



Office National des Chemin de Fer - Railways National Office (ONCF)



Green Bond Framework (Version 2.0)

An Update of the 2022 Green Bond Framework

January 2025

Contents

1. Company Structure and Sustainability Commitment.....	3
2. Rationale for the issuance of Green Bonds.....	5
a) Low-Carbon Rail Transport Development in Morocco.....	5
b) Sustainable Mobility Strategy at ONCF	7
3. ONCF Green Bond Framework	10
c) Use of Proceeds.....	10
d) Process for project evaluation and selection	12
e) Management of proceeds	15
f) Reporting	15
g) External review	16
4. Version control.....	16
Annex 1: Process for Green Financing of a Rail Project.....	18
Annex 2 - Description of the KENITRA-MARRAKECH LGV high-speed rail project.....	19
I. Objectives of the project	19
II. Nature of the project.....	19
III. Environmental and social actions.....	19
1. Approach & means.....	21
2. Actions	21

ONCF GREEN BOND FRAMEWORK

1. Company Structure and Sustainability Commitment

Office National des Chemin de Fer - Railways National Office (ONCF) is the Kingdom of Morocco's national railway operator and is under the management of the Ministry of Transport and Logistics. The company is state-owned and is responsible for the management of the national railway network including both passenger and freight lines. Currently, ONCF operates an extensive rail network spanning 3,350 kilometers of main lines, over 80% of which are electrified using a modern energy supply system comprising 53 substations at 3,000 V DC and 2 at 25 kV AC. This network includes approximately 200 kilometers of high-speed double-track lines designed for operations at speeds up to 320 km/h. As of the end of 2023, ONCF employs 6,912 dedicated professionals, demonstrating its commitment to efficient, sustainable, and innovative rail transport (figures by end of 2023)

The construction of high-speed train services between the main urban centres of Morocco represents a strategic investment for ONCF. The company's vision is articulated around five strategic pillars, guiding the Group's actions to meet the expectations of all its stakeholders:

- Establishing itself as the national leader in sustainable mobility.
- Accelerating the maximization of value for tangible and intangible assets while contributing to the development of Morocco's rail sector and its regional influence.
- Leveraging internal performance improvements as a key driver to address strategic challenges.
- Supporting public policies on mobility and territorial planning.
 - Harnessing digital transformation as a catalyst for both internal and external innovation

According to the IPCC Sixth Assessment Report, direct greenhouse gas (GHG) emissions from the transport sector in 2019 were 8.7 GtCO₂-eq (up from 5.0 GtCO₂-eq in 1990), which accounted for 23% of global energy-related CO₂ emissions. Of these emissions, 70% of

direct transport emissions came from road vehicles, while 1%, 11%, and 12% came from rail, shipping, and aviation, respectively¹. According to the IEA, USD 2 trillion in investment per year is needed in low-carbon transport globally in order to achieve the goal of the Paris Agreement to limit the rise of global temperatures to less than 2° Celsius by 2050². However, whilst transport represents a large share of green bond issuances worldwide (22% of all use of proceeds bonds issued globally), in Africa it is still greatly underrepresented (less than 1%)³ of total issuance of green bonds.

However, according to the IEA, rail is among the most efficient and lowest emitting modes of transport: trains represent only 0.3% of global total emissions compared to 2% for aviation. In addition, rail account for 8% of the world's motorised passenger movements as well as 7% of freight transport and yet it consumes only 2% of the world's transport energy demand⁴.

Globally, high-speed trains have also become an increasingly popular low-carbon means of transport because they offer an efficient alternative to short-distance flights for both passengers and goods whilst also producing almost immediate net CO₂ benefits deriving from a reduction in air and car journeys⁵.

As far as ONCF is concerned, environmental conservation holds a pivotal place in its medium and long-term development strategy, focused on sustainable mobility. As such, the company relies on universal tools, such as the environmental management system (ISO 14001) and the approach to its 'carbon footprint' adopted since 2015 includes the following objectives:

- Evaluate the company's carbon footprint on an annual basis;
- Identify room for maneuver in terms of GHG reduction and, on this basis, develop appropriate action plans to mitigate the impact of its activities on the

¹ Transport. In IPCC, 2022: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change

² World Resource Institute, [The Trillion Dollar Question II: Tracking Investment Needs in Transport](#), April 2016

³ 2024 Market Data, The Climate Bonds Initiative

⁴ The Carbon Brief: [Eight charts show how 'aggressive' railway expansion could cut emissions](#), January 2019

⁵ International Energy Agency, [the Future of Rail](#), January 2019

environment;

- Reduce ONCF's energy consumption, while developing greener alternatives;
- Ensure its environmental and social responsibility and, consequently, improve its image in the eyes of its stakeholders; and
- Raise awareness among its employees and partners on the importance of ecological mobility.

Over the years, this approach has been a real catalyst for working towards:

- Substantially reducing the company's carbon footprint, as evidenced by a reduction in GHG emissions by approximately 12% over five years (2015 - 2020);
- Preserving the position of 'train, as a friend of the environment' due to the fact that its CO₂ emissions are by far the lowest: they represent only 0.47% of the total GHG of Morocco and 2.6% of the transport sector, for a market share of 8.5% for passengers and 18% for goods; and
- Confirming the place of rail as the most ecological mean of transport: applied to passengers per kilometre (data 2020), the level of emissions from rail transport is 25 times lower than air transport, 7 times lower than car transport and 6 times lower than bus transport⁶.

