Green Bond

2022 Report

Île-de-France Mobilités

June 2022

— Introduction

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Île-de-France Mobilités is a major player in combatting climate change. Through its position as the organising authority for mobility in one of the leading economic regions in Europe and in fulfilling its missions, it is investing massively in clean public transport and, more broadly, in order to facilitate the transition to a low-carbon economy.

More than 1,100 new electric trains on the rail and RER networks will be running by 2030 and the entire bus fleet will gradually be replaced by a 100% clean fleet by the same deadline. At the same time, Île-de-France Mobilités is investing in energy solutions for the infrastructure that is essential to the operation of this new rolling stock such as depots and maintenance centres.

Île-de-France Mobilités also promotes the development of "soft mobility" and limiting road transport.
In fact, we are constantly working to improve the accessibility of public transport and we have recently developed a carpooling offer.

With more than 20,000 users since its launch, the e-bike rental service is converting Île-de-France residents to a new green mode of transport.

Between 2022 and 2030, Île-de-France Mobilités will invest more than 27 billion euros in the region's public transport system.

To do this, we plan to raise 18 billion euros of debt, the majority of which will be in the form of Green Bonds.
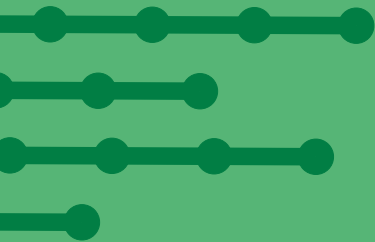After an initial successful issue of 1.5 billion euros in Green Bonds in 2021, Île-de-France Mobilités is becoming a regular and leading player in Europe for green financing.

In this first edition, this report aims to demonstrate the positive environmental impact of the projects financed by the first round of Green Bonds. We have selected projects that reflect the diversity of Île-de-France Mobilités' field of action.
The methodology for calculating the indicators has been developed to comply with market best practice, including the most complete life cycle possible for rolling stock, and is consistent with that of other transport players in the Île-de-France region.

The auditing agency KPMG has ensured its quality and seriousness. For the sake of transparency in relation to our investors, the details of the methodology used are provided in the annex to this report.

We hope you enjoy reading the report!

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Île-de-France Mobilités' missions and key figures

Île-de-France Mobilités is the Organising Authority for Mobilities (AOM) in Île-de-France. It is in charge of organising and developing the public passenger transport service in addition to coordinating all policies related to mobility at the regional level.
It is a 100% local public entity with Etablissement Public à caractère Administratif (EPA) Status. Its accounting rules are the same as for local authorities with, in particular, the obligation to have a balanced budget and to use borrowing only to finance investment expenditures.
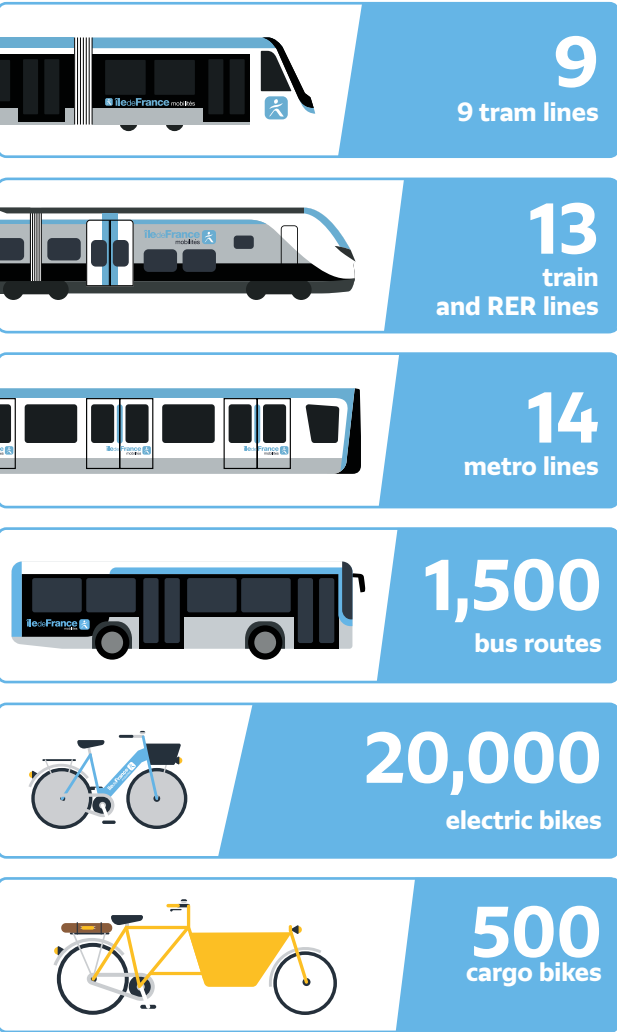
Design and decide

on projects to improve the public transport network

Create

transport tickets and decide on prices
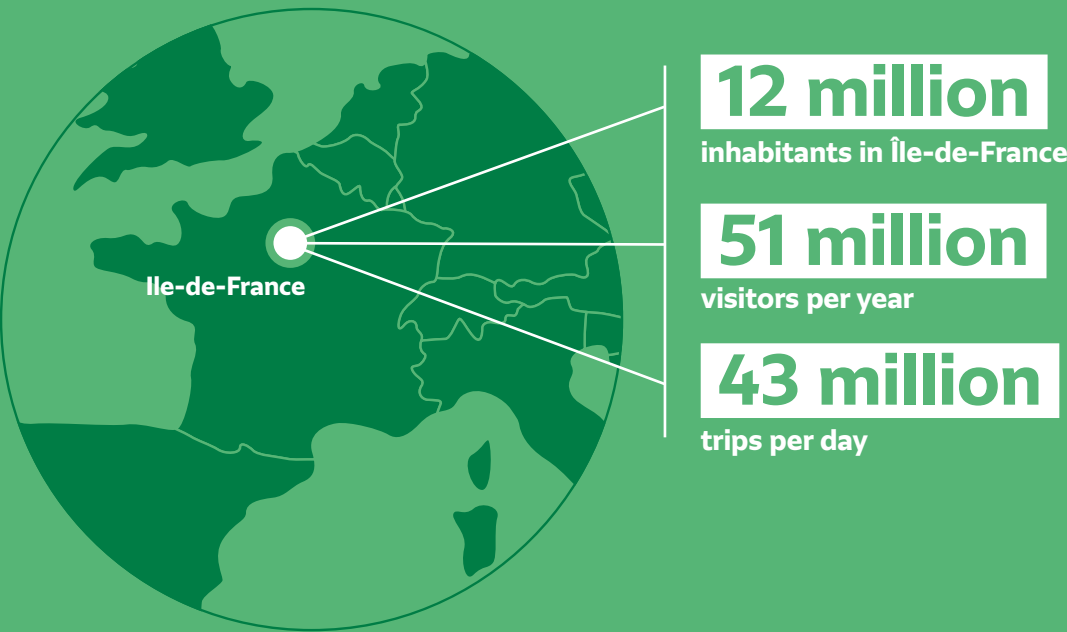
Finance

the operation and modernization of the public transport network

Promote

the most ecologically virtuous travel solutions

Every day in Île-de-France, 9.4 million trips are made thanks to one of the largest public transport networks in the world. Passengers can use the 1,500 bus routes, 14 metro lines, 9 tram lines and 13 train and RER lines that serve the Region. Over the next ten years, the Île-de-France Mobilités network will be enhanced with numerous extensions and new metro, tram and RER lines, including the future regional metro lines 15, 16, 17 and 18 (Grand Paris Express project).

