

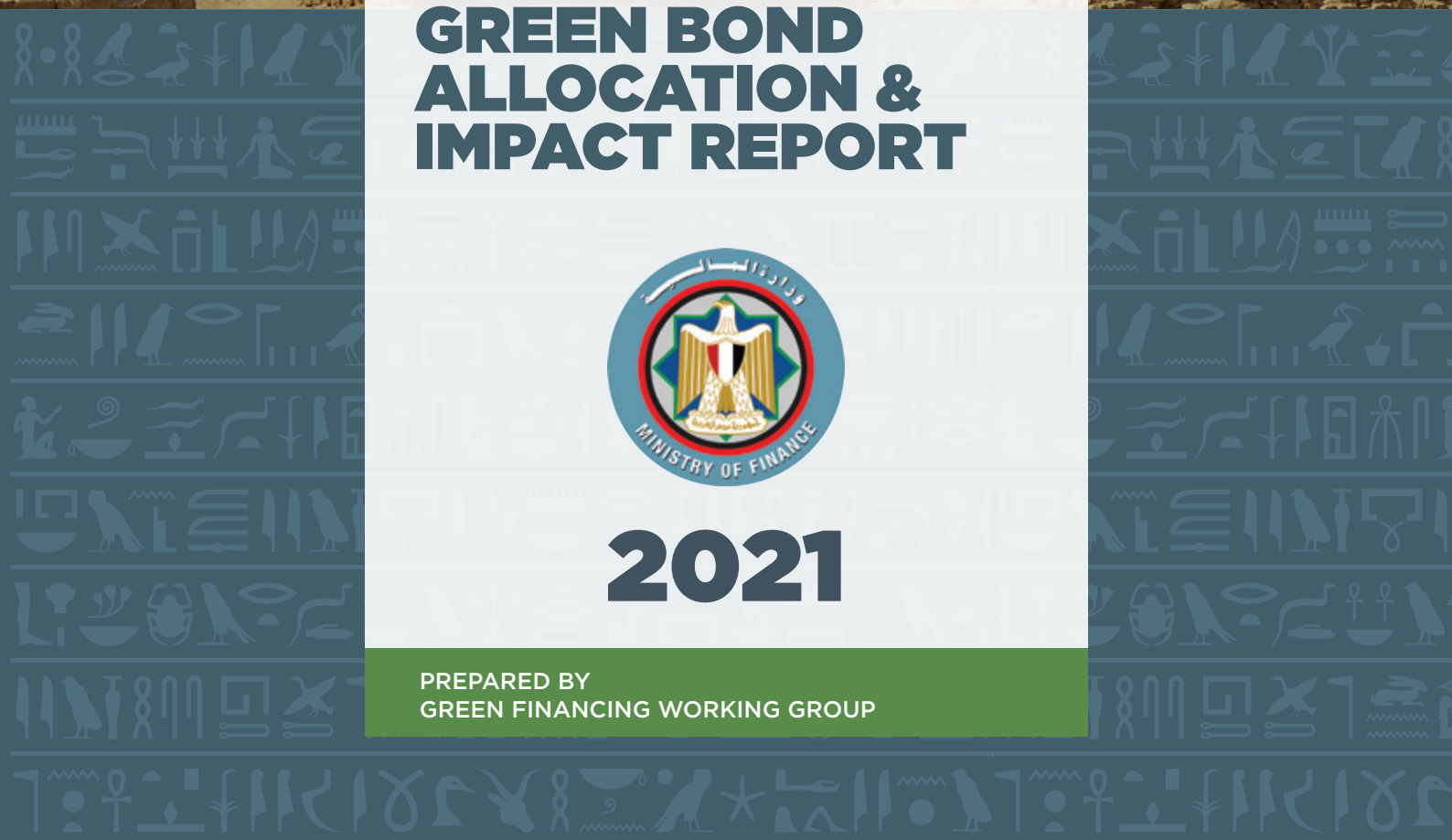


EGYPT SOVEREIGN GREEN BOND ALLOCATION & IMPACT REPORT



2021

PREPARED BY
GREEN FINANCING WORKING GROUP



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A Message from His Excellency Dr. Mohamed Maait, Minister of Finance

The Arab Republic of Egypt is diligent to become a leader in green development in the Middle East and North Africa (MENA) region by acting as a benchmark issuer of securities that have both positive environmental and financial impact. To that end, The Egyptian Government of Egypt successfully debuted in the Green Bond market with the first sovereign Green Bond in the MENA region in September 2020. The 5-year bond led to a peak order book surpassing US\$3.7bn, representing seven times oversubscription with respect to the US\$750Mn transaction. Due to investor demand, the coupon rate was reduced by 50 basis points (bps), opening at 5.75% and closing at 5.25%. The bond priced 12.5 bps below the regular new issuance premium and achieved the lowest ever 5-year coupon for Egypt.



Apart from the financial success of the transaction, we consider this a pivotal opportunity to exemplify The Egyptian Government's of Egypt commitment to integrating sustainability in it's funding strategy and achieving it's Nationally Determined Contribution (NDC) targets as set in the Paris Agreement and Sustainable Development Goals (SDGs). As we persist with developing our Green Bond program and exploring new sustainable financial instruments, we are pleased to present the first allocation and impact report for the 2020 sovereign Green Bond. The report showcases the use of bond proceeds for the project categories specified in our Green Bond framework and discloses the expected environmental impact of projects supported.

Egypt's first sovereign Green Bond allocation and impact report's preparation was led by the Ministry of Finance, the Ministry of Planning, Economic development, in cooperation with Ministry of Environment, Ministry of Transportation, and the Ministry of Housing Utilities and Urban Communities. Technical assistance was provided by the World Bank. I would like to take this opportunity to thank them for their immense support.

Dr. Mohamed Maait
Minister of Finance

M.A. Maait
1/12/2021



Vigeo Eiris, part of Moody's ESG Solutions, provided an independent review of the management and allocation of the Green Bond proceeds (Annex 8)

Vigeo Eiris is of the opinion that the Green Bond issued in 2020 by the Arab Republic of Egypt remains aligned with the GBP 2018.



Executive Summary

Figure 1

Issuance of \$750 Mn disbursements

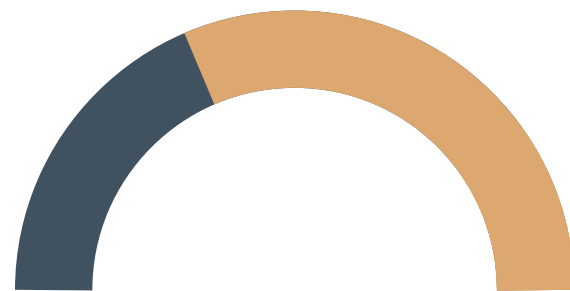
- Disbursements up to 2021
- Pending disbursements



\$564.46 Mn, 75.3% \$185.54 Mn, 24.7%

Use of proceeds

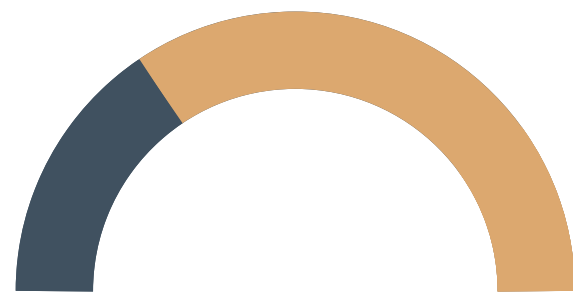
- Clean transportation
- Sustainable water & waste water management



\$346.74 Mn, 46.2% \$403.26 Mn, 53.8%

Share of proceeds used to 2021

- Refinance 2017-18-19
- New Finance 2020/21



\$ 254 Mn, 33.9% of Use of proceeds

\$ 311 Mn, 41.5% of Use of proceeds

Impact figures¹



16.9 Mn Beneficiaries from sustainable water and waste water management projects in 2022 /capita on aggregate



19.6 passengers from projects Mn / km/day 2022 on aggregate

Total water Supply

Total Water supply (freshwater production or treated used water) through projects weighted by the percentage of green finance
363,936 M3/day

Total GHG emissions reduction expected



Total GHG emissions reduction or avoidance expected through projects weighted by the percentage of green finance
65,499 tco2/year



**SUSTAINABLE
DEVELOPMENT
GOALS**

¹For clean transportation aggregate beneficiaries' unit of measurement is in Mn passengers/km/day 2022. For sustainable water aggregate beneficiaries is in Mn population /capita

Introduction

The Egyptian government is guiding the country towards a more sustainable and welfare enhancing economy by undertaking vital reforms through economic, environmental and social initiatives. The government is determined to employ a variety of methods to incorporate a sustainable path to economic growth aligned with its 2030 Sustainable Development Strategy (SDS)², which encompasses: sustainable cities and communities, climate action, affordable and clean energy, responsible consumption and production, and clean water and sanitation (Vision 2030).

The state has been a long-term advocate for environmental protection, having ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 1994, the Kyoto Protocol in 2005, the Paris Agreement in 2017, and the Doha Amendments of Kyoto Protocol in 2020. Egypt submitted its reporting obligations to UNFCCC for its 1st ³, 2nd ⁴ and 3rd ⁵ national communication reports in 1999, 2010 and 2016, respectively, and is currently formulating its 4th national communication. Egypt also submitted its first Nationally Determined Contribution (NDC) in 2015 to UNFCCC⁶, and its first biennial update report in 2019⁷.

In 2011, the Egyptian Cabinet Information and Decision Support Centre (IDSC) articulated a nationwide adaptation strategy for climate change and disaster risk reduction.⁸ The strategy is frequently updated to be consistent with the advancements in scientific research and knowledge.

