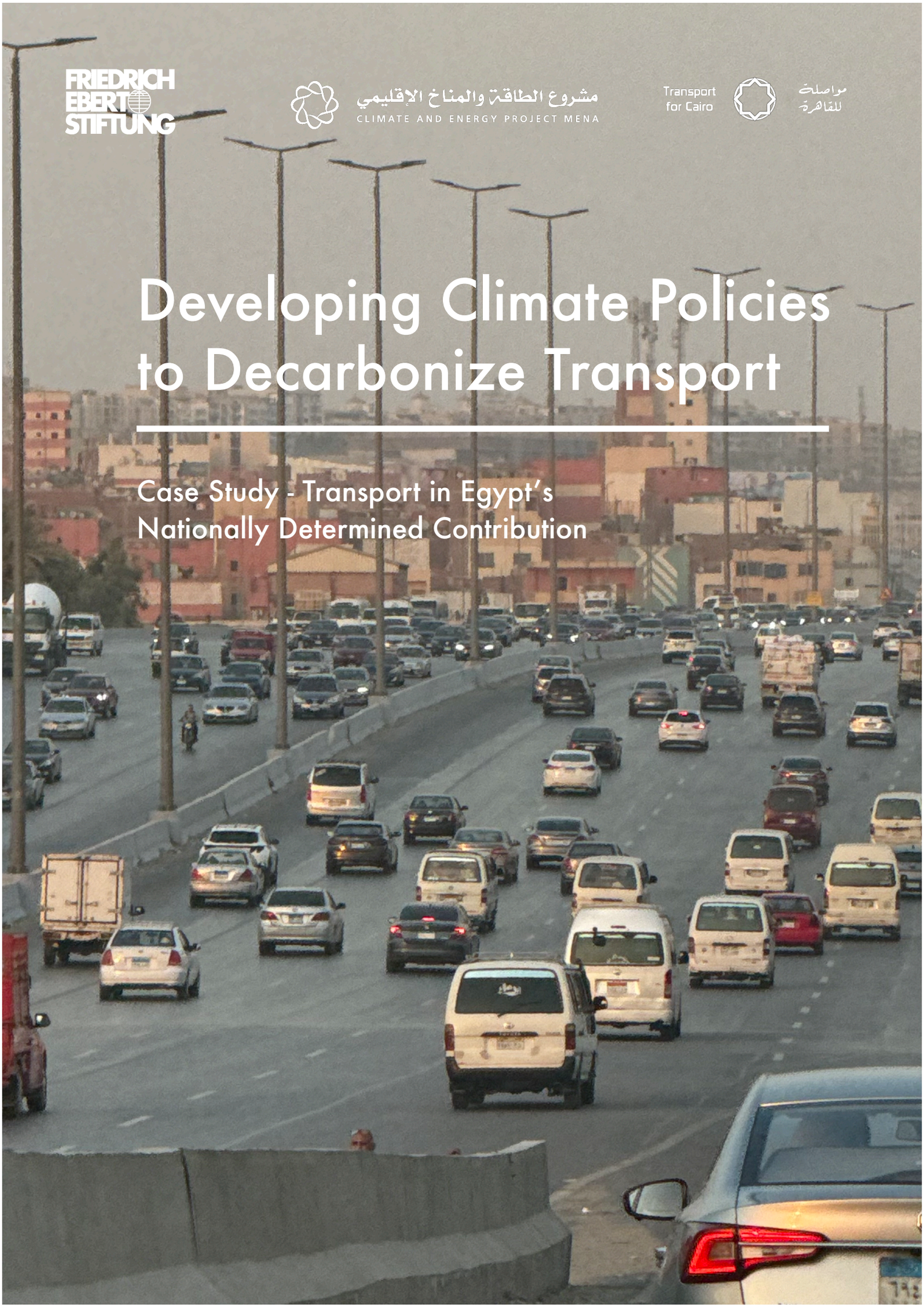
FRIEDRICH EBERT STIFTUNG

مشروع الطاقة والمناخ الإقليمي
CLIMATE AND ENERGY PROJECT MENA

Transport for Cairo
مواصلات للقاهرة

Developing Climate Policies to Decarbonize Transport

Case Study - Transport in Egypt's Nationally Determined Contribution



About Friedrich Ebert Stiftung (FES) Regional Climate and Energy Project MENA

The Regional Climate and Energy Project MENA advocates for an energy transition into renewable energy and energy efficiency. It continues to search for just transition solutions in the energy sector that ensure both, the protection of the planet and the people.

As the MENA region is one of the areas most heavily affected by climate change, we contribute to policy advising, research, and advocacy in the areas of climate change policy, energy transition, and urban sustainability, with the
support of research institutions, civil society organizations, and other partners in the region and Europe.

Year 2025

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Friedrich-Ebert-Stiftung's Regional Climate and Energy Project in the Middle East and North Africa (MENA) has commissioned, edited, reviewed, and published this study in cooperation with Transport for Cairo.

About Transport for Cairo

Transport for Cairo (TfC) is a strategic advisory practice specialized in sustainable urban mobility, established in Egypt in 2015. To date, TfC has successfully completed more than 60 projects that span twelve countries in Africa and Asia.
Our work covers all mobility and transport modes including formal rail and bus passenger services, informal services, shared mobility, micro mobility and active travel. We actively develop new knowledge and initiatives to transform transport in African cities focusing on informal transport transformation, digital transformation and electrification.
Our purpose is to help African cities envision and build sustainable mobility systems that make a distinctive and lasting impact on economic growth and quality of life in urban areas through three work streams:

- **TfC Data Lab:** We specialize in data collection and aggregation; modelling; simulation and visualization. Our in-house developed data collection and management platform (RouteLab) streamlines field research mobilization, identification of data gaps, production of standardized datasets and performing effective analytics.
- **TfC Urban Mobility Lab:** We partner with universities and research and policy centers to produce publications, datasets, training programs and novel research concepts that utilize data science.
- **TfC Maps:** TfC designs maps to reflect and satisfy passenger's needs, and to help planners reimagine transit networks.

Our clients include government bodies across our countries of operation; development agencies and banks (e.g., The World Bank, The French Development Agency, JICA); public transport operators (e.g., RATP Dev, Transdev); policy and research institutes (e.g., World Resources Institute, Volvo Research & Education Foundations) and tech companies such as Google.

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Foreword

How do we overcome challenges and continuously improve? Both, as an individual and as a society?

As we witness climate-related events around the world, we see the global scale of the climate emergency: The recent Los Angeles wildfires devastated neighborhoods; last year's flash flooding hurt Libya and Spain; extreme heatwaves challenge livelihoods in India and Pakistan; and drought hurting farmers globally.

We have an urgent need to learn and collectively address these increasing risks becoming realities.

The situation can drive climate actors to pessimism, and this is the most pressing reason we felt defeated working on this document. But we understand we need to learn to break the cycle. Advocacy, access to information, and reproducing knowledge are tools we can use to break the cycle. Policymakers should not operate in a vacuum; linking them to technical experts, operators, manufacturers and all other stakeholders to achieve collective change is vital.

Decades of decisions have shaped today's emissions pathways, and their outcomes are increasingly evident. The idea for this document began almost a year ago, with an aim to develop a policy paper on improving the integration of active travel into Egypt's Nationally Determined Contributions. From there, we worked on enhancing the inclusion of road and rail modes of passenger and freight transport into the NDC. This document does not include neither inland aviation nor inland maritime transport. The relative contribution of both to national emissions is relatively low, and the focus on modal shift to rail implicitly covers aviation.

The UN calls us Non-State Actors. as an NSA, we approached this research with the release of new templates for NDCs in mind - tools intended primarily for government use. This opportunity allowed us to explore transport and climate policies in Egypt, identify the actors involved, and consider which steps can inform the next iteration of the NDC. We specifically focused on passenger and freight transport in road and rail. These modes contribute to emissions and acknowledging them will improve emission calculations and present more opportunities to achieve climate targets. Passenger modes had more data available than freight transport, which was a limitation while drafting contextual details and recommendations.
Our work provides initial insights and clear recommendations that aim to spark discussions about the transport sector's role in developing effective, climate-conscious policies. We hope this research kickstarts conversations about better understanding and utilizing the sector's potential. We hope it inspires policy makers to increase their ambition; communicate it in their international commitments and ultimately, ideally, work towards delivering them.

Acknowledgments

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Our thanks go to Dr. Ahmed Wafiq, Executive Director of Integral Consult, and Dr. Khaled Kheir el-Din, Head of the National Adaptation Plan Project, for their time and for sharing their local insights during the stakeholder engagement phase of this project.

Peer Review Group

We thank the peer reviewers for their timely responses, feedback, and suggestions, which were instrumental in validating and improving the quality of this publication. Special thanks to Andrea San Gil León from the Global Network for Popular Transport, Dalia Sakr and Dalia Nakhla from SHiFTERRA Consultancy, Hamed Korkor working on Egypt's Biennial Transparency Report in the transport sector, Jill Warren from the European Cyclists' Federation, Jim Walker from Walk21, Juman Kubba from the International Transport Workers' Federation, and Tim-Soeren Hohmann and Sukanya Janardhanan from GIZ.

Community of Practice

We also express our gratitude to the broader network of transport practitioners and researchers whose knowledge products significantly influenced this work. These include contributions from the International Union of Railways (UIC), the International Association of Public Transport (UITP), the International Transport Forum (ITF-OECD), Alternative Policy Solutions in Egypt, and UNDP.

Finally, we thank the Egyptian government authorities, including the Ministry of Transport, Ministry of Environment, Ministry of Planning and Economic Development, and the Ministry of International Cooperation, for their efforts in advancing climate action in Egypt and in supporting this work.

