 142(I)/2006 regulating energy efficiency in buildings
- Law No. 30(I)/2009 amending Law No. 142(I)/2006 regulating energy efficiency in buildings
- Law No. 56(I)/2003 on Integrated Pollution Prevention Control (with amending laws no. 15(I)/2006, 12(I)/2008)

Relevant EU legislation
- Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity from renewable energy sources in the internal electricity market (Directive 2001/77/EC is repealed by Directive 2009/28/EC from 1 January 2012. Moreover, from 1 April 2010, Article 2, paragraph 2 of Article 3 and Articles 4 to 8 will be deleted)
- Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC
- Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community
- Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control and related amendments

Policies, measures and actions towards attainment
-See PaMs 10, 16, 19, 21, 29, and 31

[53] "Cyprus 2024 National Inventory Report (NIR)." Department of Environment, Ministry of Agriculture, Rural Development and Environment, 20 Sep 2024.
[54] SHARES summary

3D.1.1.3 Promotion of Energy Efficiency

Because of its national peculiarities, which make it a small and isolated system (an island country) without any interconnections to European or other energy networks (electricity, petroleum, natural gas) at present, Cyprus attaches great importance to energy efficiency aiming, inter alia, to improve energy supply security, increase competitiveness and ensure sustainable development/environmental protection.

Regarding the progress achieved in 2021 and 2022 for the targets for the energy efficiency dimension for the period 2021 - 2030 as set out in the 2020 NECP and revised by the implementation of the recast Energy Efficiency Directive 2023/1791/EU , the following applies:

- The Primary Energy Consumption (PEC) based on available Eurostat data for 2021 was 2.31 Mtoe and for 2022 it was 2.48 Mtoe and are consistent with the corresponding forecasts set in the previous NECP. It is recalled that the country's indicative target for 2030 is that the Primary Energy Consumption (PEC) in 2030 does not exceed 2.03 Mtoe.

- The Final Energy Consumption (FEC) based on the available Eurostat data for 2021 was 1.68 Mtoe and for 2022 it was 1.82 Mtoe and is lower than the corresponding forecasts set in the previous NECP. It is recalled that the indicative contribution of the country for 2030 is such that the Final Energy Consumption (FEC) in 2030 does not exceed 1.80 Mtoe.

- For the mandatory cumulative Energy Savings target in end-use of 349.04 Ktoe for the period 2021 – 2030, the energy savings achieved in 2021 amount to 54.40 Ktoe, compared to 53.85 Ktoe set for that year in the previous NECP. The measures with the greatest contribution were the taxation of motor fuels beyond the minimum taxation levels set by the relevant European Directive, the consumption tax on electricity, the replacement of street lighting lamps, the Save and Upgrade Schemes in Housing and some of the Grant Schemes of the RES and ESS Fund. Data on the energy savings achieved for the years 2022 and 2023 will be submitted to the EU. Commission in March 2025 in the context of submitting the biennial progress report.

- The mandatory EE of 1.31 GWh or 0.1127 Ktoe for the year 2021 in the buildings of central government authorities and as it results from Article 5 of Directive 2023/1791/EU has been achieved by 470%. The contribution of the measures implemented by the Department of Public Works (renovations of public buildings) Department of Electrical and Mechanical Services (individual EE measures) and the Energy Service (horizontal measures) in the year 2021 amounts to 0.530 Ktoe. Data on the energy savings achieved for the years 2022 and 2023 will be submitted to the European Commission in March 2025 in the context of the submission of the biennial progress report.

In accordance with Article 8 of Directive (EU) 2023/1791, cumulative end-use energy savings target for 2021-2030 amounts to savings of 349.04 ktoe of which 52.70 ktoe should be achieved by implementing measures among people affected by energy poverty, vulnerable customers, people in low-income households and people living in social housing. The savings will be achieved through a combination of the Energy Efficiency Obligation Scheme and alternative measures. The Energy Efficiency Obligation Scheme is a legislative mechanism that sets requirements on obligated parties to achieve energy savings targets for energy distributors and was implemented in Cyprus for the first time in 2023, with a total cumulative objective to be achieved by the obligated parties in the period 2023 – 2030 set at 100 ktoe. Full details of the scheme can be found in the 2024 Final Update to the NECP.

In addition to the planned measures, current challenges to energy efficiency and programmes to achieve the targets are described in section 3.2.iv. of the Final Update to the NECP. Main efforts will be directed to standardize procurement procedures for the provision of energy services in the public sector, design capacity building for stakeholder groups to strengthen individual and institutional capacity for wider uptake of energy efficiency measures, strengthen existing regulation for building codes and energy performance certificates, and revise energy audit requirements in enterprises. All these efforts must be conducted in the face of a limited budget, requiring the State to focus current resources on cost-effective support, and seek more private financing and market-based solutions to increase investment beyond 2024.

Planned upgrades to gas and electricity infrastructure and the relevant support, described in full in NECP 3.2.vi, include bi-annual reports to CERA on progress toward achieving the 80% penetration of smart metering systems by 14 September 2025, a technical and financial study to support the increased installation and efficiency of the new electricity from RES, implementation of a regulatory framework to allow the non-discriminatory participation of electricity storage facilities in the energy market, and increase of observability of the distribution system to increase efficiency of distribution system management.

There are also energy efficiency measures in heating and cooling primarily, mainly building upgrades to improve the energy efficiency on buildings in the residential and commercial sectors (e.g. roof insulation, installing new windows, improving the insulation of the building shell).

Measures under the Energy Efficiency Directive (Directive 2012/27/EU) and the Energy Performance of Buildings Directive (Directive 2010/31/EU) are described in Cyprus' 4th Biennial Report. Measures to implement minimum energy performance levels under the revised Energy Performance of Buildings Directive have not yet been designed, as the guidelines from the European Commission are not yet available.

The energy efficiency targets for Cyprus are compared with the projected achievement under the WEM and WAM scenarios in Table 3-12. These figures come from the latest NECP, wherein policies and measures for improvement of energy efficiency were created while considering the "Energy Efficiency First Principle." Please refer to the latest NECP for further details on the impacts of this principle.

Table 3-12. Initial and new energy efficiency targets, in relation to achievement based on forecast scenario

	Initial objectives		New objectives (Fit-for-55)		Scenario with existing measures	Scenario with additional measures
	EU	Cyprus	EU	Cyprus	Cyprus	Cyprus
Energy efficiency (improvement over expected forecast)	32.5% relative to 2007 baseline	-	11.7% relative to 2020 baseline	-	-	-
Primary energy consumption	-	2.4 Mtoe	-	2.03 Mtoe	2.34 Mtoe	2.13 Mtoe
Final energy consumption	-	2.0 Mtoe	-	1.8 Mtoe	1.99 Mtoe	1.80 Mtoe
Cumulative end-use energy savings	-	243.04 ktoe	-	349.04 ktoe	Achievement (476.65 ktoe)	
Cumulative end-use energy savings in consumers affected by energy poverty	-	-	-	52.7 ktoe	Achievement (53.35 ktoe)	

In accordance with Article 5 of Directive (EU) 2023/1791, member states should ensure that the total final energy consumption of all public bodies is reduced by 1.9% annually, as relative to 2021 baseline. As permitted by the directive, Cyprus will exclude the energy consumption of public transport and armed forces from the baseline, but include the reductions in final energy consumption in the public transport sector. Quantities are shown in Table 3-13, please see section 2.2.ii of the NECP for further details.

Table 3-13. Indicative reduction in total energy consumption of all public bodies that must be achieved from the date of entry into force of the obligation, i.e. from 11 October 2025

Reporting Bases of Final Energy Consumption of Public Bodies in Cyprus	Quantity in ktoe	Date the obligation comes into force	Obligation expiration date	Percentage reduction compared to the 2021 baseline	Annual quantitative reduction in ktoe

Indicative Reference Base of final energy consumption of all public bodies for 2021 excluding public bodies in local administrative units with a population of less than 50,000	40.99	11/10/2025	12/31/2026	1.9% (0.4% for 2025)	0.779 (for 2025 the obligation is 0.164)
Indicative Reference Base of final energy consumption of all public bodies for 2021 excluding public bodies in local administrative units with a population of less than 5,000 inhabitants	45.39	01/01/2027	12/31/2029	1.9%	0.863
Indicative Reference Base of final energy consumption of all public bodies for 2021 without exceptions	47.45	01/01/2030	-	1.9%	0.902

The regional collaborations STRATENERGY, C-IZEBs, and Upgrade are described in Section 3.2.VII of the NECP.

The energy efficiency policies and measures can be divided into residential, non-residential, transport, and industrial. All measures are presented in Table 3-14. Table 3-15 indicates the contribution to the energy saving target, Table 3-16 indicates the cumulative energy saving for the measures addressing energy poverty, and Table 3-17 indicates the scope of each measure. Box 3.6 provides key information. A note on measures 60-66: Some of the measures for the period 2021-2030 are the implementation of the Sustainable Urban Mobility Plans (SUMPs) in all cities in Cyprus (e.g. creation of cycle paths and bus lanes, implementation of measures to enhance accessibility and movement of cyclists, pedestrians and people with mobility difficulties in urban centers), promotion of electromobility by installing electric vehicle charging stations in publicly accessible areas and providing grants for the purchase of electric vehicles, replacement of the government vehicle fleet with the purchase of electric vehicles, etc.

Box 3.6. Key information

Competent authority

Other involved authorities

- Department of Town Planning and Housing, Ministry of Interior
- Department of Environment, Ministry of Agriculture, Natural Resources and Environment
- Department of Labour Inspection, Ministry of Labour and Social Insurance

Type

Legislative, voluntary

National legislation

- Revision of relevant legislation with a view to adopting Article 11 of the revised Energy Efficiency Directive is currently underway
- Law No. 112(I)/2013 on the promotion and encouragement of the use of renewable energy sources, which has repealed the old one (N.33(I)/2013)
- Law No. 142(I)/2006 regulating energy efficiency in buildings
- Law No. 30(I)/2009 amending Law No. 142(I)/2006 regulating energy efficiency in buildings
- Law No. 56(I)/2003 on Integrated Pollution Prevention Control (with amending laws no. 15(I)/2006, 12(I)/2008)

Relevant EU legislation

- Directive 2023/1791/EC of the European Parliament and of the Council of 13 September 2023 on energy efficiency and amending Regulation (EU) 2023/955
- Directive 2001/77/EC of the European Parliament and of the Council of 27 September 2001 on the promotion of electricity from renewable energy sources in the internal electricity market (Directive 2001/77/EC is repealed by Directive 2009/28/EC from 1 January 2012. Moreover, from 1 April 2010, Article 2, paragraph 2 of Article 3 and Articles 4 to 8 will be deleted)

- Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC
- Directive 2009/29/EC of the European Parliament and of the Council of 23 April 2009 amending Directive 2003/87/EC so as to improve and extend the greenhouse gas emission allowance trading scheme of the Community

Relevant National Regulations

- Regulatory Decision No. 02/2018 (ΚΔΠ 259/2018) – How to recover the costs of installing the Intelligent Metering Systems Infrastructure
- Regulatory Decision 02/2019 – Regulatory Administrative Act 204/2019 - On the elaboration of a thorough techno-economic study for the redesign of the transmission system and distribution system 2021-2030
- Regulatory Decision 03/2019 – Regulatory Administrative Act 224/2019 - Establishing basic principles of a regulatory framework for the operation of electricity storage installations upstream of the meter in the wholesale electricity market

Policies, measures and actions towards attainment

-See PaMs 32–66, 86–88, and 95–102

Table 3-14. Energy efficiency obligation regime and alternative measures under Articles 9 and 10 of the recast Directive (EU) 2023/1791 on Energy Efficiency.

Measure number	Policy Measure Title	Brief description of the policy measure	Implementation Status	Start / End
32	Fiscally neutral green tax reform by increasing environmental taxes	The Government of the Republic of Cyprus is promoting a fiscally neutral green reform, in accordance also to the European Green Deal. The proposed tax reform, entails shifting towards more efficient use of the economy's resources for environmentally sustainable development and the increase in the penetration of renewable energy. The reform will introduce a carbon tax for fuels used in the sectors of the economy that do not fall under the Greenhouse Gas Emissions Trading Scheme. The reform will also entail the gradual introduction of a levy on water, the introduction of a country wide charge on household/landfill waste and will take into consideration the effects of the tax on vulnerable households and may propose compensatory measures. The tax reform is carried out through Reform 1 under the Component 2.1 - Climate neutrality, Energy efficiency and Renewable Energy penetration of Cyprus Recovery and Resilience Plan 2021 – 2026.	Planned	2024–2030
33	Supporting schemes for energy efficiency investment using European Structural, Investment Funds 2021-2027 and Recovery and Resilience Facility (RRF) funding. ("Save - Upgrade in Housing" Grant Scheme / "Save - Upgrade for Businesses and Other Organizations" Sponsorship Plan)	The Plan aims at the extensive energy upgrade of existing homes. The 1st announcement of the plan was made in March 2021. Within the framework of the plan, there are 3 types of investments that can be implemented: A. Energy Upgrade of a home to a Nearly Zero Energy Building (NZEB) and compliance with the criteria set out in the relevant national legislation. Maximum Grant amount up to 32,000 euros. B. Energy Upgrade of a residence that will simultaneously install a photovoltaic system that will operate with the Net - Billing method , so that the following mandatory criteria are achieved: Primary energy savings of at least 60% based on the final PEA of the residence compared to the initial one, upgrading the residence to Energy Class A, the residence after the Energy Upgrade must achieve at least two of the three average thermal transmittance coefficients of the shell elements and a photovoltaic system that will operate with the Net - Billing method must be installed in the residence . Maximum amount of Sponsorship up to 27,000 euros. C. Energy Upgrade of a residence, so that the following mandatory criteria are achieved: Primary energy savings of at least 60% based on the final PEA of the residence compared to the initial one, the residence after the Energy Upgrade must achieve at least two of the three average thermal transmittance coefficients of the shell elements. Maximum Grant amount up to 22,000 euros. The grant rate for all types of investments amounts to 80% of the total eligible amount for the residences	Implemented	2021 – 2027 / 2023 – 2026

Measure number	Policy Measure Title	Brief description of the policy measure	Implementation Status	Start / End
		of vulnerable consumers and 60% of the total eligible amount for the remaining residences. The 2nd Announcement of the Scheme was made in May 2023, while the 3rd announcement of the Scheme is expected to be made before the end of 2024. The Scheme also aims to promote energy saving investments in buildings and facilities owned and/or used by small and medium-sized enterprises and non-profit organizations. Support is provided for the renovation and energy upgrading of buildings/infrastructures as well as for improving the efficiency of production processes. The announcement of the scheme was made in June 2022, while the 2nd announcement of the Scheme is expected to be made before the end of 2024. Within the framework of the scheme, there are 4 types of investments that can be implemented: A. Investments in buildings and investments related to the production and operation processes of SMEs or a combination of the two can be implemented, but without installing a PV system. For buildings, a primary energy saving of at least 35% must be achieved and at least one investment concerning the building envelope must be implemented. For the production and operation processes of SMEs, a primary energy saving of at least 30% must be achieved. Maximum amount of Sponsorship up to 100,000 euros and a sponsorship rate of 40% of the cost of each eligible category of expenditure. B. Investments in buildings and investments related to the production and operation processes of SMEs or a combination of the two and with the possibility of installing a PV system may be implemented. For buildings, primary energy savings of at least 50% must be achieved and at least one investment concerning the building shell must be implemented. For the production and operation processes of SMEs, primary energy savings of at least 50% must be achieved. Maximum amount of Sponsorship up to 150,000 euros and a sponsorship rate of 40% of the cost of each eligible category of expenditure. C. The implementation of investments in buildings is mandatory. Energy Upgrading of a building to a Nearly Zero Energy Building (NZEB), primary energy savings of at least 30% and compliance with the criteria set out in the relevant national NZEB legislation. For the production and operation processes of SMEs, primary energy savings of at least 30% must be achieved. Maximum Grant amount up to 300,000 euros and a grant rate of 40% on the cost of each eligible expenditure category. For Non-Profit Organizations, the grant rate is 60%. D. It only concerns investments in buildings used by non-profit organizations. Primary energy savings of at least 30% must be		

Measure number	Policy Measure Title	Brief description of the policy measure	Implementation Status	Start / End
		achieved. Maximum Grant amount up to 150,000 euros. Maximum Grant amount up to 100,000 euros and a grant rate of 60% on the cost of each eligible expenditure category.		
34	Energy Fund of Funds providing soft loans for energy efficiency.	The scope is to provide soft loan to cover the capital cost for implementing energy efficiency investments. Launching year expected the year 2020. Target group is households, SMEs and public sector. It will provide low interest loans.	Expired	2021–2023
35	Energy Efficiency Obligation System (EEOS).	As part of the implementation of the EEOS, energy distributors (electricity and oil products) are required to implement end-use energy saving measures to final customers. The Energy Efficiency Obligation Scheme is a legislative mechanism that sets requirements on obligated parties to achieve energy savings targets and was implemented in Cyprus for the first time in 2023.	Implemented	2023–2030
36	Supporting Schemes through national Fund of Renewable Energy (RE) & Energy Conservation (EC) for promoting energy efficiency investments in Residential and Public sector and energy audits in SMEs.	The measure concerns the various grant plans that will be operated in the coming years by the RES and ESE Fund. Since 2021, the following end-use energy saving related grant plans are in operation on an annual basis and are expected to operate at least until 2025: Roof thermal insulation plan in dwellings, floor thermal insulation plan in combination with PV installation in dwellings, Allowance Plan for installation/replacement of solar hot water systems in dwellings. In addition, 2021/2022 operated an Allowance Plan for the replacement of electrical appliances (air conditioners, refrigerators, refrigerator-freezers and washing machines) in homes of vulnerable electricity consumers, which is expected to operate again in 2025.	Implemented	2020–2030
37	Promotion of energy Efficiency in enterprises, through voluntary agreements under the “Business for climate” initiative.	Voluntary commitment from businesses to reduce their emissions by more than 8% by 2030. It includes specific commitment for improving their energy efficiency. The PAM will be implemented by Cyprus Employers & Industrialists Federation, and the National Government. Enterprises (other than those involved in the ETS) participating in the project have to sign of a voluntary declaration, to reduce greenhouse gas emissions by more than 8% by 2030.	Planned	2024–2030
38	Additional floor space “allowance” for new buildings and buildings that are renovated	In the case of new and renovated buildings, it is possible to increase the building rate by 5 % if the primary energy consumption of a building does not exceed 50 (kWh/m^2 year). The aim is to incentivise the construction or renovation of buildings that go beyond NZEB requirements. The incentive was revised on 1 July 2020 and expires on 31 March 2024. The incentive shall be applied following an order issued by the Minister for the Interior and shall be applied by the Spatial Planning Authorities in cooperation with the Ministry of Energy, Commerce and Industry. The incentive effect	Implemented	2014 - 2024

Measure number	Policy Measure Title	Brief description of the policy measure	Implementation Status	Start / End
		was extended until the end of 2024. Discussions with the Planning and Town Planning Department on the revision of the Mandate are ongoing.		
39	Uptake of energy efficiency services in public sector by removing procurement hurdles	Templates and standard procedures for energy performance procurement in public sector will be prepared and disseminated to all public authorities. The PAM will be implemented by the National Government.	Implemented	2021–2030
40	Removing barriers that impede the uptake of energy performance contracting and the implementation of energy efficiency investments in general	Targeted training and other events to be provided to selected target groups, involved in energy efficiency (implementation and financing). The PAM will be implemented by the National Government in cooperation with other parties/agencies/organizations.	Planned	2023–2030
41	Energy efficiency retrofits in selected municipal buildings through Interreg projects CYPRUS-GREECE	The Ministry of Energy, Commerce and Industry participates in the co-funded project with the acronym 'STRATENERGY' implemented under the European Regional Cooperation Programme INTERREG V-A Greece – Cyprus 2014-2020. The aim of the project for Cyprus is the energy upgrading of four buildings in the wider public sector. Some of the key energy efficiency measures to be implemented in buildings are thermal insulation of roofs and walls, replacement of windows, replacement of lighting, replacement of heating and cooling systems, and installation of photovoltaic systems. The energy performance certificate for all buildings following the energy upgrade should be at least B. Interventions in Cyprus' buildings were completed in December 2023.	Implemented	2018 -2023
42	Implementation of measures aimed at attaining energy savings in existing public buildings (annual obligation)	Article 5 of Directive 2012/27/EU requires Member States to renovate annually 3% of the total floor area of buildings owned and occupied by central government authorities or to choose an alternative approach, including other cost-effective energy saving measures in selected privately owned public buildings (including, but not limited to, large-scale renovations and measures to change the behaviour of users) in order to achieve equivalent energy savings by 2030. With the recast of the Directive, this obligation (Article 6 of Directive (EU) 2023/1791) is differentiated from 2026 and now 3% of the total floor area of buildings owned by Public Bodies must be renovated and converted into Nearly Zero Energy Buildings. Additionally, it includes the measures that will be implemented for the obligation related to Article 5 of	Implemented	2021–2030

Measure number	Policy Measure Title	Brief description of the policy measure	Implementation Status	Start / End
		Directive (EU) 2023/1791 on Energy Efficiency, concerning the public sector and presented in Chapter 2 of Annex 8.		
43	Net billing Scheme for High Efficiency Cogeneration (HECHP)	The net-billing scheme applies to commercial/industrial and public administration consumer categories for the installation of HECHP systems with the prime goal of covering their own consumption. The installed capacity of each net-billing system can be up to 5 MW. Launching year 2018.	Implemented	2018–2030
44	Pilot projects for installing high efficiency cogeneration in public buildings	The general hospital of Nicosia and the University of Cyprus were selected to install and operate HECHP in order to cover part of their energy needs.	Implemented	2018–2023
45	Minimum energy performance requirements for existing buildings,	All existing buildings undergoing major renovation and/or retrofit or add elements of their building envelope except those described in the Annex II of the Law that Regulates Energy Performance of Buildings (Law 142(I)/2006) must comply with the minimum energy performance requirements established by Ministerial Decree. This measure arises from Cyprus' obligation to implement Energy Performance of Buildings Directive (EPBD). The purpose of the measure is described in the wider purpose of applying the Directive concerned.	Implemented	2009–
46	Minimum energy performance requirements for new buildings	All new buildings, except those listed in Annex II of the Law that Regulates Energy Performance of Buildings (Law 142(I)/2006) must comply with minimum energy performance requirements established by Ministerial Decree. This measure arises from Cyprus' obligation to implement Energy Performance of Buildings Directive(EPBD). The purpose of the measure is described in the wider purpose of applying the Directive concerned.	Implemented	2020–
47	Energy efficiency obligation in public purchases and national green public procurement action plan	The 1st Green Public Procurement (GPP) Action Plan was implemented in Cyprus in 2007. The Action Plan revised in 2012 and remains in force up today. 'Green public procurement' (GPP) means that environmental factors are taken into account in entering into (public) contracts for buying products, services or works falling within the scope of the two Coordination of Public Procurement Procedures Laws , with a view to ensuring continued progress in environmental performance, by reducing environmental impacts and maintaining economic sustainability. On 30.06.2017 the Treasury of the Republic of Cyprus as the Competent Authority for Public Procurement issued a Circular (ΛΛ/ΑΑΔΣ 101) regarding the preparation of tender documents. The Competent Authority informs, among other issues, all Contracting	Implemented	2007–

Measure number	Policy Measure Title	Brief description of the policy measure	Implementation Status	Start / End
		Authorities for the implementation of GPP in public contracts as well as for the obligation to take into account the energy efficiency in public contracts.		
48	Implementation of soft measures (information campaigns, training, workshops, etc.).	The Ministry of Energy, Commerce and Industry (MECI), places particular emphasis on providing people with information on energy issues, with a view to increasing awareness among citizens and among different professionals. For this purpose, MECI in cooperation with other bodies organise every year, workshops associated with Energy Saving training seminars , energy efficiency awareness campaigns, development of and energy savings tool for citizens, lectures at schools, distribution of leaflets on energy efficiency issues, awareness for taking behavioural changing measures in public sector etc.In addition, MECI participates in the annual 'Save Energy' exhibition organised by Cyprus Employers and Industrialist Federation and distributes material concerning ES and RES technologies and through Facebook, Twitter and YouTube accounts promote, among other things, ES and RES.	Implemented	2021–2030
49	RES and Energy Conservation fee (tax)applied on electricity.	Compared to the minimum level of electricity tax of 0.1 Euro/kWh provided for in Directive 2003/96/EC, the consumption tax leads to higher retail prices for electricity. The energy savings due to this taxation exceeding the EU minimum levels are taken into account, as the consumption tax is imposed for energy efficiency. On 20/12/2019, the Promotion and Encouragement of the Use of Renewable Energy Sources (Determination of the Amount of Consumption Fee) Regulations of 2019 (R.D.P. 417/2019) were published in the Official Gazette of the Republic of Cyprus, which came into force on 1 January 2020. From 01/01/2020, the consumption fee imposed on all electricity consumers amounts to 0.5 euro cents per kilowatt-hour, excluding vulnerable consumers where half the charge applies. The respective amount of the Consumption Fee is provided for by a methodology (article 11(2) of Law 108(I)/2022) according to which, the amount of the consumption fee, imposed from January 1 of each year, is calculated in euros per kilowatt-hour, rounded to the fourth decimal place, as the quotient of the annual financial needs of the Fund by the expected total annual consumption of electricity. It is further provided that, the amount of the consumption fee may not be less than 0.12 eurocent per kWh .	Implemented	2021–2030
50	Energy efficient street lighting	The measure concerns the replacement of existing road lighting lamps with more efficient ones on national highways as well as on local roads of municipalities and communities. Communities: The measure concerns the gradual replacement of street lighting (approximately 100,000 lamps) in all communities of Cyprus. The replacement in all Communities has been completed within 2022. Municipalities: In	Implemented	2018–2024

Measure number	Policy Measure Title	Brief description of the policy measure	Implementation Status	Start / End
		2018, a financing tool was created for municipalities and communities through which they can apply for a loan from the Ministry of Interior for the replacement of street lighting. By the end of 2022, funding had been approved and granted to 11 municipalities. The financing tool remains open for use by municipalities.		
51	Electronic tool kit for consumers	The electronic tool is available online to the public since June 2019. The purpose of the tool is to assist the public to easily identify the cost and benefits of various energy efficiency and RES measures. A range of different functions are available to the users, including estimation of the energy consumption of different type of energy efficiency and RES measures. By having this information consumers can decide for the most beneficial option for their energy related products.	Implemented	2018–
52	Energy efficiency in electricity infrastracture	This measure aims to decrease system losses and lead to substantial energy savings in the distribution system by upgrading the medium nominal voltage of 11kV to 22kV. This will require designing new transmission/distribution substations at 22 kV of nominal voltage, upgrading switchgear and other equipment e.g. transformers operating at 11kV, planning to switch from 11kV to 22kV where the equipment is already upgraded to 22kV but operation is still at 11kV. This measure was indicated by the assessment that was undertaken to evaluate the energy efficiency potentials of the electricity infrastructure in Cyprus (Art. 15(2) of the EED).	Implemented	2016–2030
53	Measures promoting the installation of small-scale renewable energy technologies on or in buildings	The implementation of the measure reduces the energy purchased by the final customers where small-scale renewable energy technologies are installed and promotes the self consumption of RES energy produced on or in the building.	Implemented	2015–2030
54	Energy efficiency in electricity infrastracture	Increase of energy efficiency in electricity generation due to the increase of efficiency and the switching of the fuel to natural gas	Implemented	2019–2024
55	Efficient district heating and cooling	Development of efficient district heating and cooling infrastructure based upon RDF fired cogeneration technologies in tourist areas.	Planned	2027–2029
56	Energy efficiency in water sector	The Water Department of the Ministry of Agriculture, Rural Development and Environment aims to implement the following energy efficiency measures by 2030: Energy efficient design of water supply networks. Procurement based on energy efficiency. Preventive maintenance of pumping equipment. Leak detection. Energy efficient water management. Introduction of energy management. Planning is at an early stage and the available information is limited. In addition, investments have been approved for implementation through the Recovery and Resilience Plan	Planned	2023–2030

