

Société

du

**2018
Activity
report**

Grand

Paris

Comments by the Supervisory Board **on the 2018 Société du Grand Paris Activity Report**

In 2018, the Grand Paris Express entered the construction phase. With more than 100 worksites now simultaneously operating in the Île-de-France region, several tunnel boring machines at work on Line 15 South and initial civil engineering works under way on Lines 16 and 14 south of Paris, the scale and momentum of the Paris-area project are now clearly visible.

Funding for the Grand Paris Express project was secured through an initial green bond issue in 2018. The project meets the green bond criteria because the new metro system will bring about a significant modal shift, particularly in inter-suburban travel, and will speed up urban densification around its 68 future stations. This funding method also fits with the sustainable development approach taken by Société du Grand Paris from the outset of the works phase, with a major emphasis on local employment.

This is the first time that a 100% green bond issuer has raised money in the international markets. With more than 150 investors worldwide, the €1.75 deal was twice oversubscribed. The Supervisory Board is delighted with the success of this bond issue, which shows the international appeal of the Grand Paris Express.

Société du Grand Paris, a public agency, changed its organisational structure in 2018. Following Supervisory Board approval in April 2018, Thierry Dallard was appointed Chairman of its Management Board. After the 2019 Finance Law raised its employment cap, Société du Grand Paris is changing its organisation and structure. It has already begun hiring to expand in a manner commensurate with the network to be built. The eagerly awaited new employees – 200 in 2019 – will consolidate management of the outsized project and further facilitate the collaborative approach taken by Société du Grand Paris with all its partners. The Supervisory Board welcomes this increase in programme management staff, which it had strongly and regularly called for.

Patrick Braouezec,

Chairman of Société du Grand Paris Supervisory Board

*Chairman of the Etablissement Public Territorial Plaine Commune**

* Public territorial establishment



**"Sincerity
is the key to
a relationship
based on trust."**

Thierry Dallard, Chairman of the Management Committee of Société du Grand Paris

With 100 worksites already under way along the Grand Paris Express project and rolling stock already selected for Lines 15, 16 and 17, the new metro is making steady headway. What approach is Société du Grand Paris taking as it moves into these new stages?

The role of programme management is to keep its focus on the ultimate purpose of what we are building. Never before has such a project been undertaken on this scale in Europe. We are going to double the length of the metro in the Paris Region and permanently connect towns currently suffering from a lack of mobility, lower-income eastern parts of the region and other areas, such as the Saclay Plateau, where 300 laboratories already employ more than 15,000 research workers. We are at the centre of this revolution and we are very aware of the goals and of our responsibilities. We are also keenly aware of the obstacles, risks and uncertainties that are a natural part of this project. Our tunnel boring machines are moving through a densely populated metropolitan area and working in sub-soil that is complex for underground works. We have carried out a large number of geotechnical surveys that far exceed the requirements of current standards. And in spite of all this, we have and will have surprises. They can cause us to change a construction method or go back to the drawing board when the risks are too great. Safety is my primary concern. It must guide all our choices and underpin all our decisions.

Did you change Société du Grand Paris organisational structure in order to control all stages of the project?

The change meets the need for a clear-cut, strong organisational structure that can adapt to the different phases of the project. It is a strong reflection of Société du Grand Paris business model. The new structure is also designed to accommodate the increase in our staffing level, which is set to triple over the next two years.

Is the optimisation plan you presented also part of your drive to control all aspects of the project? What is the thinking behind it, and can you give practical examples to illustrate?

Controlling the costs of a project like this one does not mean building a metro on the cheap. On the contrary, it means making it possible to build the entire Grand Paris Express project. In January 2018, Société du Grand Paris began an in-depth review of the entire project and identified 1,200 ways to generate savings. Nearly 500 were ruled out because they appeared to be at variance with the roadmap and with the nature of the Grand Paris Express programme and its foundations. The remaining 700 will be further scrutinised, studied and audited as the project proceeds. Some of the potential savings are purely technical optimisation. For example, the new line opening timeline will enable us to re-use a number of tunnel boring machines. Similarly, we can revise the plans for some of the stations without affecting their features. The Massy-Palaiseau station is a case in point. In conjunction with the city and with Île-de-France Mobilités, we worked with the architect to re-design it. Ultimately, everyone welcomed the new design. The station's new building envelope will save €5 million, which is one-third of the estimated cost of construction, while maintaining the quality of the passenger areas.

Is the design-build method selected for Lines 15 East and 15 West also part of this effort to control the project?

Yes. Given the very great complexity of some stations, such as La Défense on Line 15 West and Mairie d'Aubervilliers on Line 15 East, the move to design-build was the best way to ensure cost and schedule reliability while maintaining the expected level of performance and the architectural aspirations of the stations.

In this connection, how do you build trust in your relations with local authorities and elected officials?

By being sincere and transparent. By this I mean explaining things, being truthful about the progress we are making and any difficulties we encounter. We share this information with elected officials because I know that a lot of their projects are geared to the opening of the metro line.

This duty to be sincere underpins a relationship based on trust. It also applies in our relations with businesses - those we are already working with and those bidding on our future calls for tender. They all need to grasp the issues, the reality and the obstacles to

"Safety
is my primary
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It must guide
all our choices."

05

be contended with. Similarly, sincerity is a key issue for investors, who are watching us and who would lose faith in us if we were to offer illusions. For that reason, I also set great store by Société du Grand Paris commitment to green financing. It reflects the metro's ecological and social dimensions and heralds the economic, social and cultural transformations it will bring. But this commitment also means more assessments, more outside audits. This scrutiny spurs us to do our very best, now and in future.

And to innovate, without let-up. Société du Grand Paris, fully and exclusively dedicated to the new metro, is in constant motion as part of this megaproject that will profoundly and permanently transform the region. It is fully aware of the importance of what is being created here: day-to-day mobility for millions of people living in the Île-de-France, a new model for the city, the appeal of a metropolitan area and the prestige of Greater Paris.



A changing company

11 An organisational structure geared to the project



The metro of the future takes shape

24 Over 100 worksites up and running in 2018
32 Key public procurement contracts
38 A 100% green bond programme
44 The Fabrique du Métro, a showcase and laboratory
50 The city of the future





25

54

Responsible management

56	Sustainability at the heart of the project
58	Our contributions today and tomorrow
60	An ecological metro
64	Fostering regional appeal and employment
68	Generating urban and social development
70	A shared ambition in culture and the arts
72	Innovation serving the project
74	A digital highway
75	Exemplary worksite management
78	An uninterrupted dialogue
80	Sound governance
82	Financial data

49







A changing company

An organisational structure geared to the project

11

For Société du Grand Paris, the Grand Paris Express is more than a transport network. This project will help drive the evolution of the Paris Region. In 2018, under the impetus of its new Chairman, Société du Grand Paris embarked on an in-depth reorganisation. The purpose of the new organisational structure, finalised in 2019, is to enable Société du Grand Paris, in partnership with its stakeholders, to tackle the many issues it faces.

—Until now, the organisational structure of Société du Grand Paris was focused on rapidly moving into the construction phase. Further phases await the project between now and the first line openings. Société du Grand Paris, held back so far by a staff shortages, has now been authorised to recruit 200 people in 2019. These reinforcements are needed so enable it to build a robust management structure that can meet the technical and urban objectives of the future network. Feedback from the first eight years has shown the need to better manage the many interfaces with the project stakeholders.

—It is therefore vital for Société du Grand Paris to:

- tighten its organisational structure and make it more responsive;
- reinforce overall project management by setting up a dedicated structure to define methods and processes, oversee compliance with guidelines and tools and organise the reporting system;
- ensure consistency of the transport system and prepare the operational and maintenance phases;
- give project departments the resources they need to meet their objectives;
- reinforce the fit between the project and its existing and planned environment via the stations and neighbourhoods it is helping to structure.

A new organisational structure based on eight new departments headed by members of the Executive Committee and supported by the Management Board of the public agency.

A STRENGTHENED EXECUTIVE COMMITTEE

—Société du Grand Paris changed its organisational structure in early 2019 to meet these goals and be able to achieve its missions under the best possible conditions. Eight new departments have been set up. They are headed by members of the Executive Committee and supported by the Management Board, made up of its Chairman, Thierry Dallard, and members Frédéric Brédillot and Bernard Cathelain.