9
9 tram lines

13
train and RER lines

14
metro lines

1,500
bus routes

20,000
electric bikes

500
cargo bikes

Key figures

12 million
inhabitants in Île-de-France

51 million
visitors per year

43 million
trips per day

Ile-de-France

2021 Financial figures

Operating revenue:
€10.5 billion

| Includes mobility payment of | €4.9 | billion |
| Includes fare revenue of | €2.6 | billion |

Operating expenses:
€10.1 billion

| RATP share: | €4.7 | billion |
| SNCF share: | €3.8 | billion |

Capital expenditure:
€3.3 billion

Debt raised:
€2.2 billion

To operate the lines on the network every day, Île-de-France Mobilités signs contracts with transport companies such as RATP, SNCF, Transdev, Keolis, RATP Dev, Savac-Lacroix and many others. They are responsible for operating the lines entrusted to them and for achieving the level of service quality set for them covering punctuality, accessibility, information, safety and cleanliness.

Île-de-France Mobilités now directly finances almost all the investments related to the public transport network in the Ile de France region, except for infrastructure on the Grand Paris Express project.
Between 2022 and 2030, Île-de-France Mobilités will invest more than 27 billion euros and plans to raise 18 billion euros of debt in this period to finance this investment plan, the majority of which will be in the form of Green Bonds.

Part II
—

Île-de-France Mobilités environmental commitment

Île-de-France Mobilités' commitment to sustainable and social development covers 5 key areas:

Fighting climate change

Île-de-France Mobilités' objective is to reduce Greenhouse Gas (GHG) emissions related to road travel by promoting clean public transport. This includes developing transport services and improving network quality.
Île-de-France Mobilités' actions are carried out, especially for rail, within the framework of the Master Plan for Railway Rolling Stock (MPRRS). The MPRRS defines development paths of the fleet by 2030 and is estimated at €10 billion to replace 1,100 electric trains on RER lines.
In addition, Île-de-France Mobilités has set itself a target of converting 10,000 buses and coaches by 2030 to have an entirely clean fleet.
Between 2010 and 2019, CO2 emissions from road transport fell by 13% and by 32% for NOx (Nitrogen Oxide).

Limit the impact on the environment

The High Environmental Quality INFRASTRUCTURES™ certification is applied in bus operations centres and transport infrastructure not only to limit the environmental impacts of a construction site, but also to achieve savings and improve passengers' lives.
The introduction of benchmarks for environmental quality is an innovative approach by Île-de-France Mobilités, which focuses on three priorities: carbon neutrality, alternative management of rainwater from operational platforms and biodiversity around Bus Rapid Transit (BRT) routes. The doctrine of Avoid, Reduce and Offset (ARO) applies when it is not possible to avoid all residual environmental impacts.

Ensuring social cohesion and solidarity between territories and generations

Accessibility to public transport is extended geographically and encouraged by fare policy. The Transport Services Accessibility Master Plan (TSAMP) will make 209 stations accessible to all by 2025.
In addition, as part of the strategy to better connect outlying areas, €100 million will be invested by Île-de-France Mobilités for trams on the T4 line.

Improving quality and safety for passengers

All the rolling stock will be renewed with particular attention to safety across the network.

Contribution to the transition to a circular economy

This requires the necessary integration of the environment into development projects for infrastructure carried out by Île-de-France Mobilités, for example controlling energy consumption and reintegrating waste into the economic cycle for new uses.

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Part III

The Île-de-France Mobilités framework and Green Bond issuances in 2021

The framework and the categories of eligible assets

The Île-de-France Mobilités framework was created in May 2021.
It is aligned with ICMA Green Bonds principles and with European Union taxonomy.
It received the highest "Dark Green" rating from Second Opinion firm Cicero as well as a "Good" rating for governance.

### The categories of assets that can be financed under the framework are:

Green Bond issuances in 2021

In 2021, Île-de-France Mobilités issued Green Bonds for a total of 1.5 billion euros.

1. Renovation and renewal of surface public transport fleet (electric buses)

2. Renovation and renewal of rail rolling stock (train, metro, tram-train, tram)

3. Renovation and renewal of infrastructure enabling low-carbon public transport

4. Improving the quality of service for mobility (including the improvement of passenger information, ticketing, accessibility and soft mobility (electric bikes))

Year	2021	2021	2021
Date of issuance	28/5/2021	28/5/2021	24/11/2021
Nominal value in €M	500	500	500
Order book in €M	1,125	1,021	539
Maturity	10 years	20 years	15 years
Coupon	0.400%	0.950%	0.675%
Yield Spread	OAT +25bps	OAT +26bps	OAT +30bps
ISIN	FR0014003OCS	FR0014003O87	FR0014006PN2

Geographic distribution of Green Bonds in 2021
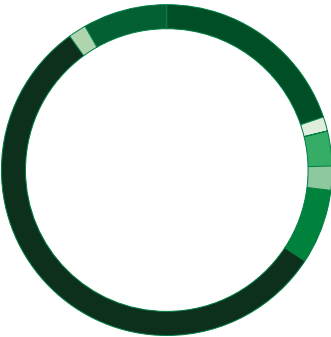
55%	France	4%	Europe – other
20%	Germany	2%	Benelux
8%	Northern Europe	2%	UK
8%	Southern Europe	1.4%	Asia
		0.1%	Middle East

Typology of investors
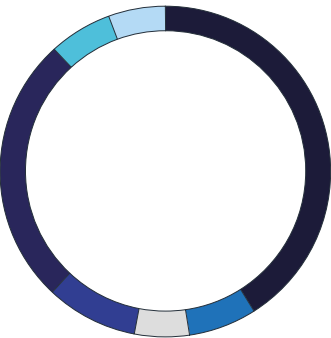
41%	Asset manager	6%	Asset liability manager
26%	Insurance	6%	Others
9%	Fund manager	5%	Central Banks
7%	Banks		

Île-de-France Mobilities rating

Île-de-France Mobilités has been rated by Moody's (AA3, outlook stable) and will be rated by Fitch from 2022.