In line with Egypt's commitment to sustainable development, the sovereign is aiming to scale up the share of renewable energy in the electricity matrix to 20% by 2022 and 42% by 2035. Egypt produces 0.6% of global GHG emissions.⁹ (VNR, 2021, p. 42)

In order to finance this ambitious agenda, the Ministry of Finance embarked on an initiative to integrate sustainability considerations into its public budget financing plans, which led to the issuance of the first sovereign Green Bond on September 29, 2020. The successful issuance of the bond in the global markets helped achieve several goals: it highlighted the government's commitment to transparently finance its environmental priorities and international commitments, promoted self-discipline through enhanced governance standards and reporting, enhanced the environmental social and governance (ESG) profile of Egypt, and diversified its investor base by attracting investors interested in both financial, environmental and social returns, while increasing the confidence of foreign investors in the Egyptian economy.

The Egyptian Government of Egypt can infer that the sovereign Green Bond will also encourage the Egyptian private sector to commence utilizing sustainable financing instruments. In addition, it was an important opportunity to validate the interest of investors in financing future adaptation projects.

² <https://www.mof.gov.eg/en/About/5fbd28790f63030007fec9bb/5fe3763a7bfc600007cbce92>

³ <https://www.eeaa.gov.eg/portals/0/eeaaReports/N-CC/egync1.pdf>

⁴ <https://www.eeaa.gov.eg/portals/0/eeaaReports/N-CC/CCCD-Egypt-SNC.pdf>

⁵ <https://www.eeaa.gov.eg/portals/0/eeaaReports/N-CC/Egypt's%20third%20national%20communication%20report%20.pdf>

⁶ https://www.eeaa.gov.eg/portals/0/eeaaReports/announcements/NC4Egypt/nc4egypt_cc_report.pdf

⁷ <https://unfccc.int/sites/default/files/resource/BUR%20Egypt%20EN.pdf>

⁸ https://www.eeaa.gov.eg/portals/0/eeaaReports/N-CC/Adaptation_Strategy_-_Final_22-05-2011.pdf

⁹ https://sustainabledevelopment.un.org/content/documents/279512021_VNR_Report_Egypt.pdf

Environmental and Social Commitments

The inauguration of sustainable financing tools in Egypt's financial products portfolio is a historic event. It is the first sovereign Green Bond issued from MENA —a region facing critical environmental challenges. With this bond Egypt has clearly positioned itself as a prime mover and leader in green finance and sustainable development, setting an example for others and contributing to global efforts for climate action and environmental protection.

Prior to the issuance of the Green Bond, the government of Egypt published a green financing framework disclosing the governance arrangements established to identify eligible projects and allocate funds to the projects (see a summary of the framework in annex 3). The framework covering Green Bonds and Green Sukuk transactions, was based on the ICMA Green Bond Principles (GBP)¹⁰. A Second Party Opinion was provided by a leading environmental research firm Vigeo Eiris.^{11,12} This report is the first annual report to investors for the 2020 issuance in compliance with the core components of the GBP.

According to the IPCC Fifth Assessment Report (AR5), the earth will encounter manifold environmental transformations due to climate change in the coming years, unless countries collectively adopt policies and actions to limit the increase in the global average temperature to well below 2°C compared to pre-industrial levels, and pursue efforts to limit warming to 1.5°C. Furthermore, Egypt faces a wide variety of environmental issues, including air, water and waste pollution, which significantly affects the efforts of promoting economic and social development. Hence, the Egyptian government is ensuring that it contributes towards mitigating the impacts of climate change on resources, ecosystems, biodiversity, food security, etc.

Egypt is among the first Arab countries to engage in global efforts to challenge climate change threats in line with the principles of equity and common but differentiated responsibilities (CBDR) and respective capabilities. The founding of the Egyptian Environmental Affairs Agency (EEAA) in 1982, followed by the creation of the Ministry of State for Environmental Affairs in 1997, were early indications of Egypt's commitments towards environmental preservation. The Climate Change Unit, was established at EEAA in 1996, was transformed and upgraded to the Climate Change Central Department (CCCD) in 2009 to reinforce the institutional structure in combating climate change at the state level. CCCD has three departments: Vulnerability and Adaptation General Department, Mitigation and Clean Development Mechanism (CDM) General Department, Technology and Research General Department.

Egypt first published its Nationally Determined Contributions report in 2015 which communicates the contributions by country towards mitigation to the UNFCCC.¹³ This addressed the urgent need for Egypt to formulate and implement a comprehensive and economically feasible mitigation program that would help it achieve the proposed reductions in emissions by 2030 at the lowest cost to the national economy. The emission reduction program is founded on the following initiatives:

¹⁰ <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf>

¹¹ See the framework here: <https://mof.gov.eg/files/27682660-663c-11eb-a70b-29b6f5bc96c7.pdf>

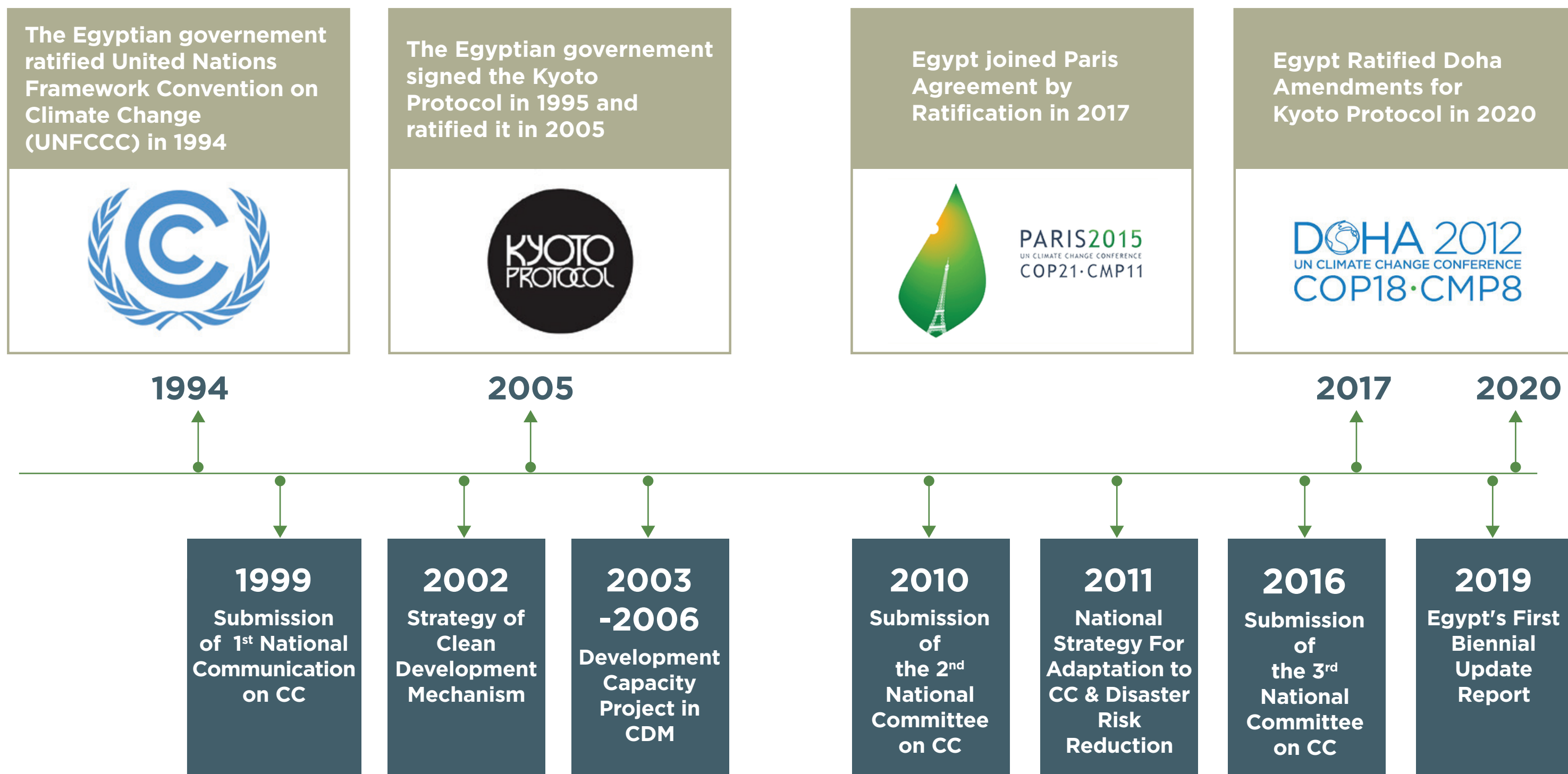
¹² <https://www.mof.gov.eg/en/posts/publicDept/601ace3810ca760007b20d2c/Green-Bond%20Documentation>

¹³ https://www.eeaa.gov.eg/portals/0/eeaaReports/announcements/NC4Egypt/NC4Egypt_KE2_GHGI.pdf



International Commitments

Figure 2



Awards and Recognition for Egypt 2020 Sovereign Green Bond



Figure 3: ESG & Sustainable deal of the year from Bond, Loan & Sukuk Middle East Awards



Figure 4: Sovereign Green Market Pioneer from 6th Climate Bonds Awards

Use of Proceeds

Figure 5

Clean Transportation



46%
Use of Proceeds



Sustainable Water & Wastewater Management



54%
Use of Proceeds



Eligible Categories Receiving Proceeds

Clean Transportation

As one of the main drivers of economic and social development, the transportation sector is a key national priority for Egypt. The Egyptian government allocated \$15.6 Bn of investments to the country’s transport sectors in fiscal year 2021-22. As a result, public investments dedicated to the transportation and logistics sector grew by 110% from the previous year (Egypt, 2021).¹⁴ Urban transport needs to be reliable, sustainable, accessible, safe, and affordable. The cost of elevating Egypt’s transport infrastructure to global benchmark standards has been variously estimated at between 3 and 5 percent of GDP.^{15,16} Egypt is currently moving it’s capital from Cairo to the New Administrative Capital, which requires the development of environment-friendly methods of transportation such as the monorail. The monorail is an efficient, cost-effective, environment-friendly mass transit system that helps people commute with relative comfort and ease. The Cairo Monorail project has received \$347Mn from the Green Bond proceeds.¹⁷