—The eight departments are the following:

Management, Methods and Tools, which coordinates and monitors the programme, oversees compliance with the technical guidelines and manages the configuration of the overall system.

Its objectives are as follows:

- set up and manage a reporting system covering all Société du Grand Paris activities;
- design the public agency's processes;
- coordinate programme management of information systems ;
- oversee document management and roll out BIM;
- coordinate relations with concessionaires and managers of utility lines, with project departments handling re-routing directly.

Lines, which coordinates all Grand Paris Express project departments, handles land acquisition and manages interfaces.

Transport Systems and Operation, which ensures consistency of transport systems and their implementation.

Its objectives are to:

- specify and build transport systems in compliance with the timelines, costs, expected performance and passenger safety requirements;
- prepare the opening of the lines and their transfer to the operation/maintenance company;
- manage relations with Île-de-France Mobilités, RATP GI and the transport managers and operators.

Finance, which oversees the Société du Grand Paris budget, management control, and financing.

Purchasing, which coordinates all purchasing for the public agency and ensures compliance with regulations governing public procurement and contract management.

Stations and Urban Affairs, which defines and implements the project's goals with respect to passenger services to be provided. In conjunction with local authorities, it handles all issues relating to station design, public spaces and urban projects and ensures their quality.

External Relations, which liaises with local entities (local residents, authorities, and stakeholders), coordinates institutional communications and relations with national office holders, handles employment and local job integration issues, the "Youth" action plan and the Fabrique du Métro.

Resources, which provides the entire production system with the full range of non-financial resources required for its operation and the achievement of its objectives.

In 2018, Société du Grand Paris undertook a collaborative review of the values that guide its team. There are three: Standards, Responsibility, Collaboration.

Standards

to ensure the quality of operations.

Economic,

ecological and social responsibility to fulfil its public interest mission.

Collaboration

to ensure close working relationships with partners and all local and regional stakeholders.

EXECUTIVE COMMITTEE



1. Sophie Schmitt
Stations and Urban Affairs

2. Serge Dupont
Contracts and contract
management

3. Thierry Dallard
Chairman of the
Management Board

4. Vincent Gaillard
Finance

5. Ève Laroudie
Resources

6. Christophe Villard
Transport system
and operation



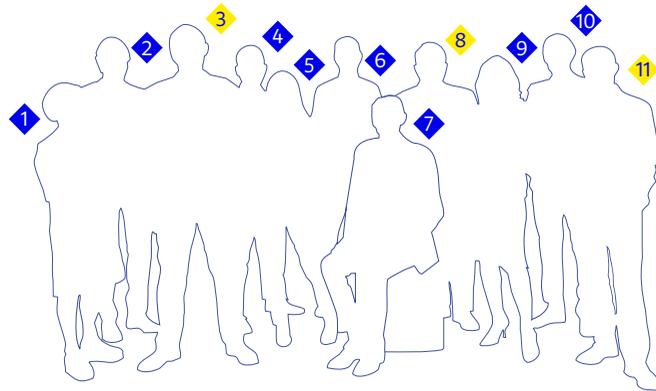
7. Alexis de Pommerol
Lines

8. Frédéric Brédillot
Member of the
Management Board

9. Sandrine Gourlet
External Relations

10. Gérard Chérel
Coordination, methods
and tools

11. Bernard Cathelain
Member of the
Management Board



1. Sophie Schmitt

Stations and Urban Affairs

An engineering graduate of the École Spéciale des Travaux Publics et du Bâtiment de Paris, Sophie Schmitt is a specialist in urban planning and major property projects. She oversees the design of stations, public spaces and urban projects and ensures their quality and integration into the areas where they are built.

2. Serge Dupont

Contracts and contract management

An electrical engineering graduate of the Hautes Études Industrielles de Lille, Serge Dupont brings to the project his management and organisational expertise and his experience in coordinating transformational projects, purchasing, procurement and contract law and contract management.

3. Thierry Dallard

Chairman of the Management Board

Thierry Dallard, who was named Chairman of the Management Board on 30 May 2018, is a graduate of the Ecole Normale Supérieure and the Ecole Nationale des Ponts et Chaussées. He also holds a doctorate in fluid mechanics. He began his career as a consultant on high-speed rail projects, moved to the Ministry of Transport and then joined the Société des Autoroutes du Sud de la France (ASF), the French highways department and Meridiam, an investment fund specialising in the development and private-sector financing of public infrastructure.

4. Vincent Gaillard

Finance

Vincent Gaillard holds an MBA from the Neeley School of Business and is an alumnus of the Burgundy School of Business. He coordinates the budget and management control department, the contractual and

financial management unit and the specialised financing unit.

5. Ève Laroudie

Resources

A graduate of the Institut Supérieur du Commerce, Ève Laroudie holds an Executive MBA from HEC. Her mission is to coordinate the activities of the entities making up her department: human resources, information systems, working environment and property and the internal communications and change management unit.

6. Christophe Villard

Transport system and operation

A graduate of the Supélec engineering school, Christophe Villard spent most of his career in the industry and public works sectors. He coordinates six projects and systems units: trades, commissioning and safety, operation and maintenance centres, relations with Île-de-France Mobilités, RATP-GI and transport operators, and digital systems.

7. Alexis de Pommerol

Lines

A graduate of the École Polytechnique and the École Nationale des Ponts et Chaussées, Alexis de Pommerol is a specialist in major rail infrastructure projects. He coordinates the project departments for Lines 15 South, 15 West, 15 East, 16, 17 and 18 and the land management unit.

8. Frédéric Brédillot

Member of the Management Board

Named a member of the Management Board on 20 April 2017, Frédéric Brédillot is a graduate of the Institut d'Études Politiques de Paris and the École des Hautes Études en Sciences Sociales (EHESS). He began his career as an adviser to the the Assemblée Nationale departments. He then served

as a special adviser on tax issues to Deputy Budget Ministers Jérôme Cahuzac and Bernard Cazeneuve, and subsequently as tax adviser to Prime Minister Manuel Valls and head of the economics unit in the office of Prime Minister Bernard Cazeneuve.

9. Sandrine Gourlet

External Relations

Chief engineer for bridges, water and forests, Sandrine Gourlet is a political science and public economics graduate. She is in charge of the regional relations and communications departments, the local residents unit, the employment and local work integration unit, the youth mission and the Fabrique du Metro.