ÎLE-DE-FRANCE MOBILITÉS' GREEN BOND 2022 REPORT | III. THE ÎLE-DE-FRANCE MOBILITÉS FRAMEWORK AND GREEN BOND ISSUANCES IN 2021   **12**

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Part IV
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Methodological approach to impact indicators

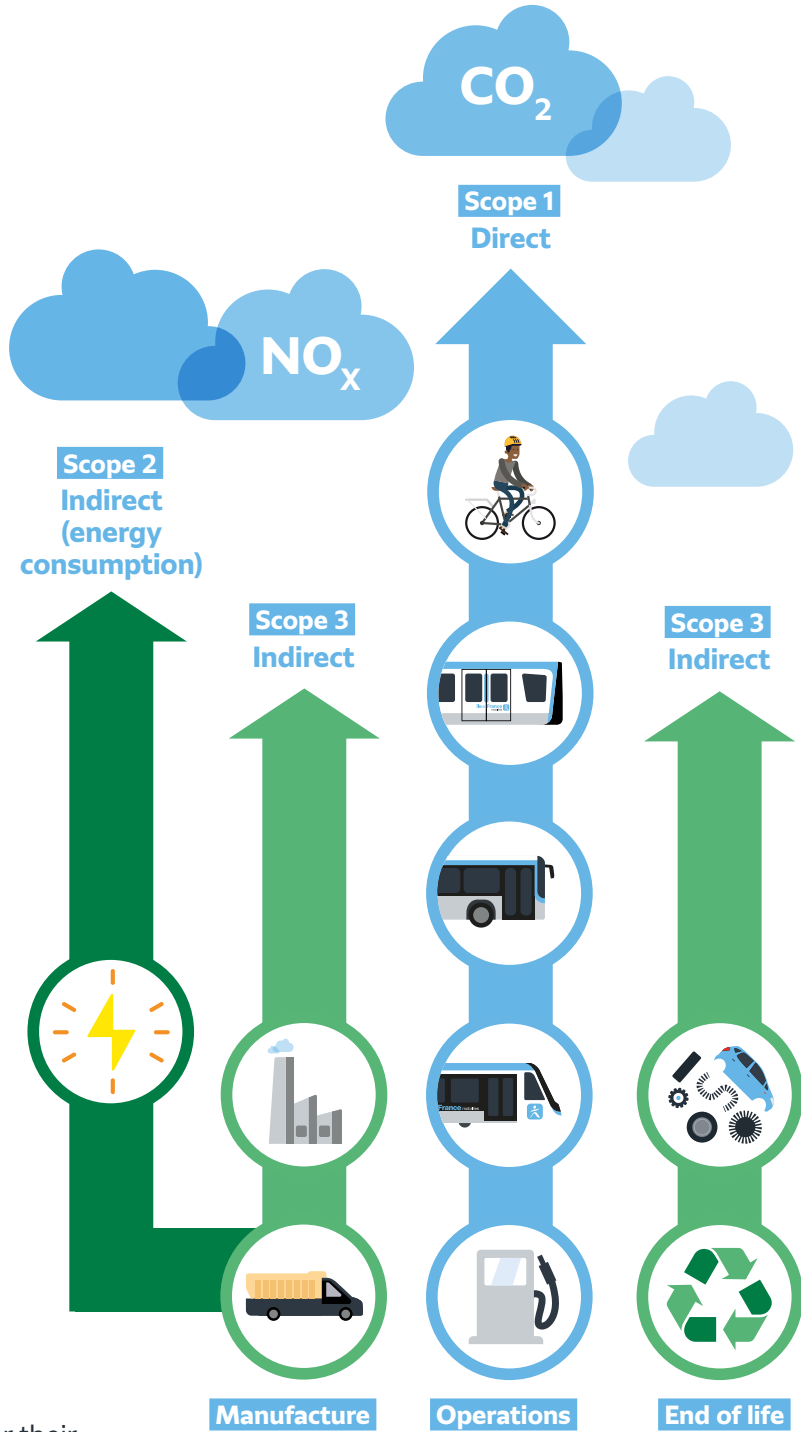The general principle for calculating CO2 emissions avoided thanks to Green Bonds financing is identical for the three projects studied. This involves comparing the situation allowed by the use of the funds acquired by this program, with a base situation where Île-de-France Mobilités did not have these funds. The three aspects of carbon footprint assessment have been considered as far as possible: upstream manufacturing, operations and the downstream end-of-life phase.

The assumptions used and the base values for calculating emissions are detailed in the annex that describes the calculation methodology. The environmental impact of each project is calculated over the lifespan of the vehicles: 6 years for bikes, 15 years for buses and 30 years for trains. The main results are as follows:

Subsidy for the purchase of e-bikes (lifespan taken into account: 6 years)	
Number of beneficiaries	141,941
Number of kms travelled by car avoided	165,000,000
CO2 emissions avoided	1,600 tonnes

Purchase of electric buses (lifespan taken into account: 15 years)	
Number of electric buses acquired	68
Cumulative CO2 emissions from old fleet	57,000 tonnes
CO2 emissions avoided	38,000 tonnes

Purchase of electric trains (lifespan taken into account: 30 years)	
Number of electric trains purchased	154
Number of kms travelled by car avoided	5,000,000,000
CO2 emissions avoided — emissions attributable to the 71 RER-NG trains — emissions attributable to the 83 Régio-2N trains	1,600,000 tonnes 750,000 tonnes 850,000 tonnes

CO_2

Scope 1
Direct

NO_x

Scope 2
Indirect (energy consumption)

Scope 3
Indirect

Scope 3
Indirect

Manufacture

Operations

End of life

All these projects make it possible, over their entire lifespan, to avoid the emission of more than 1.6 million tonnes of CO2. The benefit is all the more important as these are high-capacity modes with a long lifespan. Finally, this result can be compared with emissions from road traffic alone, which amount to nearly 14 million tonnes per year in Île-de-France.

