



**REPUBLIC OF TÜRKİYE**  
**MINISTRY OF TREASURY AND FINANCE**  
**Green Bond Allocation Report**  
**September 2024**

# Outline



1. Türkiye's Commitment to Climate Change and Recent Developments
2. Overview of Sustainable Finance Framework
3. Inaugural Green Bond Issuance
4. Allocation of the Proceeds
5. Realized & Expected Output of the Financed Projects
6. Selected Green Projects
7. Independent Limited Assurance Report for Allocations by PwC Türkiye





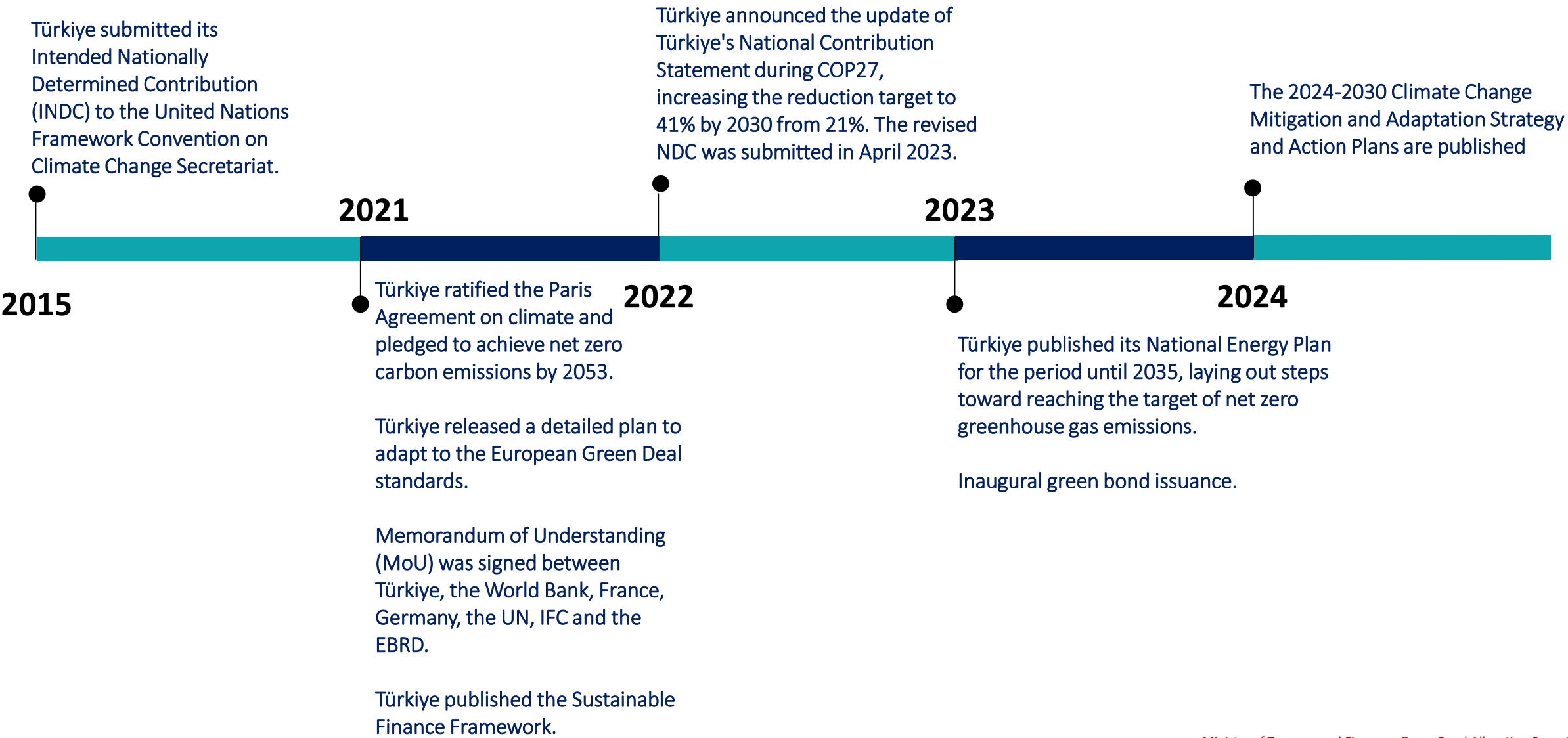
# 1

## Türkiye's Commitment to Climate Change and Recent Developments

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# Highlights of Türkiye's Commitment to Climate Change



# Medium-Term Program (2025-27) and Climate Change Mitigation Strategy & Action Plan (2024-30)



## Medium-Term Program (MTP)

- **MTP for 2025-2027** was co-developed by the Ministry of Treasury and Finance and the Presidency of Strategy and Budget
- **“Acceleration of Green Transformation”** section under 2025-2027 Medium Term Program (MTP), with 23 policy and actions, focuses on accelerating the green transformation process with the approaches as follows:
  - ✓ Supporting greenhouse gas (GHG) emission reduction
  - ✓ Increasing the adaptation capacity to climate change
  - ✓ Prioritizing competitiveness and local production especially in energy-intensive sectors
  - ✓ Implementing the Green Finance Strategy and Action Plan
  - ✓ Revising and assessing the economic and social impacts of the carbon tax practices and complementary carbon tax
  - ✓ Disseminating zero waste implementations
  - ✓ Finalizing the National Green Taxonomy in line with the EU taxonomy and other international best practices
  - ✓ Encouraging low carbon transportation projects
  - ✓ Continuing to create new sink areas by protecting and expanding forestation

## Climate Change Mitigation Strategy and Action Plan (CCMSAP)

- After the NDC studies were completed, **Türkiye’s Climate Change Mitigation Strategy and Action Plan (CCMSAP) 2024-2030** was formulated in a transparent and participatory process. The scope of the Action Plan was determined as 7 main mitigation sectors; namely energy, industry, buildings, transport, agriculture, waste and land use, land use change and forestry, and 2 cross-cutting thematic areas as just transition and carbon pricing mechanisms.
- There are 49 key sectoral strategies in the Action Plan, and 260 actions for 7 main mitigation sectors and 2 cross-cutting thematic areas, including:
  - ✓ Promoting energy efficiency across all sectors
  - ✓ Maximizing use of renewable energy
  - ✓ Reducing product-based carbon footprint and carbon intensity in industry Promoting circular economy and resource efficiency across manufacturing industry
  - ✓ Developing electrification systems in transport sector
  - ✓ Ensuring transition to zero- or low-emission transport systems
  - ✓ Protecting and increasing sink areas for effective climate response
  - ✓ Achieving digitalization in all sectors





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## Overview of Sustainable Finance Framework

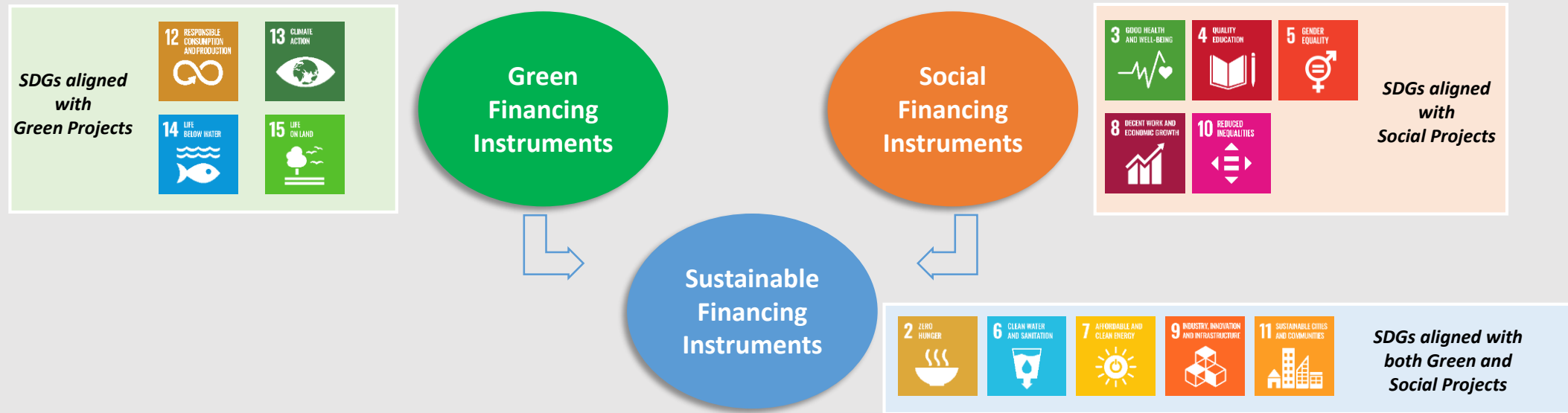
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# Overview of Sustainable Finance Framework



The Republic of Türkiye established the Sustainable Finance Framework (“Framework”) in 2021, to support its sustainability commitments and to set out how it intends to raise Green, Social and Sustainable Financing Instruments.