Sustainable Water And Wastewater Management

In accordance with Vision 2030, The Egyptian government has been scaling up efforts to increase investment in seawater desalination and wastewater reuse for irrigation. Desalinated water could offer Egypt a secure source of potable water as concerns over future access to water increase. This sector is organized by the Ministry of Housing, Utilities & Urban Communities. The MHUUC has a nationwide plan for seawater desalination to meet drinking water needs from 2020 to 2050. The plan encompasses the following pillars:

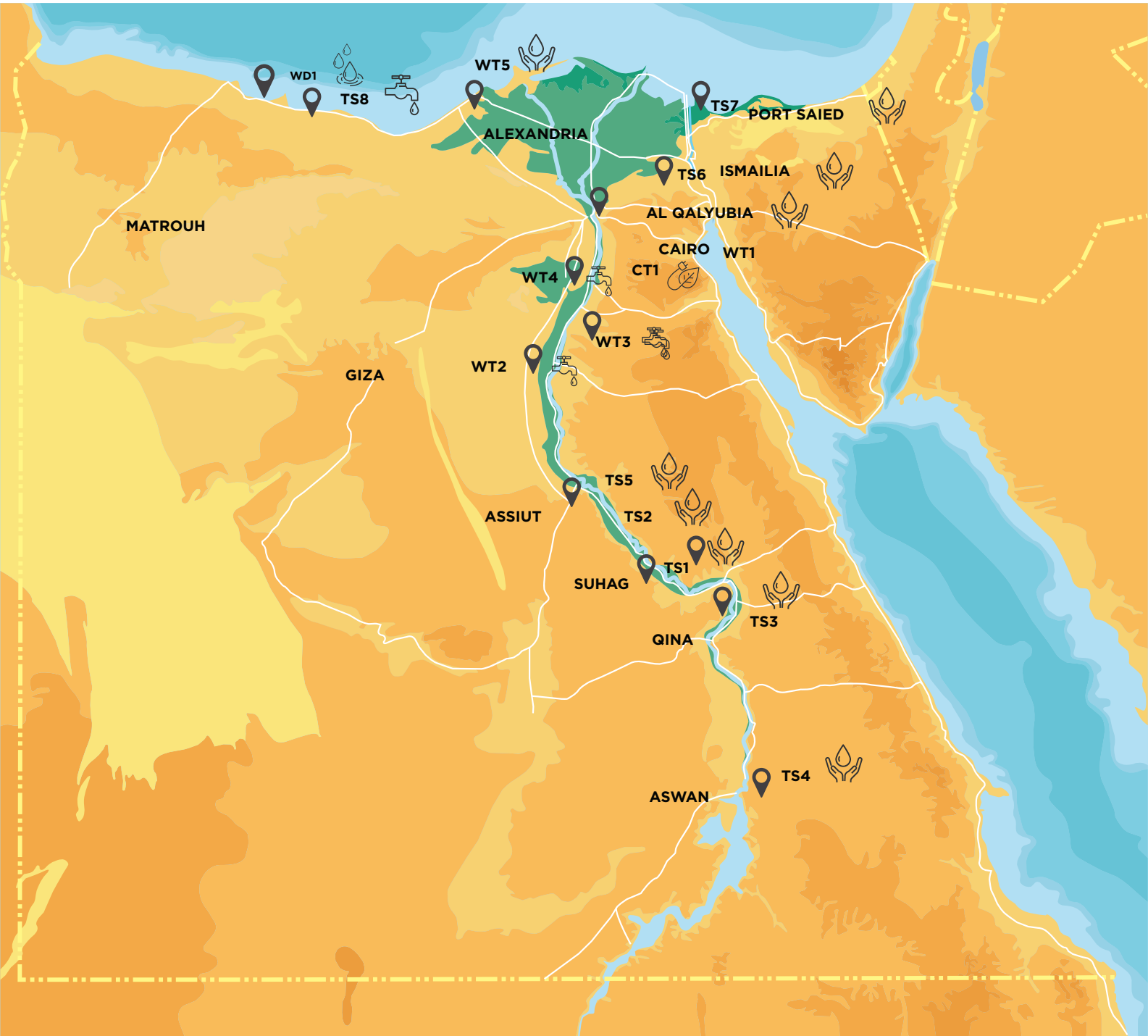
- 1) Provide drinking water to meet the current requirement and future increase in population
- 2) Provide drinking water to stop long transmission of surface water to governorates (Matrouh - Red Sea – South Sinai)
- 3) Replace surface water by desalinated water in coastal governorates
- 4) Meet the drinking water needs of new urban development communities

The Green Bond proceeds supported 14 projects in this sector corresponding to \$403.26 Mn.

¹⁴ Source: Ministry of Planning & Economic Development
¹⁵ EGYPT Enabling Private Investment and Commercial Financing in Infrastructure, The World Bank, 2018
¹⁶ <https://documents1.worldbank.org/curated/en/588971544207642729/pdf/132784-v2-WP-PUBLIC-Final-Report-Egypt-InfraSAP-English.pdf>
¹⁷ Source: Ministry of Transport

Geographical Locations of Projects

Figure 6



	Desalination
	Clean Transportation
	Water Treatment Plant
	Sludge Treatment Facility
ID	Project
CT1	Cairo Monorail
TS1	Saqltah TP
TS2	Abnoub & Fateh TP
TS3	Al-Marashdeh TP
TS4	Mahamid TP
TS5	Arab Elmadabigh Village TP
TS6	C9 TP
TS7	New Ismailia TP
TS8	El Dabaa TP
WD1	El Dabaa Desalination Plant
WT1	El Gabal Al Asfar STF Ext.
WT2	Al Ayat STF Ext.
WT3	Arab Abu Said STF
WT4	Abu Rawash STF
WT5	Eastern Alexandria STF

Featured project: Cairo Monorail

CO2 emissions are rising all over the globe and air pollution is harmful for human health. One of the ways to enhance air quality is to create a substitute to normal means of transportation that support reductions in GHG emissions. The Cairo Monorail project was conceived to achieve that goal. The monorail is located in two governorates Giza & New Cairo, extending 56.5 km from East Cairo to the New Administrative Capital (22 stations), and 42 km connecting 6th of October City to Giza (12 stations). The daily capacity of line 1 (NCC) is 671,714 passengers and 459,729 for line 2 (6th of October). The project will improve connectivity between the cities and urban communities, facilitating the movement of citizens, and decreasing the use of private cars, fuel consumption and environmental pollution. It will also reduce the number of injuries and deaths resulting from road accidents and the number of health-related issues due to air pollution, while providing a large number of job opportunities, creating up to 4,000 jobs during construction and approximately 450 jobs during operations adhering to leading standards of environmental and social protection during construction and operations. The Cairo Monorail project started in August 2018. Line 1 will begin operation in May 2022 and Line 2 in February 2023. The Green bond-financed components will be completed by 2022. This project serves SDGs 9, 11, and 13.



Figure 7

(CT1) Cairo Monorail



Line 1 NCC in New Cairo
Line 2 6th of October in Giza



Total Passengers per km in Mn per day weighted to % of green financing

1 Mn passengers per KM per day for each line

Allocation

Total Eligible Amount of \$346.74 Mn

68% of total eligible amount disbursement up to 2021

Project Life time

25 YEARS

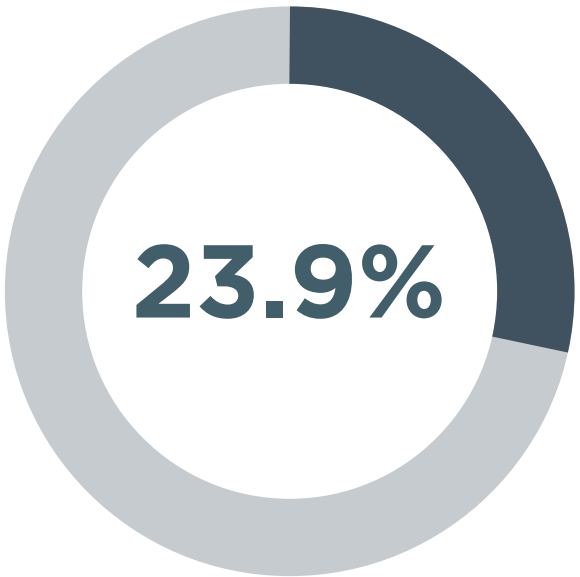
GHG Emissions Annual Reduction in tco2 expected 30% of car & bus switch to rail weighted to % of green bond finance

Line	2022
New Capital City	8,028
6 th of October	13,306

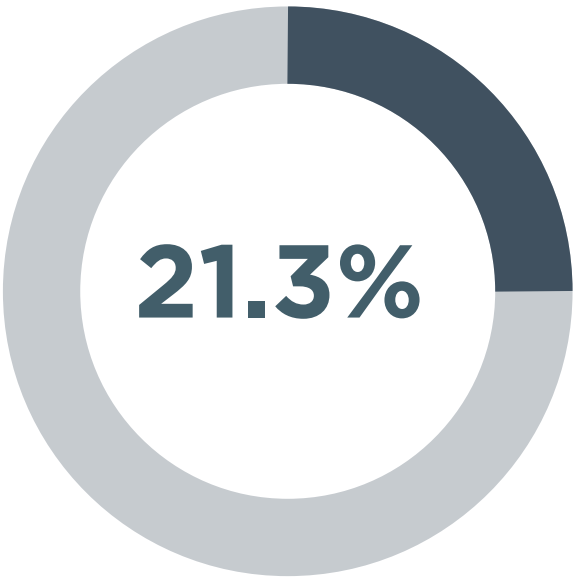
Project Coverage area

Line	Location served KM	Number of Stations
New Capital City	56.5 km	22 stations
6 th of October	42 km	12 stations

Progress to date



New Capital City Line 23.9%



6th of October Line 21.3%



Featured project: El Dabaa Desalination Plant

Egypt is a water scarce country. The combination of increasing socioeconomic demands, physical water scarcity, and competing transboundary needs, have severe ramifications for its water supply and sanitation sector. The Egyptian government is tackling these challenges in a sustainable and comprehensive way by funding new desalination plants. The El Dabaa Desalination Plant, located in Matrouh Governorate in the north of Egypt, will contribute towards the government's strategy to increase water resources and secure water for irrigation. The purpose of this project is to increase its capacity by 40,000 m³ per day and that increase can now serve 57,260 Capita, based on the assumption of household or individual water consumption 310 L per day using reverse osmosis, for cities and villages in Matrouh Governorate. Considering the deficit in water supply, it was necessary to implement innovative solutions to meet the demand by establishing sea water desalination plants, reusing wastewater (agriculture-sanitary-industrial), modernizing agricultural irrigation and expanding the use of groundwater. The EL Dabaa Desalination Plant Project construction started in 2017 and started operating in 2020. The Green Bond-financed component was completed in 2020. The project meets the criteria set out for refinanced projects with a retroactive period of 3 years. This project serves SDGs 3, 6, 12, and 13.