Projects financed in 2021 and impact indicators

Summary of projects financed:
€1.5 billion spent (58% refinancing)

Project name	Purchase of 68 electric buses	Acquisition of 71 New Generation Regional Express Network (RER NG) electric trains		Renewal of 83 electric trains on Line N and Regional Express Network D (RER D)	Purchase subsidy for various types of bikes including electrically assisted bicycle	Road and Rail Network Accessibility Master Plan (RRNAMP)
Category	Category 1*	Category 2		Category 2	Category 4	Category 4
Amount financed by Green Bonds in 2021	€36M	€382M		€711M	€51M	€320M
Refinancing share	0.4%	78%		49%	46%	64%
Disbursement period of funds	2020 — 2021	2019 — 2021		2018 — 2021	2020 — 2021	2019 — 2021
Total project period	2020 — 2021	2018 — 2023		2018 — 2022	2020 — 2021	2009 — 2025 for Rail 2015 — 2021 for Road
Green Indicators	**38,000 tonnes of CO2** Total reduction in GHG emissions (tCO2 eq.) **>90%** recyclability rate **>95%** recoverability rate according to ISO22628 standard	**750,000 tonnes of CO2** Total reduction in GHG emissions (tCO2 eq.) **96%** recyclability rate **99%** recoverability rate according to ISO22628 standard		**850,000 tonnes of CO2** Total reduction in GHG emissions (tCO2 eq.) **88%** recyclability rate **91%** recoverability rate according to ISO22628 standard	**45 million** car journeys avoided **1,500 tonnes** of CO2 emissions avoided	**For the road:** **242** Number of bus routes made accessible **4,072** Number of bus stops made accessible **For the Rail:** **72** Number of stations made accessible
Social Indicators	**Buses with the "Origine France Garantie" certification**			**4,900** Direct and indirect jobs created by the project	**141,941** beneficiaries of the programme	

The figures for this project also include a small part covering services provided under category 4

Purchase of 68 electric buses

Green impact of the project

38,000 tonnes of CO2

Total reduction in GHG emissions (tCO2 eq.)

>90% Recyclability rate

>95% Recoverability rate according to ISO22628 standard

Social impact of the project

Buses with the "Origine France Garantie" certification

Project category	1 — Renovation and renewal of surface public transport fleet
Amount financed	**€36 million**
% refinancing	**0.4%**
Total cost of the project	**€36 million**
Total project period	**2020-2021**

Description of project

Île-de-France Mobilités recently embarked on a programme to accelerate the energy transition with the ambitious objective of converting 100% of the fleet deployed in dense areas by 2025 and throughout the region by 2030 prioritising buses running on biomethane or electricity. This represents 10,000 clean buses, including 2,500 electric buses.
This strategy also includes the conversion of Bus Operations Centres.

The entire energy transition programme for bus fleets (vehicle cost, work to convert depots to new power sources) represents an investment of nearly €4 billion by 2030 (including €1.3 billion for electrical power).
In this context, 68 electric buses were purchased by Île-de-France Mobilités in 2021 via a central purchasing office (Centrale d'Achat du Transport Public).

Technical features

After experimenting with electric bus technology, Île-de-France Mobilités considered it to be mature for mass deployment.
The 68 standard electric buses (with a lifespan of 15 years minimum) replace diesel buses, half of which are EURO 6 standard and the other half of EURO 5 standard.

Of the 68 buses purchased,
— 32 are for routes out of the Argenteuil Bus Operational Centre on routes on the R'Bus network operated by KEOLIS Argenteuil Boucles de Seine
— 36 are for routes out of the Vélizy BOC operated by KEOLIS Vélizy on the Phébus network

The buses purchased are the GX 337e model which are 12 metres long, 2.55 metres wide and 3.35 metres high, with 27 seats and one wheelchair space and use Lithium batteries.

Testimonial

JÉRÉMY OLIVIER
—
Head of the Energy Transition and Operational Performance department

What were the main objectives of this project and the challenges encountered?

Among the main objectives in purchasing these 68 electric buses are the elimination of pollutant emissions, the reduction of noise pollution and the improvement of the quality of service with the introduction of new and better equipped buses to encourage a modal transfer to public transport. Regarding the main difficulties encountered, we had to deal with very high purchase costs and conversion costs for bus operational centres, numerous candidates for tenders and a more complicated entry into service than with ICE buses (interaction between the bus and the programming terminal). In addition, a precise synchronisation between the arrival of the buses and the delivery of the converted bus operational centre was essential.

Acquisition of 71 New Generation Regional Express Network (RER NG) electric trains

Green impact of the project

750,000 tonnes of CO2
Total reduction in GHG emissions (tCO2 eq.)

96% Recyclability rate

99% Recoverability rate according to ISO22628 standard

Project category	**2 - Renovation and renewal of rail rolling stock (train, metro, tram-train, tram)**
Amount financed	**€382 million**
% refinancing	**78%**
Total estimated cost of the project	**€1.6 billion**
Total project period	**2018–2023**

Project description

The purchase of 71 RER NG electric trains for Lines E and D is part of the Railway Rolling Stock Master Plan (RRSMP) which defines the development paths for the rail fleet up to 2030. To improve the quality of rail transport, Île-de-France Mobilités accelerated its ambitious policy of renewal and renovation of rolling stock in Île-de-France in 2016, to significantly revive the current fleet. This programme has been estimated in the long term at €10 billion for 1,100 new or renovated trains, for the renewal in particular of the RER B, E, D and Transilien lines, with an initial objective of 700 new or renovated trains by the end of 2021.

The purchase of 71 RER NG electric trains is a major project on the RER E with the extension of Line E to Nanterre la Folie in a first phase. The overall programme on the RER D renews trains coming to the end of their operational life and combined with the automation of RER B and D trains. The last trains will be delivered in 2023.

Technical features

Electric rolling stock purchased for the RER E: the total length is 112 metres (short version – no step accessibility except at Eponnes where mixed rolling stock operate on the same central platform) with 501 seats and a total capacity of 1,563 and 4 spaces for wheelchair users.

Electric rolling stock purchased for the RER D: the total length is 130 metres for the RER D (long version - mobile step designed to serve low platforms) with 606 seats and a total capacity of 1,861 and 4 spaces for people in wheelchairs.

Encountered difficulties

The main challenge was to develop a train specific to Île-de-France needs, with a major infrastructure adaptation programme in France (East-West Express Link - EOLE), adaptations to fixed installations and electric traction (Installations Fixes de Traction Electrique) on the RER D and the creation of workshops for maintenance.

Objectives

The objectives were to benefit from trains that comply with the operating and environmental objectives for the RER E and the RER D, in particular the need to have trains with increased acceleration and deceleration performance and to allow passengers to benefit from the latest generation of trains with features such as air conditioning and active passenger information systems.

Renewal of 83 electric trains on Line N and Regional Express Network Line D (RER D)

Green impact of the project

850,000 tonnes of CO2 — Total reduction in GHG emissions (tCO2 eq.)

>88% — Recyclability rate

>91% — Recoverability rate according to ISO22628 standard

26% — Recycled materials used

Social impact of the project

4,900 — Direct and indirect jobs created by the project

Project category	2 - Renovation and renewal of rail rolling stock (train, metro, tram-train, tram)
Amount financed	€711 million
% refinancing	49%
Total estimated cost of the project	€1.1 billion
Total project period	2018-2022

Project description

The renewal of 83 electric trains for Line N and RER D is part of the framework of the Railway Rolling Stock Master Plan (RRSMP) which defines the development paths for the rail fleet up to 2030.

To improve the quality of rail transport, Île-de-France Mobilités accelerated its ambitious policy of renewal and renovation of rolling stock in Île-de-France in 2016, to significantly revive the current fleet. This programme has been estimated in the long term at €10 billion for 1,100 new or renovated trains, for the renewal in particular of the RER B, E, D and Transilien lines, with an initial objective of 700 new or renovated trains by the end of 2021.

