

2020 Green Bond Report

Editorial

While thinking of Greater Paris and the surrounding Île-de-France region, a number of images spring to mind - prestigious universities, large housing estates, international airports, the flow of tourists, business districts, public transport, work sites etc. A whole range of economic and social activities which bring the city to life, fuelling its vibrancy and cementing its influence. Beyond this usual view of the area, hides the forests and green spaces which cover a quarter of the region. Just as much, in fact, as the urban areas. Indeed, there are many other images that should complete our picture of Grand Paris, from the Bondy forest to the garden city of Clamart, the hillsides of Aulnoy to the Pinson hill, from the Seine's meanders to the curves of the Marne river. People and nature cohabiting brings its share of challenges. Every year 1,000 hectares of open land are engulfed by the expanding city - the equivalent of the city of Paris every eleven years.

Agricultural land and natural environments in peri-urban areas are under pressure from real estate development and urbanisation. For decades, they have been the victims of a car-centric policy and a star-shaped public transport network inevitably accelerating urban sprawl. We need to slow down. Each and every one of us, at every level, knows this. Each and every one of us, at every level, needs to take quick and decisive action. These actions will imply, among other consequences, changing the way we live and travel. This is the mission of the Grand Paris Express, the fruit - around ten years ago - of disruptive thinking creating a transport system linking outer areas and encouraging the building of a vertical city around station hubs.

Is it possible for a project like the Grand Paris Express to be conceived, run and completed with environmental and social priorities factored in to every decision? Is it possible to build a new rail network that works toward the restoration of biodiversity and brings nature back to the city? This is the huge but crucial challenge taken up by Société du Grand Paris. The Grand Paris Express aims at improving the everyday lives of the residents of the Paris Region tomorrow while preserving the living world of today. To do so, most of its lines run underground but above all, our environmental pledge made right from the beginning has grown from strength to strength.

Over ground, each work site proposal is carefully analysed to avoid or mitigate the impact on the environment. The measures deployed to offset this are exemplary. No net loss of biodiversity - that is our pledge.

Jean-François Monteils

Chairman of the Société du Grand Paris management board

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A vital project for tomorrow

By building 200 km of new automated metro lines connected to the existing infrastructure along with 68 additional stations, Société du Grand Paris is developing the Greater Paris region and enhancing its appeal.

Its primary purpose is to “design and develop the overall plan for the various infrastructure projects under the Grand Paris Express umbrella and oversee the construction of the lines, fixed structures and facilities, the built and layout of stations and interchanges as well as the procurement of the railway rolling stock that will run on this infrastructure”.

The four new Grand Paris Express lines (15, 16, 17, and 18), as well as the extension of Line 14 to the north and the south, will be connected to the existing transport network.

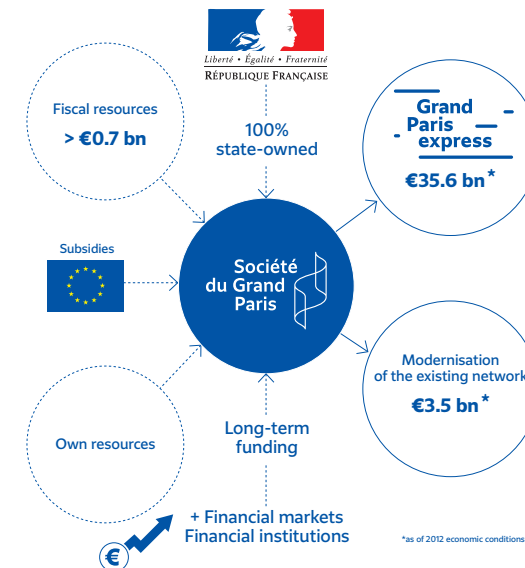
As an “urban, social and economic project of national interest” that aims to promote “sustainable and inclusive economic growth driving job opportunities in the Greater Paris region”, the Grand Paris Express will boost the region’s appeal and

contributed maintaining its competitive edge on the world stage.

With 200 km of new automated metro lines around the French capital, effectively doubling the existing metro network, as well as 68 additional stations, the Grand Paris Express offers solutions to the challenges the region has been facing for several years: increasing mobility for everyone, reducing social and geographical inequality, and improving quality of life while benefiting the environment. The new metro will also help reduce greenhouse gas emissions, with annual savings of 755,000 to 1.3 million tonnes of CO₂ equivalent once it is completed.

Thanks to the Grand Paris Express, the Paris region will be bigger, greener and more united than ever.

Société du Grand Paris financial model



Protecting bio-diversity, central to the project

Protecting the environment is an ongoing concern for Société du Grand Paris. As stated in its CSR approach, the company aims to offset and reduce “the project’s impact on the land and natural environments” wherever possible, from defining the new metro’s route to the construction sites.

The aim is to limit the environmental impact of the Grand Paris Express, from its design to its operation, by rigorously applying the legislative and regulatory principles of the “ARO” strategy: avoid, reduce and offset.

To this end, Société du Grand Paris anticipates and reinforces knowledge of local biodiversity on project sites, in order to assess the impact and define appropriate measures, by carrying out inventories of the flora and fauna during the project’s initial study and design phases.

It has also ramped up controls of biodiversity-related requirements on worksites by conducting environmental audits.

When avoidance or reduction measures are insufficient and there are remaining residual impacts on the natural world, Société du Grand Paris implements ecological offsetting measures, in cooperation with its partners.

Société du Grand Paris’ commitment

One of the four guidelines of the Société du Grand Paris CSR roadmap is to “*design and build while protecting the environment*”. Its first key objective is to limit impacts on the land and natural environments.

The Société du Grand Paris CSR approach and roadmap are in line with the United Nations’ 17 Sustainable Development Goals (SDGs).

Since 2020, Société du Grand Paris has been committed to the United Nations Global Compact integrity initiative and its principles on human rights, labour, environment and anti-corruption. In particular, it is committed to principles 7 (applying the precautionary approach to environmental challenges) and 8 (undertaking initiatives to promote greater environmental responsibility).



