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Project: "Development of North Macedonia's First Biennial Transparency Report and the combined Second Biennial Transparency Report and Fifth National Communication on climate change under the UNFCCC (BTR1 and BTR2/NC5)"

INFORMATION ON FINANCIAL, TECHNOLOGY DEVELOPMENT AND TRANSFER AND CAPACITY-BUILDING SUPPORT NEEDED AND RECEIVED UNDER ARTICLES 9-11 OF THE PARIS AGREEMENT

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Contents

Executive summary	4
A. National circumstances, institutional arrangements and country-driven strategies	6
(a) Systems and processes to identify, track and report support needed and received — including challenges and limitations	6
(b) Country priorities and strategies, and aspects of the NDC that need support	6
B. Underlying assumptions, definitions and methodologies	7
C. Information on financial support needed under Article 9 of the Paris Agreement	9
C.1. Financial Support Needs for ENDC Implementation: Estimates, Barriers, and Mobilization Plan (2024–2030)	9
C.1.1. Overview of estimated financial needs and timeframe for ENDC Implementation	9
C.1.2. Sectors for which international finance is sought and key barriers	10
C.1.3. Contribution of international support to the ENDC and the long-term goals of the Paris Agreement	10
C.1.4. Finance approach and instruments requested	11
C.2. Financial Support Needs for Long-Term Climate Action Strategy (2020–2050) Implementation	14
C.2.1. Long-term Strategy overview and headline investment needs	14
C.2.2. International Financial Support Needed	14
D. Information on financial support received under Article 9 of the Paris Agreement	16
D.1. Committed International Support (Article 9): Total Commitments and Total Climate Finance (2020–2022) – project-based approach	16
Climate-specific (CS) or Climate-relevant (CR)	17
Purpose of funding: Mitigation, Adaptation or Cross-cutting	18
Contribution Providers	19
Bilateral vs. Multilateral Commitments	20
Distribution of Climate Finance by Sector	20
Type of Funding and Climate Attribution	22
Distribution by Type of Support	22

D.2. Bilateral climate-related official development assistance (ODA)	23
E. Information on Technology Development and Transfer Support Needed (Article 10)	25
(a) Plans, Needs, and Priorities	25
F. Technology development and transfer support received (Article 10)	26
G. Information on capacity-building support needed under Article 11 of the Paris Agreement	27
H. Information on capacity-building support received under Article 11 — narrative	28
Annex 1. International FTC support received under Article 9 -11 of the Paris Agreement in the period 2020 - 2022	30

Executive summary

The *First Biennial Transparency Report (BTR1)* of the Republic of North Macedonia presents an integrated account of the support needed and the support received for climate action under the Paris Agreement's Enhanced Transparency Framework. The report builds on three foundational national documents—the *Enhanced Nationally Determined Contribution (ENDC, 2020–2030)*, the *Long-Term Climate Action Strategy and Action Plan (LTS, 2020–2050)*, and the *National Energy and Climate Plan (NECP, 2021–2030)*—which together define the country's long-term vision for low-carbon, climate-resilient development. It also draws on an updated inventory of international support provided to North Macedonia during the 2020–2022 period, covering financial, technical, and capacity-building assistance. By harmonizing data across multiple sources, this report ensures coherence, transparency, and comparability of information in line with UNFCCC reporting guidance.

The methodological framework adopted in this report applies consistent assumptions and data treatment across all reporting elements. Figures on *support needed* are taken from nationally costed measures within the ENDC, LTS, and NECP, expressed initially in constant national prices and then re-estimated to 2025 constant prices using the national GDP deflator (as published by the State Statistical Office and the Ministry of Finance). All 2025-price estimates are converted to U.S. dollars at the average 2025 market exchange rate, ensuring comparability with international reporting standards. Conversely, *support received* is recorded as nominal commitments in the year of approval or signature and converted into U.S. dollars using the annual average exchange rate applicable for that year, referencing data from the National Bank of the Republic of North Macedonia, the European Central Bank, or the IMF International Financial Statistics. Where relevant, reported amounts are further adjusted to reflect climate relevance using the OECD Rio Marker methodology—applying coefficients of 100% for activities with principal climate objectives and 40% for those with significant climate relevance. All assumptions, conversion factors, and data sources are cited within table notes for full transparency and traceability.

The analysis of *support needed* highlights the scale of investment required to achieve the country's climate targets. According to the ENDC, implementing all identified mitigation measures by 2030 would require an estimated €25 billion in 2021 prices, which, when expressed in 2025 prices and converted to U.S. dollars, corresponds to an indicative need of around US\$35 billion. The NECP and LTS further elaborate these needs, detailing sector-specific pathways toward decarbonization, renewable energy expansion, industrial competitiveness, sustainable transport, and climate-resilient agriculture and forestry. Across all three documents, investment priorities converge around renewable energy and grid modernization, deep energy renovation of buildings, electrification of transport, circular waste and wastewater management systems, climate-smart agriculture, and improved hydrometeorological and early-warning systems. Cross-cutting enablers—such as project preparation capacities, monitoring, reporting and verification (MRV) systems, transparency frameworks, and financial de-risking mechanisms—are also identified as crucial for turning national strategies into bankable investment pipelines.

Between 2020 and 2022, North Macedonia benefited from diverse forms of *international support* directed toward strengthening both mitigation and adaptation capacities. This included financial and technical assistance from bilateral and multilateral partners, the European Union, international financial institutions, and United Nations agencies. The portfolio of received support, presented in the Annex, covers grants, concessional loans, and blended-finance operations. Support has been particularly important in four areas: (i) enhancing institutional and governance capacities for climate action, including readiness for direct access to international funds; (ii) strengthening sectoral implementation capacities in energy efficiency, renewable integration, waste management, water resources, and agriculture; (iii) promoting technology transfer in areas such as low-carbon energy systems, digital MRV tools, industrial emissions management, and early warning for climate hazards; and (iv) advancing capacity building and awareness across public

institutions, municipalities, and civil society to foster a more inclusive and participatory approach to climate governance.

Technology development and transfer have played a key role in reinforcing national implementation capacity. Supported by the Green Climate Fund (GCF), Global Environment Facility (GEF), the European Union, and bilateral partners such as GIZ and UNDP, several projects have introduced innovative low-emission technologies, including smart-grid management systems, renewable-based heating and cooling, industrial energy-efficiency technologies, and modern hydrometeorological networks. These interventions have combined infrastructure and equipment with tailored training, knowledge exchange, and operational guidelines to ensure their sustainable use and replication across sectors. Such support has been instrumental in bridging the gap between policy design and practical application of mitigation and adaptation measures.

Parallel to technological progress, *capacity-building support* has been vital in enhancing the country's institutional preparedness and absorptive capacity. Through readiness and technical assistance programmes, North Macedonia has strengthened its policy coordination mechanisms, MRV systems, and national climate finance architecture. The ENDC Financing Strategy and the NDC Implementation Roadmap emphasize the need for continuous improvement in project-preparation capacities, financial modelling, risk assessment, and gender- and inclusion-sensitive approaches. Moreover, initiatives in hydrometeorology, air-quality monitoring, and public-sector energy management have contributed to the institutionalization of technical expertise and the creation of data-driven policy frameworks.

In conclusion, the analysis confirms that North Macedonia has clearly defined and quantified its climate investment needs and has already mobilized significant international support in key priority areas. Progress achieved in 2020–2022 demonstrates the country's increasing ability to design, report, and implement climate-related actions in line with the Paris Agreement. Going forward, the establishment of a permanent national mechanism for tracking climate finance, the strengthening of project-preparation and pipeline development capacities, and the expansion of technical and financial partnerships will be critical to accelerating implementation of the ENDC, NECP, and LTS. Sustained institutional coordination, transparent data systems, and broad stakeholder engagement will be essential for ensuring that North Macedonia continues its transition toward a low-emission, climate-resilient, and inclusive economy.

A. National circumstances, institutional arrangements and country-driven strategies

(a) Systems and processes to identify, track and report support needed and received — including challenges and limitations

Identifying and compiling “support needed.” Needs are identified from three government-endorsed planning documents and transcribed as published: the [Enhanced Nationally Determined Contribution \(ENDC\)](#), the [Long-Term Climate Action Strategy 2020–2050 \(LTS\)](#), and the [National Energy and Climate Plan \(NECP\) of the Republic of North Macedonia](#). Figures are taken in their original constant-price base years, **re-estimated to 2025 constant prices**, and then **converted to USD** following the report’s declared FX rule to ensure comparability across sectors and horizons.

Tracking and reporting “support received.” At present, there is **no single, officially established national mechanism** for systematically collecting and consolidating information on international support received. For this report, data are assembled through a **project-based approach** using provider documentation (bilateral, multilateral, EU instruments, UN agencies) and are **cross-checked** against the **OECD Creditor Reporting System (CRS)** and its **Rio marker** records for bilateral ODA to improve coverage and tagging consistency. Climate relevance is determined using the Rio methodology, and commitment amounts are recorded in the **year of approval/commitment**.

Process governance and conventions. Entries include provider, channel, instrument, sector/purpose, commitment year and amount; where available, project status is also captured (pipeline, committed, under implementation, completed). Aggregation applies consistent conventions on **price basis**, **FX conversion**, and **Rio-marker attribution** to derive climate-attributed totals from committed international finance.

Challenges and limitations. Key constraints include: (i) fragmented project information across institutions/programs; (ii) incomplete or non-harmonized climate tagging for some operations; (iii) reliance on **commitments rather than disbursements** in the core dataset; and (iv) occasional gaps in source documents on price-year/FX details requiring standardization at the report level. These limitations are mitigated by explicit table notes on **price year (2025)** and **FX source**, and by the systematic use of Rio markers for attribution.

(b) Country priorities and strategies, and aspects of the NDC that need support

North Macedonia’s climate policy is framed by three mutually reinforcing documents: the **Enhanced Nationally Determined Contribution (ENDC)** for 2024–2030 implementation, the **Long-Term Climate Strategy** to 2050, and the **National Energy and Climate Plan (NECP)**. Together, they set out mitigation pathways (energy transition, efficiency, transport, industry, waste) and adaptation priorities (water, agriculture/forestry, health, disaster-risk reduction, resilient infrastructure), with attention to inclusion and just transition.

Priority areas where **international support** is sought include: (i) **de-risking and concessional finance** to crowd in private capital for renewables, efficiency, and low-carbon transport; (ii) **grants and technical assistance** for enabling policies, institutional capacity, MRV/transparency systems, and social measures; (iii) **adaptation investments** in water management, climate-resilient agriculture and ecosystems, and municipal resilience; and (iv) **data, digital and hydromet systems** that underpin risk assessment, planning and monitoring. These needs and the indicative financing mix are presented in Section C at 2025 constant prices and USD, consistent with this report’s methodological rules.

B. Underlying assumptions, definitions and methodologies

This report presents information on **support needed** and **support received** using a consistent, transparent approach that combines a **project-based portfolio** with **OECD marker-based aggregates**. Values are compiled in original currency and year, transformed to United States dollars (USD) under a declared FX rule, and—where relevant—translated into **climate-attributable finance** using the **OECD Rio marker methodology**. The narrative below describes the core assumptions, definitions and methods, including, as applicable, those used to (a) convert currency; (b) estimate needs; (c) estimate needs; (d) determine reporting years.

Scope and data foundations (overview).