2. Rationale for the issuance of Green Bonds

a) Low-Carbon Rail Transport Development in Morocco

International trends in the green bond markets for low carbon transport and the shift towards sustainability of many urban transport system operators has led ONCF to re-orient itself towards a more dedicated environmental and social mode in alignment with the orientation of the Kingdom of Morocco through its [New Development Model \(2021-2035\)](#), with the objective to strengthen the implementation of projects aimed at improving the national railway system. ONCF is committed to enhancing the wellbeing and comfort

⁶ Results for 2020 based on ONCF's 2016 carbon footprint assessment conducted with a specialized firm Refer to Annual Financial Report 2021 – Chapter 8 – Reporting ESG : [Présentation PowerPoint \(oncf.ma\)](#)

of its millions of passengers as well as providing a fast and efficient rail network to improve to economic resilience of Morocco.

Indeed, the fourth component of Morocco's New Development Model (2021-2035) on competitive and sustainable transport calls for strengthening rail to significantly increase its share in both passenger and freight transport. Furthermore, the New Government Program (2021-2026) states that the positive effects of rail transport are multidimensional, as it reconciles economic and sustainability ambitions. It emphasizes the central role played by this mode of transport in the efficient and successful implementation of multiple projects in recent years, such as the construction of renewable energy plants.

Furthermore, the Group also supports the [Sustainable Development Goals](#) (SDG)⁷ promoted by the United Nations and [Morocco's National Strategy for Sustainable Development \(SNDD\)](#) in order to establish a common development agenda by 2030. ONCF believes that rail and public transport in general can actively contribute to sustainable development and the fight against climate change by facilitating a shift from air and fossil fuel vehicles to rail transport, both for passengers and freight.

For this purpose, as part of its climate engagement and leadership, at COP26, ONCF and the Moroccan Ministry of Transport and Logistics [International Union of Railways](#) endorsed the [Sustainability Pledge of the International Union of Railways \(UIC\)](#) and shared their vision with participants as part of Africa's wider commitment to bolster and support the development of African railways in line with the Sustainable Development Goals (SDGs). The objective was also to raise awareness among stakeholders on the importance of contributing to the ecological transition and territorial integration of Morocco, through the development of a responsible, integrated and complementary transport system that meets the challenges and concerns of the 'green economy'.

ONCF's Corporate Social Responsibility (CSR) strategy has been approved by the company's General Management and was the subject of its very first ESG report published

⁷ <https://sdgs.un.org/goals>

in 2016. This strategy is based on the idea that, in the future, rail systems will be based on a vision of mobility that combines sustainable, inclusive and intelligent solutions, so as to meet the expectations of its customers in terms of both quality of service and low carbon emissions.

Concerning ONCF's development strategy, the [Morocco Rail Plan 2040 \(PRM\)](#) is a long-term master plan for the development of the national rail network in its various components by 2040, which takes into account the mapping of future transport needs, broken down into rail service needs and then into project banks. Built around hubs, connected to each other within travel corridors by high-speed trains, regional trains and shuttles, the PRM will ensure a dense network throughout the Kingdom and will play a decisive role in territorial development policies. This plan provides nearly 35 billion euros of investment (375 billion Moroccan dirhams) to, among other things, extend the country's network of high-speed lines by 1,100 km⁸.

b) Sustainable Mobility Strategy at ONCF

In line with its own commitment to sustainability and Morocco's ambitions under the New Development Model, ONCF in 2022 issued its first green bonds to finance or refinance the operations of its rail lines, the vast majority of which are electrified. The green bond raised **1 billion Moroccan dirhams (about US\$100 million)**, which was used to refinance a loan (raised in July 2017) to undertaken for the construction of the first high-speed train line between the cities of Kenitra and Tangier in northern Morocco.

The bond is Climate Bonds Certified and was labeled in accordance with the [Green Bond Principles](#) (June 2021) developed by the [International Capital Markets Association](#) (ICMA) and with the [Guide on Green, Social and Sustainability Bonds of Morocco](#) (AMMC, June 2018).

This issuance was an immediate, short-term intervention as the high-speed rail (HSR) line project is part of a master plan to connect Tangier to the city of Marrakech by 2030, with


⁸ Results of the PRM strategic study carried out by ONCF with a group of specialized consultants

the aim of combining economic development by providing faster intercity lines for passengers and freight, while reducing CO₂ emissions.

With this issuance, travel time between Tangier and Kenitra has been reduced by approximately 2 hours and 25 minutes (for a travel time of approximately 47 minutes) compared to traditional rail infrastructure, and it is estimated that the line will result in a reduction of more than 2.5 million tons of CO₂ equivalent over a 30-year period.

Inaugurated on 15th November 2018, the High-Speed Rail line between Tangier and Kenitra has been running on green energy since January 1st, 2022⁹. The "AL BORAQ" high-speed train was the first to offer sustainable transport using 100% wind power, with a vision for ONCF to eventually power all trains with clean energy.