For Line N, the project consisted in replacing the 37 VB2N and 3 Z2N reaching the end of their operating life. For RER Line D the project involved replacing the Etoile de Corbeil trains (Juvisy - Malesherbes and Corbeil - Melun).

Technical features

Line N: the 64 trains are 105 metres long with a capacity of 1,890 seats, +7% compared to the previous trains.

Line D: the 19 trains are 110 metres long with a capacity of 2,046 seats, +15.7% compared to the previous trains.

Difficulties encountered

The main difficulties were found in the adaptation of the infrastructure and fixed electrical traction installations (on Line N), and maintenance installations.

Objectives

The main objectives were to ensure the continuity of the rail service with trains arriving at their operating limit, to provide new functions for users and to benefit from a train with a more contemporary and brighter interior that is more reassuring and better adapted to passengers with reduced mobility.

Purchase subsidy for various types of bikes including electrically assisted bicycle

Green impact of the project

45 millions — car journeys avoided

1,500 tonnes of CO2 — Total reduction in GHG emissions (tCO2 eq.)

Social impact of the project

141,941 — Number of beneficiaries

€404 — Average subsidy granted

Subsidy considered decisive for

73% of the beneficiaries

Project category	4 – Improvement of the quality of mobility services
Amount financed	€51.3 million
% refinancing	46%
Total project period (extended)	2020-2021

Project description

Île-de-France Mobilités policy on cycling has long focused on the development of secure bicycle parking in stations. Given the potential for trips that can be made by bicycle across Île-de-France (current modal share of the bicycle: 2%, objective is to triple it), Île-de-France Mobilités has decided to diversify its actions in terms of bicycle services. Following the launch of the "Véligo Location" rental service at the end of 2019, Île-de-France Mobilités set up a purchase subsidy system in February 2020 for various types of bicycles: classic e-bikes and cargo bikes, then extended to folding bicycles and adapted bicycles (for those with disabilities).

Technical features

The purchase subsidy is valid for e-bikes, cargo bikes, folding bikes and adapted bikes, and takes account of local purchase subsidies at the Île-de-France level.
It is limited to a maximum of 50% of the purchase price (including VAT) of the bike and safety accessories, totalling no more than €500.

Questionnaires on mobility use before and after the purchase are distributed when submitting the application.

Difficulties encountered

One of the main challenges was dealing with a very large number of applications (between 5,500 and up to 8,000 per month) and dealing with numerous special cases.

Objectives

One of the objectives is to change mobility use, towards ways of travelling that emit less CO2, offering easy access to quality bicycles and an "exit device" post-"Véligo Location".
Another objective is to offer a mobility solution for people who are more dependent on the car or with little public transport options, but also a more accessible mobility solution for people who cannot ride a conventional bicycle.

Accessibility Master Plan (AMP) for the road and rail network

Green and Social impact of the project

Road AMP:

242 — Number of bus lines made accessible

4,072 — Number of bus stops made accessible

Rail AMP:

72 — Number of stations made accessible

Project category	4 - Improvement of the quality of service for mobility
Amount financed	**€320 million**
% refinancing	**64%**
Total estimated cost of the project	**€1.5 billion**
Total project period	**2009–2025** for the rail AMP **2015–2021** for the road AMP

Description of project

The Accessibility Master Plan is composed of two parts : rail and road. Its objective is to make stations accessible (for the rail AMP) and bus stops accessible (for the road AMP) for people with reduced mobility.
The law of 11 February 2005 allows transport authorities to continue the development of the accessibility of their networks, by drawing up an Accessibility Master Plan – a programmed accessibility agenda (Sd'Ap).

The Île-de-France Mobilités board of directors approved its Accessibility Master Plan in 2009 and its Sd'Ap in 2015.

Technical features

Rail AMP: this is based on a benchmark network with an objective of 268 SNCF and RATP stations accessible to people with reduced mobility covering 95% of passenger traffic.
Road AMP: this has an accessibility objective for 908 bus routes defined as priorities: approximately 340 bus routes in the inner suburbs (RATP) and 560 in the outer suburbs.

Difficulties encountered

Rail AMP: the project includes many technical challenges working in an existing and constrained environment. The management of several development programmes at stations (AMP, Line Master Plans, load alleviation, etc.) and changes in the regulations for Persons with Reduced Mobility (PMR) regarding stations already declared accessible are also part of the difficulties encountered.

Road AMP: the work to bring bus stops up to standard is carried out by the communities in charge of the work on their roads (departments, municipalities, etc.). Île-de-France Mobilités finances up to 30% of the work.

Objectives

The target audience is those with reduced mobility. These can be both people with disabilities, the elderly, or people with a baby stroller, for example.
The objective is to make public transport more accessible to people with reduced mobility and so reduce car use.

Fund Allocation Report

Allocation table by category

	Amount allocated in 2021 (€M)	Amount allocated in 2021 (%)
Category 1: Renovation and renewal of surface public transport fleet*	35.6	2%
Category 2: Renovation and renewal of rail rolling stock (train, metro, tram-train, tram)	1 092.9	73%
Category 3: Renovation and renewal of infrastructure enabling low-carbon public transport	-	0%
Category 4: Improvement of the quality of service for mobility	371.4	25%
TOTAL	1,500	100%

Allocation table by project

	Amount allocated in 2021 (€M)	Amount allocated in 2021 (%)
Purchase of 68 electric buses	35.6	2%
Acquisition of 71 New Generation Regional Express Network (RER NG) electric trains	382.1	25%
Renewal of 83 electric trains on Line N and Regional Express Network D (RER D)	710.8	47%
Road and Rail Network Accessibility Master Plan (RRNAMP)	320.3	21%
Purchase subsidy for various types of electrically assisted bicycle (E-bikes)	51.2	3%
TOTAL	1,500	100%

The figures for the electric bus project also include a small part covering services provided under category 4.

Part VII
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Limited assurance report KPMG

Île-de-France Mobilités commissioned an independent auditor (KPMG) to verify the integrity of the information presented in the report.

Key excerpts from the conclusion of the KPMG assurance report:

"In response to the request of the Group Île-de-France Mobilités, we have conducted our diligences so as to provide a limited assurance conclusion on whether the information detailed hereinafter (the Verified information) in the fund allocation table untitled 'Use of proceeds by eligible asset class' published in the Allocation Report Green Bond for fiscal year 2021 related to the Green Bond issuance on May 2021 (the Document), attached to this report, has been presented, in all material respects, in accordance with the Guidelines defined below.

The Guidelines comprise the "Green Bond Framework" prepared by Île-de-France Mobilités for the Green Bond issuance and included in the Second Party Opinion provided by Cicero prior to the Green Bond issuance, available on the Group's website.