- **Support received (2020–2022):** built primarily from a **project-based dataset** of international provider operations in the country (bilateral, multilateral, EU instruments and UN agencies). Figures are recorded as **nominal commitments** at approval/signature and then **converted into climate finance** by applying Rio marker coefficients (see below). For **bilateral ODA**, the project list is cross-checked against **OECD Creditor Reporting System (CRS) Rio marker data** and **OECD’s marker-based aggregates** to ensure coverage and consistency.
- **Support needed:** derived from nationally determined needs and planning documents (e.g., sector strategies, NDC/long-term strategy pipelines). Needs are expressed in constant prices and then converted to USD under a declared index/FX rule (below).

a) Converting domestic currency into United States dollars

- **Support received (commitments):** each operation is converted from the **original currency at the FX rate prevailing in the commitment/approval year** (central bank/ECB/IMF reference). Where only a commitment month/day is known, the **annual average** is used.
- **Support needed:** cost estimates are first expressed in **constant national prices** for the base year used in the underlying sector plans. For comparability in this report, needs are **re-indexed to a common price year** and then converted to USD using the **average FX for that price year**.
- **No PPP adjustments** are applied; values are market-exchange-rate USD. All tables indicate **price basis and year**.

b) Estimating the amount of support needed

Definition and scope. “Support needed” is the financing required to deliver priority mitigation and adaptation measures in **2024–2030** (with an indicative view to **2050**), covering policy/technical assistance, public investment, de-risking instruments, and—where explicitly quantified—mobilized private capital.

Authoritative sources. All needs are drawn **exclusively** from:

- the **Enhanced Nationally Determined Contribution (ENDC) (2020-2030)**,
- the **Long-Term Climate Action Strategy 2020-2050**, and
- the **National Energy and Climate Plan (NECP) of the Republic of North Macedonia**.

Price basis and currency. Cost figures from the NDC, LTS and NECP are taken in their original constant-price base years and **re-estimated to 2025 constant prices** using the national GDP deflator (SSO/MoF). For cross-report comparability, all 2025-price values are **converted to USD using the average 2025 FX rate** (market exchange rate; no PPP).

Method notes. Sectoral envelopes and measure-level costs are **transcribed directly** from the three source documents. Where a source provides a range, the **central estimate** is reported; where measures are described but not costed, they are flagged as **uncosted**. Assumptions used for re-indexing and FX conversion are documented in table notes to ensure traceability.

c) Estimating the amount of support received

Definition and scope. “Support received” refers to **international financial commitments** provided to the Republic of North Macedonia in the form of grants, concessional loans, guarantees, equity participation, or technical assistance during the **2020–2022** reporting period. It reflects the **value of legally approved or pledged provider commitments**, irrespective of subsequent disbursements, and serves as the reference measure for assessing international climate-related support under **Article 9 of the Paris Agreement**.

Primary data sources. Information on received support is based on two complementary datasets:

- **Project-based portfolio data** compiled from official national and provider sources, covering bilateral, multilateral, EU-funded, and UN-implemented operations active in 2020–2022.
- **OECD Creditor Reporting System (CRS)** and **Rio Marker database**, which provide internationally harmonized data on bilateral Official Development Assistance (ODA) tagged for climate-related objectives.

Methodological approach. The report applies the **OECD Rio Marker methodology** to determine the share of committed international finance that can be attributed to climate-related purposes. Each project is screened against two markers: **Climate change mitigation**, and **Climate change adaptation**.

If both markers apply, attribution follows OECD rules to prevent double counting.

Attribution coefficients. Climate-attributable shares are derived using **OECD marker-based aggregate coefficients**: **Score 2 (Principal / Climate-specific)** receives a **100%** attribution; **Score 1 (Significant / Climate-relevant)** receives a **partial attribution (40%)**; **Screened, not targeted** and **Not screened** are treated as **0%** for climate totals. If a project has **both** mitigation and adaptation markers, attribution follows OECD practice to **avoid double counting** (e.g., capping the combined climate share at the project amount).

This process ensures that the values reported as “support received” correspond to the **Rio-marker-adjusted portion** of provider commitments, representing the most accurate proxy for **climate-directed finance** available for the 2020–2022 period.

Price basis and currency. All commitments are reported in **nominal values** at the time of approval and then converted to **USD** using the **exchange rate prevailing in the commitment year** (sourced from NBRNM, ECB, or IMF IFS). Where only annual data are available, the **average annual rate** is applied. Amounts are presented in **market-exchange-rate USD**; no PPP adjustments are made.

Interpretation and caveats. Reported figures represent **commitments, not disbursements**, and therefore capture the **scale of pledged international support** rather than actual financial flows. Rio-marker attribution provides a **standardized and conservative measure of climate relevance**, ensuring comparability across providers and years. The approach aligns fully with **UNFCCC reporting guidance** and **OECD statistical standards** for monitoring climate-related development finance.

Documentation and traceability. Each aggregated figure in the report is traceable to its underlying project record, identifying the **provider, implementing agency, sector, instrument type, commitment year, and Rio-marker score**. Tables specify both the **price basis** and **FX source** used for conversion, ensuring transparency and reproducibility of all results.

d) Determining the reporting year or time frame

Support received. The reporting period covers **calendar years 2020–2022**. Each operation is assigned to the **year of commitment or approval** as declared by the provider. When projects extend across multiple years without a detailed annual breakdown, the **total commitment amount** is attributed to the **approval year**, ensuring consistency and preventing duplication. Any amendments or additional tranches are registered in the year they are formally approved. Disbursement data are not used unless explicitly specified.

Support needed. The period for estimating financial support needs is **2024–2030**, consistent with the implementation horizon of the **Enhanced Nationally Determined Contribution (ENDC)** and the **National Energy and Climate Plan (NECP)**. An **indicative projection to 2050** is provided in line with the **Long-Term Climate Strategy (LTS)** of the Republic of North Macedonia.

C. Information on financial support needed under Article 9 of the Paris Agreement

C.1. Financial Support Needs for ENDC Implementation: Estimates, Barriers, and Mobilization Plan (2024–2030)

C.1.1. Overview of estimated financial needs and timeframe for ENDC Implementation

According to the **Enhanced Nationally Determined Contribution (ENDC)** and the **Strategy for Financing the ENDC**, the total investment required to implement all mitigation measures by 2030 was **€25,031 million (2021 prices)**. Updating this envelope to **2025 prices** using cumulative euro-area inflation of **(2021–2025)** and translating at the **ECB reference FX rate (€/US\$)**, the estimated need rises to **≈€29,877 million**, equivalent to **≈US\$34,890 million**.

Table 1. Estimated Investment Needs for ENDC Implementation by Sector (Updated to 2025 Prices, in EUR and USD Millions)

Sector	2021 Prices (EUR m)	2025 Prices (EUR m)	2025 Prices (USD m)
Energy	24,863	29,676	34,656
AFOLU	110	131	153
Waste	58.6	69.9	81.7
Total	25,031	29,877	34,89

The implementation of the Enhanced Nationally Determined Contribution (ENDC) is planned for the period **2024–2030**, fully synchronized with the national climate and energy policy cycle. The **total financial requirement** for realizing all ENDC measures is now estimated at **approximately US \$34.9 billion (2025 prices)**.

According to the Strategy for Financing the ENDC, the expected financing structure is highly diversified. Roughly **4 percent** (around **US \$1.4 billion**) is projected to be covered **entirely by domestic public sources**, mainly through the central and local government budgets. About **43 percent**, or **US \$15.0 billion**, is expected to come from **non-government sources**, including private investment, donor programs, and consumer-financed schemes. The remaining **54 percent**, equal to roughly **US \$18.9 billion**, will require **mixed or blended financing**, combining international public finance with private co-investment and concessional instruments.

Consequently, the **estimated amount of international financial support needed**—through concessional loans, guarantees, equity participation, and grants—ranges between **US \$20 and 22 billion** for the 2024–2030 period. This support will be essential to catalyze additional private capital, mitigate financial and regulatory risks, and ensure affordable implementation of the ENDC portfolio.

North Macedonia therefore prioritizes the mobilization of **international public and private climate finance** through blended and risk-sharing mechanisms, while using targeted **grant and technical-assistance support** to strengthen enabling policies, institutional capacity, and social transition measures that safeguard inclusiveness and long-term sustainability.

C.1.2. Sectors for which international finance is sought and key barriers

The Republic of North Macedonia seeks international financial support primarily in the **energy, buildings, transport, industry, agriculture and land-use (AFOLU), and waste sectors**. These are the key areas where decarbonization investments will have the greatest impact on achieving the national emission-reduction target and advancing the transition toward a climate-resilient economy.

The **energy sector** remains the central pillar of the ENDC, with measures aimed at the transformation of electricity generation, modernization of the transmission and distribution network, and greater integration of renewable energy sources. Financing is needed to develop large-scale and distributed renewable projects, strengthen grid infrastructure, introduce energy storage, and enable flexible operation of the power system. However, the sector faces significant barriers, including the high capital intensity of projects, limited long-term finance in domestic currency, evolving regulatory frameworks, and the need for grid balancing and interconnection investments.

In the **buildings sector**, support is required for deep renovation of existing residential and public buildings, installation of heat pumps, and construction of passive buildings. These measures are among the most cost-effective ways to reduce emissions and improve energy security. The main barriers are split incentives between owners and users, limited access to affordable financing for households and SMEs, and the absence of large-scale aggregation mechanisms that would enable economies of scale and standardized results-based financing.

The **transport sector** requires international finance for electrification of the national vehicle fleet, deployment of charging infrastructure, and modernization of the railway network. The barriers in this sector are related to high upfront costs, early-stage market development, network externalities, and the need for policy and regulatory support to create viable markets for electric mobility.

In the **industrial sector**, investments in energy efficiency, modernization of production processes, and introduction of advanced technologies are crucial. Yet, firms face challenges due to competing investment priorities, uncertain payback periods, and limited access to long-term credit and guarantee mechanisms.

The **AFOLU sector**, covering agriculture, forestry and land use, requires targeted financing for afforestation, fire-risk management, improved manure management, and other soil-carbon measures. These activities provide both mitigation and adaptation benefits but are constrained by fragmented land ownership, smallholder structures, and the lack of robust monitoring and verification systems required for results-based payments.

Finally, the **waste sector** needs investments in landfill gas recovery, mechanical–biological treatment, and recycling systems. Barriers include low municipal creditworthiness, limited PPP experience, and insufficient tariff recovery, which restrict the ability of local governments to attract private or commercial financing without blended support and technical assistance.

C.1.3. Contribution of international support to the ENDC and the long-term goals of the Paris Agreement

The financial support sought under Article 9 will play a decisive role in **delivering the 63 policies and measures (PAMs)** defined in the ENDC and ensuring the country's achievement of its **2030 emission-reduction target**. The assistance will directly contribute to the **mitigation objectives**, accelerate the transition to **low-emission and climate-resilient development**, and strengthen North Macedonia's alignment with the long-term goals of the Paris Agreement.

International support will **catalyze private-sector investment** by lowering risks and financing costs through concessional loans, guarantees, and blended instruments. These interventions will unlock

substantial private and commercial capital that is necessary to finance renewable energy, energy efficiency, and low-carbon transport at scale.

The requested assistance will also enable **technology transfer** and **capacity development** in key sectors such as renewable energy integration, smart grid management, electric mobility, and industrial decarbonization. Through international partnerships, the country will gain access to advanced technologies, management systems, and innovative financial models that will sustain long-term transformation.

Moreover, support will be directed toward **institutional and policy reforms**, including the introduction of carbon pricing, improvement of the legal framework for energy markets and PPPs, and the development of monitoring, reporting and verification (MRV) systems. These efforts will improve transparency, efficiency, and governance in climate action.

Finally, the financial assistance will deliver multiple **co-benefits** for sustainable development: enhanced energy security and affordability, improved air quality and public health, creation of green jobs, and promotion of a **just transition** for communities affected by the phase-out of carbon-intensive activities.

C.1.4. Finance approach and instruments requested

To effectively address sector-specific barriers and mobilize resources for the implementation of the Enhanced Nationally Determined Contribution (ENDC), the Republic of North Macedonia proposes a **comprehensive and diversified financing approach**. This approach combines various financial instruments and leverages both **domestic and international public finance** to crowd in private capital and ensure long-term financial sustainability of climate actions.

The country seeks to make full use of the **UNFCCC Financial Mechanism**, including the **Green Climate Fund (GCF)**, the **Global Environment Facility (GEF)**, and the **Adaptation Fund**, as well as to strengthen cooperation with **multilateral development banks (MDBs)** and **UN agencies** such as the **World Bank**, **European Investment Bank (EIB)**, **European Bank for Reconstruction and Development (EBRD)**, **Food and Agriculture Organization (FAO)**, **United Nations Development Programme (UNDP)**, and the **United Nations Industrial Development Organization (UNIDO)**. In parallel, regional and bilateral facilities—such as the **Western Balkans Investment Framework (WBIF)** and **EU Instrument for Pre-Accession Assistance (IPA III)**—will be mobilized to co-finance investments aligned with EU accession priorities and the Paris Agreement.