Green Bond Performance

ONCF Green Bond	Green Bond Objectives	Environmental Impacts	Socio-Economic and Environmental Impacts
<p>MAD 1 billion (Approx. U\$100 mn)</p>  <p>Climate Bonds Certified under fully electrified inter-urban train lines for the purpose of transporting public passengers, purchase of rolling stock eligible criteria.</p> <p>Labelled according to the ICMA Green Bonds Principles.</p> <p>Issued according to the AMMC Guide on Green, Social and Sustainability Bonds of Morocco.</p>	<p>The proceeds of the ONCF CBI Certified Green Bond issued in 2022 were fully used to refinance a debt raised in 2017 dedicated to the financing of the Moroccan HSR project whose objectives were to:</p> <ul style="list-style-type: none"> - Bring the two major economic hubs of Casablanca and Tangier closer together; - Satisfy an ever-increasing demand for rail transport; - Reduce travel time between the two cities (to 2 hours 10 minutes from 4 hours 45 minutes); - Free up capacity for freight transport resulting from the activity of the Tangier Med port; 	<p>ONCF's 2023 carbon footprint shows a significantly reduction, despite an increase in the use of train travel, which is evidenced by the improved performance in 2023 compared to 2022. Some indicators included:</p> <ul style="list-style-type: none"> - Reduction in GHG Emissions: Achieved a 20% reduction, bringing emissions to approximately 297,000 tons of CO₂e (compared to 371,000 tons in 2022), with 28% attributed to upstream and downstream travel. - Improved Carbon Intensity for Passengers: Reduced to 13.02 g CO₂ per passenger-kilometer (a 7.83 g CO₂ decrease). Train travel generates 9 times less CO₂ emissions than cars. - Improved Carbon Intensity for Freight: Reduced to 23.37 g CO₂ per ton-kilometer (a 5.38 g CO₂ 	<ul style="list-style-type: none"> - Mobilization of 5,000 workers; - 160 Road accidents/year avoided - Creation of 1,500 direct jobs; - Gain in carbon intensity for passengers of -7,83 g CO₂/passenger-Km - Gain in carbon intensity of freight of -5,38 g CO₂/Ton-Km - 90% of civil engineering work carried out by local companies; and - 73,600 Estimated CO₂ emissions avoided in 2023 (tons CO₂) - 90% - Green Energy Usage for

⁹ [ONCF - ONCF: AL BORAQ PASSE EN MODE GREEN POUR UNE MOBILITE ECORESPONSABLE](#)

	<ul style="list-style-type: none"> - Promote development of a local rail ecosystem; and - Reduce GHG emissions through putting in place a sustainable means of transport. 	decrease), for the transport of 17 million tons of freight.	<p>Electric Train Traction</p> <ul style="list-style-type: none"> - 64.2% - Share of Train Operations Powered by Electricity - 100% electrification rate of high-speed trains - 82 % Customer satisfaction rate - 89.5 % Regularity rate of trains (%) - 52.8 millions of passengers transported
--	---	---	---

ONCF continues to improve its carbon footprint and remains focused on its objective to avoid an equivalent of 120,000 tons of CO₂ each year. With this objective and in line with its Master Plan to connect Tangier to the city of Agadir via a high-speed rail line by 2030-2040, ONCF intends to raise finance through a green bond of **2 billion Moroccan dirhams (about U\$200 million)**, which shall be used to support the refinancing of debt linked to several projects from the 2010-2019 cycle. This refinancing will enable ONCF to strengthen its financial capacity and move forward with the launch of the new fully electric high-speed rail line project.

The Kenitra-Marrakech High Speed Line (HSL) project (the Project) is part of the high-speed master plan, scheduled for 2030. This project extends the Tangier-Kenitra line, which was commissioned in 2018, to connect Kenitra to Rabat, Casablanca and Marrakech, which are respectively the administrative, economic and tourist hubs of the Kingdom. LGV projects generally aim to improve the service offering by reducing travel times between the cities served. The Kenitra-Marrakech LGV project will support the socio-economic development of the Kingdom through a safe, fast, comfortable and ecological transport offer. It will also strengthen the image of the Kingdom internationally, particularly with a view to hosting major sporting events such as the Football World Cup scheduled for 2030¹⁰.

¹⁰ ONCF

3. ONCF Green Bond Framework

The Green Bond Principles (June 2021) are a set of voluntary guidelines that call for transparency and disclosure. They aim to promote integrity in the green bond market by clarifying the approach for labeling a bond as green.

Therefore, in accordance with the [Green Bond Principles](#) (June 2021), the [Guide on Green, Social and Sustainability Bonds of Morocco](#) (AMMC, June 2018) and the [Climate Bonds Standard](#) (and its [Land transport criteria, V.2, 2020](#)), this Green Bond Framework is structured around the following five pillars, which will apply to every Green Bond issued:






- a) **Use of proceeds**
- b) **Process for project evaluation and selection**
- c) **Management of proceeds**
- d) **Reporting**
- e) **External review**

c) Use of Proceeds

Under this framework, ONCF will allocate an amount equal to the net proceeds of the bond to one or more eligible projects and assets. These are projects or assets that have a positive environmental or sustainable impact according to the list provided by the Green Bond Principles (June 2021).

Specifically, the proceeds from the bonds issued under this Framework will be used to finance or refinance Eligible Projects and Assets in the Clean Energy Transport category (generally fully electrified rail infrastructure). Where possible, Eligible Projects and Assets will be certified according to the [Land Transport Criteria](#) of the [Climate Bonds Standard](#) (V4.2, June 2024).