Figure 8

(WD1) EL Dabaa Desalination Plant



Matrouh



Production



40,000
M³/day

Served Population

57,260

Individual Water Consumption Average Per Capita Share / Day

310
Liter / capita / day

Allocation



100%
Disbursement
of total Eligible
amount

\$67.6 Mn
Total Eligible
amount of 2021

Project Life time

50 YEARS

Progress to date

100%

Featured project: Eastern Alexandria STF

Preventing a water crisis is a top priority for the Egyptian government. Water treatment and water reuse is essential for efficient and sustainable water resource management as well as climate action efforts in Egypt. The Eastern Alexandria Sludge Treatment Facility is located in the Alexandria governorate. The purpose is to reduce the volume of waste by 30%, thereby reducing CO2 emissions by 11,208 tCO2 per annum (weighted by the % of Green Bond financing) as well as reducing the cost of transporting waste to landfills, and supporting energy efficiency by reusing wastewater sludge to produce 50% of the electricity needed to run the plant.



Figure 9

(WT5) Eastern
Alexandria STF.



Alexandria



Designed Operation Capacity

800,000
M3/day

Production

50,000
MWH

Sludge Reduction

30%



Power supply in operating the plant

50%

Allocation



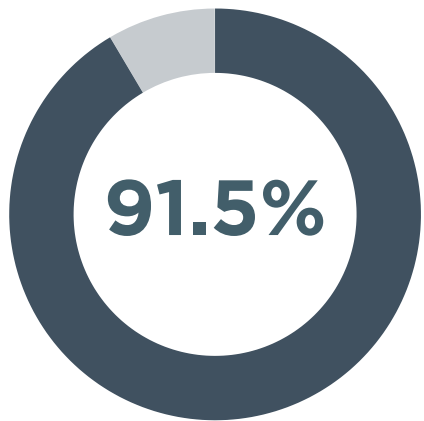
80%
disbursed of
total Eligible
amount up
to 2021

\$49.8 Mn
Total Eligible
amount of

Project Life time

30
YEARS

Progress to date



Allocation and Impact Reporting

The use of bond proceeds is disclosed in table 5. The allocation data was provided by the Ministry of Housing, Utilities and Urban Communities, and the Ministry of Transport. In the Green Bond Framework, The Egyptian Government of Egypt committed to allocating Green Bond proceeds to eligible expenditures no later than 24 months from the bond issuance date, supporting new and existing expenditures with a look-back period of no more than 36 months. Accordingly, the 2020 Green Bond proceeds were allocated to eligible expenditures between 2017 and September 2021. For Years 2017, 2018 and 2019 expenses are accounted as re-financing and the rest as new financing.

Out of the US\$750 Mn raised through the Green Bond, US\$253.67 Mn was disbursed for expenditures in 2017, 2018, 2019 (refinancing), corresponding to 34% of total committed disbursement. 2020 and 2021 disbursements amounted to US\$ 167.94 Mn and US\$ 142.85 Mn, corresponding to 22 % and 19% of the commitment, respectively. To date, 75% of the Green Bond proceeds (US\$ 564.46 Mn) have been allocated. The remaining (25%, equivalent to US\$ 185.54 Mn) will be allocated in 2022 and presented accordingly. The unallocated proceeds will be held in Egypt's Treasury account in cash and there will be no temporary investment of unallocated proceeds, per the government's commitment in the Green Bond Framework.

Egypt has identified US\$1.9 Bn of green projects eligible to be financed with Green Bond future Issuances. US\$ 564.46 Mn has been disbursed towards these projects to date supported by the 2020 Green Bond. This indicates the scope for future disbursements. See figures 10 and 11.

Figure 10

Total allocated and pending disbursements in US\$ Mn

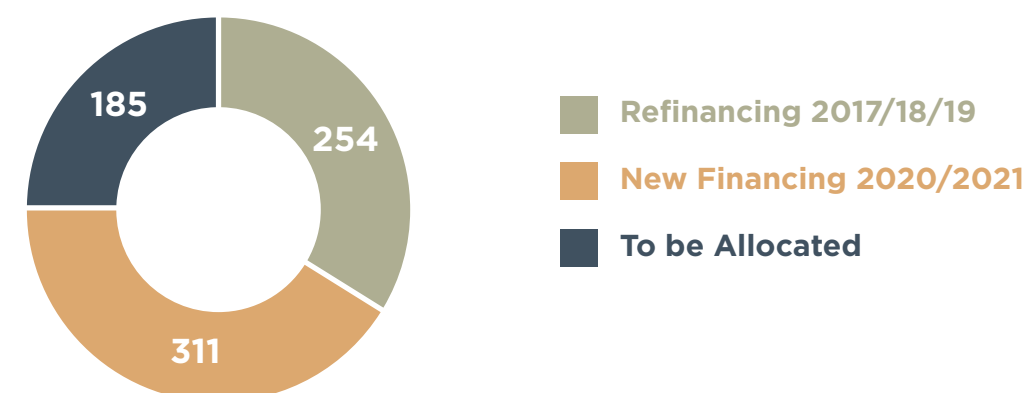
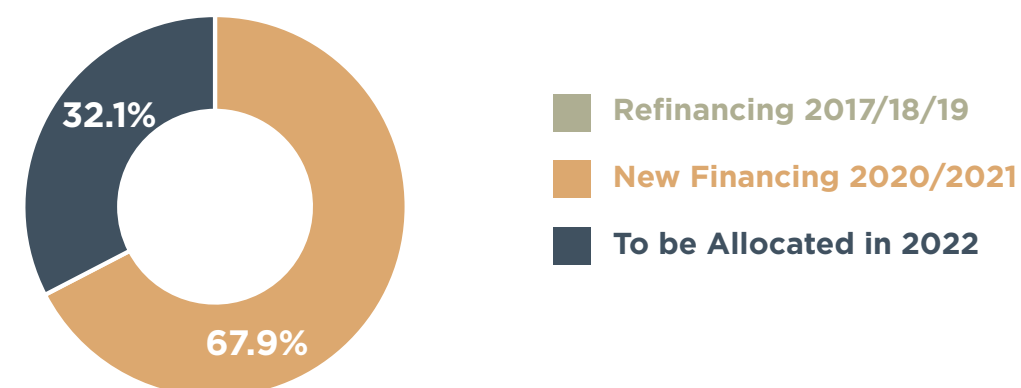


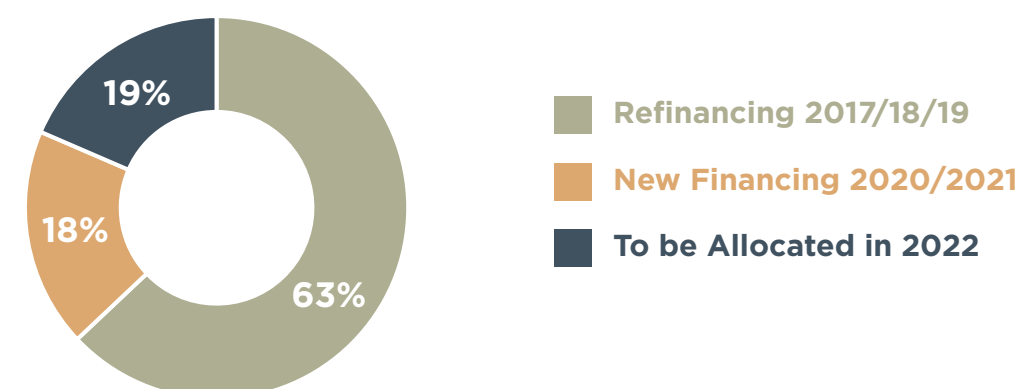
Figure 11:

Refinancing, New Financing and pending allocations by green category

Clean Transportation



Sustainable Water & Wastewater Management





ANNEX1: Impact Reporting Methodology

Scope of Results

Reporting is based on “ex-ante” estimates at the time of project appraisal unless otherwise indicated.

Uncertainty

Impact indications and projected results are based on assumptions. While every effort is made to make sound and conservative assumptions that are reasonable based on the information available at the time, the actual impact of the projects may diverge from initial projections.

Omissions

Projects may display benefits across a much wider range of indicators than those captured in the impact assessment. On the other hand, there may be some projects for which the proposed indicators are either not applicable or the data is not available.

Source of Data

All reported results are derived from the Egyptian government as well as publicly available sources.

GHG Methodology Used for Monorail

The GHG emissions of an activity can be calculated using the following basic equation:

Emissions=Activity data x Emission Factor x Global warming Potential.

The Monorail project is expected to result in a reduction in emissions from other modes of transport as members of the public in Cairo change from more carbon intensive transport (car, bus) to the monorail. This screening includes a high-level evaluation of the extent of the expected emission avoidance associated with this change. In order to calculate emission avoidance, information on projected ridership for the monorail has been referenced. The ridership data estimates passenger volume, including total passengers on the line per day and the average distance travelled per passenger at different points in time during the operation of the monorail. This has been used to calculate the total kilometers per year which are estimated to be travelled by all passengers on the monorail line during its operation. These calculations assume the monorail operates 365 days a year. The emissions associated with using car, bus or railway are estimated using emissions factors published by the UK government. For the 6th of October line, it is estimated that between 457 kt CO₂e in 2022 to 1,043 kt CO₂e in 2037 would be produced each year from the three modes of transport and that approximately 81 to 202 kt

CO₂e could be avoided per year as a result of the modal shift

from car and bus to the monorail (assuming 20-50% of passengers switch from car/bus to monorail). For the NCC line, it is estimated that between 322 kt CO₂e in 2022 to 740 kt CO₂e in 2037 would be produced per year from the three modes of transport and that approximately 49 to 122 kt CO₂e could be avoided per year as a result of the modal shift from car and bus to the monorail.