The following instruments will form the core of the country's financing strategy:

- **Concessional and policy-based loans** will finance large-scale infrastructure projects, including renewable energy generation, transmission and distribution upgrades, storage systems, public building renovations, and modernization of the railway network. These loans, provided through institutions such as the GCF, EIB, WB, and EBRD, will offer long maturities and grace periods that align with project lifecycles.
- **Guarantees and first-loss facilities** will be crucial to attract commercial finance by reducing perceived risks in sectors such as energy efficiency, distributed solar deployment, and industrial modernization. Instruments of this type—offered through the GCF Private Sector Facility, the EBRD's Green Economy Financing Facilities (GEFFs), or bilateral export credit agencies—will help lower financing costs and extend access to private credit.
- **Equity participation and development finance institution (DFI) debt** will support Independent Power Producer (IPP) projects and public-private partnerships in renewable energy and low-carbon technologies. Participation by institutions such as IFC, EIB, and GCF in blended equity funds can catalyze further private investment.
- **Grants and technical assistance** will be sought from the GEF, Adaptation Fund, UNDP, FAO, and bilateral donors for project preparation, enabling policy reforms, and capacity building in monitoring, reporting and verification (MRV), financial structuring, and stakeholder engagement. These

resources will also finance social measures related to the **just transition**, ensuring that vulnerable groups and workers in carbon-intensive sectors benefit from the energy transition.

- **Results-based and nature-based finance**, including access to **voluntary carbon markets (VCM)** and results-based payment mechanisms under REDD+ or Article 6 of the Paris Agreement, will be mobilized to support forestry, land restoration, and soil-carbon projects that deliver measurable and verifiable emission removals. FAO and GCF collaboration will be particularly relevant for agriculture and land-use programs.
- **Regional and EU-blended financing instruments**, notably through **EIB, WBIF, and EU IPA III**, will be leveraged for cross-border energy and transport infrastructure, as well as for scaling up energy-transition investments aligned with the Green Agenda for the Western Balkans.

This **integrated financing framework** reflects North Macedonia’s strategic approach, where international public finance—channeled through the UNFCCC Financial Mechanism, multilateral banks, and UN agencies—acts as a **catalyst for private investment**, reinforces national institutions, and reduces fiscal pressure on the state budget. By combining concessional, market-based, and results-based instruments, the country aims to ensure that the ENDC implementation is both **financially viable and socially inclusive**, while fully consistent with the goals of the **Paris Agreement** and the **2030 Agenda for Sustainable Development**.

Table 2. ENDC PAMs requiring international financial support (Article 9) (2024–2030 timeframe)

Title (ENDC measure / policy)	Amount (reestimation in USD m 2025)	Primary Instrument & Likely Channels	Type	Sector / Subsector	Expected Use / Impact
Reduction of network losses	237.0	Concessional loan (EIB / EBRD / WBIF); guarantee for DSO investments	Mitigation	Energy – Transmission & Distribution	Lower technical losses; grid reliability improved; ≈ 323 Gg CO ₂ e reduced
Large hydropower plants (IPP / PPP)	2392.2	DFI debt + guarantees (EIB / EBRD / IFC); IPP equity; grant for social and environmental safeguards	Mitigation	Energy – Renewable Generation	≈ 741 Gg CO ₂ e reduction; firm renewable capacity; green jobs
Incentive scheme for renewables – feed-in tariff	497.5	Policy-linked concessional window + results-based grants (GCF / GEF)	Mitigation	Energy – Renewables Policy Support	Scales bankable RES projects; mobilizes private capex
Incentive scheme for renewables – feed-in premium	335.3	Blended support (GCF Private Sector Facility) + merchant risk guarantees	Mitigation	Energy – Renewables Policy Support	Expands competitive RES deployment; reduces LCOE
Solar rooftop programme for households and SMEs	506.5	Concessional credit lines via local banks (GCF / EBRD GEFF); guarantees; grants for low-income users	Mitigation	Energy – Distributed RES	≈ 164 Gg CO ₂ e reduction; MW installed; households served
Renewable energy projects	1848.1	Project finance (DFI debt + guarantees);	Mitigation	Energy – Utility-Scale RES	Adds new capacity; enhances energy security

without incentives		IPP equity; grid integration TA			
Comprehensive programme for deep energy retrofits in residential buildings	2381.1	Concessional loans + first-loss guarantees; RBF; social grants	Mitigation	Buildings – Residential Efficiency	≈ 73 Gg CO ₂ e reduction; thousands of homes renovated
Energy efficiency in central government buildings	237.0	Sovereign concessional loan (EIB / EBRD / GCF) + technical assistance	Mitigation	Buildings – Public Sector	≈ 19 Gg CO ₂ e reduction; improved public facilities
Energy efficiency in municipal buildings and services	209.1	Municipal window (WBIF / IPA III) + grant co-financing; EPC support	Mitigation	Buildings – Local Government	≈ 20 Gg CO ₂ e reduction; municipal EPCs launched
Energy retrofit of commercial buildings	738.8	On-lending credit lines + portfolio guarantee (DFIs)	Mitigation	Buildings – Commercial Efficiency	≈ 98 Gg CO ₂ e reduction; private investment mobilized
Construction of new energy-efficient buildings	394.1	Green mortgage lines + TA for building code implementation	Mitigation	Buildings – New Construction	Lifetime savings; market shift to EE design
Promotion of passive buildings and advanced design standards	1488.7	Blended loans + grants for early adopters; TA for architects / builders	Mitigation	Buildings – High-Performance	≈ 17 Gg CO ₂ e reduction; green construction market
Introduction of efficient electric motors in industry	157.5	Credit lines + guarantees; vendor finance; TA for audits	Mitigation	Industry – Energy Efficiency	≈ 15 Gg CO ₂ e reduction; energy savings in SMEs
Deployment of advanced industrial technologies	611.4	Blended finance + innovation grants (UNIDO / GCF)	Mitigation	Industry – Process Modernization	≈ 128 Gg CO ₂ e reduction; competitiveness improved
Modernization and increased use of railway transport	251.7	Sovereign concessional loan + WBIF grant	Mitigation	Transport – Rail Infrastructure	≈ 37 Gg CO ₂ e reduction; modal shift achieved
Construction of railway interconnection to the Republic of Bulgaria	1003.6	Blended loan (EIB / WBIF / IPA) + grant	Mitigation	Transport – Cross-Border Rail	Regional integration; reduced road emissions
Electrification of transport and EV infrastructure deployment	7051.5	Blended finance (GCF / EIB / EBRD); grants for public charging & early fleets	Mitigation	Transport – E-Mobility	≈ 62 Gg CO ₂ e reduction; EV adoption scaled up
Integrated management of forest fires	2.1	Grants / results-based payments (GEF / GCF / FAO) + TA	Mitigation & Adaptation	AFOLU – Forestry Protection	≈ 345 Gg risk reduction; enhanced resilience

National afforestation programme	10.9	Grants / VCM / REDD+ results-based payments	Mitigation & Adaptation	AFOLU – Forestry Expansion	≈ 312 Gg CO ₂ e removals; ecosystem benefits
Use of biochar for carbon sequestration on agricultural land	41.8	Results-based payments; VCM; agri-credit lines (FAO / GCF)	Mitigation	AFOLU – Cropland Management	≈ 110 Gg removals; soil fertility improved
Deployment of photovoltaic irrigation systems in agriculture	65.3	Concessional agri-credit + grant (FAO / GCF / IFAD)	Mitigation & Adaptation	AFOLU – Agriculture Energy	≈ 93 Gg CO ₂ e reduction; diesel replaced by solar
Landfill gas flaring for methane capture	28.6	PPP + concessional loan (EIB / EBRD) + EU grant	Mitigation	Waste – Solid Waste Mgmt.	≈ 490 Gg CO ₂ e reduction; methane captured
Mechanical and biological treatment (MBT) with composting in new landfills	50.3	PPP + concessional loan + EU / WBIF grant	Mitigation	Waste – Recycling & Composting	≈ 108 Gg CO ₂ e reduction; waste diverted from landfill

C.2. Financial Support Needs for Long-Term Climate Action Strategy (2020–2050) Implementation

C.2.1. Long-term Strategy overview and headline investment needs

North Macedonia’s Long-Term Climate Action Strategy with Action Plan (2020) sets a whole-economy pathway to 2050 under a WAM (“with additional measures”) scenario. It translates sectoral transition pathways into an investment plan spanning energy supply and networks, demand-side efficiency in buildings and industry, transport electrification and rail, AFOLU, and waste.

The Strategy’s detailed WAM table reports a total investment cost of €34.805 billion (2020 basis) across identified measures. To ensure consistency with this report’s pricing, we re-express that envelope to 2025 price levels and into USD using the same working assumptions applied elsewhere in Section C. This yields an indicative total of ≈ €41.54 billion (2025 prices) or ≈ US\$ 48.51 billion.

C.2.2. International Financial Support Needed

An analysis of the **Long-Term Climate Action Strategy’s investment table** indicates that several measures explicitly rely on **external or blended financing sources**—such as **EU and donor grants, IPP/PPP structures, and sovereign or DFI co-financing**. When these measures are isolated, the subset of investments dependent on international finance amounts to approximately **€22.34 billion (2020 prices)**.

Re-expressed to **2025 prices** and converted to USD using the working assumptions adopted in this report, the total reaches an estimated **€26.66 billion**, equivalent to **about US \$31.14 billion**. This figure represents the portion of the Strategy’s total capital requirement that cannot be mobilized solely through domestic public and private resources and will thus require **concessional, grant, or blended international support**.

The distribution of this international financing need is **highly concentrated** in a few key sectors that drive the majority of greenhouse-gas reductions:

- **Energy sector (≈84%)** – covering **transport electrification and rail modernization**, as well as **energy-efficiency improvements and clean-heat technologies** in buildings and industry. Together, these account for roughly **63 percent** of total international support needs.
- **Renewable energy generation (≈21%)** – primarily **utility-scale and distributed RES investments**, including solar, hydropower, and biomass facilities, along with associated grid integration and storage.
- **AFOLU and waste sectors (≈3%)** – comprising **afforestation, land-use improvements, and waste-management modernization**, all of which require grant-based or results-based international finance mechanisms to be viable.

This structure underscores that **international climate finance will be indispensable** for achieving the long-term mitigation targets outlined in the Strategy and for sustaining the transition toward a **low-carbon, climate-resilient economy** consistent with the objectives of the Paris Agreement.

