

2022 Report on the Implementation of Georgia's 2030 Climate Change Strategy and Action Plan
for 2021-2023

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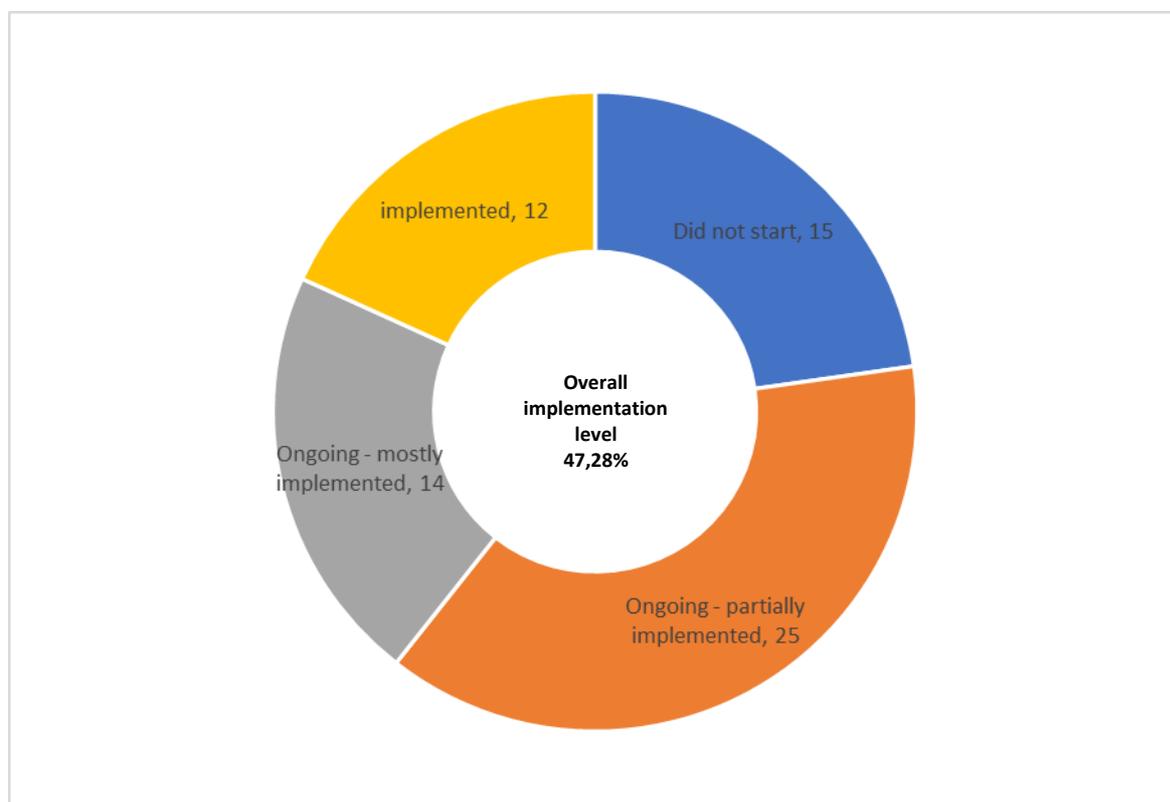
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Summary

This Report provides an overview of the progress of the implementation of Georgia's 2030 Climate Change Strategy and Action Plan for 2021-2023 as of December 31, 2022. It includes information on the activities carried out by various responsible departments in the period 2021-2022 in coordination with the Ministry of Environmental Protection and Agriculture of Georgia and the Climate Change Council. This is the second annual and fourth consecutive monitoring Report (after the January-June 2021 Progress Report, the 2021 Annual Report and the January-June 2022 Progress Report).

The level of implementation of the Action Plan from December 31, 2021 to December 31, 2022 increased by 34 percent - from 35.15% to 47.28%. 18.18% of the 66 activities included in the Action Plan have already been implemented. By the end of 2021, this figure was 10.61%. Compared to December 2021, the number of mostly completed activities decreased slightly and amounted to 21.21%. The number of partially completed activities remained almost at the same level (37.88%). Due to the positive dynamics of the implementation of the above activities, compared with the previous period, some of the activities moved from the category of partially completed to the category of mostly completed and implemented, and the implementation of part of the unfinished activities has started. By December 31, 2022, the number of unstarted activities also decreased. Their share decreased by 6 percentage points compared to December 2021 and stands at 22.73%.



Out of the 24 targets of the Strategy and Action Plan, by 84% -100% have been completed the activities of those targets that served to amend the existing rules for the technical inspection of vehicles, implement activities provided for by sustainable urban mobility plans and the transport policy of Tbilisi and Batumi, create information systems for energy efficiency of public buildings, developing qualification, accreditation and certification schemes for energy sector professionals, replacing wet-mix cement production with dry mixing, promoting climate-smart farming practices, increasing knowledge and awareness of waste management, as well as creating a unified process for data collection and update, forest restoration and sustainable management.

The most problematic areas in terms of implementation are the energy and buildings sectors, where the construction of renewable energy stations and the implementation of energy efficient approaches are still slow, as well as the waste and agriculture sectors, where there is a high percentage of activities that have not yet started.

The main challenges in the implementation process were the lack of data at the objective level and/or the failure to start collecting them, the late start of a number of activities due to the spread of the pandemic in 2020-2021, on the one hand, and on the other hand, the lack of funding. Agencies are encouraged to intensify their efforts in data collection, timely planning of activities and resource mobilization, especially for activities that have not yet started. It is necessary to strengthen interdepartmental coordination in this direction.

In the **energy generation** sector, the share of renewable energy sources (wind, solar, hydro, biomass) in electricity generation in Georgia has decreased compared to 2021. This is caused by a decrease in hydroelectric power dependent on the natural conditions (river speeds, etc.). At the same time, compared to the target indicator, the efficiency of electricity generation at thermal power plants and the share of renewable energy sources (wind and solar power plants) in the installed capacity of the energy system of Georgia remained unchanged. Progress has been recorded in terms of the number of energy policy documents, laws and subordinate acts developed, discussed and agreed with stakeholders. The activities are at different stages of implementation, but the pace of their implementation is quite low.

In the **transport industry** in 2021-2022 compared to the baseline scenario, the share of low and zero emission cars and technically serviceable cars in the fleet increased, the share of renewable energy sources consumed by all types of transport in final energy consumption has not changed. In addition, despite significant progress in implementing measures to promote non-motorized transport and public transport in Tbilisi and Batumi, the percentage of people using non-motorized and public transport is below the baseline.

In the **building sector**, progress has been shown in establishing a public register of buildings of over 500 m² area. In addition, the zero percentage share of newly built buildings certified for energy efficiency/subject to certification in accordance with the law did not increase in 2021-2022. Also

the percentage of consumers who consider the energy efficiency of buildings and household items to be an important factor in consumer decision making has not been measured. There was also no data on the share of solar water heating installations purchased by individuals/legal entities for heating water in individual residential and commercial buildings. It is worth noting that in terms of the implementation of activities compared to 2021, significant progress has been recorded, although the number of activities not yet started remains high.

A number of activities are planned to start in 2023.

Progress has been recorded in the **industrial sector**, in particular, the situation has improved in terms of studying emission factors in the industrial sector. At the objective level, the reduction of greenhouse gas emissions from industrial processes for the production of cement and nitrogen and the energy consumption of these industrial facilities has been successfully achieved. Measures to replace the wet-mix cement production method with the dry-mix method are 100% completed.

In the **agricultural sector**, little progress has been made in terms of developing legislation and policies. The share of climate-smart initiatives based on cost-benefit analysis and other data in agricultural programs has increased. An analytical and research paper on climate smart agriculture has been developed and published. There is also some progress in conducting outreach activities for target groups. In this sector, there are also a large number of activities that have not yet started.

In the **waste management sector**, progress has been made in closing/cleaning illegal and impromptu landfills, as well as in waste sorting and recycling. Some progress has been made in collecting data on waste management and conducting awareness raising activities. However, the lack of data on objective-level indicators remains a challenge.

In **forestry sector**, the area of degraded forests, where reforestation work has been carried out, has increased, hundreds of hectares in different regions have been reforested, planted and maintained. The hectareage of forests managed under sustainable management principles has increased dramatically, and forest management plans have been prepared for all target municipalities. Significant progress has also been made in terms of the number of interagency coordination and intersectoral projects, as well as the share of protected area management plans that include climate change mitigation measures.

Introduction

This Annual Monitoring Report contains information on the progress for the period of 2012-2022 in the implementation of Georgia's 2030 Climate Change Strategy and Action Plan for 2021-2023, a document N 167 approved by the Government of Georgia on April 8, 2021. The Climate Strategy and Action Plan (CSAP) is a document that reflects the long-term vision for reducing greenhouse gas emissions by 2030 in Georgia's Updated Nationally Determined Contribution document (NDC) under the United Nations Framework Convention on Climate Change (UNFCCC). It was developed

in cooperation with the Ministry of Environment and Agriculture of Georgia and the Climate Council and contains climate change mitigation activities in seven sectors: 1. Energy generation and transmission, 2. Energy consumption in the transport, 3. Energy consumption in buildings, 4. Energy consumption in industry and industrial processes, 5. Agriculture, 6. Waste management and 7. Forestry.

To reduce greenhouse gas emissions in all seven sectors, the strategy set the following 7 goals for each sector:

- 1. Reduce greenhouse gas emissions in the energy generation and transmission sector to 15% below the reference scenario projections by 2030;*
- 2. Reduce greenhouse gas emissions in the transport sector to 15% below the reference scenario projections by 2030;*
- 3. Support development of low-carbon approaches in the buildings sector by promoting climate-smart and energy-efficient technologies and services;*
- 4. Support development of the low-carbon approaches in the industry sector by promoting climate-smart and energy-efficient technologies and services to reduce greenhouse gas emissions to 5% below the reference scenario projections by 2030;*
- 5. Support the low carbon development of the agriculture sector by encouraging the climate-smart and energy-efficient technologies and services;*
- 6. Support the low carbon development of the waste sector by promoting climate-smart and energy-efficient technologies and services;*
- 7. Increase the carbon capturing capacity of the forestry sector by 10% for 2030 compared to 2015.*

The strategy sets a total of 24 objectives.

Objectives set by the strategy

Energy Generation:

1. Support renewable energy (wind, solar, hydro, biomass) generation
2. Improve average efficiency of thermal power plants
3. Strengthen the capacities of renewable energy integration in the transmission network of Georgia
4. Develop new policy documents and legislation for the energy sector

Transport:

1. Increase the share of low- and zero-emission and roadworthy private vehicles in the vehicle fleet
2. Encourage the reduced demand on fossil fuel and the use of biofuels
3. Promote non-motorized means of mobility and public transport
4. Implement innovative, evidence-based initiatives in the transport sector

Building:

1. Develop a system for energy efficiency certification of buildings
2. Raising consumer awareness about energy efficiency
3. Encourage energy-efficient approaches and installation of energy-efficient lighting in residential, commercial and public buildings
4. Support use of solar energy for water heating and use of energy-efficient stoves
5. Train high professional standard personnel in energy efficiency

Industry:

1. Reduce the level of greenhouse gas emissions from industrial processes and from energy consumption of industrial facilities by introducing modern technologies
2. Develop a system for studying the emission factors in the industry sector and for data management

Agriculture:

1. Implement sustainable management of soil and pastures and support the introduction of sustainable domestic animal feeding practices
2. Build capacities of generating scientific evidence for development of climate-smart approaches in the agriculture sector

Waste Management:

1. Reduce GHG emissions from existing unauthorized dumpsites and non-hazardous landfills
2. Support waste recycling
3. Reduce greenhouse gas emissions from wastewater
4. Develop a data-based waste management system

Forestry:

1. Restore degraded forests
2. Support sustainable forest management
3. Develop a forest management system adequate to climate change challenges

The report includes information on the CSAP implementation two-year period, from January 1, 2021 to December 31, 2022. Since the implementation of the activities envisaged by the Action Plan of the Strategy began before the official approval of the Strategy, the reporting period includes activities carried out from January 1 to April 8. The Annual Report, in turn, showcases data from January 1 to December 31, 2022.

The Annual Report was developed in coordination with the Climate Change Division of the Ministry of Environment and Agriculture of Georgia based on the status reports received from the responsible departments. The data were collected using an electronic climate change data

management system, which was developed in collaboration with the Ministry of Environment and Agriculture of Georgia and the Regional Environmental Center for the Caucasus (REC Caucasus).

The Climate Change Division made sure that the submitted Annual Report complies with the requirements for the preparation of the annual report, established by the Resolution No. 629 of December 20, 2019 of Georgian Government on Rules for Development, Monitoring and Evaluation of Policy Documents.

The draft Annual Report was discussed and agreed upon with the interdepartmental advisory body - the Council on Climate Change, established by Resolution No. 54 of the Government of Georgia dated January 15. The Council is headed by the Minister of Environment Protection and Agriculture of Georgia.

Overall Progress

This Report provides an overview of the status of implementation of activities and achievement of objectives for the biennium from 1 January 2021 to 31 December 2022. It analyzes the extent to which the measures envisaged by the Action Plan approved by the government of Georgia are implemented by the responsible agencies and analyzes the implementation of the objectives set by the Strategy in 7 climate change sectors as a result of these activities. The Report does not review the achievement of the objectives and the impact of the Strategy, which is the task of the midterm and final evaluation.

In 2021, all 66 activities planned under the Action Plan were supposed to start, however, according to the Action Plan, all of them are designed for three years' period - 74.4% of them must be completed in the 4th quarter of 2023, at the end of the Action Plan, 12% - by the end of 2023 in the 2nd quarter, 10.6% - in the 3rd quarter and 3% - in the 1st quarter. The Annual Report gives some indication of the extent to which the agencies are working according to plan and to what extent there has been a late start (failure to start) of activities. The 2022 Report also provides information on progress against the baseline and intermediate targets for 2022, which allows the development of appropriate recommendations.

Objective Level Progress

The Action Plan contains 24 objectives with 31 objective outcome indicators. In 2022, progress was made towards achieving the target indicators for the objectives outlined in the Action Plan, with a total of 13 target indicators for 10 objectives. For 8 indicators, there was zero progress, for 2 indicators the result has worsened, and no data were available for 10 objective target indicators.