Eligible Projects are limited to those that occurred no earlier than three years prior to issuance, the budget year of issuance, and the two budget years following issuance.



# In aligning with the principles and guidelines, Sustainable Finance Framework is presented through the following four core components and external review:



## I. Use of Proceeds

Türkiye will allocate an amount at least equivalent to **the net proceeds** of the bonds issued under the Framework to finance and/or re-finance, in whole or in part, to the projects which meet the eligibility criteria of the Eligible Green Project categories and Eligible Social Project categories, as defined in the Framework.

## II. Process for Project Evaluation and Selection

For the governance of Framework, the Ministry of Treasury and Finance has set up a **Working Group** consisting of the following members: Presidency of Strategy and Budget, Ministry of Agriculture and Forestry, Ministry of Energy and Natural Resources, Ministry of Environment, Urbanisation, and Climate Change, Ministry of Family and Social Services, Ministry of Health, Ministry of Labor and Social Security, Ministry of National Education, Ministry of Trade, Ministry of Transport and Infrastructure, Ministry of Youth and Sports, Ministry of Industry and Technology.

## III. Management of Proceeds

The net proceeds of any Sustainable Financing Instrument will be transferred to the Ministry of Treasury and Finance's account at the Central Bank of the Republic of Türkiye. The allocation and tracking of the Sustainable Financing Instrument proceeds will be done by the relevant Ministries within the Working Group, under a portfolio approach.

## IV. Reporting

- Allocation Report: The Ministry of Treasury and Finance will make and keep readily available reporting on the allocation of the amount equal to the net proceeds.
- Impact Report: **Where feasible**, the MOTF will aim to report on the estimated environmental and social impacts arising from the implementation of the Eligible Green and Social Projects.

## EXTERNAL REVIEW

- Second Party Opinion on the Framework provided by **Sustainalytics**.
- The allocation report of potential ESG issuances under the framework will be assured by an independent audit firm.
- For this green bond report, the allocation of proceeds has been assured by PwC Türkiye.



### Republic of Turkey

Sustainable Finance Framework

November 2021



# Use of Proceeds for a Green Bond



As outlined in the Sustainable Finance Framework of the Ministry of Treasury and Finance, the net proceeds from the sale of the notes will be allocated to eligible projects.

## Eligible Green Categories

1. Renewable Energy
2. Energy Efficiency
3. Sustainable Water and Wastewater Management
4. Pollution Prevention and Control
5. Clean Transportation
6. Sustainable Management of Living Natural Resources and Land Use & Terrestrial and Aquatic Biodiversity Conservation
7. Climate Change Adaptation
8. Circular Economy Adapted Products, Production Technologies and Processes and/or certified eco-efficient product
9. Green Buildings

## Exclusions

1. Exploration, production or transportation of fossil fuel
2. Manufacturing of petrochemicals
3. Activities/projects associated with livestock
4. Manufacture and production of finished alcoholic beverages
5. Military contracting
6. Gambling
7. Weaponry
8. Manufacture and production of finished tobacco products
9. Nuclear power generation
10. Activities/projects associated with child labor/forced labor

# External Review by Sustainalytics Confirms That the Framework is in Line with International Guidelines and Principals



Second-Party Opinion

Republic of Turkey Sustainable Finance Framework

Evaluation Summary

Sustainalytics is of the opinion that the Republic of Turkey Sustainable Finance Framework is credible and impactful and aligns with the Sustainability Bond Guidelines 2021, Green Bond Principles 2021, Social Bond Principles 2021, Green Loan Principles 2021, and Social Loan Principles 2021. This assessment is based on the following:

**USE OF PROCEEDS** The eligible categories for the use of proceeds<sup>1</sup> are aligned with those recognized by the Green Bond Principles, Social Bond Principles, Green Loan Principles, and Social Loan Principles. Sustainalytics considers that investments in the eligible categories are expected to advance Turkey's inclusion and sustainable development initiatives and advance the UN Sustainable Development Goals, specifically SDGs 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16.

**PROJECT EVALUATION / SELECTION** Turkey's Ministry of Treasury and Finance (MOTF), with the help of a Working Group consisting of members from the Presidency of Strategy and Budget and related ministries, will be responsible for reviewing and approving eligible projects. The Republic of Turkey has regulations and legislation in place to mitigate key environmental and social risks related to financing or refinancing eligible projects under the Framework. Sustainalytics considers the project selection process and the social and environmental risk management in line with market practice.

**MANAGEMENT OF PROCEEDS** The Working Group will be responsible for allocation and tracking of net proceeds by using an allocation register that is maintained by the MOTF. The register will contain information on details of each instrument, pricing date and maturity date. Pending allocation, unallocated proceeds will be held in cash or equivalent according to the MOTF's general cash management policies. This is in line with market practice.

**REPORTING** The Republic of Turkey intends to report on allocation of proceeds on its website on an annual basis until full allocation. The allocation reporting will include information on, among others, the total amount of outstanding sustainable financing instruments, the net proceeds allocated to eligible projects, the balance of unallocated proceeds. In addition, the Republic of Turkey is committed to reporting on relevant impact metrics. Sustainalytics views the Republic of Turkey's allocation and impact reporting as aligned with market practice.

SUSTAINALYTICS

a Morningstar company

SECOND-PARTY OPINION

Evaluation Date

November 2, 2021

Issuer Location

Ankara, Turkey

Report Sections

Introduction

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Sustainalytics' Opinion

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☒ “Republic of Türkiye is well-positioned to issue green, social and sustainability bonds, sukuk and loans and that Republic of Türkiye Sustainable Finance Framework is robust, transparent, and in alignment with the four core components of the ICMA GBP, SBP and LMA GLP, SLP”

☒ Sustainalytics considers that the projects funded by the sustainability bond, sukuk and loan proceeds are expected to advance Türkiye’s inclusion and sustainable development initiatives and help reduce the Country’s GHG emissions.

☒ Sustainalytics is of the opinion that ROT has adequate measures to identify, manage and mitigate environmental and social risks commonly associated with the eligible projects funded by the proceeds and believes that Republic of Türkiye Sustainable Finance Framework is aligned with the overall sustainability mandate of the Country and that the use of proceeds categories will contribute to the advancement of the following UN SDGs:

Source: Second Party Opinion for Türkiye’s Sustainable Finance Framework, <https://ms.hmb.gov.tr/uploads/sites/2/2021/11/Republic-of-Turkey-Sustainable-Finance-Framework-Second-Party-Opinion.pdf>

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# 3

## Inaugural Green Bond Issuance

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# Türkiye's Debut Green Bond Issuance Attracted Significant Interest from the International Investor Community



## Transaction Termsheet

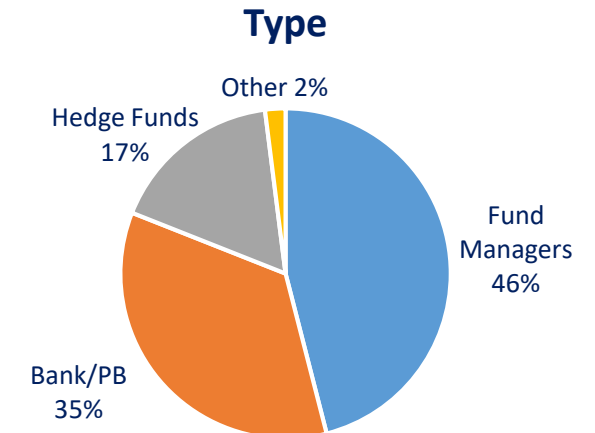
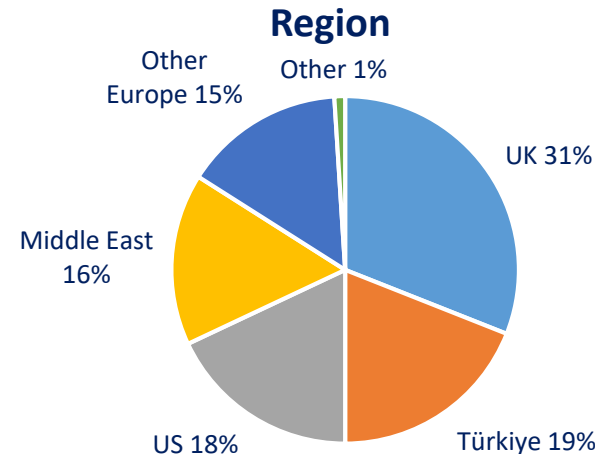
Issuer	Republic of Türkiye
Issuer Rating (as of the time of issuance)	B3 (Moody's) / B (Fitch)
Format	Global (SEC Registered)
Ranking	Senior Unsecured
Issue Size	<b>US\$ 2.5 Billion</b>
Issue Date	April 13, 2023
Maturity Date	July 13, 2030
Coupon	9.125%
Issue Price	99.117%
Net Proceeds	<b>\$2,476,050,000</b>
ISIN	US900123DJ66
Listing	Luxembourg Stock Exchange (Regulated Market)

- On 5th April 2023, Republic of Türkiye issued its inaugural SEC-registered US\$2.5 billion **Green Bond**, with a long 7-year maturity.
- The transaction followed the introduction of Türkiye's Sustainable Finance Framework in November 2021.
- The transaction attracted substantial interest from international investors, with a remarkable allocation of 64% of the issuance directed towards European and US accounts.