An ambitious regulatory framework

Introduced into French law by the 1976 Nature Conservation Act, the Avoid, Reduce, Offset (ARO) sequence has a solid legislative basis at both French and European levels.

Applying the ARO sequence is part of a regulatory approach that aims to take the environment into account from the initial design phases, and throughout all phases of a project. This approach does not solely apply to biodiversity; but to all environmental matters (soil, water, air, climate, pollution, etc.).

The regulatory framework governing the ARO sequence application on biodiversity has been significantly strengthened, in particular through the 2016 law on restoring biodiversity, which reinforces the objective of “no net loss” or even increasing biodiversity, as part of the scaling of offsetting measures. This is the “no net loss” or “ecological equivalence” principle.

WHAT ARE WE TALKING ABOUT?

Some key terms

Avoidance: measure to modify a project, in order to eliminate an identified adverse impact that may be caused by the project. Avoidance is the priority measure, and may relate to avoidance through selection, or geographical, technical or temporal avoidance.

Reduction: measure defined after avoidance, aimed at minimising the permanent or temporary adverse impacts of a project on the environment, either during the construction phase or the operating phase. Reduction measures can be geographical, technical or temporal in nature.

Offsetting: measure defined after avoidance and reduction, aiming to mitigate the adverse, permanent or temporary impacts of a project on the environment that cannot be avoided or sufficiently minimised (residual impacts). The offsetting measures must be able to restore, in comparable quantitative and qualitative proportions, the damage done to the environment.

No net loss of biodiversity: objective aiming to ensure that any biodiversity losses related to a project with residual impacts should be matched by ecologically equivalent gains through offsetting measures.

AN INNOVATIVE METHOD FOR ASSESSING THE IMPACTS AND SCALE OF THE PROJECT'S ECOLOGICAL OFFSETTING MEASURES

Biodiversity is by definition monitored locally, therefore establishing and aggregating quantitative impact indicators, like tonnes of CO₂, can prove difficult. Indeed, biodiversity and how ecosystems work are far too intricate subjects to be comprehensively covered. We can only approximate the infinite complexity and dynamics of living organisms.

However, this biodiversity metric approach is useful for assessing and comparing the positive and negative impacts of a project in a quantitative and “ex-ante” manner (i.e. before they occur), in order to assess their equivalence and determine whether the “no net loss of biodiversity” objective has been achieved, as set out in the environmental code.

Given the lack of a national methodological framework, Société du Grand Paris called in CDC Biodiversité which has developed an innovative and robust method that takes operational as well as scientific and regulatory acceptability criteria into account. This method quantifies and compares biodiversity losses that may be caused by the project, as well as the potential gains provided by the ecological offsetting measures, in order to calculate net losses/gains and determine whether the “no net loss of biodiversity” objective has been achieved.

The study was launched in the second half of 2019 and the method was applied to the Line 17 North project in summer 2020. Despite a number of limitations caused by the complexity of the field, the various bodies consulted (CDC Biodiversité’s scientific committee, the French Biodiversity Office – OFB, the General Commission for Sustainable Development – CGDD) issued positive opinions of the method.

Rigorous application of the ARO sequence

MAXIMISING THE IMPACT OF AVOIDANCE

Avoidance is the only solution capable of preventing environmental damage during the project works, and is therefore the priority action in the ARO sequence (Avoid-Reduce-Offset). The avoidance phase is considered at the design stage and extends throughout the project. However, from the project outset and particularly during the preliminary studies, the most effective avoidance decisions can be made.

Société du Grand Paris has therefore sought to integrate the principles of the ARO sequence from the project's initial study phases. Critical decisions were made to maximise the positive impacts of avoidance. It was applied with greater precision as the project was consolidated through the various regulatory procedures.

Anticipating the challenges of biodiversity conservation

In 2010, **Grand Paris Express' global environmental assessment** identified the potential or actual effects of the project on all environmental aspects, in relation to its nature, scale and location. This assessment, conducted early in the project design process, helped identify the major biodiversity issues and define avoidance measures for key components of the project (route variants, technical choices).

It was also supported by a public consultation procedure organised by the National Commission for public debate (*Commission nationale de débat public*) from 30 September 2010 to 31 January 2011.

The application of the ARO sequence is a gradual process, which was consolidated through the various regulatory procedures. It was specified in the declaration of public utility files (DUP) and then consolidated as part of the environmental authorisation procedures.

more than 600 biodiversity survey days conducted since 2011

Environmental surveys

These studies are based on the findings of environmental surveys, which provide an in-depth analysis of the biodiversity present in the project's construction areas. These surveys, conducted by expert environmental scientists commissioned by the Société du Grand Paris, set their understanding and knowledge of the original state, which serves as the "keystone" of their environmental assessment. The original state report **defines the current condition of the territory where the project will be rolled out, analyses the potential impacts of the project and identifies measures** to avoid, reduce or offset such impacts.

The surveys carried out to determine the original state of the various project lines have **helped identify, in certain**

sectors of the project's development, natural environments and flora and fauna that must be protected, as well as invasive alien plant species, for which specific measures are then defined.

Ecological surveys are also essential for the management and monitoring of mitigation and offsetting measures. They assist in monitoring the effectiveness of the measures implemented and can contribute to remedial measures.

9,160 data items added to the platform for biodiversity data

PRACTICAL EXAMPLE

AVOIDANCE OF IMPACTS ON THE BONDY FOREST NATURA 2000 SITE LINE 16

The line 16 route layout has been subject to in-depth comparative studies of a number of alternatives. As part of the impact study carried out for the public utility declaration (DUP), a multi-criteria analysis, covering technical, functional, time and environmental aspects, was completed in order to determine the best route. Based on the findings of the analysis, the selected route avoids the Bondy forest, part of the Natura 2000 "Seine-Saint-Denis sites" zone, thereby avoiding any direct impact to the area.

Conclusion

This successive planning **made it possible to integrate fundamental choices into the design of the Grand Paris Express**, thereby avoiding serious damage to the most sensitive areas:

- a technical choice that significantly reduced the project's negative impacts on the natural environment, despite its scale: 90% underground, using a tunnel boring technique;
- alternative routes defined to eliminate impacts on protected natural areas: see example below;
- an adjustment of rights-of-way at the local level, based on the findings of ecological surveys.