Independence and quality control

We apply International Standard on Quality Control and accordingly maintain a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.
We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants.

KPMG's responsibility

Our responsibility is to carry out a limited assurance engagement and to express a conclusion on the Verified Information, based on the work performed. We conducted our engagement in accordance with International Standard on Assurance Engagements (ISAE) 3000. The Standard requires that we plan and perform our work to obtain limited assurance about whether the information has been prepared, in all material respects, in accordance with the Guidelines, based on the accounting records used to prepare the Group's Financial statements. It is not our responsibility to provide an opinion on:

*— **the eligibility criteria specified in the Framework** on which an opinion was expressed by the Second Party Opinion provided by Cicero prior to the issuance, and, in particular, to give an interpretation of the terms and conditions of the Framework;*

*— **the management of proceeds** once they have been allocated;*

*— **the reporting or impact indicators presented in the Allocation Report Green Bond.***

Nature and scope of our work

We used our professional judgement to select procedures for our limited assurance engagement, and to assess the risk of material misstatement in the Verified information, whether due to fraud or error.
To assess risk, we took into account Île-de-France Mobilités' internal controls on the preparation of the Verified information in order to design appropriate assurance procedures, and not to express a conclusion as to the effectiveness of the Group's internal control system. We conducted several interviews with the persons responsible for preparing the Verified information, with those in charge of collecting the information, and, with those responsible for internal control and risk management procedures.

Our work entailed:

*— **identifying the people responsible for the preparation of the Verified information disclosed in the Document within the Group**, those in charge for the data collection regarding the Verified information, and the people responsible for the internal control and risk management procedures implemented;*

*— **assessing the appropriateness of the reporting procedures** in terms of their relevance, completeness, reliability, neutrality and understandability;*

*— **verifying the existence of internal control and risk management procedures implemented by the Group;***

*— **verifying the concordance of the information** disclosed in the Document, with the accounting and the underlying accounting data;*

*— **examining the processes** used for data collection, compilation, processing and control, particularly the procedures relating to the allocation of funds as at December 31, 2021;*

*— **based on a representative sample of selected eligible expenses:** verifying the compliance of the selected eligible expenses with the eligibility criteria as specified in the Framework, and verifying the concordance of the allocation of the net proceeds to the selected eligible expenses with the accounting and the underlying accounting data, as at for the year ended December 31, 2021;*

*— **verifying the compliance of the projects financed** with the eligibility criteria as specified in the Framework;*

*— **verifying the amount of the allocated funds** to eligible projects is lower or equal to the outstanding amount of these loans as at December 31, 2021.*

We believe that the sampling methods and sample sizes we have used, based on our professional judgement, are sufficient to provide a basis for our limited assurance conclusion; a higher level of assurance would have required us to carry out more extensive procedures. Due to the use of sampling techniques and other limitations inherent to information and internal control systems, the risk of not detecting a material misstatement in the Verified information cannot be eliminated.

Conclusion

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our conclusion.
Based on the procedures performed, nothing has come to our attention that causes us to believe that the Verified information is not presented fairly in the Document, in all material respects, in accordance with the Guidelines."

Annex
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Methodology for calculating avoided CO2 emissions

The funds acquired by Île-de-France Mobilités via the Green Bonds system have been used to finance various transport projects.
Having a reliable and efficient transport system is essential in a region such as Île-de-France to reduce CO2 emissions, in particular by allowing people to travel in ways other than in individual ICE vehicles.

This annex describes the methodology used to assess the reduction in CO2 emissions linked to the investments made by Île-de-France Mobilités with funds acquired via Green Bonds.

Three projects are studied:

Purchase subsidy for various types of bikes including electrically assisted bicycle

Purchase of 68 electric buses for the outer suburban bus network

Purchase of 154 electric trains for the RER and train network

To assess the specific impact of the use of Green Bond funds, the situation made possible by the use of these funds, known as the project situation, is compared to a base situation, where Île-de-France Mobilités would not have been able to make these investments, due to a lack of funding.

The base values for estimating CO2 emissions from traffic data come from ADEME's Carbon Base[1], and more specifically from its "Transport of People" section.

The results presented are to be understood in order of magnitude.

E-bike purchase subsidy

Funds acquired via the Green Bonds scheme were used for the e-bike purchase subsidy. The purchase of an e-bike can lead to a modal shift, in particular from private cars. This leads to a significant reduction in CO2 emissions.

Only car journeys avoided are considered here, as this is the mode that consumes most energy. A survey carried out by IFOP on behalf of Île-de-France Mobilités estimates the number of car journeys avoided by users of the Véligo[2] service at 1.1 per week.

Use of an individual e-bike will therefore be assumed to be similar to that of the Véligo service.

[1] https://bilans-ges.ademe.fr/documentation/UPLOAD_DOC_FR/index.htm?transport_de_personnes.htm
[2] E-bike rental service financed by Île-de-France Mobilités

The base situation here is therefore a situation where beneficiaries of the subsidy would make these 1.1 journey per week by car, because they do not have an e-bike purchased through this subsidy. The parameters considered in the calculation are presented below:

Number of beneficiaries:
141,941 in 2020 and 2021, as of January 2022

E-bike lifespan:
6 years

Modal shift:
1.1 car trip avoided per week (IFOP study)

Average distance of an e-bike trip:
3.76 km (Véligo data)

CO2 emissions of a car:
185 g / km (ADEME carbon base)

CO2 emissions for the manufacture of an e-bike:
165 kg of CO2 per bike (manufacturer's data from Trek, average for an e-bike[3])

Considering the number of beneficiaries in January 2022 and the average lifespan of the bikes, 45 million car journeys have been avoided thanks to the project (1.1 journey per week, for 6 years, for 142,000 users).

The average distance of a trip made by e-bike is 3.76 km compared to 4.7 km by car in the Île-de-France region. The distance of 3.76 km is used to calculate the transfer from a private car.
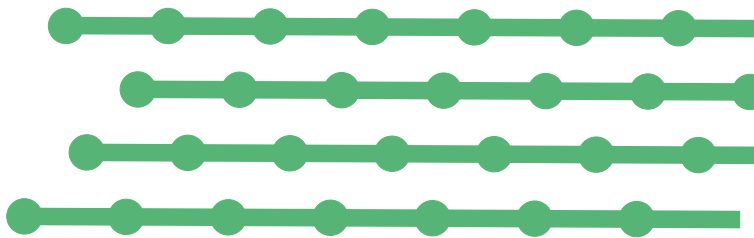
Therefore, 170 million kilometres travelled by car are avoided thanks to the project, which amounts to 30,000 tonnes of avoided CO2 emissions, or 36 kg per bike per year.