The transaction was awarded the **"Debt Deal of the Year - Türkiye"** at the **Bonds, Loans and ESG Capital Markets Türkiye Awards** in 2023 by GFC Media

## Investor Allocation

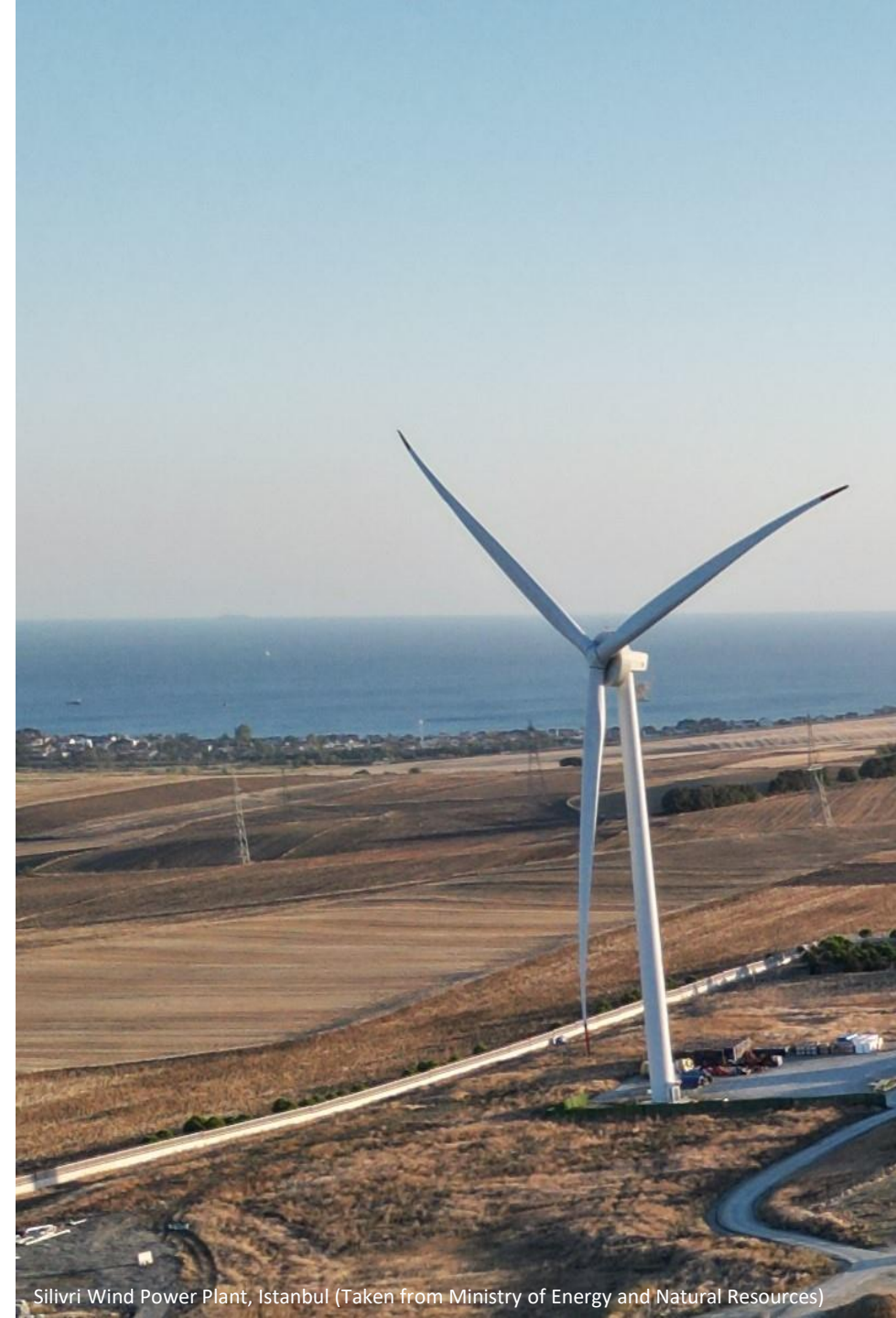




# 4

## Allocation of the Proceeds

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# Reporting Methodology



## Allocation

- The Republic of Türkiye aims to allocate the net proceeds from the debut green bond issuance in April 2023 into eligible green expenditures until the full allocation of the net proceeds will be ensured.
- The time period for green expenditures for refinancing and financing have been restricted to the fiscal years of 2020 to 2025. Among the green expenditures for all these years, a certain number of expenditure items have been listed, the total of which are corresponding to the amount exceeding the green bond issuance size in April 2023.
- Regarding the expenditures for 2024 and 2025, a great portion of which have already been budgeted, have not been included in this reporting period on the grounds that they have not yet been fully realized.
- The Framework also states that eligible green projects should be netted off any contributions from other stakeholders. As per this criteria, **funds from the EU and supranational entities have been excluded from the defined expenditure items in order to avoid double counting.**

## Impact

- In accordance with the Sustainable Finance Framework, where feasible, the Republic of Türkiye aims to report on the estimated environmental impacts arising from the implementation of the Eligible Green Projects.
- The Impact segment of the report, which has been prepared based on the information provided by the relevant Ministries, includes both qualitative and quantitative measurements of output from the selected Eligible Green Projects.
- The impact data, where possible, have been calculated with various methodologies taking into account the features of the projects. Impact indicators and metrics may change depending on variety of factors such as the type or sector of project, relevance, data availability.
- **Where quantitative assessments are not possible or appropriate due to several factors, qualitative assessments have been included in the reporting.**



# Eligible Green Projects

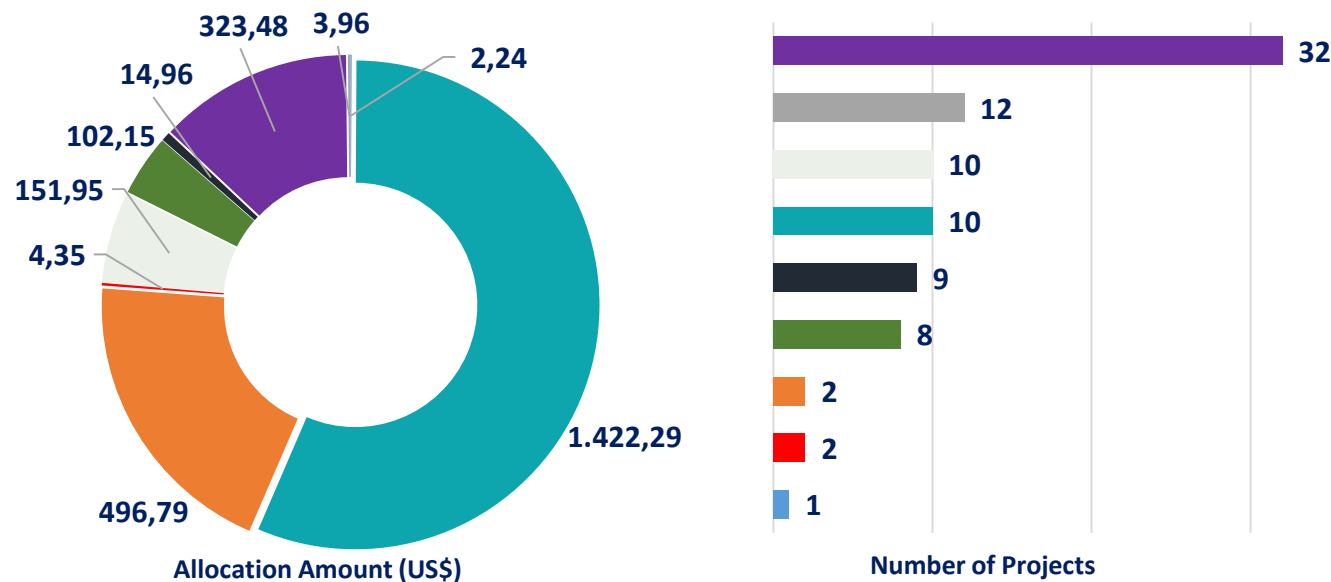


Project Categories	Number of Projects	Refinancing (mio US\$)		Financing (mio US\$)	Total Allocated Amounts (mio US\$)	Share (%)
		2020	2021	2023		
Clean Transportation	10	827.93	368.74	225.62	1,422.29	56.39
Climate Change Adaptation	2	21.30	405.33	70.16	496.79	19.70
Sustainable Water and Wastewater Management	32	77.35	84.98	161.16	323.48	12.83
Sustainable Management Of Living Natural Resources and Land Use	10	46.62	53.44	51.89	151.95	6.02
Pollution Prevention and Control	8	78.44	8.08	15.64	102.15	4.05
Renewable Energy	9	5.39	4.80	4.77	14.96	0.59
Energy Efficiency	2	0.03	0.53	3.80	4.35	0.17
Terrestrial and Aquatic Biodiversity	12	1.21	1.27	1.49	3.96	0.16
Circular Economy Adapted Products, Production Technologies and Processes	1	1.17	1.07	-	2.24	0.09
TOTAL	86	1,059.43	928.24	534.51	2,522.18	100