Table 3. Measures Requiring International Financial Support (from the Long-Term Climate Action Strategy (Re-estimated to 2025 Prices and USD))

Policy / Measure	Investment (USD m, 2025)	Indicative source(s) of international finance	Sector
Large hydropower plants (PPP/IPP)	2,269	PPP/IPP/ESM; DFI project finance/guarantees	Energy – Renewable Generation (RES)
Rooftop solar power plants	875	Donors; central & local subsidies; EE fund	
RES without subsidies (utility-scale)	2,469	PPP/IPP/ESM; DFI debt + guarantees	
Biomass power plants (CHP optional)	45	IPP; possible blended lines via DFI/GEFF	
Solar thermal collectors	287	Donors; EE fund; gov. incentives	Energy – Efficiency & Buildings/Industry
Heat pumps (national programmes – large scale)	460	Donors; EE fund; central & local incentives	
Heat pumps (additional municipal/private programmes)	347	Donors; EE fund; central & local governments	
Renovation of existing residential buildings	3,731	Donors; EE fund; commercial EE credit lines	
Renovation of central government buildings	375	Sovereign concessional + TA (donors)	
Renovation of municipal buildings	314	Donors + local budgets; EPC support	
Renovation of commercial buildings	1,405	Donors; EE fund; commercial loans	
New buildings (≥ Class C)	409	Donors; EE fund; commercial EE loans	
Passive buildings	1,718	Donors; EE fund; municipal support	
Efficient electric motors (industry)	259	DFI on-lending; guarantees; donor TA	
Advanced industrial technologies	1,492	Blended finance; EE fund; donor TA	Energy – Transport Electrification & Rail
Railway link to Bulgaria	1,031	Sovereign concessional + EU/WBIF grants	

Transport electrification (EVs, charging, fleets)	11,764	Blended (DFIs + guarantees) + public incentives	
CH ₄ reduction in dairy (3%)	0.5	IPARD, FAO, GCF (results-based)	AFOLU
N ₂ O reduction in dairy manure (20%)	2.1	IPARD/FAO/GCF	
N ₂ O reduction in swine manure (13%)	2.1	IPARD/FAO/GCF	
N ₂ O reduction in dairy manure <50 LU (20%)	2.1	IPARD/FAO/GCF	
Biochar for soil carbon	64	IPARD/FAO/GCF; possible VCM/Article 6	
Photovoltaic irrigation	66	IPARD/FAO/GCF/IFAD	
Land-use conversion >15% slope (cropland)	4	IPARD/FAO/GCF	
Contour cultivation (5–15% slopes)	2	IPARD/FAO/GCF	
Perennial grass in orchards/vineyards (>5% slope)	2	IPARD/FAO/GCF	
Landfill gas flaring	34	EU funds; PPP; EIB/EBRD	
MBT with composting (new landfills)	55	EU funds; PPP; EIB/EBRD	
Waste sorting – paper	5	EU funds; PPP	
Industrial waste & materials management	—	EU funds; MOEPP; municipalities	

D. Information on financial support received under Article 9 of the Paris Agreement

D.1. Committed International Support (Article 9): Total Commitments and Total Climate Finance (2020–2022) – project-based approach

This subsection presents international support recorded as **committed/pledged** for the 2020–2022 reporting window, in line with Article 9 requirements. The portfolio under review comprises climate-related operations/projects financed by external providers alongside national co-financing. For clarity, the **total amount of the project portfolio includes both international (donor) and domestic contributions**. It is shown to convey the overall scale of climate-related activity during the period, but it is **not** used as the Article 9 metric of “support received,” which pertains to international provider finance.

Within this portfolio, the **total international donors’ (funder) contribution (USD 198,205,109)** represents the **aggregate international commitment/pledge** attributable to 2020–2022. This figure captures the value of provider financing that was legally committed to projects active in, or initiated during, the BTR1 window, irrespective of the pace of subsequent disbursement. It should therefore be interpreted as a pipeline-oriented measure of external support rather than a cash-flow measure.

To identify the portion of these commitments that is climate-attributable, the analysis applies the **Rio Marker methodology**. Using the agreed coefficients for activities tagged **principal** (climate objective is the main focus), **significant** (climate objective is explicitly stated but not the primary focus), and **screened/not targeted**, the portfolio is scaled to derive **climate finance**. On this basis, **climate finance amounts to USD 96,414,444** for the period. This value represents the Rio-marker-adjusted share of

committed international funding and is therefore the most policy-relevant approximation of climate-directed support within the committed pipeline.

The distinction between these two figures is important for interpretation and transparency. The **total donors' commitment (USD 198.2 million)** narrows this to the portion financed by international providers only, capturing the scale of external pledges in the window. The **climate finance (USD 96.7 million)** then applies Rio-marker attribution to those commitments, yielding an estimate of the finance directly aligned with climate objectives.

Table 4. Committed International Support

Total commitment	Amount (USD)	Climate finance as %
Total internaional commitment for climate related projects (in USA\$)	198.205.109	48,6%
Total climate finance commitment (in USA\$)	96.414.444	

All amounts are presented in original currency and converted to USD using the exchange rates recorded for each entry. Where commitments are recorded at project level without an annual split, they are assigned to the 2020–2022 window based on project approval and implementation periods documented in the source data. This approach preserves comparability across entries and avoids inflating the climate-attributable figure with periods outside the scope of this report.

Two caveats accompany these results. First, **commitments differ from disbursements**; they reflect the value of legally agreed funding and not the timing of actual expenditures. Any analysis of execution or absorption will be addressed separately using disbursement data. Second, **Rio-marker attribution provides a standardized, conservative estimate** of climate relevance but does not substitute for project-level impact metrics; it is a classification-based method applied consistently across the portfolio to reportable international finance.

In summary, during 2020–2022 North Macedonia's climate-related portfolio totaled **USD 198.2 million** corresponds to **international commitments/pledges**. After applying Rio-marker coefficients, **USD 96.4 million** is assessed as **climate finance** within those commitments. These figures will anchor the Article 9 presentation of **committed external support**, while subsequent sections of the report will separately address execution patterns and other analytical dimensions using the appropriate datasets.

Climate-specific (CS) or Climate-relevant (CR)

In the Rio Marker system, **Principal/CS** activities are designed with climate as the main objective, while **Significant/CR** activities embed climate as an explicit but secondary objective. This difference shows up in both the **volume of commitments** and the **rate at which those commitments translate into climate finance**.

Across **USD 198,205,109** in international commitments, **Principal/CS** represents **USD 65,294,000 (≈32.9%)**, and **Significant/CR USD 132,911,109 (≈67.1%)**. Applying Rio-marker attribution yields a **climate finance total of USD 96,414,444**, composed of **USD 43,250,000 (≈44.9%)** from **Principal/CS** and **USD 53,164,443 (≈55.1%)** from **Significant/CR**.

Attribution rates differ as expected: **Principal/CS** converts **≈66.2%** of its commitments into climate-attributed finance ($43.25 \div 65.294$), reflecting its primary climate focus, whereas **Significant/CR** converts **≈40.0%** ($53.164443 \div 132.911109$). In aggregate, the portfolio's **climate share of commitments** is **≈48.6%** ($96.414444 \div 198.205109$).

Put simply: **Significant/CR dominates the volume of commitments**, so it contributes a slightly larger share of the climate-attributed total, **while Principal/CS delivers a higher climate “yield” per committed dollar**—both patterns consistent with the definitions of the two Rio Marker categories.

Table 5. Climate-specific (CS) or Climate-relevant (CR)

Type	Total international commitment for the climate related project in USA\$	Total climate finance commitment in USA\$
Principal	65.294.000	43.250.000
Significant	132.911.109	53.164.443
Total	198.205.109	96.414.444

Purpose of funding: Mitigation, Adaptation or Cross-cutting

The composition of international climate finance commitments varies by **purpose of funding**, reflecting the balance between investments aimed at reducing greenhouse gas emissions and those enhancing resilience to climate impacts. Each purpose category contributes differently to both the **volume of international commitments** and the **climate-attributed share** under the Rio Marker methodology.

Across the 2020–2022 period, **adaptation** emerges as the dominant focus of international commitments, totaling **USD 100,907,310 (≈50.9%)** and yielding **USD 46,895,986 (≈48.6%)** in climate-attributed finance. This highlights the strong orientation of support toward climate resilience, risk reduction, and institutional strengthening to address the impacts of climate change.

Mitigation follows with **USD 52,164,651 (≈26.3%)** in commitments and **USD 28,592,484 (≈29.7%)** in Rio-attributed climate finance, reflecting the country’s engagement in energy efficiency, renewable energy, and emissions-reduction initiatives.

Cross-cutting activities—those integrating both mitigation and adaptation dimensions or focusing on system-wide enabling measures—amount to **USD 45,133,149 (≈22.8%)** in total commitments and **USD 20,925,974 (≈21.7%)** in climate-attributed amounts.

Conversion rates from committed to climate-attributed amounts illustrate the expected differentiation by purpose: approximately **54.8%** for mitigation, **46.5%** for adaptation, and **46.4%** for cross-cutting operations. Overall, the **aggregate climate finance share** across all purposes remains **48.6%** of total international commitments, consistent with the broader portfolio trend observed in the previous subsection.

This distribution underscores the **predominant emphasis on adaptation and resilience-building**, while maintaining substantial support for mitigation and cross-sectoral interventions that facilitate long-term low-carbon and climate-resilient development pathways.

Table 6. Purpose of funding: Mitigation, Adaptation or Cross-cutting

Purpose of funding	Total international commitment for the climate related project in USA\$	Total climate finance commitment in USA\$
Mitigation	52.164.651	28.592.484
Adaptation	100.907.310	46.895.986
Cross-cutting	45.133.149	20.925.974
Total climate finance	198.205.109	96.414.444

Contribution Providers

The composition of international climate support varies significantly across providers, reflecting the different modalities of engagement, thematic priorities, and financing instruments used by each partner. The analysis below retains the commitment-based perspective, showing both the total amount of international finance committed and the corresponding Rio-attributed climate share.

The European Union (EU), World Bank (IBRD), and Switzerland emerge as the three largest providers, collectively accounting for USD 162.94 million ($\approx 82.2\%$) of total international commitments and USD 70.67 million ($\approx 73.3\%$) of Rio-attributed climate finance.

- The World Bank (IBRD) provided the largest volume of commitments at USD 77.9 million, of which USD 31.16 million ($\approx 40.0\%$) was Rio-attributed as climate finance.
- Switzerland follows with USD 50.96 million \rightarrow USD 20.39 million ($\approx 40.0\%$), while the EU recorded USD 34.08 million \rightarrow USD 19.12 million ($\approx 56.1\%$), reflecting the strong climate orientation of EU-funded IPA and thematic projects.

Among multilateral climate funds, the Global Environment Facility (GEF) shows a high attribution rate—USD 12.06 million \rightarrow USD 9.83 million ($\approx 81.5\%$)—followed by the Green Climate Fund (GCF) with USD 3.69 million \rightarrow USD 2.39 million ($\approx 64.8\%$). These results confirm the dedicated climate focus of these mechanisms, consistent with their mandates under the UNFCCC framework.

The Joint SDG Fund and EBRD blended facility, combining concessional and non-concessional elements, recorded USD 9.34 million in commitments and USD 3.74 million ($\approx 40.0\%$) in climate finance, mainly supporting low-carbon investments and green finance facilities.

Bilateral donors such as Sweden, USAID, GIZ, and the International Visegrad Fund (IVF) display 100% attribution, as their programmes are fully climate-oriented and explicitly designed to address mitigation, adaptation, or green governance priorities. Similarly, Germany's bilateral contribution (\approx USD 3.45 million \rightarrow USD 3.44 million) also shows near-full attribution, primarily through GIZ and related technical cooperation activities.

The Multilateral Fund under the Montreal Protocol provided USD 0.75 million, of which USD 0.36 million ($\approx 47.6\%$) was climate-attributed, consistent with its focus on ozone-depleting substance phaseout and related climate co-benefits. The FAO TCP recorded USD 0.38 million, fully attributed to climate purposes (100%), reflecting the direct integration of climate-smart agriculture into its programming.

Across all contributors, the totals reconcile to USD 198.2 million in international commitments and USD 96.4 million in Rio-attributed climate finance, yielding an overall attribution rate of 48.6%—fully consistent with the aggregate portfolio results. This distribution confirms the leading role of multilateral development finance institutions and European partners in supporting North Macedonia's transition toward a low-carbon and climate-resilient development model.

Table 7. Distribution of Climate Finance by Provider (2020–2022)

Funder	Total international commitment for the climate related project in USA\$	Total climate finance commitment in USA\$
EU	34.076.183	19.118.703
FAO TCP	381.000	381.000
GCF	3.687.651	2.390.406
GEF	12.056.698	9.828.645
Germany	3.445.099	3.442.260
GIZ	209.725	209.725
International Visegrad Fund (IVF)	23.160	23.160
Joint SDG Fund (+ EBRD credit; Gov. NMK; local FIs)	9.340.000	3.736.000

Multilateral Fund (Montreal Protocol)	751.904	357.762
Sweden	5.027.583	5.027.583
Switzerland	50.959.037	20.392.132
USAID	347.069	347.069
World Bank (IBRD)	77.900.000	31.160.000
Total	198.205.109	96.414.444

Bilateral vs. Multilateral Commitments

The overall composition of climate-related finance shows a clear predominance of **multilateral** sources, both in total commitments and in climate-attributed amounts. This reflects North Macedonia's strong integration into global and regional mechanisms such as the EU's Instrument for Pre-Accession (IPA), the Global Environment Facility (GEF), the Green Climate Fund (GCF), and development lending by the World Bank and other international institutions.