CO2 emissions generated during the manufacture of the bikes also need to be accounted for. This is higher for e-bikes than standard bikes, mainly because of the battery.
These emissions are estimated at 165 kg of CO2 per bike (manufacturer's data). Given the number of e-bikes purchased, this represents a total of 23,400 tonnes of CO2 emitted for this item. This should be subtracted from the previous result to obtain the net result of 7,000 tonnes of CO2 avoided thanks to the project.

Île-de-France Mobilités does not finance the entire cost of the bikes. This is also borne by the beneficiary. Subsidies financed via the Green Bonds scheme amount to €400 per bike, for an average cost of €1,760. This represents a ratio of 23%, which should be applied to the net result of CO2 emissions avoided thanks to the project, to arrive at a weighted net result of 1,500 tonnes of CO2.

An indication of avoided CO2 emissions per euro invested can be calculated. The project costs 30 million euros per year, and the report to date covers the first two years, 2020 and 2021.
So, 27 g of CO2 emissions are avoided per euro invested in this project, taking into account only the net weighted emissions.

[3] https://view.publitas.com/trek-bicycle/trek-bicycle-2021-sustainability-report/

Purchase of 68 electric buses for the outer suburb bus network

Funds acquired via the Green Bonds scheme were used to purchase 68 electric buses to replace ICE buses running on diesel on the outer suburban network. The base situation is defined by the operation of the network with the old bus fleet. Only savings in CO2 emissions made possible by the replacement of this fleet will be calculated. Additional savings linked to the long-term continued use of the bus network in the outer suburbs, and car journeys avoided because of this in a zone that heavily relies on the network, are not taken into account here.

The parameters considered in the comparison of the old and new bus fleet are presented below:

Number of buses:

68

Bus lifespan:

15 years

Annual bus mileage:

44,000 km

Average consumption per km of an ICE bus:

0.4 litres of diesel (Île-de-France Mobilités calculation based on contractual data)

Average consumption per km of an electric bus:

1.3 kWh (manufacturer's data)

ICE bus CO2 emissions:

3.16 kg CO2 / litre (ADEME carbon base)

Electric bus CO2 emissions:

38.6 g CO2 / kWh (ADEME carbon base)

Based on annual mileage data, the 68 diesel-powered ICE buses emit 3,800 tonnes of CO2 per year, or 57,000 tonnes of CO2 over the total 15-year lifetime of the bus. The 68 electric buses emit 150 tonnes of CO2 per year, or 2,500 tonnes of CO2 over 15 years. The operation of these 68 electric buses therefore saves 54,500 tonnes of CO2 over 15 years, or 3,500 tonnes per year.

ADEME tells us that the manufacture of a bus emits 4 kg of CO2 per kg of vehicle. That means 56 tonnes of CO2 per bus for a 14-tonne bus. This item therefore emits 4,000 tonnes of CO2 for all 68 buses, emissions that should be deducted from the reduction previously calculated, to arrive at a net result of 50,000 tonnes of CO2 avoided over 15 years.

It takes more than a fleet of buses to operate a bus route. Investments in infrastructure are also required, in particular Bus Operations Centres (COB) and bus stops. The CO2 emissions avoided calculated previously must be weighted between what is invested in vehicles and what is invested in infrastructure, insofar as investments in infrastructure do not fall within the scope of this report. This ratio, in the case of Île-de-France Mobilités, is 75% of capital expenditure on vehicles, and 25% on infrastructure. This ultimately gives around 38,000 tonnes of avoided CO2 emissions.

Looking at vehicle manufacture, it should be noted that the various components of the electric buses acquired via the Green Bonds are made of between 0% and 70% recycled materials, depending on the component (manufacturer's data). Also, more than 50% of the cost price of the buses was acquired in France. Finally, regarding the end of life of vehicles, the manufacturer indicated a recyclability rate of over 90%, as well as a recovery rate according to the ISO22628 standard of over 95%.

Lastly, following the purchase of these 68 buses that cost a total of €35,625,760, this project allows to avoid around 1 kg of CO2 emissions per euro invested, (net weighted emissions).

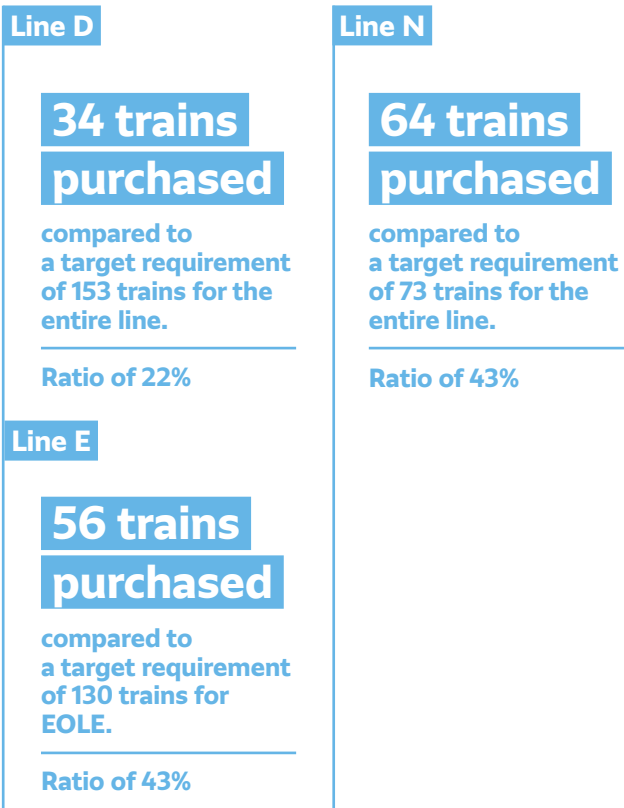## Purchase of 154 trains for the RER and train network

Funds acquired via the Green Bonds scheme were used to purchase 154 trains (83 Régio-2N trainsets and 71 RER-NG trainsets) for RER and train Lines D, E and N. The rolling stock replaced is equipment that already ran on electricity.

The purchase of trains is essential for the renewal of rolling stock with a limited lifespan and therefore the continued operation of one of the largest urban transport networks in the world. The gain for the environment remains substantial here. Indeed, in the absence of Green Bonds funds, not replacing these units would have had a significant impact on the operation of the lines in question. They would operate in a very degraded mode, due to the obsolescence of part of the rolling stock.