# Breakdown of Eligible Green Projects

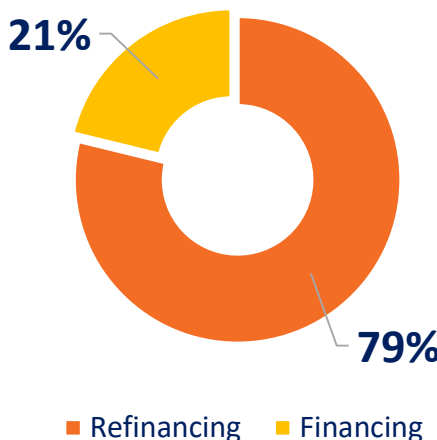
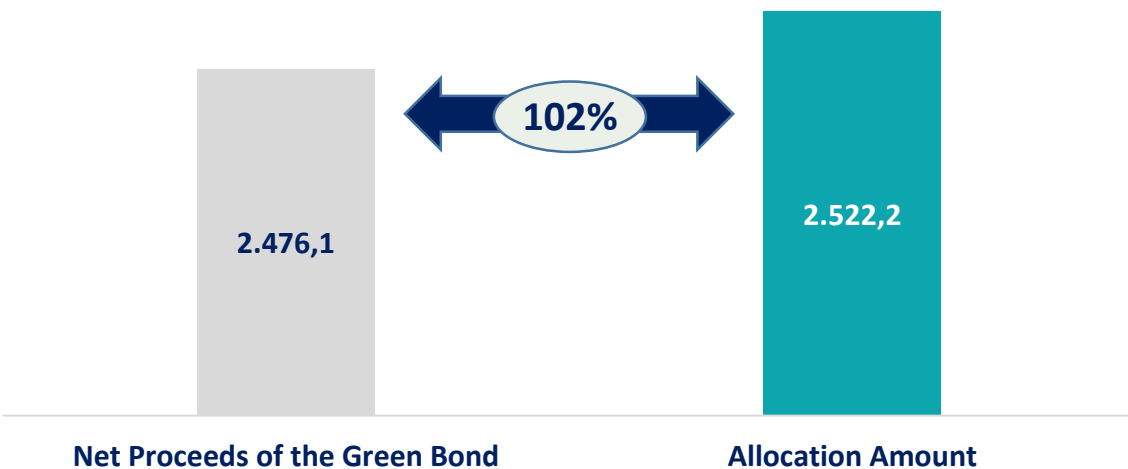


## Sectoral Breakdown



- Circular Economy Adapted Products, Production Technologies and Processes
- Clean Transportation
- Climate Change Adaptation
- Energy Efficiency
- Sustainable Management Of Living Natural Resources And Land Use
- Pollution Prevention and Control
- Renewable Energy
- Sustainable Water and Wastewater Management
- Terrestrial and Aquatic Biodiversity