REDUCING THE ENVIRONMENTAL IMPACT OF WORKSITES

The second pillar of the ARO approach, reduction, is the subject of particular attention at worksites. To boost its effectiveness, Société du Grand Paris has opted to conduct environmental audits on worksites, which ensures that the measures taken to preserve biodiversity are properly implemented.

Adapting work periods to environmental cycles

In order to comply with the environmental commitments set out in their contracts, companies adapt sensitive work streams to the constraints and ecological rhythms of the species that live in the region. Planned works schedules, such as cutting and felling trees or clearing brush, are adapted so that they are carried out **outside these sensitive periods, especially during bird nesting or bat hibernation**, for which these operations can be particularly detrimental.

These measures are also combined with inspections by ecologists to check for animals living in tree cavities prior to felling work, particularly in areas with trees that are likely to host bats (cavities, cracks, etc.).

Combating the spread of invasive non-native plant species

Invasive alien species (IAS) are the fourth most significant cause of biodiversity loss in the world.

Combating their spread is a major challenge to contain its impact on biodiversity, in addition to avoiding works that destabilise environmental balance and favour the propagation of these species. Exposed land may provide suitable ground for their proliferation, and unclean machinery or land movement may cause them to spread.

Identifying these species on worksites, both before and during the construction phase, is therefore a major issue and is the subject of **specific measures and requirements imposed on companies**. Prior to the start of any work, ecological surveys identify the presence of these species in the worksite area and help establish preventive or corrective actions. These actions then become mandatory for companies via an

environmental compliance notice (contractual document included in the works contract). This may involve mowing or cutting before blooms, high-pressure cleaning of machinery and equipment, or a ban on mixing or transferring soil from a potentially contaminated site.

A variety of actions to combat the proliferation of invasive alien plant species are regularly carried out on Grand Paris Express worksites.

100%
of worksites are
subject to
environmental
requirements for
the protection of
biodiversity

Implementing specific reduction measures

Some development areas present specific environmental challenges, as identified through the ecological survey process. In these areas, specific reduction measures are defined and implemented. For example, this may involve the relocation of plant or animal species or the installation of facilities for wildlife (protective barriers for amphibians, hibernacula, nesting boxes, etc.).

Worksite inspections and controls

In addition to the standard checks and controls carried out by the project managers and contractors during the construction process, **Société du Grand Paris conducts**

regular environmental inspections to ensure that all measures and requirements have been implemented.

These inspections cover all worksite stages (preparatory work, civil engineering work, all trades work, system works, etc.) and cover all environmental matters (water, pollution, biodiversity, excavation, cleaning, environmental management systems, etc.).

This provides an **an independent, factual picture of the environmental situation** at the worksites and, if required, triggers a process for monitoring and correcting any non-conformities; so that these shortcomings are addressed in time and to ensure that appropriate corrective measures are implemented.

115
environmental
inspections carried
out at worksites as of
31 December 2020

PRACTICAL EXAMPLES

PROTECTING THE WALL WHITLOWGRASS

LINE 18

Wall Whitlowgrass (*Draba muralis L.*) is a plant species protected in the Île-de-France region. This species was observed along the RN118 in the municipality of Saclay, in an area where work is to be carried out to build the viaduct for the line 18. In order to protect this species, actions have been taken to transfer the plant from its original site to an alternative replacement site, located on the *Golf national de Guyancourt*. These actions involved moving the soil from the original site to the replacement site. Scientific monitoring will be carried out at the replacement site to monitor the species' progress.

PROTECTING AMPHIBIANS

LINE 15 SOUTH

The findings of the ecological surveys carried out highlight the presence of amphibians and in particular of two native species in the vicinity of the Villejuif Institut Gustave Roussy station construction site: the common midwife toad and the natterjack toad. These species, and in particular the natterjack toad, tend to colonise environments such as temporary ditches or puddles created on building sites. To reduce the risk of these species invading the construction site, specific protective barriers were placed around the construction site and along its access roads. These barriers are particularly effective for species with limited jumping abilities like the species targeted. They were implemented with the assistance of an ecologist and are monitored and maintained throughout the works.

COMBATING LIGHT POLLUTION

LINE 18

Artificial lighting from the facilities can affect wildlife, particularly chiropterans and nocturnal raptors. The Palaiseau operations centre and line 18 viaduct is a particularly sensitive sector given the species that live there, particularly chiropterans, which have already been identified. In order to protect these species, devices will be set up to limit light pollution and reduce its impact on nocturnal fauna. The lighting equipment of these various structures will also be adapted to prevent the diffusion of light toward the sky. Low-level lighting triggered by motion sensors will be installed at the operations centre, located near particularly sensitive ecological corridors.

OFFSETTING IMPACTS ON BIODIVERSITY ACCORDING TO GUIDELINES

When avoidance and reduction measures do not sufficiently reduce the impact on biodiversity, Société du Grand Paris implements ecological offsetting measures with its partners and in accordance with applicable regulations.

The third pillar of the ARO approach is governed by a very specific regulatory framework, including a number of criteria to be respected when defining and implementing offsetting measures: feasibility, additionality, sustainability, geographical and temporal proximity, ecological equivalence, objective of no net loss and an obligation to achieve a specific result.

22
ecological and forest offsetting sites, all located in Île-de-France

In addition to these regulatory aspects, Société du Grand Paris has defined **a series of guidelines for selecting offsetting measures suited to the challenges of the Grand Paris Express, both from an ecological standpoint and in terms of integration** of the offsetting projects within the region. Three key objectives have been set:

- encourage the pooling of offsetting measures between the different lines of the Grand Paris Express;
- encourage offsetting measures on public land, in partnership with local public stakeholders in the region;
- encourage the use of wild and native plants in the vegetation work carried out at the offsetting sites.

Consolidating offsetting measures

Consolidating offsetting measures between the various lines of the Grand Paris Express helps optimise resources while promoting environmental actions over larger areas. The result is **a greater ecological gain and improved environmental resilience**. This makes ecological restoration more effective and sustainable.