Compared to the baseline, improvement in performance indicators was observed for 11 objectives:

- 1.4 - Develop new policy documents and legislation for the energy sector
- 2.1 - Increase the share of low- and zero-emission and roadworthy private vehicles in the vehicle fleet
- 2.4 - Implement innovative, evidence-based initiatives in the transport sector
- 3.5 - Train high professional standard personnel in energy efficiency
- 4.1 - Reduce the level of greenhouse gas emissions from industrial processes and from energy consumption of industrial facilities by introducing modern technologies
- 4.2 - Develop a system for studying the emission factors in the industry sector and for data management
- 5.2 - Build capacities of generating scientific evidence for development of climate-smart approaches in the agriculture sector
- 6.4 - Develop a data-based waste management system
- 7.1 - Restore degraded forests

- 7.2 - Support sustainable forest management
- 7.3 - Develop a forest management system adequate to climate change challenges

Compared to the baseline, objective performance indicators did not improve for the following objectives:

- 1.1 - Support renewable energy (wind, solar, hydro, biomass) generation
- 1.2 - Improve average efficiency of thermal power plants
- 1.3 - Strengthen the capacities of renewable energy integration in the transmission network of Georgia
- 2.2 - Encourage the reduced demand on fossil fuel and the use of biofuels
- 2.3 - Promote non-motorized means of mobility and public transport

There was lack of data on individual target indicators to assess progress towards the following objectives:

- 3.1 - Develop a system for energy efficiency certification of buildings
- 3.2 - Raising consumer awareness about energy efficiency
- 3.3 - Encourage energy-efficient approaches and installation of energy-efficient lighting in residential, commercial and public buildings
- 3.4. Support use of solar energy for water heating and use of energy-efficient stoves
- 5.1. Implement sustainable management of soil and pastures and support the introduction of sustainable domestic animal feeding practices
- 6.1 - Reduce GHG emissions from existing unauthorized dumpsites and non-hazardous landfills
- 6.2 - Support waste recycling
- 6.3 - Reduce greenhouse gas emissions from wastewater

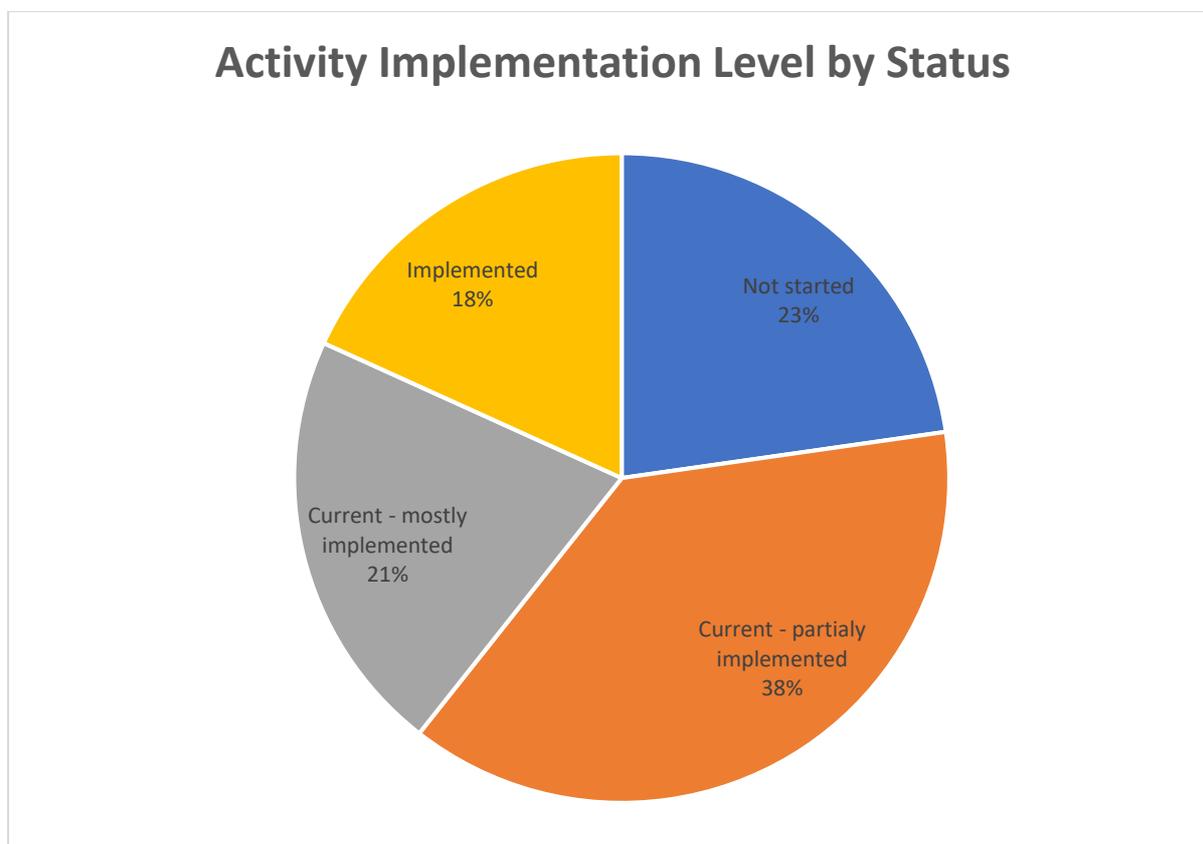
The 2022 midterm target indicator was met and exceeded for the following 9 objectives:

- 1.1 - Support renewable energy (wind, solar, hydro, biomass) generation
- 1.4 - Develop new policy documents and legislation for the energy sector
- 2.1 - Increase the share of low- and zero-emission and roadworthy private vehicles in the vehicle fleet
- 2.4 - Implement innovative, evidence-based initiatives in the transport sector
- 3.5 - Train high professional standard personnel in energy efficiency
- 4.1 - Reduce the level of greenhouse gas emissions from industrial processes and from energy consumption of industrial facilities by introducing modern technologies
- 5.2 - Build capacities of generating scientific evidence for development of climate-smart approaches in the agriculture sector
- 6.4 - Develop a data-based waste management system
- 7.2 - Support sustainable forest management
- 7.3 - Develop a forest management system adequate to climate change challenges

Data Point	Date	1.1 Renewable Energy	1.4 Policy documents in the energy sector	2.1 Low-emission cars		2.4 Transport initiatives	3.5 Staff training in energy efficiency	4.1 Emissions in the industry (ktCO2e)		5.2 Climate- smart approache s in agriculture	6.4 Waste managem ent system	7.2 Sustainabl e forest managem ent	7.3 Climate- smart forest management system (number of projects 7.3.1)
				Share of hybrid vehicles	Share of vehicles that fail inspection			Cement	Chemical				
Baseline		2018- 78%	2020 - 7	2019 - 4.91%	2019- 55%	2020 - 0	0%	2020 - 968	2020 - 2547	-	2020- 0%	2019 - 0 Ha	2020 - 10
Midterm	2022	72%	9	5- 5%	54%	1	0%	1083	2919	10%	50%	150807 Ha	20
	2024	76%	12	6- 7%	50%	2	30%	2023 - 1139	2023 - 3105	30%	70%	300000 Ha	25
	2026	82%	20	9- 8%	45%	3	60%	-	-	40%	80%	350000 Ha	28
	2028	85%	26	15%	40%	4	80%	-	-	50%	90%	402000 Ha	30
Final	2030	87%	Over 30	20%	30%	5	100%	-	-	60%	100%	450000 Ha	Over 30
Factual performance		72%	22	7- 26%	35- 85%	1	4.6%	852.11	2305.99	10%	50%	266177 Ha	20
Target performance		100%	244%	132%	383%	100%	105%	127%	126%	100%	100%	177%	100%

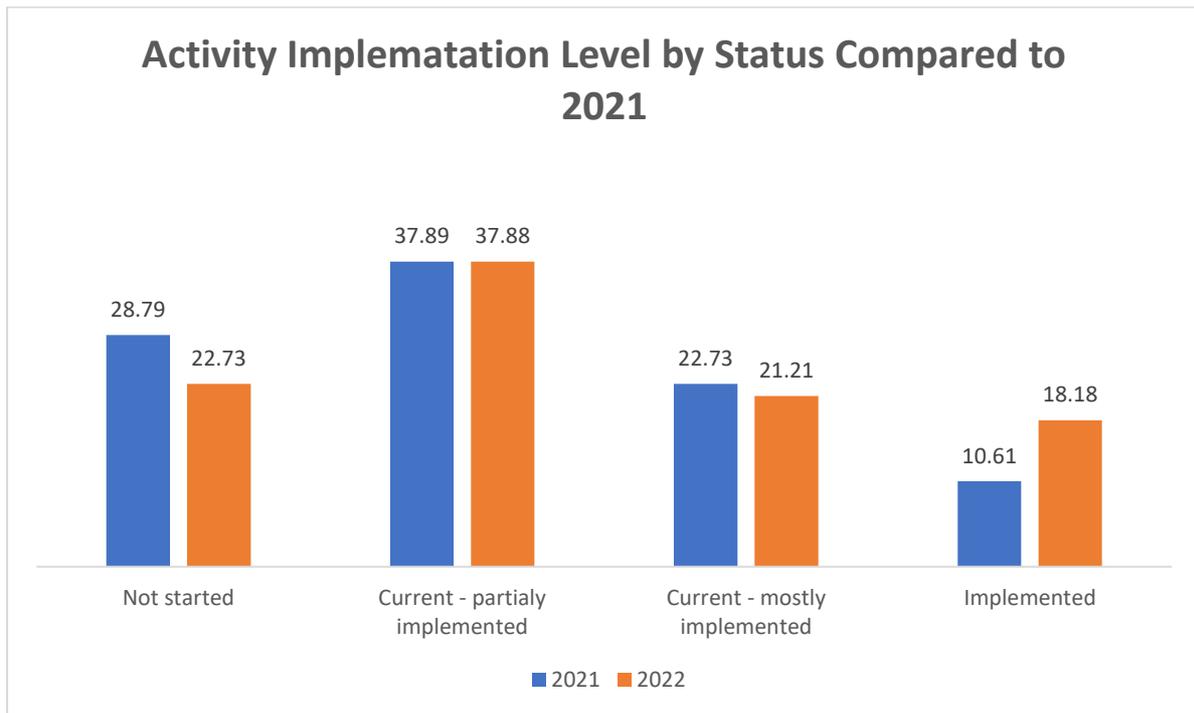
Activity Level Progress

Of the total number of 66 activities for 2021-2022, 12 activities (18.18%) were implemented, 14 activities were mostly implemented (21.21%), 25 activities were partially implemented (37.88%). And 15 activities (22.73%) have not been started. Thus, 59.09% of the activities are at various stages of implementation. 18.18% were completed ahead of schedule.



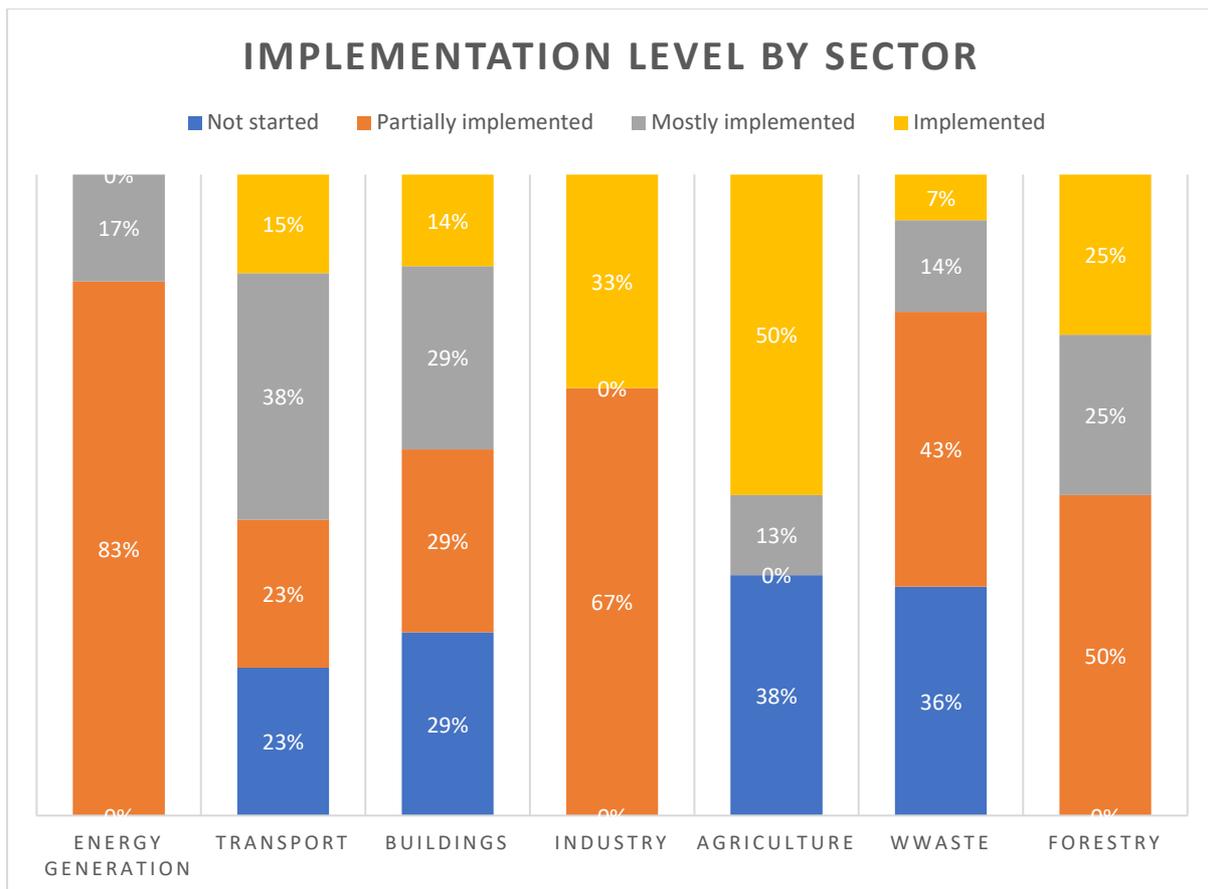
It should be noted that compared to the data as of December 31, 2021, the number of implemented activities increased, while the number of mostly activities implemented decreased slightly, and the

number of partially implemented activities remained unchanged. This is due to the positive dynamics of the implementation of the Action Plan. A number of partially and mostly implemented activities have moved to the activities that have status of implemented activities, and a number of activities that have not been started have moved to the activities with the status of mostly or partially implemented activities. Of these, the largest is the number of partially implemented activities. The number of activities not started remains a problem, although it should be noted that their number has decreased from 28.79% to 22.73% compared to December 2021.