During the 2020–2022 reporting period, **multilateral commitments** amounted to **USD 138,216,596**, representing approximately **69.7%** of total international commitments. Of this, **USD 66,995,675 (~48.5%)** was Rio-marker-attributed as climate finance. These commitments include both concessional loans and grants for programs focusing on long-term resilience, energy efficiency, renewable energy, and capacity building for environmental governance. The relatively high conversion rate aligns with the mandate of multilateral funds to mainstream climate considerations across their portfolios.

Bilateral commitments total **USD 59,988,513**, or **30.3%** of total international support, generating **USD 29,418,769 (~49.0%)** in Rio-attributed climate finance. This group includes targeted programs by Switzerland, Sweden, Germany (through GIZ), and the United States (USAID), primarily supporting adaptation and institutional-strengthening activities. The close parity between bilateral and multilateral attribution rates—both around **48–49%**—illustrates a consistent application of Rio-marker criteria across funding channels, even though their delivery modalities differ.

In aggregate, **USD 96,414,444** in climate-attributed finance is derived from **USD 198,205,109** in international commitments, yielding an overall attribution rate of **48.6%**—identical to the headline figure presented earlier. The distribution underscores the **leading role of multilateral mechanisms** in scaling up climate finance in North Macedonia, complemented by **bilateral initiatives** that emphasize locally grounded, adaptation-oriented interventions.

Table 8. Bilateral vs. Multilateral Commitments

	Total international commitment for the climate related project in USA\$	Total climate finance commitment in USA\$
Bilateral	59.988.513	29.418.769
Multilateral	138.216.596	66.995.675
Total	198.205.109	96.414.444

Distribution of Climate Finance by Sector

The distribution of international commitments and their Rio-attributed climate components reflects the **sectoral orientation** of North Macedonia's climate-related support during 2020–2022. Based on the Rio Marker classification, the analysis highlights both the **volume of international commitments** and the **extent of climate attribution** across key sectors.

The **Water & Sanitation** sector received the largest volume of international commitments, amounting to **USD 52.83 million**, of which **USD 25.42 million (≈48.1%)** was attributed as climate finance. This reflects the continued emphasis on improving wastewater systems, integrated water resource management, and adaptation to floods and droughts.

The **Agriculture** sector follows with **USD 50.88 million** in total commitments and **USD 20.58 million (≈40.4%)** in climate-attributed funding. This aligns with national priorities for climate-smart agriculture, soil conservation, and sustainable land management, supporting rural resilience and food security.

General Environmental Protection ranks third, with **USD 37.65 million** committed and **USD 23.14 million (≈61.5%)** attributed as climate finance. This sector includes biodiversity protection, pollution reduction, and institutional capacity building under programs financed by the EU, GEF, and other partners.

Energy Generation, Distribution & Efficiency received **USD 28.41 million** in commitments, with **USD 11.97 million (≈42.1%)** attributed as climate finance. This funding supports renewable energy initiatives, energy efficiency programs, and modernization of public infrastructure to reduce emissions.

Humanitarian Aid – Disaster Prevention and Preparedness also represents a significant component, totaling **USD 22.02 million** in commitments and **USD 10.87 million (≈49.4%)** in climate-attributed amounts. These projects focus on early warning systems, flood resilience, and community preparedness to reduce vulnerability to climate-related disasters.

Smaller but important contributions are observed in **Government & Civil Society (USD 2.33 million → USD 2.01 million, ≈86.4%)**, **Other Multisector (USD 4.00 million → USD 2.34 million, ≈58.3%)**, **Education (USD 63,091 → USD 63,091, 100%)**, and **Transport & Storage (USD 14,196 → USD 14,196, 100%)**. These represent governance reforms, awareness programs, and enabling actions supporting broader climate objectives.

Across all sectors, total international commitments amount to **USD 198.21 million**, and total Rio-attributed climate finance equals **USD 96.41 million**, resulting in an overall attribution rate of **48.6%**. The pattern underscores a **strong adaptation focus**, especially in **water, agriculture, and environmental protection**, complemented by mitigation-oriented investments in **energy efficiency** and cross-cutting governance measures that enhance institutional resilience and policy integration.

Table 6. Distribution of Climate Finance by Sector

Sector	Total international commitment for the climate related projects (in USA\$)	Total climate finance commitment (in USA\$)
Agriculture	50.881.000	20.581.000
Education	63.091	63.091
Energy Generation, Distribution & Efficiency	28.412.130	11.972.130
General Environmental Protection	37.654.816	23.143.034
Government & Civil Society	2.327.344	2.011.405
Humanitarian Aid – Disaster prevention & preparedness	22.019.433	10.871.993
Other Multisector	4.003.979	2.336.011
Transport & Storage	14.196	14.196
Water & Sanitation	52.829.119	25.421.583
Total	198.205.109	96.414.444

Type of Funding and Climate Attribution

The structure of international climate-related commitments in North Macedonia reveals a clear predominance of **grants** as the primary financing instrument, complemented by **concessional loans** provided through multilateral development banks and blended-finance facilities. The analysis applies the Rio Marker methodology to both categories to estimate their respective climate-attributed shares.

During the 2020–2022 period, **grants** amounted to **USD 110,965,109**, accounting for **56.0%** of total international commitments. Of this, **USD 61,518,444 (≈55.4%)** was Rio-attributed as climate finance. This reflects the continued reliance on grant-based support from bilateral partners (Switzerland, Sweden, Germany) and multilateral sources such as the EU, GEF, and GCF, which primarily fund adaptation measures, institutional capacity building, and environmental governance programs.

Loans, predominantly from the **World Bank (IBRD)** and **EBRD** through blended-finance mechanisms, represent **USD 87,240,000**, or **44.0%** of total international commitments. Of this amount, **USD 34,896,000 (≈40.0%)** is attributed as climate finance. These resources are generally linked to mitigation-oriented investments, particularly in public-sector energy efficiency, low-carbon infrastructure, and climate-resilient urban systems.

The comparative attribution rates—**≈55% for grants** and **≈40% for loans**—reflect the different policy focus and design features of the two modalities. Grant-financed projects typically emphasize adaptation, capacity development, and enabling frameworks with high climate relevance, while loan-financed operations combine climate co-benefits with broader development objectives, leading to slightly lower Rio attribution levels.

In total, the portfolio comprises **USD 198.2 million** in international commitments and **USD 96.4 million** in Rio-marker-attributed climate finance, yielding an overall climate share of **48.6%**. This balance underscores the dual structure of North Macedonia’s international climate finance—grant-based support driving institutional and policy transformation, and loan-based instruments supporting large-scale, mitigation-oriented investment programs.

Table 7. Type of Funding of international climate commitment

Type of funding	Total internaional commitment for the climate related project (in USA\$)	Total climate finance commitment (in USA\$)
Grants	110.965.109	61.518.444
Loans	87.240.000	34.896.000
Total	198.205.109	96.414.444

Distribution by Type of Support

In the same **commitments-based** frame, the portfolio classifies each activity by one or more **types of support**. These categories are **not mutually exclusive**—most projects blend instruments (e.g., finance + capacity building), so totals by type will legitimately **overlap**. Climate attribution (Rio markers) is applied separately and does not change the tagging below.

Financial Support. This is the backbone of the portfolio, covering the **funded actions themselves**—from investment operations to grant-financed project delivery. It spans large programmes (e.g., **IBRD** public-sector energy efficiency; **Swiss/EU** water, waste and flood-risk operations) as well as mid-size and smaller grants (e.g., energy-efficiency pilots, biodiversity and land management). In practice, **Financial Support** co-occurs with other types, funding the measures that Capacity/Technical/Technology components prepare or enable.

Capacity Building. A pervasive feature across providers, focused on **institutions, systems, and people**. It includes transparency and MRV work (**GEF CBIT**), GCF readiness and NDA strengthening (**GCF/FAO, GIZ**), hydrometeorological diagnostics and governance (**GCF/WMO**), parliamentary and civil-society engagement (**GIZ, Sweden**), and DRR capacities in vulnerable regions (**Switzerland/UNDP**). These elements anchor sustainability and are frequently paired with Financial Support to ensure absorption and long-term operation.

Technical Support. Targeted **technical assistance**—studies, designs, regulatory alignment, operating procedures, feasibility and procurement packages—that make investments implementable. Examples include industrial-pollution alignment with **IED/BAT**, environmental information systems (**EMIS**), landfill closure packages, and detailed designs for wastewater and water-supply upgrades (e.g., **Kocani/Vinica** design work). Technical Support typically precedes or runs alongside Financial Support to de-risk delivery.

Technology Support. Assistance tied to **specific technologies or systems**: Paris-transparency toolsets (**CBIT/MRV**), **Montreal Protocol** technology transitions (HCFC phase-out, HFC enabling), **hydromet** observation and data systems, **RES/EE** deployments (e.g., **prosumer solar**, municipal EE), and process-technology upgrades in water/waste. These components are often bundled with Financial Support (for procurement/deployment) and Capacity Building (for O&M and institutional uptake).

General (cross-cutting enabling). Activities whose primary value is **enabling and coordination**—e.g., air-quality plans, climate-law and long-term strategy support, awareness and outreach, multi-stakeholder platforms, and programme-level management. “General” tags appear where the intervention strengthens the **overall enabling environment** rather than a single technology or capacity stream.

Bilateral Climate-Related Official Development Assistance (ODA) to North Macedonia

D.2. Bilateral climate-related official development assistance (ODA)

In this part, we will **analyze bilateral climate-related official development assistance (ODA)** provided to **North Macedonia** as reported in the **OECD Rio Marker database**.

The analysis uses data from **all DAC member countries and EU institutions**, covering projects with climate change objectives—both **mitigation** and **adaptation**—classified according to the **Rio Marker methodology**. Each activity is assigned a relevance score: **Principal (score 2)** when climate action is the main objective, or **Significant (score 1)** when climate goals are secondary.

All figures are reported in **current U.S. dollars** and represent **commitments** rather than disbursements. The dataset provides an overview of **bilateral climate finance support** received by North Macedonia, forming the basis for assessing **international support under Articles 9–11 of the Paris Agreement**.

Between **2020 and 2022**, North Macedonia received an estimated **USD 138.1 million** in **bilateral official development assistance (ODA)** commitments that targeted climate change objectives. These commitments, reported by all **OECD DAC member countries**, include both projects where climate action was the **principal goal** and those where it was a **significant but secondary objective**.