Measure number	Policy Measure Title	Brief description of the policy measure	Implementation Status	Start / End
		regarding the supply and installation of Smart Water Meters in specific Municipalities of Cyprus.		
57	Advanced Metering Infrastructure Plan	"The measure concerns the gradual installation of 400,000 smart electricity meters in the country's building stock during the period 2023 -2027. The installation of smart meters will be carried out through the Recovery and Resilience Plan. Smart meters facilitate the optimization and control of the distribution system, increase the penetration of distributed renewable energy sources in the system, and enable the concentration of RES and increase the direct participation of the end customer at all stages of the market. In addition, the use of smart meters will allow the creation of the necessary conditions for strengthening the role of citizens as consumers. Based on the project schedule, 250,000 smart meters should have been delivered and installed by 30/06/2026, while the supply and installation of all 400,000 meters should have been completed by January 2027. "	Implemented	2024–2027
58	Excise tax on road transport fuels exceeding the minimum levels as required in Directive 2003/96/EC.	Energy savings resulting from tax measures exceeding the minimum levels of taxation applicable to motor fuels as set out in Directive 2003/96/EC are taken into account, as energy taxes are levied for energy efficiency. Until 2012, excise duties on motor fuels in Cyprus were at the minimum level set out in Directive 2003/96/EC. Subsequently, taxes on diesel fuel were increased in two stages (2013 and 2014) and reached 0.479 euros/litre, while petrol was 0.450 euros/litre. These tax levels changed in December 2018, when the Parliament of Cyprus decided to reduce excise duty levels by 0.05 euros/litre on all liquid fuels taxed above the EU minimum level. On March 8, 2022, they were reduced to the EU minimum levels of Directive 2003/96/EC and then returned/increased to previous levels in 2024.	Implemented	2014–2030
59	Vehicle excise duty based on CO2 emissions.	This measure relates to the tax imposed on vehicles with a view to reducing CO2 emissions, which has been in force since 2014. The latest amendment to the Motor Vehicles and Road Traffic Law (Law N.47(I)/2019) has revised the method of calculating the motor vehicle registration fees beyond the CO2 parameter. More specifically, higher fees are now charged for vehicles emitting more than 120 g/km. Furthermore, an additional fee is included based on the 'Euro' technical specifications of vehicles.	Implemented	2012–
60	Old vehicle scraping scheme and financial incentives for the	Incentives for the purchase and use of low/zero emission vehicles including the old vehicle scraping scheme and financial incentives for the purchase of electric vehicles that was announced in late 2019. This scheme will come into force in 2020.	Expired	2020–2021

Measure number	Policy Measure Title	Brief description of the policy measure	Implementation Status	Start / End
	purchase of electric vehicles			
61	Installation of charging points and infrastructures for electric vehicles	The Electricity Authority of Cyprus has deployed a total of 19 recharging stations accessible to the public in Cyprus: 7 charging stations in Nicosia, 5 in Limassol, 2 in Larnaca, 2 in Ammochostos and 3 in Paphos. Furthermore, the Department of Electromechanical Services is proceeding to the installation of 10 high charging stations in publicly accessible areas, for example such as hospitals, large publicly accessible parking places or outside public services buildings.	Implemented	2018–
62	New Bus Contracts 2020-2030	This measure will be implemented via specific requirements within the new bus operators' contracts that will come to force in 2020. More specifically, based on the new contracts, it is required that the average age of any PT operator's bus fleet drops to 10 years for the contract period 2020-2030. At the moment, on a national level, the average age of the public bus fleet is approximately 17 years and it is therefore expected that extensive renewal of the fleet will be undertaken to meet these requirements. This measure will be implemented by including specific requirements within the new bus operators' contract such as: • Additional Cost for the Tenderer to Convert their bus fleet to Compressed Natural Gas (CNG), when such fuel source is available in Cyprus and the prerequisites for doing so exist. The proposal should be identifying, but not costing, the number of CNG Fuel Stations; • Additional Cost for the Tenderer to provide Electric Buses (maximum capacity 22 persons) in Historic City Centres • May submit a variant to their standard offer (of 10 year contract period), showing amortisation over a longer period – not exceeding 15years – for supplying a fleet with vehicles (buses) operating with electric energy, which are more expensive than the usual diesel buses, and will require further significant investments on charging stations in depots and key locations, but contribute towards a cleaner environment.	Implemented	2020–2030
63	Installation of telematic system in public bus fleet	The Ministry of Transport, Communications and Works has installed, a telematic system that manages the bus services and records data for further optimisation of the public transport system. The related website and mobile application contain a detailed map of the routes and the timetable of buses in order to facilitate passengers in real time. This action was completed in 2018, and its cost was approximately €7,000,000, including maintenance for 5 years.	Expired	2026–2018

Measure number	Policy Measure Title	Brief description of the policy measure	Implementation Status	Start / End
64	Shift of modal share from car trips to sustainable modes of transport – Implementation of Sustainable Urban Mobility Plans	"Target of Modal share of all modes of transport are set/will in the Sustainable Urban Mobility Plans and the National Strategic Plan Actions/ measures and include: • Significantly improved bus service (routes, frequency, hours of operation) • Upgrading of infrastructure for pedestrians, cyclists and public transport • Development and implementation of a holistic parking policy • Configuration of zero or low emission zones • Promotion of a tram system in Nicosia • Development and implementation of high-quality public transport corridors for all cities (including bus-lanes)"	Implemented	2020–2030
65	Use of buses with low or zero emissions	• Complementary measure of limited scope • Incorporation into the terms of the new public transport contracts • Harmonization and implementation of European Directives and the 'Clean Vehicles Directive' etc. • Provide more incentives for tourist buses to convert to renewable energy sources engines	Implemented	2020–2030
66	Use of vehicles with low or zero emissions	• Harmonization and implementation of European Directives and the 'Clean Vehicles Directive' etc • Additional Incentives to use low/zero emission vehicles.	Implemented	2020–2030
86 (New Measure)	Article 9 of EPBD: Minimum energy performance standards for non- residential buildings and trajectories for progressive renovation of the residential building stock	Gradual introduction of minimum energy performance standards for non-residential buildings based on national thresholds to trigger the renovation of buildings with the lowest energy performance. Introduce measures to decrease the average energy performance of the national residential building stock by 16 % by 2 030 in comparison to 2020, and by 20-22 % by 2035, based on national trajectories	Planed	2026–2033
87 (New Measure)	Article 11 of EPBD: Zeroemission buildings	From 2028 the buildings belonging to public bodies and from 2030 all new buildings must be zero emission buildings	Planed	2026–
88 (New Measure)	Article 6 of EED: Exemplary role of public bodies' buildings	Renovation of at least 3 % each year of the total floor area of Heated and/or cooled buildings that are owned by public bodies into at least nearly zero-energy buildings or zero-emission buildings.	Planed	2025–

Measure number	Policy Measure Title	Brief description of the policy measure	Implementation Status	Start / End
95 (New measure)	Energy upgrading of hospitals and/or hospital units and construction of new energy efficient hospitals and/or hospital units	The measure concerns the energy upgrade of hospital departments and/or hospital units with at least a 30% reduction in primary energy demand and the construction of new energy-efficient hospital departments and/or hospital units with a Primary Energy demand at least 20% lower than the requirement set out in the national legislation for the Nearly Zero Energy Building (NZEB). The energy upgrade of 8 hospital departments and/or hospital units and the construction of 3 new energy-efficient hospital departments and/or hospital units have been approved for implementation through the Recovery and Resilience Plan 2021 – 2026. Additionally, through national resources, energy upgrading of hospital departments and/or hospital units and the construction/expansion of energy-efficient hospital departments and/or hospital units will be carried out, applying the above requirements.	Planed	2021–2026
96 (New measure)	Grant Scheme "Encouraging the reduction of greenhouse gas emissions in enterprises"	The Scheme was announced in February 2024 and aims to provide financial incentives in the form of public funding to encourage the reduction of greenhouse gas emissions by existing Small and Medium Enterprises and existing Large Enterprises. The amount of financial support provided will depend on the type of enterprise (Small, Medium, Large) and the type of investment. Within the framework of the operation of the Scheme, it is expected that some of the eligible categories of expenditure will be the preparation of environmental studies, replacement of an existing vehicle fleet or part thereof with electric vehicles, installation of electric vehicle charging points, electric bicycles, organic waste management, food waste monitoring devices, replacement of old mobile or fixed air conditioning systems with new environmentally friendly ones, replacement of old equipment (e.g. refrigerators, freezers, fire extinguishing systems) containing fluorinated gases with self-use equipment containing environmentally friendly gases, installation of carbon footprint recording devices, replacement of light bulbs with LED bulbs , installation of light, motion and timer sensors, building/energy management system (BMS / EMS), smart meters, thermal insulation of the building envelope, energy-efficient windows and double glazing, energy-efficient electrical appliances. devices, Installation of Photovoltaic Systems for self-production, Installation of solar thermal systems, etc.	Planed	2024–2030
97 (New measure)	Individual energy efficiency interventions and energy efficiency	The measure concerns the implementation of individual energy efficiency interventions and energy upgrades in buildings of the wider public sector. Some of the investments to be implemented concern the integrated energy upgrade of existing	Planed	2023–2030

Measure number	Policy Measure Title	Brief description of the policy measure	Implementation Status	Start / End
	retrofits in buildings of the wider public sector	school buildings, the measures to be implemented for the obligation concerning Article 5 of the Energy Efficiency Directive and concern the wider public sector and are presented in Chapter 2 of Annex 8.		
98 (New measure)	Additional energy efficiency measures to achieve the share of cumulative energy savings related to energy poverty.	To achieve this obligation, one or more of the following measures will be adopted and implemented during the period 2025 – 2030: 1. Grant Scheme for the energy upgrade of existing vulnerable/energy poor homes into Nearly Zero Energy Buildings. 2. Grant Scheme for energy upgrading of existing vulnerable/energy poor homes with primary energy savings of at least 60%. 3. Grant Scheme for thermal insulation of roofs of vulnerable/energy poor homes. 4. Grant Scheme for roof insulation and installation of PV systems in vulnerable/energy poor homes. It is noted that these measures will be additional to measures 33, 36, and 103 related to energy poverty and vulnerable households.	Planed	2025–2030
99 (New measure)	Grant Scheme for Energy Upgrading and Strengthening the Competitiveness of Large Enterprises	The Plan aims to support, develop and upgrade Large Enterprises, including their energy upgrade, and provides financial incentives for expenses related to, among other things, the creation of a new business establishment, the upgrading of the operation and business activity of existing enterprises, the creation of new production units, the promotion of energy saving investments in buildings, facilities and/or equipment, as well as the transition of the enterprise's operation to a circular model.	Planed	2024–2027
100 (New measure)	Reconstruction and maintenance of refugee apartment buildings (ktiZO)	The "κτίΖΟ" project concerns the provision of grants to beneficiaries of apartments in 358 existing apartment buildings in government-run settlements for displaced persons, for the repair/strengthening or reconstruction, if necessary, of their apartment buildings. The project was announced in April 2023.	Planed	2023–2033
101 (New measure)	Amendment of the Income Tax Law regarding tax exemptions for businesses carrying out energy upgrades	Granting an increased capital allowance to businesses for capital expenditures incurred within the tax years 2023, 2024 and 2025 for improving the energy efficiency of buildings, for machinery and equipment connected to renewable energy systems and technical systems for improving energy efficiency, as well as for new motorized electric vehicles.	Planed	2023–2026
102 (New measure)	Promoting Energy Efficiency and developing innovative approaches in schools (PEDIA project).	The PEDIA project comprehensively addresses the needs of school buildings in Cyprus, in order to transform them into Nearly Zero Energy Buildings, while simultaneously addressing problems such as heating, air conditioning, lighting and ventilation. The “ PEDIA ” project undertakes a wide range of actions aimed at	Planed	2023–2026

Measure number	Policy Measure Title	Brief description of the policy measure	Implementation Status	Start / End
		improving energy efficiency and comfort conditions in at least 25 public school buildings in Cyprus. The construction part of the project is co-financed through the Cohesion Policy Programme “THALEA 2021-2027”, while the technical support is financed by the European Union programme “Project Development Assistance " of Horizon 2020 and the " PEDIA " project.		

Table 3-15. Contribution of measures to achieving the mandatory cumulative energy saving target

	Measure number	Policy Measure Title	Start / End	Cumulative energy savings without taking into account double counting of savings between measures (ktoe)	Cumulative energy savings taking into account double counting of savings between measures (ktoe)	Contribution to the achievement of the Target taking into account double counting of savings
	33	"Save - Upgrade in Housing" Grant Scheme	2021 - 2027	93.12	93.12	26.68%
	33	"Save - Upgrade for Businesses and Other Organizations" Sponsorship Plan	2023 - 2026	39.48	39.48	11.31%
	35	Energy Efficiency Obligation System (EEOS).	2023 - 2030	100.00	100.00	28.65%
	36	Supporting Schemes through national Fund of Renewable Energy (RE) & Energy Conservation (EC) for promoting energy efficiency investments in Residential and Public sector and energy audits in SMEs	2021 - 2026	21.45	21.45	6.15%
	38	Additional floor space “allowance” for new buildings and buildings that are renovated	2014 - 2024	4.16	4.16	1.19%
	41	Energy efficiency retrofits in selected municipal buildings through Interreg projects CYPRUS-GREECE	2018 -2023	0.75	0.75	0.22%
	42	Implementation of measures aimed at attaining energy savings in existing public buildings (annual obligation)	2021 - 2030	14.95	14.95	4.28%
	48	Implementation of soft measures (information campaigns, training, workshops, etc.).	2021 - 2030	2.78	0.00	0.00%
	49	RES and Energy Conservation fee (tax)applied on electricity.	2021 -2030	87.89	7.01	2.01%

	Measure number	Policy Measure Title	Start / End	Cumulative energy savings without taking into account double counting of savings between measures (ktoe)	Cumulative energy savings taking into account double counting of savings between measures (ktoe)	Contribution to the achievement of the Target taking into account double counting of savings
	50	Energy efficient street lighting.	2018 -2024	9.49	9.49	2.72%
	56	Energy efficiency in the water sector.	2021 -2030	0.80	0.80	0.23%
	57	Advanced measurement infrastructure plan.	2021 - 2027	10.32	0.00	0.00%
	58	Excise tax on road transport fuels exceeding the minimum levels as required in Directive 2003/96/EC	2014 - 2030	250.22	82.37	23.60%
	60 - 66	Energy saving measures in the road transport sector.	2021 -2030	29.75	0.00	0.00%
NM*	95	Energy upgrading of hospitals and/or hospital units and construction of new energy-efficient hospitals and/or hospital units	2021 - 2026	1.12	1.12	0.32%
NM	96	Grant Scheme "Encouraging the reduction of greenhouse gas emissions in businesses"	2023 - 2030	31.33	31.33	8.98%
NM	97	Individual energy efficiency interventions and energy upgrades in buildings in the broader public sector.	2023 - 2030	1.80	1.80	0.52%
NM	98	Additional energy efficiency measures to achieve the share of cumulative energy savings related to energy poverty.	2025- 2030	45.36	45.36	13.00%
NM	99	Grant Scheme for Energy Upgrading and Strengthening the Competitiveness of Large Enterprises	2024- 2027	12.24	12.24	3.51%
NM	100	Reconstruction and maintenance of refugee apartment buildings (ktiZO)	2023 - 2033	2.62	2.62	0.75%
NM	101	Amendment of the Income Tax Law to grant an increased capital deduction to businesses that implement energy efficiency improvement measures	2023 - 2026	3.78	3.78	1.08%
NM	102	Promoting Energy Efficiency and developing innovative approaches in schools (PEDIA)	2023 - 2026	0.29	0.29	0.08%
Totals				763.69	472.13	135.26%

*NM stands for new measure

Table 3-16. List for achieving the share of the mandatory cumulative energy savings target that addresses energy poverty.

	Measure number	Policy Measure Title	Start / End	Cumulative energy savings without taking into account double counting of savings between measures (ktoe)	Cumulative energy savings taking into account double counting of savings between measures (ktoe)	Contribution to the achievement of the Target taking into account double counting of savings
	33	"Save - Upgrade in Housing" Grant Scheme	2021 - 2027	4.89	4.89	9.28%
	36	Supporting Schemes through national Fund of Renewable Energy (RE) & Energy Conservation (EC) for promoting energy efficiency investments in Residential and Public sector and energy audits in SMEs	2021 - 2026	0.98	0.98	1.86%
NM*	98	Additional energy efficiency measures to achieve the share of cumulative energy savings related to energy poverty.	2025- 2030	45.36	45.36	86.07%
NM	100	Reconstruction and maintenance of refugee apartment buildings (ktiZO)	2023 - 2033	2.62	2.62	4.97%
Totals				53.85	53.35	102.18%

*NM stands for new measure

Table 3-17. Policies and Measures and sectoral coverage

No.	Measure number	Policy Measure Title	Coverage Area	Category
	33	"Save - Upgrade in Housing" Grant Scheme	Residential Sector	Buildings
	33	"Save - Upgrade for Businesses and Other Organizations" Sponsorship Plan	Tertiary and Industrial Sector	Buildings, processes
	35	Energy Efficiency Obligation System (EEOS).	All sectors	All
	36	Supporting Schemes through national Fund of Renewable Energy (RE) & Energy Conservation (EC) for promoting energy efficiency investments in Residential and Public sector and energy audits in SMEs.	Household Sector, Tertiary Sector	Buildings, devices, processes
	38	Additional floor space “allowance” for new buildings and buildings that are renovated	All sectors except the Transport Sector	Buildings

No.	Measure number	Policy Measure Title	Coverage Area	Category
	41	Energy efficiency retrofits in selected municipal buildings through Interreg projects CYPRUS-GREECE	Tertiary Sector	Buildings of the wider Public Sector
	42	Implementation of measures aimed at attaining energy savings in existing public buildings (annual obligation)	Tertiary Sector	Public Sector Buildings
	48	Implementation of soft measures (information campaigns, training, workshops, etc.)	All sectors	All
	49	RES and Energy Conservation fee (tax)applied on electricity	All sectors	Devices, buildings, processes
	50	Energy efficient street lighting	Tertiary Sector	Street Lighting in the Public and Broader Public Sector
	56	Energy efficiency in the water sector.	Tertiary Sector, Household Sector	Buildings, processes
	57	Advanced measurement infrastructure plan	All except transportation	Buildings, processes
	58	Excise tax on road transport fuels exceeding the minimum levels as required in Directive 2003/96/EC	All sectors	Transportation
	60 - 66	Energy saving measures in the road transport sector.	All sectors	Transportation
NM*	95	Energy upgrading of hospitals and/or hospital units and construction of new energy-efficient hospitals and/or hospital units	Tertiary Sector	Hospital buildings
NM	96	Grant Scheme "Encouraging the reduction of greenhouse gas emissions in businesses"	Tertiary Sector, Industrial Sector and Transport Sector	Buildings, devices, transportation, processes
NM	97	Individual energy efficiency interventions and energy upgrades in buildings in the wider public sector.	Tertiary Sector	Buildings of the wider Public Sector
NM	98	Additional energy efficiency measures to achieve the share of cumulative energy savings related to energy poverty.	Residential Sector,	Buildings
NM	99	Grant Scheme for Energy Upgrading and Strengthening the Competitiveness of Large Enterprises	Tertiary Sector, Industrial Sector and Transport Sector	Buildings, transportation, processes
NM	100	Reconstruction and maintenance of refugee apartment buildings (ktiZO)	Residential Sector,	Buildings
NM	101	Amendment of the Income Tax Law to grant an increased capital deduction to businesses that implement energy efficiency improvement measures	Tertiary Sector, Industrial Sector	Buildings, transportation
NM	102	Promoting Energy Efficiency and Developing Innovative Approaches in Schools (PEDIA)	Tertiary Sector	School buildings

*NM stands for new measure

3D.1.1.4 Energy Efficiency in Industry (Existing Companies)

Prior Measures

A Grant Scheme for encouraging the use of Renewable Energy Sources and Energy Saving for Natural and Legal Persons as well as for Public Sector Bodies engaged in an economic activity, was in place up until the end of 2013. The investments covered by the Grant Scheme fell into two subcategories. NA - Energy Saving (SA) and NB - Renewable Energy Sources (RES).

According to the provisions of the 2013 NEEAP, energy-savings investment means an investment in systems, equipment and materials whose installation achieves at least 10% energy savings in a specific application. Eligible expenses also included the design costs, where necessary, under the restrictions set out in the relevant application documents for the different categories and subcategories of the Scheme.

Category NA1 of the grant scheme applied only to existing undertakings operating in Cyprus for at least four (4) years. Financial aid was granted to energy investments in existing holdings of the undertakings in question, under the condition that the building license was issued by 28 December 2008. There were five (5) subcategories of investments as follows:

1. Purchase/installation of new equipment for the recovery of waste energy, either directly or indirectly by recovery/recycling of discarded materials, product or employed medium.
2. Purchase/integration of new materials and equipment to reduce idle energy consumption and energy losses.
3. Purchase of new equipment for the production, transmission, distribution and use of energy.
4. Purchase/installation of a new energy management IT system and/or integration of automated direct energy regulation/switch-off devices.
5. Replacement of existing materials and/or equipment connected with the subcategories 1 to 4.

Training seminars on energy management were held on an annual basis, in cooperation with the Human Resources Development Authority of Cyprus (HRDA), the Productivity Centre and the Energy Institute. Four (4) seminars were held in 2013 in Nicosia, Limassol, Larnaca and Paphos, with a duration of 60 hours each. The seminars were addressed to unemployed engineers of all specialties and focused, inter alia, on issues related to energy saving and energy efficiency improvement technologies/systems, ways of operation, selection of an appropriate system and applications in Cyprus (industry, hotels, services, etc.). In addition, examples for drawing up a technical-financial study for the installation of energy-saving systems and other examples of studies under ES Grant Schemes were presented.

Furthermore, information days were held in Nicosia, Limassol and Paphos addressed mainly to engineers who are members of the Cyprus Scientific and Technical Chamber (ETEK), the Cyprus Employers and Industrialists Federation (OEB), the Cyprus Chamber of Commerce and Industry (KEBE), hotel owners, entrepreneurs, credit institutions, municipalities and communities, contractors and the general public. Information days focused on energy audits, the energy efficiency of buildings, energy labelling, energy-saving and RES technologies used for heating and cooling purposes.

The Cyprus Employers and Industrialists Federation (OEB) also held an annual fair on energy saving, in cooperation with the EAC and the Energy Department. Printed information material on the different energy-saving technologies is distributed at the fairs. In addition, information is provided to the general public with regard to the provisions of the grant schemes. The most efficient energy-saving investments made by natural or legal persons under the grant scheme of the Special Fund ES are rewarded at the 'Save Energy' fair.

In 2013, the Energy Service has approved training institutes to carry out training programmes for candidate Category A and B energy auditors. Category A relates to all buildings regardless of their surface and air conditioning system and includes, inter alia, ports, airports and street lighting. Category B relates to industrial facilities, as well as agricultural activities and installations. The first category B energy auditors were entered in the relevant registry within 2014. The first energy auditors were included in the registry of Category A energy auditors in 2013.

In addition, Cyprus' NEEP establishes, as a measure to achieve the target under Article 7, co-financing for conducting energy audits in industries and for the implementation of the energy-saving investments proposed by the energy audit. The measure concerned approximately 10 industries per year.

A 2017 study noted that there was still a theoretical maximum saving potential of 34% for electricity and 5% for oil and gas for the industry sector[55].

Recent Planned Measures

Under the WAM scenario, combined heat and power generation in industry significantly increases energy efficiency in the coming years. There are also projects to renovate industrial equipment at a much faster rate than is being currently done. Finally, there are grant schemes to support the renovation of industrial buildings (e.g. roof insulation, installation of new windows, improving insulation), dissemination on energy efficiency awareness in the industrial sector, installations of systems to promote the monitoring of waste and energy usage, and adoption of direct and indirect carbon taxes.

The indirect and direct carbon taxes will arise from:

- The adoption of a carbon tax on all light industry as part of the tax reform from 2025,
- The new Light Industry Greenhouse Gas Emissions Trading System (ETS2) from 2027,
- The gradual purchase of ETS allowances by cement and ceramics (which until now have been largely made available free of charge to heavy industry) due to the implementation of the Carbon Border Adjustment Mechanism from 2026 onwards.

Cyprus' Final Draft of the National Strategy for Hydrogen was not available at the time of preparation for the WEM or WAM scenario, but given its recent publication it will likely factor into measures for future reporting.

Box 3.7. Key Information

Competent authority
Energy Service, Ministry of Energy, Commerce, Industry and Tourism
Other involved authorities
Department of Environment
Type
Legislative, compulsory
National legislation
Law No. 31/2009 on energy end-use efficiency and energy services
Relevant EU legislation
- (EU) 2018/2002 on Energy Efficiency amending (EU) 2012/27
- Decision 406/209/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020

Policies, measures and actions towards attainment
-See PaMs 33–35, 37–38, 40, 43, 45–46, 51–66, 96, 99, 101

3D.1.1.5 Residential Buildings

According to Article 4 of Directive 2012/27/EU on energy efficiency, Member States shall establish a long-term strategy for mobilising investments in the renovation of their national stock of buildings. According to Eurostat data for 2022, in Cyprus houses accounted for 19.8% of final energy consumption, whereas another 15.8% corresponds to commerce, hotels and services, i.e., mainly office buildings.

The long-term building renovation strategy, published in July 2024 and available in Annex III to the NECP, reports 473,148 residential buildings in all of Cyprus for 2021, almost half of which are single dwelling. The annual energy consumption per dwelling decreased from 1.16 tonnes of Oil Equivalent (toe) in 2000 to 0.85 toe in 2013 and to 0.75

[55] "An energy efficiency strategy for Cyprus up to 2020, 2030 and 2050," GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit), July 2017. Pg. 2.

toe in 2021. At the same time, the share of the residential sector in energy consumption has remained roughly stable since 2011. This can partly be attributed to the improvement in the energy performance of buildings with the implementation of the EPBD since the end of 2007.

The main energy product used in the residential sector is electricity coming from the grid, as it is responsible for almost half the final energy consumption, followed by fuel oil and LPG, which are the most important energy products after electricity. In 2022 solar energy accounted for almost 18%, whereas other renewable energy sources, such as PV systems, geothermal heat pumps and biomass have a smaller contribution. The highest primary energy consumption rates are due to air conditioning and heating. Solar thermal systems for domestic hot water production have an increased penetration in the residential sector as they are installed in 91% of dwellings.

The measures implemented in the residential sector taken into consideration are the following:

- Residential new buildings
- Residential buildings energy upgrade
- Residential solar panels replacement

Thus, many measures on renewable energy and energy efficiency are relevant to the improvement of residential buildings, and these can be found in 3D.1.1.2 and Section 3D.1.1.3, respectively.

Box 3.8. Key information

Competent authority
Energy Service, Ministry of Energy, Commerce, Industry and Tourism
Other involved authorities
- Ministry of Interior
- Municipalities
- Department of Environment

Type
Legislative, compulsory
National legislation
Law No. 142 (I)/2006 regulating energy efficiency of buildings and amending Laws N. 30(I)2009, N. 210 (I)2012, N. 15 (I)2017
Relevant EU legislation
Decision 2018/844/EU of the European Parliament and of the Council of 30 May 2018 amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency
Decision 406/209/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020
Policies, measures and actions towards attainment
- See PaMs 32–36, 38, 40, 45, 46, 48–57, 86, 98, 100, 101
- The Long Term Building Renovation Strategy, describing the support to the renovation of national stock of residential and non-residential buildings, both public and private, including policies, measures and actions to stimulate cost-effective deep renovation and policies and actions to target the worst performing segments of the national building stock, in accordance with Article 2a of Direction 2010/31/EU, can be found in Annex 3 of the Final Update to the NECP

3D.1.1.6 Non-residential Buildings

According to Eurostat data for 2022, in Cyprus commerce, hotels and services accounted for 19.8% of final energy consumption.