## Allocation Statistics



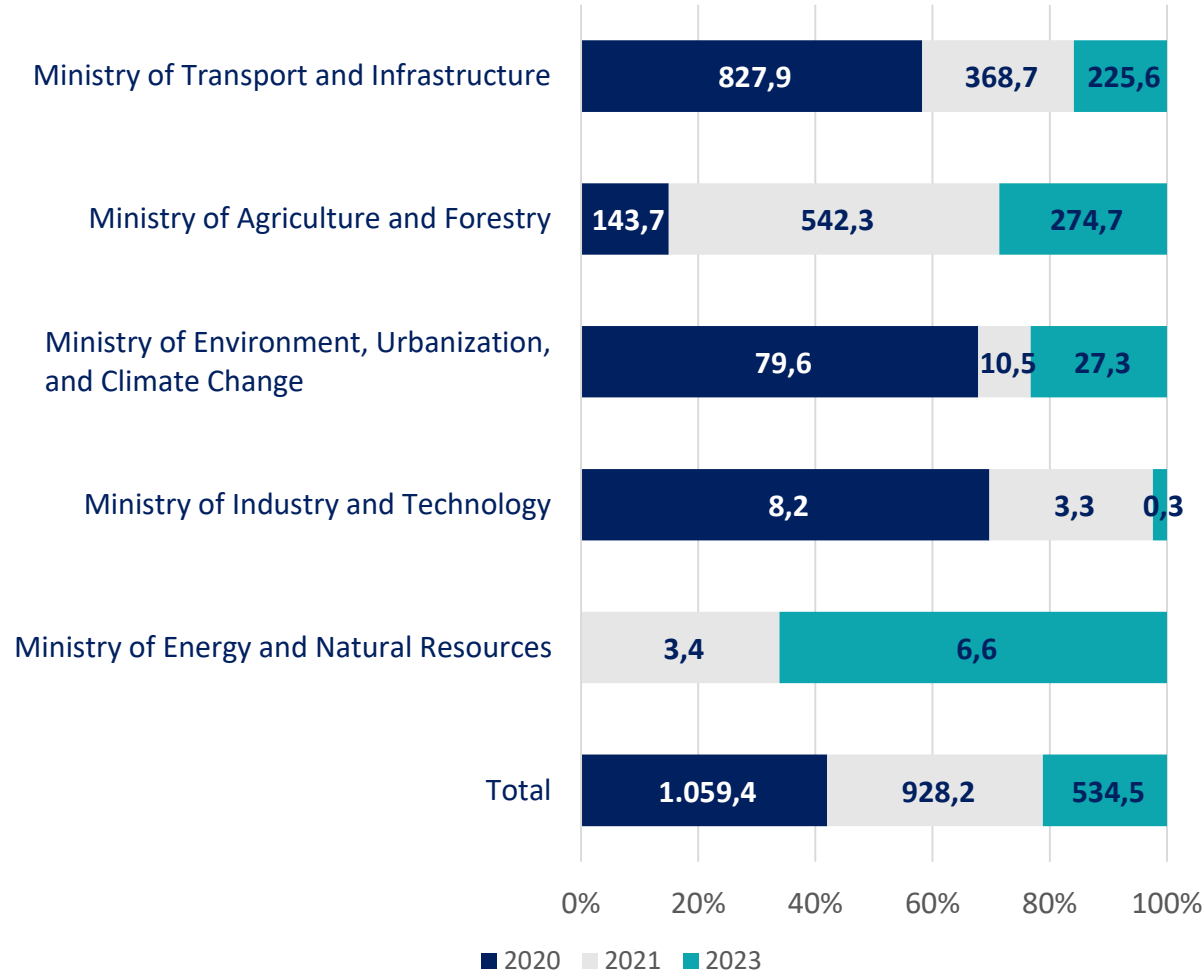
## Selected Projects' SDGs



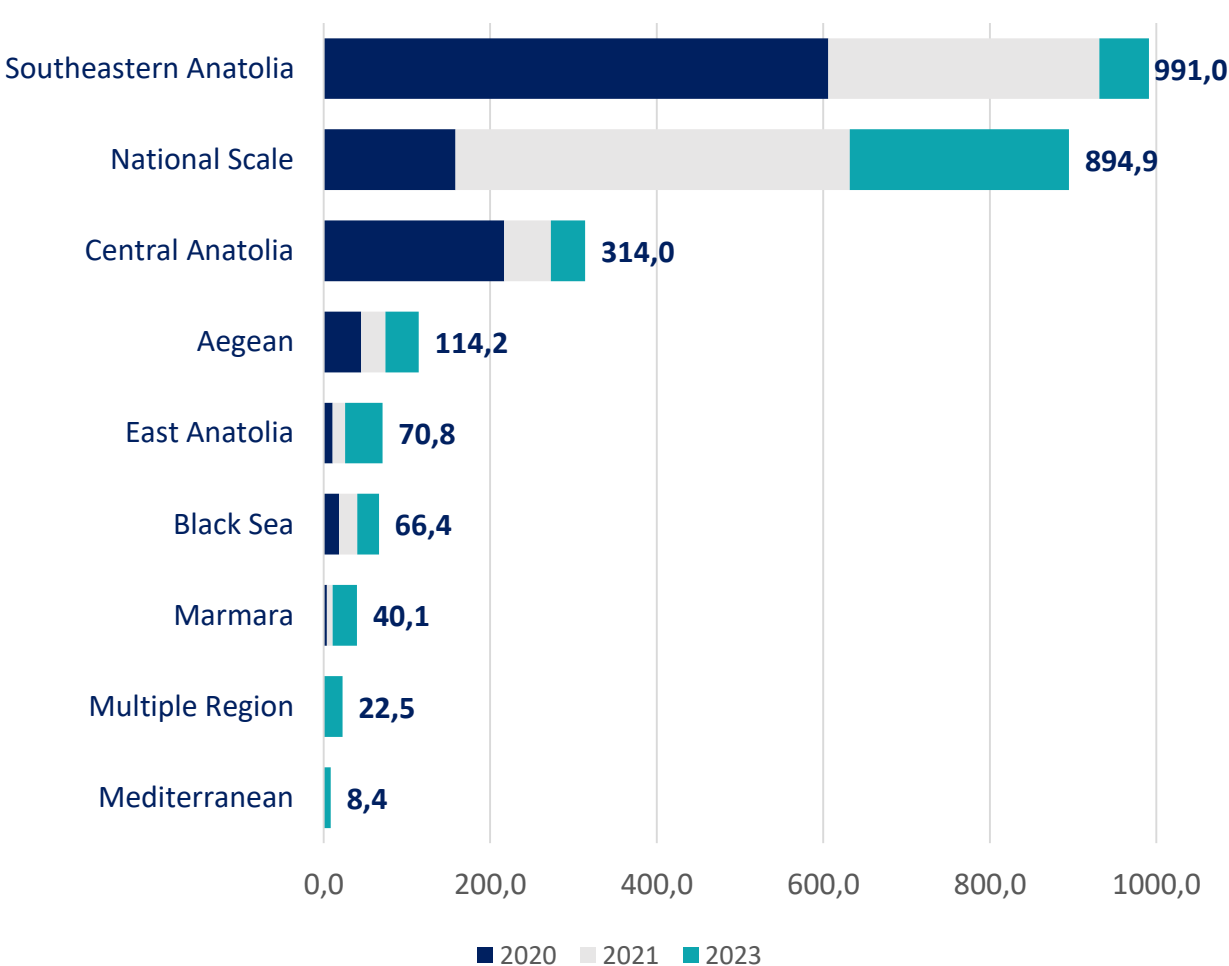
# Breakdown of Eligible Green Projects



Amount by Ministries  
(mio US\$)



Geographical Distribution  
(mio US\$)







# 5


## Realized & Expected Output of the Financed Projects

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# Realized & Expected Output of the Financed Projects



Categories	Sub-categories	Realized/Expected Progress	Relevant Ministry
<b>Clean Transportation</b> <div>   </div>	<ul style="list-style-type: none"> <li>• Railway related projects</li> <li>• Projects related to determining the locations of electric vehicle charging stations by analyzing the current status of electric vehicles</li> <li>• The road network in the transportation infrastructure, bus stations, stations, airports, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• In electric trains, the amount of carbon released into the atmosphere during electricity production is 20–35% lower compared to trains that use diesel fuel.</li> <li>• Electric locomotives operate much quieter than diesel locomotives, <b>reducing noise pollution.</b></li> <li>• The use of low-emission electric vehicles in public and individual transportation will be encouraged. Special projects are ongoing for <b>the electrification of the existing 1,299-kilometer railway line.</b></li> <li>• The procurement of <b>56 electric train sets and 95 electric mainline locomotives</b> is expected to be completed in 2026.</li> <li>• During the reporting period, determining the location of electric vehicle charging stations, creating a simulation program, and the design and prototype production of E5000 national electric locomotive have been carried out.</li> </ul>	Transport and Infrastructure
<b>Climate Change Adaptation</b> <div>  </div>	<ul style="list-style-type: none"> <li>• Anti-erosion and soil conservation</li> <li>• Fighting forest fires and capacity building. The expenses of facility, machinery, aircraft and personnel within the scope of combating forest fires</li> </ul>	<ul style="list-style-type: none"> <li>• <b>For the combating erosion efforts, soil migration was mitigated by building dams.</b></li> <li>• Precautions have been taken against flood formation with upper basin flood control projects.</li> <li>• Contribution to animal husbandry was made through pasture improvement works.</li> </ul>	i. Agriculture and Forestry  ii. Industry and Technology

# Realized & Expected Output of the Financed Projects



Categories	Sub-categories	Realized/Expected Progress	Relevant Ministry
<b>Sustainable Water and Wastewater Management</b> 	<ul style="list-style-type: none"> <li>Improving access to drinking water and sanitation services</li> <li>Effective management of water resources</li> <li>Prevention of water pollution and improvement of water quantity and quality</li> <li>Effective and efficient use of water resources in agricultural irrigation</li> <li>Wastewater recovery in industrial facilities</li> <li>Installation and modernization of wastewater facilities</li> <li>Use of new technologies in wastewater monitoring</li> <li>Elimination wastewater arising from settlements in protected areas.</li> </ul>	<ul style="list-style-type: none"> <li>Upon completion of the projects;</li> <li>✓ water storage tanks with a capacity of approximately 514.4 hm<sup>3</sup>, drinking water treatment plants with a capacity of approximately 2,408,700 m<sup>3</sup>/day,</li> <li>✓ transmission lines with a length of approximately 1,643.17 km,</li> <li>✓ wastewater treatment plants with a capacity of approximately 69,104 m<sup>3</sup>/day,</li> <li>✓ collectors with a length of approximately 75.6 km will have been established and,</li> <li>✓ annual volume of clean drinking water provided for human consumption will be approximately 909.21 hm<sup>3</sup>/year.</li> <li>• <b>More than 1,447,166 people will have access to improved sanitation facilities.</b></li> <li>• <b>Securing access to clean drinking water in 26 cities thanks to improved infrastructure supporting sustainable and efficient water use.</b></li> </ul>	<p>i. Agriculture and Forestry</p> <p>ii. Environment, Urbanization, Climate Change</p> <p>iii. Industry and Technology</p>
<b>Sustainable Management Of Living Natural Resources And Land Use</b> 	<ul style="list-style-type: none"> <li>Expansion and control of organic agriculture</li> <li>Forest development and expansion</li> <li>Forest protection and firefighting</li> <li>Rehabilitation of degraded forests</li> <li>Integrated micro basin rehabilitation</li> <li>Combating desertification erosion</li> <li>Establishment of national land cover classification</li> <li>Monitoring system by artificial intelligence and machine learning technologies</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Approximately 1,200 hectares of new organic farming area has been certified in 2023.</b></li> <li>• <b>139,350 hectares forestry facility work was carried out.</b></li> <li>• <b>The ratio of productive forests to total forest area has increased by 1% between 2020-2023.</b></li> <li>• <b>The ratio of forests to the country's land area increased by 0.6% between 2020 and 2023.</b></li> <li>• According to greenhouse gas emission figures, 1 ton of CO<sub>2</sub> per hectare was captured annually in afforestation areas.</li> <li>• Between 2020-23, 260 million saplings were produced annually.</li> <li>• <b>48,500 hectares of degraded forest area were rehabilitated and made productive. As a result, 2.5 million tons of carbon sequestration is expected to be achieved.</b></li> </ul>	<p>i. Agriculture and Forestry</p> <p>ii. Environment, Urbanization and Climate Change</p>



# Realized & Expected Output of the Financed Projects





Categories	Sub-categories	Realized/Expected Progress	Relevant Ministry
<b>Pollution Prevention and Control</b>	<ul style="list-style-type: none"> <li>• Cleaning the bottom mud on the seabed</li> <li>• Converting from coal combustion system to clean fuels heaters</li> <li>• Greening of cities and supporting local administrations related to the environment</li> <li>• Making waste management investments in the most appropriate and economical way</li> <li>• Fulfilling environmental obligations in waste management</li> <li>• Preventing environmental pollution</li> <li>• Supporting environmental investments</li> <li>• Bringing solid wastes to economy</li> <li>• Research and development projects related to preventing the pollution and improving the air quality</li> </ul>	<ul style="list-style-type: none"> <li>• Industrial Plant Air Pollution Impact Modelling project was developed which enables studies to determine which pollutant emission parameter from the enterprises should be monitored precisely in the legislation, thus determining compliance with emission limit values and determining emission reduction techniques or cleaner production technologies, if necessary.</li> <li>• With the establishment of the NEFES (Breathe) Software Project; the municipalities, together with local authorities, are informed by their local maps, and thus air quality measures for cities are better implemented. <b>The 3D air quality maps were prepared for 59 out of 81 cities.</b> Remaining cities' activities and data production is still ongoing.</li> <li>• The Air Quality Improvement Grant Support project <b>provides financial support</b> from the government <b>to those who want to switch from coal combustion system to clean-fuel heaters</b>, especially in the city centers where the air quality is poor.</li> </ul>	Environment, Urbanization and Climate Change
	<ul style="list-style-type: none"> <li>• Cleaning the bottom mud on the seabed</li> <li>• Converting from coal combustion system to clean fuels heaters</li> <li>• Greening of cities and supporting local administrations related to the environment</li> <li>• Making waste management investments in the most appropriate and economical way</li> <li>• Fulfilling environmental obligations in waste management</li> <li>• Preventing environmental pollution</li> <li>• Supporting environmental investments</li> <li>• Bringing solid wastes to economy</li> <li>• Research and development projects related to preventing the pollution and improving the air quality</li> </ul>	<ul style="list-style-type: none"> <li>• The Solid Waste Program supports metropolitan municipalities and municipalities/unions in making their waste management investments in the most appropriate and economical way and fulfilling their environmental responsibilities in waste management. This support covers integrated waste management facilities, preparation of implementation projects, approval of storage facilities, all processes related to the construction of additional lots, pre-processing facilities and transfer stations.</li> <li>• <b>Within the scope of the Environmental Law, support in the amount of TL 497,014,388 was provided to support environmental investments of municipalities to prevent environmental pollution.</b></li> </ul>	