Table 8. Principa and Significant climate related ODA commitement

Time period	2020		2021		2022		Total 2020-2022	
	Principal	Significant	Principal	Significant	Principal	Significant	Principal	Significant
Climate change mitigation	6.573.529	8.334.700	26.017.029	24.232.079	2.028.266	19.739.056	34.618.824	52.305.836

Climate change adaptation	6.517.682	9.380.570	1.555.588	23.407.855	726.525	9.634.245	8.799.795	42.422.670
Total	13.091.211	17.715.270	27.572.617	47.639.934	2.754.791	29.373.302	43.418.619	94.728.506

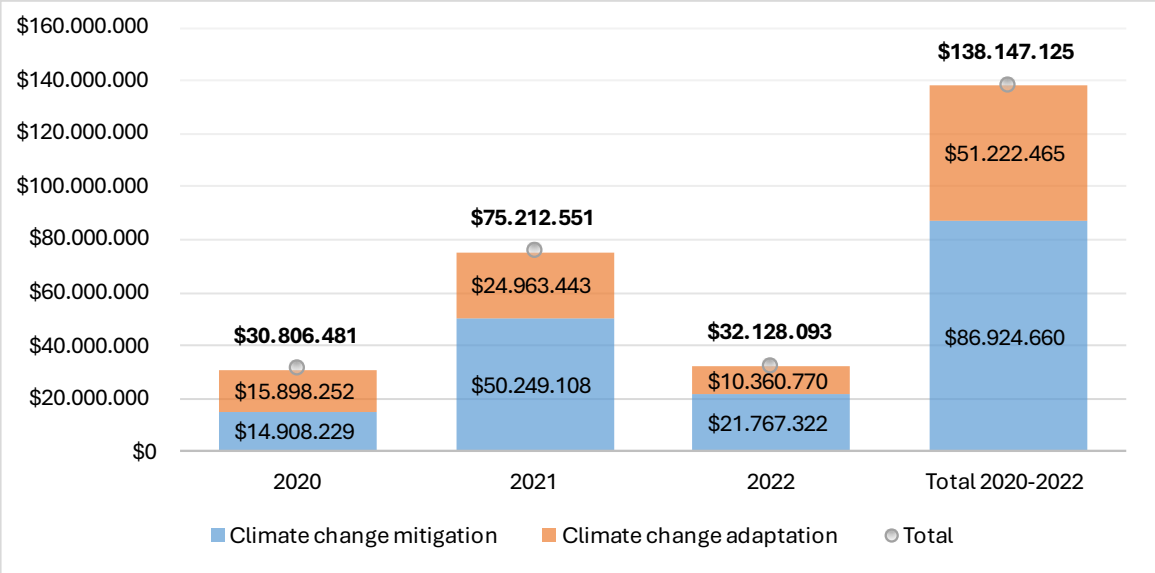
The overall trend shows a **strong growth in climate-related commitments in 2021**, when total funding more than doubled compared to 2020. That year alone accounted for over **half of the total three-year volume**, driven by large infrastructure, environmental protection, and energy efficiency programs financed by EU institutions and multilateral partners. By 2022, the total volume decreased, returning to pre-2021 levels as project pipelines normalized after the post-pandemic recovery period.

When disaggregated by thematic area, **mitigation-oriented projects dominated** the bilateral climate portfolio, accounting for **about USD 86.9 million (~63%)**, compared with **USD 51.2 million (~37%)** directed to adaptation. Mitigation commitments focused primarily on **energy generation, efficiency, and low-emission transport**, while adaptation activities were concentrated in **water management, agriculture, and disaster risk reduction**—areas directly linked to the country’s Nationally Determined Contribution (NDC) and adaptation priorities.

In terms of climate relevance, the data reveal that **“significant” projects far outweigh “principal” ones**. Only about **one-third of total commitments (USD 43.4 million)** were fully climate-specific, while **two-thirds (USD 94.7 million)** incorporated climate objectives as part of broader development interventions. This distribution indicates that most bilateral support to North Macedonia integrates climate action as a **cross-cutting development concern**, rather than through stand-alone climate projects.

Taken together, the 2020–2022 data portray a **steady integration of climate objectives across the development portfolio**, with mitigation remaining the dominant focus and adaptation receiving a consistent share of support. The trend reflects a **gradual transition from isolated climate projects toward mainstreamed climate financing**, consistent with global ODA practices under the Paris Agreement’s Articles 9–11 framework.

Figure 1. Climate change mitigation & Climate change adaptation related ODA commitment



E. Information on Technology Development and Transfer Support Needed (Article 10)

(a) Plans, Needs, and Priorities

North Macedonia's technology development and transfer needs stem jointly from the **Enhanced Nationally Determined Contribution (ENDC 2020–2030)**, the **National Energy and Climate Plan (NECP 2021–2030)**, and the **Long-Term Climate Strategy and Action Plan (2020–2050)**. Together they define a coherent vision of decarbonization, adaptation, and sustainable growth built on four technological pillars:

1. **Energy and Industry Transformation (ENDC + NECP)** – deployment of renewable electricity generation (solar, wind, hydropower, and biomass CHP); modernization of transmission/distribution networks through **smart grids, advanced metering, and storage systems**; rehabilitation and expansion of **hydropower plants**; and increased **electrification of transport** supported by charging networks and interconnections (e.g. 400 kV Bitola–Elbasan).
2. **Buildings and Urban Systems (ENDC + NECP)** – comprehensive **building-renovation programs** and **heat-pump roll-out**, use of **solar thermal collectors, LED street-lighting modernization**, and digital building-energy-management tools financed via the **Energy Efficiency Fund**.
3. **Agriculture, Forestry, and Waste (ENDC + LTS)** – application of **climate-smart irrigation, methane-capture and MBT facilities, forest-fire prevention and afforestation**, and **biochar or PV irrigation** technologies to reduce non-CO₂ emissions and strengthen adaptation.
4. **Cross-Cutting Innovation and Governance (LTS + ENDC + NECP)** – establishment of an integrated **MRV and transparency system**, climate-data digitalization, **research and innovation programs (FITD, Smart Communities)**, and green-finance mechanisms to leverage private capital for clean-technology diffusion.

(b) Technology Development and Transfer to Enhance Endogenous Capacities

Building endogenous capacity is central to all three frameworks. Key needs include:

- **Testing, certification, and installer training** for heat-pump and building-efficiency technologies.
- **System-operation, forecasting, and balancing expertise** for grid operators and utilities.
- **Technical-vocational training** for e-mobility servicing, renewable-energy O&M, and energy auditing.
- **Integrated MRV systems** and QA/QC protocols enabling consistent reporting under the Enhanced Transparency Framework.
- **Research and SME innovation programs** to localize clean technologies and foster public-private partnerships.

F. Technology development and transfer support received (Article 10)

During 2020–2022, North Macedonia received a blend of investment, technical assistance, and institutional support that moved technologies along the full cycle—**planning and piloting → deployment → early diffusion**—while strengthening **domestic capacities** in ministries, utilities, municipalities, academia, and SMEs. Project-by-project details (technology type, entities, status, and results) are provided in the **Annex 1**; this section synthesizes the technology-transfer outcomes.

Scope and modalities of support. Support covered smart-grid enablement (loss-reduction analytics, advanced metering, renewable integration), large-scale and distributed clean energy, building renovation with **heat-pump** rollout, district-heating modernization, efficient municipal services (e.g., LED street lighting), clean-transport enablers, wastewater and solid-waste methane solutions (MBT, landfill-gas capture), flood-risk and watershed measures, and ecosystem restoration. Cross-cutting activities strengthened MRV/transparency systems, environmental information platforms, readiness for climate-finance access, and standardized procurement/financing models (e.g., performance contracting and de-risking windows).

Capacity and know-how building. A consistent feature was the pairing of **hardware with practice**: standard operating procedures, O&M protocols, digital monitoring, QA/QC, and targeted training. Capabilities were institutionalized through utility manuals, accreditation and certification for installers and energy auditors, and templates for procurement and performance management. Readiness and de-risking instruments improved access to concessional finance and **mobilized private capital**, enabling replication beyond initial pilots.

Stages across the technology cycle. Support spanned: (i) **research and planning** (diagnostics, standards, pipeline preparation), (ii) **demonstration** (pilots for smart-grid functions, efficiency models, and risk-reduction solutions), (iii) **deployment** (utility, building and municipal implementation at scale), and (iv) **diffusion** (replication through standardized designs, toolkits, and trained local providers).

Illustrative climate-specific case. A **low-GWP conversion in the refrigeration and air-conditioning servicing sector**—classified as **climate-specific**—combined policy and licensing measures with technician training, recovery/recycling equipment, and updated servicing practices. Beyond direct reductions of high-GWP substances, this intervention embedded compliance systems and skills nationally, exemplifying technology transfer that progresses from demonstration to broad deployment and diffusion.

Lessons and remaining gaps. Results were strongest where “**people + procedures + platforms**” advanced together: trained operators and installers, clear O&M/QA/QC, and digital data systems. Standardized financing and procurement tools lowered transaction costs and accelerated uptake. Challenges encountered included fragmented project information across institutions, differences between commitment and disbursement timelines, and uneven climate-specific tagging during design. These are being addressed through improved documentation, MRV integration, and the traceability conventions applied in this report.

Support received in 2020–2022 did more than supply equipment—it **transferred capabilities**, codified repeatable practices, and established the data and financing foundations needed to **sustain and scale** technology under ENDC/NECP implementation and the long-term pathway set by the LTS. For specific activities and quantified results, consult the **Annex 1**.

G. Information on capacity-building support needed under Article 11 of the Paris Agreement

North Macedonia's capacity-building needs reflect its ambition to fully operationalize the Enhanced Nationally Determined Contribution (ENDC), the National Energy and Climate Plan (NECP), and the Long-Term Climate Action Strategy (LTS). These needs focus on **institutional strengthening**, **technical expertise**, and **systemic coordination** across sectors, while fostering transparency, innovation, and public engagement in climate governance.

1. Strategic Approach to Capacity Building

The national approach seeks to move beyond project-based, ad hoc training toward a **systematic and institutionalized capacity-building framework**. This framework will be anchored in the forthcoming **Law on Climate Action**, which establishes the Ministry of Environment and Physical Planning (MoEPP) as the lead coordinating body, supported by the National Climate Change Council and sectoral institutions. The goal is to ensure a "whole-of-government" approach that integrates climate considerations into planning, budgeting, and monitoring systems.

Building upon lessons from the ENDC Implementation Roadmap and the NDC Financing Strategy, the country aims to **link capacity development directly with climate investment readiness**, project pipeline preparation, and transparent climate finance tracking (MRV). In this regard, **capacity building is both an enabling condition and an investment multiplier**.

2. Priority Capacity-Building Needs

Institutional capacities and coordination. The ENDC Roadmap identifies six priority areas requiring institutional capacity improvement:

- Launching and coordinating cross-government climate processes;
- Integrating NDC priorities into sectoral programmes and preventing policy conflicts;
- Training public officials to strengthen technical and managerial competencies;
- Conducting regulatory and policy revisions for alignment with EU climate acquis;
- Engaging non-state actors effectively;
- Monitoring and reporting progress through robust MRV and MVP systems

Technical and analytical capacities. Enhanced capacity is required to:

- Develop national and subnational **GHG inventories, MRV systems, and climate finance tracking mechanisms**;
- Conduct **technology and financial needs assessments** to identify viable mitigation and adaptation projects;
- Strengthen modelling and data analytics for policy evaluation, including **cost-benefit analysis and climate-risk assessments**;
- Build sectoral competence in energy transition, sustainable transport, AFOLU practices, and circular waste management

The NDC Financing Strategy highlights a need for:

- Expertise in **project design, concept note writing, and proposal development** for international climate funds;
- Knowledge of **funding modalities** (grants, blended finance, guarantees, results-based payments);

- Strengthening of **national implementing entities** to achieve direct access accreditation to funds such as the **GCF** and **Adaptation Fund**;
- Enhancing the capacity of the **financial sector** to assess climate-related risks and mobilize private investment

Data management and transparency: Developing robust systems for tracking and reporting climate-related expenditures remains a critical gap. Building a **national MRV for climate finance** with standardized methodologies, KPIs, and inter-institutional data-sharing mechanisms is a priority to ensure transparency and facilitate donor confidence

NDC Financing Strategy

The LTS and NECP both emphasize that capacity-building must extend beyond public institutions to include **citizens, civil society organizations, local authorities, and the private sector**. Efforts will focus on:

- Strengthening **public access to climate information** through the national climate data portal;
- Expanding **education and awareness campaigns** on energy efficiency, sustainable consumption, and climate adaptation;
- Supporting **local-level participatory planning** and climate-resilient community initiatives, particularly in vulnerable municipalities;
- Promoting gender-responsive and inclusive participation in decision-making on climate and energy issues.

Capacity-building support will strengthen national systems to:

- Enhance data accuracy and transparency in reporting under the Paris Agreement;
- Increase the effectiveness and accountability of ENDC implementation;
- Enable sustainable access to international climate finance;
- Accelerate the transition to a low-carbon, climate-resilient economy;
- Improve public understanding, trust, and participation in climate action.

In line with Article 11, North Macedonia requires sustained capacity-building support that strengthens institutions, equips experts, and engages society at all levels. This support will bridge the existing gaps in knowledge, coordination, and implementation capacity, ensuring that climate ambition is matched with execution readiness. Specific activities and timelines for the planned capacity-building programmes will be presented in the **Annex 1**.