The long-term building renovation strategy, published in July 2024 and available in Annex III to the NECP, reports more than 34,000 non-residential buildings in all of Cyprus. Non-residential buildings include various types of buildings, the most important of which are offices, retail shops, restaurants, hotels and hospitals. The vast majority of customers under category 'other services' represent buildings and building units used as retail shops, which rank first in terms of number followed by offices. Roughly 70% of the energy demand is met by electricity.

The measures implemented in the non-residential (tertiary) sector taken into consideration are the following:

- Tertiary new buildings
- Tertiary buildings energy upgrade

Thus, many measures on renewable energy and energy efficiency are relevant to the improvement of non-residential buildings, and these can be found in 3D.1.1.2 and Section 3D.1.1.3, respectively.

Box 3.9. Key information

Competent authority
Energy Service, Ministry of Energy, Commerce, Industry and Tourism
Other involved authorities
- Ministry of Interior
- Municipalities
- Department of Environment

Type
Legislative, compulsory
National legislation
Law No. 142 (I)/2006 regulating energy efficiency of buildings and amending Laws N. 30(I)2009, N. 210 (I)2012, N. 15 (I)2017
Relevant EU legislation
Decision 2018/844/EU of the European Parliament and of the Council of 30 May 2018 amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency
Decision 406/209/EC of the European Parliament and of the Council of 23 April 2009 on the effort of Member States to reduce their greenhouse gas emissions to meet the Community's greenhouse gas emission reduction commitments up to 2020
Policies, measures and actions towards attainment
- PaMs 33–38, 40, 43, 45, 46, 48–57, 86, 96, 99, 101
- Implementation of national action plan on energy efficiency
- Implementation of national legislation
- The Long Term Building Renovation Strategy, describing the support to the renovation of national stock of residential and non-residential buildings, both public and private, including policies, measures and actions to stimulate cost-effective deep renovation and policies and actions to target the worst performing segments of the national building stock, in accordance with Article 2a of Direction 2010/31/EU, can be found in Annex 3 of the Final Update to the NECP

3D.1.1.7 Public Buildings

The term "public buildings", means buildings used by:

- Central government authorities such as Ministries, the Police and the General Prosecutor's Office;
- Local Administration, such as Municipalities and Communities
- Public schools, public universities and other public educational institutions;
- The military.

Central governmental authorities means all administrative services whose competence extends to the whole territory of the Republic of Cyprus, which are laid down in Annex IV to the 2006 Coordination of the Public Procurement, Works and Services Contracting Procedures and Relevant Matters Act. These authorities use 1,066 buildings and building units of which only 572 are properties of the public sector. As a rule, they use only electricity to cover their energy needs.

In the areas under the effective control of the Republic of Cyprus, Local Administration consists of 30 Municipalities and 350 Communities. Most Municipalities and large communities have only one building, used for administrative purposes and events. However, large Municipalities own more buildings which are being used to serve the public, as well as other building types, such as libraries and sports centers.

In Cyprus there are approximately 450 public schools of primary and secondary education. The Technical Department of the Ministry of Education and Culture is responsible for the implementation of projects related to the construction of new school units and the maintenance and extension of already existing ones. Regarding public universities, the University of Cyprus, which is the largest public university, owns most of the buildings that have been constructed in recent years within the Campus. The Technological University of Cyprus uses mainly historical buildings and leased buildings in the historical center of Limassol, whereas the Open University of Cyprus uses a building in Nicosia. Public universities have technical departments which are responsible for the maintenance and the smooth operation of their building infrastructures.

As noted in the NECP, the period 2021–2030 will apply the same approach as dictated by Article 5 of Directive 2012/27/EU, namely that Member States should annually renovate 3% of the total area of buildings owned and used by central government authorities or engage in an alternative approach that achieves equivalent energy savings. This will be extended to all buildings owned and occupied by public bodies (public and wider public sector). For 2021, the mandatory energy savings amount of 1.31 GWh (or 0.1127 ktoe) for 2021 was achieved by 470%.

A description of the policy and measures to promote energy services in the public sector and measures to remove regulatory and non-regulatory barriers to energy performance contracting and other energy efficiency service models can be found in Section 3.2.iii of the Final Update to the NECP.

Many measures on renewable energy and energy efficiency are relevant to the improvement of public buildings, and these can be found in 3D.1.1.2 and Section 3D.1.1.3, respectively.

Box 3.10. Key information

Competent authority
Energy Service, Ministry of Energy, Commerce, Industry and Tourism
Other involved authorities
-
Type
Legislative, Compulsory
National legislation
Law No. 142 (I)/2006 regulating energy efficiency of buildings and amending Laws N. 30(I)2009, N. 210 (I)2012, N. 15 (I)2017
Relevant EU legislation
Decision 2018/844/EU of the European Parliament and of the Council of 30 May 2018 amending Directive 2010/31/EU on the energy performance of buildings and Directive 2012/27/EU on energy efficiency
Policies, measures and actions towards attainment
- PaMs 32–36, 38–42, 44–57, 61, 87–95, 97, 102
- Implementation of national action plan on energy efficiency
- The Long Term Building Renovation Strategy, describing the support to the renovation of national stock of residential and non-residential buildings, both public and private, including policies, measures and actions to stimulate cost-effective deep renovation and policies and actions to target the worst performing segments of the national building stock, in accordance with Article 2a of Direction 2010/31/EU, can be found in Annex 3 of the Final Update to the NECP

3D.1.1.8 Promotion of Biomass and Alternative Fuels in Industry

Biomass and Alternative Fuels in the Cement Industry

Globally, historically, the primary fuel used in cement industry is coal[56]. A wide range of other fuels such as gas, oil, liquid waste materials, solid waste materials and petroleum coke have all been successfully used as sources of energy for firing cement-making kilns, either on their own or in various combinations. In Cyprus the predominant fuel used in cement production is pet-coke, while biomass and the non-biomass fraction of waste are also used.

[56] Chinyama, 2011, Alternative Fuels in Cement Manufacturing, available at https://www.intechopen.com/books/alternative-fuel/alternative-fuels-in-cement-manufacturing

Cement production continues to dominate the emissions from mineral products, accounting for 98% of this category in 2022[57]. The new cement producing installation in Cyprus installed in 2011 has the capability of using considerable amounts of alternative fuels and biomass. Non-renewable waste is consumed by only one cement-producing installation, which has been submitting an annual emissions report since 2005, in accordance with the requirements of the ETS law 110(I)2011. In the industrial waste category, we report the non-biomass fraction of biomass incinerated; i.e., sewage sludge, tires, ASF, MBM and compost. The waste is incinerated for production of thermal energy in the furnace which burns the raw material to produce the cement. In 2022, 219 TJ of non-renewable industrial waste, 1729 TJ of non-renewable municipal waste, and 1121 TJ of renewable municipal waste were incinerated. These are large increases from the first use of the materials, i.e. 24 TJ of municipal waste incinerated in 2012, and 18 TJ of industrial waste incinerated in 2001.

The WAM scenario envisions that the incineration of non-renewable waste will decrease from 33% of non-metallic mineral consumption in 2022 to 4% by 2030, and phase out entirely by 2040. Meanwhile, the incineration of biomass will increase from about 24% of the consumption in 2022 to 34% in 2030, and 65% in 2040. This is due in part to the new EU ETS of 2027. Specifically, the cement industry is implementing a scheme to replace coal with solid biomass derived mainly from waste.

Biogas

As described in section 3D.1.4 (Agriculture), biogas is produced through anaerobic digestion and used in various ways to generate heat and electricity. The transport sector, described in section 3D.1.2, has a planned measure for promotion of alternative fuels, which includes biomethane. Finally, there is also a planned measure to recover biogas for electricity production, as described in section 3D.1.5 (Waste).

3D.1.2 Sectoral Policies and Measures: Transport

The 2022 road transport emissions contributed 23% of the total national emissions, excluding LULUCF. The emissions of road transport in 2022 increased by 66% compared to 1990, while the 2021 emissions increased by 69% from 1990. The lower number from 2020 is attributed to the lockdowns and movements in restriction brought about by the COVID-19 pandemic, as detailed in Table 3.14 of the 2024 NIR. The substantial increase of GHG emissions from road transport since 1990 is directly linked to the increase of the vehicle fleet and the increase of transportation activity. Cyprus is heavily reliant on passenger car transport and had the 4th highest number of cars per capita in the EU-27 in 2022[58].

In addition to the importance for emissions, transport has been an issue of particularly great interest to the society of Cyprus, due to the very large growth of the number of privately owned cars and the associated problems in traffic that are experienced, especially in the capital, Nicosia. Even though many studies have been completed since the 1990s on how to deal with traffic in the urban areas of Cyprus and especially Nicosia, it was not until about a decade ago that action was initiated and measures implemented.

The energy intensity in the transport sector is among the highest in the EU, mainly due to the large percentage of road transport operations. However, there has been a remarkable improvement in this sector in recent years. The utilization of renewable energy sources in road transportation empowers the reduction of CO2 emissions by 14.5% according to the revision of the EU's Renewable Energy Directive (RED), which entered into force in November 2023. In order to reach this goal, a share of RES in the final energy consumption of transport of at least 29% in 2030 or a reduction in GHG intensity of at least 14.5% by 2030, compared to the baseline of 94g CO2/MJ. Furthermore, the increase in the energy efficiency of private vehicles and the import of smaller and more efficient cars have led to better results although public transport in Cyprus is not adequately developed. The transport sector, along with the electricity generation and building sectors, is one of those sectors that offer significant potential for energy efficiency improvement. The reported target for 2030 is 82% of travel coming from private vehicles, 8% from public transport (bus), 6% from foot and 4% from micromobility.

[57] "Cyprus 2022 National Inventory Report (NIR)." Department of Environment, Ministry of Agriculture, Rural Development and Environment, 06 Apr 2022.
[58] "Table 2: Passenger cars, 2015-2020". Passenger Cars in the EU, Eurostat, 05 Aug. 2022, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Passenger_cars_in_the_EU.

Based on the General Policy Framework for Promoting the Use of Electric Vehicles, it is foreseen that 8 % of the fleet of vehicles (85000 vehicles), new and second-hand, of all categories, will be purely electric by 2030. In addition, a target of 25 % of registrations of new passenger cars and 17 % of new light commercial vehicles in 2030 and 100 % of all new vehicles in 2035 is set for pure electric vehicles, in accordance with European Directive (EU) 2023/851. More detailed information can be found in sector 2.2 of the final update of the NECP.

According to the 2013 (Amending) Law on Motor Vehicles and Road Traffic, which entered into force on 1 January 2014, the annual circulation tax for each category M1 motor vehicle and the annual circulation tax for each category N1 motor vehicle, resulting from a category M1 motor vehicle and classified under the category of light lorry (VAN type), is calculated on the basis of the carbon dioxide emissions of the vehicle's engine. In addition, as from 1 January 2014, category N2 and N3 vehicles (lorries) and M2 and M3 vehicles (buses) are registered in so far as they have been proven to comply with the 'EURO VI' requirements on the emission of pollutants. The latest amendment was decided on 29 March 2019 and has revised the method of calculating the motor vehicle registration fees beyond the CO2 parameter. More specifically, higher fees are now charged for vehicles emitting more than 120 g/km. Furthermore, an additional fee is included based on the 'Euro' technical specifications of vehicles. This action further promotes the use and purchase of low emission vehicles, including zero emissions vehicles.

The launch of the 4th Old Vehicle Scrapping and Replacement Scheme was announced on 11 October 2010, whereas the scheme was implemented in 2011. Applications were admitted for a period of 2 months with final date on 13 December 2010. The 4th Scheme related to the payment of a grant equal to EUR 1 800 and covered the scrapping of M1 category motor vehicles, older than 15 years old, under the condition that a new car with CO2 mass emissions lower or equal to 165gr/km would be purchased.

The new public transportation system was put in force in the second half of 2010. The new public transportation bodies replaced part of their vehicles with new ones that have low fuel consumption and pollutant emissions, as compared to the old vehicles that were replaced. Provincial urban companies have re-organised their routes, aiming to optimise their efficiency in this sector. Their websites contain a detailed map of the routes and the timetable of buses in order to facilitate passengers. Moreover, new bus concessions were put in force between 2020 -2022 and will further improve the system. The increase of the use of buses that have low or zero GHG emissions will be implemented for the contract period 2020-203o. Furthermore, the new bus contracts include specific requirements for the use of electric buses.

Before the end of 2011, the widening of the motorway linking the Alambra and the GSP intersections (entry to Nicosia) from four to six circulation lanes was completed. Works started on 11 January 2010 against the amount of EUR 32.4 million + VAT and were co-financed by the Trans-European Transport Networks Fund.

In the context of the implementation of EU Regulation (EC) No 1222/2009 on the labelling of tyres with respect to fuel efficiency and other essential parameters, delegated inspectors of the Energy Department perform market surveillance checks in order to identify cases of noncompliance with these provisions. In addition, presentations on energy savings in the transport sector and on eco-driving are made in the context of the seminars addressed to unemployed engineers of all specialisations organised by the Energy Department and the Productivity Centre, with the support of the Human Resources Development Authority of Cyprus.

The municipalities of Nicosia have founded the Inter-municipal Bicycle Company of Nicosia (DEPL), aiming to change the way things work on Cypriot roads via an automated 3rd generation bike rental system. The installation of this innovative system will be combined with the design of new bicycle lanes, which will be used by a large part of the population and by tourists to commute from and to the city centre. In particular, the Nicosia Municipality has installed 100 bicycles in 5 stations, the Aglantzia Municipality, 50 bicycles in 4 stations, the Strovolos Municipality, 80 bicycles in 8 stations, the Dali Municipality, 20 bicycles in 3 stations, the Aghios Dometios Municipality, 20 bicycles in 2 stations, the Latsia Municipality, 15 bicycles in 2 stations and the Engomi Municipality, 30 bicycles in 3 stations. There is one single system for all municipalities that participate in the programme, whereas each user can take a bicycle from the station of one municipality and return it to the station of another municipality. The programme aims to promote the use of bicycles among citizens as an alternative means of transport in the city.

Furthermore, a Grant Scheme for energy saving in the transport sector (purchase of hybrid vehicles, electric vehicles and low-pollutant vehicles), was in force in the period 2004-2009.

The European Directive 2014/94 / EU on the Development of Rural Renewables Infrastructures establishes a common framework for measures to develop the market for alternative fuels in the transport sector and the implementation of relevant infrastructure within the Union in order to minimize dependence on liquid minerals to reduce the environmental impact in the transport sector. Within the framework of the directive, which sets practical goals, the development of the market and related infrastructure for the use of electricity, liquefied natural gas (LNG), compressed natural gas (CNG) and hydrogen in transport is specifically promoted. Directive 2014/94 / EC is a tool to meet the mandatory 2020 target for road transport, i.e. (a) 10% energy from RES in transport (Directive 2009/28 / EC) and b) 6 % reduction in greenhouse gas emission intensity in the life cycle of road transport fuels (Directive 2009/30/EC) the competent authority is the Ministry of Energy, Trade, Industry and Tourism. A National Policy Framework describing national targets and targets, guidelines, support actions and policies for the development of alternative fuels and developing the necessary infrastructures was prepared by the Ministry of Transport, Communications and Works in cooperation with the Ministry of Energy, Commerce, Industry and Tourism.

Charging points and infrastructures for electric vehicles have been installed in public buildings and in public roads, whereas installation costs in private buildings, single-family houses and undertakings will be subsidised under specific criteria and specifications. There are currently 20 charging stations in Cyprus: 7 charging stations in Nicosia, 6 in Limassol, 2 in Larnaca, 2 in Ammochostos and 3 in Paphos. The Department of Electromechanical Services is undertaking installation of 10 fast charging stations[59]. Although the numbers are still very small, the expectation is that the registration of electric cars will increase considerably, so that they comprise the majority of on-road vehicles by 2030[60].

The installation of LPG systems in vehicles has also started in 2017 and will reduce the emission of pollutants and fuel consumption in old vehicles.

For the reduction of emissions from road transport the competent authorities are considering the implementation in the immediate future of further measures in the fields of Traffic demand management, Improvement of road traffic flow, Reduction in transport demand, Switch in transport modes and Alternative fuels and technologies.

The continuation and further development of measures such as the above and additional measures like the improvement of infrastructure for further encouragement of use of public transport, cycling and walking and financial incentives to encourage new vehicles with low to zero emissions and discourage vehicles with high emissions, can reduce the emissions of one of the most important sectors in Cyprus with respect to mitigation.

Biofuels

Biofuels are liquid or gaseous transport fuels such as biodiesel and bioethanol which are made from biomass. They serve as a renewable alternative to fossil fuels in the EU's transport sector, helping to reduce greenhouse gas emissions and improve the EU's security of supply. The EU aimed to have 10% of the transport fuel of every EU country come from renewable sources such as biofuels by 2020. GIZ GmbH conducted a study, 'Penetration of alternative fuels in Cyprus road and maritime sectors,' to analyze this goal for Cyprus[61]. Among the conclusions was that the 10% target was neither cost-effective nor easily feasible for Cyprus, but the overall target was met in a more cost-effective manner with greater contribution from other sectors. The revision of the EU's RED, which entered into force in November 2023 envisages a minimum target of 1% in 2025 and 5.5% in 2030 of which at least 1% are from renewable fuels or non-biological origin for advanced biofuels and electricity-based energy sources. While the share of 2nd biofuels was 7.86% for 2020, this is projected to increase over the next two decades.

These changes lead to a positive shift towards a more sustainable energy future. By setting realistic but also progressive targets and emphasizing advanced biofuels and electricity-based fuels, the revised directive encourages innovation and investment in cleaner technologies. This helps reduce greenhouse gas emissions and

[59] Cyprus' Integrated National Energy and Climate Plan, version 1.1. Nicosia January 2020. pg. 116
[60] Cyprus' Integrated National Energy and Climate Plan, version 1.1. Nicosia January 2020. pg. 116
[61] "Penetration of alternative fuels in Cyprus road and maritime sectors," Deutsche Gesellschaft für Internationale Zusammenarbeit, June 2017.

dependency on fossil fuels across the country. In the long term, these measures are expected to foster a greener transport sector, supporting the EU's broader climate goals and paving the way for a more sustainable future.

Box 3.11. Key information

Competent authority
Energy Service, Ministry of Energy, Commerce, Industry and Tourism
Other involved authorities
-
Type
Legislative, Compulsory
Relevant EU legislation
Revised Emissions Trading System ((EU) 2023/959)
Revision of the Regulation on CO2 emission performance standards ((EU) 2023/851)
Regulation on the Development of Alternative Fuels Infrastructure (EU) 2023/1804)
FuelEU Maritime Initiative ((EU) 2023/1805) to reduce maritime transport emissions
FuelEU Aviation Initiative ((EU) 2023/2405) to reduce aviation emissions
Laws of the Fit-for-55 Legislative Package
National legislation
Law N. 112 (I)/2013 – 2015(transposition of EU Directive 2009/28/EC)
Relevant EU legislation
- Regulation (EU) 2023/1804 on the deployment of alternative fuels infrastructure
- Directive 2009/28/EC of the European Parliament and the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC
Policies, measures and actions towards attainment
- See PaMs 9, 29, 32–35, 38, 40, 48, 49, 51, 52, 54, 58–66, 73, 96, 99

3D.1.3 Sectoral Policies and Measures: Industry

The New EU F-gas Regulation adopted in 2014 and applied from 1 January 2015, aims among others in preventing emissions of F-gases from existing equipment by requiring leakage checks, proper serving and recovery of the gases at the end of the equipment's life. For the full implementation of this regulation in Cyprus a proper recovery system needs to be setup and used in Cyprus. Given the high GWP of the F-gases, and their increasing contribution to the national emissions, it is considered crucial for proper recovery to be implemented within the following years.

Under provisions of Art. 9 of Regulation 517/2014/EC, on fluorinated greenhouse gases, without prejudice to existing Union legislation, Member States shall encourage the development of producer responsibility schemes for the recovery of fluorinated greenhouse gases and their recycling, reclamation or destruction. Cyprus has adopted and harmonized the above Regulation into Cypriot Law 62(I)/2016 and 46(I)/2017. The next step is to forward a national Law regarding a producer's responsibility scheme. The main provision of this Law will follow the "polluter pays" principle and each producer will have to participate in an appropriate scheme for management of f-gases that have been recovered for any reason.

At the same time, under the provisions of the same scheme, certified technicians will be encouraged to return to the scheme any fluorinated gases the have recovered, for a pre-decided profit.

Under the WEM scenario, recovery begins in 2024 and increases linearly to reach 5% in 2030. The WAM scenario considers a higher recovery of 10% will be achieved in 2030.

Box 3.12. Key information

Competent authority
Department of Environment, Ministry of Agriculture, Rural Development and Environment
Other involved authorities
-
Type

Legislative, compulsory
National legislation
Fluorinated greenhouse gases Law (No. 62(I)/2016 and 46(I)/2017)
Relevant EU legislation
- Regulation (EU) 2018/842 amending (EU) 525/2013
- Regulation on fluorinated greenhouse gases 517/2014
Policies, measures and actions towards attainment
- See PaM 82
- Additional capture is assumed in the WAM scenario

3D.1.4 Sectoral Policies and Measures: Agriculture

Anaerobic digestion technology may help to address two congressional concerns that have some measure of interdependence: development of clean energy sources and reduction of greenhouse gas emissions. Anaerobic digestion, as a way of converting biomass to energy, has been practiced for hundreds of years. It is a technology that helps to reduce waste, generate energy and cut down on carbon emissions. The general performance of anaerobic digesters and the diversity of wastes which they can treat have been increasing steadily as a result of new reactor design, operating conditions, or the use of specialised microbial consortia, during the last decades.

Most small-scale pig farms in Cyprus use mechanical separation for the treatment of their waste. The separated liquid is sent to evaporation lagoons or is used for irrigation, and the solid fraction is used as soil improver. Nine large pig farms have installed a combination of anaerobic/aerobic treatment plants (Anaerobic digestion). The treated liquid fraction is used for irrigation, washing the housing areas or is placed in evaporation lagoons. The produced biogas is combusted onsite by Combined Heat Power generators for the production of heat and electricity. Both heat and electricity are consumed at the farms. Any excess electricity is sold to the electricity provider and directed to the electricity distribution network. Heat is not distributed outside the farm because there is no heat distribution network in Cyprus. The emissions from the electrical energy from the biogas used onsite and offsite has been taken into account in the energy sector according to the national energy balance. In the 2022 NIR, anaerobic digestion was calculated at 60% of waste management for 2020.

Anaerobic digestion is also practiced at cattle farms, calculated at a percentage of 5.0% in the NIR in 2020. The waste from sheep, goats, horses, mules and asses are collected and left to dry before being applied on land for soil improver (Solid storage and dry lot). Poultry waste is characterised by high content of solids (almost dry) and it is collected, left to dry and then used as soil improver (Solid storage and dry lot).

Manure management is responsible for methane and nitrous oxide emissions. Methane is produced during the anaerobic decomposition of manure, while nitrous oxide is produced during the storage and treatment of manure before its use as fertilizer. Emissions from manure management in 2020 accounted for 24.1% of the total agriculture emissions without LULUCF. CH_4 and N_2O from manure management in 2020 accounted for 17.2% and 37.1% of GHG emissions from Agriculture respectively. Total emissions in 2020 decreased by 13% compared to 1990 levels because of the improvement of waste management practices. All available studies show that there is a great potential in Cyprus to further promote anaerobic digestion for the treatment of waste with high organic content.

Even though anaerobic digestion is not clearly stated in the European or national legislation, the technology is preferred by large animal farms to comply with the terms stated on the wastewater and air emissions permits. The technology is strongly promoted by the Department of Environment, especially for the large installations that fall under the Industrial Emissions directive. Relevant national legislation that encourages the promotion of anaerobic digestion is (a) the Control of Water Pollution (Waste Water Disposal) Regulations 2003, Κ.Δ.Π. 772/2003; (b) the Control of Water Pollution (Sensitive Areas for urban waste water discharges) Κ.Δ.Π. 111/2004. It is a voluntary measure which is expected to increase. Therefore, it is considered important to further promote the use of anaerobic digestion for the treatment of animal waste.

In the WAM scenario, further reduction of the cattle population is assumed to reach -10% of the base year population.

Box 3.13. Key information

Competent authority
Department of Environment, Ministry of Agriculture, Rural Development and Environment
Other involved authorities
-
Type
Legislative, compulsory
National legislation
- the Control of Water Pollution (Waste Water Disposal) Regulations 2003, Κ.Δ.Π. 772/2003
- the Control of Water Pollution (Sensitive Areas for urban waste water discharges) Κ.Δ.Π. 111/2004
Relevant EU legislation
- Regulation (EU) 2018/842 amending (EU) 525/2013
- EU Common Agriculture Policy (CAP)

Policies, measures and actions towards attainment
- See PaMs 85
- Further reduction of the cattle population is assumed under WAM

3D.1.5 Sectoral Policies and Measures: Waste

Emissions from the Waste Sector in 2022 contributed 7% of the total emissions without LULUCF, 60% to the total methane emissions of the country without LULUCF and 12% to the total N_2O emissions without LULUCF. In 2022, 87% of the waste sector emissions are from solid waste disposal, 2% from biological treatment of solid waste and 11% from wastewater treatment and discharge. The emissions from waste have changed considerably between 1990 and 2022 due to changes that are taking place in the waste and wastewater management practices of the country. For example, the emissions from Wastewater treatment and discharge between 1990 and 2022 decreased 48%, mainly due to the shift from septic tanks to centralised aerobic treatment systems for the treatment of domestic wastewater. Recycling and composting have been reducing the amount of waste disposal on land since 2010. Due to its dominance, the greatest emphasis of the policies and measures in the waste sector is reduction of emissions from solid waste disposal. A brief description of the situation of Cyprus' landfill follows, with full details on the trends in the waste sectors are available in the 2022 NIR.

With the EU Landfill Directive being the main guiding force, in combination to the improvement of the infrastructure of the country, Cyprus has developed and is implementing during the recent years the revised strategy for municipal solid waste management. The implementation of the strategy is the responsibility of the Department of Environment.

The National Municipal Waste Management Plan of 2015–2021 (MWMP) has been updated with the new National Municipal Waste Manage Plan of 2022–2028. The latest plan includes further measures, actions and procedures to enable Cyprus' transition to a zero-waste economy. It contains quantitative and qualitative targets and enumerates specific measures and actions to be taken in order for the EU targets to be reached. One of the quantitative targets is that no more than 95,000 tonnes of biodegradable waste to be disposed in landfills (represents the 35% target of the 1999/31/EC directive). The measures accounted for the impacts from tourism, financial projections, separate collection and assumptions, limitations on the capacity of available infrastructure, and utilization/enhancement of existing infrastructure. The responsible authorities for the implementation of the SDDA are listed below, according to how they are detailed in the plan itself[62].

- The Environment Department of the Ministry of Agriculture, Rural Development and Environment acts as the competent authority for waste management.
- The Department of Water Development, of the Ministry of Agriculture, Rural Development and Environment coordinates the construction of the Green Points and the OEDA units and the restoration of the HADA.
- The Provincial Councils for Exploitation of Domestic Waste Disposal or Utilization Sites are the operators of waste disposal or utilization sites and, among other things, are responsible for the receipt, separation

[62]Ministry of Agriculture, Rural Development and Environment. Municipal Waste Management Plan 2022–2028. Pg. 7.

and treatment of municipal solid waste, including the management of treatment sites and transshipment stations.
- The Local Government Authorities, as responsible for the implementation of separate collection systems for municipal waste and Pay As You Go (POP). With the relevant clustering of Municipalities and Communities, ATA is expected to have increased responsibilities and powers in a wide range of issues, including municipal waste management, thus providing quality services to the citizen, separate collection and integrated management of their municipal waste.
- Obliged product producers and collective schemes of extended producer responsibility that fulfill the producer's obligations under the relevant legislation.
- Private sector waste treatment facilities and collectors/transporters of waste.