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2024–2025

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Cover Image: Ring Road, Cairo, © Sara Amr

Acronyms

BAU	Business as Usual	سيناريو «العمل كالمعتاد»
BRT	Bus Rapid Transit	الأوتوبيس الترددي السريع
BTR	Biennial Transparency Report	تقرير الشفافية لفترة السنتين
BUR	Biennial Update Report	التقرير المُحدّث كل سنتين
CAPMAS	Central Agency for Public Mobilization and Statistics	الجهاز المركزي للتعبئة العامة والإحصاء
CREATS	Cairo Regional Area Transport Study	دراسة أوضاع النقل والمواصلات في إقليم القاهرة الكبرى
CTA	Cairo Transport Authority	هيئة النقل العام بالقاهرة
EEAA/CCCD	Central Climate Change Department	الإدارة المركزية للتغيير المناخي
ENIT	Egyptian National Institute of Transport	المعهد القومي للنقل
ENR	Egypt National Railways	سكك حديد مصر
ETF	Enhanced Transparency Framework	إطار الشفافية المعزز
GARB	General Authority for Roads and Bridges	الهيئة العامة للطرق والكباري
GCF	Green Climate Fund	صندوق المناخ الأخضر
GCR	Greater Cairo Region	منطقة القاهرة الكبرى
GDP	Gross domestic Product	إجمالي الناتج المحلي
GHG	Greenhouse Gas	غازات الدفيئة
GHGI	Greenhouse Gas Inventory	جرد غازات الدفيئة
GNPT	Global Network for Popular Transportation	الشبكة الدولية للنقل الشعبي
GST	Global Stocktake	التقييم العالمي
HCMLT	Holding Company for Maritime and Land Transport	الشركة القابضة للنقل البحري والبري
HDV	Heavy Duty Vehicles	المركبات الثقيلة
IEA	International Energy Agency	وكالة الطاقة الدولية
IPCC	Intergovernmental Panel on Climate Change	الهيئة الحكومية الدولية المعنية بتغير المناخ
IIGCC	Institutional Investors Group on Climate Change	مجموعة جهات الاستثمار المؤسسية المعنية بتغير المناخ
ITF-OECD	International Transport Forum	المنتدى الدولي للنقل
LEZ	Low Emission Zones	مناطق منخفضة الانبعاثات
LMIC	Low- and Middle-income countries	البلدان منخفضة ومتوسطة الدخل
LRT	Light Rail Transit	القطار الكهربائي الخفيف
LTRA	Land Transport Regulatory Authority	جهاز تنظيم النقل البري الداخلي والدولي
MALR	Ministry of Agriculture and Land Reclamation	وزارة الزراعة واستصلاح الأراضي
MOD	Ministry of Defense	وزارة الدفاع
MoE	Ministry of Environment	وزارة البيئة
MoE/ EEAA	Egyptian Environmental Affairs Agency	جهاز شئون البيئة
MoERE	Ministry of Electricity and Renewable Energy	وزارة الكهرباء والطاقة المتجددة
MoFA	Ministry of Foreign Affairs	وزارة الخارجية
MoHUUC	Ministry of Housing, Utilities, and Urban	وزارة الإسكان والمرافق والمجتمعات العمرانية

MoHUUC/ NUCA	New Urban Communities Authority	هيئة المجتمعات العمرانية الجديدة
MoPED	Ministry of Planning, Economic Development and International Cooperation	وزارة التخطيط والتنمية الاقتصادية والتعاون الدولي
MoPMR	Ministry of Petroleum and Mineral Resources	وزارة البترول والثروة المعدنية
MoT	Ministry of Transport	وزارة النقل
MOU	Memorandum of Understanding	مذكرة تفاهم
MRV	Monitoring, Reporting, and Verification	القياس والإبلاغ والتحقق
MWRI	Ministry of Water Resources and Irrigation	وزارة الموارد المائية والري
M&E	Monitoring and Evaluation	المتابعة والتقييم
NAP	National Adaptation Plan	خطط التكيف الوطنية
NAT	National Authority of Tunnels	الهيئة القومية للأنفاق
NCCC	National Climate Change Committee	المجلس الوطني للتغيرات المناخية
NCCS	National Climate Change Strategy	الاستراتيجية الوطنية لتغير المناخ
NDC	Nationally Determined Contributions	مساهمات محددة وطنيًا
NGO	Non-governmental Organizations	المنظمات غير الحكومية
NIB	National Investment Bank	بنك الاستثمار القومي
NMT	Non-motorized Transport	النقل غير الآلي
NRP	National Road Project	المشروع القومي للطرق
NUC	New Urban Communities	المجتمعات العمرانية الجديدة
ODAs	Overseas Development Agencies	وكالات التنمية الدولية
OECD	Organization for Economic Co-operation and Development	منظمة التعاون والتنمية الاقتصادية
PATH	Partnership for Active Travel and Health	شراكة من أجل الصحة والتنقّل النشط
PT	Public Transport	النقل العام
SULP	Sustainable Urban Logistics Plans	الخطط اللوجستية الحضرية المستدامة
SUMP	Sustainable Urban Mobility Planning	تخطيط التنقل الحضري المستدام
UIC	International Union of Railways	الاتحاد الدولي للسكك الحديدية
UITP	International Association of Public Transport	الاتحاد الدولي للمواصلات العامة
UNDG	United Nations Development Group	مجموعة الأمم المتحدة الإنمائية
UNDP	United Nations Development Programme	برنامج الأمم المتحدة الإنمائي
UNEP	United Nations Environment Programme	برنامج الأمم المتحدة للبيئة
UNFCCC	United Nations Framework Convention on Climate Change	اتفاقية الأمم المتحدة الإطارية المتعلقة بتغير المناخ
WHO	World Health Organization	منظمة الصحة العالمية
WRI	World Resources Institute	معهد الموارد العالمية
ZEVS	Zero Emission Vehicles	مركبات عديمة الانبعاثات

Glossary

Active Travel: Modes of transportation that involve physical activity, primarily walking and cycling, used for traveling from one place to another, or to access public transport. Sometimes referred to as non-motorized transport (NMT).

Adaptation measures: Projects, actions, measures, or approaches to adjust to new climate conditions, typically in response to or in anticipation of climate change and its impacts.

Biennial Transparency Report: A report mandated under Article 13 of the Paris Agreement as part of the Enhanced Transparency Framework (ETF). It ensures accountability by tracking progress and providing transparency on countries' climate actions and commitments.

Business as Usual: A scenario for future developments that assumes no significant changes in current technology, policy, or practice.

Global Stock-take: An evaluation process conducted globally to assess the collective progress towards achieving the Paris Agreement climate goal.

Intercity transport: Transport services that connect different cities, typically involving longer distances than intracity transport.

Intracity transport: Transport services within the same city or urban areas, facilitating daily commutes and local travel.

Mitigation measures: Actions taken to reduce the emission of greenhouse gases and to curb the severity of future climate impacts.

Nationally Determined Contributions: Commitments by countries under the Paris Agreement to reduce national emissions and adapt to the impacts of climate change. The plans include specific targets and actions across various sectors.

Non-State Actors: Entities outside national governments, including businesses, cities, non-governmental organizations (NGOs), and academia, driving climate action under UNFCCC.

NDC transport templates: Guidelines developed by non-state actors to assist national governments in enhancing, and aligning their NDCs with climate goals by incorporating sustainable transport strategies such as active mobility and electrification targets.

Paris Agreement: An international treaty adopted in 2015, aiming to limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.

Project Affected Parties: Individuals or groups who are directly or indirectly affected by the outcomes of a project. This includes workers, private operators, local communities, and other stakeholders who might experience social, economic, or environmental impacts due to the implementation of transport-related projects.

Popular transport: transport services provided by individuals or associations, often referred to as "informal transport," "paratransit," "intermediate public transit," or "artisanal public transportation." The operations, vehicles, routes or schedules of these services are usually not managed or regulated by government authorities.

Modal Shift: The process of triggering behavioral changes to shift the mode of transportation used for moving people or goods. This often involves transitioning from less sustainable options, like private vehicles, to more sustainable alternatives, such as public transit, walking, or cycling.

Sustainable Urban Mobility Planning: Planning framework for designing transportation systems in urban areas that focuses on sustainability, integration, and meeting the mobility needs of all users.

1 Introduction

In early 2025, countries will be required to share a more progressive third generation of their Nationally Determined Contributions (NDC 3.0). The NDC document released by each country outlines the country's updated mitigation plans to decrease their greenhouse gas emissions (GHG) and its adaptation plans to the impacts of climate change, across sectors.

UNEP's Emissions Gap Report states that if trajectories of current policies and NDCs continue, it limits global warming increases at 3°C, well above the Paris target of 1.5°C. A more optimistic scenario where countries deliver all conditional or unconditional commitment from their NDC could lower these estimates to 2.5°C. (1)

These figures and the increased sense of urgency require countries to push towards pledging to actionable, and more ambitious NDC.

It's important to commit to more ambitious targets in the upcoming NDC. The first Biennial Transparency Report (BTR)[1] which Egypt published late December 2024 bodes well for the NDC 3.0 planned for 2025. The BTR is part of the Enhanced Transparency Framework of the Paris agreement which requires that countries share detailed information regarding their progress in achieving the current NDC. The BTR would then inform the Global Stocktake[2] (GST) process to evaluate the collective efforts of countries for climate action.

Image 1 Nile Corniche, Cairo. (Ghada Abdul Aziz, 2023)

1 The BTR should be submitted every two years, after the first submission which is due December 2024.
2 The GST occurs every five years, the first one took place in 2023, and the next GST is scheduled for 2028.

1.1 Objective and approach

We develop a **comprehensive set of recommendations to enhance the transport sector's contribution in Egypt's upcoming NDC.** The recommendations are informed by three key components:

1. Establishing a clear context for transport services in Egypt focusing on public transport, freight and active travel. We highlight the current trajectories of projects and the institutional set up that manages these services. By drawing this context, we ensured that the recommendations are connected to the realities of transport provision in Egypt, and the decarbonization potential of different modes.

2. Insights into the NDC production process in Egypt: the development process of Egypt's NDC and their integration with broader national climate strategies. We document the institutional framework, key actors, and coordination mechanisms involved in formulating climate commitments. We engaged stakeholders who worked on the updated NDC document (NDC 2.0) and the National Adaptation Plan (NAP) project.

3. Localizing international NDC transport guidance on inclusion of sub-sections of urban passenger and freight transport in NDC documents. We localize these international templates and guidelines to help align Egypt's transport sector with international best practices but also remain grounded by the local context.