10. Gérard Chérel

Coordination, methods and tools

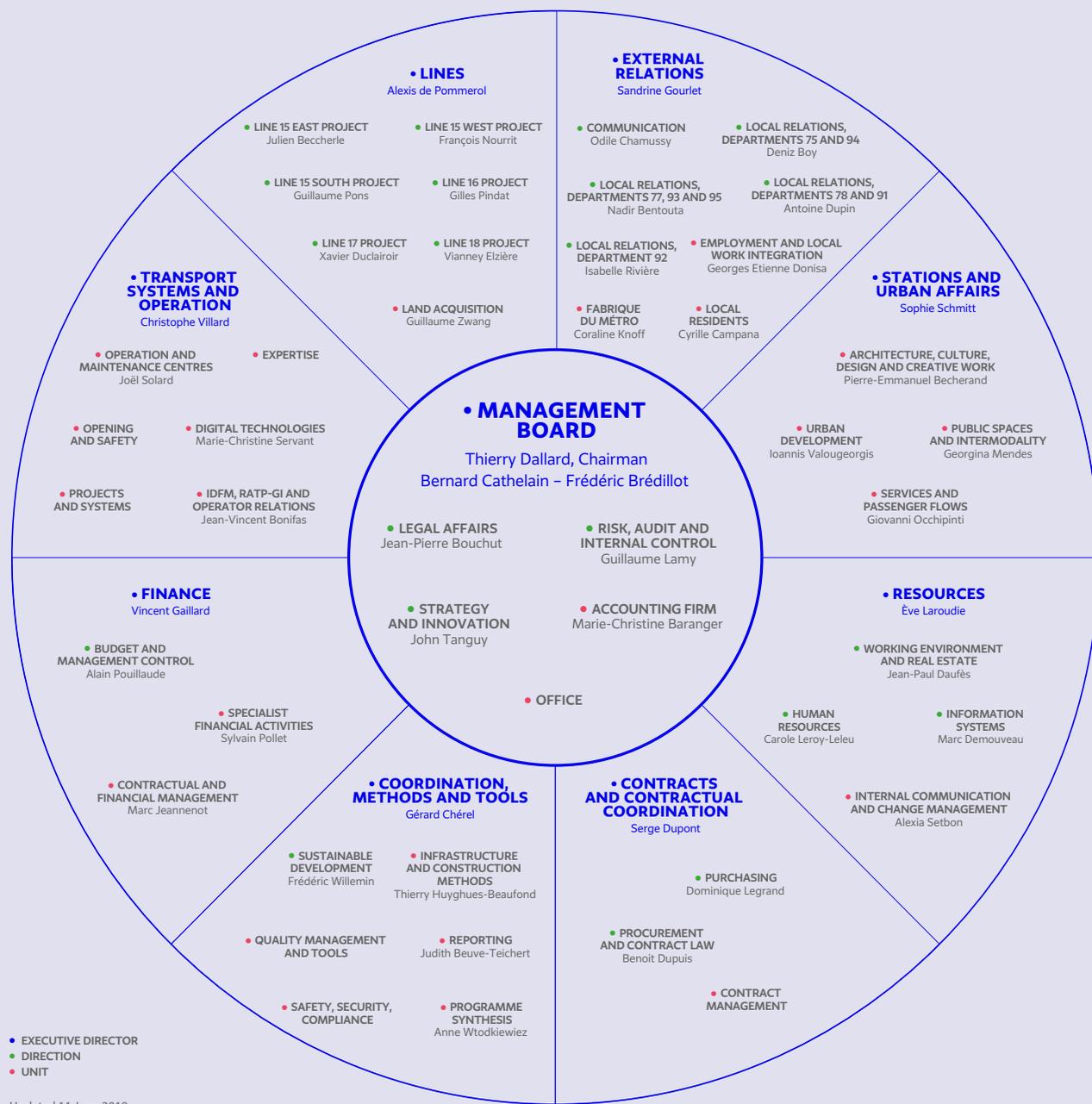
A engineering graduate of the École Nationale des Ponts et Chaussées, Gérard Chérel has substantial experience in major urban transport infrastructure projects. He is in charge of coordinating the work of the sustainable development department, the reporting, quality management units, programme synthesis, infrastructure, construction methods, safety, security and compliance.

11. Bernard Cathelain

Member of the Management Board

Named as a member of the Management Board on 25 March 2015, Bernard Cathelain is a graduate of the École Polytechnique and the École Nationale des Ponts et Chaussées. He is a specialist in the coordination and supervision of major complex development projects with strong technology focus. He was Deputy Managing Director for Development at Aéroports de Paris, and in parallel, for a period of two years, he chaired the board of directors of Hub One, a subsidiary of Aéroports de Paris providing telecoms operation and expertise in traceability and mobility.

Organisational chart





**Bernard Cathelain,
Member of the
Management Board of
Société du Grand Paris**

18

"The post-COP 21 metro"

With more than 100 worksites now operating, the Grand Paris Express has scaled up. Is it meeting its commitments?

2018 was indeed a major milestone in the history of the Grand Paris Express, with large-scale underground works on Line 15 South and the start of civil engineering works on Line 16. What has been begun is now clearly irreversible and this project, which was debated at great length but was also consistently confirmed and supported at the highest levels of government, has now clearly entered the construction phase. For Société du Grand Paris, this offers an opportunity to remind ourselves of its requirements. We are committed to ensuring that

all the companies working on this, including the smallest take ownership of it. As of 31 December 2018, there were 1,967 companies on our worksites, including 863 Île de France VSEs/SMEs. Our worksites have already generated 500,000 hours of work integration. The construction of the Grand Paris Express is helping to drive the regional economy. It is a growth driver and a springboard for employment, a crucial focus of attention in the areas where it is being built.

Your decision to design and build Lines 15 East and 15 West, announced in the autumn of 2018, is also a major move. Does this signal a change in the approach taken by programme management?

Quite the opposite, this decision makes perfect sense in light of what we learned on Lines 15 South and 16, where we started with a blank slate and drew up the brief, assessed the risks and set up the construction processes. Given the stage the work has reached, Société du Grand Paris is able to choose the contract form that is best suited to a line's constraints and objectives. The design-build approach involves very early involvement of a project manager and contractor, which makes it possible to optimise schedules and costs. For Lines 15 East and 15 West, where the technical complexities are especially daunting, this is the best solution.

Will this type of contract keep a dialogue going between the elected officials and Société du Grand Paris?

Whatever the type of contract, consultations with all the partners will continue, especially with locally elected officials, as well as with RATP, SNCF and Île-de-France Mobilités. On Lines 15 East and 15 West, these stakeholders are closely involved in defining the programme. The dialogue has provided input for every stage of the Grand Paris Express. It is our trademark and an integral part of our identity.

Rolling stock for Lines 15, 16 and 17 was also a focus of attention in 2018. What are its main features and how does it innovate?

Following a call for tender initiated in 2014 and a subsequent negotiated procedure, Société du Grand Paris and Île-de-France Mobilités agreed to award the contract to design and supply rolling stock for Grand Paris Express Lines 15, 16 and 17 to railway equipment manufacturer Alstom. These new high-capacity steel-wheeled metro trainsets will be able to travel at up to 110 kilometres per hour in automated, driverless mode. Each train will have six cars on Line 15 and three cars on Lines 16 and 17. The first trainsets will come off the assembly lines in 2022 and the first commercial operation will begin in the 2024 timeframe. These trainsets will give operators new-generation, high-performance equipment using state-of-the-art technologies. The travel experience will combine comfort and speed.

On these three lines the new metro will have the benefit of the latest technologies Alstom has developed to optimise energy consumption. Special attention is also being paid to noise, vibrations and atmospheric emissions. The electric braking system, which operates down to very low speed, and limits the use of brake discs, will sharply curtail brake particle emissions. In addition, braking energy will be recovered to help recharge batteries or feed power into the electricity grid. With all these innovations, the Grand Paris Express will be the high environmental performance metro – the post-COP 21 metro.



Frédéric Brédillot,
Member of the of the
Société du Grand Paris
Management Board

20

"Two people hired every day"

The 2019 Finance Law authorised 200 additional positions, virtually doubling the Société du Grand Paris staffing level. What do you make of this decision?

In February 2018, the Prime Minister stressed the need to expand the staffing level of Société du Grand Paris. The 2019 Finance Law puts that commitment into practice and meets a strong Société du Grand Paris aspiration.

This is obviously very good news because it will enable us to better manage the project and achieve the objectives set for us.

What sorts of profiles are you seeking to recruit?

A wide variety, reflecting the many aspects of the Grand Paris Express. We require a large number of specialist skills - obviously civil engineers and railway systems engineers, but also legal experts, contract managers, management controllers, purchasing specialists and land managers.