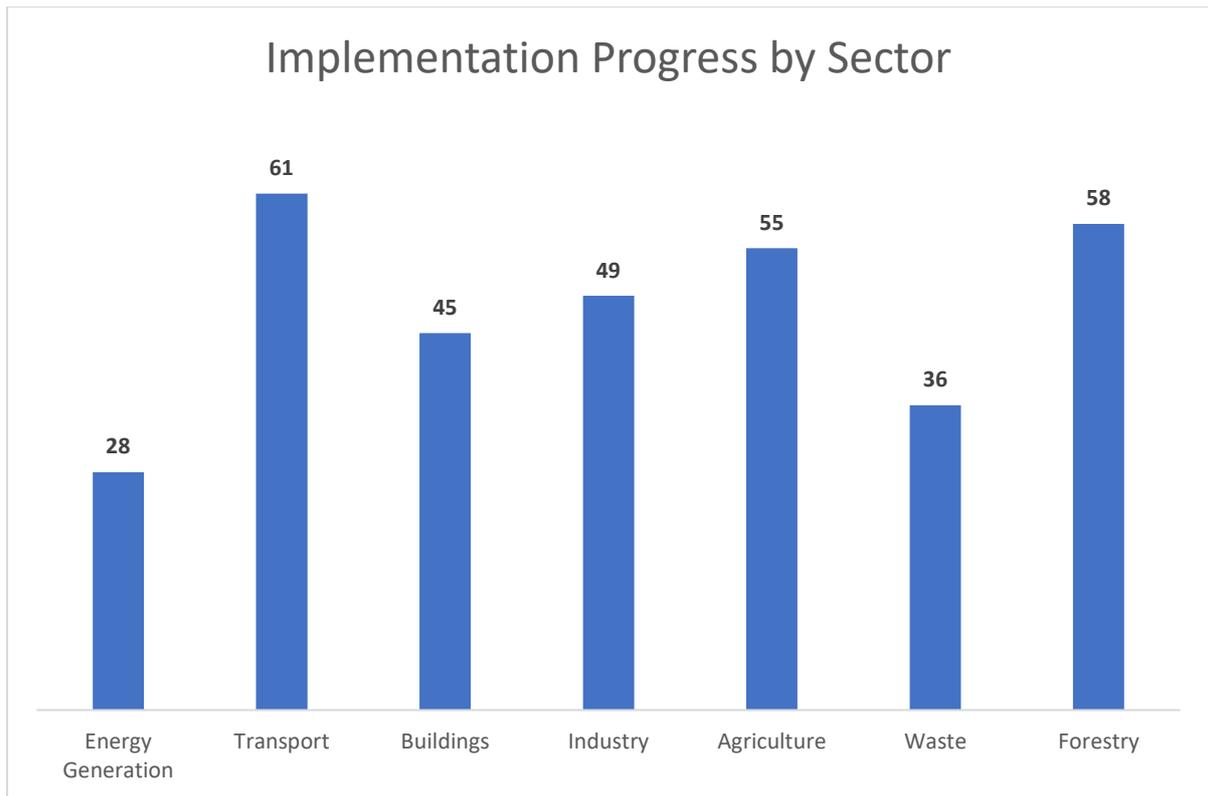
The level of implementation of the Action Plan in terms of activity status (states) varies by sector. The largest share of fully implemented activities (50%) falls on the agricultural sector. The largest share of activities that are mostly implemented (38%) is in the transport sector, while the energy production sector has the highest share of partially implemented activities (83%).

The agriculture and waste management sectors have the highest percentage of not-started activities (38% and 36% respectively). In energy generation, industry and forestry sectors, the number of activities with such status is 0.

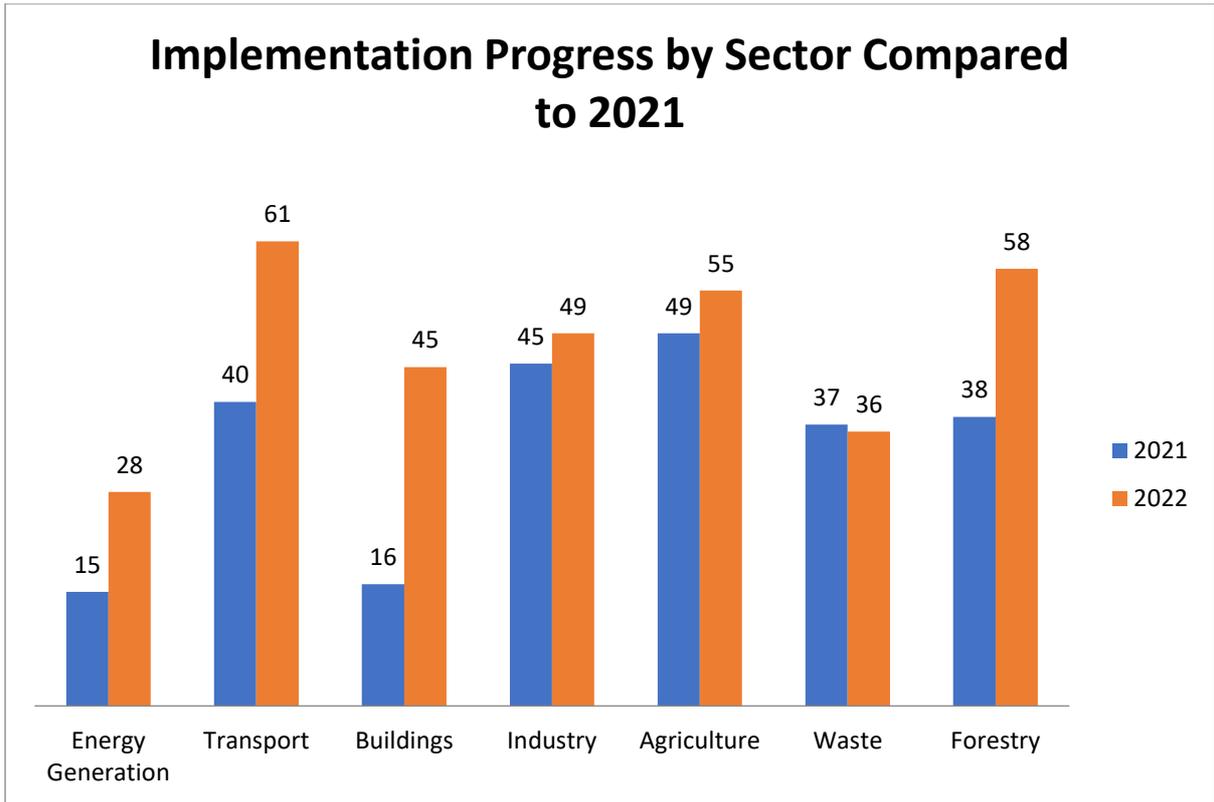


Progress compared to 2021 was recorded in the building and forestry sectors. In the building sector, there has been an increase in the number of implemented activities (from 0% to 14%), the number of mostly implemented activities (from 14% to 29%), the number of partially implemented activities (from 21% to 29%) and, consequently, the number of not-started activities has decreased (from 64% to 29%). In the forestry sector, there has been an increase in the number of implemented activities (from 13% to 25%), the number of mostly implemented activities (from 0% to 25%) and the number of partially implemented activities has decreased (from 88% to 50%).

Action Plan **implementation progress** (percentage of implementation) also differs across sectors. In total, for the reporting period, the overall Action Plan implementation progress is 47.28%. As of December 31, 2021, this indicator was 35.15%. Despite the progress made, the pace of implementation remains low, with only one year remaining in the three-year Action Plan, which increases the risk that the Action Plan will not be fully implemented before the deadline. The highest progress in implementation is observed in the transport (61%), forestry (58%) and agriculture (55%) sectors, and the lowest progress in the energy generation sector (28%).

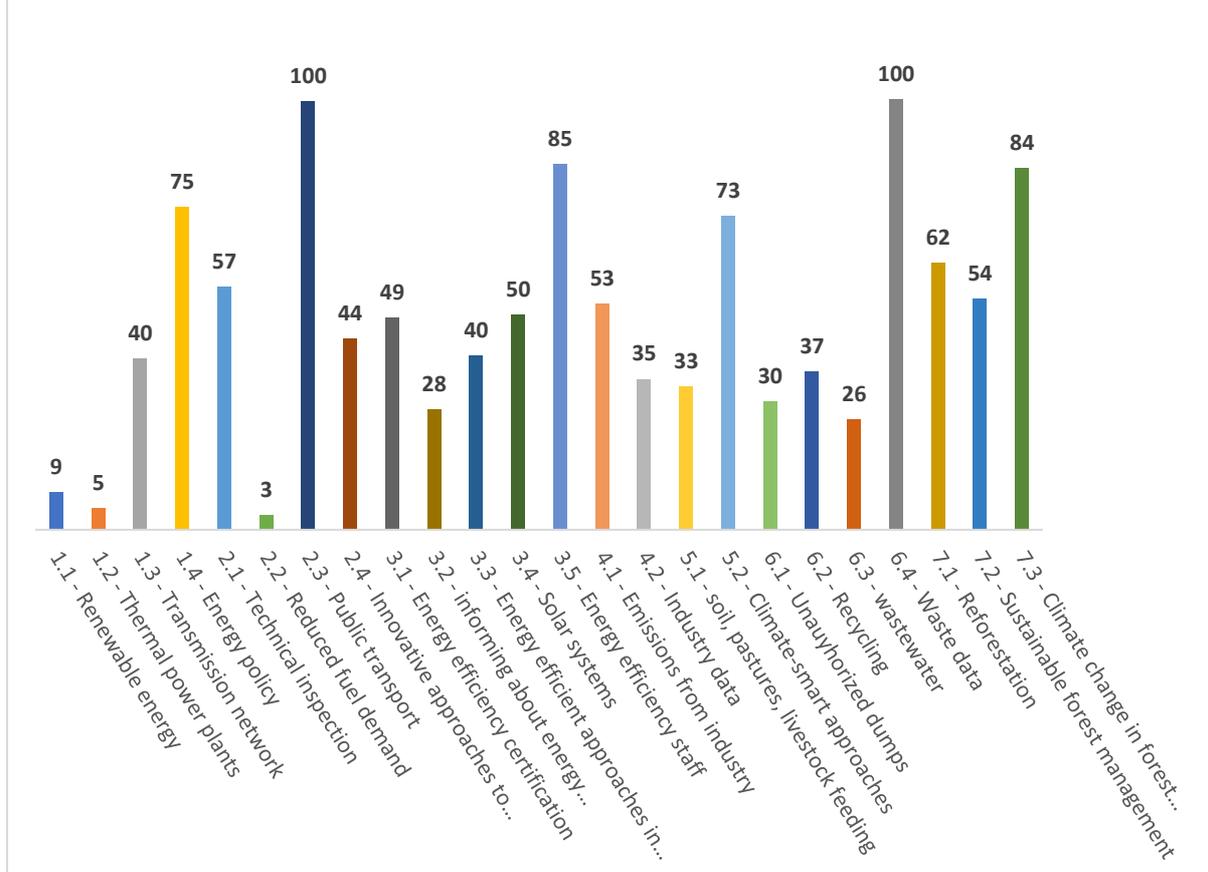


It should be noted that compared to December 31, 2021, progress in implementation was recorded in all sectors, except for the waste management. Although the energy generation sector has the lowest performance indicators, as of December 31, 2021, its implementation progress has almost doubled. Implementation progress in the building sector has also nearly tripled. The implementation indexes in transport (by 21% percentage points) and forestry (by 20% percentage points) sectors have also increased significantly.

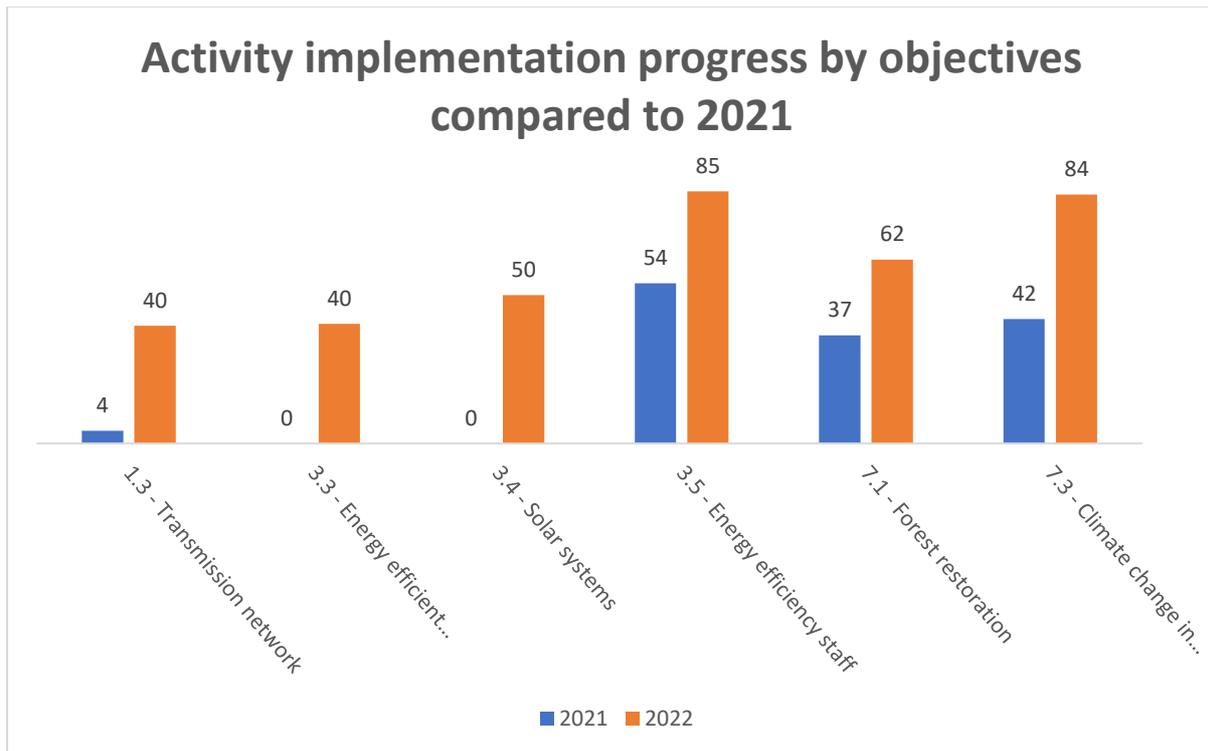


The activities planned under the 24 different objectives showed different rates in implementation progress. The highest implementation progress rates by objectives was demonstrated in the cases of Objective 6.4. Develop a data-based waste management system, Objective 2.3. Promote non-motorized means of mobility and public transport, Objective 3.5. Train high professional standard personnel in energy efficiency and Objective 7.3. Develop a forest management system adequate to climate change challenges, which were 100%, 100%, 85% and 84% completed, respectively.