These NDC guidance documents are:

- Active Travel template published by the Partnership for Active Travel and Health (PATH)
- Public Transport template published by the International Association of Public Transport (UITP)
- Rail template published by the International Union of Railways (UIC)
- Popular transport template published by TfC in partnership with Global Network of Popular Transportation (GNPT)
- Guide to Integrating Transport into Nationally Determined Contributions published by the International Transport Forum (ITF)

2 Transport sector emissions

Globally, transport is the second largest contributor to CO2 emissions, accounting for 15% of total emissions in 2023, which amounts to 8.7 GtCO2e. Road vehicles are responsible for 70% of these emissions, with aviation and other modes contributing the remainder. (1)

The energy sector contributes 65% of Egypt's GHG emissions, with transport accounting for 15% of this total, the second-largest share after energy industries (28%). In Egypt's second NDC update (2023), transport sector baseline GHG emissions were 0.05 GtCO2 in 2015, with Business as usual (BAU) emissions for 2030 projected at 0.12 GtCO2. Egypt is aiming for a 7% reduction in these projected emissions by 2030. (3)

Egypt's Biennial Transparency Report (BTR) and Egypt's Biennial Update Report (BUR) contain aggregated fuel data for the entire transport sector, with a primary focus on road transport as the largest energy consumer. The BUR 2018 report does not disaggregate GHG emissions by subsectors (rail, aviation, and waterborne navigation) due to inconsistent data from 2005 to 2015. Although the BTR does provide expected emission reduction estimates for some transport projects, it also does not disaggregate GHG emissions by subsector. Additionally, due to the lack of disaggregated transport sector data and the absence of raw data for total transport sector activity in the IPCC GHGI software[3], data is categorized under road transport as it represents the main energy-consuming transport activity.

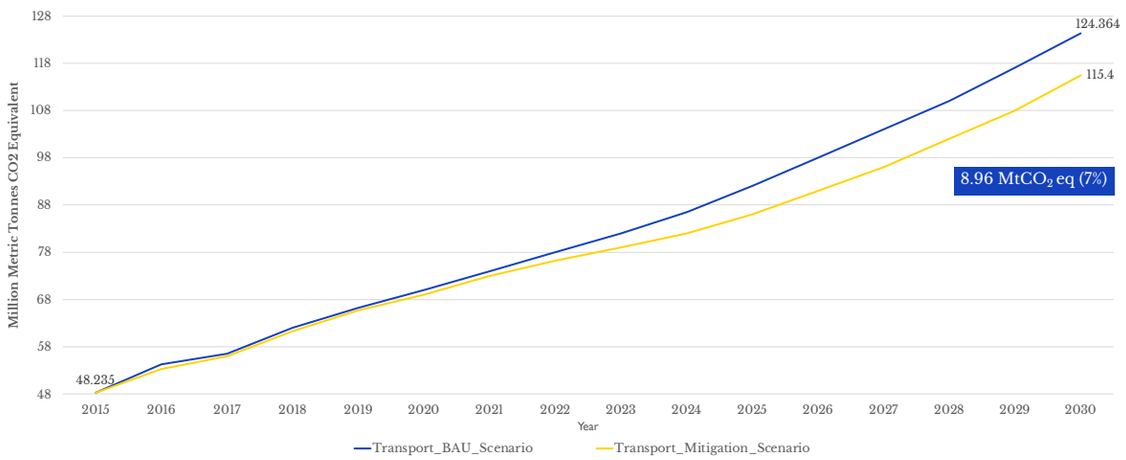

Figure 2-1 Transport BAU and mitigation scenarios for GHG emissions and the reduction target (MoE, 2023)

3 The Intergovernmental Panel on Climate Change (IPCC) Greenhouse Gas Inventory (GHGI) software is a tool developed by the IPCC to assist countries in estimating and reporting greenhouse gas emissions and removals across various sectors.

3 Climate action in Egypt

3.1 Egypt´s climate strategy

Egypt's broader climate strategy, outlined in the National Climate Change Strategy 2050 and its updated NDC, emphasizes the need for a modal shift to low-carbon transport modes, particularly for both passenger and freight services. The country has committed to expand its rail network, to electrify buses, and to improve infrastructure to support this shift.

The development of Egypt's Nationally Determined Contributions (NDCs) is part of a broader strategy, with substantial financial and technical support from international partners like the United Nations Development Programme (UNDP) and the Green Climate Fund (GCF).

3.1.1 Institutional framework for NDC development

The Egyptian Environmental Affairs Agency (EEAA) leads the development of climate strategies through the Central Climate Change Department (CCCD), which is responsible for data collection, strategy formulation, and project monitoring across sectors. The National Climate Change Council (NCCC), headed by the Prime Minister, supervises these initiatives. The MoE led the coordination of data collection from different ministries, facilitating the modeling of various scenarios essential for drafting the NDC. This involved engaging governmental and non-governmental stakeholders who contributed to previous climate action reports or studies.

Table 3-1 elaborates on the roles and responsibilities of each entity in preparing different national strategies.

GOVERNING BODY	ESTABLISHMENT YEAR	ROLE
National Climate Change Council (NCCC) **Ministerial level**	Established by Prime Minister Decree#1912 in 2015 and amended by decree #1129 in 2019. (4)	Organization: · NCCC is currently headed by the prime minister and was previously chaired by the Minister of Environment. · The NCCC includes a supreme committee, an executive bureau, and technical working group. · Coordinates climate policy development and implementation, ensures integration of climate actions into national development planning
Climate Change Central Department (CCCD) **National level**	Established as a climate change unit in 1996 and upgraded to a Central Department in 2009.	The CCCD is a central department at the Egyptian Environmental Affairs Agency. · National entity which coordinates with relevant ministries and the Central Agency for Public Mobilization and Statistics (CAPMAS). · The CCCD is the technical arm of the NCCC · Responsible for climate reporting, data collection, capacity building, technology transfer, enhancing the monitoring, reporting, and verification (MRV) system, and finance tracking.

Table 3-1 Entities managing climate change aspects in Egypt.

Insights from local consultants who played key roles in developing the NDC highlighted several challenges encountered during the drafting process. The challenges include clear differences between sectors in how advanced they are in implementing the measures outlined in the NDC. The challenges also include time-consuming data collection and modeling projections and the lack of unified (MRV) processes between government entities.

The NDC is viewed as a political document that reflects the current and planned achievements of various sectors. This perspective restricts flexibility in including new projects that lack identified funding sources, leading to cautious responses from governmental representatives when asked about adding more ambitious targets. As a result, the NDC has a mostly project-oriented focus in transport, primarily listing initiatives that are currently being implemented. Stakeholders indicated that it is generally easier to integrate sub-projects into existing initiatives than to propose new projects without guaranteed funding.
This stands in contrast to the energy sector components of the NDC, which include policy-oriented actions such as energy subsidies reform.

Image 2 Aswan Agricultural Road, in front of Munib Metro Station, Cairo. (Yasmine Sabek, 2022)

3.1.2 Climate related publications

Government of Egypt publishes various documents on climate action, with some listed in Table 3-2. Those include reports published nationally in the last ten years to strategize Egypt's action towards climate change, with a brief focus on how the transport sector is mentioned in each.

As is evident from Table 3-2, the Ministry of Environment, represented in the Egyptian Environmental Affairs Agency (EEAA) leads the production of national climate strategies.

3.2 NDC 2.0 development process

Egypt's second update of the NDC was produced in parallel to drafting the National Climate Change Strategy (NCCS). It was financially supported by the United Nations Development Programme (UNDP). The MoE coordinated the effort to gather essential data from various ministries to develop detailed scenarios for emissions reductions. The consultant responsible for drafting the NDC collected and analyzed data from different governmental sectors. Climate scenarios based on each sector's contributions and plans we're established, based on Egypt's Low Emissions Development Strategy (LEDS). This allowed for comprehensive modeling and setting targets for emission reduction, though some challenges—such as data consistency, sectoral alignment, and the establishment of a unified monitoring framework—were noted as areas needing improvement.

Currently, only three ministries - Transport, Electricity, and Petroleum and Mineral Resources - have defined quantitative goals, with the Ministry of Transport committing to a 7% reduction in GHG emissions by 2030 in comparison to the BAU scenario.

YEAR	PUBLISHING ENTITY	TITLE	BRIEF DESCRIPTION OF TRANSPORT IN THE REPORTS
2019	MoE, EEAA	Egypt's first Biennial Update Report (BUR)	The report includes transport by detailing GHG emissions from the sector, outlining policies like promoting public transportation and electric vehicles, noting funding needs for projects, and describing MRV processes.
2022	MoE, EEAA	Egypt National Climate Change Strategy 2050 (NCCS)	The strategy, specifically through Goal 1, promotes electric mass transit, converting vehicles to natural gas, improving road infrastructure, and encouraging non-motorized transport to reduce emissions. The NCCS also includes a monitoring and evaluation (M&E) institutional framework.
2023	MoPED	The National Agenda for Sustainable Development: Egypt's Updated Vision 2030	The strategy includes enhancing the Suez Canal, expanding electric traction within the railway network, and creating a network of roads, bridges, ports, airports, and communication systems.
2023	MoE	Egypt's Second Updated Nationally Determined Contributions (NDC 2.0)	The transport projects included in the NDC include expanding the rail network in Cairo (monorail, LRT, and the metro) and Alexandria (metro network) and the rapid electric train.
2024	MoE	Egypt's First Biennial Transparency Report (BTR)	According to the BTR, the transport sector is the second highest contributor to Egypt's GHG emissions, accounting for 25.5% of total energy emissions in 2022, marking a 322% increase in emissions from 1990 to 2022. The report tracks that Egypt surpassed its 2030 target for transport sector emissions reductions, achieving a 16.86% decrease in 2022 compared to BAU, well above the 7% target. (4)[4]

Table 3-2 Documents relevant to the climate action in Egypt.