PRACTICAL EXAMPLE

CONSOLIDATING OFFSETTING MEASURES ON THE PORT AUX CERISES SITE

LINE 15 WEST, LINE 18, TRAM 12 EXPRESS

A large-scale consolidated ecological offsetting project is being developed on the Port aux Cerises leisure island. This project aims to provide offsetting for a number of projects (lines 15 West and 18 of the Grand Paris Express, Tram 12 Express) and to compensate for a number of habitats of protected species (wooded habitats for birds and chiropterans, thermophilic habitats for reptiles, semi-open habitats for birds and insects, wetlands for certain species of birds and insects specifically dependent on this type of environment).

Ecological initiatives are currently being deployed across 35 hectares, enabling the two contracting authorities (Île-de-France Mobilités and Société du Grand Paris) to pool their efforts for more effective and sustainable ecological restoration that encourages environmental resilience.

42
hectares restored as part of offsetting measures since 2017, including

24
hectares for forest offsetting and

18
hectares for ecological offsetting

Partnerships with local public stakeholders

Encouraging offsetting measures on public land, in partnership with local public stakeholders in the region via an agreement process, **provides a stronger guarantee of sustainability and wider local acceptance**. Offsetting measures can be presented to the public and information campaigns on the protection of biodiversity can be organised to support the offsetting projects carried out by Société du Grand Paris, in cooperation with its partners.

Using wild and native plants

As part of the vegetation work carried out on the offsetting sites, the company prioritises the use of wild and local plants and seeds. In the context of climate change and a high probability of an increase in extreme weather events (droughts, storms), these plants will have **greater resilience and will help preserve local genetic diversity, suited to the soil or climate**. This also limits the risk of introducing invasive species and helps to make ecosystems more resilient.

PRACTICAL EXAMPLE

TAKING PART IN ESTABLISHING A LOCAL WILD SEED NETWORK IN ÎLE-DE-FRANCE

There is currently a lack of available local wild seeds in the Île-de-France region. This issue needs to be addressed, particularly in the context of the construction of the Grand Paris Express, which entails the planting of local seeds for new green areas.

As such, a partnership agreement was signed in November 2020 between the *Conservatoire Botanique National du Bassin Parisien* (CBNBP), CDC Biodiversité and Société du Grand Paris. The purpose of this agreement is to establish a production chain for herbaceous seeds locally adapted to the Ile-de-France region in response to current climate and environmental issues, which can be used to revegetate sites after construction and to restore the Grand Paris Express ecological offsetting sites.

SUPPORTING THE ARO STRATEGY TO ENHANCE EFFECTIVENESS

Support measures will also help consolidate biodiversity protection measures during the Grand Paris Express project. These measures are not designed to address direct impacts of the project, however they play an important and complementary role to the ARO approach aiming at reducing life-cycle impact.

PRACTICAL EXAMPLES

MAINTAINING WATER LEVELS IN NATURA 2000 DEPARTMENTAL PARKS AND PONDS

LINES 14 NORTH, 16, 17 SOUTH, 17 NORTH

The water bodies of the Georges Valbon and Sausset departmental parks, Natura 2000 sites in Seine-Saint-Denis, provide a habitat for several protected and iconic bird species, such as the Little Bittern, Starry Bittern (or Great Bittern) and European Kingfisher. More than 140 bird species, including many migratory, come to these areas to nest or rest.

These water bodies being groundwater-fed, the pumping required for the construction work on certain structures of lines 16 and 17 North was likely to have an indirect impact on these environments.

In order to preserve existing water levels, a groundwater replenishment system was implemented in partnership with the Seine-Saint-Denis departmental council, which manages the parks. Furthermore, a water level monitoring system has been in place since 2016 for ponds and water bodies, in order to gain better understanding of the hydraulic functioning of these sites and raise alerts in the event of a significant decline in water levels, triggering the replenishment system.

SUPPORTING BIODIVERSITY-FRIENDLY AGRICULTURE PROJECTS LINE 17 NORTH

Under a subsidy agreement signed in February 2021 with Agrof'île, an association that works to raise awareness and train farmers and young people in agroforestry, Société du Grand Paris supports the implementation of two biodiversity-friendly farming projects.

These two projects, one located in Plessis l'Évêque and the other in Duvy, involve the transformation of arable farming into hazelnut orchards. With Agrof'île's support, these projects are designed to help develop a biotope that is particularly favourable to a number of animals, especially birds. A specific approach is also embraced to protect biodiversity (reduced use of phytosanitary products and transition to organic farming, selection of species that encourage soil fertility and good melliferous potential).

Long-term environmental monitoring

Throughout the project, Société du Grand Paris is committed to monitoring the steps taken to protect the environment. Specifically with regard to offsetting measures, environmental monitoring is conducted over a period of 30 years.

The findings of these **environmental surveys are sent to the relevant public departments each year** as part of the annual reports drawn up for each line.

The gross biodiversity data of the ecological surveys is also uploaded each year to the [biodiversity data platform](#), the purpose of which is to help build an inventory of the natural environment and deepen our understanding of how to better protect France's natural heritage.

The monitoring of ecological offsetting measures aims at assessing their effectiveness in relation to defined objectives. It sets out to answer the following questions: is the ecological trajectory of the offsetting site in line with the objectives? Are the targeted habitats and species actually present, in an ecosystem that helps to maintain or improve their conservation status?

Corrective or complementary measures can also be implemented to achieve the objectives set.

Half of the financing secured

In two years, Société du Grand Paris has raised €17 billion, including €16 billion under its 100% green EMTN programme, thereby securing 50% of the financing required for the Grand Paris Express.

Since 2018, Société du Grand Paris has carried out a total of fifteen bond issuances, seven of which in 2020. All of its bonds comply with the 2018 Green Bonds Principles and are certified by the Climate Bond Initiative.

For Société du Grand Paris, 2020 marked a milestone in the Grand Paris Express' financing with the ramp-up of its bond issues. The trajectory thus remains clear: **secure financing** for the project in a context of historically low interest rates and **fully participate in the green recovery of the French economy**.