Activity implementation progress by objectives



Compared to December 31, 2021, an increase by objectives was observed for almost all objectives. A significant increase in implementation progress was observed in cases of the following objectives: Objective 3.4. Support use of solar energy for water heating and use of energy-efficient stoves (by 50% percentage point), Objective 7.3. Develop a forest management system adequate to climate change challenges (by 42% percentage point), and Objective 3.3. Encourage energy-efficient approaches and installation of energy-efficient lighting in residential, commercial and public buildings (by 40% percentage point).



The action plan has also been completed by 50 percent or more in terms of reduction of greenhouse gas emissions from industrial processes (Objective 4.1), sustainable forest management (Objective 7.2), transport technical inspection (Objective 2.1.), forest restoration (Objective 7.1), climate-smart approaches (Objective 5.2), developing energy policy documents (Objective 1.4), considering climate change in forest management (Objective 7.3), training high professional standard personnel in energy efficiency (Objective 3.5), promoting public transport (Objective 2.3) and developing a data-based waste management system (Objective 6.4).

Successful Examples

Objective 6.4 - Develop a data-based waste management system

During the reporting period, 95% of activities under objective 6.4 “Develop a data-based waste management system” were completed. The creation of a consolidated process for collecting and updating data for the waste management sector - was an activity planned within the framework of this objective. The Action Plan has set the following outcomes for this activity: National Statistics Office of Georgia to start producing the waste statistics; Emission reports are based on sources and data (including incineration and composting).

During the reporting period, the National Statistics Office of Georgia started producing the waste statistics. Data on municipal waste has already been published on the website. Work is underway to determine the feasibility of producing additional indicators for waste. On the other hand, the

national greenhouse gas inventory document is based on sources and data published by the National Statistics Office.

Objective 3.5. Train high professional standard personnel in energy efficiency

As part of the GIZ technical assistance, four short-term qualification programs for the training of installers of renewable energy technologies have been developed and approved by the National Center for Educational Quality Enhancement: a) installation of solar photovoltaic systems; b) installation of solar thermal systems; c) installation of biomass boilers and stoves; d) installation of surface geothermal systems and heat pumps.

For the implementation of qualification/certification programs, in the fall of 2021, accreditation was granted to the Technical University of Georgia, which in November 2022 announced admission to the certification course of study. 37 persons have already successfully completed this course and received certificates of knowledge and skills in the above 4 professions. The course is systematic and admission to it is announced periodically.

In addition, within the framework of the Technical Assistance Project funded by the EU/KfW, rules have been developed for the certification and accreditation of energy auditors in accordance with the Law on Energy Efficiency. The purpose of this rule is to define appropriate procedures for developing an accreditation and certification system for energy auditors (both for energy auditors in the building and industrial sectors).

In addition, training programs have been developed as defined in Article 14 of the Law on Energy Efficiency. Approval of these qualification programs is one of the preconditions for creating an accreditation and certification system. Educational and training programs for energy auditors have also been developed, which means the development of training materials and concepts for the preparation of curriculum.

The most problematic areas in terms of implementation of activities include the **energy generation sector**, where the least progress has been made in terms of on two objectives: reduce the level of greenhouse gas emissions from industrial processes and from energy consumption of industrial facilities by introducing modern technologies (objective 1.1) and improve average efficiency of thermal power plants (objective 1.2). There is also little progress in encouraging the reduced demand on fossil fuel and the use of biofuels (objective 2.2) in the **transport sectors**.

Activity implementation progress by objectives	
Objectives	%
2.2 - Reduced demand on fuel	3

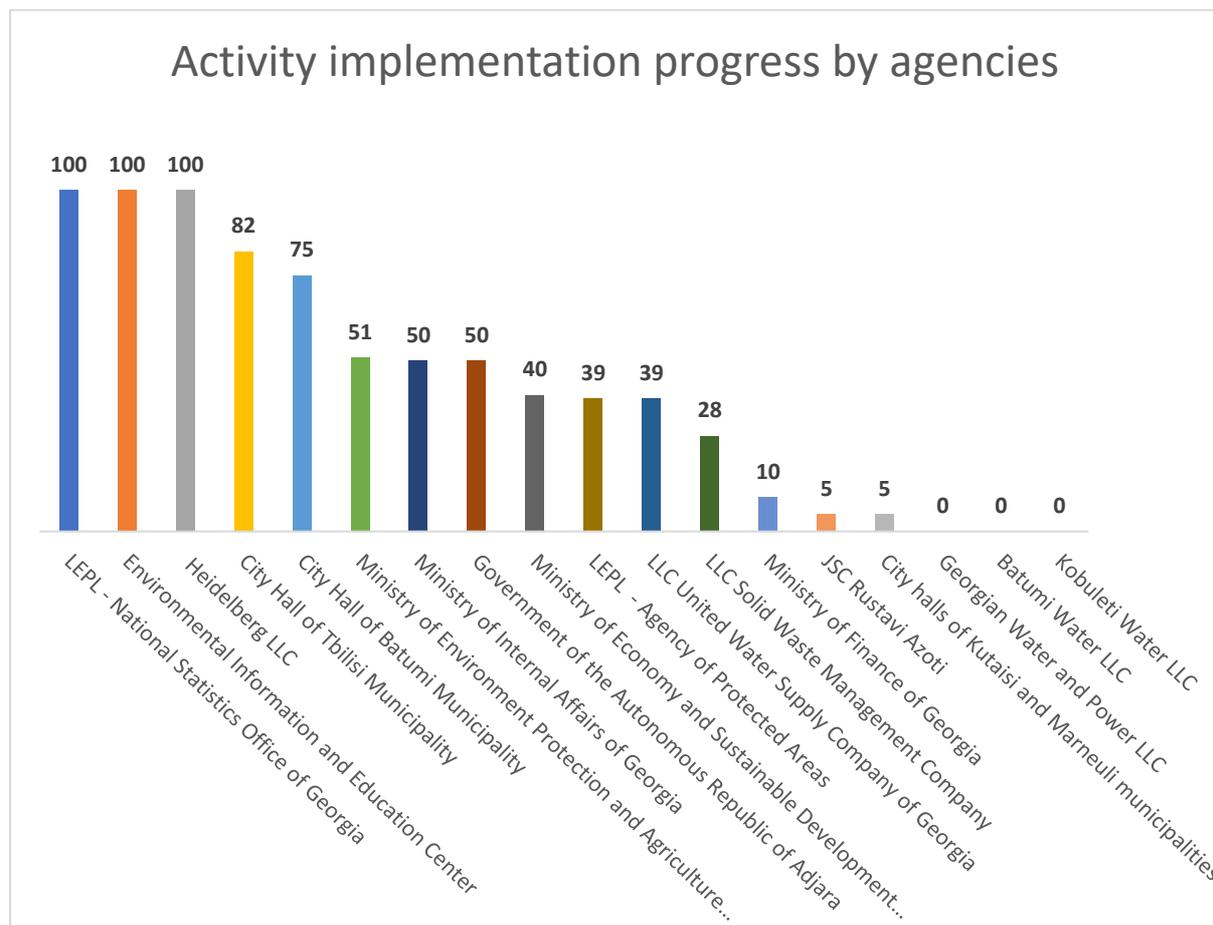
1.2 - Thermal power plants	5
1.1 - Renewable energy	9
6.3 - Wastewater	26
3.2 - Awareness about energy efficiency	28
6.1 - Unauthorized dumpsites	30
5.1 - Soil, pastures and domestic animal feeding	33
4.2 - Industrial data	35
6.2 - Waste recycling	37
1.3 - Transmission network	40
3.3 - Energy-efficient approaches in buildings	40
2.4 - Innovative approaches in transport	44
3.2 - Energy efficiency certification	49
3.4 - Solar systems	50
4.1 - Industrial emissions	53
7.2 - Sustainable forest management	54
2.1 - Technical inspection	57
7.1 - Forest restoration	62
5.2 - Climate-smart approaches	73
1.4 - Energy policy	75
7.3 - Climate change in forest management	84
3.2 - Energy efficiency personnel	85
2.3 - Public transport	100
6.2 - Data on waste	100

In terms of activities, a particularly important measure in the context of reducing greenhouse gas emissions, which was 100% implemented as early as by the previous reporting period, is the complete replacement of the wet-mix cement production with dry-mix process at Heidelberg Cement, which reduces energy consumption at this plant by 20-40%. Also, 100% of the activities provided for by the Batumi Sustainable Urban Mobility Plan have been implemented.

In terms of progress against the previous reporting period, it is worth noting that the rehabilitation of Tamar Mepe and Ketevan Dedopali avenues was carried out in accordance with the principles of multimodal planning within the Tbilisi Transport Policy. The purpose of this activity is to encourage the use of public transport in the capital. In addition, as part of the promotion of climate-smart approaches in the agricultural sector, an analytical paper “Climate-smart farming practices in the context of Georgia” and a paper on manure management practices and cost-benefit analysis have already been prepared and published.

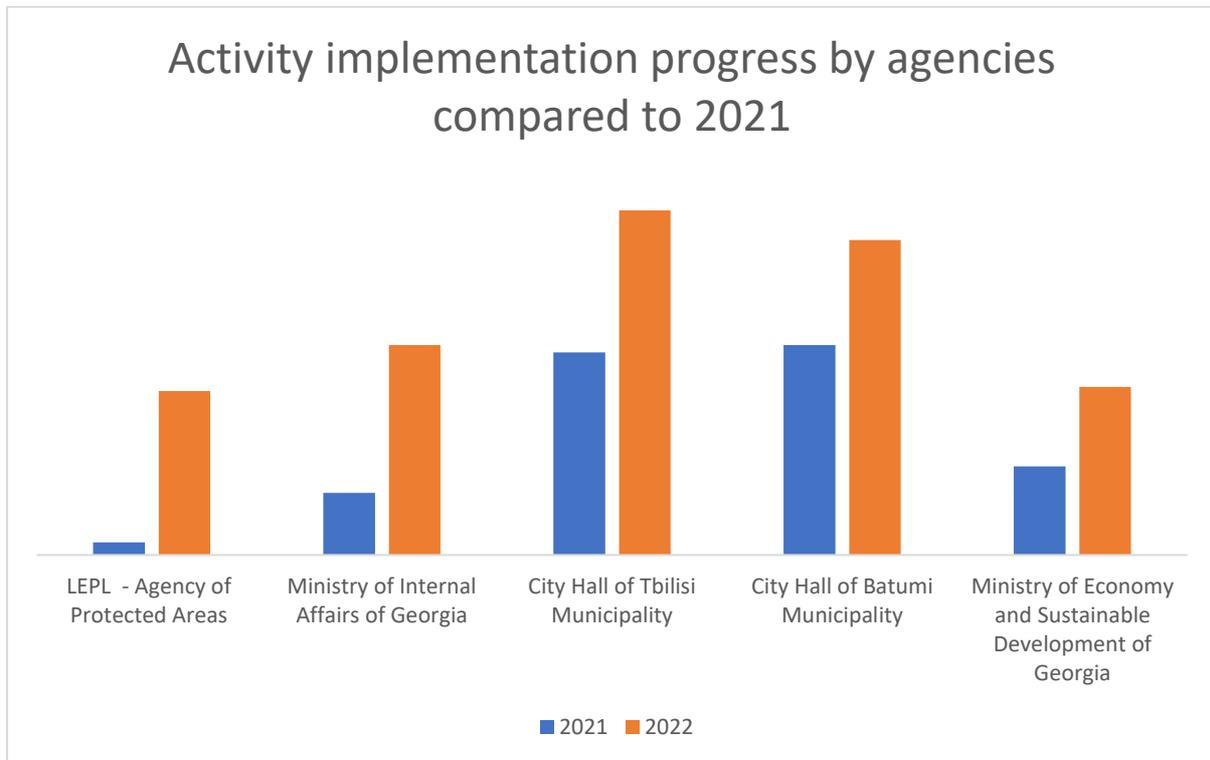
Another dimension of the analysis is the **implementation progress by the implementing agencies**. It shows the performance of the agencies responsible for the individual activities in the Action Plan, expressed as a percentage of activity completion during the reporting period.

The highest implementation progress, as early as the previous reporting period, were demonstrated by Heidelberg Cement LLC. and the Environmental Information and Education Centre. They completed their activities 100%. The National Statistics Office also completed its activities 100%. The least progress was demonstrated by Georgian Water and Power LLC, Batumi Water LLC and Kobuleti Water LLC (0%), Rustavi Azoti (5%), City Halls of the municipalities of Kutaisi and Marneuli (5%) and the Ministry of Finance of Georgia (10%).