4 The BTR relied on Tier 1 methods outlined in the IPCC 2006 Guidelines for National Greenhouse Gas Inventories, to estimate emissions. This tier uses simplified, default methods and global or regional average data, typically applied when country-specific data is limited, ensuring a consistent approach to emissions reporting in line with international standards. (4)

3.3 Recommendations for NDC 3.0 development process

To strengthen Egypt's upcoming NDC submission, we recommend the following regarding the NDC development process:

- **Enhance inter-ministerial project coordination early in the process of drafting the NDC.** The NCCS proposes an institutional framework which includes technical working groups that report to the NCCC. We recommend utilizing these frameworks to establish a sustainable transport technical working group under the NCCC. This working group can be headed by the MoT, and can have the mandate of facilitating the planning, budgeting, and monitoring of sustainable transport projects. This working group can facilitate coordination between projects, ministries and stakeholders including private operators, workers' unions, and other project-affected parties.
- **Improve data collection mechanisms to contribute to more accurate benchmarks.** Embed experienced individuals[5] within the CAPMAS and establish academic partnerships to mentor existing staff and to work on improving the institutions' environmental reports by improving the data collection and aggregation mechanisms.
- **Activate climate change units within relevant ministries** in alignment with Prime Ministerial Decree No. 1129/2019, which mandated their establishment.[6] Pair this institutionalization with well-designed capacity-building programs to ensure these units can enhance data collection consistency, streamline tracking processes, and improve transparency in climate-related efforts.
- **Incorporate ambitious projects to leverage opportunities for funding and future investment.** When larger projects lack funding, consider adding sub-projects or additional elements to existing initiatives, allowing for gradual advancement of climate targets.
- **Include timeframes and implementation measures and entities.** Establish detailed timeframes, implementation measures, and responsible entities for each NDC target. Specify milestones for policy changes, project development phases, and monitoring schedules. Assign accountability to relevant ministries, agencies, and technical working groups under the NCCC to ensure timely execution and progress tracking.

4 Local context

4.1 Passenger transport

Passenger transport in Egypt is characterized by a diverse mix of public, popular[7] (informal), and private transport modes catering to the varying needs of urban populations. These modes can be broadly classified into road-based and rail-based transport, each using different technologies and operator types. Figure 4-1 shows an overview of different passenger and freight transport.

5 This can take place through scholarships such as the Lee Schipper Memorial Scholarship granted to individual researchers which has the objective of accelerating the momentum of research in the transport policy and energy efficiency within institutions.

6 Prime Ministerial Decree No. 1129/2019 mandated the establishment of climate change units in the Ministry of Electricity and Renewable Energy (MoERE), the Ministry of Petroleum and Mineral Resources (MoPMR), the Ministry of Transport (MoT), the Ministry of Agriculture and Land Reclamation (MALR), and the Ministry of Water Resources and Irrigation (MWRI).

7 Popular transport -such as microbuses and tuk-tuks- serves the public but are privately operated by individuals or associations. Often labeled as informal transport because they operate and adjust their services based on local demand with limited or no government regulation. (49)

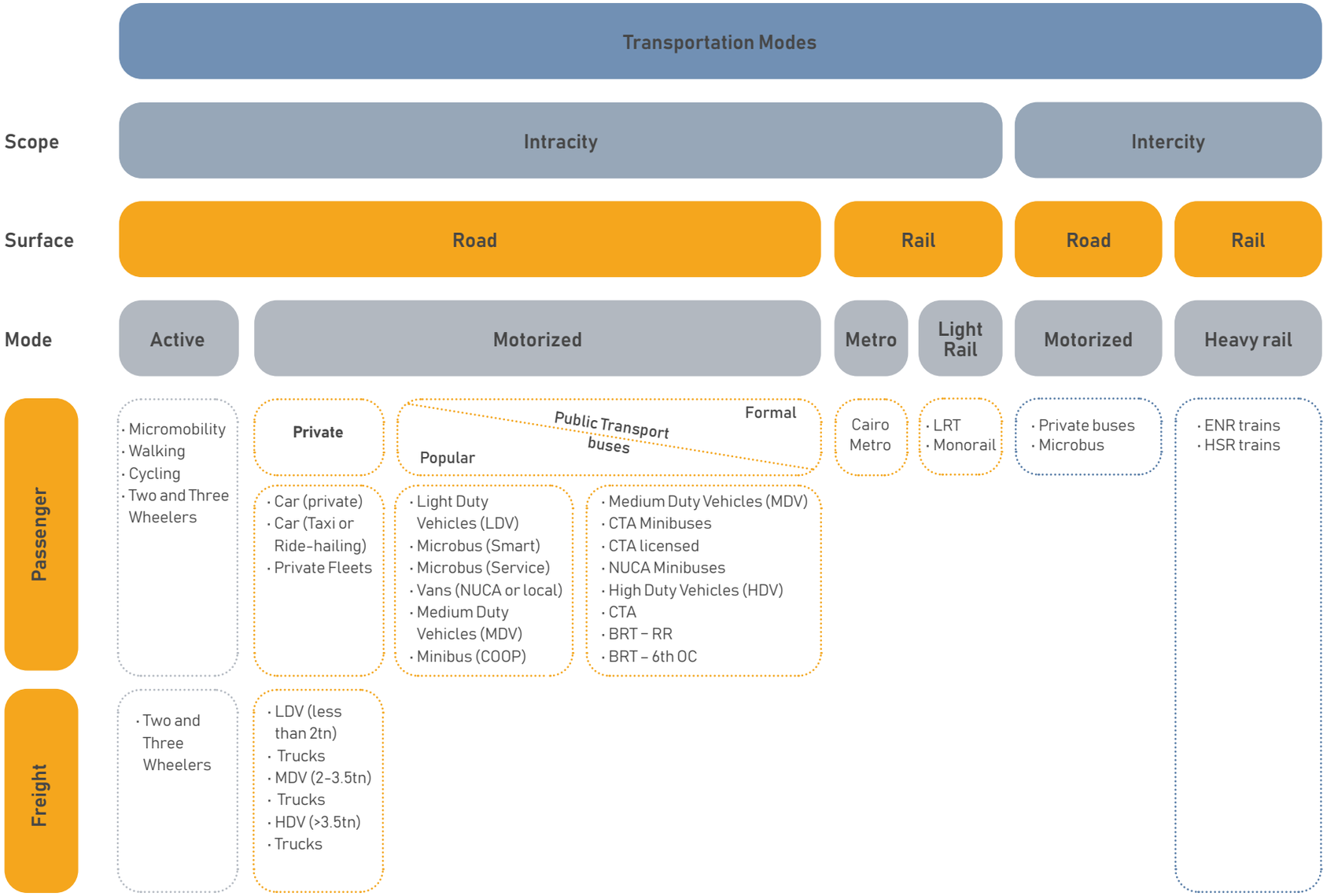

Figure 4-1 Overview of passenger and freight transportation modes in Greater Cairo Region, categorized by intracity and intercity networks. (TfC, 2024)

4.1.1 Road-based passenger transportation

ROAD CONSTRUCTION

Egypt's updated NDC include the implementation of the National Road Project (NRP), which was launched in 2014, with a budget of $11 billion. The project aims to build 7,000 km of new roads, upgrade 10,000 km of the current infrastructure and construct paved roads within governorates. (5,3)

Based on the NRP project description on the official website of the National Investment Bank (NIB), (6) multiple stakeholders are involved in the implementation and funding of the National Road Project including:

- **Ministry of Transport (MoT):** represented by the General Authority for Roads and Bridges (GARB) whose mandate allocates its responsibility in constructing and maintaining regional roads.
- **Ministry of Housing, Utilities and Urban Communities (MoHUUC)** represented in the Central Agency for Reconstruction for the different regions across Egypt.
- **The Ministry of Defense (MoD)**

The impacts of the construction of new roads within the national project is assumed to reduce travel time and to serve economic development in Egypt's different governorates while supporting the establishment of new cities. (6) While improving the road network between cities enhances the level of service, it risks increasing private car usage and potentially raising emissions unless complemented with measures that prioritize active mobility, public and popular transport on new roads, or implement demand control strategies.

TRANSPORT SERVICES

In 2022, registered vehicles amount to 10.8 million in Egypt, half of which are private cars at 5.5 million registered cars (taxis and private cars) (7). The government's current mitigation actions in the NDC focus on improving service quality and network coverage of public transport, in the hopes of attracting a modal shift of passengers and transitioning public transport to low carbon-intensive fuels.

"The transformation of public buses to operate on lower carbon intensive fuels (i.e. natural gas), efficient routes through the adoption of Bus Rapid Transit (BRT) systems." (3)
(Egypt's NDC, 2023, pg.17)

The mitigation actions in the NDC towards road-based transport focus on upgrading bus fleets by converting them to run on natural gas or electricity to reduce emissions. Major initiatives such as the electrification of public buses, including those operated by the Cairo Transport Authority (CTA), are part of the NDC commitments.

Popular transport, particularly microbuses, continues to serve an estimated two thirds of daily commuters but lacks formal recognition in climate policies. Despite their prevalence, and despite the sometimes-implicit notion that modal shift to mass transit is from popular transport in addition to passenger cars, explicit targets and policies for these modes are largely absent from global climate commitments, including Egypt's commitments in the latest NDC release.

Egypt has launched a "Go Green" project which subsidizes the substitution of petrol vehicles that are over 20 years old with new locally manufactured vehicles that operate with natural gas. Supported by the Ministry of Finance, the "Go Green Initiative" offers financial benefits: 10% off new cars, 20% off taxis, and 25% off microbuses. (8)

While popular transport plays a major role in providing transport services within cities (intracity), it also provides services between cities (intercity regional lines). Publicly available data on the number of operational microbuses, their models or routes is limited. The licensing of these services falls within the responsibility of the governorates, who also determine the fares for the different destinations.

Figure 4-2 places the different road services available on the intercity level according to their affiliation to private or public enterprises.

Institutionally, the Land Transport Regulatory Authority (LTRA), established in 2019, is the regulatory body overseeing all domestic and international land transport in Egypt, and reports to the MoT.