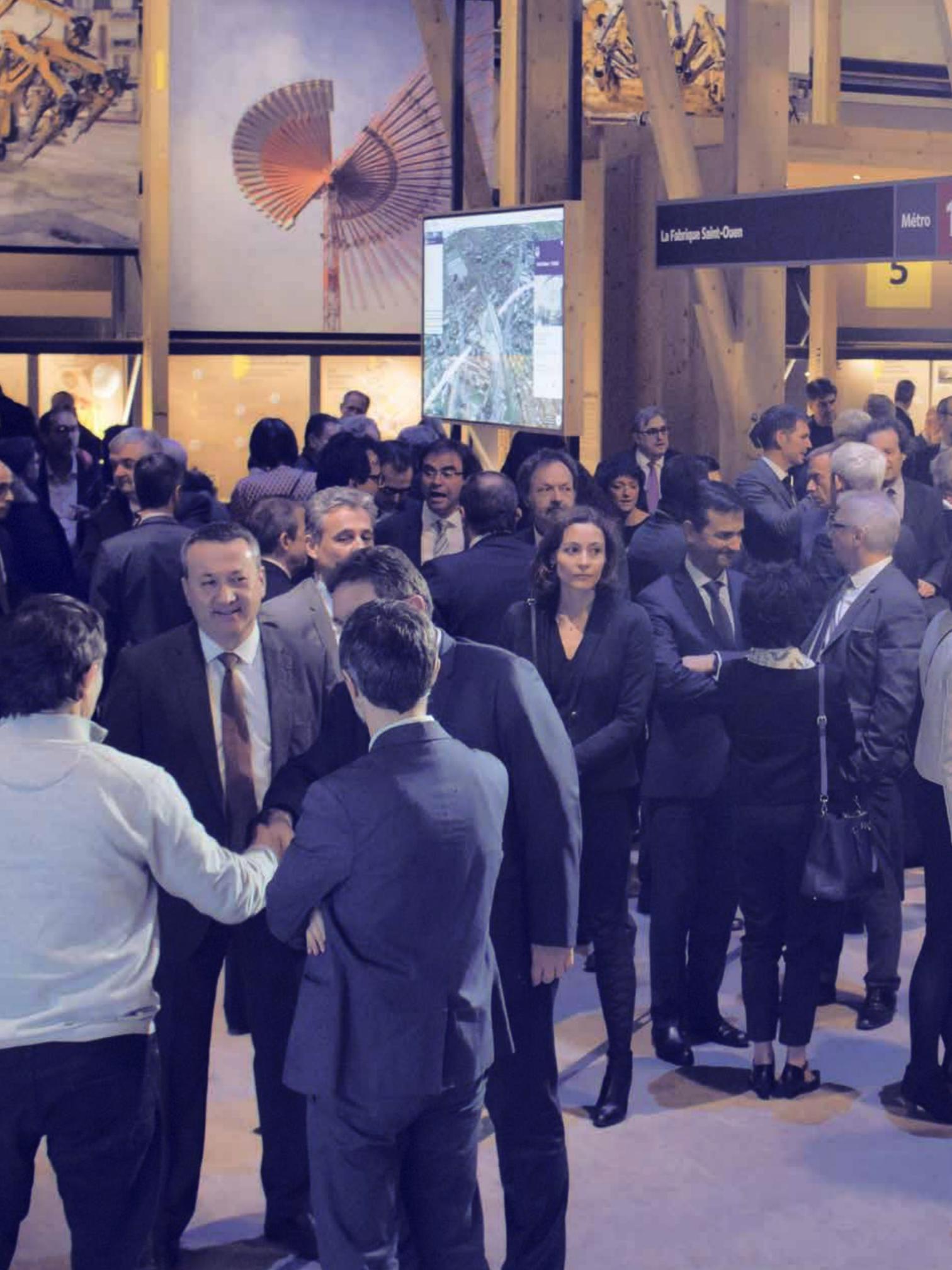
Doubling or even tripling the number of employees in a company will surely entail a number of changes...

Substantial changes, certainly. To begin with, we will need to move to new premises because our current head office will obviously not be big enough to accommodate the larger team. The removal is a project in itself. I hope it will prove to be an opportunity for us to set up a more efficient working environment that will enable us to work together better. Beyond these practical aspects, no organisation can sustain such rapid growth without revisiting its structure. We have therefore modified our organisational chart and now have eight large executive departments and four strategic departments with specific missions and features, which report directly to the Management Board.

The challenge we face is successfully navigating this transformation while continuing to manage our extraordinary project. We are working to build a ship on the high seas! There you have the history of Société du Grand Paris in a nutshell - it is probably not widely understood outside the company and it is one of the reasons I genuinely admire our teams and especially the pioneers who set out with very few resources.

2018 was also the year of Société du Grand Paris's first green bond issue. What were the transaction's key features?

Société du Grand Paris' inaugural bond issue - the largest green bond issue ever by a French agency - took place on 10 October and was a big success. It was twice oversubscribed. The success of this first bond issue confirmed our credit quality, reflecting the backing of the French state, as well as the appeal of the Greater Paris area, of which the new metro system is a key component. The fact that we met the green bond criteria also confirms the role our project - Europe's largest transport infrastructure project - will play in supporting the energy transition needed for the development of large metropolitan areas, in line with France's COP 21 commitments. Société du Grand Paris is the first 100% green bond issuer, and it is helping to establish Paris as the world's leading green finance centre. When a project is as ambitious and important as SGP's, such a strong display of investor confidence is a very positive sign and a clear endorsement of its highly committed staff.



La Fabrique Saint-Ouen

Métro

5



Tomorrow's metro takes shape

Over 100 worksites in operation in 2018

With three tunnel boring machines launched, two of which are already up and running, and the start of civil engineering works on Line 16, 2018 was an eventful year for Société du Grand Paris. All these worksites have had considerable impact on employment, work integration and the appeal of the areas concerned.

—**En In 2018 - the year when tunnel construction got under way** - there were 65 civil engineering worksites and 35 preparatory worksites on Grand Paris Express Lines 15 South and 16. This is one-third of the total number of planned project

worksites and covers 35 kilometres of line.

—**More specifically, virtually all ancillary structures along Line 15 South** are now under construction and civil engineering work is under way on most of the



< Cutting wheel of the Steffie-Orbival tunnel boring machine in Champigny-sur-Marne. The "KM5" brass band in Bagneux.
v



Line 16 stations. The first part of Line 16, which is 19 km long, was awarded to a consortium led by Eiffage Génie Civil in 2018 and will be commissioned in time for the 2024 Olympic and Paralympic Games.

—**Once the entire Grand Paris Express system has been completed**, Line 16, which will connect ten stations between Saint-Denis Pleyel and Noisy-Champs via Clichy Montfermeil, will serve 800,000 passengers daily. It will shorten travel time between La Courneuve Six-Routes and La Défense from 36 minutes at present to 17 minutes, and between Le Bourget RER and Saint-Denis Pleyel from 24 minutes to 6 minutes.

THREE TUNNEL BORING MACHINES LAUNCHED



—**Three tunnel boring machines were launched** in 2018. The first, Steffie- Orbival, started to work in April 2018. Tantamount to a "factory train", it is 100 metres long and has a diameter of 10 metres. Its cutting wheel went into action from the Champigny Plateau shaft near the site of the future Champigny-sur-Marne operations centre, and has since then been continuing its way underground towards its destination of Villiers-sur-Marne. The launch marked the symbolic start of work on the Line 15 tunnel of the new metro, which will connect Pont-de-Sèvres and Noisy-Champs.

—In August 2018, the second tunnel boring machine, Malala, also started work from the Rû de Nesle shaft in Noisy-Champs to the site of the Bry–Villiers–Champigny

Arts, cultural and festive events are held in line with the worksite schedule to bring together local community energies around the worksites.

station. In November, a third equivalent machine was installed in the Hauts-de-Seine department at the Robespierre shaft site. It is scheduled to start work in early 2019 on a 4-kilometre tunnel towards the Fort d'Issy–Vanves–Clamart station, where it is scheduled to break through in the summer of 2020. The same tunnel boring machine will then be re-used to dig the 900-metre portion of the tunnel between the Robespierre shaft and the Arcueil–Cachan station.



NEARLY 2,000 COMPANIES AT WORK ON THE PROJECT

—These worksites have had a very strong impact on all the areas concerned, and especially on the local economy. At the end of 2018, 1,336 of the 1,967 companies involved in the Grand Paris Express project were microenterprises and SMEs, including 863 head-quartered in the Greater Paris area. Over the past year, Société du Grand Paris also stepped up its work integration programme, which earmarks 5% of the labour hours required to complete the

project for the long-term unemployed. By the end of 2018, nearly 800 people had taken part in the Grand Paris Express project under work integration programmes since the start of construction. The project employs more than 4,800 people across all its worksites. In its works contracts, Société du Grand Paris also earmarked a minimum of 20% of the volume for SMEs working as joint contractors or subcontractors. These commitments are regularly tracked together with the trade associations, chambers of commerce and industry and the SME Observatory's DIRECCTE office.

—The Grand Paris Express is more than a transport network.

It is a visionary undertaking that catalyses innovation for the entire population of the Île de France. Société du Grand Paris, together with all project organisers, is therefore constantly seeking innovative solutions that can serve the Grand Paris Express. It has embarked on a collaborative innovation programme open to the ideas of all participants, including large groups, SMEs, startups, students and local residents. The new metro offers an opportunity for the region's residents and local elected officials to contribute their ideas and their innovation projects to the construction of the Paris region of the future.