The legal measures, envisaged adaptation strategies, and details on the outcomes of the strategic plan for restoration and management of landfills are outlined in the previous national communication. The Waste Framework Directive, 2008/98/EC, was amended in 2018 to strengthen waste prevention and management, with the main Cyprus legislation for waste management consisting of Waste Law N. 185(I)/2011 and its amendments[63].

The new municipal waste plan also provides an update of waste sent to landfills, and the general operating status of Cyprus landfills[64]. Out of the total 542,840 tons of municipal waste generated in 2020, 364,140 tons were sent to landfills. Operations for the last two illegal uncontrolled waste disposal sites ended in February 2019. The OEDA Limassol in Pentakomo has been in operation since 2017, while the OEDA Larnaca-Famagusta in Kosi has been in operation since 2010. With the closure of the Kotsiatis site, the Kosi site has been accepting the mixed municipal waste from the Nicosia District since November 2018. Municpal waste from Limassol, Larnaca-Ammochostos and Nicosia are transferred to the Integrated Waste Management Facilities in Pentakomos and Kosi, while Paphos mixed waste is transferred to the landfill site in Paphos without pre-treatment. While it was determined that construction of additional mechanical-biological treatment units in Paphos and Nicosia are not necessary, the possibility of transferring the mixed waste of Paphos is under consideration.

Cyprus has no hazardous waste landfill. Some hazardous waste is collected and exported for further processing, while some is used for energy recovery at the Vasilikos Cement Plant. The Cement plant uses some tires and sludge as alternative fuels, along with municipal waste streams.

The key features of the strategy that have been included in the GHG reduction Policies and Measures are the following:

- Reduction of waste to solid waste disposal sites from sorting at production level, with recycling of at least 55%, 60%, and 65% of municipal waste by weight by 2025, 2030, and 2035.
- Reduction of organics to landfills by 24% until 2030
- Increase of amount of organic wastes treated by composting
- Promotion of anaerobic digestion for the treatment of the organic fraction of the municipal solid waste and industrial solid waste

Additional planned measures for further reduction of the GHG emissions aim for a 30% recovery of biogas from inactive landfills and a recovery of 150 Gg CO_2 annually coming from sub-remediation landfills starting in 2025. Recovery and flaring of biogas is expected to begin at two sites in 2025, while three sites are expected to provide biogas for the exploitation of electricity production.

Box 3.13. Key information

Competent authority
Department for waste Development
Other involved authorities
-
Type

[63] Ministry of Agriculture, Rural Development and Environment. Municipal Waste Management Plan 2022–2028. Pg. 11.
[64] Ministry of Agriculture, Rural Development and Environment. Municipal Waste Management Plan 2022–2028. Pg. 13.

Legislative, Compulsory
Relevant EU legislation
-Regulation (EU) 2018/842 amending (EU) 525/2013
-Regulation (EU) 2018/851 amending 2009/98/EC
National legislation
-Waste Law N. 185(I)/2011 and its amendments

Policies, measures and actions towards attainment
- See PaMs 84
- Additional measures included in the WAM scenario for improving the management of landfill gas from old and new sites are described above

3D.1.6 Sectoral Policies and Measures: LULUCF

The Department of Forests (Ministry of Agriculture, Rural Development and Environment) is implementing a plan to increase forest tree production from its nurseries for planting in now non-forested lands. The campaign is titled "I plant for Climate" and is directed towards public or private organizations such as municipalities, churches, schools, NGOS and firms who wish to forest public or privately owned lands and who will agree to be responsible to provide the funds and care (i.e. water) of these areas for a minimum of three years. The Department of Forests, after evaluating the applications, will be providing the trees for free, taking into account the area of the plot and the specificities of the location, i.e. elevation. The plants supplied will be selected from a specific list of mostly indigenous, non-invasive species that are suited to the climatic conditions of Cyprus such as: Pinus brutia, Cupressus semperivines, Quercus spp., Juniperus spp., Tamarix spp., Laurus nobilis, Ceratonia silique, Myrtus nobilis, Nerium oleander and Rosmarinus officinalis. The scheme starts from around 70,000 trees in 2020 and is planned to reach 300,000 trees planted per year in 2030.

There are several new planned measures for the LULUCF iteration which are included in WAM. The following is a list of the relevant plans and measures, as outlined in the NECP.

The Common Agricultural Policy (CAP) of 2023-2027 has planned measures to enhance carbon removals and achieve targets. These include the following:

- **Afforestation and Creation of Forest Areas**: This action focuses on the creation of new forests in agricultural and non-agricultural areas with the aim of improving the natural environment, increasing forest land and carbon sequestration. The action aims to increase biodiversity and protect ecosystems, as well as to reduce soil erosion and degradation of natural resources.
- **Maintenance of forest areas:** This action aims at preserving existing forests and wooded land by providing an annual grant for the maintenance of these areas, as compensation for the loss of agricultural income. These grants aim to preserve biodiversity and ensure continuous carbon removal from forest ecosystems. The implementation of these actions, together with support to farmers and other beneficiaries, contributes to increasing carbon removals and preserving existing natural ecosystems.

New proposed measures, selected through technical assistance from a consortium of experts. These actions include:

- **Creation of Parks and Green Spaces Networks**: Green corridors in urban areas are foreseen to improve quality of life and increase carbon removal. These green corridors enhance biodiversity and help create a favourable microclimate in cities, reducing the heat burden.
- **Planting trees on Rural Earth**: Sustainable afforestation on agricultural land contributes significantly to increasing carbon storage. This action is supported through the CFP and includes the planting of endemic and non-invasive species suitable for Cyprus' climatic conditions. This action not only increases carbon removal, but also improves soil fertility and the resilience of farmland to environmental challenges.
- **Application of Compost and Nutrients**: The application of compost to arable soils, as well as the maintenance of plant residues in the soil, aims to increase the concentration of organic carbon in the soil

and to reduce the use of synthetic fertilisers. This practice enhances the resilience of farming systems and improves carbon sequestration.

- **Prevention and Monitoring of Forestry Fire**: Strengthen prevention actions and improve the fire monitoring system, with the aim of reducing the environmental impact of forest fires. This includes the upgrading of technological monitoring tools and the training of human resources to respond immediately to fire cases.

A new proposal for the development of voluntary carbon markets. The Republic of Cyprus is considering the development of a reliable system of removals through voluntary carbon markets, based on the principles of the EU Carbon removals and Carbon Farming (CRCF) Regulation. This plan includes:

- **Accreditation of Methodologies**: Accreditation of methodologies for specific carbon removal and/or reduction practices, ensuring the reliability of removal actions.
- **Developing an institutional framework**: Design and develop an institutional framework for carbon market development and participation. This will allow producers to benefit from their absorption actions, creating an incentive for additional environmental initiatives.
- **National Carbon Register**: Design, develop and operate a national carbon registry that will allow monitoring progress towards national targets and simplifying compliance with international obligations as resulting from the Paris Agreement.

Cooperation on finding a State land for tree planting. Finding state-owned land is a major challenge to increase tree planting. The Ministry of Agriculture, in cooperation with the Ministry of Interior and the Ministry of Finance, is exploring the possibility of using state-owned land for afforestation. This forest expansion will allow the restoration of degraded soils and the reduction of carbon emissions, while enhancing Cyprus' biodiversity and natural heritage. In particular, measures such as:

- **Establishment of areas for tree planting**: Designation of suitable state areas for afforestation, prioritising areas of high environmental value and/or areas subject to significant degradation.
- **Consultation of Other Public Bodies**: Cooperation with bodies such as municipalities and municipalities to define areas that can be used for afforestation actions.
- **Participation of Voluntary Groups**: Encouraging the participation of volunteer groups and citizens in tree planting actions, through information and awareness-raising campaigns.

Other targeted actions to increase tree planting. In addition to the above measures, other targeted actions are being considered to increase tree planting and improve the monitoring/recording of measures on removals from land use.

- **Preparation of a strategic planting plan**: Development of a strategic tree planting plan with priority on pavements, public open spaces, schools, camps and other public buildings. This plan aims to improve urban sustainability and create green corridors in cities.
- **Estimate Contribution to Reduction of Emissions:** An assessment of the contribution of tree planting actions to the reduction of emissions, combined with and supporting the above measures, will be implemented by improving the inventory of the Land Use, Land Change and Forestry Sector (LULUCF) for land representation and the implementation of Approach 3 (from Approach 2) of the 2006 IPCC Guidelines by the Department of Environment. By improving the inventory, it will be possible to record in more detail and density all types of vegetation as well as the increase in removals that the implementation of specific targeted measures is expected to have.
- **Guidelines for the selection of tree species and irrigation method**: Identify the appropriate tree species to be planted, taking into account climatic conditions and the specificities of the urban landscape, to ensure their resilience to pollution and other challenges. In particular, the creation of any new green areas and tree plantations should be based on dry-resistant native species plantations that are adapted to Cyprus' climate and do not require large amounts of water. In parallel, the use of reclaimed water for irrigation purposes should be sought.

By implementing the above policies and measures, Cyprus aims to achieve the national target of 352 thousand tonnes of CO2 equivalent in 2030, as set out in the EU's 'Fit-for-55' legislative package, making a significant contribution to achieving climate neutrality. These actions not only contribute to reducing emissions and increasing removals, but also enhance biodiversity, the sustainability of rural and urban areas and the overall quality of life of citizens.

Box 3.14. Key information

Competent authority
Department of Environment, Ministry of Agriculture, Rural Development and Environment
Other involved authorities
-
Type
Legislative, compulsory
National legislation
-
Relevant EU legislation
- Regulation (EU) 2023/839 of the European Parliament and of the Council of 19 April 2023 amending Regulation (EU) 2018/841
Policies, measures and actions towards attainment
- See PaM 83
- Additional measures included in the WAM scenario are described above

3D.2 International Bunkers

The RefuelEU Aviation Initiative ((EU) 2023/2405) to reduce aviation emissions is a relatively recent directive meant to reduce fossil emissions from aviation across the European Union. Cyprus has policies and measures effective in the WEM and WAM scenario for reduction of fossil emissions from aviation. From 2026 onwards, under both the WEM and WAM scenario, biofuels are estimated to be added to aviation fuels (domestic and international). The current national legislative framework allows biofuels to be used in aviation fuels, although none is currently reported and thus not included in the BaU scenario. The share of biofuels in jet fuel is more significant under the WAM scenario then in the WEM scenario due to the additional planned measure for increased use of biofuels in Cyprus. The WAM scenario also assumes the introduction and growth of aviation E-fuels from 2035 onward.

From the year 2025, the obligations of Regulation (EU) 2023/1805 for the use of renewable and low-carbon fuels in maritime transport become applicable. A small amount of biodiesel is already use has been in use in domestic maritime transport fuels since 2020. However, there is not currently biofuel reported in international maritime transport, and GDP is used to project the fuel consumption for international marine transport in the BaU, WEM and WAM scenarios. Future projections will consider the incorporation of any policies and measures relevant to international marine transport.

Box 3.15. Key information

Competent authority
Department of Environment, Ministry of Agriculture, Rural Development and Environment
Other involved authorities
-
Type
Legislative, compulsory
National legislation
-
Relevant EU legislation
- Regulation (EU) 2023/1804 on the deployment of alternative fuels infrastructure
- Regulation (EU) 2023/2405 for sustainable air transport
- Regulation (EU) 2023/1805 for the use of renewable and low-carbon fuels in maritime transport

Policies, measures and actions towards attainment

- See PaMs 29
- The WAM scenario assumes further incorporation of biofuels, as well as the introduction and use of e-fuels from 2035 onward.

3D.3 Summary of National Policies and Measures and Mitigation Impacts

This chapter concludes with a summary of the policies and measures. Table 5 in the CTF contains the full details of all published national policies and measures, as available (name, description, objectives, type of instrument, status, sectors affected, gases affected, start year of implementation, and implementing entities). These PaMs are also presented by each main sector/sub-sector with some key information (name, brief description, implementation status, start year of implementation), and cross-referenced in each sector's key box in sections 3D.1 and 3D.2.

The following tables summarize the mitigation and impact of the PaMs. Table 3-18 provides the estimated impact of the policies and measures on the reduction of GHGs for the WEM and WAM projection scenarios, aggregated as necessary. Table 3-19 provides an indication of the policies and measures related to the adaptation plan which can be considered to have mitigation co-benefits. These mitigation co-benefits are not relevant to the EU NDC, but are provided for information purposes, namely an increased understanding of the cross-cutting scope of national policies and measures. These measures illustrate that adaptation planning in Cyprus is increasingly considering mitigation aspects, ensuring that resilience-building efforts contribute to sustainable, low-carbon development. Further details of the adaptation plan and the relevant measures are available in Chapter 4.

In Table 3-18, the estimated mitigation of the policies and measures in WEM is relative to BaU, while WAM is relative to WAM. As it is calculated with a high level of aggregation, the sum of the individual and grouped impacts of policies and measures is equal to the aggregate impact. The PaMs included in each aggregated estimated are detailed in Table 5 of the CTF. Expired PaMs are excluded, and no mitigation achieved for 2020 is estimated due to the complexity this calculation would require.

The impact estimation for many policies and measures are not disaggregated. For the energy and transport policies, this is due to the nature of the models. Thus, the impact could only be determined by subtracting the scenario totals of the relevant categories. Likewise, solid waste is projected with the IPCC model, the nature of which makes it difficult to disaggregate the individual aspect of the overarching PaM. The treatment of biological waste, namely compost and anaerobic digestion activities, is also linked to the amounts of sorted organics and the impact not easily disaggregated from that of modifications to the solid waste model. Thus, the impact of policies for solid waste has been grouped with the biological treatment of waste. The exception is the additional recovery of 150 Gg CO_2 biogas, which is a fixed amount and thus easily disaggregated from remaining solid and biological reductions achieved in WAM.

In energy, the introduction of natural gas is assumed to some extent under all three scenarios. It is possible to approximate the impact of natural gas in the WEM scenario by assuming continued reliance entirely on heavy fuel oil and diesel, approximating these emission trends, and subtracting the 'no natural gas scenario' from the scenario with existing measures. However, this means that the aggregate impact of policies and measures will not match the total reduction between scenarios in Table 3 of the projections chapter.

The impact of policies and measures on international aviation is given but not included in the aggregate total.

Table 3-18. Estimated Mitigation Impact by Policy and Measure (Gg CO_2 Equivalent)

		WEM				WAM			
	Gg CO_2 Equivalent	**2025**	**2030**	**2035**	**2040**	**2025**	**2030**	**2035**	**2040**
Energy	Natural Gas, RES, Other in electricity generation	0	1208	1509	1953	108	72	73	0
	EE, RES, Other in Other Industries	39	40	36	39	48	247	349	362
	EE, RES, Other in Households	27	13	8	5	19	60	156	209
	EE, RES, Other in Services	17	24	17	19	2	16	55	62
	EE, RES, Other in Agriculture	10	7	4	6	0	4	34	50
Transport	RES, Biofuels, Natural Gas, E-Fuels in Domestic Aviation	0.04	0.06	0.10	0.15	0.00	0.00	0.04	0.23
	RES, Biofuels, Natural Gas, Electricity in Road Transport	21	9	9	8	30	317	283	323
	RES, Biofuels, Natural Gas, E-Fuels in International Aviation	*0*	*25*	*47*	*77*	*0*	*2*	*28*	*149*
IPPU	Recovery of F-gases from old equipment	6	20	30	40	14	20	30	40
Agriculture	Linear Decrease of Cattle Population (from base year) Starting in 2025, to reach -10% in 2030	NA	NA	NA	NA	3	16	16	16
	Promotion of anaerobic digestion for treatment of animal waste (3B and 3D)	0	1	3	5	4	11	12	13
	Inorganic Nitrogen Fertilisers	0	0	0	0	0	0	0	0
	Urea Application	0	0	0	0	0	0	0	0
Waste	Solid Waste and Biological Treatment of Waste	94	92	125	125	160	239	238	238
	Solid Waste: Recovery of Additional Biogas from Landfills in 2025	NA	NA	NA	NA	150	150	150	150
	Wastewater Treatment and Discharge: Population connected to central systems	7	24	25	25	0	0	0	0
	Industrial Wastewater: Increase anaerobic treatment, and 1% recovery from 2025, increasing by 1% a year	0	0	2	4	0	3	5	8
Aggregate Impact		**222**	**1438**	**1769**	**2231**	**539**	**1076**	**1306**	**1481**

Table 3-19. Summary of Policies and Measures linked to Adaptation Measure with Mitigation Co-Benefit

PaM No.	PaM Name (NECP/BTR)	Related Adaptation Area (NAS/NAP): Code – Name	Summary of Related Adaptation Measure	Summary of Mitigation Benefit
42 / 97	Public sector buildings: annual savings obligation & energy upgrades	INFR 1n – Adapt building codes towards climate change adaptation	Climate-proof building codes and retrofits for resilience (e.g., passive cooling, shading, ventilation resilience), integrated into public building stock upgrades; embed in asset management and contingency planning.	Lower electricity demand and peak loads during heatwaves; reduced HVAC consumption and losses from disruption; supports continuity of critical services.
33 / 36	Grant schemes & national fund for energy efficiency in residential/public sector	INFR 9 – Grant Scheme for adaptation to climate change of community infrastructures; EDU 5n – Strengthen the climate resilience of educational institutions and school environments	Residential and public building adaptation packages (cool roofs, insulation, shading, natural ventilation) prioritising vulnerable groups and schools/hospitals.	Permanent reduction of cooling energy demand; avoided peak generation; co-benefit on indoor thermal comfort lowers health risks.
56	Energy efficiency in the water sector	WAT 2 – Reduce water losses via network upgrades and maintenance; WAT 11 – Enhance efficient water use in buildings, industry and agriculture	Leakage reduction, smart pressure management, efficient pumping, and water-saving at end-use; integrate drought/flood plans (DMP, FMP) and non-revenue water targets.	Less electricity for abstraction, treatment, desalination and distribution; avoided emergency trucking; deferred capacity expansions.
57	Advanced metering infrastructure (AMI)	ENER 1n – Limit demand spikes via demand management; WAT 5 – Expand the use of (smart) water meters; GOV 5n – IT monitoring and reporting system for adaptation	Digital monitoring and early-warning-enabled demand management tied to heat/peak events; building-level telemetry for adaptation plans.	Demand response and peak shaving; lower grid losses; supports faster restoration after climate events.
60–66	Energy saving measures in road	INFR 7n – Improve public transport for heat stress	Active mobility & shading networks, heat-resilient public transport shelters, urban	Mode shift and efficiency reduce transport fuel use and emissions; cooler

	transport (modal shift, electrification, fuels)	conditions; INFR 2 – Urban parks/green spaces to reduce urban heat island	green corridors and compact spatial planning to maintain mobility in extreme heat.	microclimates reduce A/C loads in vehicles and buildings.
58	Excise tax on transport fuels (above EU minimums)	INFR 7n – Improve public transport for heat stress conditions; INFR 5 – Extensive tree planting (cool corridors)	Align pricing with urban adaptation: compact development and transit-oriented design to reduce exposure to heat and flood risk.	Reduced VKT and fuel consumption; supports funding for resilient mobility infrastructure.
95	Energy upgrading of hospitals (and new nearly zero-energy units)	HEAL 2n – Improve governance of heat waves; HEAL 4 – Prepare medical/municipal staff for climate-related incidents	Heat-Health Action Plans (HHAP) and hospital climate-resilience retrofits (passive cooling, backup power, water security).	Lower baseline energy and peak cooling demand; enhanced continuity of care during climate extremes.
102	PEDIA – energy efficiency & comfort in schools	EDU 5n – Strengthen the climate resilience of educational institutions and school environments	School resilience programme (thermal comfort, shading, ventilation, urban greening of schoolyards).	Reduced cooling energy use; co-benefits on learning environment and health during heat events.
83	LULUCF – “I plant for climate” & fire prevention	FOR 3 – Coping with increased forest fire risk; FOR 7 – Strategic Plan for adaptation of forests to climate change	Afforestation/reforestation priorities, firebreaks and fuel management; restoration of degraded forest/woodland mosaics.	Increased sinks; reduced fire emissions; cooler local microclimates lowering cooling loads nearby.

3E. Summary of greenhouse gas emissions and removals

For a summary of greenhouse gas emissions and removals, see Chapter 2 of this BTR.

3F. Projections of greenhouse gas emissions and removals, as applicable

3F.1 Introduction

Under EU reporting requirements of Article 18 of EU Regulation 2018/1999, Cyprus reports national projections of anthropogenic greenhouse gas emissions every two years, by 15th of March of the relevant year. The latest submission under this obligation took place in March 2023. Projections have since been updated in the course of the July 2023 National Energy and Climate Plan Draft Update[65], and subsequently with the National Energy and Climate Plan Final Update which was adopted by Cyprus in December 2024[66]. The NECP constitutes a strategic plan for the Cyprus on Climate and Energy issues and comprises a detailed roadmap for achieving concrete Energy and Climate Goals by 2030. The NECP highlights our country's energy and climate priorities and development opportunities and aims to be the key tool for shaping/mainstreaming the national energy and climate policy over the next decade. The projections portrayed herein are consistent with those presented in the December 2024 NECP. The projections are prepared for the Ministry of Agriculture, Rural Development and Environment by the Cyprus Institute[67] using the December 2023 GDP projections provided by the Ministry of Finance[68]. Further details are provided in the sections that follow.

This chapter describes a "with measures" (WM) or "with existing measures" (WEM) scenario concerning the national projections of greenhouse gas emissions by sources and their removal by sinks for the years 2020, 2025, 2030, 2035, and 2040. The "with measures" scenario assumes that no additional emission reduction policies and measures are adopted than the existing ones (implemented and adopted).

A "with additional measures" (WAM) scenario is also reported, which reflects the effect of all implemented / adopted and planned policies and measures. This scenario includes the additional policies and measures as specified in detail in the National Energy and Climate Plan (NECP), which was adopted by Cyprus in December 2024.

Finally, a "Business as usual" (BaU) or "Without measures" (WOM) scenario is also presented in this chapter, which reflects the expected emissions that exclude the effects of all policies and measures which are planned, adopted or implemented after the year chosen as the starting point for the relevant projection.

The projections of total GHG emissions are presented in Figure 3-20, while Table 3-20 presents the sectoral emissions from 1990–2040.

3F.2 Overview and Comparison of BaU, WEM, and WAM Projections

The policies and measures included in each scenario are presented in section 3D. The resulting impact is presented below in Figure 3-20 and Table 3-20.

---

[65] https://commission.europa.eu/publications/cyprus-draft-updated-necp-2021-2030_en

[66] https://commission.europa.eu/publications/cyprus-final-updated-necp-2021-2030-submitted-2024_en

[67] -Prof. Theodoros Zachariades; Energy, Environment and Water Research Centre; The Cyprus Institute; t.zachariadis@cyi.ac.cy; Tel. +357 22 208 720; https://www.cyi.ac.cy/index.php/eewrc/about-the-center/eewrc-our-people/author/1103-theodoros-zachariadis.html. -Prof. Jean Sciare; National Emission Reporting; Climate and Atmosphere Research Center (CARE-C), Impact and Policies Department; The Cyprus Institute; j.sciare@cyi.ac.cy; Tel. +357 22 208675; https://www.cyi.ac.cy/index.php/care-c/about-the-center/care-c-our-people/itemlist/user/243-jean-sciare.html.

[68] Mrs. Maria Matsi; Economic Officer A'; Directorate on Economic Policy, European and International Affairs; Ministry of Finance; mmatsi@mof.gov.cy; Tel. +357 22 601 231; www.mof.gov.cy.

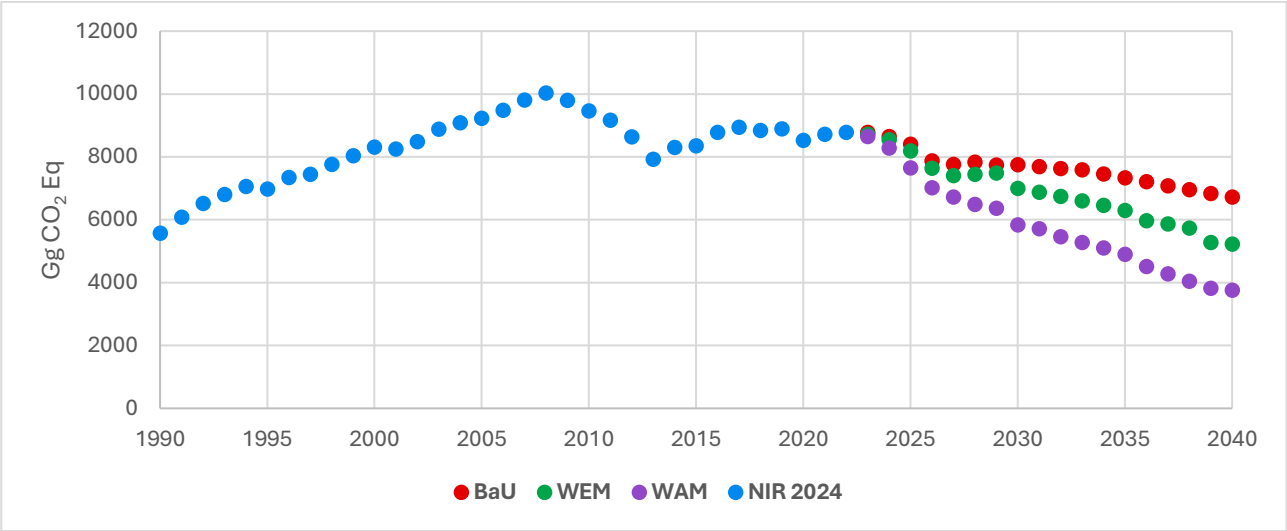


Figure 3-20. BaU, WEM and WAM Projections of total national GHG emissions (excluding LULUCF)

Three important things that should be noted for these projections are the following:

(a) The emissions from the possible exploitation of natural gas in the Exclusive Economic Zone are not taken into account due to the high uncertainty associated to any prediction of such changes.
(b) The projections presented here take into account the latest macroeconomic forecasts from the relevant national authorities and projections on international fuel prices from the European Commission.
(c) The organic fraction of solid waste not going to the landfill is treated by composting, anaerobic digestion and incinerated for energy. The additional organics for incineration at the cement installation have not been accounted for.