Bus companies are either privately or publicly owned. The intercity transport sector includes several public companies operating under the Holding Company for Maritime and Land Transport (HCMLT). EG BUS, a joint-stock company, was formed through the merger of East Delta Bus Travel, West and Central Delta Bus Company (previously two distinct entities), and Upper Egypt Transport and Tourism Company. As of 2023, 1,344 vehicles are registered under these companies, with 1,028 operational vehicles. A significant proportion (15%) of these buses have been in service for over 15 years, and most (98.54%) rely on diesel as fuel (9)

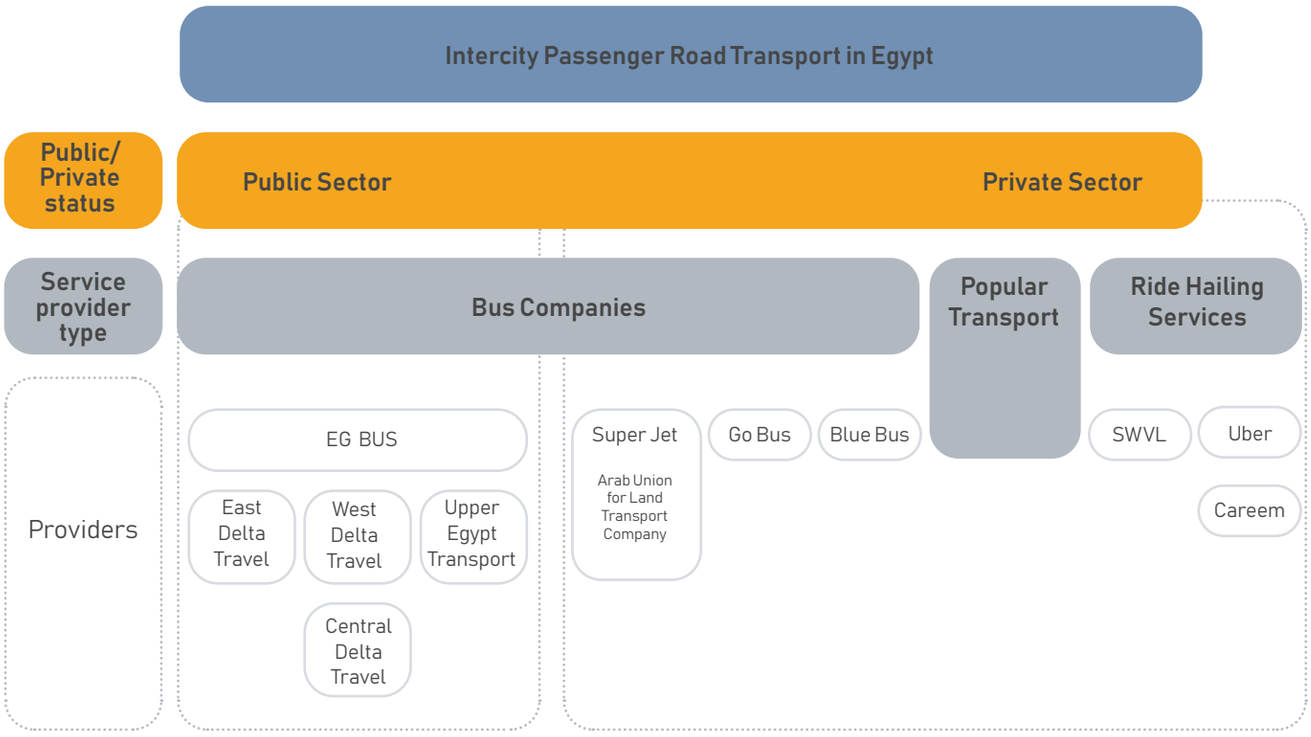

Figure 4-2 Intercity passenger road transport stakeholders from public and private sectors. (TfC, 2024)

Private intercity transport includes Super Jet (Arab Union for Land Transport), which operates under the Ministry of Transport (MoT); Go Bus, a private joint-stock company regulated by the MoT; and Blue Bus, a private company focusing primarily on routes in Upper Egypt.

Given the large demand for intercity transport services, some ride-hailing providers are currently also providing intercity rides, which can be booked on their respective apps. Ride hailing companies which offer services for intercity transport, include SWVL and UBER. SWVL is the first company to acquire a ride hailing license in 2023, issued by the LTRA, and valid for five years. Prior to this, all ride hailing companies have been operating under temporary legal agreements (10). The ride-hailing market leader Uber used to run intercity bus services in 2020 between Cairo and Alexandria. (11) and has since been discontinued. The company currently only provides intracity services.

Ride-hailing services are being electrified in multiple countries to help meet the NDC goals (12). In 2021, Uber tested Chinese manufactured electric cars as a test run, before running electric cars produced by Egyptian manufacturers (13).

Image 3 Abdel Moneim Riad, Cairo. (Sherif Mehanna, TfC, 2021)

4.1.2 Rail-based passenger transport

Public transport includes both rail and road-based services, with an overwhelming 93% of passenger transport accounted for on roads versus a miniscule 7% of passenger transport on rail (14). Public spending on transport has reflected the government's intentions to support a shift to the rail sector with 66% of allocated spending on transport dedicated to rail-based upgrades or projects in 2022/2023 (15).

RAILWAY DEVELOPMENT: EGYPT NATIONAL RAILWAYS (ENR)

ENR underwent several development and restructuring projects to improve its services through various funding channels. The National Project for Restructuring Egypt's Railway Network began in March 2009 and was largely completed by December 2020, though some aspects of the project are still ongoing. (16)
The restructuring of Egypt's railway network is also part of Egypt's broader Transport Sector Development Strategy aimed at modernizing the country's transport systems, including railways, roads, and ports. The railway restructuring focuses on upgrading tracks, signals, and stations, introducing new trainsets, enhancing safety, and expanding capacity to meet increasing passenger and freight demands. (16)

Egypt's railway development focuses on four key axes: (1) upgrading traction force, (2) modernizing safety systems, (3) capacity building, and (4) expanding railway lines. Projects include procuring and rehabilitating locomotives and introducing Talgo trains for passenger comfort. Safety enhancements involve modernizing signaling and building railway bridges. Capacity building includes establishing the Higher Institute of Transport Technology. New lines, such as al-Manashi–6th of October aim to expand the network. More details are listed in Table 6-1 in the annex.

The projects impact both freight and passenger transport whether through the improvement of overall efficiency and reliability of trains, increasing operational capacity, or improving passenger experiences.

ELECTRIC TRACTION PROJECTS: NATIONAL AUTHORITY OF TUNNELS (NAT) AND ENR

The second set of development projects in Egypt's Transport Sector Development Strategy are categorized under electric traction projects, which includes: the LRT, monorail, Cairo metro, the BRT, Alexandria metro and tram.

These projects are also highlighted as key mitigation projects in Egypt's NDC updated document. Details on the projects' description, the project length, funding details, implementation consortium, project ownership and estimated time of completion are listed in Table 6-2 in the annex. The listed projects serve intercity networks and sub-urban and regional networks in GCR.

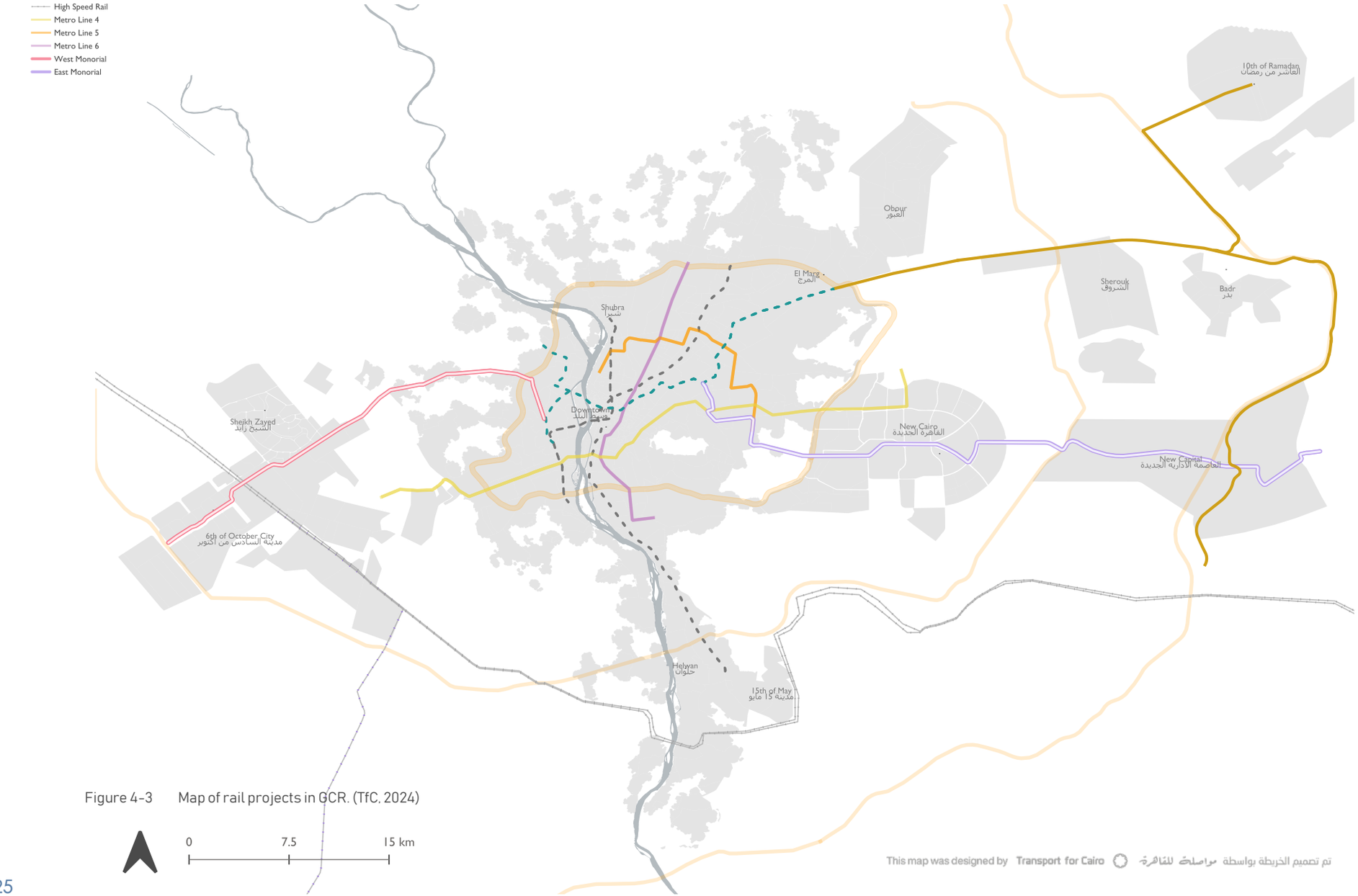

Figure 4-3 Map of rail projects in GCR. (TfC, 2024)

4.2 Active Travel

People combine walking and cycling with public transit as an access and egress mode, placing walking as an integral mode to access PT. Global research suggests that 90% of public transport access is on foot, and as much as 50% of the total journey time is spent walking.