1.



TESTIMONIAL

2.



I am a sort of orchestra conductor. My job is to move the tunnelling machine forward without breaking it. I punch buttons to make it go where it is supposed to. If the grease drums need changing, I notify the mechanic.

27

"We like it!"

Same thing to turn the mortar on and off. I handle all the components and maintain uninterrupted radio contact with the various people working on the TBM. I would not be able to work above ground now. It may seem strange to work in this type of environment, but we like it. It is a different world and you can't stay in it unless you are passionately interested in the work.



Guillaume Lagoute [3] and [4] operates the Steffie-Orbival tunnel boring machine, which is more than 100 metres long [2].

Its operation calls for a variety of skills and a large number of controls [1].



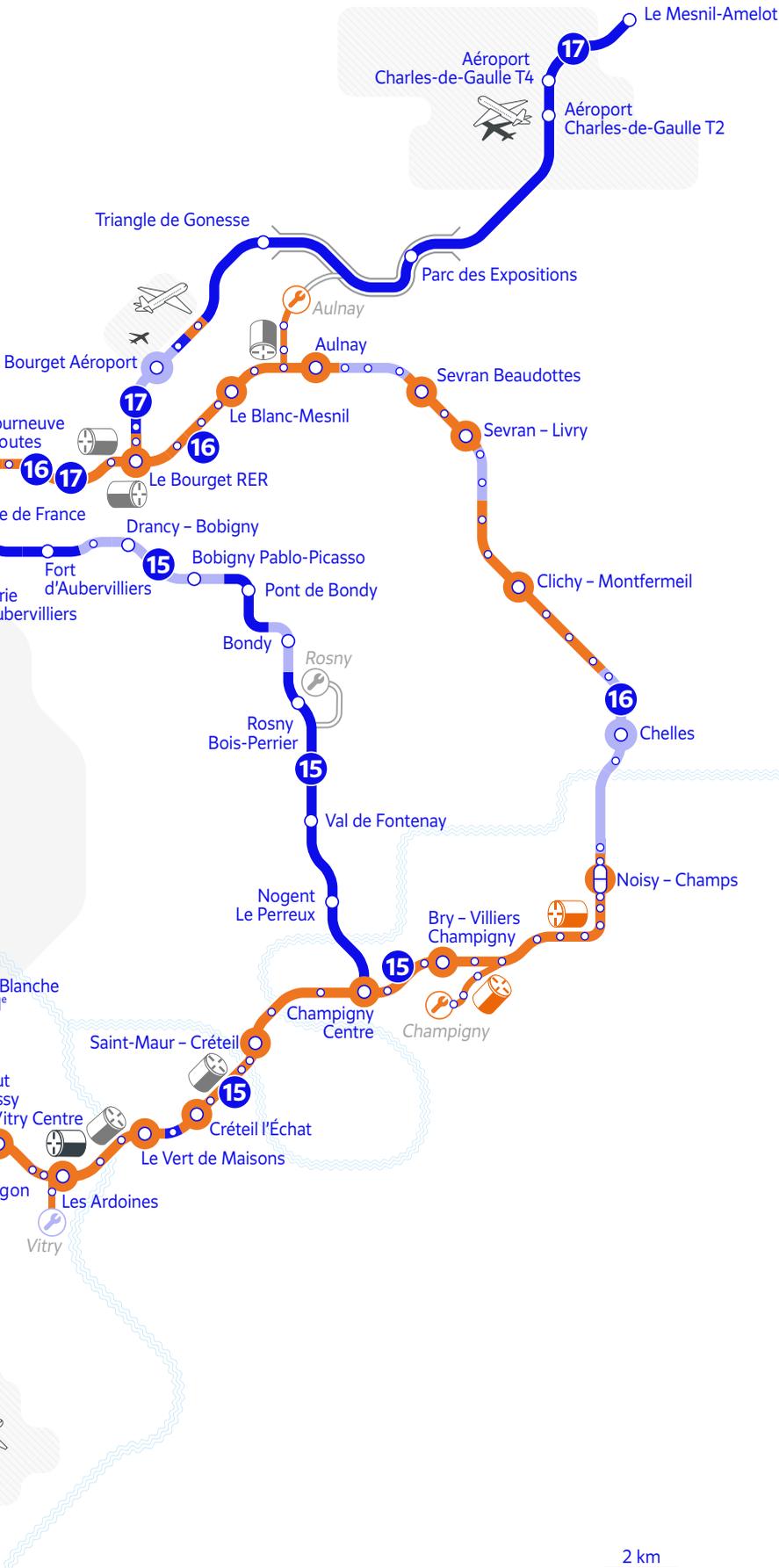
Related article: <https://www.societedugrandparis.fr/gpe/actualite/trois-professionnels-au-coeur-du-tunnelier-1804>

Guillaume Lagoute,
Steffie-Orbival tunnel boring
machine operator at Implenia

THE CONSTRUCTION SITES OF THE GRAND PARIS EXPRESS

at 31 March 2019





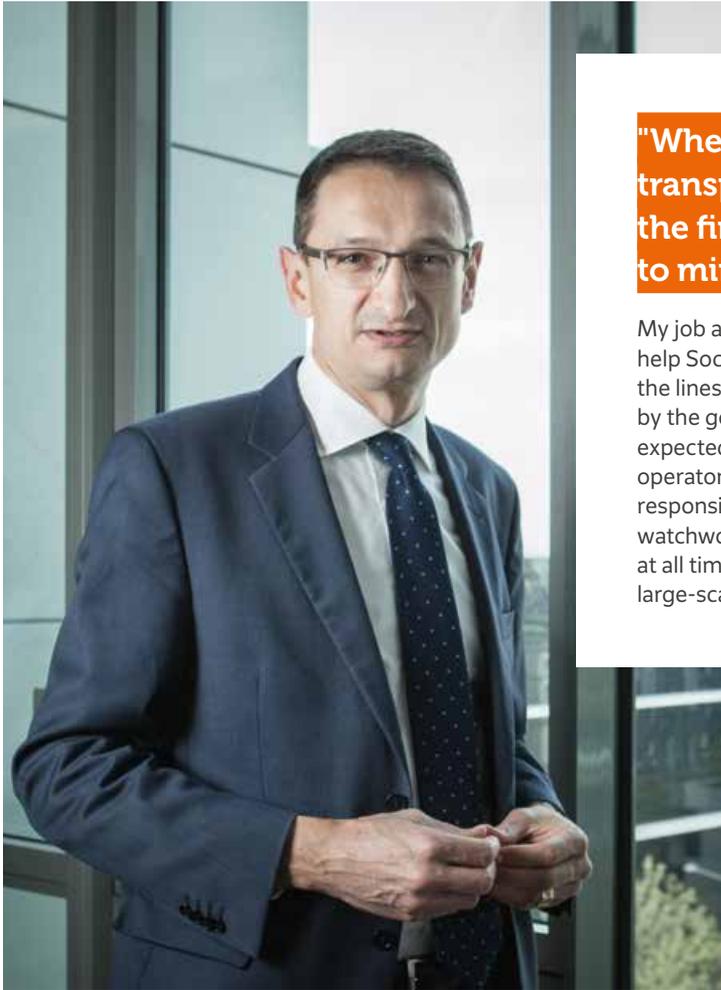
2 km

- Grand Paris Express
- Commissioned post-2030
- Overhead section
- Grand Paris Express station
- Other station
- Operations Centre
- Connecting track
- Current Line 14 and ongoing extension to the north

Data as at 31 March 2019:

- Preliminary works
- Civil engineering works
- Station in preliminary works phase
- Station in civil engineering works phase
- Operations Centre in preliminary works phase
- Operations Centre in civil engineering works phase
- Service shaft in preliminary works phase
- Service shaft in civil engineering works phase
- Tunnelling machine currently in service
- Tunnelling machine currently being assembled on-site
- Tunnelling machine scheduled for 2019

2 km



"When the new 200-kilometre transport network is mentioned, the first thing that comes to mind is the lines."

My job as head of the Lines department is to help Société du Grand Paris employees build the lines according to the roadmap set out by the government and deliver the quality expected by passengers, local authorities, operators and the companies that will be responsible for maintaining them. Our primary watchword is safety. Everyone must be vigilant at all times if we are to properly carry out this large-scale project."