Methodology used for the number of passengers: The transport study provided the total number of passengers and estimates of passenger volume for the NCC line. For the 6th of October line, total passengers on the line per day were provided and the average distance travelled per passenger at different points in time during the monorail's operation. Table 1 (Annex 3) lists the total number of passengers on the line per day. Since not all passengers travel from the beginning to the end of the line, the average distance (km) travelled was estimated by a sample of passengers in the transport study and then extrapolated (multiplied) by the total number of passengers.

GHG Methodology used for El Gabal EL Asfar¹⁸

Anaerobic digestion by methane fermentation is a powerful means of removing substantial quantities of organic matter. The process most generally used is mesophilic digestion at 35°C. For normal sewage treatment sludge, a 40 to 50% reduction in organic matter content can be expected. Digestion leads to destruction of most of the pathogenic germs.

The digestion produces biogas, which mainly consists of methane and carbon dioxide. Biogas engines are used for the Cogeneration of Heat and Power (CHP). The heat is used for the heating of the digester. The electricity is used for the operation of the plant. Depending on the type of water treatment, the CHP can supply 30% to 50% of the electricity consumption of the plant. The organic matter content of the sludge must be high in order to achieve good operating conditions and a high removal rate. Anaerobic digestion is therefore generally used for primary sludge. Anaerobic digestion represents fairly high investment costs.

The biological process may be difficult to operate since it is quite sensitive to various types of disturbance, with a risk of process upsets that then take a long time to rectify. Due to the operating requirements, it is generally recommended to plan anaerobic digestion for large plants and/or plants where skilled-trained technicians are available.

¹⁸ https://www.researchgate.net/publication/312029190_Energy_Production_from_Sewage_Sludge_in_a_Proposed_Wastewater_Treatment_Plant

ANNEX 2: Project Pictures

Cairo Monorail



Workshop Site



Nasr City Streets



Cairo Monorail Trailer

ANNEX 2: Project Pictures

El Dabaa DP



Sand Filters



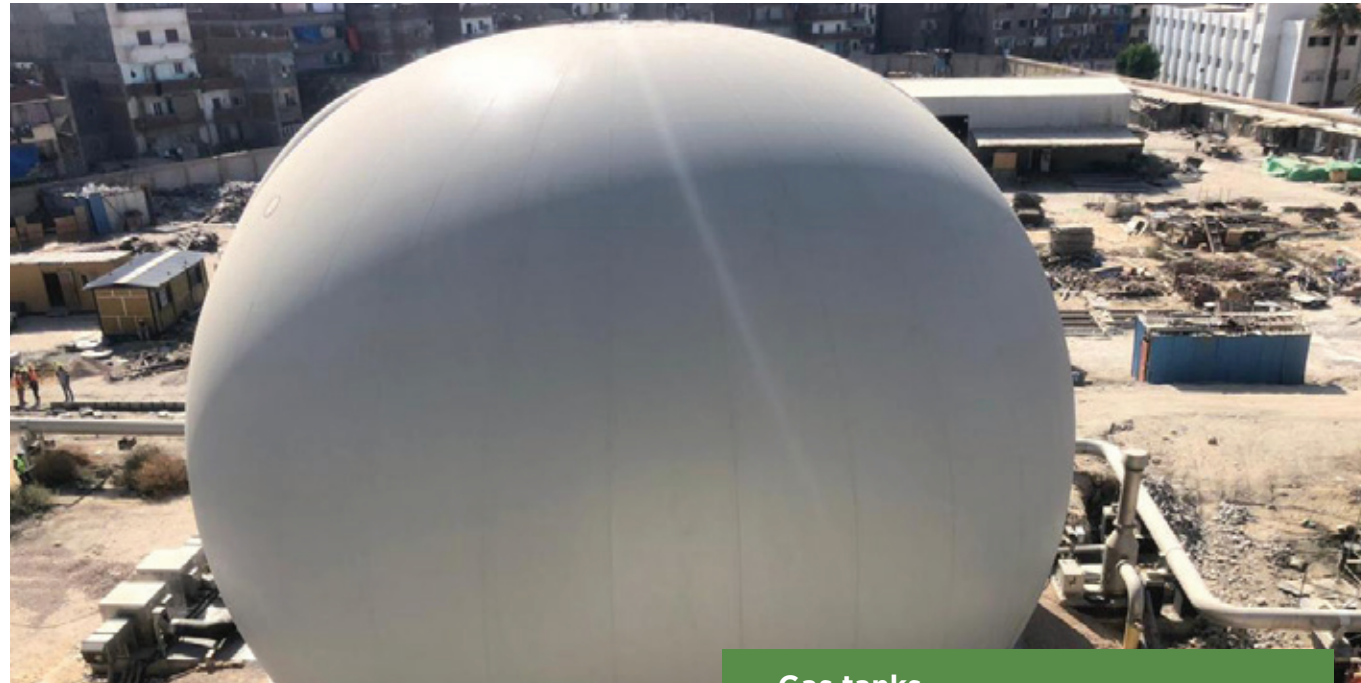
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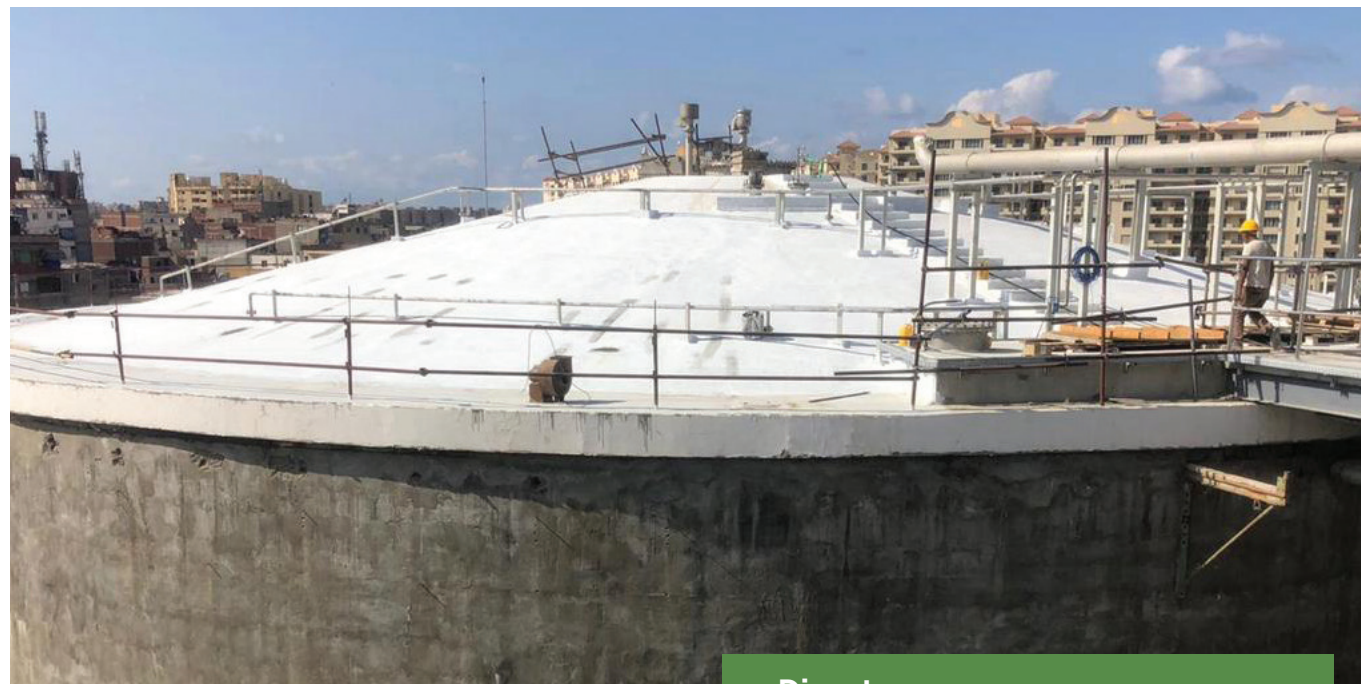
Reservoir 4