The number of trips solely conducted by walking or cycling (active travel) in the GCR is difficult to estimate. The 2011 CREATS model update estimated that 27% of total GCR trips were completed by walking or cycling. However, the 2017 WHO Steps report indicates that people in Egypt spend an average of 80 minutes daily on physical activity, with almost half of this time (48%) spent walking for transport. (17) This suggests that walking in transport data is likely undercounted.

Decarbonizing transport requires both investing in decarbonizing modes of transportation and complementing these shifts with significant investments in high-quality infrastructure for pedestrians and cyclists. (18) "Reimagining Our Streets" emphasizes a critical shift from car-centric to Complete Streets in Egypt. Streets are vital public spaces that should be safe, accessible, and conducive to positive experiences in various modes of transportation, including walking and cycling.[8]

In Cairo and other Egyptian cities, there are attempts from international organizations in partnership with local governments to construct cycling infrastructure such as bike lanes. However, these projects often create fragmented networks, which are less effective at encouraging modal shifts and, consequently, reducing emissions.

The shrinking physical access to pedestrian spaces can be attributed to two main issues: road expansions that often compromise pedestrian accessibility and safety; and land use planning which relies more on motorized traffic than transit-oriented development. The right-of-way, originally intended to serve diverse mobility needs, is increasingly dominated by motorized traffic, leaving little space for pedestrians and other non-motorized users.

Egypt's current car-centric urban design and governance frameworks prioritize private vehicle use over public transport and active travel modes, leading to safety risks, congestion, and pollution. This reliance on cars conflicts with the NDC, which calls for modal shift and reducing car dependency to meet emissions reduction targets.

8 The "Participatory Walkability Study" uncovered issues of accessibility, safety, and comfort based on quantifying the pedestrian experiences in different areas of Cairo, both NUCs and old Cairo. (Walk 21, 2023)

4.3 Freight

Recent analyses indicate that only about one-third of second-generation NDCs explicitly include freight-related actions. (18) This underrepresentation is concerning, given that freight transport accounted for approximately 40% of global transport emissions in 2019 (19). Projections show that without more ambitious policies, global transport CO2 emissions could grow by 16–50% by 2050, with CO2 emissions from freight transport alone expected to be 22% higher in 2050 than in 2015. (18)

4.3.1 Road-Based Freight

Egypt's freight sector is heavily reliant on road transport, with 96% of goods moved by trucks. The dependence on road transport is difficult to change due to limited alternatives such as rail. Shifting more freight to rail by expanding and modernizing rail infrastructure can provide a sustainable competitive alternative and can reduce GHG emissions from freight.

Egypt's freight road transport sector is mainly controlled by five companies. Holding companies own around 5% of them, while the remaining 95% is owned by employees and transport cooperatives. These five companies manage 85% of the market, with the private sector covering the remaining 15%. (20) While the estimated truck fleet capacity is placed at 5,480 million ton-kilometer,[9] key challenges include the aging truck fleet, the lack of refrigeration infrastructure, and shipping weight fees imposed by the MoT, thus increasing the prices (20). Other noteworthy challenges are road damage from overloaded trucks, environmental pollution, and road traffic crashes. (21).

Road-based freight has benefited from the Egyptian Government's developing of intercity road connections, with the introduction of dedicated road corridors and the introduction of specific lanes for heavy-duty vehicles between some cities (5). However, Egypt is also introducing policies to ensure road transport is not more competitive than rail transport, by reducing fuel price subsidies and restricting truck movement in some areas, such as the GCR (21).

9 A ton-kilometer measures moving one ton of goods over one kilometer. It combines both weight and distance to assess the capacity and performance of freight transport

4.3.2 Rail-Based Freight

ENR is the sole operator of freight services on the national rail network, with only about 1.9% of freight being transported by railways (22). Key challenges of freight transport by rail include the high time consumption of sorting freight into rail cars, the long delivery time compared to road trucks, the absence of a door to-door shipping system, and the complicated system posed by the ENR on the goods classification (20).

The Egyptian Government has plans to develop the national freight system, including significant investments in enhancing the rail network to improve freight efficiency. This includes projects like upgrading existing rail lines, developing new ones and upgrading the policies surrounding freight in rail to support the growing demand for freight transport (22). An example of a project is the Cairo-Alexandria Trade Logistics Development Project, aimed to be completed by 2029, which is supported by the World Bank. Those plans, however, have yet to reflect integration of sustainable practices into freight infrastructure development or freight practice regulation.

Image 4 Ramsis station trains platform, Cairo. (Ghada Abdul Aziz, 2024)

4.4 Transport in Egypt's NDC

TARGET The transport sector in the latest NDC has a GHG target to achieve a 7% reduction in carbon emissions by 2030 compared to BAU. The NDC plans on achieving modal shift through implementing mass transit systems. But there are no non-GHG targets such as electrification targets (transitioning to Zero Emission Vehicles (ZEVs)) for buses or private vehicles. There are also no decarbonization plans for popular transport modes.

LEADERSHIP Despite the lack of clear assignment of responsibilities in the NDC for implementing and overseeing transport measures, it is reasonable to assume that specific authorities within the Ministry of Transport (MoT), such as NAT, should take on responsibility for metro expansions and other related projects. However, this still leaves potential capacity gaps that may arise as different authorities transition to new sustainable transport systems.

DURATION While the NDC lists specific projects (e.g., monorail, LRT, HSR), timeframes for implementation are absent. Without phased or interim targets, it is challenging to track progress toward 2030 goals, even with the release of the BTR every two years.

AMBITION The NDC focuses on planned projects but does not propose avoid and shift strategies, such as land-use planning and active travel integration.

ACTIONS The NDC covers modal shift to mass transit and mentions a shift to cleaner fuels in passenger vehicles, specifically a fuel subsidy phase out and a spread of natural gas as an alternate fuel source under the energy section. It does however, exclude other measures to reduce private vehicle use, such as congestion pricing, or integration with active travel in catchment areas of mass transit services.

INVESTMENT Egypt considers the implementation of the NDC to be 100% conditional on available international financing. The NDC already allocates $40.3 billion[10] for public transport projects but does not outline plans to close financing gaps.

EVALUATION The main indicator in the NDC for tracking transport sector progress is GHG reduction, but no additional indicators are specified, and the absence of granular baseline data makes it difficult to track progress and set more ambitious targets.

10 The NDC specifies conditional funding for public transport projects: Cairo metro ($6,400M), Electric High-Speed Rails ($27,200M), electric light rail network ($5,800M), Alexandria Raml tram rehabilitation ($646M) and Cairo's Bus Rapid Transit system ($273M), totaling $40,319M.

5 Recommendations for transport sector in Egypt's NDC 3.0

The recommended guidelines from PATH, UITP, UIC, GNPT, and ITF focus on active travel, public transport, rail, popular transport, and integrating transport into Nationally Determined Contributions respectively. The templates propose adopting a unified vision, establishing clear objectives, and implementing targeted actions. This ensures that strategies are not only comprehensive but also contextually appropriate for effective implementation.

In this chapter we drafted 28 actions which the updated Egyptian (NDC 3.0) can endorse and commit to achieving. The actions are highlighted in blue in each section and are themed as follows:

1. **Establish a Unified National Vision for Sustainable Urban Mobility**
2. **Set ambitious GHG and Non-GHG targets**
3. **Achieve objectives:**
   3.1 **Objective A:** Support passenger and freight modal shift
   3.2 **Objective B:** Centre city design around people
   3.3 **Objective C:** Enable and capacitate cities to lead change
   3.4 **Objective D:** Create an investable NDC 3.0
4. **Improve Monitoring and Evaluation**

The following section explains each of the listed actions through the following:

- Recommendation to add to the upcoming NDC 3.0
- Importance of adding this action/target to the NDC and its impact on lowering GHG emissions
- Status quo in Egypt relevant to these actions/targets

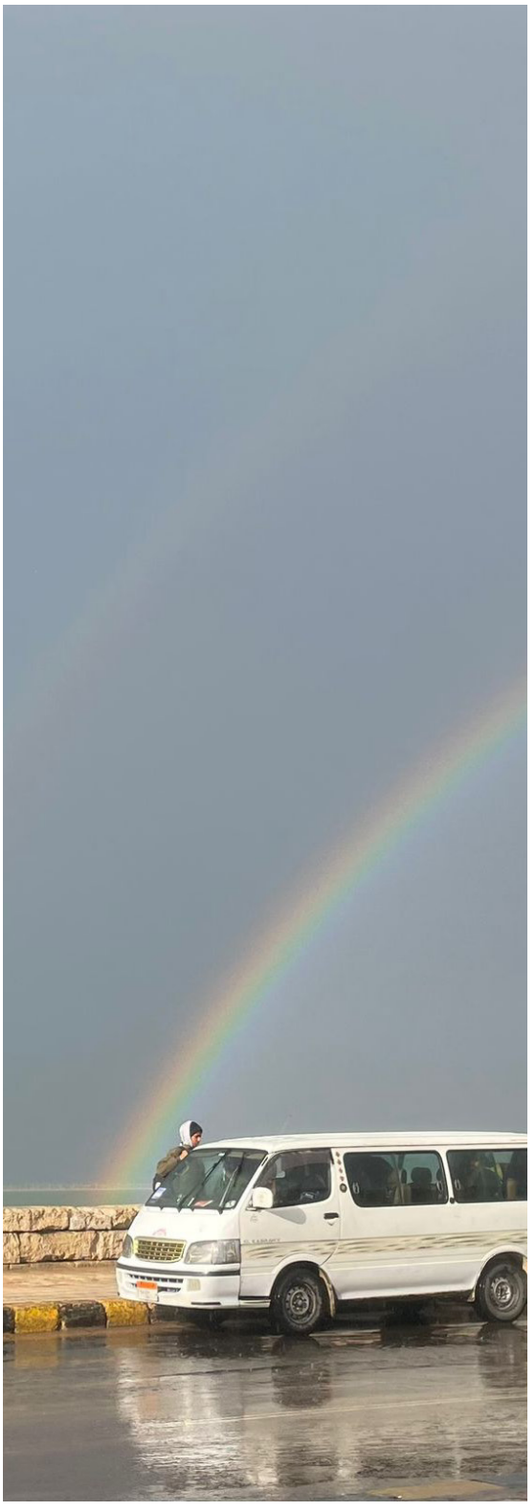

Image 5 Al-Geish road, Alexandria Corniche. (Ghada Abdul Aziz, 2024)

5.1 Establish a Unified National Vision for Sustainable Urban Mobility

We recommend that Egypt's NDC outlines a strategic vision for sustainable urban mobility that should crystallize major strategy and vision documents such as Egypt Vision 2030 and its successors. This vision integrates sustainable mobility within the broader context of national development. It should also provide direction to the technical working group under the NCCC to ensure that projects and actions align with the identified priorities for sustainable mobility.