In 2020, Société du Grand Paris consolidated its green finance model for the Grand Paris Express by expanding its Green Euro Medium Term Note from €10 billion to €20 billion.

It fulfilled its commitments to exclusively use the proceeds of its fully green EMTN finance programme for the Grand Paris Express and to regularly update investors on the project's progress and environmental benefits.

Société du Grand Paris, which is rated Aa2 (Moody's)/AA(Fitch), issued seven green bonds in 2020 via five public issuances and two private placements for a total of €11 billion:

– **February 2020:** €2.5 billion issuance with a 50-year maturity (2070), the longest-ever green bond issued by an SSA issuer.

– **May 2020:** €1.5 billion increase of the May 2050 bond. The total amount outstanding was increased to €2.5 billion.







– **June 2020:** €750 million increase of the 2070 bond. The total amount outstanding was increased to €3.25 billion.

– **October 2020:** issuance of a dual tranche with maturities of 10 and 40 years for an amount of €3 billion per tranche.

– **In April and October:** issuance of two private placements for a total amount of €250 million and maturing between 32 and 49 years.

Société du Grand Paris has become a benchmark for the Green Bond market and adheres to market best practices. It complies with the 2018 Green Bonds Principles (GBP) and its bonds have earned Climate Bond Initiative (CBI) certification from Sustainalytics. Société du Grand Paris has also maintained its commitment to Finance for Tomorrow¹ and the Corporate Forum on Sustainable Finance².

Green Bonds are an integral part of its project financing policy, so Société du Grand Paris intends to continue its active role in defining rigorous standards for green finance, contributing to debates and thinking in this area, and overtime forging a position as a benchmark in the transportation industry and regional planning and in terms of its impact on urban development.

		
		
<p>2020 Green Bond of the year, supranational, sub-sovereign and agency (SSA) by Environmental Finance SGP EUR 1bn 1.70% 30 years</p>	<p>2020 Largest Certified Climate Bond & Largest Subnational Green Bond by Climate Bonds Initiative</p>	<p>2020 Euro rising star Issuer by MTN-i</p>

1. Finance for Tomorrow is an initiative set up by Paris financial market players to promote sustainable finance in France and around the world. It helps redirect financial flows towards and inclusive, low-carbon economy in line with the Paris Agreement and the UN SDGs (Sustainable Development Goals).

2. One year on from the Paris Green Bond Pledge, which was one of the key achievements of the 2017 Climate Finance Day, Ørsted, RATP, SNCF Réseau, Société du Grand Paris, SSE, Tennet, Terna, Tideway and Vasakronan) came together to form the Corporate Forum on Sustainable Finance, also known as "the Forum".

The Forum aims to create a permanent network to encourage businesses to share their opinions and ideas. It brings together green bond issuers, who are committed to advocate and grow the market for sustainable finance, helping to effectively combat climate change and promote a sustainable and responsible society.

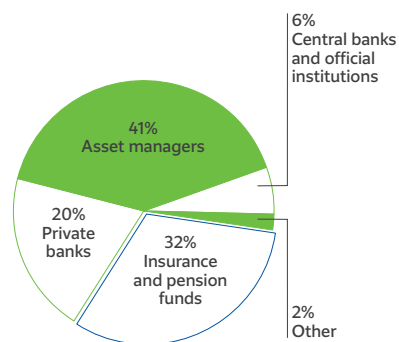
These transactions have helped finance eligible projects that meet the criteria set out in the framework. All the bonds issued by Société du Grand Paris qualified as Green Bonds.

Transactions in 2020

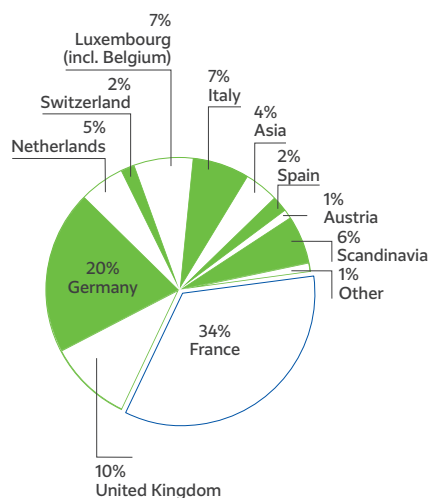
Transaction summary							
Issuer	Société du Grand Paris						
Rating	Aa2(Moody's) / AA(Fitch)						
Date	18 Feb. 2020	8 April 2020	7 May 2020	29 June 2020	15 Oct. 2020	15 Oct. 2020	29 Oct. 2020
Maturity date	18 Feb. 2070	8 April 2069	25 May 2050	18 Feb. 2070	25 Nov. 2030	15 Oct. 2060	29 Oct. 2052
Amount	2,500	50	1,500	750	3,000	3,000	200
Coupon	1%	1.149%	1.70%	1%	0%	0.70%	0.5755%
Issue spread	OAT+30 bp		OAT+35 bp	OAT+29 bp	OAT+22 bp	OAT+25 bp	

Type of investors and geographical distribution for all bond issuances.

Investors by type



Geographical distribution



Approximately 410 investors

Investments directed solely to the project

A major transport infrastructure project like the Grand Paris Express will have an impact on both the environment and the economy and must be built on solid management principles.

The bonds issued by Société du Grand Paris as part of its 100% green EMTN programme require it to demonstrate the environmental impact of the Grand Paris Express, in addition to providing a report to investors on how funds are allocated to the completion of the new metro lines.

Principles of the programme

High-quality transport and major infrastructure drive economic growth. A major transport infrastructure project such as the Grand Paris Express doesn't just transform mobility, it also changes urban development and the structure of the city itself.

In fact, the Grand Paris Act on major transport infrastructure explicitly addresses the economic impact of the Grand Paris Express. By virtue of its population and business activities, the Île-de-France region is already the leading contributor to French GDP. The Grand Paris Express will further boost its growth.