ANNEX 2: Project Pictures

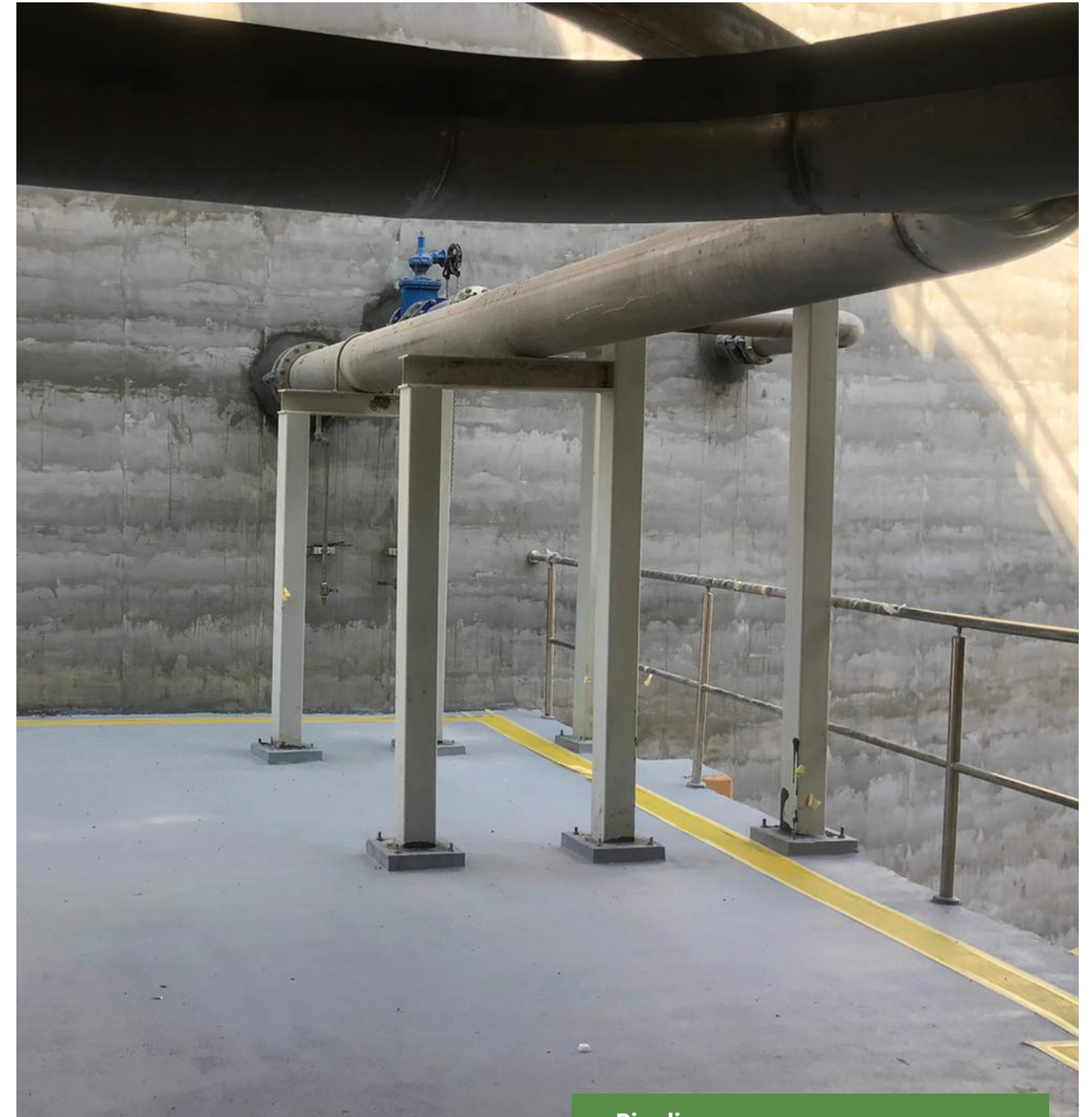
Sludge Treatment Eastern Alexandria



Gas tanks



Digester



Pipelines

ANNEX 3:

Aggregate Environmental Impact

Table 1: Ministry of Transport

Cairo Monorail				
Reduction in travel hours (passenger)	1 hour			
	For NCC line		For 6 th of October line	
Expected total number of passengers per km in Mn per day	8.10	2022	11.5	2022
	13.47	2027	19.4	2027
	15.80	2032	22.0	2032
	18.70	2037	26.3	2037
Annual GHG emission reduced or avoided (tCO2e)	For NCC line in 2022		For 6 th of October in 2022	
	49,000 if 20% of car and bus switch to rail		81,000 if 20% of car and bus switch to rail	
	73,000 if 30% of car and bus switch to rail		121,000 if 30% of car and bus switch to rail	
	98,000 if 40% of car and bus switch to rail		161,000 if 40% of car and bus switch to rail	
	122,000 if 50% of car and bus switch to rail		202,000 if 50% of car and bus switch to rail	

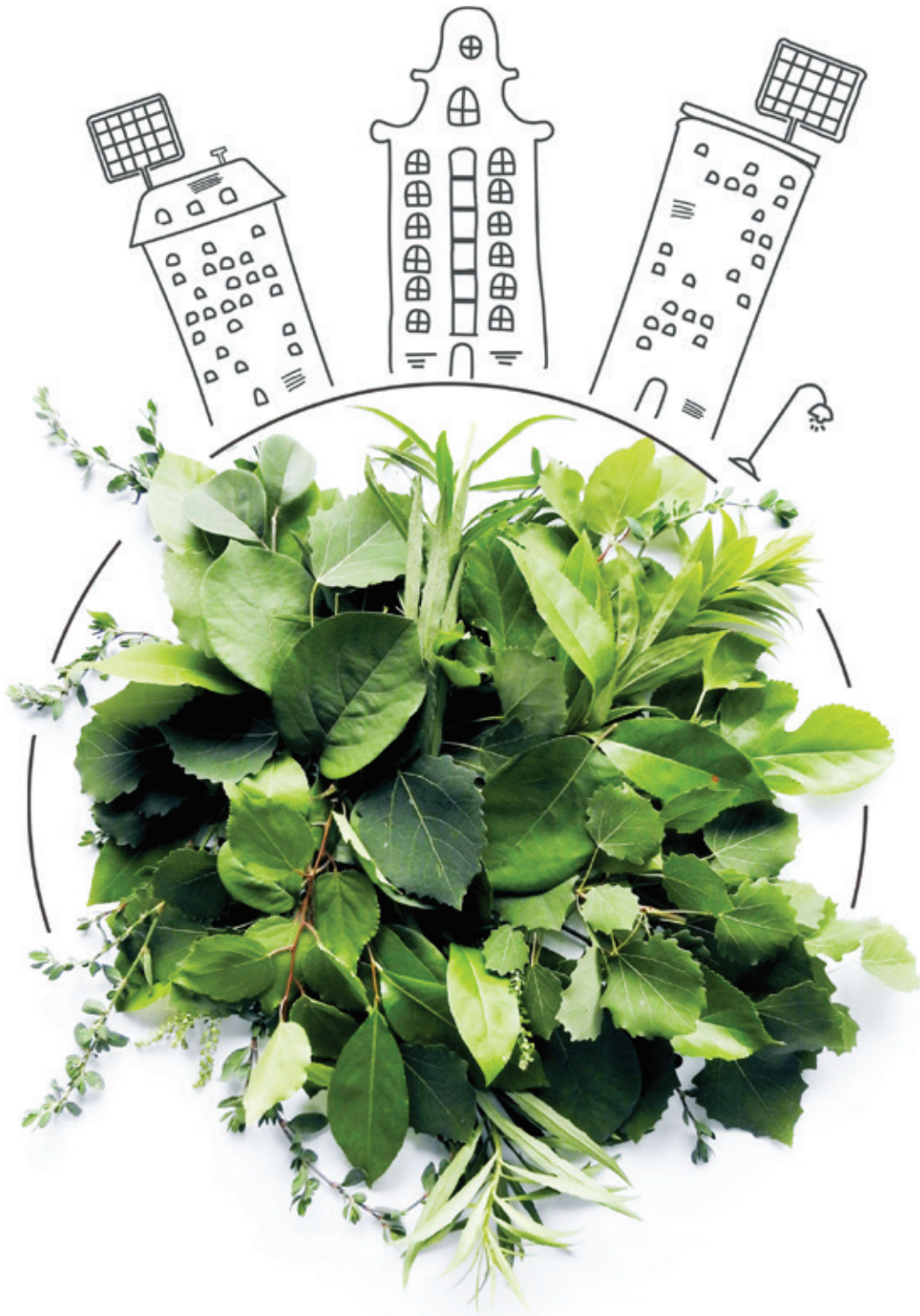


Table 2: Ministry of Housing, Utilities and Urban Communities

Indicator	Amount of Expected treated wastewater to be reused (M3/ day)	Number of served population (capita) current	Number of jobs created during implementation (Percentage of temporary AGE OR women: 5%)	Number of jobs created during operation (percentage of temporary jobs or women: 5%)	Quantity of Expected pollutants and sludge expected to be collected ANNUAL (TONS BOD/year)	Increased water consumption (litre/capita/ day)	Amount of energy generated from sludge treatment annually (MWH)	GHG emissions expected REDUCTION OR reduced or avoided (t CO2 / h)	reduction of polluted water into water ways (m3/ day)
Project									
Saqltah TP	30,000	500,000	100	45					
Abnoub & Fateh TP	82,000	600,000	150	60					
Al- Marashdeh TP	10,000	40,000	50	30					
Mahamid TP	3,000	15,000	50	21					
Arab Elmadabigh villages TP	30,000	300,000	120	60					
C9 TP	30,000	500,000	200	60					
New Ismailia TP	25,000	250,000	100	45					
Eldabaa TP	14,000	26500			1,673				
Eldabaa desalination plant	40,000	57,260				310			
ELGabal ELAsfar STF Ext.		2,500,000					110,000	52,728	
AL Ayat STF Ext.	30,000	150,000							
Arab Abu said STF	800,000	1,000,000					88,000	42,183	750,000
Abu Rawash STF.		8,500,000					168,000	80,417	
Eastern Alexandria STF		2,500,000			30%		50,000	23,382	

ANNEX 4: Weighted Environmental Impact

The data was reported by the Ministry of Transport. The Cairo Monorail is an ongoing project that had approximately 11% of its financing sourced from the Green Bond proceeds. The project is not operational as of October 2021. Hence, reported results were based on ex-ante studies. The actualized value for each indicator was multiplied by the weight of Green Bond financing to attribute the environmental effect of the bond. Total impact is included in the appendix.