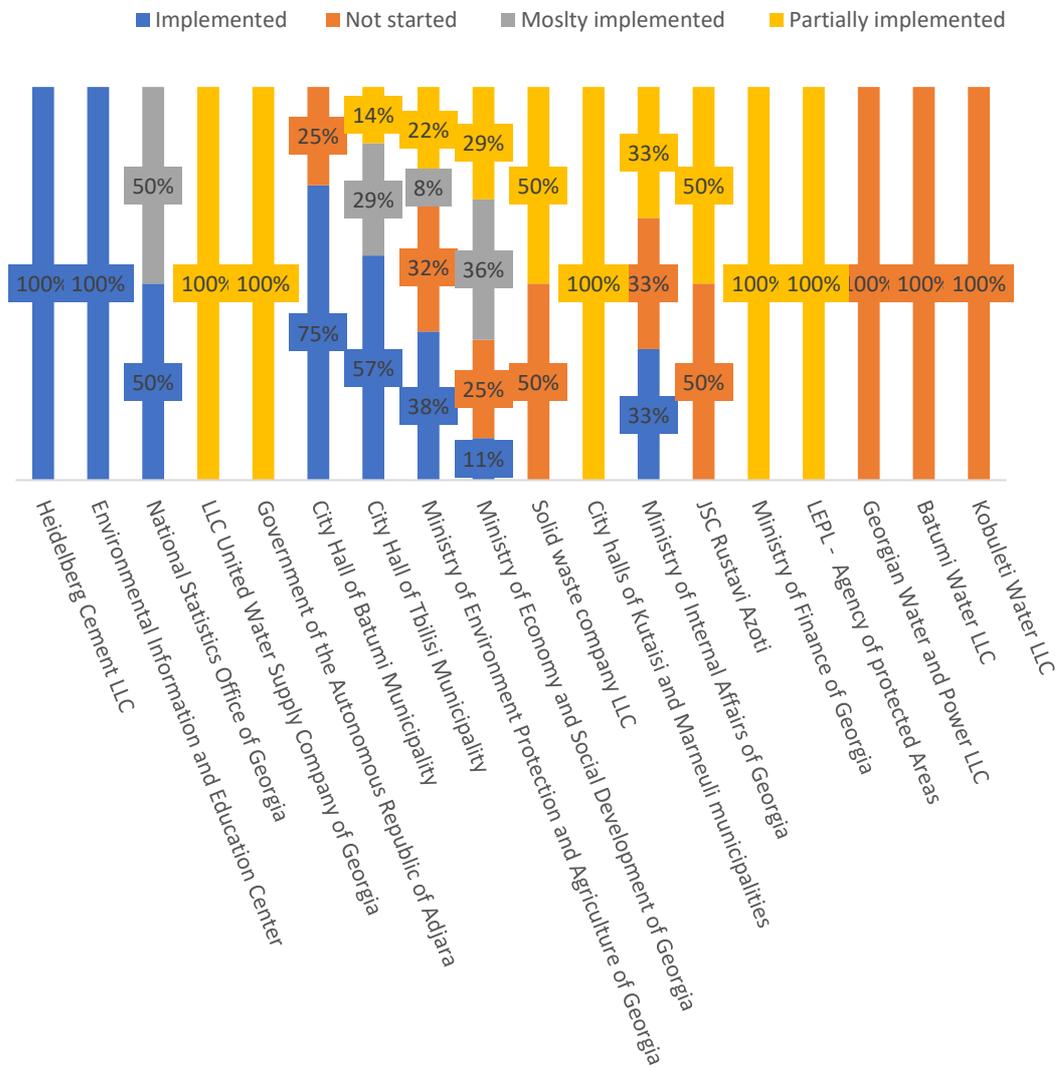
Compared to the data as of December 31, 2021, the greatest progress was demonstrated by the Agency for Protected Areas (36%), the Ministry of Internal Affairs (35%), and the Tbilisi Municipality City Hall (34%) and Batumi Municipality City Hall (25%). In the case of other agencies, progress compared to 2021 either changed little (by 1-10%) or remained unchanged. It should also be noted that the top three positions are invariably occupied by the Environmental Information and Education Center, Heidelberg LLC and the National Statistics Office. In addition, the City Halls of Batumi and Tbilisi municipalities have advanced compared to 2021 and occupy 4th and 5th positions, respectively. The Ministry of Internal Affairs has also moved up from 13th

place and is currently in 8th place. Rustavis Azoti JSC, City Halls of Kutaisi and Marneuli municipalities, Georgian Water and Power LLC, Batumi Water LLC and Kobuleti Water LLC take the last five positions with the least progress.



The level of implementation by implementing agencies shows that not started activities are most evident in the case of Georgian Water and Power LLC, Batumi Water LLC and Kobuleti Water LLC, which did not start their activities at all. The share of not started activities is 50% in the case of Solid Waste Management Company LLC and JSC Rustavi Azoti. Also 32% of the activities of the Ministry of Environment and Agriculture, 33% of the activities of the Ministry of Internal Affairs, 25% of the activities of the Ministry of Economy and Sustainable Development and 25% of the activities of Batumi municipality City Hall have not yet started.

Level of implementation by implementing agencies



Detailed Progress by Objectives

Objective 1.1. Support renewable energy (wind, solar, hydro, biomass) generation

As of 2022, the share of renewable energy sources (wind, solar, hydro, biomass) in electricity generation in Georgia has decreased from 81% to 78% compared to 2021. In particular, in 2022, the share of hydroelectric power plants in the total generation of Georgia was 77%, the share of wind power plants - 1%, and the share of thermal power plants on natural gas - 22%. In 2021, these indexes equaled to 80.5%, 0.7% and 18.8%, respectively.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
1.1.1. Share of renewable energies in Georgia's electricity generation	78	72	87	78	-

The objective involves carrying out work on technical and methodological support for the production of electricity from wind and solar energy, in particular, by 2024 it is planned to build 9 wind power plants and 7 solar power plants:

- As of December 2022, basic studies have been completed and construction contracts are being concluded at the stations Imereti - 102 MW, Rikoti-Fona - 20 MW, Tbilisi - 54 MW, Kaspi - 54 MW, Samgori - 8 MW and Nigoza - 50 MW. Their construction is planned to be completed in 2024. Construction work related to the Dirbula and Ruisi stations will be started after the completion of the feasibility studies.
- Solar energy projects are at different stages of development: Udabno (5 MW) - contractual works are underway; Plevi (7 MW) - contract not signed; Gardabani (50 MW) (EBRD) – work on a feasibility study agreement is underway; Marneuli (68 MW) – feasibility studies have been completed, the process of signing a construction contract is underway; Geosolar (9 MW) - work is underway to sign a contract for feasibility studies.
- The following works are being carried out on hydroelectric power plants: Kirnati (51.25 MW) - partially commissioned (27 MW); Completion is scheduled for 2023, with about 95% of the work completed. Khobi 2 (46.7 MW) - the project is under construction, about 80% of the work has been completed. Mtkvari (53 MW) - the project is under construction, about 80% of the work has been completed.

Mestiachala 1 (20 MW) - commissioned. Stori 1 (20.03 MW) - the project is under construction, about 85% of the work has been completed. Samkuristkali 2 (26.28 MW) - construction work stopped due to the community protests. Metekhi-1 (36.73 MW) - the project is at the construction stage, suspended. Ghebi (14.34 MW) - the project is at the construction stage, suspended. Chiora (14.15 MW) - the project is under construction, about 50% of the work has been completed. Zoti (46.07 MW) - the project is under construction,

about 55% of the work has been completed.

In addition, during 2021-2022, 15 HPPs with a total installed capacity of 46 MW were put into operation outside the Action Plan.

Objective 1.2. Improve average efficiency of thermal power plants

The objective is to increase the efficiency of electricity generation at thermal power plants by replacing old ones with low efficiency with a newly built combined thermal power plant. But since the commissioning of the new thermal power plant is scheduled for 2024, the target performance indicator remains at the baseline.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
1.2.1. Efficiency of electricity generation in thermal power stations	44%	45%	over 50%	44	-

The activity envisaged carrying out technical work at thermal power plants and the construction of one combined cycle thermal power plant by 2024. A feasibility study has already been prepared for the previous reporting period, but the technical parameters of the thermal power plant have changed, and a new feasibility study should be prepared accordingly.

Objective 1.3. Strengthen the capacities of renewable energy integration in the transmission network of Georgia

In 2022, the share of renewable energy sources (wind and solar power plants) in the installed capacity of the energy system of Georgia remained at the same level, since solar and wind power plants were not commissioned during 2021-2022.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
1.3.1. Share of renewable energy (wind and solar power plants) in the installed capacity of the Georgia's energy system	0.5	0.6	18.2	0.5	-

The activities included the implementation of Georgia's 10-year transmission network development plan for transmission companies, namely the construction and/or repair of a

substation with a capacity of about 1650 MW and 490 km of power lines, as well as the integration of wind and solar power plants with a total installed capacity of about 435 MW by 2024:

- During the reporting period, the following activities were carried out: land leveling works at 220/10 kV SS Lajanuri, construction works for Ozurgeti SS 220/110 kV and detailed design of expansion of SS Akhaltsikhe with 500 kV and 400 kV wings (350 MW, 28% completed), construction works of 500 kV Tskhaltubo SS (500 MW, 80% completed), 330/220 kV, 400 MW AT SS in Gardabani substation and construction of the relevant cells - the second autotransformer (3 sets of 133 MVA, AT3-2) and the 330 kV and 220 kV cells, respectively, have been constructed and have been in operation since December 31, 2022. The work remained under this project include the installation of a fourth 330/220 kV 133 MW AT, which is intended to replace the “A” phase of the existing 3-1 AT. Installation work (AT is on site) has been postponed to April 2023, due to the planned regimes in the power system.
- Completed activities include: - Loop-in of 500 kV OHL Kavkasioni to substation Jvari, 16 km (2x8 km); - 200kV OHL Jvari-Khorga - 55.7 km; - Loop-in of 220 kV OHL Alaverdi to substation Marneuli - 33km (2x16.7 km) and arrangement of two 220kV cells; - Rehabilitation of part of 220kV OHL Alaverdi (Alaverdi-3) (from the Thermal Station 2 to the point of Alaverdi cut) - 7.5. km; - Double circulation of 330kV OHL Gardabaki-Aghstapa - 21 km (up to the borderline); Rehabilitation of 220kV Kolkhida-1 - 66km - 16 supports have been replaced within the Project. Works, including the replacement of wires and linear fittings along the entire length of the line, as well as the installation of 4 additional new supports (replacement of existing ones) started on February 1, 2023.
- Due to the fact that no new wind or solar power plants were commissioned during the reporting period, their integration into the network could not be carried out accordingly.

Objective 1.4. Develop new policy documents and legislation for the energy sector

In 2022, the number of new policy documents, laws and subordinate acts developed, discussed and agreed with stakeholders in the energy sector was 22, which is 15 more than the baseline and 11 more than the medium-term target for 2022. In 2021, the number of new policy documents, laws and regulations developed, discussed and agreed with stakeholders in the energy sector was 11, including the Law on the Energy Efficiency of Buildings and the Law of Georgia on Promoting the Generation and Consumption of Energy from Renewable Sources, and in 2021, 4 subordinate acts were adopted. In 2022, 11 more subordinate acts were adopted based on the Energy Efficiency Law.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
1.4.1. Number of new policy documents, laws and subordinate acts developed, discussed and	7	9	Over 30	22	+

agreed with stakeholders in the energy sector					
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- Documents adopted in the reporting period include: Minimum energy efficiency requirements for buildings, building parts or building elements; National methodology for calculating the energy efficiency of buildings Minimum requirements for eco-labeling of heat pumps; Rules for issuing a certificate of origin of electricity obtained from renewable sources; Method for cost efficiency assessment of heating and cooling systems; Reporting procedure for the Energy Community Secretariat on the implementation of the national energy efficiency target; The procedure for submitting a notification to the Energy Community Secretariat on alternative policy measures provided for by the National Energy Efficiency Action Plan; The rule for approving the form of administrative offense protocol on bringing to administrative responsibility; Guidelines for the implementation of energy efficiency in the field of public procurement, as well as the rules for approving state monetary limits in order to implement energy efficient public procurement; The procedure for maintaining a register of buildings used by an administrative body; Rules for approval of alternative policy measures; Procedure for budgeting the implementation of the energy performance agreement; The procedure for determining the format of the measuring and verification platform and information/data publishing, reporting on the implemented activities to improve energy efficiency and achieved energy savings.
- During the reporting period, a draft national integrated energy and climate plan was developed. In April 2022, preliminary discussions with stakeholders on the draft version of the document, held under the auspices of the Energy Community, were completed. A preliminary Strategic Environmental Assessment Scoping Report was prepared, as provided for by the Georgian Environmental Assessment Code. In addition, a public discussion of the scoping report was held.
- As for the State Energy Policy, the draft document has already been developed. There was a public discussion of the document. Remarks and comments of the stakeholders are included in the document. A preliminary Strategic Environmental Assessment Scoping Report was prepared, as provided for by the Georgian Environmental Assessment Code. Both the document and its scoping report were published on the official websites of the Ministry of Economy and Sustainable Development of Georgia and the Ministry of Environmental Protection and Agriculture of Georgia. There was also a public discussion of the scoping report.

Objective 2.1. Increase the share of low- and zero-emission and roadworthy private vehicles in the vehicle fleet

In 2021-2022, the performance indicators for all three objective 2.1 targets improved compared to the baseline. In particular, the share of electric vehicles in the registered car fleet in Georgia increased compared to the 2019 baseline and is 0.24% of the car fleet, although it fell short of the

2022 medium-term target. The share of hybrid vehicles increased compared to both baseline and 2021 indicators to 7.26%, which is above the 2022 medium-term target. As for the vehicles that failed the first inspection, their share decreased from the baseline 55.0% to 35.85% (close to final 2030 target). This is 3.85 percentage points improvement compared to 2021. During the reporting period, the last two indicators approached and even exceeded the medium-term targets, which was probably partly due to methodological difficulties in setting targets at the planning stage.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
2.1.1. Share of electric vehicles in the registered vehicles fleet in Georgia	0- 1%	0- 5%	5- 0%	0.24	+
2.1.2. Share of hybrid vehicles in the registered vehicles fleet in Georgia	4- 9%	5- 5%	20- 0%	7.26	+
2.1.3. Percentage of vehicles failing first technical inspection	55- 0%	54- 0%	30- 0%	35.85	+

- The technical regulation, approved by Decree No. 511 of the Government of Georgia dated December 1, 2017, has been amended and since April 2021 it has become mandatory to include Periodic Technical Inspection (PTI) Centers in a single electronic database, which will contribute to greater transparency of the PTI process and reduce the tendency to bypass inspections. At the same time, each inspection center will be able to check whether the car has failed the inspection by some other center. Until now, such a single database did not exist, instead there were several databases that differed in format, were far from perfect and incompatible with each other.
- During the reporting period, 338 license plate recognition cameras with the function of checking the passage of technical inspections were installed throughout Georgia, instead of 150, as planned for the period up to 2024. This activity was carried out in excess, ahead of schedule.
- A draft Law of Georgia on Amendments to the Code of Administrative Offenses has been submitted to the Parliament. Legislative amendments will improve the legal regulation of the periodic technical inspection of a vehicle, including determining the responsibility for repeated failure to fulfill the obligation to undergo a technical inspection in the prescribed manner. The draft law was adopted by the Parliament of Georgia in the first reading, and discussion in the committee will continue in the second reading.
- 3 field measuring devices for use on the streets of large cities to control vehicle emissions on the roads, allowing to automatically measure the level of emissions from vehicles in real time and identify the offending vehicle, as envisaged by the Action Plan, have not been purchased. It should be noted that as a result of consultations held between the Ministry of

Internal Affairs of Georgia and the Ministry of Environmental Protection and Agriculture, the Ministry of Environmental Protection and Agriculture of Georgia was identified as the agency responsible for the performance of the target indicator.