The table below provides the list of Eligible Projects and Assets:

Projects	Project Description	Eligibility Criteria and Alignment	Alignment with Sustainable Development Goals ¹¹
Capacity Increase Casablanca - Kénitra	This project aims to increase rail capacity along the Casablanca-Kénitra corridor, promoting a shift from road to rail transport, which is more energy-efficient and emits less GHG. The addition of a third freight-dedicated track optimizes logistics, reduces road congestion, and enhances infrastructure safety and durability.	CBI Land Transport Eligibility Criteria	    
Upgrade of Sidi Kacem - Tangier Line	Modernization of infrastructure and signaling systems with the installation of the ERTMS system, enabling optimized train traffic management, reduced energy consumption, shorter travel times, and lower CO ₂ emissions.		
Safety Installations and Substations	Strengthening rail safety and modernizing substations, now powered by more than 90% renewable energy, primarily wind, significantly reducing GHG emissions from rail operations.		
Rolling Stock/Engines	Acquisition and refurbishment of rolling stock to improve energy efficiency, reduce energy consumption per passenger-kilometer and ton-kilometer, lower GHG emissions, and provide enhanced passenger comfort.		
Upgrade of Settat - Marrakech Line	Doubling the railway track to relieve congestion, increase capacity, streamline traffic, and promote modal shift from road to rail, contributing to CO ₂ emission reductions and sustainable regional development.		
Tangier-Med Project	Improving rail connectivity to the Tangier-Med port, strengthening freight transport capacity, reducing dependency on road transport, and optimizing the supply chain in a greener and more sustainable manner.		

¹¹ SDG Targets: **Target 3.9.1:** By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water, soil pollution and contamination; **Target 9.1:** Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with focus on affordable and equitable access for all; **Target 11.2:** by 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport.

Exclusions:

- Railway lines wholly dedicated to the transport of fossil fuels

The allocation amounts for each project as indicated under the Use of Proceeds section is indicated below (Millions MAD):

Financing	Montant initial de financement	Capacity Increase Casablanca - Kénitra	Upgrade of Sidi Kacem - Tangier Line	Safety Installations and Substations	Upgrade of Settat - Marrakech Line	Rolling Stock/Engines	Tangier-Med Project	Totaux Financement
Crédit consortial BMCE/BCP/BMCI/CDM infra	1.000	-	-	-	-	-	166	166
Emprunt Obligataire 2011	1.500	23	-	-	28	58	-	109
Emprunt Obligataire 2015	1.500	728	73	109	-	182	-	1.092
Prêt bancaire garanti 2,5 Milliards	2.500	507	56	71	-	-	-	634
Total refinancement hors projets non éligibles		1.257	129	180	28	240	166	2.000

d) Process for project evaluation and selection

ONCF's Green Bonds Committee (already established) shall be responsible for selection and evaluation of projects and assets for the issuance of Green Bonds. The Committee will also be responsible for reviewing, updating and implementing the processes described in this Green Bond Framework.

The Committee will be headed by the ONCF Director General and shall include members of Finance and Corporate Management Directorate (DGFC), Strategy, Cooperation and Quality Directorate (DSCQ) and the Divisions concerned by the project(s) eligible for green financing. Once approved by the Committee, the selected projects and assets are then included in a green bond register, which is then used by the Finance and Corporate Management Directorate (DGFC) to maintain a complete list of eligible projects and assets and the respective amounts allocated to them.

If, throughout the term of a Green Bond, a project or asset ceases to meet the eligibility criteria described in the Framework, ONCF shall remove the project or asset from the registry and reallocate the amount to other projects and assets that are eligible under the

processes and criteria described in this Framework. Reallocation can only occur with projects and assets that have been verified by an external reviewer.




Since 2015, ONCF has made carbon footprint assessment an integral part of its environmental management system, with the following key objectives:

- To evaluate ONCF's carbon footprint annually and identify opportunities for GHG reduction, developing corresponding action plans aimed at mitigating the environmental impact of its activities.
- To reduce energy consumption while developing greener alternatives.
- To ensure ONCF's environmental and societal responsibility, thereby enhancing its image with stakeholders.
- To raise awareness among ONCF's employees and partners about the importance of ecological mobility.

The 2023 *bilan carbone* report highlights a significant reduction in ONCF's carbon emissions, despite the remarkable growth in rail travel. Key performance indicators from 2023, compared to 2022, include:

- A 20% reduction in GHG emissions, down to approximately 297,000 tons of CO₂ equivalent (from 371,000), with nearly 28% of these emissions being related to upstream and downstream activities tied to rail travel.
- A decrease in carbon intensity for passengers, with a reduction of 7.83g CO₂ per kilometer, bringing the total to 13.02g CO₂ per passenger-kilometer. This is five times less than the carbon intensity of car travel.
- A reduction in carbon intensity for freight transport, down by 5.38g CO₂, resulting in only 23.37g CO₂ per ton-kilometer for the 17 million tons transported.