We propose the following vision with the following bullets to underpin it:

"Provide transport services that are integrated, equitable, accessible, and aligned with global climate goals."

- Engage stakeholders at local and national levels through social dialogue with workers and consultations with project affected parties.
- Enhance connectivity and accessibility by prioritizing infrastructure development for safe, comfortable, and enjoyable active mobility to encourage behavioral change towards sustainable modes of transport.
- Ensure the transition to new technologies such as electrification and smart traffic systems are guided by the principles of just transition.[11]

IMPORTANCE

By articulating specific objectives, such as modal shifts, network expansion, and emissions reductions, the vision serves as both a pathway and a benchmark for progress. The vision ensures that transport policies and investments work towards common goals. A well-defined vision prioritizes sustainable urban mobility, integrating walking, cycling, public transport, and rail into a comprehensive strategy that addresses climate change. This vision shifts from a project-based approach to a framework focused on long-term goals and sustainability.

STATUS QUO

The Transport Sector Development Strategy, as outlined on the State Information Service website, lacks a cohesive vision for sustainable transport. While the strategy focuses on infrastructure and modal development, it does not incorporate a comprehensive approach that addresses climate decarbonization or the policy reforms required for accessible and affordable transport systems.

11 Just transitions revolve around four ideas: procedural justice (involving everyone affected in the process), distributive justice (ensuring those with the least benefit the most from the transformation), recognition justice (creating space for those previously excluded), and restorative justice (addressing and repairing past injustices). (50)

5.2 Set ambitious GHG and Non-GHG targets

5.2.1 GHG Target

To align with global climate goals and to fulfill Egypt's commitment to the Paris Agreement, we propose that:

1. Egypt aims to cap the growth of its absolute transport emissions to just 19% by 2030. This limit would represent a 54% reduction compared to the projected emissions from the BAU scenario in the 2023 NDC update.

Although Egypt is not committed to a Net Zero Pathway, this adjustment uses the International Energy Agency's (23) Net Zero by 2050 Roadmap as a guiding baseline to establish necessary emission reductions and adapts them to Egypt's projected population and GDP growth. This analysis considers Egypt's developmental trajectory and its responsibilities under the Paris Agreement, employing a simple model that adjusts BAU emissions in proportion to anticipated economic and demographic changes, ensuring alignment with international efforts to limit global warming to 1.5 °C.

IMPORTANCE

Egypt's 2023 NDC targets a 7% reduction in transport emissions by 2030 compared to its stated Business-as-Usual (BAU) scenario. This target, while reflecting sustainable transport initiatives such as metro expansions and greening buses, translates into a 139% increase in absolute emissions from the 2015 levels. Even given Egypt's anticipated growth in population and GDP and in line with differentiated responsibilities outlined in the Paris Agreement, Egypt should aim for a more ambitious approach to remain Paris aligned.

STATUS QUO

Egypt's NDC transport sector currently has a GHG target to achieve a 7% reduction in carbon emission by 2030 (8.9 MtCO2e) from the baseline (48 MtCO2e) which presents 15% of the share of the energy contribution to GHG emissions in Egypt in 2015. (3)

5.2.2 Non-GHG targets

2. Commit to electrification targets: Egypt should commit to phasing out fossil-fuel based vehicles.

a. To do so, it should explore international targets to Zero-Emission-Vehicles (ZEV) adoption such as the ZEV Declaration or the Global Memorandum of Understanding (MOU) on Zero-emission medium and heavy-duty vehicles. Signatory countries commit to achieving 100% electric car and van sales by 2035, 85% electric sales for two- and three-wheelers by 2030, and 30% electric medium and heavy-duty vehicle sales by 2030.

3. Prioritize modal shift: Set a target to reduce the share of kilometers traveled by passenger cars. Such a target could be 35-43% by 2030. Egypt should also set a target to increase the modal share of rail in freight transport.

4. Increase infrastructure investment in pedestrian and rapid transit networks: expand high-quality pedestrian and bike lanes and rapid transit networks to improve infrastructure. Commit to 38 km of rapid transit per million inhabitants and to prioritize walkable catchment areas around stations.

5. Promote electric charging infrastructure: The government should increase the number of electric vehicles charging stations for passenger cars as part of the broader electrification strategy to support the transition to electric mobility.

6. Enforce vehicle renewal plans for popular transport vehicles: these plans should be supported by financial mechanisms to facilitate market transition.

IMPORTANCE

Table 5-1 outlines outcome indicators from the State of Climate Action 2023 report, which links achieving the 1.5 °C. goal to sector-specific targets. We recommend incorporating these indicators into Egypt's updated NDC to improve progress monitoring and global tracking. (24)

STATUS QUO

Although all the current rail projects are present in the NDC, the climate targets related to these projects are not included. The NDC doesn't specify any electrification targets for public buses, minibuses, or two and three wheelers in its NDC. Out of the 13,776 public buses in Egypt, only 1% of the are electric. (25)

#	THEME	INDICATORS	INTERNATIONAL BEST PRACTICE ON TARGETS[12]
1	Electrification and phase out of ICEs	Share of electric vehicles in light-duty vehicle sales	100% sales of electric cars and vans by 2035
2		Share of electric vehicles in two- and three-wheeler sales	85% electric 2&3W by 2030
3		Share of electric vehicles in medium and heavy-duty vehicle sales	30% of MHDV sales electric by 2030
4	Modal Shift	Share of kilometers traveled by passenger cars (% of passenger-km)	35-43% by 2030
5		Share of rail in freight transport	Increase the share of rail in freight transport
6	Infrastructure	Number of kilometers of high-quality bike lanes per 1,000 inhabitants	2 km/1,000 inhabitants by 2030
7		Walkable catchment areas of transit	Walkable 200m catchment areas of every metro station
8		Number of kilometers of rapid transit per one million inhabitants	38 km/1M inhabitants by 2030

Table 5-1 Non-GHG targets to include to the NDC.

Image 6 Talaat Harb Street, Downtown Cairo. (Yasmine Sabek 2017)

12 These targets can act as guiding benchmarks which Egypt can adopt in its NDC. All the targets (except targets no. 5 and 7 which are tailored to the Egyptian context) are referenced from the State of Climate Action 2023 report – appendix A which details each indicator and its targets. (24)

5.3 Objective A: Support passenger and freight modal shift

Achieve modal shift through multiple policy measures adopted from the library of goals and policy measures published in the ITF's guide to integrating transport into NDCs. (26)

7. **Adapt the fuel subsidy reform policy** to prioritize reducing car dependency and contribute to promoting a shift toward sustainable mobility solutions.
8. **Apply congestion pricing** to reduce private vehicle use. Revenues from the scheme could be reinvested in public transit infrastructure improvements. (27)
9. **Implement low-emission zones (LEZ)** in densely populated urban areas (such as Historic Cairo) to limit high-emission vehicles and encourage the use of cleaner, more efficient transport options. (28) This would bring significant health co-benefits
10. **Implement parking pricing policies** to discourage car use. By reducing demand for on-street parking, parking pricing can reduce urban traffic, thereby cutting CO2 emissions. (29)

IMPORTANCE

The listed policy measures reduce CO2 emissions by influencing travel behavior and reallocating road space for more sustainable transport infrastructure (walking and cycling). Congestion pricing reduces CO2 emissions by encouraging the use of public transport and fuel-efficient vehicles. In Milan, traffic decreased by 12% in the zones charged and 3.6% outside, with 48% of trips shifting to public transport. (27)

Access restriction zones limit vehicle use based on emissions. Although specific studies on CO2 reductions are limited, evidence from other assessments highlights the charging zones' role in reducing air pollutant emissions and encouraging sustainable transport behavior.
In terms of parking policies, a 10% increase in parking prices typically results in a 1-3% reduction in parking demand, leading to proportional CO2 savings. (29) Redirecting subsidies to sustainable infrastructure and mobility systems supports emission reduction goals and long-term energy transition efforts. Applying these policies, such as congestion pricing, often generates revenues that exceed implementation costs, as seen in Singapore, where the road pricing scheme generates EUR 40–50 million annually, against operating costs of only EUR 8 million. (27)

STATUS QUO

Currently, Egypt's reliance on private vehicles persists due to fuel subsidies, free parking, and a lack of economic and behavioral change measures to manage demand. While investments in metro and bus rapid transit systems are included in the NDC, the absence of policies to curb car use limits progress toward climate targets. Fuel subsidy reforms are focused on economic factors, with limited consideration of their climate impact. The government has been gradually reducing fuel subsidies but rising global energy prices and currency challenges have led to further delaying the full removal of the fuel subsidy, now planned for end of 2025.

5.4 Objective B: Centre city design around people

Center cities' design around people by adopting multiple land use planning policy measures.

11. Develop Sustainable Urban Mobility Plans (SUMPs) for major urban agglomerations and include sustainable Urban Logistics Plans within them to integrate freight and passenger transport systems.

12. Develop Publish Sustainable Urban Logistics Plans (SULPs) on a regional scale to coordinate logistics-related land use development in newly established industrial cities and minimize freight transport distances. (30)

13. Strengthen stakeholder collaboration and governance: establish metropolitan-level planning authorities to coordinate between national, regional, and local plans. Utilize the technical working group under the NCCC to act as a focal point, ensuring consistency and translating national climate strategies into actionable local plans.

14. Incentivize housing schemes along rapid-transit lines to attract population into new cities which these services feed.

15. Launch and publicize Egypt's National Active Mobility Strategy[13] by updating the National Egyptian Road Code to integrate concepts of active mobility (walking and cycling) in respect to different road classifications considering urban, peri-urban, and rural destinations.