Such a degraded situation would have a significant impact on the modal transfer of passengers to private cars. The base situation here will therefore be this degraded situation, i.e. no trains purchased with Green Bonds funds to replace current rolling stock on each of the lines concerned.
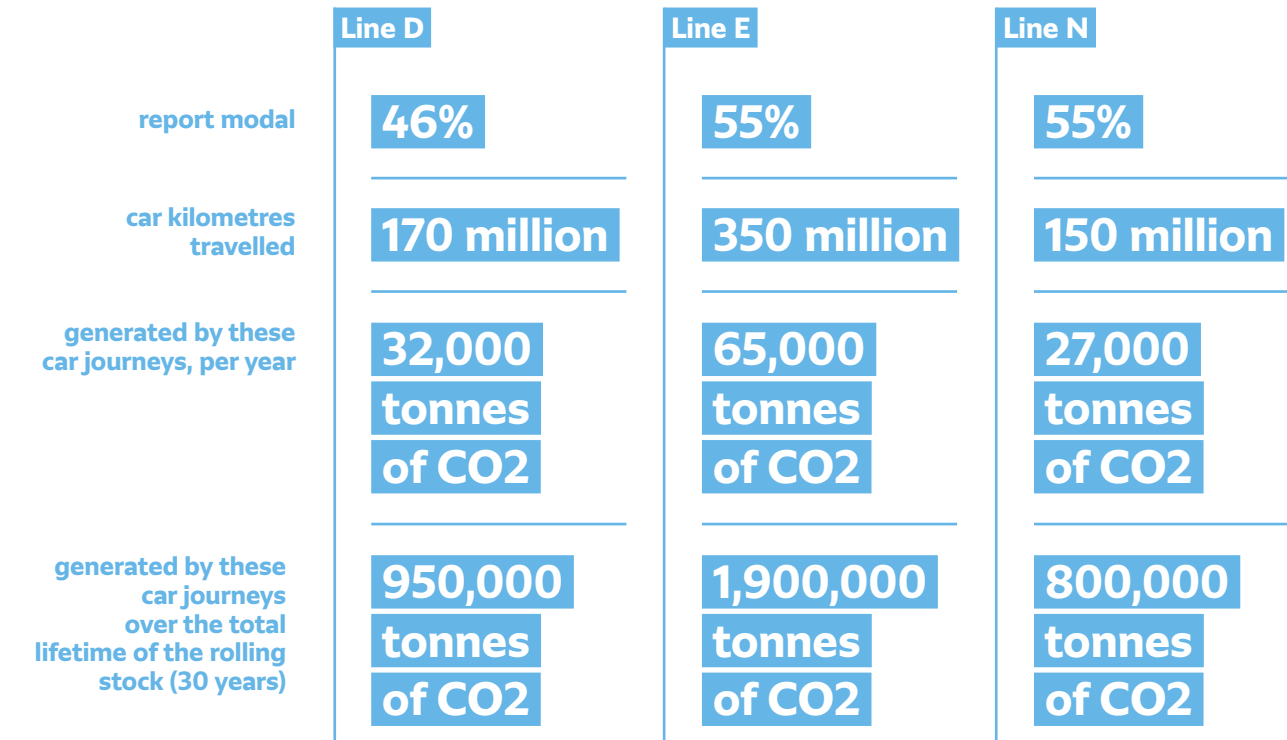
Since the avoided CO2 emissions are calculated over the entire lifetime of the rolling stock, the base fleet corresponds here to the target needs per line (these target needs include for example the future extension of Line E, EOLE).

Below are the ratios presented by line:

Line D

34 trains purchased

compared to a target requirement of 153 trains for the entire line.

Ratio of 22%

Line E

56 trains purchased

compared to a target requirement of 130 trains for EOLE.

Ratio of 43%

Line N

64 trains purchased

compared to a target requirement of 73 trains for the entire line.

Ratio of 43%

The modal shift generated by the degradation of the supply in the reference situation is calculated with the ANTONIN 3 model of traffic forecast. The reference values for CO2 emissions come from the ADEME carbon database, i.e. 185 g of CO2 emitted per km travelled, for short distance journeys.

Below are the main results presented by line:

	Line D	Line E	Line N
report modal	46%	55%	55%
car kilometres travelled	170 million	350 million	150 million
generated by these car journeys, per year	32,000 tonnes of CO2	65,000 tonnes of CO2	27,000 tonnes of CO2
generated by these car journeys over the total lifetime of the rolling stock (30 years)	950,000 tonnes of CO2	1,900,000 tonnes of CO2	800,000 tonnes of CO2

The modelling of these degraded situations makes it possible to estimate that 3.7 million tonnes of CO2 would have been emitted if the rolling stock financed by the Green Bonds had not been purchased.

The emissions generated by the operation of trains which, although electric, emit CO2 during their use, must be deducted from these avoided emissions. The annual ridership figures per line (including the future EOLE extension), and an emission value provided by the SNCF in 2019 for the train network in Île-de-France, make it possible to establish that the CO2 emissions on this network amount to 5.28 g of CO2 per passenger-kilometre.

Here are the results by line:

	Line D	Line E	Line N
for the entire line	660,000 annual trips	545,000 annual trips (including extension)	132,500 annual trips
for the entire line	10.5 million passenger-kilometres	6 million passenger-kilometres	1.8 million passenger-kilometres
attributable to trains financed by Green Bonds	2.4 million passenger-kilometres	2.5 million passenger-kilometres	1.6 million passenger-kilometres
emitted annually by these trains	56 tonnes of CO2	32 tonnes of CO2	9.5 tonnes of CO2
emitted due to operations over the lifetime of these trains	1,700 tonnes of CO2	950 tonnes of CO2	280 tonnes of CO2

A total of 3,000 tonnes of CO2 are therefore emitted operating these trains.

We must also deduct the CO2 emissions generated by the manufacture of these vehicles. The ADEME carbon base indicates that these emissions can be estimated at 7 kg of CO2 per kg of vehicle. Given the unladen weight of a vehicle (240 tonnes), it follows that a total of 250,000 tonnes of CO2 were emitted for the production of these 154 trains . The net result then amounts to 3.5 million tonnes of avoided CO2 emissions.

The portion of these avoided emissions attributable to rolling stock is isolated by subtracting what is attributable to infrastructure. The ratio in the case of rail transport is estimated at 45% for rolling stock and 55% for infrastructure. The total net weighted avoided emissions therefore amount to 1.6 million tonnes of CO2 thanks to the purchase of these trains, i.e. 50,000 tonnes per year. Of this figure, 0.75 million tonnes are attributable to the 71 RER-NG trains, and 0.85 million tonnes are attributable to the 83 Régio-2N trains.

The total cost of the purchase of these trains amounts to 2.7 billion euros, 585 grammes of CO2 emissions were avoided per euro invested in this project.
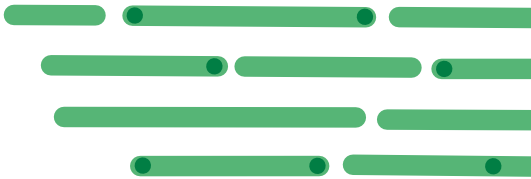
[4] A value of CO2 emitted to produce the trains was also provided by the manufacturer, which indicated a value of 1,500 tonnes of CO2 per train. This is equivalent to a total of 230,000 tonnes for the 154 trains, i.e. a result very close to that calculated from the ADEME carbon database, tending to reinforce this methodology.

Credits

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