H. Information on capacity-building support received under Article 11 — narrative

During 2020–2022, North Macedonia received capacity-building from multilateral funds and bilateral partners that supported implementation of the ENDC, NECP and the Long-Term Climate Strategy. Activities in the portfolio (see Annex: Capacity-building & Technology Projects, 2020–2022) include training, advisory services, diagnostics, guidelines/toolkits and peer-learning. They engaged national institutions, municipalities and public utilities, CSOs, academia and private intermediaries, and were delivered at national level with complementary regional and local actions.

Main areas covered. Support focused on: (i) governance and coordination of climate workstreams; (ii) transparency and information management (e.g., inventory/MRV practices and environmental data systems); (iii) access to finance and project preparation (pipeline development, procurement and

performance-contracting models); and (iv) sector skills in priority domains such as energy efficiency and renovation, renewable integration, waste and wastewater management, hydrometeorology, climate-smart agriculture and industrial environmental management.

Climate-specific (CS) emphasis. A subset of the portfolio is tagged as CS in the Annex. Illustrative CS activities include readiness and transparency assistance, low-GWP transitions in refrigeration/air-conditioning servicing, municipal energy-efficiency programmes and hydrometeorological capacity diagnostics. These interventions aimed to strengthen practical capabilities for planning, operating and maintaining climate-relevant measures.

Observed contribution to capacity. Across institutions and delivery partners, the received support contributed to clearer roles and workflows, greater familiarity with reporting and data-management practices, improved ability to originate and prepare climate projects, and broader participation of local actors in implementation.

Reference to the common tabular format. The accompanying Annex 1 provides the required fields per activity—title, description, implementing and recipient entities, support type (mitigation/adaptation/cross-cutting), timeframe, status, and use/impact— with capacity-building and CS/CR tags as recorded in the synthesized project table.

Annex 1. International FTC support received under Article 9 -11 of the Paris Agreement in the period 2020 - 2022

INFORMATION ABOUT THE PROJECT								FINANCING OF THE PROJECT			Type of climate activity		Type of Support							
No.	Project name	Short description of the project (Specific purpose of funding) or Link to the porject	Bilateral / Multilatera l	Donor	Implementing entity	Sector	Implem entatio n period	Type of funding	Currency	Total donors' (Funder) Contributi on in original currency	Mitigation	Adaptation	Financial Support	Capacity Building	Technical Support	Technology support	General			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
1	Foster Research Excellence for Green Transition in the Western Balkans, GreenFORCE	https://cordis.europa.eu/project/id/1011059411 ; https://greenforcetwinning.net/	Multilateral	EU	LEAD:Co-PLAN, Institute for Habitat Development in Albania PARTNERS: University of Belgrade - Faculty of Geography (UB-GEF) in Serbia Center for Economic Analyses (CEA) in North Macedonia Nordregio, a pan-Nordic research organization based in Sweden Politecnico di Torino (POLITO) in Italy	Other Multisector	2022–2025	Grant	EUR	89.958		X		X	X					X
2	Healthy habits for healthy environment	Healthy habits for healthy environment was a project for reshaping the way we commute. Inadequate and insufficient means of transport jeopardize public health through emissions and road accidents, having vehicles, especially with diesel engines as one of the major contributors to urban air pollution. The overall aim of the project, regarding fluctuating urban mobility, was to encourage and motivate individuals (aged 18 - 65) to practice efficient mobility i.e. to walk or to use pedal or/electric bicycles, whilst altering their daily activity patterns in terms of costs, energy and environmental conservation.	Bilateral	Switzerland	UNDP/Center for Research and Policy Making	Transport & Storage	2022–2022	Grant	EUR	13.500	x		x							
3	I love Skopje green	The main objective of the project was to increase the environmental awareness of citizens from Skopje, focusing on the youth, and increase their sense of responsibility towards nature in the direction of its preservation, at the same time encouraging proactivity and volunteerism for the common good. The ethical context of the project instils a deep sense of synergy with and empathy towards nature and represents a key element for a reasonable attitude of citizens towards the environment.	Bilateral	Germany	Center for Research and Policy Making	Government & Civil Society	2022–2022	Grant	EUR	4.500	x		x							
4	Development of an organic waste management in grapes and wine production in Tikves region (Municipality of Negotino, Kavadarci & Demir Kapija)	The main objective of the project is to develop an efficient and sustainable business model for an organic waste management for vineyards and wineries in North Macedonia. The project encompasses the following specific objectives (i) to revise legal and strategic framework for organic waste management from wine production and to promote multilevel dialogue; (ii) to analyse organic waste generated from grape growing and wine production and identification of potentials for treatment; (iii)	Bilateral	GIZ	GIZ, Bovin and Center for Research and Policy Making	Water & Sanitation (solid/organic waste management)	2022–2024	Grant	EUR	85.000	x		x							

6	Kocani Wastewater Treatment	Through construction of a WWTP and a main collector for wastewater, the project contributes to the sustainable development of the Kocani region and protection of the natural resources. The project also strengthened the capacities of the Public Utility. The planned activities have been successfully completed by the end of 2019. In order to use the full capacity of the WWTP of Kocani and strengthen its performance and sustainability, an additional Swiss contribution in the amount of CHF 2'375'000 has been provided for the following activities: 1) Preparation of tender design and documents for the connection of the city of Vinica and five neighbouring villages to the WWTP Kocani, and for sewage network rehabilitation in Vinica; 2) Extended corporate development of the public utilities in Kocani and Vinica; 3) Development of wastewater management skills with Swiss expertise; 4) Priority measures for rehabilitation of sewage systems of Kocani, Orizari and Trkanje. The WWTP has been equipped with PVs that covers about 70% of the electricity needs of the plant, and biogas produced in the process is used for generating electricity and heat at the plant. Finally, the sludge is transformed into compost (registered as a fertilizer) by adding rice straw.	Bilateral	Swiss Government (SECO)	Swiss Consultancy Company EBP	Water & Sanitation	2016-2024	Grant	CHF	23.300.000	x			X	X	X	X		
7	CSO Action for climate- Civil Society Support Program	Building a strong civil society driving decarbonization, transformation and renewal for a clean environment, green economy, and healthy citizens in North Macedonia. CSOs raised awareness and advocated necessary policy changes with decision makers.	Bilateral	Swedish International Development Cooperation Agency- SIDA	Organization	Government & Civil Society	2021-2025	Grant	SEK	15.096.834		X	X	X					
8	Adaptation to Climate Change through Transboundary Flood Risk Management in the WB's	Adaptation to Climate Change in transboundary flood risk management in the Western Balkans GIZ	Bilateral	Germany	German International Cooperation, GIZ	Humanitarian Aid – Disaster prevention & preparedness	2018-2021	Grant	EUR	3.000.000			X	X	X	X	X		X
9	Building capacity towards sustainable human capital development in North Macedonia	https://www.greencimate.fund/sites/default/files/document/north-macedonia-giz.pdf	Multilateral	GCF	German International Cooperation, GIZ	Other Multisector	2022-2024	Grant	USD	820.076	X				X				
10	ComAct - Community Tailored Actions for Energy Poverty Mitigation	https://comact-project.eu/	Multilateral	EU	Habitat Macedonia	Energy Generation, Distribution & Efficiency	2020-2023	Grant	EUR	160.875	X		X	X	X	X			
11	EXCITE - Award Excellence, Invest in Trust: Tailored Energy Management Services for East European Local Authorities	http://www.excite-project.eu/	Multilateral	EU	Habitat Macedonia	Energy Generation, Distribution & Efficiency	2020-2023	Grant	EUR	105.625	X	X		X	X	X			
12	REELIH - Residential Energy Efficiency for Low-Income Households	https://getwarmhomes.org/our-approach/	Bilateral	USAID	Habitat Macedonia	Energy Generation, Distribution & Efficiency	2017-2022	Grant	USD	347.069					X	X			
13	UDR - Enhancing Sustainable Urban Development of Roma Communities	The overall objective of the project is to contribute towards inclusive, efficient and sustainable urban development, to improve	Multilateral	EU	Habitat Macedonia	Other Multisector (urban)	2019-2023	Grant	EUR	498.647		X				X			

		housing conditions and enable further urban development, and to promote equal opportunities for social inclusion in housing, education and health for the Roma in municipalities of Suto Orizari and Veles.				development/management)													
14	Energy efficient Homes - Retail Ledning (EEH - RL)	Retail Lending (RL), energy efficiency program includes a set of activities that help those living in MFABs reduce their vulnerability to energy prices, bearing in mind climate change issues.	Multilateral	EU	Habitat Macedonia	Energy Generation, Distribution & Efficiency	2010-ongoing	Grant	EUR	200.000	X		X						
15	SunRise - Prosumer Solar Energy	https://www.euki.de/en/euki-projects/sunrise-prosumer-solar-energy/	Bilateral	GIZ	Habitat Macedonia	Energy Generation, Distribution & Efficiency	2022-2025	Grant	EUR	74.449	X	X		X	X				
16	Transferring Visegrad Experience With Energy Efficiency Building Policies To North Macedonia	The aim of the project is to create enabling environment for more effective implementation of housing and energy efficiency regulations, through higher involvement and participation of the relevant state and local authorities and promotion.	Multilateral	International Visegrad Fund (IVF)	Habitat Macedonia	Energy Generation, Distribution & Efficiency	2021-2022	Grant	EUR	19.593	X	X		X					
17	ARSINOE- Climate resilient regions through systemic solutions and innovations	https://arsinoe-project.eu/	Multilateral	EU	Institute for Research in Environment, Civil Engineering and Energy, IECE	Other Multisector	2021-2025	Grant	EUR	306.000		X						X	
18	BEWARE -Development of Professional Courses in Building Resilience and Sustainability to Extreme Weather Events	https://iege.edu.mk/project/beware/	Multilateral	EU	Institute for Research in Environment, Civil Engineering and Energy, IECE	Education	2022-2024	Grant	EUR	60.000		X		X					
19	Water supply and wastewater treatment in Delchevo		Bilateral	Switzerland	Ministry of Environment and Physical Planning, Republic of North Macedonia	Water & Sanitation	2022-2022	Grant	CHF	6.050.000		X	X						
20	"Strengthening country capacities for climate change adaptation and mitigation and finalization of Country Work Programme for the Republic of North Macedonia" https://www.greencimate.fund/do-cument/country-programming-and-strategic-frameworks-support-north-macedonia-through-fao	Expected outcomes: - Through this project, the NDA will aim to finalize the development of a Country Work Programme for the GCF with concrete priorities and a detailed pipeline of project/programme ideas (from public and private stakeholders, on national and local level) in the priority sectors identified - energy, transport, water resources, agriculture, waste, biodiversity, health, forestry, and cultural heritage - that will be implemented as part of North Macedonia's efforts to tackle climate change. - Based on the progress achieved under the first Readiness grant, the system for tracking, monitoring and streamlining of climate finance in the country will be finalized. - Strengthening the capacities of different national stakeholders on issues related to the GCF will remain a focus, with a particular attention on increasing the private sector engagement in innovation and investments for climate action in the country's priority sectors. -The project will also support transferring knowledge and experience at institutional level regarding the GCF accreditation process to enable the country to directly access the Fund. This includes identifying potential institutions at national level to initiate the accreditation process to become GCF Direct Access Entities.	Multilateral		FAO	General Environmental Protection (climate policy/admin & finance readiness)	2020-2022	Grant	USD	663.245		X			X	X			
21	"Building capacities towards sustainable and climate-resilient human capital development, enhancing readiness and access to climate finance in the health, education and social protection sectors of North Macedonia"	Project components: - Component 1 - strengthening the mechanism for utilizing the financial opportunities of the GCF, i.e., strengthening the capacity of the NDA - Component 2 - developing climate change capacities in the Ministry of Health and	Multilateral		GIZ	Other Multisector (health, education, social protection)	2022-2025	Grant	EUR	820.076		X			X	X			