Table 3: Ministry of Transport

Cairo Monorail		
Reduction in travel hours (passenger)	0.110 hour	
	For NCC line	For 6 th of October line
Expected total number of passengers per km in Mn per day	1 Mn/km/day 2022 1 Mn/km/day 2027 2 Mn/km/day 2032 2 Mn/km/day 2037	1 Mn/km/day 2022 2 Mn/km/day 2027 3 Mn/km/day 2032 3 Mn/km/day 2037
Annual GHG emission reduced or avoided (tCO ₂ e)	For NCC line in 2022 5,388 tCO ₂ e if 20% of car and bus switch to rail 8,028 tCO ₂ e if 30% of car and bus switch to rail 10,777 tCO ₂ e if 40% of car and bus switch to rail 13,416 tCO ₂ e if 50% of car and bus switch to rail	
		For 6 th of October in 2022 8,907 tCO ₂ e if 20% of car and bus switch to rail 13,306 tCO ₂ e if 30% of car and bus switch to rail 17,705 tCO ₂ e if 40% of car and bus switch to rail 22,213 tCO ₂ e if 50% of car and bus switch to rail



Table 4: Ministry of Housing, Utilities and Urban Communities

The data was by the Ministry of Housing, Utilities and Urban Communities as reported by the National Authority for Potable Water and Sewage, the Construction Authority for Portable Water and Wastewater, and the Holding Company for Water and Sanitation and the Ministry of Transport. The actualized or expected value of each indicator was proportioned by the weight of Green Bond financing, in relation to total financing. Actual numbers were for the following projects: Saqultah TP, Abnoub & Fateh TP, Al-Marashdeh TP, Mahamid TP, Arab Elmadabigh villages TP, C9 TP, New Ismailia TP, Eldabaa TP, Eldabaa desalination plant.

Indicator	Amount of Expected treated wastewater to be reused (M³/ day)	Number of served population (capita)	Number of jobs created during implementation (Percentage of temporary AGE OR women: 5%)	Number of jobs created during operation (percentage of temporary jobs or women: 5%)	Quantity of Expected pollutants and sludge expected to be collected ANNUAL (TONS BOD/year)	Increased water consumption (litre/capita/ day)	Amount of energy generated from sludge treatment annually (MWH)	GHG emissions expected REDUCTION OR reduced or avoided (t CO2 / h)	reduction of polluted water into water ways (m3/day)
Project									
Saqultah TP	29,396	489,933	98	44					
Abnoub & Fateh TP	50,225	367,500	92	37					
Al- Marashdeh TP	10,000	40,000	50	30					
Mahamid TP	3,000	15,000	50	21					
Arab Elmadabigh villages TP	30,000	300,000	120	60					
C9 TP	30,000	500,000	200	60					
New Ismailia TP	25,000	250,000	100	45					
Eldabaa TP	9,592	18,155			1,146				
Eldabaa desalination plant	40,000	57,260				310			
ELGabal ELAsfar STF Ext.		411,323					18,098	8,675	
AL Ayat STF Ext.	3,019	15,094					0	0	
Arab Abu said STF	133,705	167,131					14,708	7,050	125,348
Abu Rawash STF.		1,821,429					36,000	17,232	
Eastern Alexandria STF		1,198,310					23,966	11,208	

ANNEX 5: Project by Project Reporting

Table 5: Allocation of Proceeds and Expected Impact as of 2021¹⁹

Project name	Project capital	Eligible amount \$	*Allocated amount to date (1000 \$)	% Disbursed	Goals	Project Life (years)	Capacity or Coverage	Units	Expected Production or Improvement from Baseline	Units	Emissions reduced per annum	Emissions reduced per annum (weighted)	Progress to Date (%)	Green Bond financing % ²⁰
Cairo Monorail (CT1)	3153.2	346.74	235	68%	Connect the new administrative capital (NAC) to outlying metropolitan areas through a mass transit system Improve mobility services for citizens, while reducing traffic congestion and environmental impact	25	NCC line: 671,000 in 2022 1.1 mill in 2027 1.3 mill in 2032 1.5 mill in 2037 For 6 th of October line: 459,000 in 2022 716,000 in 2027 790,000 in 2032 940,000 in 2037	Passenger per day	For NCC line: 671,000 in 2022 1.1 mill in 2027 1.3 mill in 2032 1.5 mill in 2037 For 6 th of October line: 459,000 in 2022 716,000 in 2027 790,000 in 2032 940,000 in 2037	Passenger per day	For NCC line in 2022 49,000 t CO2e if 20% of car and bus switch to rail 73,000 t CO2e if 30% of car and bus switch to rail 98,000 t CO2e if 40% of car and bus switch to rail 122,000 t CO2e if 50% of car and bus switch to rail For 6 th October in 2022 81,000 t CO2e if 20% of car and bus switch to rail 121,000 t CO2e if 30% of car and bus switch to rail 161,000 t CO2e if 40% of car and bus switch to rail 202,000 t CO2e if 50% of car and bus switch to rail	For NCC line in 2022 5,388 t CO2e if 20% of car and bus switch to rail 8,028 t CO2e if 30% of car and bus switch to rail 10,777 t CO2e if 40% of car and bus switch to rail 13,416 t CO2e if 50% of car and bus switch to rail For 6 th October in 2022 8,907 t CO2e if 20% of car and bus switch to rail 13,306 t CO2e if 30% of car and bus switch to rail 17,705 t CO2e if 40% of car and bus switch to rail 22,213 t CO2e if 50% of car and bus switch to rail	23.9% for NCC line 21.3% for 6 th October	10.9%

Table 5: Allocation of Proceeds and Expected Impact as of 2021¹⁹
- continuation

Project name	Project capital	Eligible amount \$	*Allocated amount to date (1000 \$)	% Disbursed	Goals	Project Life (years)	Capacity or Coverage	Units	Expected Production or Improvement from Baseline	Units	Emissions reduced per annum	Emissions reduced per annum (weighted)	Progress to Date (%)	Green Bond financing % ²⁰
Saqltah TP (TS1)	26.2	25.67	25.67	100%	Wastewater treatment and reuse of treated water for Sohag city inhabitants	35-50	500,000	person	30,000	m ³ /day			95%	97.9%
Abnoub & Fateh TP (TS2)	35.3	21.61	21.61	100%	Wastewater treatment and reuse of treated water for Abnoub and Fateh city inhabitants	35-50	600,000	person	82,000	m ³ /day			95%	61%
Al-Marashdeh TP (TS3)	16.19	16.19	16.19	100%	Wastewater treatment and reuse of treated water for Al- Marashdeh city inhabitants	35-50	40,000	person	10,000	m ³ /day			95%	100%
Mahamid TP (TS4)	6.91	6.91	6.91	100%	Wastewater treatment and reuse of treated water for Mahamid city inhabitants"	35-50	15,000	person	3,000	m ³ /day			95%	100%
Arab El Madabigh villages TP. (TS5)	32.19	32.19	32.19	100%	wastewater treatment and reuse of treated water for Arab Elmadabigh city inhabitants"	35-50	300,000	person	30,000	m ³ /day			95%	100%

Table 5: Allocation of Proceeds and Expected Impact as of 2021¹⁹
- continuation

Project name	Project capital	Eligible amount \$	*Allocated amount to date (1000 \$)	% Disbursed	Goals	Project Life (years)	Capacity or Coverage	Units	Expected Production or Improvement from Baseline	Units	Emissions reduced per annum	Emissions reduced per annum (weighted)	Progress to Date (%)	Green Bond financing % ²⁰
C9 TP. (TS6)	32.26	32.26	32.26	100%	wastewater treatment and reuse of treated water for Sohag city inhabitants	35-50	250,000	person	30,000	m ³ /day			95%	100%
New Ismailia TP. (TS7)	26.18	26.18	26.18	100%	wastewater treatment and reuse of treated water for New Ismailia city inhabitants	35-50	250,000	person	25,000	m ³ /day			95%	100%
El Dabaa TP. (TS8)	38.3	26.21	26.21	100%	Wastewater treatment and reuse of treated water for villages and cities in EL Matrouh governorate inhabitants	50	14,000 m ³ /day 26,500 inhabitants, 4,256 households	m ³ /day, inhabitants, household"	5.1 Mn cubic meters of treated water will be available annually for reuse in the served area	m ³ /year			100%	68.5%
El Dabaa DP.(WD1)	67.6	67.6	67.6	100%	Water treatment for El Dabaa city inhabitants.	50	40,000 m ³ /day 57260 inhabitants	m ³ /day inhabitants	14.6 Mn cubic meters	m ³ /year			100%	100%
EL Gabal EL Asfar STF Ext. (WT1)	236.25	38.87	12.6	32%	Reducing waste for El Gabal EL Asfar city inhabitants, Generate electricity from sludge treatment	30	use the sludge comes out from the plant to be used in producing electricity covers around 50% from the total electricity required for operate the plant	mwh	110,000	MW	52,728	8,675	0%	16.5%

Table 5: Allocation of Proceeds and Expected Impact as of 2021¹⁹
- continuation

Project name	Project capital	Eligible amount \$	*Allocated amount to date (1000 \$)	% Disbursed	Goals	Project Life (years)	Capacity or Coverage	Units	Expected Production or Improvement from Baseline	Units	Emissions reduced per annum	Emissions reduced per annum (weighted)	Progress to Date (%)	Green Bond financing % ²⁰
AL Ayat STF Ext. (WT2)	30.24	3.04	3.04	100%	Recycling treated wastewater to increase water supply for EL Ayat city inhabitants.	30	treated wastewater around 30000 m3/d	m ³ /d	10950000 annually	m ³		0	98%	10.1%
Arab Abu said STF. (WT3)	226.17	37.80	12.6	33%	Extension of existing plant to reach capacity of 800000 m3/d (tertiary treatment, and generate electricity from sludge treatment,) for Abu Said inhabitants.	30	1,000,000	person	88000	MW	42,183	7,050	0%	16.7%
Abu Rawash STF. (WT4)	88.2	18.9	6.3	33%	Generate electricity from sludge treatment for Abu Rawash city inhabitants.	30	8,500,000	person	168000	MW	80,417	17,232	0%	21.4%
Eastern Alexandria STF. (WT5)	104.0	49.83	40	80%	Reducing waste for Eastern Alexandria city inhabitants. Generate electricity from sludge treatment.	30	use the sludge comes out from the plant to be used in producing electricity covers around 50% from the total electricity required for operate the plant	MWH	50000	MW	23,382	11,208	91.5%	47.9%

¹⁹ For projects under construction or otherwise not operational yet, the impact is anticipated/expected. For projects that are operational (please check the refinanced projects), the impact is realized

²⁰ Share of financing sourced from Green Bond proceeds relative to total financing

ANNEX 6: Summary of Egypt Green Financing Framework

Egypt developed a Green Financing Framework (the “Framework”) in accordance with the 2018 ICMA Green Bond Principles, under which the government can issue Green Bond(s) and Sukuk.