Alexis de Pommerol,
Director of Lines at
Société du Grand Paris

—In February 2018, the residents of Champigny-sur-Marne were invited to watch the cutting wheel of the first tunnel boring machine being lifted and then lowered into a 20-metre shaft. This was followed by a picnic on the worksite, an exhibition and educational workshops for children as part of this "KM", the third such public event organised by Société du Grand Paris. When work got under way on Line 16 in September, another "KM" was held. This was a roving exhibition that enabled

the public to explore the worksites, learn about the new metro and have an exclusive look at the scale models of the future stations in La Courneuve, Le Bourget, Saint-Denis and Saint-Ouen-sur-Seine. A final "KM" was held in 2018 when the third tunnel boring machine was launched in November. It was held in the evening in Bagneux, where the worksite was turned into a sound and light show around the 42-metre shaft.

1. "KM" is the name given to the various public events held on the worksites as the work proceeds on the Grand Paris Express.

KEY FIGURES



Key public procurement contracts

In 2018 the award of several key contracts was stepped up, especially along Lines 15, 16 and 17. The work was carried out by all Société du Grand Paris teams dedicated to building the future network.

32

—In September 2018, the Alstom Group was selected to supply the rolling stock for Grand Paris Express Lines 15, 16 and 17. The contract, comprehensively financed by Île-de-France Mobilités, could amount to

€1.3 billion and covers development and supply of 183 trainsets. A large number of innovations will ensure high environmental performance of the new equipment, which will clearly benefit operations.



A sketch of the rolling stock for Grand Paris Express Lines 15, 16 and 17 selected by the citizens of the Greater Paris area at the end of 2018.

Based on the solutions provided by the Metropolis Alstom range, with additional input from Alstom customer feedback, the new Line 15, 16 and 17 equipment will deliver a very high level of availability, reliability and safety. The traction and auxiliary converters will also use the latest technologies to ensure optimum energy consumption.

—In February 2018, a first works contract covering Lines 14 North, 16 and 17 South was awarded to a consortium led by Eiffage. These civil engineering works, with a value of €1.84 billion, cover the common section used by Lines 16 and 17 between the Saint-Denis Pleyel and Le Blanc-Mesnil stations and its connection to the future

operations centre for Lines 16 and 17. The contract also covers the extension of Line 14 between the Mairie de Saint-Ouen and Saint-Denis Pleyel stations and the Line 15 section running through the latter.

SEVERAL OPERATIONS CENTRES ON TRACK



—At handover, the Grand Paris Express will have six operations centres spread across the network. Technicians will work from these buildings to maintain the new metro's rolling stock, infrastructure and operating systems. In 2018, major contracts were awarded for several such centres.

TESTIMONIAL

34



I joined Société du Grand Paris in 2012 to handle rolling stock. This covers the passenger trains and the infrastructure

"We are carrying out studies to define the most suitable rolling stock."

maintenance vehicles for Lines 15, 16 and 17 and for Line 18, for which we have now completed design studies and are preparing calls for tender. The train contract for Lines 15, 16 and 17, which is a bit further along, was awarded to Alstom at the end of 2018.

We carried out preliminary and basic studies to define the rolling stock best suited to the requirements. We are now piloting the realization of our future trains.

Benoit Barthe,
train engineer at
Société du Grand Paris

—In October 2018, the consortium comprising the NGE and EHTP companies and led by Guintoli won a contract to build the operations centre for Lines 16 and 17 in the municipalities of Aulnay-sous-Bois and Gonesse. Subsequently, tracks will be laid, buildings erected, roads built and main services (sewerage, drainage, utility lines, etc.) installed.

FIRST SYSTEMS AND AUTOMATION CONTRACTS



—At the end of 2018, several contracts covering other technical parts of the project were awarded, including two systems contracts for Line 15 South. The first, awarded to a consortium led by Colas Rail, covers the track and catenary works for the eastern sector of the line and the Champigny operations centre and its connecting line. The second, awarded to the Alise consortium led by Sdel Infi, covers installation of high/low voltage equipment and wiring on the line. These key works include supply and installation of the electricity supply substations in the stations and the tunnel ventilation and smoke extraction equipment. The installation of the optical fibre network, lighting system and the fire brigade connections along the line is also included.

The operations centres ensure train and network quality of service, reliability and safety.

—At the same time, a consortium led by Spie Batignolles Génie Civil won the contract for the Champigny-sur-Marne operations centre on Line 15 South. It covers the building envelope, roads and main services and has a value of €125 million excl. VAT. This centre will channel all information concerning the operation of Grand Paris Express Line 15, including line maintenance.

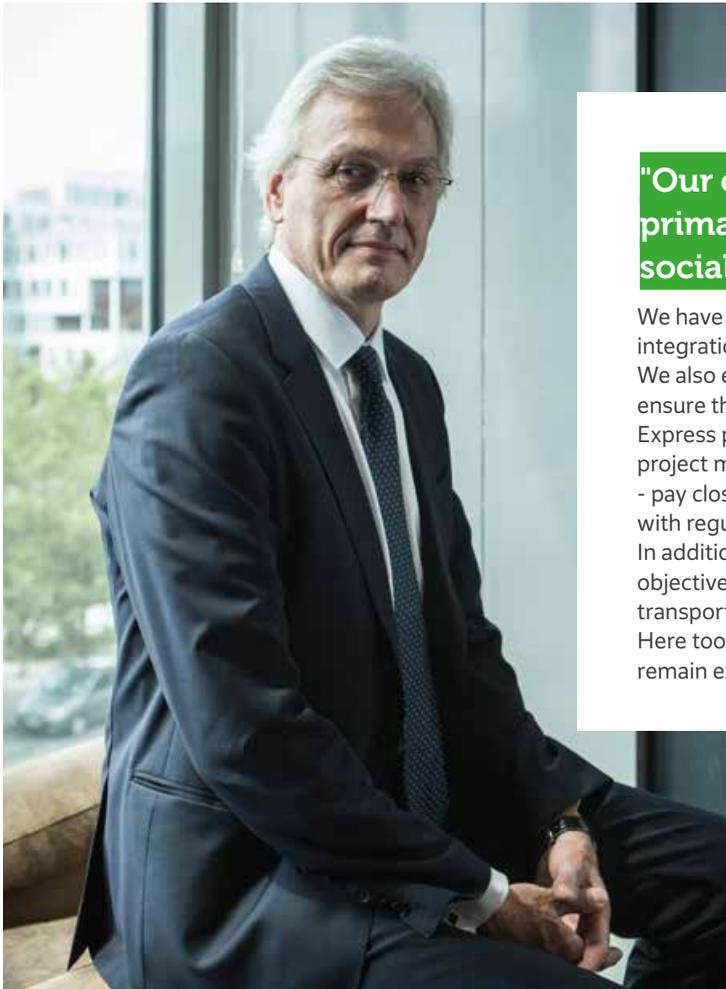
—Salini Impregilo, an Italian company, won the second of the three Line 16 civil engineering contracts, with a value of €718.8 million excl. VAT, which notably covers civil engineering works for the Aulnay, Sevran Beaudottes, Sevran-Livry and Clichy – Montfermeil stations and boring of an 11.1-kilometre tunnel between the Aulnay and Chelles stations.

New high-environmental-performance rolling stock will be an advantage in operations.

—In October 2018, Société du Grand Paris notified the contract to supply train automation systems and control centres for Grand Paris Express Lines 15, 16 and 17. This contract, which runs for 15 years and has an overall value of €360 million excl. VAT, is co-financed by Société du Grand Paris

and Île-de-France Mobilités. It was awarded to a consortium led by Siemens in association with Thales. These groups will supply the system that safely operates the automated, driverless trains and the two control centres to be set up in Champigny-sur-Marne and Aulnay-sous-Bois.

—Lastly, on 2 October 2018 Société du Grand Paris launched the Line 15 South and Line 16 station and ancillary structures development contracts. It brought the large building construction companies together at the Beffroi in Montrouge to present these contracts in detail.



"Our contractual relationships primarily reflect our pro-active social policies."