		<ul style="list-style-type: none"> • Implementation of modern control systems (SCADA) • Installation of Individual Heating Substations (IHS) • Installation of heat metering or heat cost allocators (HCAs) <p>Urban transport • Electric bus vehicles, facilities and charging infrastructure (battery and hybrid electric).</p> <ul style="list-style-type: none"> • Construction, expansion or improvement of electric tram or trolleybus (including hybrid battery electric) fleets, systems and/or infrastructure and facilities. • Construction, expansion or improvement of suburban rail, metro and LRT fleets, systems and/or infrastructure and facilities. • Electric ferry and water taxi fleets. <p>Street Lighting • Introducing LED lighting and associated infrastructure.</p> <ul style="list-style-type: none"> • Introducing energy saving measures through control and sensor systems and associated infrastructure. <p>Solid waste • Active or passive landfill gas collection systems (with or without energy production) and remediation activities (e.g. methane oxidation layers) as a part of the construction or improvement sanitary landfills.</p> <ul style="list-style-type: none"> • Mechanical-biological treatment plants, composting facilities and biogas plants. • Innovative waste-to energy solutions in the local context and the production of refuse derived fuels. • Source separation of recyclables and subsequent recycling value chains. 																	
24	Further strengthening the capacities for effective implementation of the acquis in the field of industrial pollution		Multilateral	EU	Ministry of Environment and Physical Planning, Republic of North Macedonia	General Environmental Protection (industrial pollution/IED/BAT)	2020–2021	Grant	EUR	1,000,000	X		X						
25	Preparing of Long-term Strategy and Law on Climate Action	https://euprojects.mk/maps/report/1849	Multilateral	EU	Ministry of Environment and Physical Planning, Republic of North Macedonia	General Environmental Protection (long-term climate strategy & law)	2019–2020	Grant	EUR	977,333		X	X		X	X			X
26	Communities Communicating Climate Change (CCCC)	https://euprojects.mk/maps/report/300	Multilateral	EU	ECO-Svest	Government & Civil Society (CSO awareness /advocacy)	2018–2020	Grant	EUR	396,827		X	X	X	X				X
27	Enabling the path towards decarbonisation and protection of the environment	https://euprojects.mk/maps/report/1704	Multilateral	EU	ECO-Svest	Government & Civil Society (CSO advocacy for decarbonisation)	2020–2020	Grant	EUR	58,546		X		X	X				X
28	Improving Capacities for NATURA 2000 and CITES	https://euprojects.mk/maps/report/2544	Multilateral	EU	Ministry of Environment and Physical Planning, Republic of North Macedonia	General Environmental Protection	2022–2024	Grant	EUR	1,881,985			X		X	X			X

						(biodiversity/NATURA 2000/CITES)													
29	Development of Environmental Monitoring and Information System (EMIS)	https://cfcd.finance.gov.mk/wp-content/uploads/2021/04/II-Environment.pdf	Multilateral	EU	Ministry of Environment and Physical Planning, Republic of North Macedonia	General Environmental Protection (environmental monitoring/EMIS)	2019–2021	Grant	EUR	1.163.693	X	X	X	X	X	X	X		
30	Improvement of the Wastewater Collection Infrastructure in the City of Skopje (Phase 1 – Works)	https://cfcd.finance.gov.mk/wp-content/uploads/2021/04/II-Environment.pdf	Multilateral	EU	Ministry of Environment and Physical Planning, Republic of North Macedonia	Water & Sanitation (wastewater collection/WWTP prep)	2017–2021	Grant	EUR	8.228.119	X	X	X	X	X	X			
31	Closure of non-compliance landfills and dumpsites – East region (Lot 1)	https://cfcd.finance.gov.mk/wp-content/uploads/2021/04/II-Environment.pdf	Multilateral	EU	Ministry of Environment and Physical Planning, Republic of North Macedonia	Water & Sanitation (landfill closure – solid waste)	2020–2021	Grant	EUR	3.880.761	X	X	X	X	X				
32	Closure of non-compliance landfills and dumpsites – North-East region (Lot 2)	https://cfcd.finance.gov.mk/wp-content/uploads/2021/04/II-Environment.pdf	Multilateral	EU	Ministry of Environment and Physical Planning, Republic of North Macedonia	Water & Sanitation (landfill closure – solid waste)	2020–2021	Grant	EUR	2.311.309	X	X	X	X	X				
33	Support in establishing Regional Waste Management System – Supply of collection vehicles (E & NE regions, Phase 1)	https://cfcd.finance.gov.mk/wp-content/uploads/2021/04/II-Environment.pdf	Multilateral	EU	Ministry of Environment and Physical Planning, Republic of North Macedonia	Water & Sanitation (waste collection vehicles – solid waste)	2019–2021	Grant	EUR	3.057.824	X	X	X	X	X				
34	Improving the capacities for industrial pollution (IED/BAT)	https://euprojects.mk/maps/report/2545	Multilateral	EU	Ministry of Environment and Physical Planning, Republic of North Macedonia	General Environmental Protection (industrial pollution control)	2023–2024	Grant	EUR	850.000	X	X	X	X	X				
35	HCFC Phase-out Management Plan (HPMP) – Stage II (first tranche)	Complete phase-out of remaining HCFC consumption (servicing sector), compliance measures, training & policy; Stage II approved 2021 (total US\$487,500; first tranche US\$120,000 + support costs). UNIDO Downloads	Multilateral	Multilateral Fund (Montreal Protocol)	MoEPP / National Ozone Unit (NOU)	General Environmental Protection (Montreal Protocol – ODS/ozon e)	2021–2028	Grant	USD	487.500	X	X	X	X	X				
36	Institutional Strengthening for Montreal Protocol – Phase VII	24-month IS support to NOU for licensing/quota, reporting (Art. 7), stakeholder coordination, awareness; Dec 2021–Dec 2023; budget US\$169,404 (excl. agency support). UNIDO Downloads	Multilateral	Multilateral Fund (Montreal Protocol)	MoEPP / National Ozone Unit (NOU)	General Environmental Protection (Institutional Strengthening – MP)	2021–2023	Grant	USD	169.404	X	X	X	X	X				
37	Enabling activities for HFC phase-down / KIP preparatory	Enabling activities supporting ratification of Kigali Amendment (Feb 2020), HFC licensing/reporting framework; Budget US\$95,000; UNIDO execution. UNIDO Downloads+1	Multilateral	Multilateral Fund (Montreal Protocol)	MoEPP / National Ozone Unit (NOU)	General Environmental Protection (HFC)	2018–2020	Grant	USD	95.000	X	X	X	X	X				

						enabling/Ki gali)													
38	TCP/MCD/3705 – Increased Resilience of Agriculture Sector through Promotion of Climate-Smart Agriculture Practices	FAO TCP to pilot/promote CSA practices (e.g., tunnels/greenhouse demo sites, farmer training) to increase resilience of agricultural production. USD 280,000; 01/01/2020–31/12/2021. Open Knowledge FAO+1	Multilateral	FAO TCP	Ministries of Agriculture (MoA)	Agriculture (climate-smart agriculture)	2020–2021	Grant	U S D	280.000		X	X						
39	CREATING ENABLING ENVIRONMENTS FOR ENHANCED CLIMATE RESILIENCE IN AGRICULTURE	Armenia, Kyrgyzstan, North Macedonia and Tajikistan	Multilateral	FAO TCP	Ministries of Agriculture (MoA)	Agriculture (resilience in agriculture – multi-country)	2020–2023	Grant	U S D	101.000		X	X						
40	Promoting Sustainable Land Management (SLM) through strengthening legal & institutional framework, capacity building and restoration of vulnerable mountain landscapes (GEF ID 9759)	UNEP/GEF full-size project to strengthen SLM policy & institutions, pilot SLM/SFM measures in north-western mountainous ecosystems; supports Soil Protection Law, updated LEAPs, erosion control pilots. open.unep.org+1	Multilateral	GEF	UNEP (ROE/Vienna)	General Environmental Protection (sustainable land management/erosion)	2020–2025	Grant	U S D	3.662.545		X	X						
41	Achieving Biodiversity Conservation through Creation and Effective Management of Protected Areas & Mainstreaming Biodiversity into Land-Use Planning (GEF ID 5528)	UNEP/GEF project that supported proclamation of Shar Mountain National Park (June–July 2021); produced valorization & socio-economic studies; strengthened PA system & planning. UNEP - UN Environment Programme+1	Multilateral	GEF	UNEP	General Environmental Protection (protected areas/biodiversity)	2016–2022	Grant	U S D	3.360.731		X	X						
42	CBIT – Strengthening institutional & technical Macedonian capacities to enhance transparency (Paris Agreement) (GEF-10042)	UNDP/GEF CBIT MSP to meet Article 13 transparency requirements; MRV systems, data, governance. climate-transparency-platform.org+1	Multilateral	GEF	UNDP	General Environmental Protection (CBIT – transparency/MRV)	2019–2022	Grant	U S D	1.320.000	X	X							
43	Biodiversity Conservation, Sustainable Land Management & Sustainable Tourism Development (GEF-10676)	UNEP/GEF project approved FY2022; integrated landscape approach in Shar Mountains; grant US\$3.713m; co-fin. US\$54.875m. Implementation starts 15-Mar-2023 (added because approved in 2022). Global Environment Facility+2UNEP - UN Environment Programme+2	Multilateral	GEF	UNEP	General Environmental Protection (biodiversity/SLM & tourism)	2023–2028	Grant	U S D	3.713.422		X							
44	Improving the management of the protected areas	Grants & pilots to strengthen PA management; biodiversity & community wastewater pilots (ecosystem resilience). UNDP	Multilateral	EU	UNDP / MoEPP	General Environmental Protection (PA management)	2015–2020	Grant	U S D	5.092.339		X	X	X	X	X	X		
45	Restoration of Strumica River Basin (Phase 2)	Integrated water resources & flood-risk management; decentralized WWTP pilots; agro-runoff reduction; early warning. UNDP	Bilateral	Switzerland	UNDP / MoEPP	Water & Sanitation (river basin/IWRM; WWTP pilots)	2015–2021	Grant	U S D	3.563.028		X	X	X	X	X	X		
46	Improving Resilience to Floods in the Polog Region	Regional flood-risk governance, infrastructure demos, flash-flood early warning, DRR legal alignment. UNDP	Bilateral	Switzerland	UNDP	Humanitarian Aid – Disaster prevention & preparedness (flood resilience/DRR)	2017–2024	Grant	U S D	18.579.066		X	X	X					X
47	Green Finance Facility to Improve Air Quality & Combat Climate Change (UN Joint Programme)	Blended finance for RE/EE investments via local FIs; PBPs and TA for SMEs & underserved	Multilateral	Joint SDG Fund (+ EBRD credit;	UNDP (with EBRD, IOM, UNECE)	General Environme	2022–2026	Loan	U S D	9.340.000	X		X	X					X

		households; expected +10.7 MW RE, -80,000 tCO ₂ . UNDP		Gov. NMK; local Fls)		ntal Protection												
48	SCALING UP ACTIONS TO TACKLE AIR POLLUTION	Support to 5 municipalities (Kavadarci, Kumanovo, Gostivar, Strumica, Struga) for air-quality plans, monitoring, equipment and priority measures. UNDP	Bilateral	Sweden	UNDP + municipalities	General Environmental Protection (air-pollution abatement/municipal AQ plans)	2022-2026	Grant	USD	3.268.865	X		X	X				X
49	Public Sector Energy Efficiency Project (P149990)	Reduce energy use in public sector; establish sustainable EE financing mechanism (incl. initial capital for EE Fund). World Bank+1	Multilateral	World Bank (IBRD)	Ministry of Finance (MSIP PIU)	Energy Generation . Distribution & Efficiency	2020-2025	Loan	USD	27.400.000	X	X	X	X	X			X
50	Agriculture Modernization Project (P168014)	Improve competitiveness in target agri subsectors & strengthen institutions for EU alignment (climate-smart investments, cold-chain/markets). World Bank	Multilateral	World Bank (IBRD)	MAFWE / PIU	Agriculture	2020-2022	Loan	EUR	46.000.000		X	X	X	X	X	X	X