16. Develop implementation guidelines of green infrastructure and climate-proof designs to enhance the resilience of transport system and roads against climate change impacts, such as flooding in coastal cities and extreme weather events.

IMPORTANCE

Land use planning defines how cities are designed and how they grow, directly shaping travel behavior by population and job density, land-use diversity, pedestrian- and transit-friendly design, and accessibility to transit and destinations. (31) Land use planning can reduce transport demand and passenger-km traveled. Doubling residential density across a metropolitan area can lower household demand by around 5-12%. (31) In Paris, increasing distances by around 10 km between the city center and warehouses increased the annual CO2 emissions by 15,000 tones. Planning freight facilities locations can reduce travel distances and optimize supply chains. (30)

STATUS QUO

The NDC doesn't address land use planning for passenger or freight transport. Egypt has over 49 new urban communities developed by the New Urban Communities Authority (NUCA), covering 2.2 million acres, but only 1.7% of the national population lives in these cities. (32)

New city development has not integrated sustainable land use or transport policies, missing the opportunity to reduce travel demand and CO2 emissions. Social and structural barriers, such as high housing costs and lack of public transport, limit population absorption and highlight the need to revisit the approach of building new cities.

13 National Active Mobility Strategy is mentioned in Egypt's 2023 Update of the NDC

5.5 Objective C: Enable and capacitate cities to lead change

Achieving the targets requires technical expertise, training and knowledge-sharing, with the following recommendations to build capacity.

17. Facilitate international and regional technical assistance programs to allow government officials on all levels to learn from sustainable best practices.

18. Engage with overseas development agencies (ODAs) for technical assistance and financial support in capacity-building programs.

19. Embed capacity building opportunities within public transport institutions: establish certified educational programs such as master programs and diplomas and expand the scope of professional short courses offered through entities such as Egyptian National Institute of Transport (ENIT) covering electrification, transit-oriented development, climate-resilient infrastructure, and GHG emissions calculation in transport.

20. Reduce health and safety hazards for public and popular transport workers and users by implementing temperature-control measures (such as shading and cooling) and providing essential facilities.

21. Commit to a just transition by setting a target to create decent jobs and working conditions, and improving labor regulations, based on dialogue with workers of public and popular transport services.

IMPORTANCE

The role of capacity building in enabling the transition to sustainable mobility, reducing greenhouse gas emissions, and adapting to climate impacts is often overlooked in post-Paris international negotiations. (33) Despite its recognized importance, only 11% of NDCs reference actions related to knowledge sharing and capacity building.
Knowledge transfer and capacity building are required to advance climate action and increase the ambition of NDCs, as highlighted during COP28. (34) Each of the four NDC templates include actions related to capacity building, knowledge and data-sharing in driving and sustaining the transition to sustainable mobility. Capacity building at the institutional level particularly play a central role in planning and implementing climate action in transport.

STATUS QUO

While the NDC mentions cross-cutting capacity building across many sectors, no measures related to decarbonizing transport are detailed. The institutional setup of transport in Egypt forms a structure of authorities performing different functions (strategic, operational, financing, etc) related to transport services. This set-up operates in a silo from authorities involved in climate action affiliated to MoE. There is no sustainable mobility training offered in institutions established with a mandate to train the transport workforce (for ex: ENIT). Current courses, seminars and workshop programs offered in ENIT do not focus on sustainable mobility, which widens the gap between theory and practitioners' experiences.

5.6 Objective D: Create an investable NDC 3.0

To create a more investable NDC in the upcoming version, the NDC needs to show potential financiers the opportunities in the transition and to promote a stable and supportive policy environment that meets the needs of private capital. (36)

22. Identify how much it will cost to implement an ambitious NDC, (37) this must be centered around national and local annual investment plans, and not in a climate-silo estranged from already existing planning and financing mechanisms of projects.

23. Include granular information such as estimated costs for different scenarios and reflect the country's willingness to meet the targets set to inform investors. (38)

24. Disclose assessments of compliance, support for climate goals, and risk management in projects' annual GHG reports to enhance transparency and align with investor expectations. This disclosure ensures projects are climate-resilient and contribute positively to national and global climate targets.

IMPORTANCE

Securing urgent investment in energy-efficient, fossil-free land transport is essential to preventing significant loss in transport assets and ensuring a sustainable future. (39) While the transport sector currently receives 29% of climate finance, fossil-free solutions require an estimated $2.7 trillion annually until 2050. (39) This gap is particularly acute in low- and middle-income countries (LMICs), which need at least $550 billion annually over the same period. However, current low-carbon transport investments in LMICs amount to just $15 billion per year—only 2.7% of the required funding.

Based on OECD's Green Growth Policy review of Egypt, published in 2024, Egypt would face substantial funding gaps in the short and medium term despite the possible new international funding opportunities. (5) Therefore, the government will need to attract private sector resources through international and domestic capital markets.

STATUS QUO

The mitigation actions in Egypt's NDC 2.0 currently includes conditionally financed projects already in the pipeline of implementation with a total of $40 billion. The projects lack sectoral policies, and relevant risk mitigation mechanisms as well as the dependencies that informed the target set for emission reduction by 7%. This impacts the degree by which projects are perceived investable.

5.7 Improve monitoring and evaluation

Recommendations to improve Egypt's monitoring and evaluation framework of transport sector based on the ITF guide to integrating Transport into NDCs:

25. Collect vehicle data for all modes of transport, specifically popular transport fleets, operations, workforce and trips to create realistic databases of emissions for the services.

26. Develop and track indicators on modal shift, emissions reductions, and impacts such as road safety.

27. Develop clear data-sharing protocols between national, regional, and local levels.

28. Establish periodic review cycles to assess progress against set benchmarks, this can take place in coordination with the climate change units in the different ministries.

IMPORTANCE

Monitoring and evaluation frameworks design the methodology which will track the progress of the set targets, goals and actions.

STATUS QUO

The MRV framework in Egypt's NDC is overseen by the NCCC, with the CCCD acting as the national coordinating entity, working alongside relevant ministries and governmental agencies. The MRV system is structured around four pathways: GHG Inventory MRV, Mitigation Policies and Actions MRV, Support Received MRV, and Adaptation Policies and Actions MRV. While the MRV framework has been formally adopted by the NCCC, it has not yet been institutionalized, and its full implementation depends on the availability of funding and resources.

6 Annex

DEVELOPMENT AXIS	PROJECT	STATUS	FUNDING SOURCES	PROJECT	STATUS
1. New locomotive and wagons	Strengthening the railway traction force by procuring 260 new locomotives.	Ongoing	Public budget, various international partnerships	2020 - 2025	Passenger & Freight
	Modernizing and rehabilitating 172 tractors from the current fleet.	Ongoing	Public budget	2021 - 2025	Passenger & Freight
	Wabtec (formerly General Electric) is manufacturing and supplying 100 new locomotives, including maintenance for 11 years.	Ongoing	European Bank for Reconstruction and Development – EBRD	2022 - 2033	Passenger & Freight
	Talgo trains supply: Introduction of Talgo trains to enhance passenger comfort and speed.	Ongoing	Loan agreement between the Egyptian & Spanish governments	2022 - 2025	Passenger
2.Development of signaling systems, semaphores, and electrification of level crossings	Modernization of signaling systems over 2,000 km to enhance safety and efficiency for the routes: 1) Cairo-Alexandria; 2) Cairo-Aswan; 3) Banha-Port Said	Ongoing	Various international and Egyptian companies	2010 - 2025	Passenger & Freight
	Construction of 660 bridges over railway intersections and moval of 1,100 informal crossings nationwide	Completed	Public budget	2014 - 2021	Passenger & Freight
3. Capacity building	Establishment of the Higher Institute of Transport Technology	Ongoing	Public budget	2020 - Ongoing	Passenger & Freight
4.Construction of new railway lines	Construction of a 70 km railway line between al-Manashi and 6th of October City.	Planned	Public budget, private sector investment	2023 - 2026	Freight
	Construction of a 50 km line: al-Rubiki - Tenth of Ramadan-Belbeis Line.	Planned	Public budget, private sector investment	2023 - 2026	Freight
	Development of Tanta-Mansoura-Damietta Line	Ongoing	Public budget	2021 - 2025	Passenger
	Development of Qalyubia-Menouf-Tanta line	Ongoing	Public budget	2021 - 2025	Passenger
	Construction of the Egyptian Railway Station in Bashtil	Ongoing	Public budget	2018 - 2024	Passenger & Freight

Table 6-1 Overview of key railway development axes based on the Transport Sector Development Strategy. (16,40)

PROJECT NAME	DESCRIPTION	LENGTH	COST	CONSULTANT/ DESIGNER	ESTIMATED TIME OF COMPLETION	OWNER
Monorail	East monorail: East Cairo to NAC: 54 km. West monorail: 6th of October to Giza: 42 km	96 km	$4.5 billion (41)	Bombardier Transportation (acquired by Alstom Group), Orascom Construction and Arab Contractors	2025-2027	NAT/ MoT
Metro Line 1 new trains and development	Helwan to New Marg: 44 km, infrastructure and 55 new trains	44 km	$750 million (42)	Systra, ACE, and EHAF	2024-2026	NAT/ MoT
Metro Line 3	Adly Mansour to Cairo University: 41.7 km, 25 new trains	42 km	-	SYSTRA, Egis Rail, ACE and EHAF	2024-2026	NAT/ MoT
Metro Line 4 (phase I)	6th of October to New Cairo	42 km	$676 million (43)	Concord for Engineering and Contracting, Arab Contractors, Hassan Allam Construction, and Petrojet	2025-2028	NAT/ MoT
Metro Line 6	Khosous to New Maadi	35 km	-	Alstom	2026-2028	NAT/ MoT
BRT Bus Project	Ring Road (57 stations)	110 km	$195 million (44)	Government, International Funding	2024-2026	LTRA/MoT Cairo gov.
BRT Bus Project	Electric high-speed rail from Cairo to Alexandria, including Beni Suef to Aswan	660 km	$2.7 billion (45)	Siemens Mobility, Hyundai Rotem	2027-2030	NAT/ MoT

Table 6-2 National electric traction projects included in the transport development strategy.

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