We have made commitments to provide work integration for the long-term unemployed. We also earmark market share for SMEs to ensure that they too benefit from the Grand Paris Express project. All the participants - companies, project managers and programme managers - pay close attention to safety and compliance with regulations covering seconded workers. In addition, we include ambitious and measurable objectives with respect to the environment, transport and removal of excavated materials. Here too, Société du Grand Paris is and will remain exacting."

Serge Dupont,
director of contracts
and coordination
at Société du Grand Paris

KEY FIGURES

915

contracts notified
since the start of the project

82

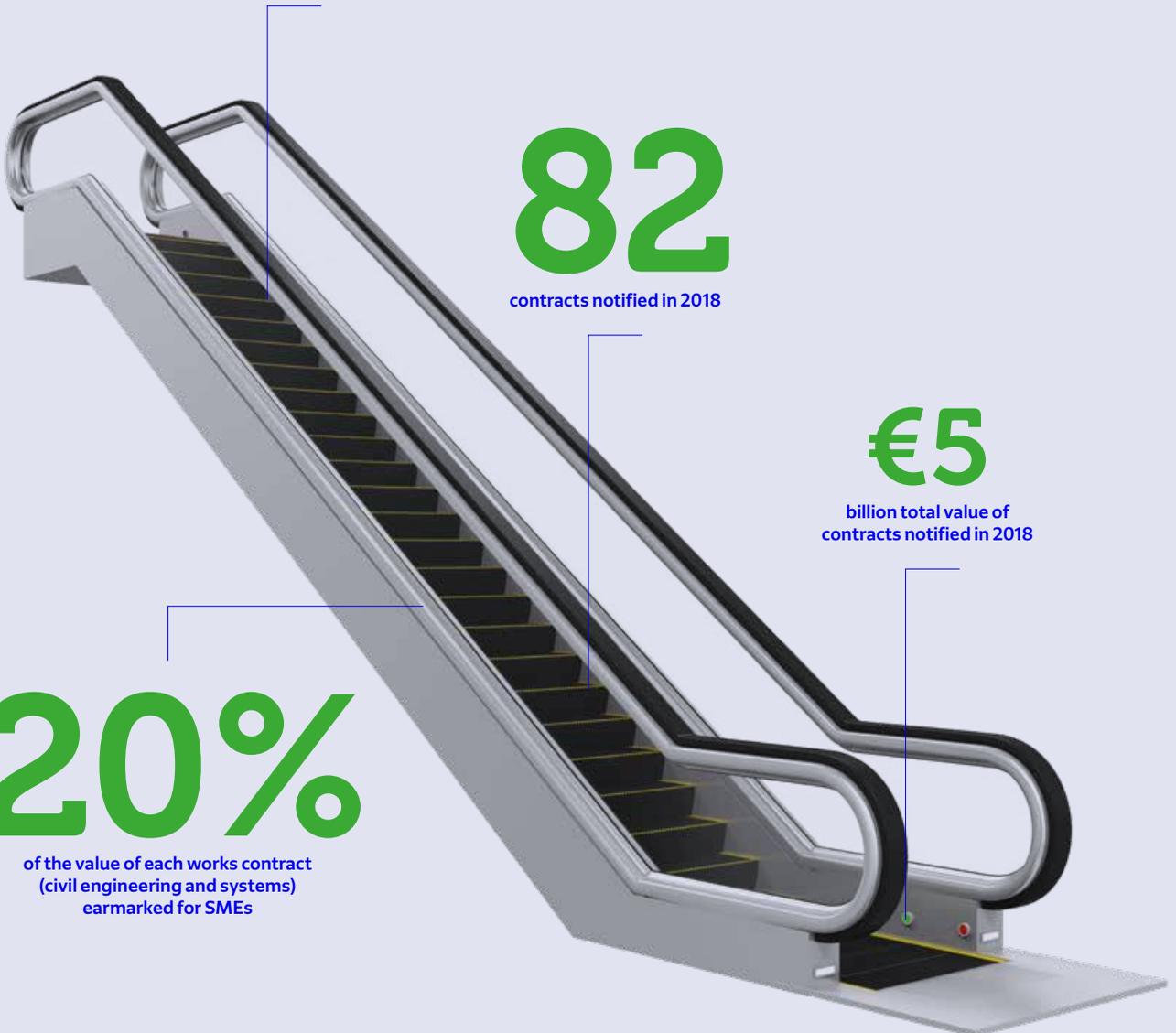
contracts notified in 2018

€5

billion total value of
contracts notified in 2018

20%

of the value of each works contract
(civil engineering and systems)
earmarked for SMEs



A 100% green bond issuance programme

38

After securing bilateral financing agreements with the European Investment Bank and Caisse des Dépôts, Société du Grand Paris laid the main foundations of its funding arrangements in 2018:

- a €3 billion short-term commercial paper (NeuCP) programme to manage its day-to-day cash requirements;
- an EMTN (Euro Medium-Term Notes) programme to give it the longer-term financial resources it needs to develop its assets.



A 100% GREEN EMTN PROGRAMME

–In July 2018, Société du Grand Paris took another step forward with its financing by arranging

a €5 billion "Green Euro Medium Term Note" programme.

–This means that Société du Grand Paris is the first bond issuer to adopt a 100% green



The Largest New Certified Climate Bond Issuer Award was presented to Société du Grand Paris on 5 March 2018.

EMTN programme, exclusively involving the issuance of green bonds.

—Grand Paris Express has undertaken to invest the money

raised through this programme in its project and to report to investors on a regular basis about progress with it and its environmental benefits. Before setting up this programme, Société du Grand Paris developed a framework to determine the eligibility of assets to be funded through green financing. This framework received a positive second opinion from Sustainalytics, confirming its overall compliance with the guidelines of the Green Bond

Principles. In addition, Société du Grand Paris undertook to have its bond issues certified by the Climate Bonds Initiative.

In the fourth Green Bond Pioneer Awards (GBPA) ceremony in March 2019, Société du Grand Paris received the "Largest new Certified Climate Bond issuer award" from the Climate Bonds Initiative for its green bond issues.

—These commitments are based on the project's intrinsic environ-

mental features. The project is designed to reduce greenhouse gas emissions over the life of the infrastructure. The commitments are also based on the project's contribution to the ecological and energy transition and to

TESTIMONIAL



I had the pleasure in helping Société du Grand Paris put together its 100% green bond financing programme.

"Implications for jobs, economic growth and urban development."

This innovative programme was a world first. Grand Paris Express is an intrinsically green

project, but we had to ensure that the overall environmental impact, from construction to operation, was positive. As well as climate and environmental issues, this includes implications for jobs, economic growth and urban development. The inaugural bond issue in October 2018 had a huge impact within the world's green and responsible investment community. CA-CIB, which was the

bond issue's joint lead manager, also provided advice on structuring in relation to the green bonds. I worked closely with Société du Grand Paris' people, who can be rightly proud of this landmark project.

Nathalie Sarel,
green finance expert
at Crédit Agricole CIB

sustainable mobility, employment and regional development.