The framework is segmented as follows:

- i. Use of Proceeds
- ii. Project Evaluation and Selection
- iii. Management of Proceeds
- iv. Reporting

Use of proceeds

An amount, equal to the net proceeds of any Green Bond issued by the Egypt, will be allocated to finance new or re-finance existing projects/expenditures, in part or in full, as long as they meet the requirements of Eligible Green Projects as set out below. Eligible expenditures include investments expenditures, operating expenditures, and tax expenditures, insofar as any expenditure contributes to the Egypt’s climate change mitigation and adaptation policies. Eligible Green Projects will exclude any state disbursements to a local agency or local authority that participates in capital markets to raise financing, such as the issuance of Green Bond. Eligible project categories include clean transportation, renewable energy, pollution prevention and control, climate change adaptation, energy efficiency, sustainable water and wastewater management.

Project Evaluation and Selection

The proceeds of any Egyptian Green Bond/Sukuk will be allocated to new lending or existing projects/expenditures that meets the criteria set out in the Use of Proceeds section. Egypt established a Green Finance Working Group (GFWG) to carry out the evaluation and selection process. The GFWG consisted of members from:

Ministry of Finance
 Ministry of Planning and Economic Development (MPED)
 Ministry of Environment (MoE)
 Ministry of Transportation (MOT)
 Ministry of Housing, Utilities & Urban Communities (MoHUUC)
 Ministry of Electricity and Renewable Energy (MOEE)
 New and Renewable Energy Authority (NREA)
 Egyptian Electricity Transmission Company (EETC)
 Construction Authority for Potable Water & Wastewater (CAPW)

On a semi-annual basis, the GFWG will review all proposed eligible Use of Proceeds to determine compliance with the Egypt Green Financing Framework before approving the allocation of proceeds. GFWG will ensure the compliance of the selected projects with the criteria set out above in Use of Proceeds for the lifetime of the bond.

Management of Proceeds

The Ministry of Finance and Ministry of Planning and Economic Development will oversee the allocation and tracking of expenditures on Eligible Green Projects up to an amount equal to the net proceeds of Green Bond issued. The Green Financing Register is reviewed annually by the Ministry of Finance and the Ministry of Planning and Economic Development. To manage this process, Egypt established a Green Financing Register.

Reporting

This report will be made on an annual basis by the GFWG Impact Report Working Group to capture the environmental impact of financed projects, and the allocated proceeds. All reporting will be made public on the Ministry of Finance website.

Vigeo Eiris is to provide independent review of the management and allocation of the Green Bond proceeds.

ANNEX 7: Environmental Challenges

Egypt is highly vulnerable to the impacts of climate change. According to the assessment reports of the Intergovernmental Panel on Climate Change (IPCC), Egypt's Nile Delta is one of the world's three hot spots for "extreme" climate vulnerability. Projections indicate that Egypt will suffer from the following climate change influences: sea level rise influencing migration and food security, water scarcity and deficiency, and an increase in the frequency and intensity of extreme weather events such as heat waves that would bring detrimental effects to health conditions, food security, energy consumption, tourism, and infrastructure. Flash floods affecting health conditions and food security, heavy rains, sand and dust storms. This is expected to have a major impact on infrastructure, beaches and fertile land in the Nile Delta as they are subject to erosion, saltwater intrusion and inundation. Therefore, food security, human health, economy and ecosystems in Egypt are at risk. Sectors which are anticipated to be particularly affected include water resources, agriculture and fisheries, health, housing and settlements, biodiversity, telecommunications, energy, tourism, as well as coastal zones and coral reefs.

Egypt relies on suitable climate and natural resources (land and water) for agricultural production and for food supply. The top three sectors vulnerable to climate change in Egypt: i) water resources and irrigation, ii) agriculture, and iii) coastal zone protection.

Climate change is anticipated to be a cause of pressure on coastal zones, particularly with the effect of a rise in sea level on low land and the recurrence of severe storms and extreme weather events (IDSC, 2011). The coastal area of the Nile Delta is highly prone to flooding as a result of rising sea levels. This may be accompanied by soil subsidence at varying rates, depending on topographical and geological characteristics. Delta coastal zones can be divided into three sub-zones, based on the degree of vulnerability of the location to sea level rise and erosion.²¹

Efforts to address climate change and other environmental priorities

The Egyptian Government of Egypt is steadfast to achieving the United Nations Sustainable Development Goals (SDGs). This promising commitment is mirrored in Egypt's comprehension of the intertwined nature of sustainable development and is embodied in the framework of Egypt's national strategy, "Sustainable Development Strategy: Egypt Vision 2030" (SDS).²² The strategy reflects the three dimensions of sustainable development: economic, social and environmental.

The plan is a national framework that guides and sets policies and programs in order to realize the SDGs, as well as other national objectives. The updated version of Egypt's Vision 2030 unfolds in four Guiding Principles putting the citizen at the core and centre of development, while guaranteeing equity and accessibility for all, coupled with an approach of resilience and adaptation, all within a mindset of sustainability. These principles are considered the overarching umbrella that guides the implementation of the six National Strategic Goals.

The strategy identifies a group of seven Enablers to galvanize the implementation of the goals.

The SDS is a governmental strategy that encompasses a plan for a diversified pool of stakeholders including the private sector, civil society and international organizations. SDS is aligned with the 17 SDGs, as well as the African Agenda 2063, and acts as the governing agenda for all executed development programs and projects spanning until 2030. The inauguration of the strategy was followed by the establishment of a national committee, the National Committee for Monitoring the Implementation of the Sustainable Development Goals, as a result of a prime ministerial decree.

Additionally, the Government Program (2018/2019 – 2021/ 2022) acknowledges several development programs, realizing different aspects of sustainability, including water consumption rationalization, coasts protection, developing renewable energy resources, transformation to green economy, establishment of environmentally compatible industrial clusters, expansion of establishing the smart and fourth generation cities, refining the environmental conditions in the most vulnerable villages, developing slums, enhancing water and air quality, waste management, solid wastes disposal, and linking scientific research with environmental improvement.

Therefore, the Sustainable Development Plan of the Fiscal Year 2020/2021 has shed light on prioritizing the finance of green investment projects, which embody approximately 15% of total public investments (as of 2020). These projects span sustainable transportation, generation of renewable energy, solid waste management, water desalination plants, and sewage treatment plants. Additionally, a guide has been prepared by the Ministry of Environment and the Ministry of Planning concerning the sustainability criteria to be considered when formulating the Sustainable Development Plan of the Fiscal Year 2021/2022 to amplify the proportion of green investment projects to 30% by 2022 and eventually 50% by 2024/2025.²³

²¹ Source: Egypt's first biennial report and Arab Republic of Egypt's Green Financing Framework

²² <https://mof.gov.eg/en/About/5fbd28790f63030007fec9bb/5fe3763a7bfc600007cbce92>

²³ Source: Arab Republic of Egypt's Green Financing Framework.

ANNEX 8: Vigeo Eiris, part of Moody's ESG Solutions Independent review²⁴



²⁴ For the full report, visit www.MOF.gov.eg

INDEPENDENT REVIEW¹

of the management of the Arab Republic of Egypt's Green Bond issued in 2020

V.E is of the opinion that the Green Bond issued in 2020 by the Arab Republic of Egypt remains aligned with the GBP 2018.



Key Findings¹

- ▶ We express a reasonable² assurance on the Issuer's capacity to use the Bonds' proceeds to finance Eligible Projects, in line with its initial commitments.
- ▶ We express a reasonable assurance on the Issuer's capacity to implement the evaluation and selection process, in line with its initial commitments.
- ▶ We express a reasonable assurance on the Issuer's capacity to implement the allocation process, in line with its initial commitments.
- ▶ We express a reasonable assurance on the Issuer's capacity to implement the reporting process, in line with its initial commitments:
 - First, we express a reasonable assurance on the Issuer's capacity to report on the fund allocation, in line with its initial commitments. The indicators used for the allocation reporting are complete and relevant, at project level.
 - We express a reasonable assurance on the Issuer's capacity to report on environmental benefits of the financed Eligible Projects, in line with its initial commitments. The indicators used for the environmental benefits reporting (outputs, outcomes and impacts) are relevant and in line with market standards.

SUMMARY : LEVEL OF ASSURANCE OF THE ISSUER'S CAPACITY TO REMAIN ALIGNED WITH THE GBP 2018				
USE OF PROCEEDS	ALLOCATION OF PROCEEDS	MANAGEMENT OF PROCEEDS	REPORT ON THE ALLOCATION OF PROCEEDS	REPORT ON THE ENVIRONMENTAL BENEFITS
Reasonable	Reasonable	Reasonable	Reasonable	Reasonable
Moderate	Moderate	Moderate	Moderate	Moderate
Weak	Weak	Weak	Weak	Weak

¹ This Review is to be considered as the "Consultant review" described by the International Capital Market Association (www.icmagroup.org)
² The detailed definition of V.E' scales of assessment can be found in the Methodology section.

ANNEX 9: List of Abbreviation

MOF	Ministry of Finance
MOT	Ministry of Transportation
MOE	Ministry of Environment
MOI	Ministry of Investment
MPED	Ministry of Planning and Economic Development
GFWG	Green Financing Working Group
m3/d	Meter cubed per day
MWH	Mega Watt Hour
ICMA	International Capital Market Association
MOHUUC	Ministry of Housing, Utilities & Urban Communities
MOEE	Ministry of Electricity and Renewable Energy
EETC	Egyptian Electricity Transmission Company
CAPW	Construction Authority for Potable Water & Wastewater
IPCC	Intergovernmental Panel on Climate Change
UNSDG	United Nation Sustainable Development Goals
WWTP	Wastewater Treatment Plant
NCC	Nasr City- New Administrative Capital
STF	Sludge Treatment Facility
tCo2e	Tons of Carbon Dioxide equivalent
TP	Treatment Plant
DP	Desalination Plant





2021