- In order to identify additional optimal tax incentive options to encourage the use of electric vehicles, the Ministry of Finance conducted a small preliminary analysis of possible tax incentive options. Consultations are underway with the Ministry of Environmental Protection and Agriculture of Georgia to complete the implementation of these activities. Together with the NDC Partnership, donor funding is being sought for the shortfall CSAP activities that will implement the above activity.
- During 2021-2022, 9 charging stations for electric vehicles appeared in the capital. At the moment, 40 charging points have been installed in Tbilisi.
- In total, 9,024 spaces (instead of the planned 3,500 spaces planned for 2024) have been allocated within the framework of the zonal hourly parking system throughout Tbilisi, which have a zero tariff for electric vehicles.
- A study on the possible impact of an increase in the tax on imports of old cars will begin in 2023 as part of GIZ's technical support.
- With the aim of introducing the EUR4/EUR5 engine emission standard for imported vehicles, with the support of the United Nations Environment Program (UNEP) and the Caucasus Environmental Non-Governmental Organizations Network (CENN), a cost-benefit analysis of vehicle emissions standards document has been prepared, presented to stakeholders and published¹.
- In order to implement the regulations corresponding to the EUR4/EUR5 standard, a draft technical regulation on Applying the Limit Values of Emissions (Exhaust Gases) from Different Types of Vehicles and Other Mobile and Mechanical Means Polluting Ambient Air by Harmful Substances on the Territory of Georgia, in Accordance with EU Law. The technical regulation has undergone a preliminary review with the participation of state bodies. Further reviews of the technical regulation are planned with the support of the current EU regional climate program EU for Climate and the Technical Assistance Project in 2023, aimed at developing mechanisms for enforcing technical regulations and preparing relevant legislative amendments.

Objective 2.2. Encourage the reduced demand on fossil fuel and the use of biofuels

According to Georgia's energy balance for 2021, the share of renewable energy consumed by all types of transport in the final energy consumption of the territory was 1%, which is less than the baseline index of 2%. This indicator was at the same level according to the energy balance of 2020.

¹ <http://environment.cenn.org/downloads/cost-benefit-analysis-of-applying-a-euro-5a-emissions-policy-on-imports-of-car/>

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
2.2.1. Share of renewable energy consumed by all types of transport in the final energy consumption on the territory of Georgia	2%	3%	10%	1%	-

- In order to consider the possibility of increasing the fuel tax, as part of the GIZ Technical Support, a feasibility study of the economic and environmental impacts of a possible increase in fuel tax will begin in 2023.
- During the reporting period, no activities were carried out to support and promote the production of biodiesel, including the development and publication of a database and an information brochure on the production and sale of biodiesel.

Objective 2.3. Promote non-motorized means of mobility and public transport

As of 2022, 7% of commuters use non-motorized transport (biking and walking) in the capital, less than the baseline. The share of trips by public transport is higher than by non-motorized means, and is 20%. However, this figure is also below the baseline. Areas are currently being planned for accommodating cycle paths and pedestrian streets, after which it will be possible to start work that will increase the proportion of non-motorized transport users in Tbilisi. This includes appropriate infrastructure, road markings and trail arrangement work. Tbilisi is also in the process of planning bus lane schemes and updated public transport routes, which will further allow bringing the share of public transport users to the target indicator.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
2.3.1. Percentage of transportation with non-motorized transport (bicycle and pedestrian) in Tbilisi	27- 15%	30%	35%	7	-
2.3.2. Percentage of transportation with public transport (metro, bus, minibus) in Tbilisi	39%	40%	45%	20	-

- The Transport and Urban Development Agency under Tbilisi City Hall received reports on data collection and analysis, institutional distribution, communication strategies, management of planning processes, urban growth and calibration of transport models. At this stage, the final part of the project is being carried out and a final report, model and

action plan is being prepared, which will allow the capital to reach preliminary forecast targets for the next 20 years before the implementation of specific transport and communication infrastructure changes.

- The Tbilisi bus depot has been completely renewed. In 2021, 180 units of 8-meter ISUZU buses were purchased. In addition, negotiations are underway with various companies and organizations regarding the future renewal of the fleet.
- In total, 9,024 parking spaces have been allocated in the zone-hourly parking system throughout Tbilisi.
- In order to encourage the use of public transport in the capital, renovation works were carried out on Tamar Mepe and Ketevan Dedopali avenues in accordance with the principles of multimodal planning,
- During the reporting period, the Batumi City Hall implemented more than 20% of the activities provided for by the Integrated Sustainable Urban Mobility Plan of Batumi.
- In 2020, 8 electric buses were purchased as part of the Batumi Bus Project (stage 2).
- United Nations Development Program (UNDP) Project - Green Cities: As part of the development of integrated sustainable transport systems for the city of Batumi and the Adjara region, hourly parking spaces have been organized and put into operation in 7 locations in Batumi.

Objective 2.4. Implement innovative, evidence-based initiatives in the transport sector

The number of additional evidence-based initiatives to reduce greenhouse gas emissions in the transport sector increased from 0 to 1 during the reporting period. In particular, a science-based project proposal to reduce greenhouse gas emissions in the transport sector “Sustainable Inter-Municipal Transport in Georgia” has been developed.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
2.4.1. Number of additional evidence-based initiatives for reducing GHG emissions in the transport sector	0	1	5	1	+

- The Action Plan included the preparation of proposals for international climate funding to improve public, intercity and non-motorized transport. During the reporting period, a project proposal “Sustainable Inter-Municipal Transport in Georgia” was prepared and submitted to the NAMA Facility, however, the project proposal was not selected for funding, and the search for an additional donor and proposal submission process continues.
- However, work on a cost-benefit analysis document to identify the best options for converting road freight transport to rail has not yet begun.

Objective 3.1. Develop a system for energy efficiency certification of buildings

In 2021-2022, the 0% share of newly built buildings certified for energy efficiency or subject to certification in accordance with the law did not increase, since the prepared energy efficiency certification regulation has not yet been approved. In addition, rules for the energy efficiency certification of buildings have already been prepared and work is currently underway within the framework of the EU/KfW Technical Assistance Project.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
3.1.1. Percentage of newly constructed buildings subject to certification that are certified for energy efficiency in accordance with the law	0	0	100	0	-

- To develop the methodology necessary for the certification of buildings, the minimum energy efficiency requirements for buildings, building parts or building elements have already been approved on July 13, 2021 by the Decree of the Government of Georgia N354, and the National Methodology for Calculating the Energy Efficiency of Buildings, approved on September 7, 2021 by the Decree No. 449 of the Government of Georgia. A comparative methodology framework for calculating cost-optimal levels of minimum energy performance requirements as well as a framework for the development and use of one or more energy efficiency calculation programs have been developed under the EU/KfW Technical Assistance Project. At this stage, research is underway to calculate cost-optimal levels. The adaptation of the energy efficiency calculation program to the realities of Georgia and the training of relevant specialists to use this program are in the process. A working version of the building energy efficiency certification rule has also been developed.
- Rules for general energy efficiency, selection and installation, regulation and technical management of technical and engineering systems in existing and new buildings have also been prepared.
- Rules for the inspection of heating and air conditioning systems of buildings, rules for attestation and accreditation of independent experts engaged in issuance of energy efficiency certificates for buildings and inspection of heating and air conditioning systems of buildings, as well as rules for the inspection and verification of energy efficiency certificates, rules for heating and air conditioning system inspection reporting have also been developed.

- A concept for a national plan to increase the number of nearly zero energy buildings is also ready.
- A procedure has been developed for maintaining a register/database of energy efficiency certificates, independent experts and inspection reports.

Objective 3.2. Raising consumer awareness about energy efficiency

Percentage of consumers who consider the energy efficiency of buildings and household items to be an important factor in consumer decision making has not been measured in the reporting period. The reason for this is that the National Statistical Office is currently working to include a relevant question in the household survey conducted by the National Statistical Office. Although progress against the target outcome indicator would be less expected as the planned outreach programs and activities were not implemented, the adoption and implementation of the technical regulation on energy labeling, which is planned by the end of 2023, should have a big impact on consumer energy efficiency decisions.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
3.2.1. Percentage of consumers who identify the energy efficiency of buildings and household appliances as an important factor in consumer decision making	Not available	40% of the target audience	80% of the target audience	Not available	Unknown

- With the help of the Danish International Development Agency (DANIDA), a process is underway to develop energy efficiency schemes for household appliances, more specifically known as ecodesign regulations. At this stage, draft 9 ecodesign technical regulations have been fully prepared, discussions with stakeholders will begin in the spring of 2023. Due to the high interest in 2023, it was decided to conduct a marketing research with the help of a donor for 9 product groups provided for by the regulation.
- A law on energy labeling has been adopted. With the help of the Danish International Development Agency (DANIDA), the necessary appliance standards and labels were developed. These standards and labels are actively consulted with stakeholders. Since standards and labels have not yet been approved, calculations of the share of labeled products on the market are not yet carried out.
- Of the 16 technical regulations to be approved as part of the Action Plan, 1 regulation concerning the energy efficiency labeling rule for vacuum cleaners has been withdrawn following an amendment adopted by the European Commission. Changes were also made to 6 regulations. Among them, 2 regulations “On energy labeling for household combined

washing and drying machines” and “On energy labeling of household washing machines” are combined into one regulation with the following title “On the energy labeling for household washing machine and household washer-dryers”. Accordingly, instead of 16 technical regulations, 14 are subject to approval. Currently, draft technical regulations for 9 regulations have been fully prepared, as for the remaining 5, which have also been prepared, work is underway to reflect changes in accordance with the updated EU regulations.

- To raise awareness, a communication strategy and a visibility study were developed under the ongoing Technical Assistance Project funded by the European Union and the German Reconstruction Credit Bank (KfW). The documents are pending to be submitted to the ministry. The preparation of these documents is a prerequisite for conducting an awareness campaign.
- Public awareness programs on energy efficiency, including information campaigns on incandescent light bulbs and solar water heating, are planned to start in 2023 under the ongoing Technical Assistance Project funded by the European Union and KfW.

Objective 3.3. Encourage energy-efficient approaches and installation of energy-efficient lighting in residential commercial and public buildings

During the reporting period, a register of public buildings was created for buildings with an area of more than 500 m². At this stage, efforts are focused on managing and improving the register, as well as preparing plans for the reconstruction of 1% of buildings so that they meet the minimum energy performance established by Georgian legislation. In addition, according to the Law on Energy Efficiency, rules and guidelines for the implementation of energy efficiency in public procurement and public sector have already been approved. The approval of this rule conditions the purchase of energy-saving light bulbs. But due to the large impact on the expenditures of the budget, the deadline for implementing the rule is set January 1, 2025. Accordingly, the determination of the share of energy-efficient light bulbs in public buildings will remain unattainable until 2025.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
3.3.1. Number of buildings of more than 500 m ² , occupied and owned by central and municipal governments, which have 1% of their total area annually upgraded according to energy efficiency standards	0	10%	over 90%	0	-

3.3.2. Percentage of public buildings that use energy-efficient light bulbs	Not available	20%	over 70%	Not available	Unknown
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- The development of a tax regulation for incandescent bulbs is planned as part of the ongoing Technical Assistance Project funded by the European Union and KfW, starting in 2023.
- Increasing the share of energy-saving light bulbs in newly purchased bulbs for residential and commercial buildings is subject to the approval and implementation of the Regulation for the Ecodesign requirements for light sources (EU) 2019/2020, as this technical regulation prohibits the presence of non-energy-saving lamps on the market. The draft of this technical regulation was prepared within the framework of the DANIDA Technical Assistance Program. Discussions with stakeholders are planned to start in spring 2023.
- According to the Law on Energy Efficiency, the approval of rules and recommendations for the implementation of energy efficiency in public procurement and public sector will lead to the purchase of energy efficient light bulbs, which will be possible from January 1, 2025.
- The rule for maintaining a register of buildings used by an administrative body, provided for by the Georgian law on Energy Efficiency, was prepared within the framework of the EU/KfW Technical Assistance Project and approved by the Order No. 1-1/335 of the Minister of Economy and Sustainable Development. The registry has started operating in accordance with the rule and has already registered at least 50% of public buildings.
- The Ministry of Economy and Sustainable Development ensures the implementation of energy efficiency policies and establishing minimum energy performance (energy efficiency) standards for public buildings and buildings in general, building elements and parts of buildings. However, in the Action Plan, the LEPL Municipal Development Fund shall be appointed as the agency responsible for the implementation of energy efficiency measures in schools. The Ministry of Infrastructure and Regional Development of Georgia has data on the progress of ongoing upgrading in kindergartens and schools across the country to meet energy efficiency standards, as these measures are being implemented as part of their projects.

Objective 3.4. Support use of solar energy for water heating and use of energy-efficient stoves

There was also no data on the share of solar water heating installations purchased by individuals/legal entities for heating water in individual residential and commercial buildings. Work is underway with the National Statistical Office to integrate data/questions into the National Statistical Office's Household Sector Survey.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
3.4.1. Percentage of solar water heating systems in the systems purchased by individuals / legal entities for water heating in individual residential and commercial buildings after implementation of the incentive measures	Not available	10%	60%	Not available	Unknown

- The ongoing Technical Assistance Project funded by the European Union and KfW provides for the development of various schemes to encourage the promotion of energy efficiency. Work on incentive mechanisms will begin in 2023.
- A voucher program for energy-efficient stoves has been developed, the implementation of the voucher program will begin in 2023.
- Five information meetings were held in Guria, Kakheti and Mtskheta-Mtianeti with representatives of local governments, public/non-governmental organizations, educational institutions and the private sector (94 participants) to inform on the possible benefits to society in the process of sustainable forest management, alternative fuels and energy efficient stoves and auxiliary financial support program, improved forest management. The meetings were held within the framework of the ECO.Georgia Project funded by the Green Climate Fund and in cooperation with the German Society for International Cooperation.