Table 3-20. Projections of national GHG emissions disaggregated by sector and gas

	1990	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**2025**	**2030**	**2035**	**2040**
BaU											
Energy	2716	3555	4517	5024	5171	4197	4146	3864	3239	3316	3188
Transport	1237	1550	1838	2115	2380	1925	1918	1932	1801	1267	789
IPPU	728	840	882	1003	810	1157	1266	1414	1499	1498	1498
Agriculture	455	544	543	526	515	442	532	531	532	526	521
Waste	435	481	523	558	584	623	653	660	679	716	720
TOTAL (Including LULUCF)	**5417**	**6790**	**8161**	**9005**	**9195**	**8048**	**8216**	**8482**	**8473**	**8096**	**7440**
TOTAL (Excluding LULUCF)	**5570**	**6971**	**8304**	**9226**	**9460**	**8344**	**8515**	**8718**	**8772**	**8401**	**7750**
Gas (Excluding LULUCF)	**5570**	**6970**	**8303**	**9226**	**9460**	**8344**	**8515**	**8718**	**8772**	**8401**	**7750**
CO_2 (w/ LULUCF)	4492	5682	6954	7738	7837	6677	6625	6837	6818	6408	5739
CO_2(w/out LULUCF)	4645	5862	7103	7959	8104	6975	6926	7081	7118	6717	6053
CH_4 (w/ LULUCF)	776	888	943	960	974	956	1064	1090	1078	1079	1097
CH_4(w/out LULUCF)	776	887	938	960	974	956	1063	1084	1077	1077	1095
N_2O (w/ LULUCF)	146	186	194	173	173	154	174	179	176	208	203
N_2O (w/out LULUCF)	146	186	191	172	172	153	173	175	175	205	200
HFCs	NO,NE	28	62	122	198	244	335	384	384	384	384
PFCs	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
SF6	3	6	9	12	13	17	19	18	18	18	18
WEM											

Energy	2716	3555	4517	5024	5171	4197	4146	3772	2624	2477	1901
Transport	1237	1550	1838	2115	2380	1925	1918	1910	1792	1258	781
IPPU	728	840	882	1003	810	1157	1266	1408	1478	1468	1458
Agriculture	455	544	543	526	515	442	532	530	531	523	516
Waste	435	481	523	558	584	623	653	559	563	565	566
TOTAL (Including LULUCF)	**5417**	**6790**	**8161**	**9005**	**9195**	**8048**	**8216**	**8482**	**8473**	**7872**	**6663**
TOTAL (Excluding LULUCF)	**5570**	**6971**	**8304**	**9226**	**9460**	**8344**	**8515**	**8718**	**8772**	**8179**	**6988**
Gas (Excluding LULUCF)	**5570**	**6970**	**8303**	**9226**	**9460**	**8344**	**8515**	**8718**	**8772**	**8179**	**6988**
CO_2 (w/ LULUCF)	4492	5682	6954	7738	7837	6677	6625	6837	6818	6303	5112
$CO_{2(w/out\ LULUCF)}$	4645	5862	7103	7959	8104	6975	6926	7081	7118	6614	5442
CH_4 (w/ LULUCF)	776	888	943	960	974	956	1064	1090	1078	966	966
$CH_{4(w/out\ LULUCF)}$	776	887	938	960	974	956	1063	1084	1077	964	964
N_2O (w/ LULUCF)	146	186	194	173	173	154	174	179	176	207	202
$N_2O_{(w/out\ LULUCF)}$	146	186	191	172	172	153	173	175	175	205	200
HFCs	NO,NE	28	62	122	198	244	335	378	365	355	345
PFCs	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
SF6	3	6	9	12	13	17	19	18	17	17	16
WAM											
Energy	2716	3555	4517	5024	5171	4197	4146	3647	2270	1839	1230
Transport	1237	1550	1838	2115	2380	1925	1918	1827	1430	946	445
IPPU	728	840	882	1003	810	1157	1266	1394	1458	1438	1418
Agriculture	455	544	543	526	515	442	532	524	504	495	487
Waste	435	481	523	558	584	623	653	248	171	172	170
TOTAL (Including LULUCF)	**5417**	**6790**	**8161**	**9005**	**9195**	**8048**	**8216**	**8482**	**8473**	**7317**	**5481**
TOTAL (Excluding LULUCF)	**5570**	**6971**	**8304**	**9226**	**9460**	**8344**	**8515**	**8718**	**8772**	**7640**	**5833**
Gas (Excluding LULUCF)	**5570**	**6970**	**8303**	**9226**	**9460**	**8344**	**8515**	**8718**	**8772**	**7640**	**5833**
CO_2 (w/ LULUCF)	4492	5682	6954	7738	7837	6677	6625	6837	6818	6088	4386
$CO_{2(w/out\ LULUCF)}$	4645	5862	7103	7959	8104	6975	6926	7081	7118	6416	4743
CH_4 (w/ LULUCF)	776	888	943	960	974	956	1064	1090	1078	639	536
$CH_{4(w/out\ LULUCF)}$	776	887	938	960	974	956	1063	1084	1077	636	534
N_2O (w/ LULUCF)	146	186	194	173	173	154	174	179	176	209	198
$N_2O_{(w/out\ LULUCF)}$	146	186	191	172	172	153	173	175	175	207	195
HFCs	NO,NE	28	62	122	198	244	335	365	345	326	307
PFCs	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO
SF6	3	6	9	12	13	17	19	17	16	15	14

3F.2.1 Without Measures (BaU)

The BaU emissions by sector for years 1990–2040 are presented above in **Error! Reference source not found.**, a nd are depicted below in Figure 3-21. The latest inventory year used as reference is 2022. This scenario assumes a considerable slow improvement in energy intensity across all end-use sectors. This results in a very high final energy demand projections, with an equivalent effect in emissions. This scenario resembles the evolution of energy intensity of the EU Reference Scenario 2020. BaU emissions (total GHG CO_2 eq) in 2030 are projected to

increase by 39.1% compared to 1990 and decrease by 16.0% compared to 2005. BaU emissions in 2040 are projected to increase by 20.6% compared to 1990 and decrease by 27.2% compared to 2005.

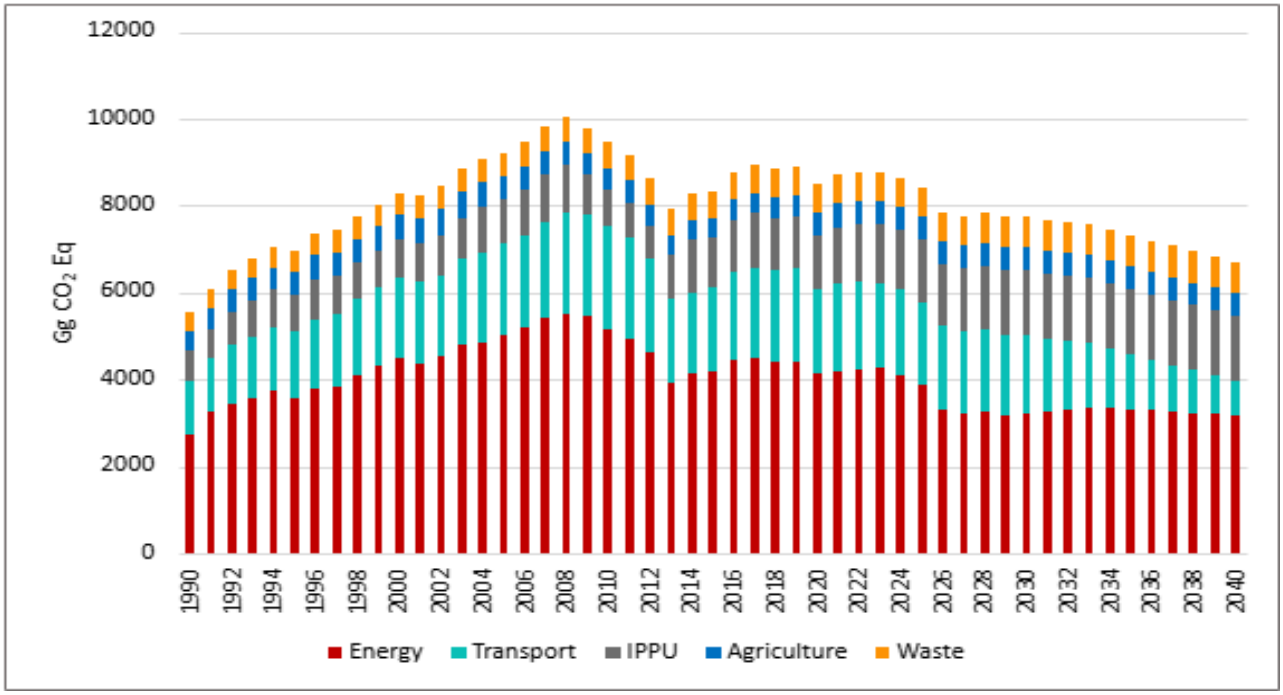


Figure 3-21. Total BaU GHG emissions by sector (Gg CO_2 eq.) 1990–2040

The methodologies applied are the same as those used for the preparation of the 2024 submission of National Greenhouse Gas emissions inventory of Cyprus to the UNFCCC [69] and projected activity data.

Energy demand projections are largely based on recommended harmonized values from the European Commission as provided under Annex I, Part 2 of Regulation (EU) 2018/1999, and pursuant to Article 18(I) of the Governance Regulation[70]. For certain sectors (manufacture of solid fuels, other energy industries, aviation, water-borne navigation, non-specified stationary and mobile), the latest GDP forecast has been used[71]. Other key assumptions for energy are the introduction of natural gas in 2026 and 21.1% RES in 2025, 25.5% in 2030, 30.8% in 2035, and 39.3% in 2040. Biofuels share in diesel is 5.1% in 2025, 5.1% in 2030, 5.1% in 2035 and 5.1% in 2040. Higher fuel prices have increased the competitiveness of renewable energy, especially in the long run. Alongside decreased costs for renewable energy sources, this has resulted in higher renewable energy shares.

3F.2.2 With Existing Measures (WEM)

The WEM emissions by sector for years 1990–2040 are presented above in, and are depicted below in Figure 5.3.

The WEM scenario considers policies and measures that are already in place, as well as investments in infrastructure that are proceeding as planned. Taking into account ongoing measures to improve energy efficiency, the WEM scenario represents a notable improvement in energy intensity across the economy. Nonetheless, despite measures and investments to promote sustainable modes of transport, the WEM scenario assumes that there is no social acceptance of the relevant interventions. As in BaU, introduction of natural gas is predicted for 2026, but RES shares are slightly different, at 23.5% in 2025, 28.8% in 2030, 37.2% in 2035, and 56.5% in 2040. Biofuels share in diesel is 7.2% in 2025, 7.2% in 2030, 7.2% in 2035 and 7.2% in 2040.

WEM emissions (total GHG CO_2 eq) in 2030 are projected to increase by 25.4% compared to 1990 and decrease by 24.3% compared to 2005. WEM emissions in 2040 are projected to decrease by 6.27% compared to 1990 and

[69] https://unfccc.int/documents/461671
[70] Annex I, Part 2 of the Regulation (EU) 2018/1999 on the Governance of the Energy Union and Climate Action; Article 38(3) of the Implementing Regulation; Article 18(1) of the Governance Regulation.
GDP forecast as prepared by the Ministry of Finance in October 2022; Maria Matsi, Economic Officer, Directorate of Economic Research and EU Affairs, Ministry of Finance, 1439 Nicosia – Cyprus, Tel. no.: +35722601231, Email: mmatsi@mof.gov.cy

decrease by 43.4% compared to 2005. The difference in the total GHG (CO_2 eq) emissions between the BaU and the WEM scenario are presented

Figure 3-22. WEM emissions are 9.84% lower than BaU in 2030, and 22.3% lower than BaU in 2040.

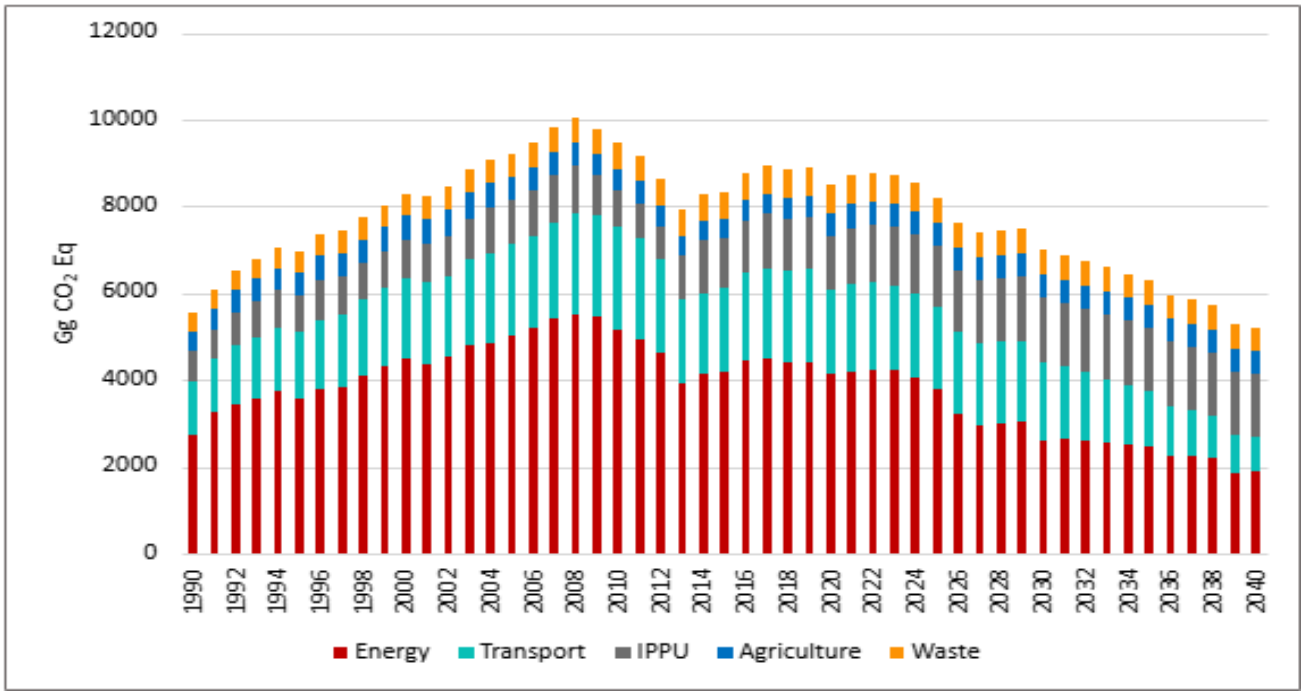


Figure 3-22. Total WEM GHG emissions by sector (Gg CO_2 eq.) 1990–2040

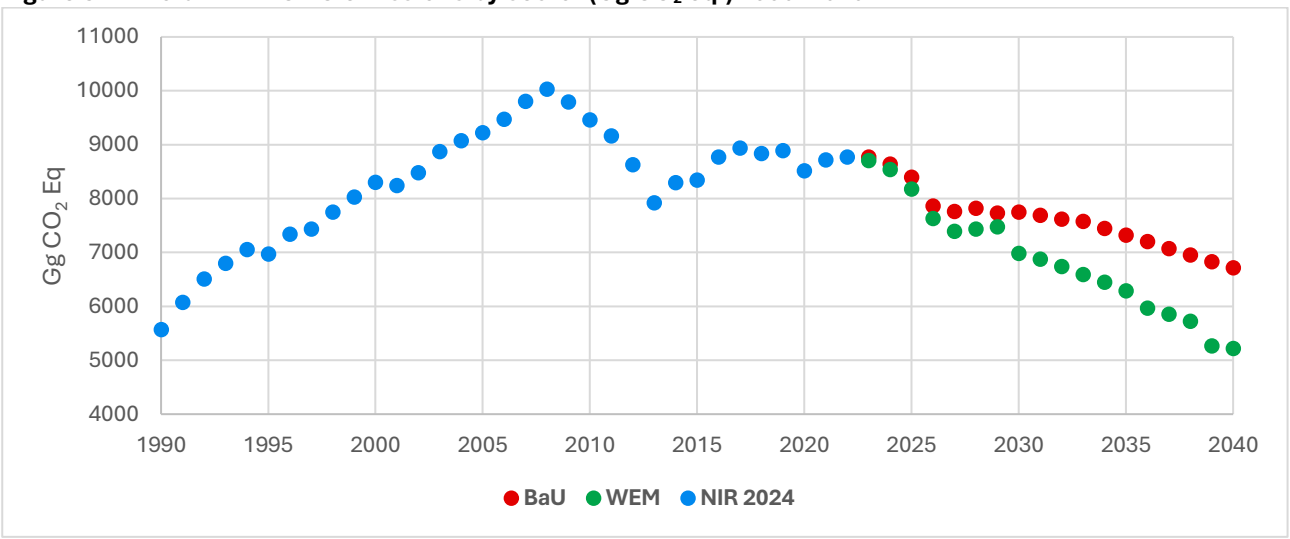


Figure 3-23. Total WEM GHG emissions compared to BaU (Gg CO_2 eq.) 1990–2040

The effect of currently implemented and adopted policies and measures (that are incorporated in the WEM projections scenario) are presented in Table 3-21**Error! Reference source not found.** in terms of GHG emissions avoided on a CO_2 equivalent basis.

Table 3-21. Reductions for WEM by Sector and Gas (Gg CO_2 eq.)

Gg CO_2 eq.	**2025**	**2030**	**2035**	**2040**
Energy	93	615	839	1287
Transport	21	9	9	8
IPPU	6	20	30	40
Agriculture	0	1	3	5
Waste	101	116	152	154
Total (Excluding LULUCF)	**222**	**762**	**1032**	**1495**
Gas (Excluding LULUCF)	**222**	**762**	**1032**	**1495**
CO2	102	611	834	1281
CH4	113	130	168	173
N2O	1	1	0	1
HFCs	5	19	29	38
PFCs	NO	NO	NO	NO
SF6	0	1	1	2

The total estimated GHG emissions reduction potential from the implemented and adopted policies and measures (without LULUCF) was estimated to be 222 Gg CO2eq for 2025 (-5 Gg under EU-ETS and 227 Gg under ESR sectors); and 762 Gg CO2eq for 2030 (531 Gg under EU-ETS and 231 Gg under ESR sectors). These reductions are given relative to the BaU scenario.

3F.2.3 With Additional Measures (WAM)

The WAM emissions by sector for years 1990–2040 are presented above in Table 3-22, and are depicted below in Figure 5.6.

The methodologies applied are the same as those used for the preparation of the 2024 submission of National Greenhouse Gas emissions inventory of Cyprus to the UNFCCC[72]. The impact in the emissions is presented in Figure 3-20. This scenario is based on the official National Energy and Climate Plan (NECP) of December 2024. The WAM scenario considers additional policies and measures to improve energy efficiency, increase the share of renewable energy sources and reduce greenhouse gas emissions across all sectors of the economy. Important deviations from WEM include the increased adoption of sustainable modes of transport, increased biofuel blending in motor fuels, a higher rate of energy efficiency improvements in buildings and industry and increased deployment of renewable energy technologies in the electricity generation mix by 2030.

As in BaU, introduction of natural gas is predicted for 2026, but RES shares are slightly different, at 23.8% in 2025, 33.2% in 2030, 45.7% in 2035, and 72.3% in 2040. Biofuels share in diesel is 7.2% in 2025, 16.6% in 2030, 16.6% in 2035 and 16.6% in 2040. As presented in section 3D, the WAM scenario assumes the introduction of additional policies in Energy, Agriculture, and Waste, as well as higher recovery of F-gases.

[72] https://unfccc.int/documents/461671

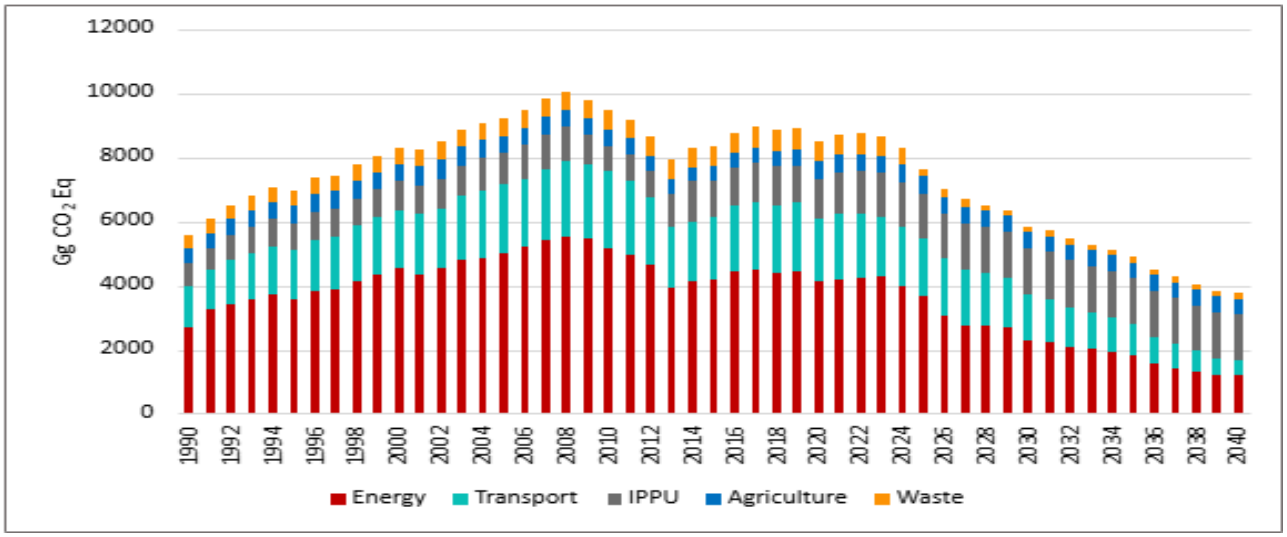


Figure 3-24. Total WAM GHG emissions by sector (Gg CO_2 eq.) 1990–2040

WAM emissions (total GHG CO_2 eq) in 2030 are projected to increase by 4.7% compared to 1990 and decrease by 36.8% compared to 2005. WAM emissions in 2040 are projected to decrease by 32.7% compared to 1990 and decrease by 59.4% compared to 2005.

Reductions from the WAM scenario as compared to the BaU scenario are presented below in Figure 5.6 and Table 5.3. WAM emissions are 24.7% lower than BaU in 2030, and 44.2% lower than BaU in 2040. WAM emissions are 16.5% lower than WEM in 2030, and 28.2% lower than WEM in 2040.

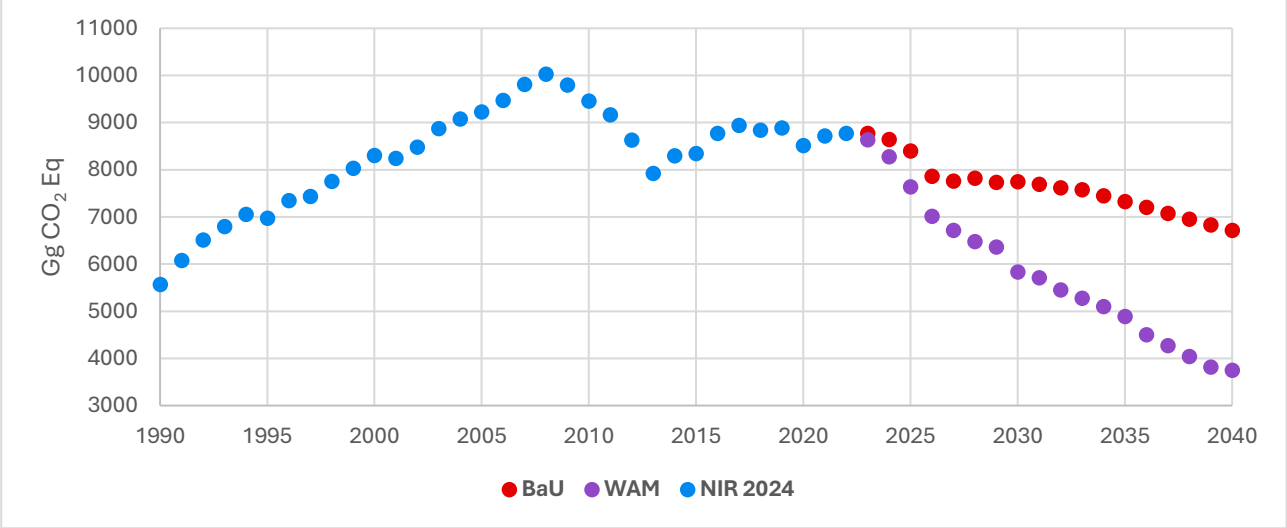


Figure 3-25. Total WAM GHG emissions compared to BaU (Gg CO_2 eq.) 1990–2040

The effect of currently implemented and adopted policies and measures (that are incorporated in the WAM projections scenario) are presented in Table 3.22, in terms of GHG emissions avoided (relative to BaU) on a CO_2 equivalent basis.

Table 3-22. Reductions for WAM by Sector and Gas (Gg CO_2 eq.)

Gg CO_2 eq.	**2025**	**2030**	**2035**	**2040**
Energy	217	969	1477	1958
Transport	105	371	320	344
IPPU	20	40	60	80
Agriculture	7	28	31	34
Waste	411	508	545	550
Total (Excluding LULUCF)	**761**	**1917**	**2433**	**2966**
Gas (Excluding LULUCF)	**761**	**1917**	**2434**	**2967**
CO2	301	1310	1768	2271
CH4	441	561	600	608
N2O	-1	5	6	8
HFCs	19	38	58	77
PFCs	NO	NO	NO	NO
SF6	1	2	3	4

The total estimated GHG emissions reduction potential from the planned policies and measures (without LULUCF) was estimated to be 539 Gg CO_2 eq for 2025 (153 Gg under EU-ETS and 386 Gg under ESR sectors); and 1155 Gg CO_2 eq for 2030 (212 Gg under EU-ETS and 943 Gg under ESR sectors). These reductions are given relative to the WEM scenario.

3F.2.4 LULUCF

The absorptions from the LULUCF sector are expected to increase in the coming years, mainly due to the growth of trees in the forested areas and implementation of the national policies and measures on forestation and reforestation. Table 3-23 and Figure 3-26 present the projected absorptions by the LULUCF sector until 2040 compared to previous years. As with the other sectors, "NIR2024" are the GHG historical net removals according to the September 2024 GHG inventory submission to the UNFCCC; BaU is the "Business as Usual" scenario; WEM is the "With existing measures" scenario; and WAM is the "With Additional Measures" scenario. CO2 sink is the majority of the sector, with only a small amount of CH4 and N2O emitted. The calculation of projected amounts of CH4 and N2O is beyond the scope and resources of this projection. Thus, the measures for WEM and WAM are calculated based on CO2 equivalent, and disaggregated by gas based on the ratio of the last ten inventory years.

Table 3-23. 1990–2040 LULUCF emissions

Year	**NIR 2023**	**BaU**	**WEM**	**WAM**
	Gg CO_2 eq.			
1990	-153			
1995	-180			
2000	-143			
2005	-221			
2010	-265			
2015	-296			
2020	-299			
2025		-304	-307	-323
2030		-310	-325	-352
2035		-317	-341	-385
2040		-323	-357	-418

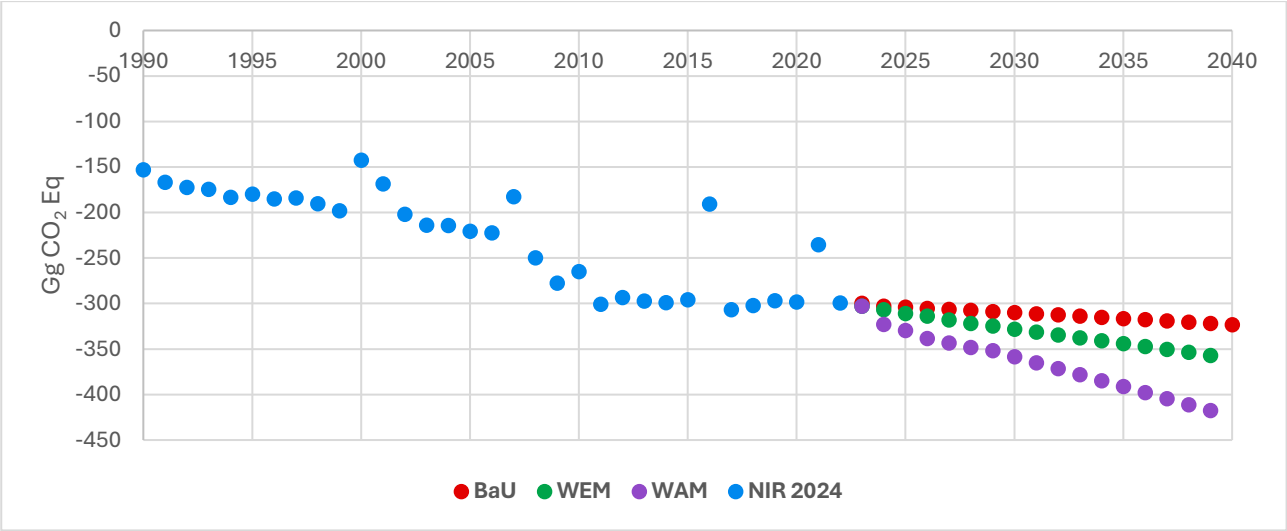


Figure 3-26. Projected LULUCF emissions until 2040

3F.2.5 International Bunkers

As described in 3D.2, policies and measures for reduction of emissions from international aviation are included in WEM, and to a greater degree, WAM. For the purpose of estimating the emissions from biofuels, it is assumed that the biofuel mixture and thus emission factors are the same as those applied to Road Transport for the respective scenarios.