Evolution of GHG emissions 2023:

	NATURE	UNITÉ	2019	2020	2021	2022	2023	ÉVOLUTION
	Emissions Globales GES	Teq CO ₂	607 848	330 904	540 575	370 629	296 980	-20%
	Intensité carbone Activité Voyageurs	gCO ₂ /Voyageur. km	25,83	21,26	23,84	20,85	13,02	-7,83 gCO ₂ /Voyageur. km
	Intensité carbone Activité Fret et logistique	gCO ₂ /Tonne. km	33,87	29,32	31,05	28,75	23,37	-5,38 gCO ₂ /Tonne. km

The insights gained from these carbon assessments include:

- A shared commitment to the positive impact of reducing ONCF's environmental footprint.
- The methodological challenge of adhering to universal standards and norms, which adds credibility and transparency to the performance data.
- The importance of such evaluations for continuous improvement, as "what is not measured, cannot be improved."
- The relevance and feasibility of the action plans, including the systems in place for GHG management (KPIs, digitalization, decentralization).
- The value of focusing initially on simple, cost-effective actions that lead to tangible and short-term results.

To this end, the Green Bonds Committee decides on the allocation of the designated assets to green bonds. It also examines all projects and assets already selected to ensure that they still meet the eligibility criteria and that they are not, at any time, facing any major controversy. Should such a controversy arise, the project or asset may be temporarily (subject to performance improvement) or permanently (in the event of insufficient improvement measures) removed from the list of eligible assets. A replacement project or asset will then be proposed for allocation.

e) Management of proceeds

ONCF intends to allocate the proceeds raised under any Green Bond to projects and assets selected in accordance with the evaluation and selection process outlined above.

The proceeds raised under this Framework will be transferred to ONCF's normal cash/treasury account pending the allocation of an amount equal to the net proceeds from the sale of the bonds. As long as the net funds of a green bond are not allocated (for a maximum period of 24 months), ONCF will keep and/or invest the net balance not yet allocated in money market instruments (cash or cash equivalent, bank deposits, treasury bills, etc.).

ONCF has established a 36-month look-back period for its refinancing activities as aligned with market practice. ONCF's treasury will oversee the management of proceeds and track the allocation using the relevant bond register, with financial audits to review the allocations as part of procedural and required standard reporting.

f) Reporting

The Moroccan Capital Market Authority (AMMC) requires issuers of green bonds to provide information on the allocation of funds and impacts of the bonds issued at least once a year, as part of the issuer's ESG report for the duration of the bond's validity.

ONCF, as a publicly traded company, already complies with the requirement to publish an annual ESG report prescribed by the AMMC. In addition, ONCF intends to present a report to investors having subscribed to green bonds within one year from the date of issuance, then every year, during the whole lifetime of the bond.

The allocation report will provide information on:

- the total amount of proceeds allocated to eligible projects and assets;
- the balance of unallocated proceeds;
- the amount or percentage of new financing and refinancing; and

- external review(s) conducted;

Examples of key indicators that can be reported based on the project and asset portfolio include:

- For passenger lines: estimated energy savings (GWh), estimated avoided emissions (tCO₂eq), number of passengers per year, kilometers of new lines built or renovated, number of new electric trains (locomotives and coaches) put into service, number of people employed; and
- For freight lines: estimated energy savings (GWh), estimated avoided emissions (tCO₂eq), tons of goods transported, kilometers of new lines built or renovated, number of new electric trains (locomotives and coaches) put into service, number of people employed.

ONCF's reports will be made available to bondholders and published on the company's website once a year.

g) External review

ONCF will engage an external reviewer to verify the alignment of this Framework and any of the bonds labelled under it with the Green Bond Principles (July 2021). Where possible, Certification under the [Climate Bonds Standard](#) (V4.2, June 2024) (Land Transport Criteria, V.2, 2020) will be pursued and an Approved Verifier will be selected for this purpose.