# Realized & Expected Output of the Financed Projects



Categories	Sub-categories	Realized/Expected Progress	Relevant Ministry
<b>Renewable Energy</b> 	<ul style="list-style-type: none"> <li>Developing renewable energy infrastructure of research institutions</li> <li>Conducting research on renewable energy potential</li> <li>Expanding the use of renewable energy with innovative applications</li> <li>Building solar energy panels for use by nomadic farmers</li> <li>Establishing or renewing wind and solar power plants</li> <li>Expanding the use of renewable energy sources to technology development zones</li> </ul>	<ul style="list-style-type: none"> <li><b>The number of renewable energy systems installed is 31 and the amount of CO2 reduced by electricity generated with renewable energy sources is 5,247,926 µg/m3</b></li> <li><b>The electricity generated by renewable energy sources has reduced CO2 emissions by 5.247.926 µg/m3 and the total amount of electricity produced annually from renewable sources is 62,590,376 kWh</b></li> <li><b>The amount of gas emissions (SO2, Nox, CO, CO2, O3, HC, PM, etc.) reduced is 135,391 µg/m3</b></li> <li>Air pollution and greenhouse gas production will be prevented with solar energy systems.</li> <li>In some projects, the wind turbines that have completed their economic life will be renewed which is expected to increase their renewable energy production capacity.</li> </ul>	<ul style="list-style-type: none"> <li>i. Agriculture and Forestry</li> <li>ii. Energy and Natural Resources</li> <li>iii. Industry and Technology</li> </ul>
<b>Energy Efficiency</b> 	<ul style="list-style-type: none"> <li>Implementing energy efficiency measures in businesses/institutions</li> <li>Construction of energy conversion of flue gas waste heat</li> </ul>	<ul style="list-style-type: none"> <li>The amount of energy provided by waste heat and water recycling is 15,632 kWh.</li> <li>The investment amount related to energy efficiency technologies is approximately TL 68.5 million at current prices.</li> <li><b>10 MW power will be obtained by using heat exchangers to reduce the heat released from 510°C to approximately 130°C.</b></li> </ul>	<ul style="list-style-type: none"> <li>i. Energy and Natural Resources</li> <li>ii. Industry and Technology</li> </ul>

# Realized & Expected Output of the Financed Projects



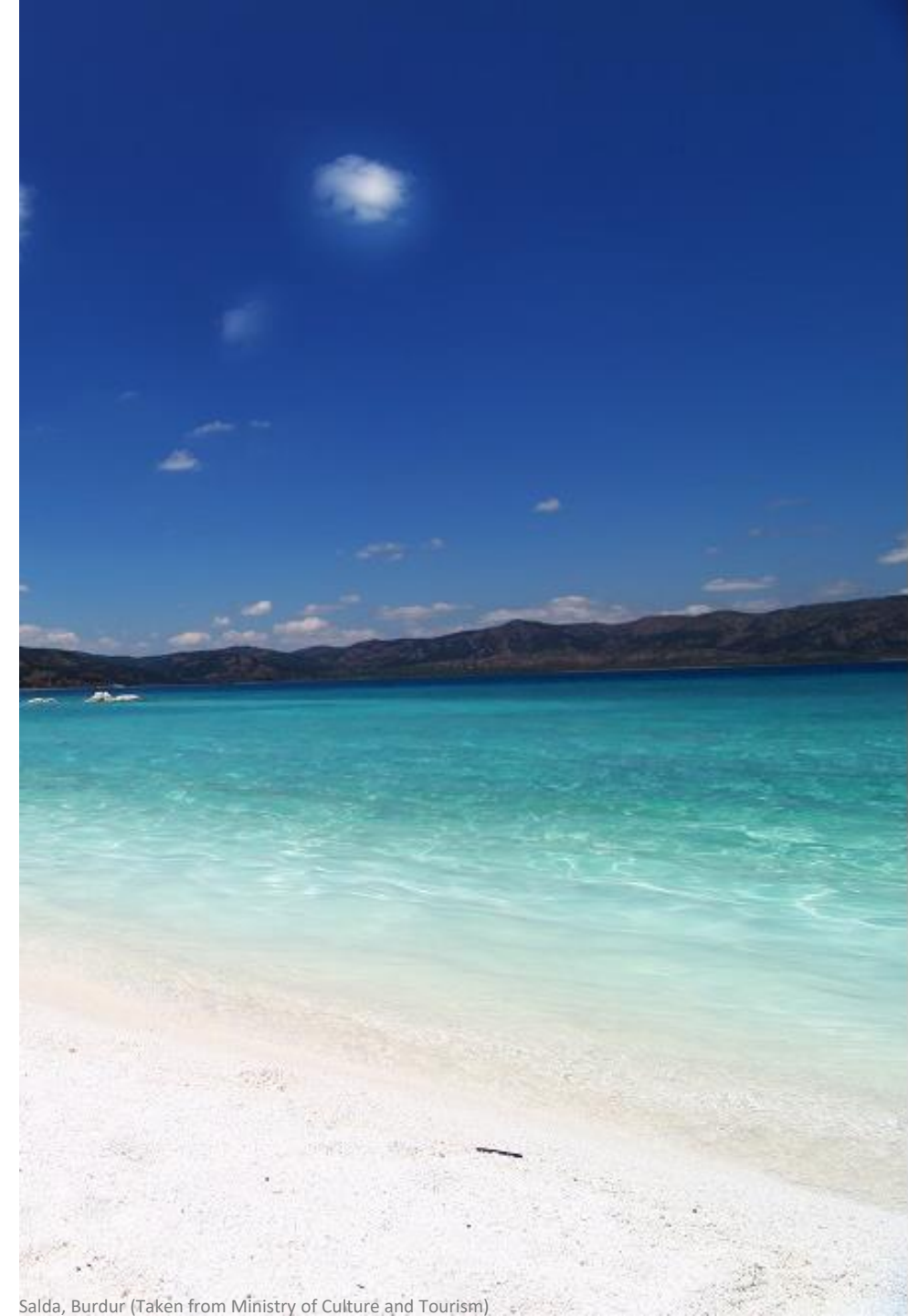
Categories	Sub-categories	Realized/Expected Progress	Relevant Ministry
<b>Terrestrial and Aquatic Biodiversity</b> <div> </div>	<ul style="list-style-type: none"> <li>Conservation and monitoring of endangered species and habitats</li> <li>Creating special environmental protection areas within the aim of protecting biodiversity</li> <li>Investigating the effects of climate change on marine and terrestrial ecosystems and increasing the adaptation capacity</li> </ul>	<ul style="list-style-type: none"> <li>27,500 samples were taken from 276 fish species for registration in the national gene bank, 7 commercial species stocks assessment were made.</li> <li>2 invasive species have been taken under monitoring.</li> <li>5 marine survey was carried out.</li> <li>4 special environmental protection area biodiversity survey carried out for the determination of biological diversity, classification, zoning, threats and protection measures of endemic, rare, endangered and endangered species and habitats to form a base for the plans to be made in special environmental protection areas.</li> <li>2 investigation projects for evaluate the effects of climate change on both terrestrial and marine ecosystems within the Gökova Special Environmental Protection Area, and to enhance their adaptive capacity and the causes and consequences of the increase of jellyfish in the sea of Marmara.</li> <li>8 monitoring projects have been carried out. This project is the most detailed study to date on reptiles and amphibians, which are an important part of Special Environmental Protection Areas.</li> <li>The number of baby turtles reaching the sea increased to 106,592 in 2023 from 47,503 in 2020.</li> </ul>	<ul style="list-style-type: none"> <li>i. Agriculture and Forestry</li> <li>ii. Environment, Urbanization and Climate Change</li> </ul>
<b>Circular Economy Adapted Products, Production Technologies and Processes</b> <div> </div>	Resource efficiency with new production technologies	<ul style="list-style-type: none"> <li><b>3,794,348 m3 of waste was recycled.</b></li> <li><b>159,559 tons of solid waste were collected.</b></li> <li>The amount of processed by-products and waste products was 5,024 tons, and a <b>reduction of 3,301,034 m3 of waste products was achieved.</b></li> <li>As a result, the cash value of wastes recycled into the economy was TL 44.6 million at current prices.</li> </ul>	Industry and Technology