Projected greenhouse gas emissions from interational aviation for the BaU, WEM, and WAM scenarios are shown below in Table 3-24. The emissions between the three scenarios are also compared in Figure 3-27.

Table 3-24. GHG Emissions by Scenario and Gas from International Aviation in the BaU, WEM, and WAM Scenarios

	1990	1995	2000	2005	2010	2015	2020	2022	2025	2030	2035	2040
BaU												
International Aviation* (Gg CO_2 Eq)	724	803	834	839	834	757	329	559	794	863	968	1045
BaU - Gas	0	0	0	0	0	0	0	0	0	0	0	0
CO_2*	718	797	827	833	828	751	327	555	788	857	961	1037
CH_4	0	0	0	0	0	0	0	0	0	0	0	0
N_2O	5	6	6	6	6	6	2	4	6	6	7	8
Biomass CO_2	*NO*	*NO*	*NO*	*NO*	*NO*	*NO*	*NO*	*NO*	*NO*	*NO*	*NO*	*NO*
WEM												
International Aviation* (Gg CO_2 Eq)	724	803	834	839	834	757	329	559	794	863	942	998
WEM - Gas	0	0	0	0	0	0	0	0	0	0	0	0
CO_2*	718	797	827	833	828	751	327	555	788	857	935	990
CH_4	0	0	0	0	0	0	0	0	0	0	0	0
N_2O	0	0	0	0	0	0	0	0	0	0	0	0
Biomass CO_2	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*4*	*8*
WAM												
International Aviation*	724	803	834	839	834	757	329	559	794	863	940	970

(Gg CO_2 Eq)												
WAM - Gas	0	0	0	0	0	0	0	0	0	0	0	0
CO_2*	718	797	827	833	828	751	327	555	788	857	932	962
CH_4	0	0	0	0	0	0	0	0	0	0	0	0
N_2O	5	6	6	6	6	6	2	4	6	6	7	8
Biomass CO_2	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*0*	*4*	*9*

*Excluding CO_2 from biomass, which is reported separately (in italics) in the respective area of the table for each scenario

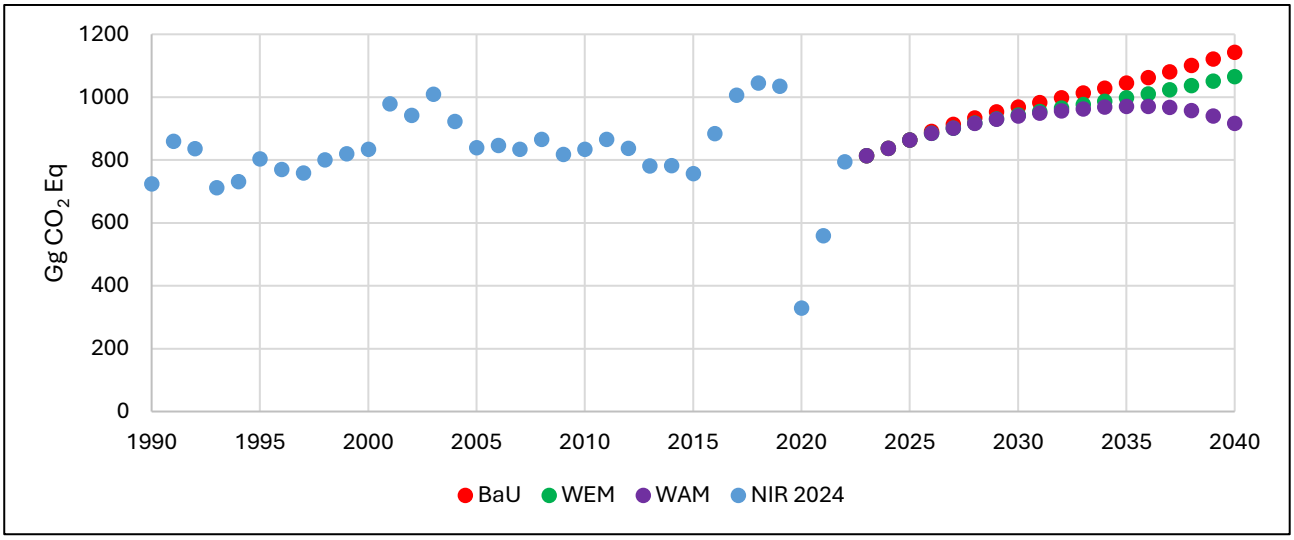


Figure 3-27. GHG Emissions (Gg CO_2 Equivalent) from International Aviation in the BaU, WEM, and WAM Scenarios (Excluding CO_2 Emissions from Biomass)

As described in Section 3D.2, there is not currently biofuel reported in international maritime transport. GDP is used to project the fuel consumption for international marine transport in the BaU, WEM and WAM scenarios, assuming same emission factors for all fuels as used in the inventory, and the resulting emissions are shown in Table 3-25.

Table 3-25. GHG Emissions by Scenario and Gas from International Marine Transport in the BaU, WEM, and WAM Scenarios

	1990	**1995**	**2000**	**2005**	**2010**	**2015**	**2020**	**2022**	**2025**	**2030**	**2035**	**2040**
Total (Gg CO_2 Eq)	185	219	613	927	594	776	885	810	921	1001	1122	1211
Gas												
CO_2*	183	217	606	917	588	767	874	800	910	989	1109	1197
CH_4	0	0	1	2	1	2	2	2	2	2	2	2
N_2O	2	2	5	8	5	7	9	8	9	10	11	12

3F.2.6 Sensitivity Analysis of the Projections

The majority of emissions in Cyprus come from the Energy sector, with electricity production accounting for the largest portion of the sector. Electricity demand is sensitive to temperature projections. Therefore, a sensitivity analysis is provided for the WEM and the WAM scenario, with each comparing the central forecast (the electricity demand as presents in the model) with two additional forecasts, of mild weather and extreme weather. The mild weather scenario is without climate change, but with mild summer conditions. The central forecast is without climate change, with typical weather conditions. The maximum case is with climate change with higher temperatures than usual in the summer. The sensitivity analysis was only conducted for the next ten years, and therefore no information after 2033. It includes information for 2030, a key year for climate targets.

The scope of the analysis is only the electricity sector (that is, sector 1A1a. Public Electricity and Heat Production). The sensitivity analysis was only available for the final energy demand model, and not the OseMOSYS model (see section 3F.3.2.1 for information on the models used). The final energy demand was applied to electricity emissions by assuming the GHG CO_2 eq/GWh for 1A1a under the central forecast would also be applied to the mild weather and extreme weather forecasts. It also had to be assumed that, in essence, the share of fossils and renewables would be the same in each specific year.

The table with the results of the analysis of the response of electricity demands for the WEM scenario is shown in Table , while the results of the electricity demand scenarios are depicted for comparison in Figure 3-28, and the corresponding estimated GHG emissions in Figure 3-29. The comparison shows that, for 2030 in the WEM scenario, a mild weather scenario would decrease GHG emissions by 65 $GgCO_2$ eq (-4.5%), while the case of extreme weather would increase GHG emissions from the central forecast by 159 $GgCO_2$ eq (6.5%).

Table 3-24. Sensitivity of Annual Peak Load Projection to Climate Forecast: WEM Scenario

Projection of Final Electricity Demand by Scenario (GWh)												
	2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
Central forecast	4856	4826	4951	5013	5061	5088	5170	5288	5385	5408	5420	5432
Mild weather	4638	4607	4726	4786	4833	4858	4937	5050	5141	5165	5176	5188
Extreme weather	5116	5092	5232	5305	5363	5399	5494	5627	5737	5769	5789	5809
Estimate of GHG Emissions from 1A1a (Gg CO2 eq) by Final Electricity Demand Projection												
	2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
Central forecast	3109	3060	2868	2579	2015	1791	1807	1850	1430	1438	1429	1403
Mild weather	2969	2921	2738	2462	1924	1710	1726	1766	1365	1374	1365	1340
Extreme weather	3275	3228	3031	2729	2135	1900	1920	1968	1524	1534	1526	1501

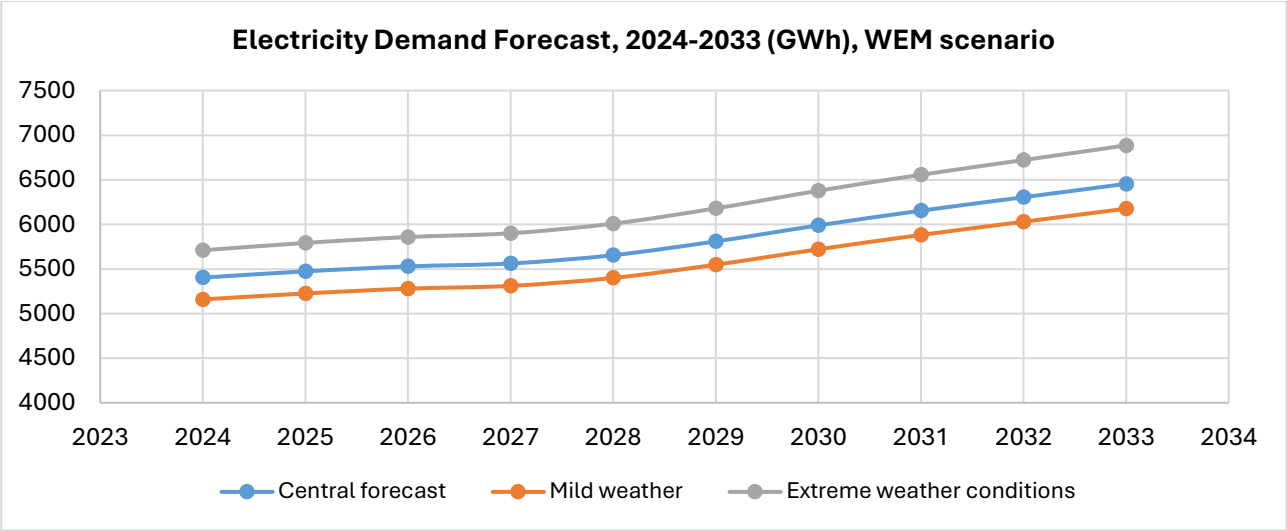


Figure 3-28. Sensitivity of Annual Peak Load Projection to Climate Forecast: WEM Scenario

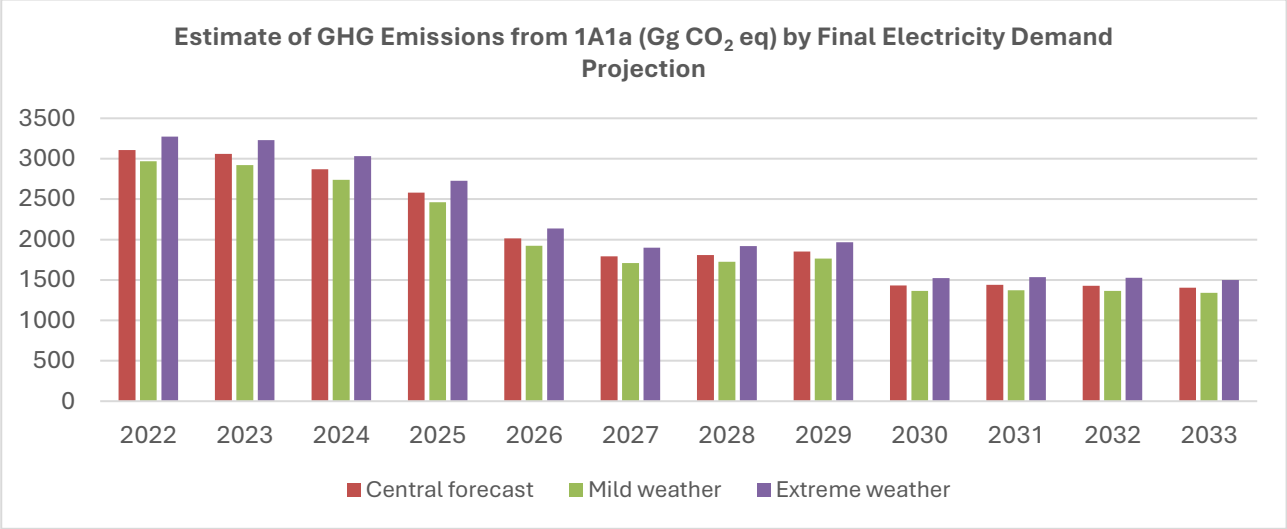


Figure 3-29. Estimate of GHG Emissions from 1A1a (Gg CO_2 eq) by Final Electricity Demand Projection for the WAM Scenario

The table with the results of the analysis of the response of electricity demand to forecast for the WAM scenario is shown in Table , while the results of the electricity demand scenarios are depicted for comparison in Figure **3-30**, and the corresponding estimated GHG emissions in Figure **3-31**. The comparison shows that, for 2030 in the WAM scenario, a mild weather scenario would decrease GHG emissions by 160 $GgCO_2$ eq (-4.5%), while the case of extreme weather would increase GHG emissions from the central forecast by 149 $GgCO_2$ eq (6.5%).

Table 3-25. Sensitivity of Annual Electricity Demand Projection to Climate Forecast: WAM Scenario

Projection of Final Electricity Demand by Scenario (GWh)												
	2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
Central forecast	4856	4802	4833	4880	4921	4944	5000	5069	5123	5410	5651	5830
Mild weather	4638	4584	4614	4660	4700	4722	4776	4842	4893	5170	5400	5571
Extreme weather	5116	5067	5106	5163	5213	5244	5310	5390	5456	5767	6030	6228
Estimate of GHG Emissions from 1A1a (Gg CO2 eq) by Final Electricity Demand Projection												
	2022	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	**2031**	**2032**	**2033**
Central forecast	3109	3060	2772	2471	1912	1690	1697	1727	1358	1345	1300	1315
Mild weather	2969	2921	2647	2359	1826	1614	1621	1649	1298	1286	1243	1256

Extreme weather	3275	3228	2929	2614	2025	1793	1802	1836	1447	1434	1387	1404

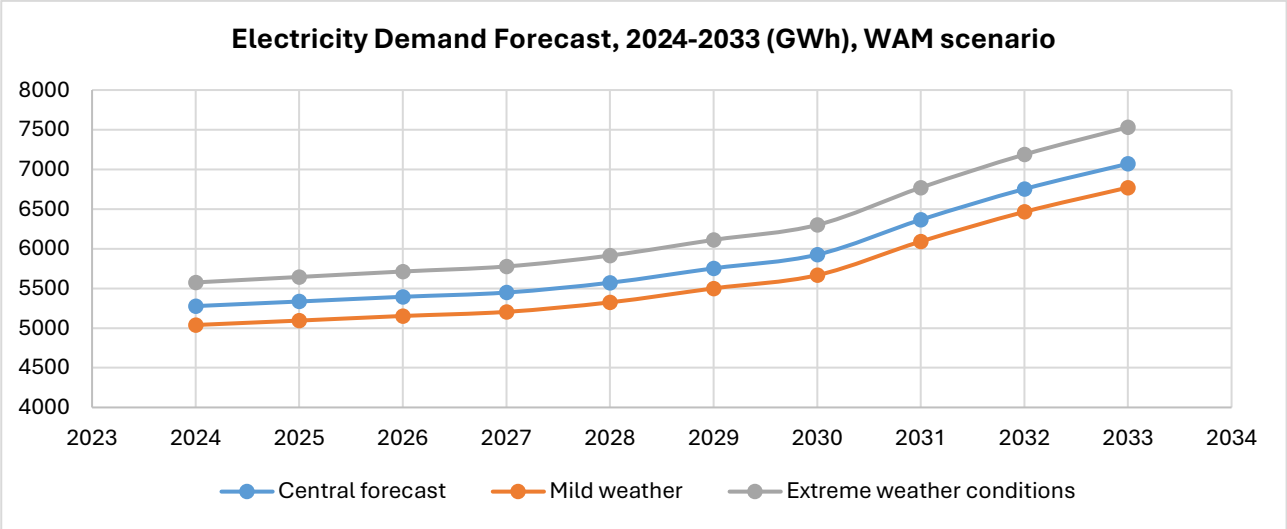


Figure 3-30. Sensitivity of Annual Peak Load Projection to Climate Forecast: WAM Scenario

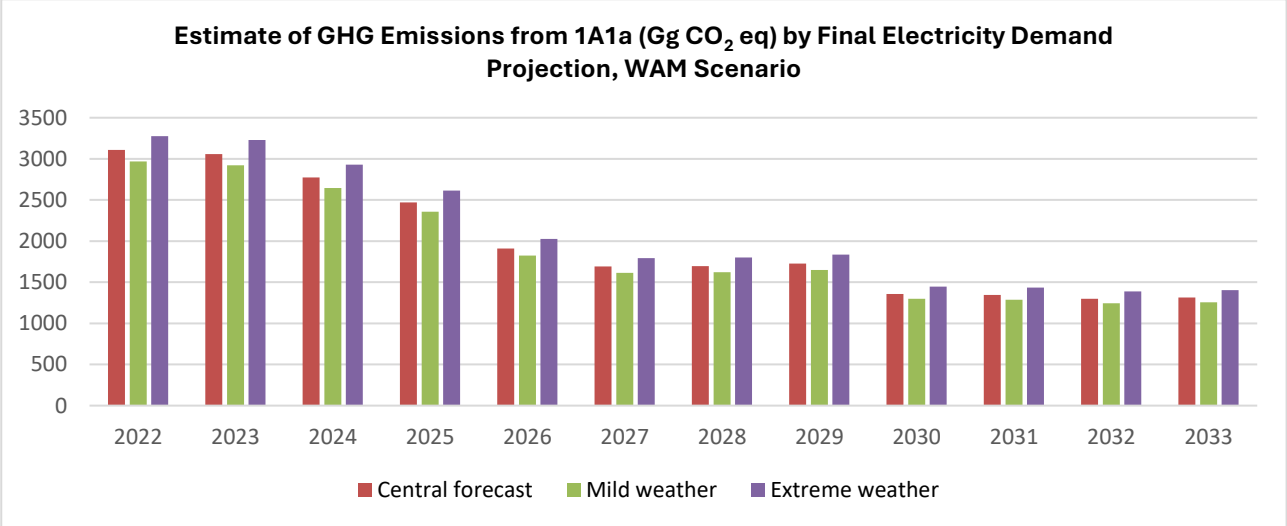


Figure 3-31. Estimate of GHG Emissions from 1A1a (Gg CO_2 eq) by Final Electricity Demand Projection for the WAM Scenario

No other sensitivity analysis was performed. There was no mitigation impact assessment of individual PaMs for the energy sector, due to the type of modelling used for the energy sector. If further sensitivity exercises would have been carried out, they would always generate the result that the projections are most sensitive to the changes in the energy sector, since the energy sector produces more than half of the total national emissions.

3F.2.7 Air Pollutants Emissions Projections

3F.2.7.1 WEM Scenario

The aforementioned choices in energy technologies and fuel mix results in the air pollutant emissions projections shown in Table . Although the increase in the share of renewable energy across the economy leads to a continuous reduction in NO_x and SO_2 emissions between 2024 and 2030, PM_{10} emissions are generally decreasing from 2027 to 2030 while $PM_{2.5}$ stays constant, as a result of tighter regulations in road transport and relative decline in the growth rate of passenger cars countered by the increased use of biomass in the heating and cooling sector. It should be mentioned that the national emission cap set for SO_2 limits the use of high sulphur fuel oil from 2020 onwards.

Table 3-26. Air pollutant emission projections until 2030 in the WEM Scenario.

Pollutant	Unit	2022	2023	2024	2025	2026	2027	2028	2029	2030
NO_x	kt	7.46	6.97	6.47	5.94	5.49	5.06	4.87	4.66	3.82
PM_{10}	kt	2.24	2.22	2.22	2.09	2.07	2.00	2.02	2.05	1.99
$PM_{2.5}$	kt	2.02	2.00	2.00	1.89	1.87	1.80	1.82	1.84	1.80
SO_2	kt	4.27	4.48	4.60	2.51	2.67	2.67	2.68	2.69	1.94

When the projections of DLI are taken into account for the remaining sectors of the economy that are not captured by the adopted methodology, a more comprehensive outlook is provided. It should be noted that DLI projects emissions for the major air pollutants only until 2030, and as such the horizon is limited in this case (Table).

Table 3-27. Economy-wide air pollutant emissions projections in the WEM scenario until 2030.

Pollutant	Unit	2022	2025	2030
NO_x	kt	11.93	10.18	8.86
$PM_{2.5}$	kt	0.99	0.74	0.62
SO_2	kt	11.23	1.41	1.53

3F.2.7.2 WAM Scenario

Compared to the WEM scenario, reduced emissions of air pollutants are projected, as shown in Table . A decrease is observed for most air pollutants, but $PM_{2.5}$ and PM_{10} show the smallest decrease in the long term. This is due to the use of biomass in the heating and cooling sector, as well as the increase in biofuels in road transport. There is also a decrease in SO_2 emissions by 2030. This is due to a decrease in the consumption of petroleum products in the heating and cooling sector and in electricity production. Finally, NO_x emissions are lower in the AFM scenario due to lower gas consumption for electricity generation, as well as lower reliance on conventional passenger cars in the road transport sector.

Table 3-28. Air pollutant emission projections until 2030 in the WAM Scenario.

Pollutant	Unit	2022	2023	2024	2025	2026	2027	2028	2029	2030
NO_x	kt	7.46	6.96	6.43	5.88	5.42	4.95	4.58	4.24	3.44
Difference from WEM		0%	0%	-1%	-1%	-1%	-2%	-6%	-9%	-10%
PM_{10}	kt	2.24	2.22	2.20	2.05	2.03	1.96	1.93	1.91	1.84
Difference from WEM		0%	0%	-1%	-2%	-2%	-2%	-4%	-7%	-8%
$PM_{2.5}$	kt	1.19	1.14	1.10	1.12	1.14	1.15	1.17	1.18	1.20
Difference from WEM		0%	0%	-1%	-2%	-2%	-2%	-4%	-6%	-7%
SO_2	kt	1.67	1.69	0.53	0.59	0.60	0.63	0.66	0.61	0.62
Difference from WEM		0%	0%	-1%	-4%	-7%	-8%	-10%	-12%	-23%

When the projections of DLI are taken into account for the remaining sectors of the economy that are not captured by the adopted methodology, a more comprehensive outlook is provided. As aforementioned, DLI projects emissions for the major air pollutants only until 2030, and as such the horizon is limited in this case (Table).

Table 3-29. Economy-wide air pollutant emissions projections in the WAM scenario until 2030.

Pollutant	Unit	2020	2025	2030
NO_x	kt	11.78	10.11	7.67
$PM_{2.5}$	kt	2.31	2.13	1.91
SO_2	kt	4.48	2.53	1.60

3F.3 Methodology Used for the Presented GHG Emission Projections

3F.3.1 Description of the Information Collection Process

The methodology applied for the estimation of the projected GHG emissions has taken into consideration the following:

(a) At the time the projections were estimated, the 2024 GHG emissions inventory was available. Therefore, all data presented for 2022 and prior is based on the 2024 GHG inventory submitted to the UNFCCC in September 2024 in accordance with Regulation (EU) 2018/1999 of the European Parliament and of the Council of 11 December 2018 on the Governance of the Energy Union and Climate Action. The projection calculations reflect the inventory data for the historical years 1990–2022.
(b) For the energy sector two models have been utilised by the Cyprus Institute for the preparation energy projections: OSeMOSYS-Cyprus and Final energy demand projection model.
(c) For the activities that are included in the EU-ETS data for 2023 was available from the annual reports of the installations. This concerns the sectors of electricity generation (1A1a(i)) and cement and ceramics production (1A2f, 2A1 and 2A4a).
(d) GDP and population projections from the energy models were used where GDP and population data was needed.
(e) The projections of activity data were converted to GHG emissions through the application of the 2006 IPCC Guidelines and by applying global warming potential values from the fifth IPCC assessment report, in line with the latest national GHG inventory submission (2024). Emission factors are derived from expert assessments based on the 2006 IPCC guidelines and country specific information.
(f) Biomass and biofuels are included, but in line with UNFCCC reporting procedures, CO_2 emissions from biomass are not included in sectoral and inventory totals, but rather reported as a memo item in the 2023 National Inventory. Emissions from solvent use are likewise excluded, and reported as indirect emissions in the 2023 National Inventory.

The main steps of the methodology applied for all sectors were the following: (a) Scenario definition, (b) Activity data projection, (c) Estimation of GHG emissions. Further details on each sector and the specific assumptions applied are given in the sections that follow.

The base year for projections is the latest year of the national GHG emission inventory submitted to the UNFCCC in September 2024. Measures which have been introduced before the time of projection preparation are considered as existing measures. Measures expected to be approved later are considered as additional. Predictions of the number of inhabitants are based on information from the Statistical Service. These data are used for the energy models and waste projections. The scenarios of trends in the GDP used in projections are based on predictions provided by Ministry of Finance. These data are used for the energy models and for Waste sector projections. The prices of fuels on the global market and carbon prices are taken directly from the European Commission harmonised parameter values. The prices of domestic energy sources are based on the costs of their acquisition and are also affected by the competitive energy sources. Energy production projection data and energy consumption development are obtained by the relevant bodies (System Operators, Cyprus Energy Regulatory Authority and Energy Service) as well as from projections made by external collaborators. The decision on the projections to be used is taken by the Ministry of Energy. Calculation of GHG emissions from fuel combustion is based on energy balances obtained from the scenarios developed by the model of external collaborators. The projections of GHG emissions in Agriculture are based on trends in the activity data used in the emission inventory calculation. The most important activity data are animal population cattle and swine population, amount of fertilizers applied to agricultural soils, and annual harvest and production. The development of animal numbers is taken from the Department of Agriculture.

The activity data for the base year are taken from the Statistical Service.

The emission estimates in the LULUCF sector are to a large degree determined by development of land areas categorized by their use. Therefore, the LULUCF emission estimates and their projections must primarily methodologically solve the issue of land areas. The actual development of six major IPCC land use categories as reported in the latest emission inventory is used. The projections are based are on the observed trends and anticipation of gradually less intensive land use changes until 2040. The specific attention is given to forest land, which always represents one of the key absorption categories in the emission inventory.

A waste sector projection contains three source categories - emissions from landfills, emissions from wastewater handling and emissions from biological treatment of waste. The Tier 2 methodology was implemented for the estimation of emissions from land disposal of solid waste using the IPCCWasteModel excel spreadsheet. The parameters are set to Southern Europe region, the Degradable Organic Carbon (DOC) is calculated based on waste by composition and the methane generation rate constant is the default for dry temperate. For biological treatment of solid waste Tier 1 methodology was implemented using the default method given in Equations 4.1 and 4.2 (2006 IPCC guidelines (volume 5, page 4.5)) with activity data based on national statistics. Tier 2 methodology was implemented for the estimation of emissions from wastewater treatment and discharge with incorporation of a country specific emission factor and country specific activity data. Activity data for the projections are various. As with the other sectors, the main socioeconomic drivers used for quantifications and GDP are obtained from the Ministry of Finance.

Subsequent activity data are estimated in accordance with scenarios description and particular policy.

3F.3.2 Energy Sector

3F.3.2.1 Information on Models Used

Energy demand and production data for the sectors of energy were obtained mainly from the Cyprus Institute, where OSeMOSYS-Cyprus and Final energy demand projection model. The use of these models leads to the conduction of analytical quantitative targets per technology, such as the demanded power for wind turbines, small-scale biomass or the quantification of energy savings in the industrial and residential sectors, etc.