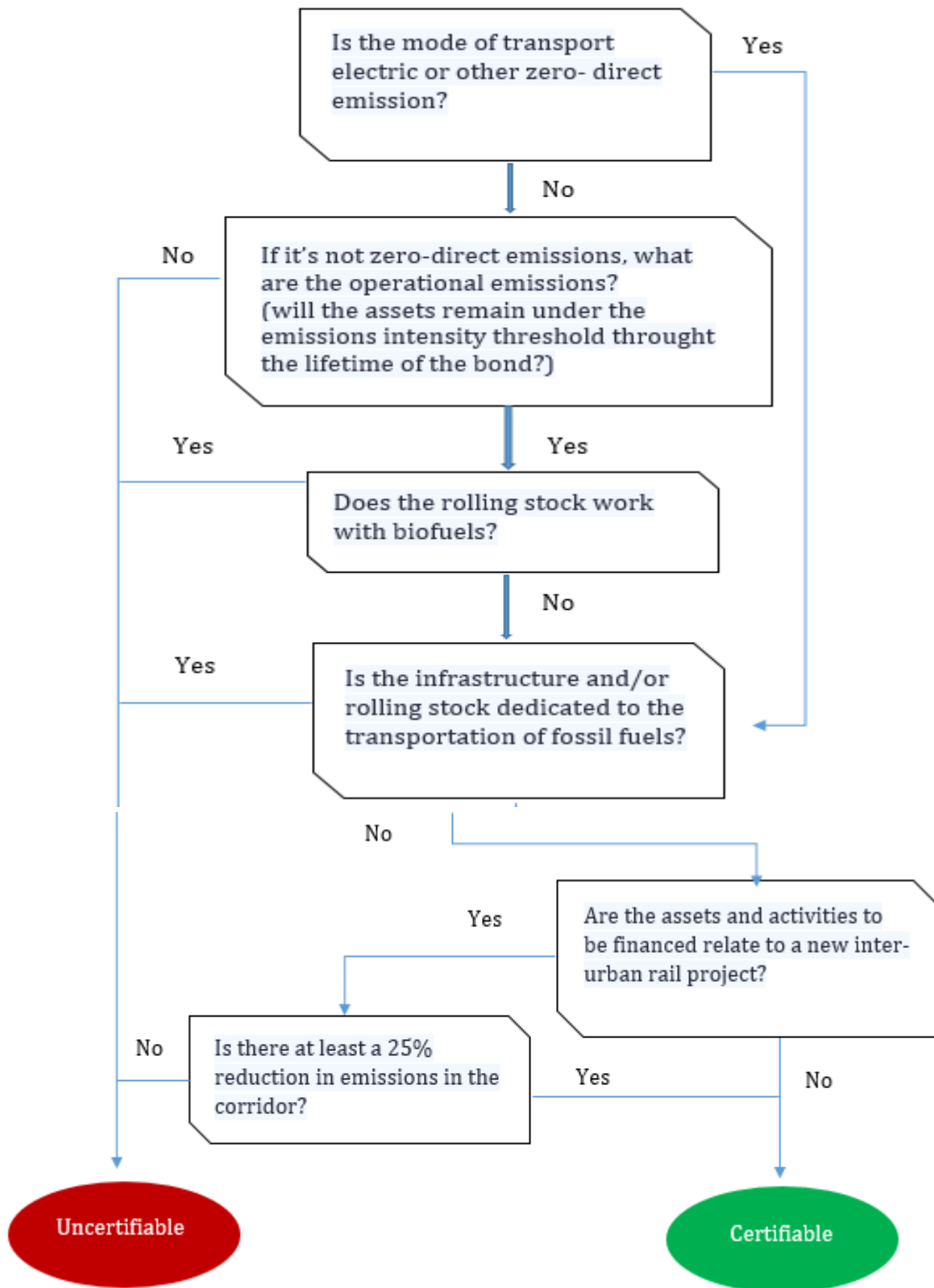
The verification reports will be submitted to the AMMC of Morocco and will be published on the ONCF's website. In addition, in line with the requirements of the Climate Bond Standard (when relevant), post-Issuance verification will be undertaken within two years (24 months) of issuance of each bond. Post-Issuance reports will also be made available on ONCF's website.

4. Version control

This Framework is an Update of the 2022 Green Bond Framework. This Framework may be regularly reviewed, changed, and updated. A version control system will be maintained

by ONCF, and each version of this Framework will be made available on the company's website prior to the issuance of the first bond.

Annex 1: Process for Green Financing of a Rail Project



1

Annex 2 - Description of the KENITRA-MARRAKECH LGV high-speed rail project.

I. OBJECTIVES OF THE PROJECT

The Kingdom of Morocco has adopted a high-speed rail master plan to meet the strong growth in traffic and to support the country's development. The Tangier-Kenitra high-speed rail project was the first step in this plan and consists in the improvement of the service offer by reducing travel time between the cities of Tangier, Kenitra, Rabat and Casablanca.

The Kenitra-Marrakech High Speed Line (HSL) project (the Project) is part of the high-speed master plan, scheduled for 2030. This project extends the Tangier-Kenitra line, which was commissioned in 2018, to connect Kenitra to Rabat, Casablanca and Marrakech, which are respectively the administrative, economic and tourist hubs of the Kingdom.

Thus, the main objectives of the project are:

- To provide a suitable and sustainable solution to a steadily growing demand for passenger transport;
- To support the development of the new economic hubs;
- To contribute to enhancing the Kingdom's international image in preparation for hosting major sporting events, such as the 2030 FIFA World Cup
- To facilitate freight traffic on the Tangier- Marrakech line by freeing up part of the old line; and
- To be in sync with the development of the European and Maghreb rail corridors.