Objective 3.5. Train high professional standard personnel in energy efficiency

During the reporting period, GIZ technical assistance developed short-term professional development programs to train installers in renewable energy technologies. Starting from 2023, it is planned to retrain 100 people per year, which will amount to 800 people by 2030 (the target contingent for all years in total). In 2022, 37 people have already completed the course and received a certificate, which is 4.6% of the target contingent. A rule for certification and accreditation of energy auditors has also been developed. In addition, the training programs provided for in Article 14 of the Energy Efficiency Law have been developed, discussed and agreed with stakeholders. Educational and training programs for energy auditors have also been developed. The approval and implementation of the above rules and programs will be followed by registration of graduates and certified professionals.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
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3.5.1. Total percentage of certified and degree-holding specialists in energy efficiency of heating, cooling and ventilation systems of buildings and electrical appliances	0% of the target audience	0% of the target audience	100% of the target audience	4.6%	+
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- Within the framework of the GIZ Technical Assistance, the National Center For Educational Quality Enhancement has developed four short-term qualification programs for training installers of renewable energy technologies. a) installation of solar photovoltaic systems; b) installation of solar thermal systems; c) installation of biomass boilers and stoves; d) installation of surface geothermal systems and heat pumps. In the fall of 2021, accreditation for the implementation of qualification/certification programs was granted to the Technical University of Georgia, which announced admission to the certification course in November 2022. 37 persons have already successfully completed this course and received certificates of knowledge and skills in the above 4 professions. The course is systematic and admission to it is announced periodically.
- The rules for the certification and accreditation of energy auditors, as defined by the Energy Efficiency Law, have been developed as part of the Technical Assistance Project funded by the EU/KfW. The purpose of this rule is to define appropriate procedures for developing an accreditation and certification system for energy auditors (both for energy auditors in the building and industrial sectors). In addition, the following training programs defined in article 14 of the Energy Efficiency Law have been developed within the framework of the EU/KfW technical assistance, discussed and agreed with stakeholders and are in the process of being approved: a) for energy service providers; b) for persons carrying out energy audits in industry; c) for persons carrying out certification of energy efficiency of buildings; d) for energy managers and installers of elements that affect the energy consumption in the building. Educational and training programs for energy auditors have also been developed, which includes the development of training materials and concepts for the preparation of training programs.

Objective 4.1. Reduce the level of greenhouse gas emissions from industrial processes and from energy consumption of industrial facilities by introducing modern technologies

During the reporting period, progress was made on both outcome indicators for Objective 4.1. The level of greenhouse gas emissions from cement production is about 852.11 ktCO₂e, and the level of greenhouse gas emissions from the chemical industry is about 2305.99 ktCO₂e. Both figures are below the baseline and medium-term target indicators for 2022, as well as the final target. It should be noted that in 2021-2022. no inventory of greenhouse gas emissions was carried out, and

indicators were evaluated using a mathematical model (assumptions were taken into account when extrapolating). The new greenhouse gas inventory is scheduled to start in 2023.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
4.1.1. Emissions from cement production (ktCO ₂ e.)	968	1083	1139	852.11	+
4.1.2 - Emissions from the chemical industry (ktCO ₂ e.)	2547	2919	3105	2305.99	+

- 100% of cement production is carried out using a new technology that replaces the wet-mix method with the dry-mix method.
- A feasibility, diagnostic and cost estimate report has been prepared for the introduction of a new nitric acid production technology that will reduce energy consumption by 20% and N₂O emissions by at least 95%. On October 13, 2022, a memorandum of understanding was signed between JSC Rustavi Azoti and the German Society for International Cooperation (GIZ), the official representative of the Nitric Acid Climate Action Group (NACAG). Preparatory work is underway to announce a tender for the purchase of equipment.

Objective 4.2. Develop a system for studying the emission factors in the industry sector and for data management

During the reporting period, the number of industries for which specific emission factors were studied did not increase, although progress was made in the study of two factors. A methodology has been developed to establish specific emission factors. The facilities of the main industry have been selected, including Rustavi Azoti JSC and Heidelberg Cement JSC, for which specific emission factors will be established; In 2023, both plants will collect samples for laboratory analysis in order to identify specific emission factors.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
4.2.1. The number of industries where specific emission factors have been studied	0	1	5	0.25	+

- The following work was carried out to determine the specific emission factors of plants, 1. The facilities of the main industry have been selected, including Rustavi Azoti JSC and Heidelberg Cement JSC, for which specific emission factors will be established; (0.05 of

total activity); 2. A methodology has been developed to establish specific emission factors; (0.15 of total activity); 3. Samples are taken from both plants for laboratory analysis in order to establish specific emission factors; (0.35 of total activity); 4. Laboratory analyzes on samples; (0.35 of total activity); 5. Calculation of specific emission factors of plants based on the results of analyzes; (0.10 of total activity); The works within the framework of the activity were distributed in accordance with the complexity of the work, the load and the expected risks. In addition, a meeting was also held with representatives of the industrial sector. At the meeting, further steps of cooperation following a premeditated methodology were discussed.

Objective 5.1. Implement sustainable management of soil and pastures and support the introduction of sustainable domestic animal feeding practices

The percentage of farmers who have improved information on sustainable livestock feeding practices and sustainable soil management out of the farmers informed by the extension centres and the National Food Agency is not known. Relevant studies have not been conducted.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
5.1.1. Percentage of farmers who have improved information on sustainable livestock feeding practices and sustainable soil management out of the farmers informed by the extension centres and the National Food Agency	0	50% of the target audience farmers	50% of the target audience farmers	Not available	Unknown

- To reduce emissions from enteric fermentation of cattle, donors are being sought through the NDC partner network to develop a cattle feed replacement methodology and run recommendation campaign.
- In order to develop legislation aimed at improving the quality of livestock feeding and conservation of pasture biodiversity, and to prepare a project proposal, the project “Achieving Land Degradation Neutrality Targets of Georgia through Restoration and Sustainable Management of Degraded Pasturelands” was launched with the financial support of the Global Environment Facility. The goal of the project is to help Georgia achieve national land degradation neutrality (LDN) goals through the restoration and sustainable management of degraded pastures. The municipalities of Kazbegi, Dmanisi and Gurjaani were selected as pilot municipalities for the project. The project includes the following components: preparation of a pasture management policy document, on the basis of which new legislation on pasture management will be developed; inventory of 20,000 ha of pastures and implementation of pilot projects for sustainable pasture management on 770

ha in the municipalities of Dmanisi, Kazbegi and Gurjaani; stakeholder capacity building and awareness raising to achieve a neutral balance between sustainable pastureland management and land degradation.

- As of 2022, the draft National Rangeland Management Policy Document (NMPPD) has been developed as a single consistent approach to rangeland management that provides: prevention of land degradation, conservation of biodiversity, increase in productivity, sustainable development of the livestock sector and achievement of LDN goals. The policy document sets the vision and principles, and defines issues of ownership, rights, institutional arrangements, economic and fiscal aspects, planning and monitoring. More than 30 key stakeholders (53% women) participated in a three-day National Validation Conference to discuss and agree on the provisions of the National Rangeland Management Policy Document and the key principles of rangeland management set by the NPMPD framework. The National Validation Conference also analyzed and discussed the legal implications and agreed on a recommendation for the development of a Pasture Management Law. Preparation of pasture legislation is scheduled for 2023. However, the preparation of the project proposal has not started yet.
- During the reporting period, the Parliament of Georgia adopted the Law on Windbreak (field shelter) Strips. A project application for the rehabilitation of windbreak strips has also been prepared.

Objective 5.2. Build capacities of generating scientific evidence for development of climate-smart approaches in the agriculture sector

In the reporting period, the share of climate-smart technologies and/or initiatives that were based on cost-benefit analysis and other evidence was 10% in governmental and donor agricultural programs, which means that the 2022 mid-term target was 100% accomplished.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
5.2.1. Share of climate-smart technologies and/or initiatives that are based on cost-benefit analysis and other evidence in governmental and donor agricultural programs	Unknown	10%	60%	10%	+

- With technical support from GIZ, an analytical paper on Climate Smart Agriculture Practices in the Context of Georgia’s Climate Mitigation Efforts², as well as a paper on Manure Management Practices and Cost-benefit Analysis³, were prepared and published.
- No project proposal has been developed that includes the introduction of sustainable pasture management principles for farmers.
- FAO and the World Bank have developed a document on climate-smart agriculture in the country. With FAO support, also under ENPARD III, 10 practical trainings were conducted to raise awareness of climate-smart agricultural practices and their implementation in practice. The Environmental Information and Education Center held workshops with agricultural colleges (12 colleges) to discuss the results of the project and related activities, including presentation of a training module on climate-smart agriculture, a guideline on climate-resilient, low-emission (climate-smart) agriculture, and information and quality standards for the participants in the system of knowledge and information in the field of agriculture.

Objective 6.1. Reduce GHG emissions from existing unauthorized dumpsites and non-hazardous landfills

No studies were carried out during the reporting period, therefore, there are no data on the amount of emissions from landfills.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
6.1.1. The amount of GHG emissions from the landfills (GgCO ₂ e)	1.091	1.063	840	Not available	Unknown

- The existing Dmanisi and Tsnori landfills have been closed by the Solid Waste Management Company.
- As part of the Clean Up Georgia Project, 1,315 authorized dumps have been identified, of which up to 1,000 dumps have been cleaned up.
- A new landfill for non-hazardous waste has been built in Adjara, which will be put into operation in 2023. 2 environmental impact assessment documents were prepared by SWMCG with the aim of establishing a new regional landfill in Kvemo Kartli (Tetritskaro municipality) and Samegrelo Zemo Svaneti (Zugdidi municipality). Both reports were submitted to the National Environment Agency for the purpose of making environmental decision. Documentation for the construction of a regional landfill in Samegrelo Zemo Svaneti was submitted to obtain a construction permit.

² <https://newclimate.org/resources/publications/landscape-for-mitigation-action-and-finance-in-georgias-agriculture-sector>

³ https://newclimate.org/sites/default/files/2022-09/manuremanagement_georgia.pdf

- With regard to a gas collection control system, the Tbilisi landfill continues to operate to this day, therefore, in order to construct the gas control system, a full-scale re-examination should be carried out to reflect the results caused by the operation and the actual situation. The company believes that with the help of a loan and in accordance with the terms of the EBRD for conducting international tenders, an international consulting company will be selected, whose responsibilities will include conducting a full study under the project, preparing tender documentation and participating in the procurement, appraisal and conclusion of the contract, supervision for construction works, At this stage, concept approval has been received from the donor (EBRD), key technical issues are being identified to be reflected in the above-mentioned advisory services agreement. The approximate date for the announcement of the tender is 2026. As for the wastewater treatment plant, in agreement with the donor (EBRD), in the 3rd quarter of 2021, based on technical needs, Tbiliservice Group LLC signed an agreement with the international consulting company GWCC BBVA to conduct a technical re-evaluation of the component. Tender procedures are currently underway. The tender is scheduled to be announced in the 2nd quarter of 2023.
- Arrangement of the gas control system at the Kutaisi non-hazardous waste landfill has not been started.
- At the moment, the international consulting company ICT, with the support of the EBRD, is conducting a study of an unauthorized landfill in the city of Batumi, on the basis of which measures will be developed to close the landfill and arrange gas exhaust systems in accordance with European standards.

Objective 6.2. Support waste recycling

No studies were carried out during the reporting period, and the amount of emissions reduced as a result of waste treatment (GgCO_{2e}) was not measured.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
6.2.1. The amount of emissions reduced through waste recycling (GgCO _{2e})	0	10	Over 150	Not available	Unknown

- During the reporting period, the practice of separating paper at source was partially introduced in Tbilisi, Batumi and Kutaisi. However, the preparation of an information brochure has not yet begun.
- As of December 31, 2022, 76.5 tons of biodegradable organic and garden waste were collected and processed in Kutaisi, resulting in 2.5 tons of finished compost.
- In terms of increasing knowledge and awareness about waste management, within the framework of 5 information campaigns, information meetings were held with 10 schools, a

brochure on extended producer obligations was printed, and a manual on waste management was printed. An information campaign was carried out to expand the obligations of manufacturers in social networks, 2 trainings were held and 1800 teachers were trained.

Objective 6.3. Reduce urban greenhouse gas emissions from wastewater

Emission capture devices are not in operation at the municipal wastewater treatment plant, so emission reductions from the municipal wastewater treatment plant are not expected and data are not available.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
6.3.1. The amount of reduced emissions from wastewater (GgCO _{2e})	0	Over 150	Over 500	Not available	Unknown

- In Abastumani, the construction of urban wastewater treatment facilities has been completed. The progress in the construction of Poti treatment facilities is 80%, Gudauri treatment facilities - 61%, Marneuli treatment facilities - 62%. The design works of the treatment facilities of Mukhrani, Dusheti, Pasaauri, Zhinvali, Kvareli and Martvili have also been completed. At the moment, the plans include the construction of treatment facilities in Kvareli and Martvili.
- At the urban wastewater treatment facilities of Tbilisi, Batumi and Kobuleti, work has not begun on the arrangement of gas collection and treatment systems in accordance with the 91/271/EEC Directive.

Objective 6.4. Develop a data-based waste management system

Of the national reports that included information on waste management, 50% relied on data, showing progress compared to baseline.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
6.4.1. Percentage of data-based waste management reports	0%	50%	100%	50%	+

- Waste statistics production started, municipal waste data published on the web page. Work is underway to determine the feasibility of producing additional performance indicators for waste.

- The National Greenhouse Gas Inventory is based on sources and data published by the National Statistics Office.