The existing model of the Cypriot energy system, developed in OSeMOSYS[73] is updated to support the formulation of the National Energy and Climate Plan of the Republic of Cyprus. The model employed in the second stage of the analysis is developed within the Open-Source Energy Modelling System (OSeMOSYS), which is a long-term cost-optimization energy system model. OSeMOSYS has been used in numerous studies with focus ranging from a global, regional and national scale. It is a bottom-up technoeconomic model that is demand-driven, which means the exogenously defined demand has to be met, no matter the cost. The choice of technologies and energy mix is based on the adopted technoeconomic assumptions (e.g. fuel costs, technology costs, resource availability, emission limits). The model's objective function is the minimization of the total discounted system cost over the entire modelling horizon. An existing model of the Cyprus electricity supply system, using code enhancements that allow consideration of short-term grid constraints, is expanded to include the transport and heating and cooling sectors[74].

The Final energy demand projection model was initially developed in 2008 in order to suit the planning needs of Cypriot energy and environmental authorities. It has been adopted since 2009 for the preparation of consecutive Renewable Energy and Energy Efficiency Actions Plans that were submitted by the Republic of Cyprus to the European Commission; for the development of a renewable energy roadmap for Cyprus with the aid of the International Renewable Energy Agency; for the national building renovation strategy; for the assessment of the energy efficiency potential in the Cypriot economy; and for various reporting needs to assess the compliance of Cyprus with the Energy Efficiency Directive.

The energy demand forecast model is a macroeconomic model. As an initial step in the analysis, an energy forecast model developed for Cyprus is applied to project final energy consumption across the economy. The energy forecast model has been used to support official energy planning efforts of national authorities in the recent past[75] and is described in detail in a relevant publication by IRENA[76]. Utilizing energy balance statistics for the period 2010–2023 supplied by the Statistics Service of the Republic of Cyprus, an outlook to 2050 is provided.

[73] www.osemosys.org

[74] Constantinos Taliotis, Elias Giannakis, Marios Karmellos, Nestor Fylaktos, Theodoros Zachariadis, Estimating the economy-wide impacts of energy policies in Cyprus,Energy Strategy Reviews, Volume 29,2020,100495,ISSN 2211-467X, https://doi.org/10.1016/j.esr.2020.100495(https://www.sciencedirect.com/science/article/pii/S2211467X20300481)

[75] Republic of Cyprus, 'Cyprus' Integrated National Energy and Climate Plan', Nicosia, Cyprus, Jan. 2020. [Online]. Available: http://www.mcit.gov.cy/mcit/EnergySe.nsf/All/0FC95262EE5B4273C22582FE003158A8/$file/INECP_v.1.1 -2 001 201 002 % 20SUBMITTED.pdf.

[76] IRENA, 'Renewable Energy Roadmap for the Republic of Cyprus', Abu Dhabi, 2015. [Online]. Available: http://www.irena.org/menu/index.aspx?mnu=Subcat&PriMenuID=36&CatID=141&SubcatID=501.

The main energy-consuming sectors of the economy are separately modelled, namely: agriculture, households, cement industry, other industry, services, road passenger transport, road freight transport and aviation. Demand growth for the various energy forms is driven by exogenously defined macroeconomic assumptions obtained from the Ministry of Finance, technology costs and fuel prices, while it is subject to income and short-term and long-term price elasticities; these vary across the different sectors of the economy and are based on national econometric analyses and data from the international literature. In this study, the forecast model provides final energy consumption projections for all sectors except road transport. These are used as input in the cost-optimization model[77]. Since 2018 the forecast model has been used in combination with the OSeMOSYs model in the preparation of diverse national plans, such as the impact assessment of the National Energy and Climate Plan, the greenhouse gas and air pollutant emission projections used by climate change and air quality authorities, the economic impact assessment of the National Recovery and Resilience Plan, the long-term low GHG development strategy, and the preparation of a proposal for a green tax reform including a carbon tax in non-ETS sectors of the economy. The models run for the energy projections were updated with the harmonised key parameters provided by the European Commission in 2024. They also include the latest macroeconomic forecasts from the competent national authorities. Further information is available in Annex 11 of the NECP main document, which describes in detail the models used for the projections (The analytical basis of the National Energy and Climate Plan of the Republic of Cyprus).

Road transport projections are conducted in OSeMOSYS because OSeMOSYS has a more detailed techno-economic representation of road vehicles and can therefore perform more granular and reliable projections and policy simulations for this sector. Projections regarding the evolution of the vehicle fleet and its fuel consumption require a series of additional assumptions. First, as OSeMOSYS is a demand-driven model, exogenous projections of mobility (in terms of vehicle-km) are provided for each mode of transport by the Public Works Department of the Ministry of Transport. Then assumptions on the evolution of the technoeconomic performance of the competing vehicle technologies from the EU Reference Scenario 2020[78] and fuel price projections determine the competitiveness of each technology, which in turn affects the demand for each automotive fuel. In this sense, the rate of electrification of road transport is affected by the underlying assumptions used in the model for all vehicle technologies across the different modes of transport. Other aspects that might promote earlier adoption of electric vehicles, such as the extension of the ETS to include road transport, are also accounted for. Full details on the assumptions for the projections in the road transport sector, including vehicle cost and efficiency, annual vehicle mileage, and vehicle ownership cost are available in the 2024 Final Update to the NECP.

Table 3-30 summarizes the projections for electricity generation in the energy sector.

[77] Theodoros Zachariadis, Emanuele Taibi,Exploring drivers of energy demand in Cyprus – Scenarios and policy options, Energy Policy,Volume 86,2015,Pages 166-175,ISSN 0301-4215, https://doi.org/10.1016/j.enpol.2015.07.003 .https://www.sciencedirect.com/science/article/pii/S0301421515300148

[78] European Commission. Directorate General for Energy., European Commission. Directorate General for Climate Action., and European Commission. Directorate General for Mobility and Transport., EU Reference Scenario 2020: Energy, Transport and GHG emissions: Trends to 2050. LU: Publications Office, 2021. Accessed: Jan. 05, 2022. [Online]. Available: https://data.europa.eu/doi/10.2833/35750.

Table 3-30. Projections for the electricity generation mix for each scenario (BaU, WEM and WAM)

		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
RES	BaU	19.1%	22.4%	24.1%	25.5%	25.1%	25.8%	30.5%	30.1%	30.1%	29.9%	31.2%	31.9%	33.7%	37.0%	37.3%	40.1%	43.0%	44.9%
	WEM	22.5%	26.5%	28.1%	28.5%	29.0%	29.0%	28.9%	33.7%	33.6%	34.7%	37.7%	38.8%	44.3%	51.0%	54.8%	57.9%	83.7%	81.9%
	WAM	22.6%	27.6%	29.3%	30.2%	31.1%	31.4%	31.5%	37.6%	36.1%	37.9%	42.2%	47.0%	48.9%	66.5%	72.6%	78.5%	80.9%	82.8%
Biomass	BaU	1.0%	1.0%	0.9%	0.9%	0.8%	1.2%	1.8%	2.0%	2.3%	2.6%	2.8%	3.2%	3.1%	3.0%	3.0%	2.9%	2.8%	2.7%
	WEM	1.2%	1.2%	1.2%	1.2%	1.2%	1.6%	2.1%	2.4%	2.8%	3.2%	3.9%	4.4%	4.3%	4.2%	4.1%	4.0%	3.9%	3.8%
	WAM	1.2%	1.2%	1.2%	1.2%	1.2%	1.7%	2.1%	2.5%	2.8%	3.0%	3.6%	4.1%	3.9%	3.8%	3.7%	3.6%	3.7%	3.7%
HFO	BaU	53.3%	30.8%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	WEM	61.6%	58.0%	25.4%	14.6%	8.9%	8.9%	9.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
	WAM	61.8%	58.0%	24.4%	14.0%	8.6%	8.4%	8.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Diesel	BaU	31.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	WEM	19.8%	19.4%	50.5%	8.4%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	WAM	19.5%	18.2%	50.1%	8.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Natural Gas	BaU	0.0%	51.0%	79.3%	78.7%	79.2%	78.2%	73.1%	73.1%	72.8%	72.8%	71.4%	69.8%	68.2%	65.9%	64.2%	62.3%	59.5%	57.8%
	WEM	0.0%	0.0%	0.0%	52.5%	67.0%	66.4%	66.0%	66.0%	64.5%	62.6%	60.0%	58.3%	55.6%	46.5%	46.2%	45.0%	28.8%	29.3%
	WAM	0.0%	0.0%	0.0%	51.3%	65.2%	64.4%	64.0%	64.7%	59.6%	54.2%	52.3%	50.7%	47.9%	38.4%	35.0%	31.6%	28.2%	29.5%

3F.3.3 Non-Energy Sectors

GHG emissions in the non-energy sectors are calculated using spreadsheet models that calculate emissions based on projected activity data, emission factors and sector specific assumptions. Activity data is projected on the basis of expert judgement of sectoral experts and where necessary involvement of the private sector. The tables that follow summarize the main assumptions of each scenario applied for the estimation of the GHG emissions up to 2040 for the IPPU, Agriculture and Waste sectors, based on the policies and measures presented in previous sections. Table 3-31 and Table 3-32 summarize the main assumptions for the non-energy sectors. Assumptions for changes in animal population are presented in Table 3-33. For the complete 2022 data, please refer to the 2024 National Greenhouse Gas Inventory Report.

Table 3-31. Main assumptions and parameters used for the three projections' scenarios (BaU, WEM and WAM)

Energy sub-sector	BaU	WEM	WAM
1A1a i Electricity Generation	Table	Table	Table
1A1c Manufacture of solid fuels and other energy industries 1A1cii Other Energy Industries 1A3d ii Domestic water-borne navigation 1A3d i International water-borne navigation 1A5 Non-Specified	GDP	Same as BaU	Same as BaU
1A2 Manufacturing Industries and Construction excluding 1A2f 1A4 Other Sectors	Energy models	Energy models	Energy models
1A2f Non-Metallic Minerals 2A1 Cement production	Full capacity from 2021; 80% alternative fuel by 2024 of which 30% biomass	Same as BaU	Same as BaU
1A3a i International Aviation 1A3a ii Domestic Aviation	GDP	Energy models	Energy models
1A3b Road Transport	Energy models	Energy models	Energy models
1A5 Other	GDP	Same as BaU	Same as BaU

Table 3-32. Main assumptions and parameters used for the non-energy subsector for the three projections' scenarios (BaU, WEM and WAM)

Non energy sub-sector	BaU	WEM	WAM
2A2 Lime Production	Reach 8000 t in 2030 linearly; then constant	Same as BaU	Same as BaU
2A4 Other Process Uses of Carbonates 2D1: Lubricant Use 2D2: Paraffin Wax Use	Maintain 2022 constant	Same as BaU	Same as BaU
2F Product Uses as Substitutes for Ozone Depleting Substances 2G Other Product Manufacture and Use	Maintain 2022 constant	Maintain 2022 constant Then start recovery from 2024, increase linearly to reach 5% recovery in 2030; 10% recovery in 2040	Maintain 2022 constant Start recovery from 2024, increase linearly to reach 5% recovery in 2025; 10% recovery in 2030; 20% recovery in 2040
2D3 Other - Urea-based catalysts	Use diesel projection from road transport and keep 2022 percent of vehicle diesels using urea constant	Use WEM diesel projection from road transport and keep 2022 percent of vehicle diesels using urea constant	Use WAM diesel projection from road transport and keep 2022 percent of vehicle diesels using urea constant
3A1 Cattle	Lactation/ GE (gross energy intake): extrapolate 1990-2022 linear trend Pregnancy (NEp): assume constant 2022	Same as BaU	Same as BaU Cattle population reduction to -10% in 2030 (relative to base year)
3B Dairy cattle 3B Other cattle	Anaerobic digestion: linear increase from 2022 to reach 15% in 2040	Anaerobic digestion: linear increase from 2022 to reach 10% in 2030; 15% in 2040	Anaerobic digestion: linear increase from 2022 to reach 15% in 2030; 30% in 2040
3B Swine	Anaerobic digestion: linear increase from 2022 to reach 70% in 2040	Anaerobic digestion: linear increase from 2022 to reach 65% in 2030; 75% in 2040	Anaerobic digestion: linear increase from 2022 to reach 70% in 2030; 80% in 2040
3B Poultry	Anaerobic digestion: linear increase from 2022 to reach 30% in 2040	Anaerobic digestion: linear increase from 2022 to reach 25% in 2030; 30% in 2040	Anaerobic digestion: linear increase from 2022 to reach 30% in 2030; 40% in 2040
3D1.1 Inorganic N fertilisers	Synthetic N fertilizers (FSN): Linear decrease from 2022 to reach -5% in 2040	Same as BaU	Same as BaU
3D1.2 Organic N fertilisers	Dry sludge applied on land: Maintain 2022 constant Composting: Maintain 2022 constant	Same as BaU	Same as BaU
3D1.4 Crop residues	Crop production: Maintain 2022 constant Cultivates area: Maintain 2022 constant	Same as BaU	Same as BaU
3H Urea application	Linear decrease from 2022 to reach -5% in 2040	Same as BaU	Same as BaU

5A Solid Waste	per capita production 2021: change with GDP - no tourists - > lower waste production 2021-2050: same as 2021 composition of waste to disposal sites: same as 2021	41% sorting at source from 2022; 55% 2025; 60% 2030; 65% 2035[1], constant until 2050 65% of organics to landfill from 2022; 65% of organics to landfill in 2025; 64% in 2030 20% recovery of deep unmanaged and managed from 2025	1. 41% sorting at source from 2022; 55% 2025; 60% 2030; 65% 2035, constant until 2050 2. 65% of organics to landfill from 2022; 53% in 2025; 52% in 2030 3. 30% recovery of deep unmanaged and managed from 2023
5B1. Composting	Waste composted: Assume same portion of waste going to compost as 2022	Decrease 8.8% in 2025; 4.1% in 2030; increase 0.9% in 2035; 0.9% 2040	Increase 52% in 2025; 61.3 in 2030; 69.4% in 2035; 69.4% in 2040
5B2. Anaerobic Digestion at Biogas Facilities	Waste digested: Assume constant as 2022	Annual increase of 1% from 2022	Same as WEM
5D1 Wastewater Treatment and Discharge	Population connected to central systems: assumed constant as 2022	84.8%(2023), 89.8%(2024-2026), 92.9%(2027), 94.0%(2028), 94.7%(2029), 100.0%(2030-2050)	Same as WEM
5D2 Industrial Wastewater Treatment and Discharge	Industrial production: assuming growth proportional to GDP	Increase anaerobic from 2025 to reach the following targets for 2030: 5% alcohol, 20% beer, 5% soft drinks, 7% dairy products, 10% meat and poultry, 5% vegetables, fruits and juices ; constant after 2030	Same as WEM

Table 3-33. Assumptions for change in animal population

Animal Specie	**2023–2030**	**2030–2040**
Dairy & Other cattle	Linear reduction to reach 10% of 2022	Constant from 2030
Sheep and goats	Linear increase to reach +10% of 2022	Constant from 2030
Swine	Linear reduction to reach -3% of 2022	Linear reduction to reach -2% of 2030
Horses	Constant from 2022	Constant from 2022
Mules & asses	Constant from 2022	Constant from 2022
Poultry	Linear increase to reach +10% of 2022	Constant from 2030

3F.3.4 LULUCF Sector

For the LULUCF sector, the WEM scenario includes the "I plant for climate" mitigation measure that was introduced in 2018 in addition to the fire prevention measures as presented above. The implementation of the "I plant for climate'' campaign is directed towards afforestation of non-forest land areas. The assumption for the WEM scenario is that this measure will lead to the conversion of annual cropland areas to coniferous forest. For the rest of the land-use categories (cropland, grassland, wetlands, settlements, other land) it was assumed that the same trend of land-use changes from 2013 onward until 2040 occur, given that the latest available Corine Land Cover data sets that provide the information on land-use changes are those of 2012 and 2018. For forest land remaining forest land, the average harvesting rate for the period 2012-2022 was assumed, while regarding forest

fires, the area affected was assumed to be equal to the average of the total available time series (1990-2022) for the projection. In the case of the HWP pool, the projection was based on the linear extrapolation of the net contribution of saw wood and wood panels categories based on the 2012-2022 period. The starting point for the projections was 2022, being the latest inventory year of the most updated national GHG inventory which was submitted to the EU. All categories and subcategories as well as all three gases (CO_2, CH_4, N_2O) which have been covered by the GHG inventory were considered in both WOM, WEM scenarios.

The BaU assumes that the policies and measures are not implemented.

The WAM assumes that the planned policies detailed in Section 3D.1.6 are implemented.

3F.3.5 Main Differences in Assumptions, Methods Employed, and Results from Previous National Communication Submission

As detailed in 3A.2.2, the policy and measures for projections are aligned with the National Energy and Climate Plan for the period 2021–2030 (NECP) which is the overarching mitigation action plan of Cyprus for the particular period, along with the National Long-term Strategy pursuant to Article 15 of the Regulation 2018/1999. As the NECP was updated in December 2024, and the national inventory has also been updated on an annual basis with new activity data, there are updates to all sectors from the previous submission of NC-5/BR-8.

The previous BR/NC presented projections through 2050. This first BTR presents projections through 2040, reflective of the effort in the non-energy sectors that was focused on the short and medium term under the intensive preparation of the final update to the NECP. With the revised NECP completed, additional analysis can be dedicated to the Long Term GHG plan for all sectors, and future BTR submissions will present projections through 2050.

3F.3.6 Non-Sectoral Key Underlying Parameters

The GHG emission projections presented in this chapter are based on the December 2023 GDP projections provided by the Ministry of Finance[79], and are shown below in Table .

Table 3-34. Summary of Population and GDP (EUR million, Euros 2023) Parameters

	2021	**2022**	**2023**	**2024**	**2025**	**2026**
Population	904705	920211	927999	933118	937263	940417
GDP	28,762	30,217	30,945	31,852	32,844	33,893
	2027	**2028**	**2029**	**2030**	**2035**	**2040**
Population	942999	945431	947675	949726	958348	963940
GDP	34,741	35,540	36,250	36,823	39,747	43,472

[79] Mrs. Maria Matsi; Economic Officer A'; Directorate on Economic Policy, European and International Affairs; Ministry of Finance; mmatsi@mof.gov.cy; Tel. +357 22 601 231; www.mof.gov.cy

3G. Annexes to the BTR

3G.1 Annex 1: Common tabular formats on information necessary to track progress

The following tables contain common information for the EU and the MS BTRs.

Table 3-35. Description of a Party's nationally determined contribution under Article 4 of the Paris Agreement, including updates[a]

	Description
Target(s) and description, including target type(s), as applicable[b, c]	**Economy-wide net domestic reduction of at least 55% in greenhouse gas emissions by 2030 compared to 1990.** **The term 'domestic' means without the use of international credits.** **Target type: Economy-wide absolute emission reduction.**
Target year(s) or period(s), and whether they are single-year or multi-year target(s), as applicable	**Single year target, 2030.**
Reference point(s), level(s), baseline(s), base year(s) or starting point(s), and their respective value(s), as applicable	**Base year: 1990.** **Net greenhouse gas emissions level in 1990:** **4 699 405 kt CO_2eq.**
Time frame(s) and/or periods for implementation, as applicable	**2021-2030**
Scope and coverage, including, as relevant, sectors, categories, activities, sources and sinks, pools and gases, as applicable	**Geographical scope: EU Member States (Belgium, Bulgaria, Czechia, Denmark, Germany, Estonia, Ireland, Greece, Spain, France, Croatia, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Hungary, Malta, Netherlands, Austria, Poland, Portugal, Romania, Slovenia, Slovakia, Finland, Sweden) including EU outermost regions (Guadeloupe, French Guiana, Martinique, Mayotte, Reunion, Saint Martin (France), Canary Islands (Spain), Azores and Madeira (Portugal)).** **Sectors covered, as contained in Annex I to decision 5/CMA.3:** **Energy** **Industrial processes and product use** **Agriculture** **Land Use, Land Use Change and Forestry (LULUCF)** **Waste** **International Aviation: Emissions from civil aviation activities as set out for 2030 in Annex I to the EU ETS Directive are included only in respect of CO_2 emissions from flights subject to effective carbon pricing through the EU ETS. With respect to the geographical scope of the NDC these comprise emissions in 2024-26 from flights between the EU Member States and departing flights to Norway, Iceland, Switzerland and United Kingdom.** **International Navigation: Waterborne navigation is included in respect of CO2, methane (CH_4) and nitrous Oxide (N_2O) emissions from maritime transport voyages between the EU Member States.** **Gases:** **Carbon Dioxide (CO_2)**

	Methane (CH_4) **Nitrous Oxide (N_2O)** **Hydrofluorocarbons (HFCs)** **Perfluorocarbons (PFCs)** **Sulphur hexafluoride (SF_6)** **Nitrogen trifluoride (NF_3)** **The included LULUCF categories and pools are as defined in decision 5/CMA.3.**
Intention to use cooperative approaches that involve the use of ITMOs under Article 6 towards NDCs under Article 4 of the Paris Agreement, as applicable	**The EU's at least 55% net reduction target by 2030 is to be achieved through domestic measures only, without contribution from international credits.** **The EU will account and report for its cooperation with other Parties in a manner consistent with the guidance adopted by CMA1 and any further guidance agreed by the CMA.**
Any updates or clarifications of previously reported information, as applicable[d]	**The information on the NDC scope contains clarifications/further details compared to the information provided in the updated NDC of the EU.**

Note: This table is to be used by Parties on a voluntary basis.

[a] Each Party shall provide a description of its NDC under Article 4, against which progress will be tracked. The information provided shall include required information, as applicable, including any updates to information previously provided (para. 64 of the MPGs).

[b] For example: economy-wide absolute emission reduction, emission intensity reduction, emission reduction below a projected baseline, mitigation co-benefits of adaptation actions or economic diversification plans, policies and measures, and other (para. 64(a) of the MPGs).

[c] Parties with both unconditional and conditional targets in their NDC may add a row to the table to describe conditional targets.

[d] For example: recalculation of previously reported inventory data, or greater detail on methodologies or use of cooperative approaches (para. 64(g) of the MPGs).

Table 3-36. Structured summary: Description of selected indicators

Indicator(s) selected to track progress[a]	*Description*
{Indicator}	**Annual total net GHG emissions consistent with the scope of the NDC in CO_2eq.**
Information for the reference point(s), level(s), baseline(s), base year(s) or starting point(s), as appropriate[b]	**The reference level is total net GHG emissions of the EU in the base year (1990). The reference level value for the EU is 4 699 405 kt CO_2eq.**
Updates in accordance with any recalculation of the GHG inventory, as appropriate	**This is the first time the reference level is reported, hence there are no updates.** **The value of the reference level may be updated in the future due to methodological improvements to the EU GHG inventory and to the determination of international aviation and navigation emissions in the NDC scope.**
Relation to NDC[c]	**The indicator is defined in the same unit and metric as the target of the NDC. Hence it can be used directly for tracking progress in implementing and achieving the NDC target.**

Notes: (1) Pursuant to para. 79 of the MPGs, each Party shall report the information referred to in paras. 65–78 of the MPGs in a narrative and common tabular format, as applicable. (2) A Party may amend the reporting format (e.g. Excel file) to remove specific rows in this table if the information to be provided in those rows is not applicable to the Party's NDC under Article 4 of the Paris Agreement, in accordance with the MPGs. (3) The Party could add rows for each additional selected indicator and related information.

[a] Each Party shall identify the indicator(s) that it has selected to track progress of its NDC (para. 65 of the MPGs).

[b] Each Party shall provide the information for each selected indicator for the reference point(s), level(s), baseline(s), base year(s) or starting point(s) and shall update the information in accordance with any recalculation of the GHG inventory, as appropriate (para. 67 of the MPGs).

[c] Each Party shall describe for each indicator identified how it is related to its NDC (para. 76(a) of the MPGs).

Table 3-37. Structured summary: Definitions needed to understand NDC

	Definitions[a]
Definition needed to understand each indicator:	
Annual total net GHG emissions	**Total net GHG emissions correspond to the annual total of emissions and removals reported in CO_2 equivalents in the latest GHG inventory of the EU. The totals comprise all sectors and gases listed in the table entitled 'Reporting format for the description of a Party's nationally determined contribution under Article 4 of the Paris Agreement, including updates.' Indirect CO2 emissions are included from those Member States that report these emissions.**
Any sector or category defined differently than in the national inventory report:	
{Sector} **Not applicable**	
{Category} **Not applicable**	
Definition needed to understand mitigation co- benefits of adaptation actions and/or economic diversification plans:	
{Mitigation co-benefit(s)} **Not applicable**	
Any other relevant definitions:	
Not applicable	

Notes: (1) Pursuant to para. 79 of the MPGs, each Party shall report the information referred to in paras. 65–78 of the MPGs in a narrative and common tabular format, as applicable. (2) A Party may amend the reporting format (e.g. Excel file) to remove specific rows in this table if the information to be provided in those rows is not applicable to the Party's NDC under Article 4 of the Paris Agreement, in accordance with the MPGs. (3) The Party could add rows for each additional sector, category, mitigation co-benefits of adaptation actions and/or economic diversification plans, indicator and any other relevant definitions.

[a] Each Party shall provide any definitions needed to understand its NDC under Article 4, including those related to each indicator identified in para. 65 of the MPGs, those related to any sectors or categories defined differently than in the national inventory report, or the mitigation co-benefits of adaptation actions and/or economic diversification plans (para. 73 of the MPGs).