Société du Grand Paris' programme is also aligned with the Green Bond Principles developed by ICMA¹ in 2018:

– The Société du Grand Paris Green Bonds Framework is also fully in line with the work that the European Commission has been carrying out since 2018 with the TEG (Technical Expert Group) and the latest developments on the EU Green Bonds Standard that the European Union plans to implement. As such, the framework is eligible for the Taxonomy proposed by the TEG² and adopted by the European Union, as well as the DNSH³ (Do no significant harm) criteria. In March 2021, an update to the Société du Grand Paris framework was initiated. The different versions of the Green Bond Framework are available on the Société du Grand Paris website.

– The first Second-Party Opinion, issued by Sustainalytics in 2018, affirmed this alignment with the GBPs. The latest version of the framework gave rise to an updated Second-Party Opinion, issued by Sustainalytics in 2021. The different versions of these Second-Party Opinions are available on the Société du Grand Paris website.

Société du Grand Paris has complied with the principles established by the Climate Bond Initiative (CBI) as well as those in the Low Carbon Transport Eligibility Criteria appendix (V1.0)⁴. Sustainalytics is in charge of guaranteeing alignment with the GBPs on behalf of the CBI. The 2020 version of the certification issued by Sustainalytics is available on the Société du Grand Paris website.

The 2020 version of the Green Bonds Framework is available on the Société du Grand Paris website, together with all the financial publications.



PROJECTS RECEIVING INVESTMENT

The Green EMTN programme is dedicated exclusively to financing the Grand Paris Express.

The net proceeds of the green bond issues are **allocated to investments made by Société du Grand Paris as part of the Grand Paris Express project**, defined as the “eligible assets”. These assets include all investments made in the current year and/or over the two years prior to the issue date.

All infrastructure and project management investments for the new Grand Paris Express automated metro lines are eligible:

– the construction of new lines and extensions: around 200 km of new automated metro lines in addition to the existing 200 km in Île-de-France;

– the construction and development of 68 new stations and six operating centres.

1. ICMA: International Capital Market Association.

2. https://ec.europa.eu/info/publications/sustainable-finance-technical-expert-group_en.

3. DNSH: does no specific harm to the environment

4. The Low Carbon Transportation appendix is available on the Climate Bond Initiative website.

DETAILS OF ELIGIBLE ASSETS

LINE 15 WEST

11 stations, including 10 connected to the RER, metro, or tram system

20 km of automated metro lines

14 municipalities served across 2 departments

600,000 passenger trips per day forecasted

LINE 15 SOUTH

16 stations, all connected to the RER, metro, or tram system

33 km of automated metro lines

22 municipalities served across 4 departments

300,000 passenger trips per day forecasted

LINE 15 EAST

12 stations, all connected to the RER, metro, or tram system

23 km of underground lines

13 municipalities served across 2 departments

300,000 passenger trips per day forecasted

675,000 local residents served

BY 2030, LINE 15 WILL CIRCLE PARIS, COVERING 75 KM OF RAILWAY.

LINE 18

10 stations, including 3 connected to the RER, metro, or tram system

35 km of automated metro lines including 14 km of aerial lines

13 municipalities served across 3 departments

150,000 passenger trips per day forecasted

LINE 14 SOUTH

7 stations, including 5 connected to the RER, metro, or tram system

14 km of automated metro lines

13 municipalities served across 3 departments

300,000 passenger trips per day forecasted

LINE 17

9 stations, including 5 connected to the RER, metro, or tram system

27 km of automated metro lines, including 5.5 km of aerial lines

13 municipalities served across 3 departments

130,000 to 160,000 passenger trips per day forecasted during trade shows

40 to 50 million passenger trips forecasted annually

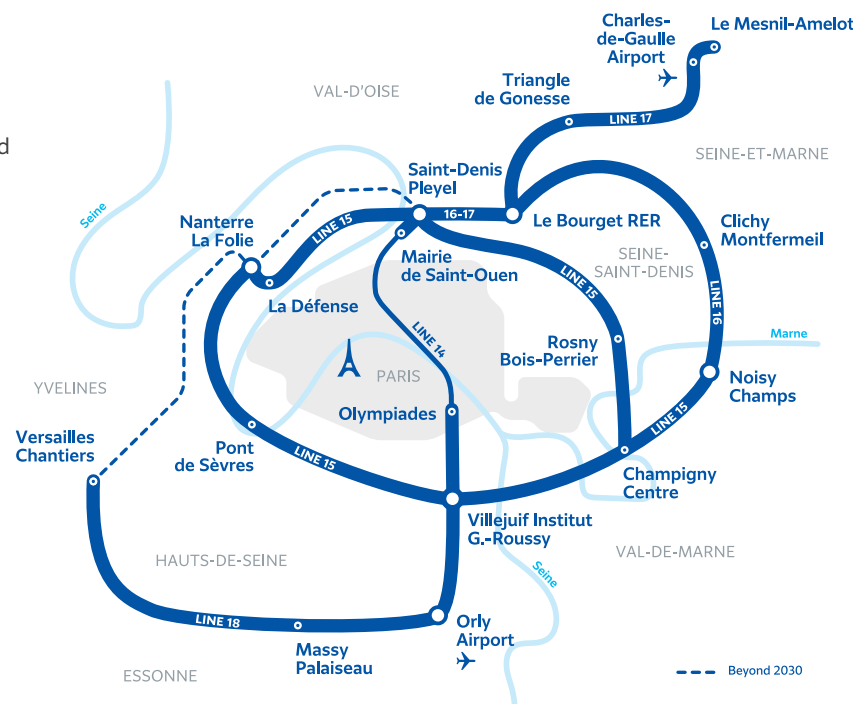
LINE 16

10 stations, including 8 connected to the RER, metro, or tram system

29 km of automated metro lines

16 municipalities served across 3 departments

200,000 passenger trips per day forecasted



2020 allocation

The table below presents the allocation of Green Bonds issued in 2020 by eligible investment with regard to the 2018 framework.

- The **“Green Bonds scope”** corresponds to the realised investment amounts made by Société du Grand Paris in each category.
- The **“Green Bonds allocation”** corresponds to the allocation of net proceeds of the 2020 Green Bond issuances by category.