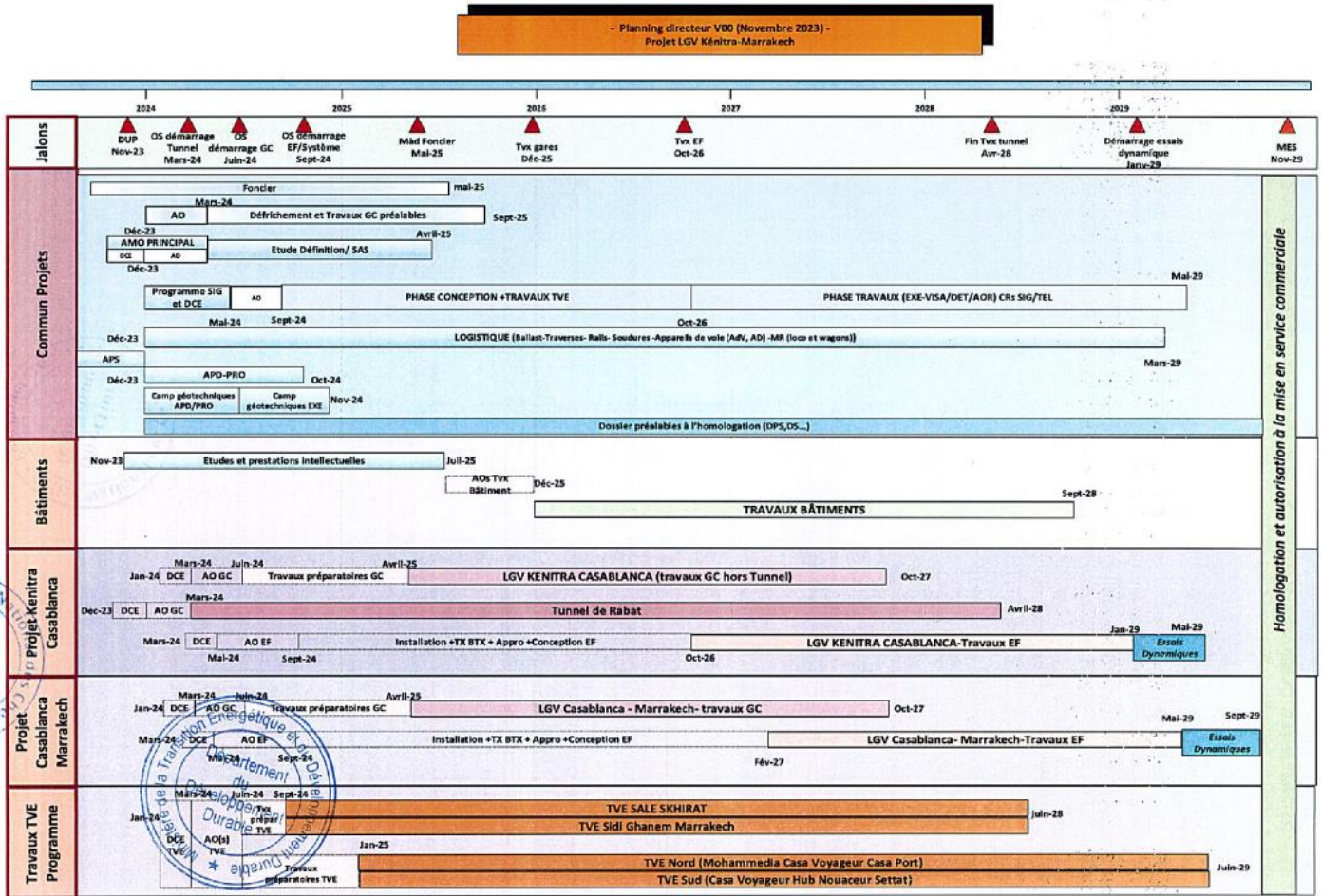
II. NATURE OF THE PROJECT

- Construction of a High-Speed Rail line (HSR) between Kenitra and Marrakech, exclusively for passenger traffic, over a distance of approximately 200 km with double electrified tracks, designed for a maximum speed of 350 km/h and operated at 320 km/h, ensuring performance and safety standards at least equivalent to recently commissioned high-speed lines (GAME). The line will feature a minimum of fifteen track change points, including eight with passing tracks, with a maximum speed of 170 km/h. The main component of the project are the following:
 - Construction of new rail lines, including infrastructure, civil works such as viaducts, covered and uncovered trenches, tunnels, embankments, footbridges, catenary masts, main cable paths, and track crossings;
 - Redevelopment of existing stations and construction of new stations;
 - Development of terminal facilities at all stations, including necessary connections;
 - Construction of electrical substations and other technical installations;
 - Construction of work bases; Design of the commercial offer

The project is scheduled to commence in Q2 2024, with commercial operation expected by the end of 2029. The corridor will be developed in three predefined sections:

- S 1: From Kenitra to Ain Harrouda or Kenitra to Ain Sebaa (150 km);
- S 2: From Ain Sebaa to Nouaceur (130 km);
- S 3: From Nouaceur to Marrakech (200 km).**

The detailed project timeline is presented in the master plan below:



The table below highlights the principal characteristics of the project:

Line Length	430 km (High-Speed Rail Line)
Operating Speed	320 km/h
Minimum Curve Radius	6050 m
Maximum Gradient	35 mm/m
Land Requirements	3500 ha
Viaducs and Covered Trenches	30 units (45 km)
Rail and Road Bridges	400 units
Earthworks	80 million m ³
Investment Amount	53 billion MAD

ENVIRONMENTAL AND SOCIAL ACTIONS

1. APPROACH & MEANS

ONCF has integrated the environmental dimension into its Kenitra-Marrakech HSR project from the earliest design phases to achieve a route with the least environmental impact as possible. ONCF's environmental approach is also based on regular consultation and information sharing with the population and the State departments in charge of the environment, notably the Ministry of the Environment and the High Commission for Water, Forests and the Fight against Desertification (HCEFLCD).

ONCF has also developed a master plan for **the environmental and social approach of the project** and has set up **an Environmental and Social Assistance** to steer this approach and ensure its implementation by the project managers and companies.

2. ACTIONS

➤ Social aspects

A **consultative approach** from the start of the evaluation studies allowed the integration of the various concerns and visions of the local populations, and thus reinforced the functional relevance of the project. Information sharing and consultation with the local populations were essentially carried out through:

- Meetings with communities concerned by the project, the proposed location of the crossing structures, the procedures for identifying the rightful landowners and the compensation process. A debate was conducted at the end of each meeting to answer questions and problems of the local population.
- Participation of representatives of the local population and local authorities in field visits to cover the entire route in each municipality concerned. These visits made it possible to closely examine various constraints and grievances of the population and to make decisions in common agreement with the elected officials and local authorities.
- Depositing a register for collecting environmental and social observations from the population in all the municipalities concerned by the study.