# 6

## Selected Green Projects

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# Case Study – I E5000 Electric Outline Locomotive

## Green Sector: Clean Transportation (Electrification of railway lines)



### Türkiye's first mainline electric locomotive with a TSI certificate, produced using national and domestic resources

- Türkiye's national electric mainline locomotive E5000 was produced at the **TÜRASAŞ** Eskişehir factory.
- The E5000 Electric Mainline Locomotive is a new-generation locomotive with a minimum power of 5000 kW, an AC-AC drive system, TSI certification, and a speed of 140 km/h. It has been designed and produced in a highly domestic and national manner; especially the Traction System, TKYS, Transformer, APU, Converter unit are very critical and important components in the locomotive sector.
- Each of the traction motors, designed by TUBITAK Rail Transportation Technologies Institute and manufactured by TÜRASAŞ Eskişehir Regional Directorate, has a power of 1280 kW and has the characteristic of being the most powerful traction motor designed in Türkiye to date. Similarly, each of the locomotive's traction converters has a power of 2.5 MW and is the most powerful high-voltage traction converter designed in Türkiye for a railway system vehicle.



- The production of the E5000 electric mainline locomotive has also been an important step in reducing Türkiye's dependence on imports in the rail industry. By producing domestic and national locomotives, in addition to the shift towards sustainable energy for transportation, Türkiye will not only increase its exports but also improve its technological capabilities and create new jobs.
- The first two EMUs were put into commercial operation, and mass production has started with plant to increase production at 56 vehicles by 2030.
- This project is included in the pool as an expenditure of **\$5.9 million**.

# Case Study – II Cleaning, Dewatering and Disposal Service of Izmit Gulf's East Basin Bottom Sludge

## Green Sector: Sustainable Water and Wastewater Management



- This initiative, backed by the Presidency's Strategy and Budget, aims to protect the Gulf of Izmit's environment. Led by the Ministry of Environment, Urbanization, and Climate Change, and the Kocaeli Metropolitan Municipality, it targets clearing bottom mud in the Gulf's eastern basin to improve the area's environment.
- The mud that continues to accumulate on the seabed of Izmit Bay, which has extremely sensitive ecosystems within the borders of Kocaeli province, affects water circulation and marine life. For this reason, efforts have been initiated to clean the bottom mud, which also triggers the formation of mucilage in the Sea of Marmara.



An aerial view of the Gulf of Izmit where pipes are being placed to transport the bottom sludge to shore (AA Photo)



An aerial view of the Gulf of Izmit in the Marmara Sea, Türkiye, Feb. 21, 2023. (AA Photo)

- The calculations indicate that **a total of 33 million m<sup>3</sup> of sludge will be drawn and subjected to dewatering process**, and the bottom sludge that has become dry at the construction site will be transported to the storage area.
- The 1st Stage of the Izmit Bay East Basin Bottom Sludge Cleaning work will be completed on 29th October 2024. The 2nd Stage tender preparation stage for the project is ongoing.
- This project is included in the pool with an expenditure of **\$8.6 million**.



# Case Study – III Renewal of Alaçatı Wind Energy Powerplant by Manufacturing Local/National Wind Turbines

## Green Sector: Renewable Energy



- This project is aimed at renewing wind turbines that have completed their economic lives in Alaçatı/Izmir.
- The power plant has 12 wind turbines with a capacity of 600 kWe. It has a total installed power of 7.2 MWe. Due to the increase in malfunctions of the power plant turbines and the limited supply of spare parts, renewal process has been planned by installing 2 wind turbines that is 4 MWe each in Alaçatı.
- With the installation of new turbines, **the existing annual electricity production amount of approximately 4,000,000 kWh is planned to reach 25,000,000 kWh.** In this way, **8,000 tons less CO2 emissions are aimed** compared to CCPP.



Photo taken from dünya.com



Photo taken from Ministry of Energy and Natural Resources

- In addition to the wind turbines, the tower, external cabins, blades and consoles, the turbine control software, the generator and power converter will be designed, developed and produced domestically.
- This project is included in the pool with an expenditure of **\$976,000.**



# Case Study – IV Yaprak Solar Power Plant

## Green Sector: Renewable Energy



- The project involves establishing an unlicensed solar power plant in state-owned Petroleum Pipeline Corporation's (BOTAS) land in Yaprak, Ankara.
- It has a total installed power of **1 MW**.
- The expected annual CO2 reduction is **1000 tons**.
- The number of trees saved is **12,000 per year** within the scope of this project.
- It meets the electricity need of **600 houses per year**.
- This project is included in the pool with an expenditure of **\$860,000**.



Photo taken from Ministry of Energy and Natural Resources





# 7

## Independent Limited Assurance Report for Allocations by PwC Türkiye


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**Limited Assurance Report  
to the Republic of Türkiye  
Ministry of Treasury and Finance**

We have been engaged by the Republic of Türkiye Ministry of Treasury and Finance to perform a limited assurance engagement in respect of the Selected Sustainability Information (the “Selected Information”) stated in the Republic of Türkiye Ministry of Treasury and Finance Green Bond Allocation Report September 2024 (“Green Bond Allocation Report September 2024”) for the period between 1 January 2020 and 31 December 2023 and listed below.

**Selected Information**

The scope of the Selected Information for the period between 1 January 2020 and 31 December 2023, which is subject to our limited assurance work, set out in the Green Bond Allocation Report September 2024 on page 15 with the sign “”, is summarised below:

- Circular Economy Adapted Products, Production Technologies and Processes (mio US\$)
- Clean transportation (mio US\$)
- Climate Change Adaptation (mio US\$)
- Energy Efficiency (mio US\$)
- Sustainable Management of Living Natural Resources and Land Use (mio US\$)
- Pollution Prevention and Control (mio US\$)
- Renewable Energy (mio US\$)
- Sustainable Water and Wastewater Management (mio US\$)
- Terrestrial and Aquatic Biodiversity (mio US\$)

Our assurance was with respect to the for the period between 1 January 2020 and 31 December 2023 information only and we have not performed any procedures with respect to earlier periods or any information other than Selected Information marked with “” in the Green Bond Allocation Report September 2024 and, any other elements included in the Green Bond Allocation Report September 2024 and, therefore, do not express any conclusion thereon.

**Criteria**

The criteria used by the Republic of Türkiye Ministry of Treasury and Finance to prepare the Selected Information is set out in section “Appendix 1: Republic of Türkiye Ministry of Treasury and Finance Green Bond Allocation Report September 2024– Reporting Principles” (the “Reporting Principles”) on pages between 34 and 36 of the Green Bond Allocation Report September 2024.



### **The Ministry's Responsibility**

The Republic of Türkiye Ministry of Treasury and Finance is responsible for the content of the Green Bond Allocation Report September 2024 and the preparation of the Selected Information in accordance with the Reporting Principles. This responsibility includes the design, implementation and maintenance of internal control relevant to the preparation of Selected Information that is free from material misstatement, whether due to fraud or error.

### **Inherent Limitations**

Non-financial performance information is subject to more inherent limitations than financial information, given the characteristics of the subject matter and the methods used for determining such information.

The absence of a significant body of established practice on which to draw to evaluate and measure non-financial information allows for different, but acceptable, measures and measurement techniques and can affect comparability between entities. The precision of different measurement techniques may also vary. Furthermore, the nature and methods used to determine such information, as well as the measurement criteria and the precision thereof, may change over time. It is important to read the Selected Information in the context of the Reporting Principles.

### **Our Independence and Quality Management**

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants, which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour.

Our firm applies International Standard on Quality Management 1, which requires the firm to design, implement and operate a system of quality management including policies or procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.



## **Our Responsibility**

Our responsibility is to form a limited assurance, based on limited assurance procedures, on whether anything has come to our attention that causes us to believe that the Selected Information has not been properly prepared in all material respects in accordance with the Reporting Principles. We conducted our limited assurance engagement in accordance with International Standard on Assurance Engagements 3000 (Revised), issued by the International Auditing and Assurance Standards Board.

A limited assurance engagement is substantially less in scope than a reasonable assurance engagement under ISAE 3000 (Revised). Consequently, the nature, timing and extent of procedures for gathering sufficient appropriate evidence are deliberately limited relative to a reasonable assurance engagement.