The amounts raised in 2020 exceeded expenses made in relation to eligible assets. Amounts yet to be allocated will be allocated in the following year, in 2021 and subsequently. In 2020, **the unallocated amounts totalled €8,853 million**. This is the result of the sum of amounts issued in 2020 and those of 2019 pending allocation, and asset allocations in 2020.

100% of investments and expenditure were made in France, specifically in the Île-de-France region.

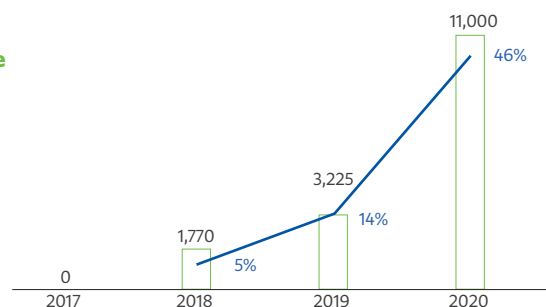
100% of the funds raised in 2020 are or will be allocated to finance eligible assets. This exclusively represents financing (no refinancing whatsoever). As a reminder, €425 million issued in 2019 is yet to be allocated and will be allocated as a priority in 2020.

In EUR millions	Asset scope	2020 allocation
	Pont de Sèvres / Noisy - Champs (Line 15 South)	1,048
	Noisy - Champs / Le Bourget RER / Saint-Denis Pleyel / Mairie de Saint-Ouen (lines 14 North, 16 and 17)	680
	Le Bourget / Le Mesnil-Amelot (Line 17 North)	108
	Pont de Sèvres / Saint-Denis Pleyel (Line 15 West)	31
	Orly / Versailles (Line 18)	171
	Saint-Denis Pleyel / Champigny (Line 15 East)	85
	Olympiade / Orly (Line 14 South)	449
	Total	2,572

Evolution of Société du Grand Paris' annual issuance programme and share of project financed

(In EUR millions)

□ Annual debt issued
— Percentage of debt issued in relation to the total debt ceiling (35 billion)



Fund management policy

Société du Grand Paris, which is subject to the French rules on public sector budget and accounts management (GBCP), can only temporarily invest the value in euros of the proceeds from its Green Bond issues in the Treasury account before funds are allocated entirely. As of 31 December 2020, the cash balance in the Treasury account was €9,607 million (including the 2020 unallocated amount, i.e. €8,853 million).

Grant Thornton assurance report

The allocation of funds to eligible projects is certified by the Statutory Auditor, Grant Thornton.

AN EXTRACT OF THE GRANT THORNTON ASSURANCE REPORT APPEARS BELOW. THE FULL REPORT IS AVAILABLE ON THE SOCIÉTÉ DU GRAND PARIS WEBSITE

Statutory auditor's responsibility

Our responsibility is to provide a reasoned opinion on the basis of our work presenting a conclusion of moderate assurance on:

- whether the projects included in the report comply, in all material aspects, with the eligibility criteria set out by the Company in the framework;
- the correct allocation of the proceeds of the Green Bond issues and the amounts allocated to each project;
- whether the temporary investment of the proceeds of the Green Bond issues is compliant;
- whether the techniques applied by Société du Grand Paris to determine the performance indicators “number of small and mid-sized businesses and microenterprises involved in building the Grand Paris Express”, “proportion of Société du Grand Paris propositions accepted by local communities”, and “number of hours of work earmarked for marginalised jobseekers” comply with the methodology laid out in the manual.

Conclusion

Based on the work performed, nothing material has come to our attention that would lead us to believe that the Information* published in the “2020 Green Bond Report” is not presented fairly and in accordance with the Guidelines.

*The Information

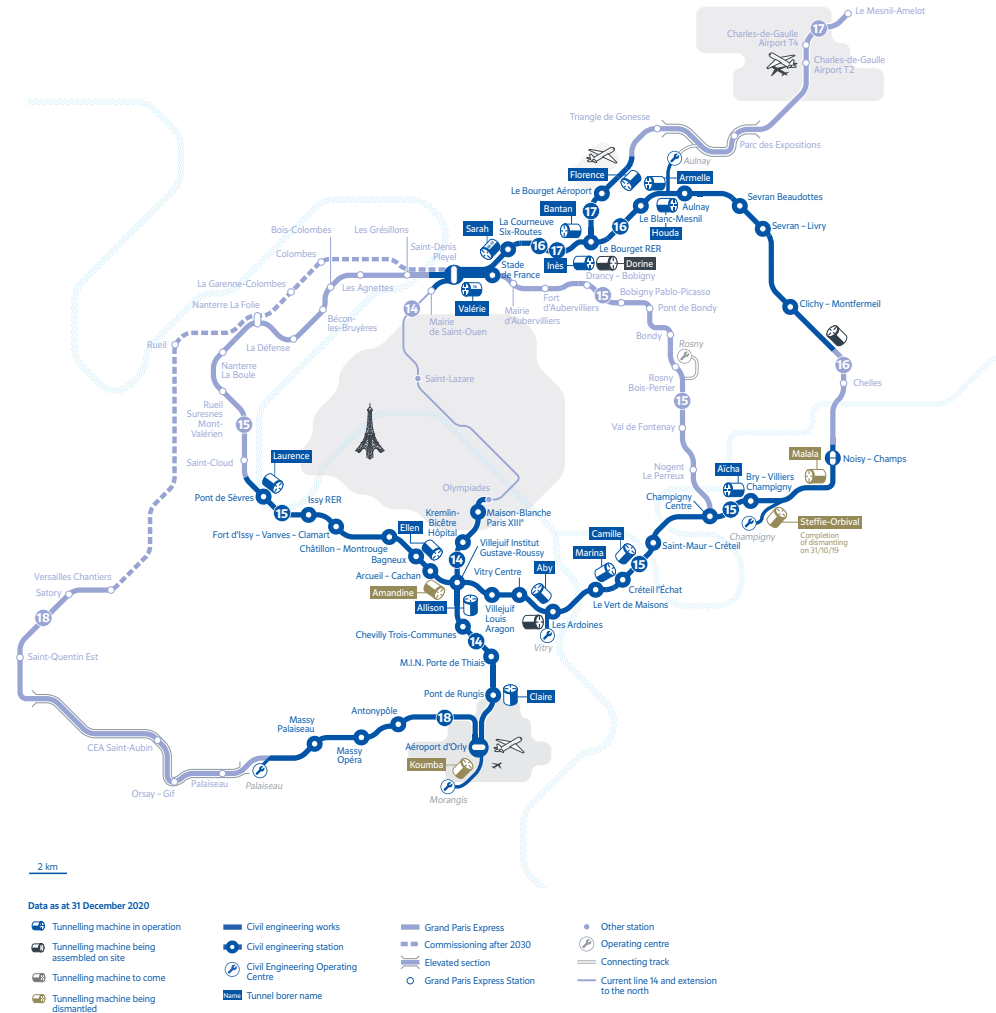
– The list of eligible assets (pages 30-31) – 2020 Allocation (page 32) – The performance indicators: “number of small and mid-sized businesses and microenterprises involved in building the GPE”, “proportion of Société du Grand Paris propositions accepted by local communities” and “number of hours of work earmarked for marginalised jobseekers” (page 37).