This approach also made it possible to identify social projects to be set up to compensate for the project's impact on the population. Five projects have been completed: four schools and a dispensary were built by ONCF. The characteristics and location of these projects were defined in consultation with stakeholders (local authorities, representatives of the population, Ministries in charge of education and health, etc.). ONCF also took charge of the equipment of these social infrastructures as well as of the resettlement of 250 households.

➤ Crossing structures

To allow movement from one side of the track to the other and to maintain the pre-existing functionalities, a crossing structure was planned on approximately every kilometer along the HSR line. The location and size of the crossing structures were determined by mutual agreement with local stakeholders. No level crossings are planned as part of the HSR project. In addition, a socio-environmental study has been carried out to maintain the location and nature of the crossing structures as closely as possible to the travel habits of the local population.

➤ Biodiversity

The choice of the HSR line route took into account the issue of ecosystem conservation by avoiding sensitive natural areas as much as possible when designing the route. The route avoids the "Merja Zerga" classified as a SIBE (Site of Biological and Ecological Interest) and as a RAMSAR site (Convention on Wetlands of International Importance) and has avoided as much as possible the wetland of "Tahaddart" also classified as a SIBE and RAMSAR site.

ONCF has also partnered with an NGO working in the area of biodiversity to develop an initial fauna and flora inventory of sensitive ecological zones and to propose appropriate measures to mitigate and compensate for the project's impacts on these zones.

Moreover, ONCF has signed a partnership agreement with HCEFLCD to mitigate the impacts of the project on biodiversity, through some specific actions.

➤ Landscape

ONCF conducted a landscape study to identify a landscape re-design along the HSR. In addition, the HSR includes several emblematic viaducts which, in addition to their value addition to the landscape heritage of the areas they pass through, allow transparency of the HSR line with respect to hydraulic flows.

➤ Noise

An acoustic study was carried out with the aim of protecting local residents from the noise generated by passing trains. More than 10 linear km of acoustic screens and merlons were built as part of the high-speed line to protect local residents from noise.

➤ Carbon emissions

A Carbon Footprint was established for the project, and it accounted for:

- Total emissions due to the project during the construction phase and for 30 years of operation: approximately 8.5 million tons of CO₂ equivalent (Teq CO₂); and
- Emissions avoided by the project over a 30-year period due to modal shift: approximately 11 million Teq CO₂.

It is estimated that the project will avoid approximately 2.5 million Teq of CO₂ over 30 years of operation of the line. The project will be carbon neutral after 13 years of operation.

➤ Environmental management of the construction works

Given the environmental risks associated with the construction of the Tangier-Kenitra high-speed line, ONCF has put in place a stringent policy for conducting the works and controlling the environmental impact of the sites:

- The consultation file for companies includes an Environmental Compliance Note (ECN) which defines the environmental clauses to be respected by companies during the construction phase;
- Companies submitting bids must present an Organizational Plan on Environmental Assurance (SOPAE) explaining the organizational and control provisions proposed to achieve environmental protection objectives set out in the NRE; and
- The SOPAE developed in the technical offer of the contracting company gives rise, during the period of preparation of the works, to the development of an Environmental Assurance Plan, submitted for approval by the project owner before the start of the works.

➤ Forestry sector

ONCF signed agreements with HCEFLCD for the reforestation of the forests crossed by the project. For each tree felled, an average of 25 were planted. In total, the project has enabled the reforestation of 2,100 hectares of forest against 130 hectares deforested.

➤ Green energy farm

Thanks to wind energy provided by a national operator, ONCF will power all of its “AL BORAQ” high-speed trains with clean energy as of January 1st, 2022. This will enable it in the short term to improve its overall carbon footprint, with an equivalent of 120,000 tons of CO₂ avoided each year, or 4 million trees planted.

➤ Impact & Mitigation measures

As part of its commitment to environmental sustainability, ONCF recognizes the importance of adopting a comprehensive approach to managing and mitigating environmental impacts. This approach follows a structured sequence of measures aimed at minimizing negative effects, in line with best practices for green bond issuance.

The measures are categorized as follows:

- **Avoidance Measures:** These are the primary measures sought to address negative impacts. Such measures are integrated into the project design from the outset to ensure that potential environmental harms are prevented.
- **Mitigation (or Reduction) Measures:** When avoidance is not fully possible, reduction measures are implemented. These actions are taken to mitigate the environmental or social impacts that cannot be entirely avoided during the design phase. They aim to minimize the effects where they occur and at the time they emerge.
- **Compensation Measures:** If the project cannot avoid significant environmental or social impacts, compensation measures are required. These are designed to offset the effects that remain after all feasible reduction efforts have been made.

ONCF is committed to continuously assessing and improving these measures as part of its broader environmental management strategy. This proactive approach ensures that the environmental footprint of its projects is minimized, supporting the long-term sustainability goals associated with the green bond issuance. In addition to the Green Bond impact reports, ONCF will consistently assess and report its impact through various E&S reports.