The procedures we performed were based on our professional judgment and included inquiries, observation of processes performed, inspection of documents, analytical procedures, evaluating the appropriateness of quantification methods and reporting policies, and agreeing or reconciling with underlying records.

Given the circumstances of the engagement, in performing the procedures listed above we:

- made inquiries of the persons responsible for the Selected Information;
- understood the process for collecting and reporting the Selected Information. This included analysing the key processes and controls for managing and reporting the Selected Information;
- evaluated the source data used to prepare the Selected Information and re-performing selected examples of calculation;
- performed limited substantive testing on a selective basis of the preparation and collation of the Selected Information prepared by the Republic of Türkiye Ministry of Treasury and Finance and
- undertook analytical procedures over the reported data.





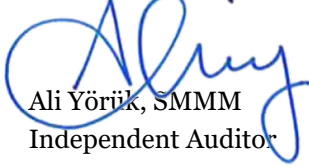
### **Limited Assurance Conclusion**

Based on the procedures we have performed and the evidence we have obtained, nothing has come to our attention that causes us to believe that Republic of Türkiye Ministry of Treasury and Finance's Selected Information for the period between 1 January 2020 and 31 December 2023, is not properly prepared, in all material respects, in accordance with the Reporting Principles.

### **Restriction of use**

This report, including the conclusion, has been prepared for the Republic of Türkiye Ministry of Treasury and Finance as a body, to assist in reporting the Republic of Türkiye Ministry of Treasury and Finance's performance and activities related to the Selected Information. We permit the disclosure of this report within the Green Bond Allocation Report September 2024 for the period between 1 January 2020 and 31 December 2023, to enable to demonstrate they have discharged their governance responsibilities by commissioning an independent assurance report in connection with the Selected Information. To the fullest extent permitted by law, we do not accept or assume responsibility to anyone other than the Republic of Türkiye Ministry of Treasury and Finance for our work or this report save where terms are expressly agreed and with our prior consent in writing.

PwC Bağımsız Denetim ve  
Serbest Muhasebeci Mali Müşavirlik A.Ş.

A blue ink signature of Ali Yörük, SMMM, is written over the text. The signature is stylized and cursive.

Ali Yörük, SMMM  
Independent Auditor

Istanbul, 23 September 2024

# Appendix-1: Republic of Türkiye Ministry of Treasury and Finance Green Bond Report September 2024– Reporting Principles

This reporting principle (the “Principle”) provides information on the data preparation and reporting methodologies of indicators within the scope of the limited assurance of Republic of Türkiye Ministry of Treasury and Finance included in the Republic of Türkiye Ministry of Treasury and Finance Green Bond Report September 2024 (the "Report").

The indicators include categories within the scope of the green use of proceeds such as Circular Economy Adapted Products, Production Technologies and Processes, Clean Transportation, Climate Change Adaptation, Energy Efficiency, Environmentally Sustainable Management of Natural Resources and Land Use, Pollution Prevention and Control, Renewable Energy, Sustainable Water and Wastewater Management and Terrestrial and Aquatic Biodiversity as identified in the Republic of Turkey Sustainable Finance Framework.

The data included in this principle consists of projects of the following members: Ministry of Agriculture and Forestry, Ministry of Environment, Urbanization and Climate Change, Ministry of Industry and Technology, Ministry of Energy and Natural Resources and Ministry of Transport and Infrastructure. All projects are under the scope of presidency investment program.

The data included in this principle is for the period between 1 January 2020 and 31 December 2023 and as detailed in the “Key Definitions and Reporting Scope” section.

## General Reporting Principles

In preparing this principle document, consideration has been given to following principles:

- Information Preparation - to highlight to users of the information the primary principles of relevance and reliability of information; and
- Information Reporting - to highlight the primary principles of comparability / consistency with other data including prior year and understandability / transparency providing clarity to users.

## Key Definitions and Reporting Scope

For the period between 1 January 2020 and 31 December 2023, the data of the Republic of Türkiye Ministry of Treasury and Finance is related to:

Indicator	Scope
Circular Economy Adapted Products, Production Technologies and Processes	It refers to projects related to reducing the use of raw materials and supporting resource efficiency such as projects that increase the recyclability/reusability of products and projects related to usage of waste and recycled materials in production for industries. Eligible portfolio for circular economy adapted products, production technologies and processes projects consist of one project and total allocated amount is USD 2.24 million.
Clean Transportation	It refers to projects related to zero emissions vehicles and associated infrastructure for personal, public and freight transportation including high-speed trains. It includes meeting the zero direct (tailpipe) CO2 emissions level (passenger and freight) for rail transportation, meeting the 50gCO2/km emissions level (passenger) for road transportation, and projects supporting the deployment of electric vehicles charging infrastructure. Eligible portfolio for clean transportation projects consists of ten projects and total allocated amount is USD 1,422.29 million.

Climate Change Adaptation	It refers to projects related to increasing the resilience of eco-systems, including measures to address drought, desertification, extreme weather events, rising sea levels, declines in agricultural productivity, forest fires, epidemics, pests and the loss of biological diversity and ecosystem services resulting from global temperature increases. Eligible portfolio for climate change adaptation projects consists of two projects and total allocated amount is USD 496.79 million.
Energy Efficiency	It refers to projects related to energy management developments to increase energy efficiency at industry, public and service buildings, installation of energy-efficient technologies and products, including energy efficient motors, to increase operational energy efficiency by at least 20%, and industrial/utility energy-efficiency improvements involving changes in processes, reduction of heat losses and/or increased waste heat recovery, and the development of energy efficient technologies. Eligible portfolio for energy efficiency projects consists of two projects and total allocated amount is USD 4.35 million.
Sustainable Management Of Living Natural Resources And Land Use	It refers to projects related to preservation and sustainable use of terrestrial and aquatic of natural resources including combating land degradation (including desertification), soil pollution, deforestation and drought, and environmentally sustainable organic agriculture (Certified agricultural practices under sustainable certification schemes, such as EU Organic, Global G.A.P., and/or equivalent national or international certification). Projects related to environmentally sustainable forestry, including afforestation, reforestation and rehabilitation of degraded forests (certified under eligible third-party schemes such as Forest Stewardship Council (FSC) and PEFC). Eligible portfolio for sustainable management of living natural resources and land use projects consists of ten projects and total allocated amount is USD 151.95 million.
Pollution Prevention and Control	It refers to projects related to waste prevention, reduction, reuse or recycling project inducing the collection, sorting, processing and conversion and treatment of waste such as funding for construction of integrated waste management facilities, pretreatment facilities such as material recovery facilities and transfer stations and investments in waste prevention and reduction for industries in accordance with best available techniques. It also refers to projects related to reducing air pollution such as full-automatic air quality measurement systems and introducing regulatory and incentive-based actions to improve air quality at local or national levels, building urban green spaces to reduce air pollution and investing in digital and AI based solutions to track air pollution patterns. Eligible portfolio for pollution prevention and control projects consists of eight projects and total allocated amount is USD 102.15 million.

Renewable Energy	It refers to projects to support the manufacturing, development, installation, operation and connection of renewable energy, including solar, wind, and geothermal (<100gCO <sub>2</sub> /kWh), and projects to support integration of renewable energy into power systems, such as smart grid technologies, big data and data analytics technologies in energy, next generation power electronics for smart grids, energy storage technologies with advanced features, charging ecosystem technologies, and advanced battery technologies. It also refers to projects related to generation of biogas from food waste. Eligible portfolio for renewable energy projects consists of nine projects and total allocated amount is USD 14.96 million.
Sustainable Water and Wastewater Management	It refers to projects related to construction, upgrades, renovations or improvements for transportation and treatment of wastewater, including water and wastewater treatment plants (WWTP) including reuse of WWTP effluent and sewer systems and pumping stations, and projects related to increase water-use efficiency, such as water recycling and reuse projects, water saving systems, technologies and water metering. It also refers to projects related to research, development, implementation and maintenance that improves or maintains water resilience, including projects that strengthen critical water infrastructure, water leakage detection systems to reduce waste and infrastructure downtime, and projects that monitor and protect water security (water quality and pollution prevention) for critical water bodies and basins. Eligible portfolio for sustainable water and wastewater management projects consists of thirty-two projects and total allocated amount is USD 323.48 million.
Terrestrial and Aquatic Biodiversity	It refers to projects related to restoration and/or conservation of natural terrestrial and marine landscapes, and projects related to biodiversity preservation, including conservation and monitoring of endangered species, habitats and ecosystems in Environmental Protection Areas. Eligible portfolio terrestrial and aquatic biodiversity projects consist of twelve projects and total allocated amount is USD 3.96 million.

### Restatement

The measuring and reporting of data inevitably involve a degree of estimation. Restatements are considered where there is a change in the data of greater than 5 percent at the Republic of Türkiye Ministry of Treasury and Finance level.





**REPUBLIC OF TÜRKİYE**  
**MINISTRY OF TREASURY AND FINANCE**