The Grand Paris Express at the half-way mark

The project has entered the construction phase, with fast growth in the number of worksites and the arrival of the rolling stock.

2020 worksites

40 km of tunnels dug by the end of 2020



By 2030, the Grand Paris Express will transport 2-3 million passengers every day. Today, work is being completed throughout the Île-de-France region, and transformations are underway.

In 2020, which was disrupted by the health crisis and repeated construction interruptions, the underground journey of the new metro reached cruising speed. 20 tunnel boring machines are working underground, digging 40 km of the future network's route. On the southern section of line 15 between Noisy – Champs and Pont-de-Sèvres, all structures are in the construction phase, most of the station boxes have been completed and the rails are being laid, marking the start of the railway equipment. More than three quarters of Line 16, between Saint-Denis Pleyel and Noisy – Champs, is under construction. The first tunnel boring machine for line 17 is in operation, and work is underway on line 18 between Orly airport and Palaiseau.

In December 2020, some 7,600 people were working on the construction of the Grand Paris Express. Since the work began in 2016, over 2,300 people have been offered placement contracts and 2,176,760 placement hours have been clocked.

The urban changes brought about by the arrival of the underground are also being addressed. Société du Grand Paris is leveraging the land acquired for the project and is involved in 10 real estate projects in partnership with local authorities and developers. Awarded to groups of developers, these projects include more than 2,150 dwellings (115,000 m²) and 30,000 m² of office and retail space around the stations.

The Grand Paris Express is becoming more of a reality for the people of the Paris area. More than 1,000 visitors got a glimpse at the project at the *Fabrique du métro* by boarding a full-scale train, a model that will run on lines 15, 16 and 17. The prototype will leave Alstom's Valenciennes factories in 2021 for initial testing.

Impact and performance indicators

Performance indicator		Impact Indicator	
Contracts notified at end-2020	For a total of €2.6 bn	Ex-ante estimate of greenhouse gas reductions (tonnes CO ₂ equivalent/year)	28 to 51 million tonnes by 2070
Companies involved in the worksites	At least 2,983 independent small and mid-sized businesses and microenterprises were involved in the construction of the Grand Paris Express* for a total of €1.370 bn awarded to small businesses and microenterprises	Millions of tonnes of earth excavated	15.9 million since the beginning of the project (through end December 2020) In 2020: 6,357,017 (line 15 South, line 16, line 17, line 18 and line 15 East)
Hours of work earmarked for marginalised jobseekers	2,202,244 hours*	Spoil recycling/ Waste valuation	47%: since the beginning of the project In 2020: 3,106,967 tonnes of spoil recycled In 2020: 12.5% of waste was transported by river to the final disposal site (all or part of the journey)
Real estate projects awarded	10 projects	Offsetting	Forest offsetting 0 hectares restored in 2020 24.2 hectares restored in total Ecological offsetting 0 hectares restored in 2020 17.9 hectares restored in total
External relations with local residents	89% of local residents accepted Société du Grand Paris' proposed agreement* Budget allocated €1.75 m		

* Data verified by the statutory auditor.

Overall conclusions

In 2020, a total of €2,572 million was allocated from a total debt estimated at €35 billion, which represents 7.3%.

Applying this percentage to the figures from the updated 2018 CarbOptimum® gives the following impact assessment*:

In millions of teqCO ₂	Timescale: 2070	
	Total	2020 share
Low	-27.4	-2
High	-51.3	-3.8

2070 was chosen to ensure the calculation reflects the duration of the assets of Société du Grand Paris and the maturity of its longest-term debt (expiration date).

Over the years and successive annual reports, this range will undergo additional analysis and be monitored in order to reduce the degree of uncertainty and spread.

CarbOptimum® Methodology

Société du Grand Paris has developed **CarbOptimum®**, a proprietary tool to assess the reduction in greenhouse gas emissions.

This life cycle carbon calculator takes into account five direct and indirect sources of emissions, which can be generated or prevented:

1. Studies and pre-construction works
2. Infrastructure construction
3. Infrastructure operations
4. Impact on mobility in the Paris region
5. Impact on regional development

CarbOptimum® uses a transparent methodology similar to those used by the Greenhouse Gas Protocol and the Bilan Carbone®, which are recommended by ADEME, the French environmental and energy agency.

* Excluding refinancing.

TO LEARN + MORE

All the documentation on this Green Bonds programme (Green Bonds Framework, Second-Party Opinion, Climate Bond Initiative Certification , Green Bonds Investor Presentation, etc.) is available on the Société du Grand Paris website on the “*Finance Durable*” (sustainable finance) page.

<https://www.societedugrandparis.fr/sgp/investors>

[Framework](#)

[Second-Party Opinion](#)

[CBI](#)

[Grant Thornton Assurance Report](#)

[Société du Grand Paris 2020 Activity Report](#)

[56th report of the National Transport Accounts Commission \(in French\)](#)

[Sign up to the financial newsletter](#)

The 2020 version of the Green Bonds Framework is available on the Société du Grand Paris website, together with all the financial publications.



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