Table 3-38. Structured summary: Methodologies and accounting approaches – consistency with Article 4, paragraphs 13 and 14, of the Paris Agreement and with decision 4/CMA.1

Reporting requirement	*Description or reference to the relevant section of the BTR*
For the first NDC under Article 4:[a]	
Accounting approach, including how it is consistent with Article 4, paragraphs 13–14, of the Paris Agreement (para. 71 of the MPGs)	**Net GHG emissions, calculated from emissions and removals from the GHG inventory of the EU and supplemented with data on international aviation and navigation collected in the Joint Research Centre's Integrated Database of the European Energy System (JRC-IDEES), are used to quantify progress towards implementing and achieving of the NDC in respect of the NDC target. This approach promotes environmental integrity, transparency, accuracy, completeness, comparability and consistency and ensures the avoidance of double counting, as described below. Existing methods and guidance under the Convention are taken into account, as described below.**
For the second and subsequent NDC under Article 4, and optionally for the first NDC under Article 4:[b]	
Information on the accounting approach used is consistent with paragraphs 13–17 and annex II of decision 4/CMA.1 (para. 72 of the MPGs)	**The European Union accounts for anthropogenic emissions and removals corresponding to its NDC consistent with paragraphs 13–17 and annex II of decision 4/CMA.1, as detailed below.**
Explain how the accounting for anthropogenic emissions and removals is in accordance with methodologies and common metrics assessed by the IPCC and in accordance with decision 18/CMA.1 (para. 1(a) of annex II to decision 4/CMA.1)	**The accounting for anthropogenic emissions and removals is based on the data contained in the EU GHG inventory, which is compiled in accordance with the 2006 IPCC Guidelines. The accounting for emissions from international aviation and navigation in the scope of the NDC is based on activity data, emission factors and methods which are in line with the IPCC guidelines. The accounting approach is also in accordance with decision 18/CMA.1 because the EU GHG inventory conforms with the provisions of chapter II of the Annex to decision 18/CMA.1.**
Explain how consistency has been maintained between any GHG data and estimation methodologies used for accounting and the Party's GHG inventory, pursuant to Article 13, paragraph 7(a), of the Paris Agreement, if applicable (para. 2(b) of annex II to decision 4/CMA.1)	**The GHG data used for accounting is based on the GHG inventory of the EU. The methodology used for accounting consists of a balancing of GHG emissions and removals, which is consistent with the methodologies used in the GHG inventory of the EU.**
Explain how overestimation or underestimation has been avoided for any projected emissions and removals used for accounting (para. 2(c) of annex II to decision 4/CMA.1)	**Not applicable. Projected emissions and removals are not used for accounting.**
For each NDC under Article 4:[b]	

Accounting for anthropogenic emissions and removals in accordance with methodologies and common metrics assessed by the IPCC and adopted by the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement:	
Each methodology and/or accounting approach used to assess the implementation and achievement of the target(s), as applicable (para. 74(a) of the MPGs)	**The methodology used to assess the implementation and achievement consists of a comparison of the reduction of net GHG emissions from the GHG inventory national total, including a share of GHG inventory international aviation and navigation emissions in line with the NDC scope, with the NDC target.** **The EU will account for its cooperation with other Parties in a manner consistent with guidance adopted by the CMA.**
Each methodology and/or accounting approach used for the construction of any baseline, to the extent possible (para. 74(b) of the MPGs)	**Progress is tracked by comparing annual net emissions with net emissions in the base year. No baseline is constructed.**
If the methodology or accounting approach used for the indicator(s) in table 1 differ from those used to assess the implementation and achievement the target, describe each methodology or accounting approach used to generate the information generated for each indicator in table 4 (para. 74(c) of the MPGs)	**Not applicable. The methodology/accounting approach used for the indicator in table 1 is the same as the methodology/accounting approach used to assess the implementation and achievement the target.**
Any conditions and assumptions relevant to the achievement of the NDC under Article 4, as applicable and available (para. 75(i) of the MPGs)	**Not applicable. The NDC is unconditional.**
Key parameters, assumptions, definitions, data sources and models used, as applicable and available (para. 75(a) of the MPGs)	**Net GHG emissions are the key parameter used for tracking progress in implementing and achieving the NDC. The GHG inventory of the EU is the data source used. Details on assumptions, definitions and models used for determining net GHG emissions can be found in the National Inventory Document of the EU.**
IPCC Guidelines used, as applicable and available (para. 75(b) of the MPGs)	**2006 IPCC Guidelines; and 2019 refinement to the 2006 IPCC Guidelines for some source categories.**
Report the metrics used, as applicable and available (para. 75(c) of the MPGs)	**100-year time-horizon global warming potential (GWP) values from the IPCC Fifth Assessment Report.**
For Parties whose NDC cannot be accounted for using methodologies covered by IPCC guidelines, provide information on their own methodology used, including for NDCs, pursuant to Article 4, paragraph 6, of the Paris Agreement, if applicable (para. 1(b) of annex II to decision 4/CMA.1)	**Not applicable.**

Provide information on methodologies used to track progress arising from the implementation of policies and measures, as appropriate (para. 1(d) of annex II to decision 4/CMA.1)	**Progress arising from the implementation of policies and measures is expressed in a reduction of GHG emissions or increase of GHG removals. The methodology used to assess such progress is based on the estimation of GHG emissions and removals in the GHG inventory of the EU and on data on international aviation and navigation monitored in the Joint Research Centre's Integrated Database of the European Energy System (JRC-IDEES).**
Where applicable to its NDC, any sector-, category- or activity-specific assumptions, methodologies and approaches consistent with IPCC guidance, taking into account any relevant decision under the Convention, as applicable (para. 75(d) of the MPGs)	**Sector-, category- and activity-specific assumptions, methodologies and approaches applicable to the NDC are described in the national inventory document of the EU and are consistent with IPCC guidance.** **Emissions from international aviation and navigation in the scope of the NDC are determined based on activity data from the JRC-IDEES, using emission factors and methodologies consistent with IPCC guidance.**
For Parties that address emissions and subsequent removals from natural disturbances on managed lands, provide detailed information on the approach used and how it is consistent with relevant IPCC guidance, as appropriate, or indicate the relevant section of the national GHG inventory report containing that information (para. 1(e) of annex II to decision 4/CMA.1, para. 75(d)(i) of the MPGs)	**NA**[80]
For Parties that account for emissions and removals from harvested wood products, provide detailed information on which IPCC approach has been used to estimate emissions and removals (para. 1(f) of annex II to decision 4/CMA.1, para. 75(d)(ii) of the MPGs)	**The EU accounts for emissions and removals from harvested wood products as an integral part of net GHG emissions and removals in the scope of the NDC. GHG emissions and removals from harvested wood products are determined in accordance with the production approach, as defined in Annex 12.A.1 to Volume 4 of the 2006 IPCC Guidelines for National GHG Inventories.**
For Parties that address the effects of age-class structure in forests, provide detailed information on the approach used and how this is consistent with relevant IPCC guidance, as appropriate (para. 1(g) of annex II to decision 4/CMA.1, para. 75(d)(iii) of the MPGs)	**The EU does not address the effects of age-class structure in forests in the accounting approach for its NDC.**
How the Party has drawn on existing methods and guidance established under the Convention and its related legal instruments, as appropriate, if applicable (para. 1(c) of	**The EU has drawn on existing methods and guidance established under the Convention by using an NDC target which is an advancement of the quantified economy-wide emission reduction target for 2020, which was communicated and tracked under the Convention.**

[80] To determine emissions and removals in the scope of the NDC, the EU does not disaggregate emissions and removals on managed land into those considered to result from human activities and those considered to result from natural disturbances.

annex II to decision 4/CMA.1)	
Any methodologies used to account for mitigation co- benefits of adaptation actions and/or economic diversification plans (para. 75(e) of the MPGs)	**The NDC does not consist of mitigation co-benefits of adaptation actions and/or economic diversification plans. Hence these co-benefits were not accounted for, and no related methodologies were used.**
Describe how double counting of net GHG emission reductions has been avoided, including in accordance with guidance developed related to Article 6 if relevant (para. 76(d) of the MPGs)	**GHG emissions and removals from the EU's GHG inventory, complemented with JRC-IDEES data for determining the share of emissions form international aviation and navigation in the NDC scope, are used for tracking the net GHG emission reductions. Emissions and removals are reported in line with IPCC guidelines, with the aim of neither over- nor underestimating GHG emissions.** **GHG emissions and removals are reported by the EU and its Member States in their respective GHG inventories. For tracking progress towards implementing and achieving the EU NDC, only those net GHG emission reductions are counted which are reported at EU level.** **For cooperative approaches under Article 6, corresponding adjustments are made in a manner consistent with guidance adopted by the CMA.**
Any other methodologies related to the NDC under Article 4 (para. 75(h) of the MPGs)	**Not applicable.**
Ensuring methodological consistency, including on baselines, between the communication and implementation of NDCs (para. 12(b) of the decision 4/CMA.1):	
Explain how consistency has been maintained in scope and coverage, definitions, data sources, metrics, assumptions and methodological approaches including on baselines, between the communication and implementation of NDCs (para. 2(a) of annex II to decision 4/CMA.1)	**The scope, coverage, definitions, data sources, metrics and approaches are consistent between the communicated NDC and its implementation, as described in the BTR.**
Explain how consistency has been maintained between any GHG data and estimation methodologies used for accounting and the Party's GHG inventory, pursuant to Article 13, paragraph 7(a), of the Paris Agreement, if applicable (para. 2(b) of annex II to decision 4/CMA.1) and explain methodological inconsistencies with the Party's most recent national inventory report, if applicable (para. 76(c) of the MPGs)	**The GHG inventory of the EU is the primary source for the GHG data used for accounting. The share of GHG inventory emissions from international aviation and navigation in the scope of the NDC have been determined separately based on JRC-IDEES data, using emission factors and methodologies consistent with IPCC guidance. There are no methodological inconsistencies with the most recent national inventory report.**
For Parties that apply technical changes to update reference points, reference levels or projections, the changes should reflect either of the following (para. 2(d) of annex II to decision 4/CMA.1):	

Technical changes related to technical corrections to the Party's inventory (para. 2(d)(i) of annex II to decision 4/CMA.1)	**No technical changes related to technical corrections to the GHG inventory were applied to update reference points, reference levels or projections.**
Technical changes related to improvements in accuracy that maintain methodological consistency (para. 2(d)(ii) of annex II to decision 4/CMA.1)	**No technical changes related to improvements in accuracy were applied to update reference points, reference levels or projections.**
Explain how any methodological changes and technical updates made during the implementation of their NDC were transparently reported (para. 2(e) of annex II to decision 4/CMA.1)	**Methodological changes and technical updates are reported in the chapter entitled 'recalculations and improvements' of the National Inventory Document of the EU.** **GHG emissions from international aviation and navigation in the scope of the EU NDC are reported for the first time in this BTR (see Annex 2 to the BTR).**
Striving to include all categories of anthropogenic emissions or removals in the NDC and, once a source, sink or activity is included, continuing to include it (para. 3 of annex II to decision 4/CMA.1):	
Explain how all categories of anthropogenic emissions and removals corresponding to their NDC were accounted for (para. 3(a) of annex II to decision 4/CMA.1)	**The indicator used for tracking progress towards implementing and achieving the NDC target comprises all categories of anthropogenic emissions and removals corresponding to the NDC.**
Explain how Party is striving to include all categories of anthropogenic emissions and removals in its NDC, and, once a source, sink or activity is included, continue to include it (para. 3(b) of annex II to decision 4/CMA.1)	**The scope of the NDC of the EU covers all categories of emissions and removals reported in the GHG inventory, in line with IPCC guidelines. Member States report some specific source categories as 'not estimated' when the estimates would be insignificant as defined in paragraph 32 of the annex to decision 18/CMA.1. Information on these categories is provided in Common Reporting Table 9 of the respective Member States' GHG inventory submission.** **Besides including all sectors listed in decision 18/CMA.1, a share of emissions from international aviation and navigation are also included in the NDC scope.**
Provide an explanation of why any categories of anthropogenic emissions or removals are excluded (para. 4 of annex II to decision 4/CMA.1)	**All categories of anthropogenic emissions and removals contained in the national total of the EU GHG inventory are included in the NDC.**
Each Party that participates in cooperative approaches that involve the use of ITMOs towards an NDC under Article 4, or authorizes the use of mitigation outcomes for international mitigation purposes other than achievement of its NDC	
Provide information on any methodologies associated with any cooperative approaches that involve the use of ITMOs towards an NDC under Article 4 (para. 75(f) of the MPGs)	**The EU will account and report for its cooperation with other Parties in a manner consistent with the guidance adopted by CMA1 and any further guidance agreed by the CMA, when applicable.**

Provide information on how each cooperative approach promotes sustainable development, consistent with decisions adopted by the CMA on Article 6 (para. 77(d)(iv) of the MPGs)	**The EU will account and report for its cooperation with other Parties in a manner consistent with the guidance adopted by CMA1 and any further guidance agreed by the CMA, when applicable.**
Provide information on how each cooperative approach ensures environmental integrity consistent with decisions adopted by the CMA on Article 6 (para. 77(d)(iv) of the MPGs)	**The EU will account and report for its cooperation with other Parties in a manner consistent with the guidance adopted by CMA1 and any further guidance agreed by the CMA, when applicable.**
Provide information on how each cooperative approach ensures transparency, including in governance, consistent with decisions adopted by the CMA on Article 6 (para. 77(d)(iv) of the MPGs)	**The EU will account and report for its cooperation with other Parties in a manner consistent with the guidance adopted by CMA1 and any further guidance agreed by the CMA, when applicable.**
Provide information on how each cooperative approach applies robust accounting to ensure, inter alia, the avoidance of double counting, consistent with decisions adopted by the CMA on Article 6 (para. 77(d)(iv) of the MPGs)	**The EU will account and report for its cooperation with other Parties in a manner consistent with the guidance adopted by CMA1 and any further guidance agreed by the CMA, when applicable, when applicable.**
Any other information consistent with decisions adopted by the CMA on reporting under Article 6 (para. 77(d)(iii) of the MPGs)	**The EU will account and report for its cooperation with other Parties in a manner consistent with the guidance adopted by CMA1 and any further guidance agreed by the CMA, when applicable.**

Notes: (1) Pursuant to para. 79 of the MPGs, each Party shall report the information referred to in paras. 65–78 of the MPGs in a narrative and common tabular format, as applicable. (2) A Party may amend the reporting format (e.g. Excel file) to remove specific rows in this table if the information to be provided in those rows is not applicable to the Party's NDC under Article 4 of the Paris Agreement, in accordance with the MPGs.

[a] For the first NDC under Article 4, each Party shall clearly indicate and report its accounting approach, including how it is consistent with Article 4, paras. 13–14, of the Paris Agreement (para. 71 of the MPGs).

[b] For the second and subsequent NDC under Article 4, each Party shall provide information referred to in chapter III.B and C of the MPGs consistent with decision 4/CMA.1. Each Party shall clearly indicate how its reporting is consistent with decision 4/CMA.1 (para. 72 of the MPGs). Each Party may choose to provide information on accounting of its first NDC consistent with decision 4/CMA.1 (para. 71 of the MPGs).

Table 3-39. Structured summary: Tracking progress made in implementing and achieving the NDC under Article 4 of the Paris Agreement[a]

	Unit, as applicable	Reference point(s), level(s), baseline(s), base year(s) or starting point(s), as appropriate (paras. 67 and 77(a)(i) of the MPGs)	Implementation period of the NDC covering information for previous reporting years, as applicable, and the most recent year, including the end year or end of period (paras. 68 and 77(a)(ii–iii) of the MPGs)		Target level[b]	Target year or period	Progress made towards the NDC, as determined by comparing the most recent information for each selected indicator, including for the end year or end of period, with the reference point(s), level(s), baseline(s), base year(s) or starting point(s) (paras. 69–70 of the MPGs)
			2021	**2022**			
Indicator(s) selected to track progress of the NDC or portion of NDC under Article 4 of the Paris Agreement (paras. 65 and 77(a) of the MPGs):							
Annual total GHG emissions and removals consistent with the scope of the NDC	**kt CO_2eq**[81]	**4 699 405**	**3 272 650**	**3 205 223**	**(at least 55% below base year level)**	**2030**	**The most recent level of the indicator is** 31.8 **% below the base year level.**
Where applicable, total GHG emissions and removals consistent with the coverage of the NDC (para. 77(b) of the MPGs)	**kt CO_2eq**	**4 699 405**	**3 272 650**	**3 205 223**			
Contribution from the LULUCF sector for each year of the target period or target year, if not included in the inventory time series of total net GHG emissions and removals, as applicable (para. 77(c) of the MPGs)	**NA**		**NA**	**NA**			
Each Party that participates in cooperative approaches that involve the use of ITMOs towards an NDC under Article 4 of the Paris Agreement or authorizes the use of mitigation outcomes for international mitigation purposes other than achievement of the NDC, shall provide (para. 77(d) of the MPGs):							
If applicable, an indicative multi-year emissions trajectory, trajectories or budget for its NDC implementation period (para. 7(a)(i), annex to decision 2/CMA.3)	**kt CO_2eq**		**To be reported in subsequent BTR**	**To be reported in subsequent BTR**			
If applicable, multi-year emissions trajectory, trajectories or budget for its NDC implementation period that is consistent with the NDC (para. 7(b), annex to decision 2/CMA.3)	**NA**		**NA**	**NA**			
Annual anthropogenic emissions by sources and removals by sinks covered by its NDC or, where applicable, from the emission or sink categories as identified by the host Party pursuant to paragraph 10 of annex to decision 2/CMA.3 (para. 23(a), annex to decision 2/CMA.3) (as part of para. 77 (d)(i) of the MPGs)	**kt CO_2eq**		**3 272 650**	**3 205 223**			
Annual anthropogenic emissions by sources and removals by sinks covered by its NDC or, where applicable, from the portion of its NDC in accordance with paragraph 10, annex to decision 2/CMA.3 (para. 23(b), annex to decision 2/CMA.3)	**kt CO_2eq**		**3 272 650**	**3 205 223**			
If applicable, annual level of the relevant non-GHG indicator that is being used by the Party to track progress towards the implementation and	**NA**		**NA**	**NA**			

[81] Net GHG emissions in the scope of the NDC

achievement of its NDC and was selected pursuant to paragraph 65, annex to decision 18/CMA.1 (para. 23(i), annex, decision 2/CMA.3)							
Annual quantity of ITMOs first transferred (para. 23(c), annex to decision 2/CMA.3) (para. 77(d)(ii) of the MPGs)	**kt CO_2eq**		**To be reported in subsequent BTR**	**To be reported in subsequent BTR**			
Annual quantity of mitigation outcomes authorized for use for other international mitigation purposes and entities authorized to use such mitigation outcomes, as appropriate (para. 23(d), annex to decision 2/CMA.3) (para. 77(d)(ii) of the MPGs)	**NA**		**NA**	**NA**			
Annual quantity of ITMOs used towards achievement of the NDC (para. 23(e), annex to decision 2/CMA.3) (para. 77(d)(ii) of the MPGs)	**kt CO_2eq**		**To be reported in subsequent BTR**	**To be reported in subsequent BTR**			
Net annual quantity of ITMOs resulting from paras. 23(c)-(e), annex to decision 2/CMA.3 (para. 23(f), annex to decision 2/CMA.3)	**kt CO_2eq**		**To be reported in subsequent BTR**	**To be reported in subsequent BTR**			
If applicable, the cumulative amount of ITMOs, divided by the number of elapsed years in the NDC implementation period (para. 7(a)(ii), annex to decision 2/CMA.3)	**NA**		**NA**	**NA**			
Total quantitative corresponding adjustments used to calculate the emissions balance referred to in para. 23(k)(i), annex to decision 2/CMA.3, in accordance with the Party's method for applying corresponding adjustments consistent with section III.B, annex to decision 2/CMA.3 (Application of corresponding adjustments) (para. 23(g), annex to decision 2/CMA.3)	**kt CO_2eq**		**To be reported in subsequent BTR**	**To be reported in subsequent BTR**			
The cumulative information in respect of the annual information in para. 23(f), annex to decision 2/CMA.3, as applicable (para. 23(h), annex to decision 2/CMA.3)	**kt CO_2eq**		**To be reported in subsequent BTR**	**To be reported in subsequent BTR**			
For metrics in tonnes of CO2 eq. or non-GHG, an annual emissions balance consistent with chapter III.B (Application of corresponding adjustment), annex, decision 2/CMA.3 (para. 23(k)(i), annex to decision 2/CMA.3) (as part of para. 77 (d)(ii) of the MPGs)	**kt CO_2eq**		**To be reported in subsequent BTR**	**To be reported in subsequent BTR**			
For metrics in non-GHG, for each non-GHG metric determined by participating Parties, annual adjustments resulting in an annual adjusted indicator, consistent with para. 9 of chapter III.B (Corresponding adjustments), annex to decision 2/CMA.3, and future guidance to be adopted by the CMA (para. 23(k)(ii), annex to decision 2/CMA.3)	**NA**		**NA**	**NA**			
Any other information consistent with decisions adopted by the CMA on reporting under Article 6 (para. 77(d)(iii) of the MPGs)	**The EU will account and report for its cooperation with other Parties in a manner consistent with the guidance adopted by CMA1 and any further guidance agreed by the CMA in a subsequent BTR or initial report, when applicable.**						

Notes: (1) Pursuant to para. 79 of the MPGs, each Party shall report the information referred to in paras. 65–78 of the MPGs in a narrative and common tabular format, as applicable. (2) A Party may amend the reporting format (e.g. Excel file) to remove specific rows in this table if the information to be provided in those rows is not applicable to the Party's NDC under Article 4 of the Paris Agreement, in accordance with the MPGs. (3) The Party could add rows for each additional selected indicator.

[a] This table could be used for each NDC target in case Party's NDC has multiple targets.

[b] Parties may provide information on conditional targets in a documentation box with references to the relevant page in their biennial transparency report.

3G.2 Annex 2: Methodology applied for the identification of GHG emissions from international aviation and navigation in the scope of the EU NDC

The scope of the EU NDC goes beyond national GHG emissions and removals in the scope of the national GHG inventory; it also includes specific emissions from international aviation and navigation. This annex describes the methodology for identifying these emissions.

International aviation and maritime emissions are estimated by using the Joint Research Centre's Integrated Database of the European Energy System (JRC-IDEES).[82] It allows to split the international transport CO2 emissions into intraEU/extraEU and intraEEA/extraEEA and the departing flights from the EU to the UK and Switzerland, categories backwards in time (i.e. 1990) (i.e. for the time period back to 1990).[83]

For international transport, JRC-IDEES applies a decomposition methodology that reconciles the scopes of available primary statistics and harmonises historical data on international aviation and maritime emissions, energy use, and transport activity. The resulting annual dataset covers 1990-2021 and distinguishes domestic, intra-EU/intra-EEA, and extra-EU/extra-EEA activity for each EU Member State, Norway and Iceland.

In aviation, JRC-IDEES distinguishes passenger and freight modes, with three geographical categories of flight origin/destinations for each mode: domestic, intra-EEA + UK, and extra-EEA + UK. Intra-EU, the UK, and EEA[84] categories are also used internally during calibration but aggregated for reporting. For each mode/category combination, JRC-IDEES estimates activity (as passenger-km or tonnes-km), energy use and CO_2 emissions, aircraft stock (expressed as representative aircraft), load factors, and aircraft efficiencies. As country-specific activity statistics are not available, the decomposition first allocates EU-level activity data from the Transport Pocketbook[85] of the European Commission's Directorate-General for Mobility and Transport to each country and flight category.

For passenger modes, this allocation calculates average load factors using Eurostat data on total passengers and flights. These load factors and total flight numbers are combined with average flight distances from EUROCONTROL, the pan-European organisation dedicated to air traffic management, to yield an initial estimate for passenger transport activity. For intra-EU activity, a uniform scaling factor is then applied across Member States to match total EU-level Transport Pocketbook data. Freight activity follows a similar process, using a 'representative flight' concept with a common load factor across all Member States to account for mixed passenger-freight flights.

Next, the decomposition estimates fuel use from EUROCONTROL data, by deriving a distance-dependent average aircraft efficiency, then applying it to the country-specific ensemble of flights and routes. The final step scales the estimates to meet Eurostat energy balances for total domestic and international consumption back to 1990 values, maintaining intra-EEA/extra-EEA fuel use ratios derived from EUROCONTROL. JRC-IDEES additionally reports resulting differences with submissions by Parties to the UNFCCC. The above process is followed throughout the entire decomposition period (1990-2021). Data gaps are estimated from the existing indicators as follows:

The process iterates backwards towards 1990, starting from the oldest years in which data is available in each Member State.

Average flight distance is kept constant for early years without EUROCONTROL data (generally before 2004).

If the load factor (passengers per flight) cannot be calculated due to a lack of passenger and/or flight data, it is estimated from the trend of the existing time series.

Missing numbers of flights are calculated from the load factor and the passengers carried.

If no passenger data is available, the total mileage is estimated from the energy consumption, and combined with average flight distance to estimate the number of flights. The number of flights is then combined with the load factor to estimate the total passengers carried.

For early years without data, constant values are assumed for the factors used to *i)* scale intra-EU activity to the Transport Pocketbook, *ii)* adjust the estimated fuel use to EUROCONTROL data for specific routes, and *iii)* scale this adjusted

[82] European Commission, Joint Research Centre, Rózsai, M., Jaxa-Rozen, M., Salvucci, R., Sikora, P., Tattini, J. and Neuwahl, F., JRC-IDEES-2021: the Integrated Database of the European Energy System – Data update and technical documentation, Publications Office of the European Union, Luxembourg, 2024, doi:10.2760/614599.

[83] The JRC-IDEES analytical database is designed to support energy modelling and policy analysis, by combining primary statistics with technical assumptions to compile detailed energy-economy-emissions historical data for each key energy sector. For aviation, EEA emissions includes emissions related to the UK but not to Switzerland, where total CO_2 emissions for the scope are additionally estimated from EUROCONTROL data.

[84] In this annex, EEA stands for European Economic Area, which comprises the 27 EU Member States, Iceland, Liechtenstein and Norway.

[85] Statistical pocketbook 2023, https://transport.ec.europa.eu/facts-funding/studies-data/eu-transport-figures-statistical-pocketbook/statistical-pocketbook-2023_en.

fuel use to Eurostat energy balances (e.g. before 1995 for Transport Pocketbook data; before 2004 for EUROCONTROL data).

For international maritime transport, JRC-IDEES estimates data both for intra-EU/extra-EU and intra-EEA/extra-EEA geographical categories. The emission estimates in the GHG inventory already include CO_2, CH_4, and N_2O gases. Transport activity (tonnes-km) is estimated from Eurostat data on gross weight of transported goods, using port-level and country-level data for intra-EU and extra-EU categories, respectively. Intra-EU activities are then scaled to match the Transport Pocketbook totals, accounting for domestic coastal shipping (calibrated separately in JRC-IDEES). Next, transport activity is combined with data reported under the monitoring, reporting and verification system for maritime transport under the EU ETS ('THETIS MRV'[86]), namely EU-level mileage data and country-specific vessel sizes to estimate load factors (tonnes per movement). The load factors and resulting annual mileage (km) are calibrated to meet EU-level THETIS MRV mileage. The annual mileage is in turn combined with THETIS MRV average efficiency to yield a total technical energy consumption, with corresponding emissions derived from default emissions factors. This energy consumption is scaled to Eurostat energy balances so as to minimise discrepancy to total intra-EU THETIS MRV emissions. As with aviation, JRC-IDEES reports corresponding differences to submissions under the UNFCCC. Early years with data gaps are estimated from existing indicators as follows:

The process iterates backwards towards 1990, starting from the oldest years in which data is available in each Member State.

Average distance of voyages is kept constant for early years without Eurostat activity data (generally before 1997-2000).

If the load factor (tonnes per movement) cannot be estimated due a lack of activity data, it is kept constant.

If activity data is not available, it is estimated from Eurostat energy consumption.

Missing mileage data is derived from the activity and load factor estimates.

For early years without data, constant values are assumed for the factors used to i) scale intra-EU activity to the Transport Pocketbook, ii) scale estimated mileage to meet EU-level THETIS MRV mileage, and iii) scale domestic and intra-EU CO_2 emissions estimated from energy consumption so as to match total THETIS MRV CO_2 emissions.

Finally, the ratios between the estimated MRV emissions and the CO_2 emissions for the reported transport activity (for intra-EU/EEA and extra-EU/EEA categories) between 2018 and 2021 are used to calculate the MRV compliant estimates back to 1990 levels.

For the year 2022, the international navigation and aviation emissions under the EU NDC scope have been estimated by applying the same share of those emissions on the total international navigation and aviation emissions (as reported in the GHG inventory) as in 2021.

[86] THETIS MRV, https://mrv.emsa.europa.eu/#public/eumrv.

Table 3-40. Aviation emissions covered by the EU NDC scope

Emissions	**Domestic aviation**		**Intra-EEA aviation**			**Extra-EEA aviation**
Current NDC commitment	Domestic EU flights (e.g. Palermo Milan	Domestic "non-EU EEA" flights (e.g. Oslo to Bergen)	Flights between "non-EU EEA" countries (from Oslo to Reykjavik)	Flights within the EEA, departing from EU airports	Flights to/from EU airports to OMRs	Departing flights from EU airports to UK and Switzerland
Current NDC commitment	Yes	No	No	Yes	Yes From Jan 2024	Yes

Table 3-41. Maritime navigation emissions covered by the EU NDC

Emissions	**Domestic maritime navigation**		**International maritime navigation**				**International maritime navigation**	
	Domestic EU flights (e.g. Palermo Milan	Voyages within NO/IS (e.g. Oslo - Bergen	Voyages between two EU MS (e.g. Valencia - Rotterdam))	Voyages between a MS and NO/IS (e.g. Rotterdam - Oslo)	Voyages between an EU MS and a third country	Voyages between NO/IS and a third country (or IS/NO)	Emissions within a port of an EU MS (reported under domestic emissions)	Emissions within a port of NO or IS (or another third country)
Current NDC commitment (CO_2; CH_4; N_2O)	Yes	No	Yes	No	No	No	Yes	No