Objective 7.1. Restore degraded forests

In order to restore degraded forests in 2021, reforestation activities were carried out on an area of 783 hectares, of which reforestation was carried out through afforestation on 150.2 hectares, and work to stimulate natural regeneration was carried out on an area of 632.8 hectares. During 2022, the LEPL National Forestry Agency did not carry out afforestation activities.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
7.1.1. Area of forests where restoration works have been carried out, in ha	190 Ha	890 Ha	Over 4000 Ha	783 Ha	+

- Reforestation activities have been completed on 150.2 hectares (including 144 hectares of burnt-out areas). In the Samtskhe-Javakheti region, 144 hectares of burnt lands have been restored, and 4.9 hectares of forest have been planted in the same region, also forest crops were planted on 1.3 ha in the Samegrelo-Zemo Svaneti region.
- As of 2022, activities to promote natural regeneration have been implemented on 3153.9 ha, of which the share undertaken by the National Forestry Agency was 1472.9 ha in 2022, the Adjara Forestry Agency undertook 190 ha, and according to the mayor's office of Akhmeta Municipality, this process proceeds naturally and the administration, for certain reasons (due to lack of finance, lack of human and technical resources and many other factors), does not intervene excessively.

Objective 7.2. Support sustainable forest management

To ensure sustainable forest management, an inventory was made and management plans were prepared on an area of 266,177 ha. The project started in 2022. And the forest area will be considered managed in accordance with the principles of sustainable management after the completion of the project.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
7.2.1. Area of forests managed with sustainable	0	150, 807 ha	450, 000 ha	266,177 ha	+

management principles, in ha					
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- Forest management plans for Lanchkhuti, Chokhatauri, Lagodekhi have been approved. Forest management plans have been developed for Lentekhi, Akhmeta, Dedoplistskaro-Signagi and Adigeni.
- Within the framework of the ECO.Georgia project, forest sustainable management work is being carried out on an area of 270,000 hectares in the target municipalities. The project started in 2022. In 2022, the LEPL National Forestry Agency started the forest inventory (FMP) process in the Tianeti forest area, an agreement was signed with the organization. Inventory trainings FMI were also held, 20 young foresters were trained and employed. Terms of reference have been developed for the Ozurgeti, Telavi, Kvareli forest areas. As part of the care and restoration of forests in Ozurgeti and Chokhatauri, Gurai district, forest care activities were carried out on an area of 35 hectares, such as caring for seedlings, cleaning territories, restoring fences. 5 business yards were built, the agency purchased 27 SUVs. So far, 16 vehicles, 1 bulldozer and 2 trucks (4x2) have been provided.
- According to the National Forestry Agency, as of 2022, 32 business yards have been organized.
- Within the framework of the ECO.Georgia project, the Department of Environmental Supervision purchased 10 off-road vehicles, 70 pieces of equipment - camera traps, a charger for camera traps, and batteries for camera traps. Trainings were conducted in Tbilisi, Batumi and Telavi - 87 first responders and 20 forestry inspectors were trained.
- A comparison of the facts of illegal logging by the population in the target areas will be carried out after the implementation of the activities. Conducted a five-day training for lawyers in target municipalities and trained 17 staff to familiarize themselves with the new Forest Code and subordinate normative acts, as well as to discuss and analyze dispute cases arising in the region. Also in 2022, the Environmental Information and Education Center held 1 essay competition for schoolchildren on the topic: "Sustainable forest management around me". 223 students took part in the Olympiad (including 148 girls). This competition served to raise the awareness of schoolchildren in terms of environmental issues. In 2022, information brochures were also printed (1,500 in total) about the project, sustainable forest management, energy efficient and alternative fuels. Through the official social networks of the Education Center, information was provided to 21,681 persons.
- As of 2022, a total of 63 recreational use permits and 27 non-timber resource use permits have been issued, including 4 from the Adjara Forestry Agency and 23 from the LEPL National Forestry Agency.
- The plan for the public awareness campaign was developed by the LEPL National Center for Environmental Information and Education.
- As of Q4 2022, 15 management plans for the Emerald Network sections have been developed, covering 186,242 hectares of forest area in Georgia. The indicator is calculated for Emerald areas outside the network of specially protected natural areas.

- During the reporting period, the Kolkheti National Park was expanded by 671.5 hectares, the law On the Creation of the Tsiv-Gombori Managed Reserve Zone came into force, area:

4 936 ha. Laws that were adopted in 2022 and will come into force in 2023: On the creation and management of the Kvereti managed reserve - 14,797 hectares, including 14,711.5 hectares of forest; On the creation and maintenance of the Racha protected area - 50,835 hectares, including 16,684 hectares of forest; On the creation and management of the Shida Kartli protected areas (total 32,850 ha), namely: On the creation and management of the Tana and Tedzma protected landscapes - 21,864 hectares, including 12,862 hectares of forest; On the creation and management of the Tana managed reserve - 10986 hectares, including 10927 hectares of forest; On the creation and management of the Machakhela protected landscape - 4,294 ha, including 3,326 ha of forest; On the creation and management of the multifunctional territory of Samukhi named after Nugzar Zazanashvili - 13,273.43 hectares. In 2022, the total area of protected areas increased by 116,720.9 ha (including 58,510.5 ha of forest) to 912,908 ha, which is approximately 13% of the territory of Georgia.

Objective 7.3. Develop a forest management system adequate to climate change challenges

During the reporting period, progress was made on only two of the three target indicators for Objective 7.3. The number of projects developed through inter-agency coordination and cross-sectoral projects. In the forestry sector, 8 such projects were implemented in which various agencies were involved in the approval process, and many projects were implemented in which various agencies were involved, albeit to a small extent. The proportion of protected area management plans that include climate change mitigation measures has increased to 42% by 2021. However, the number of gender-responsive sustainable forest management plans is still zero. On September 30, 2021, the Implementation Agreement was signed between the Ministry of Environmental Protection and Agriculture of Georgia, the Ministry of Economy and Sustainable Development of Georgia and the German Society for International Cooperation (GIZ). The above project involves the revision and updating of existing management plans, as well as the preparation of new management plans, taking into account gender issues.

Objective outcome indicator	Baseline	2022 Midterm indicator	Final indicator	Indicator in the reporting period	Progress
7.3.1. The number of forest related projects developed through inter-agency coordination and cross-sectoral projects	10	20	Over 30	20	+
7.3.2. The percentage of protected area	0	over 65%	over 100%	42%	+

management plans that integrate climate change mitigation measures					
7.3.3. The number of gender-sensitive sustainable forest management plans	0	15%	over 50%	0	-

- As of 2022, out of new and updated approved management plans, management plans of 10 protected areas (Tbilisi, Machakhela, Kobuleti, Kolkheti, Algeti, Kintrishi, Javakheti, Lagodekhi, Tusheti, Borjomi-Kharagauli) reflect climate change issues from a total of 24 administrations (of which 21 are administered by the LEPL Agency of Protected Areas, and 3 - by the relevant municipality).

Challenges and Recommendations

- A major challenge to the implementation of the Climate Change Strategy and Action Plan during the biennium is the large number of performance indicators for which no data has been collected. It is important that the departments responsible for the source of validation of the performance indicators of the respective objectives start data collection activities in time.
- Another challenge that stand out in the Report on the Climate Change Strategy and Action Plan for 2021 is the large number of activities that have yet to be started. Although the number of such activities decreased from 28.79% to 23% in 2021, their percentage is still high. This does not mean that these activities will not eventually be implemented, but with only one year remaining until the end of the Action Plan, the risk of not being implemented is high. According to the results of the end of the second year of the three-year Action Plan for 2021-2023, progress in the implementation of the Action Plan is only 47.28%. Such delays are noteworthy due to potential systemic issues that need to be addressed. Therefore, despite the fact that 1 year remains before the implementation deadline, the responsible authorities should analyze the reasons for not starting activities, strengthen their efforts in terms of timely planning of these activities, searching for appropriate donors and mobilizing resources so that activities can be successfully launched and implemented in next reporting period. The COVID-19 pandemic, which coincided with the implementation period of the Action Plan, also had a clear negative impact on the timeliness of the start of activities and led to the delay in the start of a number of activities.
- The implementation of a number of activities, for example in the energy generation sector (promoting an increase in the average efficiency of thermal power plants and renewable energy production) often depends on the availability of investors. Some of the power plants are at the stage of feasibility studies, and some are at the stage of negotiations with investors on construction work. The main challenge is the delay in these processes due to the complexity of the issues and the large number of stakeholders. It is important that the responsible authorities continue to work actively with investors in order to start construction work on time and successfully complete it. Also, intensify work in the direction of finding new investors for those power plants, the construction of which has not yet begun.
- The opposition of the population and individual groups had a negative impact on the construction of the hydroelectric power stations. In addition, since the timing of projects changes periodically due to various circumstances, such as early completion of construction or, on the contrary, delay (financial problems, environmental conditions, social problems, etc.), and in the meantime, new projects and are being added/or the existing memorandums are canceled, it would be more appropriate for policy planning and evaluation to use existing established capacities that are in operation rather than those related to specific projects. For example, in 2021-2022, 15 HPPs were put into operation, which were not included in the Action Plan.
- The pace of implementation of activities in this reporting period was also negatively affected by the fact that the relevant programs and projects have not yet been launched or legislative amendments have not been prepared. One notable example is the building sector, where a

number of activities started relatively late due to the late start of a donor-funded project. Therefore, it is important for the responsible departments to strengthen coordination with each other and continue to actively work with donors for the timely initiation and successful implementation of programs.

Sectoral Challenges

The two-year Action Plan implementation rate of 47.28% is less than the three-year proportional rate. In order to achieve the medium-term targets of the planned activities and the performance indicators of the objectives by 2024, it is important to correct the shortcomings identified during the monitoring in a timely manner. In particular, there is progress in the activities and tasks of the Action Plan, which are related to the development of legislative and policy documents. In this regard, the sectors of energy efficiency and buildings, as well as agriculture and forestry, stand out.

Energy Generation

Despite the improvement in the target indicator for the share of renewable energy (wind, solar, hydro, biomass) in electricity generation, the share of renewable energy (wind and solar power plants) in the installed capacity of the Georgian energy system remained unchanged. The reason for this is the lag in the pace of implementation of measures in the energy generation sector. The construction of 9 wind and 7 solar power plants is still at the stage of development, negotiations and contracting, and out of 10 hydroelectric power plants, only one has been put into operation. Maintaining the current pace creates a risk that these activities will not be completed by 2024.

Transport

The increase in the share of electric vehicles in the fleet is statistically insignificant. The share of electricity consumed by all modes of transport in final energy consumption is still small. This is due to the fact that, beyond the free parking and charging points envisaged in the Action Plan, the analysis of alternatives to encourage the use of electric vehicles has not yet resulted in the introduction of additional taxes or other types of incentives. Including, the possibility of introducing a progressive tax on the import of old cars and the feasibility of a possible increase in the tax on fuel in terms of economic and environmental impact have not been studied. However, these activities, along with the recent inflation in fuel prices, may have negative social and economic impacts, so their implementation will remain a challenge. Activities to promote the production of biodiesel have not been launched either.

Surprisingly, there was a higher-than-expected decline in the proportion of cars that failed inspections from 55% to 35.85%, which could be due to some factors unrelated to the activities (for

example, an increase in the proportion of relatively new cars entered for technical inspections, etc.). In order for this change to actually improve the technical condition of older vehicles, it is important to introduce control over emission routes and more intensively detect cases of bypasses for inspections, as well as effectively implement measures aimed at tightening sanctions for such violations.

Despite the successful implementation of measures to promote non-motorized transport and public transport in Tbilisi and Batumi, the percentage of people using private vehicles is still high.

Buildings

Significant progress has been made in the development of subordinate normative acts, methodological, technical and policy documents in the field of energy efficiency of buildings. Most of them have already been approved. However, no tangible progress has been made so far in meeting the challenges of the building sector in terms of certified buildings, informing consumers about energy-efficient household appliances, energy-efficient approaches in public buildings and schools. The lack of information on a number of performance indicators also remains a problem. It is important to strengthen work with the National Statistics Office on the collection and analysis of relevant data.

Industry

The current situation with the study of industrial emission factors by the National Statistics Office has improved. At the objective level, the reduction of greenhouse gas emissions from industrial processes for the production of cement and nitrogen and the energy consumption of these industrial facilities has been successfully achieved. Measures to replace the wet-mix cement production method with the dry-mix method are 100% completed. However, the introduction of a new technology for the production of nitric acid is being delayed, including at the initial stage due to the need for additional research in connection with the pandemic, and then the sanctions. It is important to eliminate interfering factors and bring the activity to the end.

Agriculture

In the field of agriculture, progress, although insignificant, has also been made in terms of the development of legislation and policies. The share of climate-smart initiatives based on cost-benefit analysis and other data in agricultural programs has increased. There is also some progress in conducting outreach activities for target groups. However, due to the lack of research, it is not known to what extent farmers' awareness of sustainable livestock feeding practices and sustainable

soil management has actually increased, which is an important factor in reducing emissions in this sector.

Waste Management

Some progress has been made in implementation of waste management knowledge and awareness raising activities. Significant progress has also been made in terms of landfill closures and the construction of regional non-hazardous waste landfills.

Projects of gas collection systems in Tbilisi, Batumi and Kutaisi are in the stage of fundraising, research and design. Here, in some cases, the need for new research was revealed. The practice of separating paper at the source and recycling biodegradable organic waste is only partially implemented and continues this year. Emission trapping devices do not operate at the municipal wastewater treatment plant. At the municipal wastewater treatment facilities in Tbilisi, Batumi and Kobuleti, activities on the arrangement of gas collection and processing systems have not been started.

Significant progress has been made by the National Statistics Office of Georgia in terms of publishing official waste data as well as data-based reporting. Due to lack of data, the amount of emissions reduced and as a result of waste treatment and emissions from landfills during the reporting period is not known. These figures depend on the inventory study, which will start in 2023. Thus, it is important to find alternative methods for annual data collection.

Forest sector

The area of degraded forest, where reforestation work was carried out, has increased, reforestation, planting and maintenance work has been carried out on hundreds of hectares in different regions. The hectareage of forests managed under sustainable management principles has increased dramatically, and forest management plans have been prepared for all target municipalities.

The foundation for the creation of new protected areas has been created and laid. The integration of climate change mitigation activities into protected area management plans has improved. However, it remains a challenge to reduce the number of cases of illegal logging by the population by raising public awareness.

Consolidated Status Report for 2022

Annex 1.