INAUGURAL ISSUE WARMLY WELCOMED BY THE MARKETS



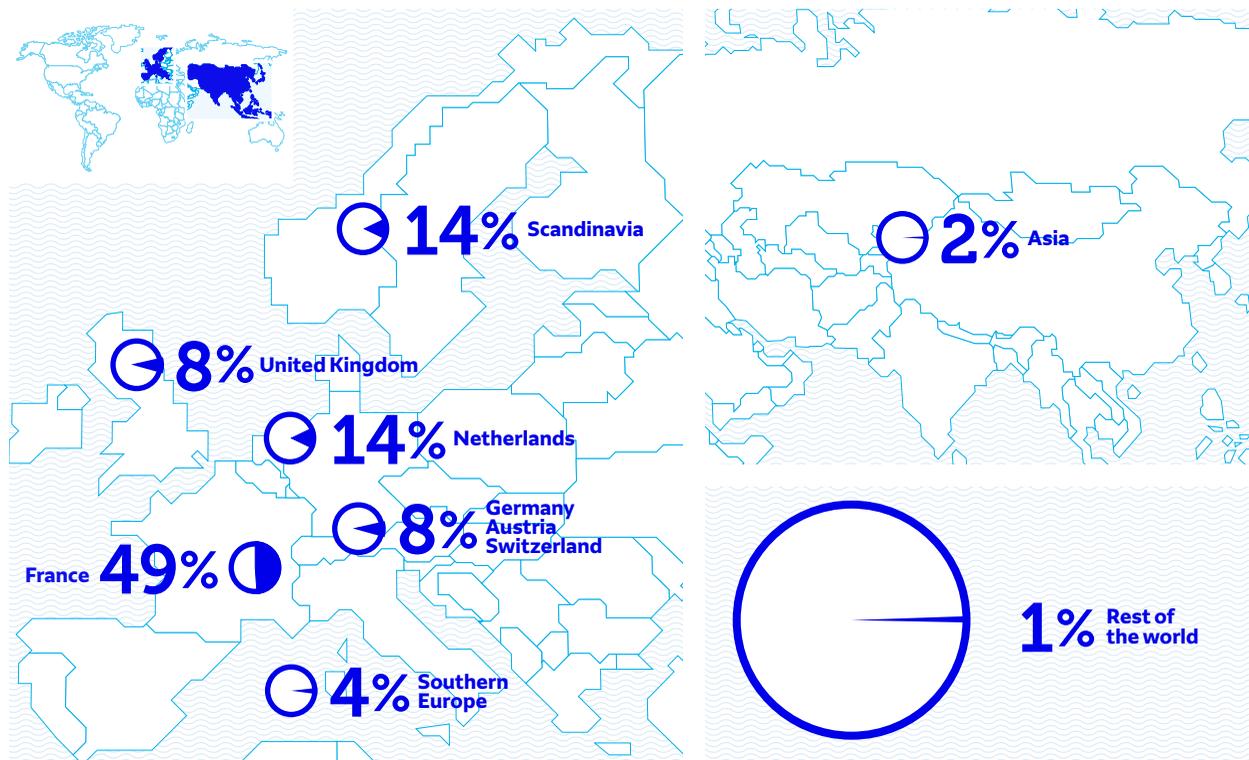
—In the long term, the new transport network could generate more than €80 billion in additional GDP for the Paris Region.

—In October 2018, SGP launched its first bond issue in the international financial markets, issuing \$1.75 billion of 10-year bonds due to mature on 22 October 2028.

—In keeping with France's environmental commitments, the introduction of this financing programme will help establish Paris as the benchmark green finance market (Société du Grand Paris is a member of Paris EUROPLACE and Finance for Tomorrow).

—This was the largest green bond issue ever carried out by a French agency. It was twice oversubscribed, showing the high level of interest in Grand Paris Express, particularly outside France, with the bonds attracting

Geographical distribution of investors



"We are extremely pleased with how our first bond issue in October 2018, and the second in March 2019, were received by international investors.

We were able to achieve attractive financing terms, in order to secure the long-term funding of our project. That success was down to four key factors: our credit quality, backed by that of the French state; the fact that our infrastructure is of strategic importance for the Paris region but also France as a whole; our pro-active commitment to sustainable finance as the first 100% green bond issuer in the international markets; and our team's unstinting commitment. Because making Grand Paris Express' funding contingent on its social and environmental benefits required, and will continue to require, dedicated work across the whole of Société du Grand Paris, not just in its finance department."



Vincent Gaillard,
Chief Financial Officer, Société
du Grand Paris

exceptional demand from more than 150 investors.

—**Société du Grand Paris has been assisted by six core banking partners** that have jointly led its bond issues: BNP Paribas (which arranged the EMTN programme), Crédit Agricole (providing advice on structuring the green bond issue), Barclays, HSBC, Natixis and SG CIB.



AN INVESTOR-ORIENTED FINANCING STRATEGY

—**Société du Grand Paris will be a significant issuer in the financial markets**, raising money repeatedly over a long period of

time. Its financing strategy has three main aspects:

- highly liquid benchmark issues (at least €1 billion up to 15 years);
- the gradual creation of a yield curve for euro-denominated green bonds, to provide investors with price transparency;
- a diverse investor base.

—**This strategy is intended to enhance SGP's access to sources of financing** that suit its needs, and on the best possible terms. It also supports the development of the green bond market by significantly increasing its liquidity and additionality.

KEY FIGURES

2

financial ratings:
Aa2, positive outlook (Moody's)
and AA, stable outlook (Fitch)

6

banks assisting Société
du Grand Paris with
its inaugural bond issue

2

certifications - Sustainalytics
and Climate Bonds Initiative

More than
150

investors in the first
bond issue

100%

green bonds

€3.6

billion of subscriptions
for the first €1.75 billion
bond issue



La Fabrique du Métro, a showcase and laboratory

The Fabrique du Métro was set up in Saint-Ouen-sur-Seine in 2016 as a Grand Paris Express demonstration space. In 2018, the public was given a first opportunity to visit the outstanding facility, which supports decision-making in the design and construction processes covering the project's 68 stations.

—A combination of several spaces La Fabrique du Métro is a testing and demonstration space in which the design needs of the

Grand Paris Express are met. In 2018, the one-of-a-kind facility also became a space where the public can explore the metro. It is



The "underground" space at the Fabrique du Métro, 15 September 2018.

6,978
visitors in 2018

1,100
visitors during the first
open house held
on 15 September 2018

open to everyone, including schools, groups, families, people living with disability and individuals. On Saturday 15 September, Société du Grand Paris held an open house for the public at the Fabrique du Métro as part of the International Heritage Days event. More than a thousand people visited the evolving experimental space dedicated to the Grand Paris Express.

—Since then, the Fabrique du Métro has provided guided tours in French and English as well as workshop tours focusing on a wide variety of topics. These programmes enable visitors to explore the oversized facility, which provides an overview, a first-hand understanding of all parts of the

project and a grasp of the work under way. Visitors discover the details of a station as it is being designed, and the construction of the project as a whole, by following a user from the metro tunnel to the square in front of the station. Scale models, panels, videos, interactive multimedia and an immersion room give the visitor – especially the young visitor – an opportunity to experience the human and technical adventure involved in building the new metro and its 68 stations.

IMMERSION IN THE 20TH CENTURY METRO



—The staging is deliberately immersive. The visit at the

Fabrique du Métro, designed by architect Giovanna Comana of the BGC Studio agency, combines replicas of station spaces, including a 25-metre section of the platform, and exhibition spaces. It literally immerses the visitor into the heart of the metro. This exhibit is based on several principles. Full-scale realism were combined with virtual processes, including a 3D immersion system that follows the visitor's movements, to provide a realistic perception of the future spaces and present the project as a whole. The exhibit also offers

creators, designers, artisans and project managers an opportunity to share their work in a simulated station where they can test, harmonise, compare, create and invent the solutions of the future.

"YOUNG TALENT" HQ



—The facility is also used as a workspace by everyone involved in the design and innovation programmes. In 2018, the Fabrique du Métro welcomed large numbers of innovators in the fields of



"We reach out to everyone living and working near the worksites,

including local residents, shopkeepers, schoolchildren and local officials. This also helps to put local residents in touch with the works contractors to foster employment. We strive to seek out the long-term unemployed to make sure that the project benefits the areas in which it is being built, right away; that is part of our social responsibility. But beyond the areas near the worksites, people are not familiar with the project. We need to draw more attention to the transformations it will bring about in the Greater Paris area and also to the way in which the Grand Paris Express will serve to drive development at national level."

Sandrine Gourlet,
director of external
relations at Société
du Grand Paris



TESTIMONIAL



1.

Working at the Fabrique du Métro enables me to meet a wide variety of audiences. My job is to whet the curiosity of visitors of all ages and walks of life, and to enable them to explore a world that is unfamiliar to them, by giving a presentation tailored to their interests.

"Make visitors want to learn more."

When I have groups of middle school and high school students, the visits are geared more to jobs and career opportunities. Not all visitors are directly affected by the Grand Paris Express, but they are curious and eager to learn more about the project. At the end of the visit, a lot of them want to stay on and talk about it. Our job is to transmit knowledge and to make people want to learn more. It is very rewarding when people tell us they appreciated the visit."

47



2.

Marie Portier,
Magmaultura mediation
coordinator and cultural mediator
at the Fabrique du Métro

Marie Portier [2] shows visitors to the Fabrique du Métro the various stages of station construction and the operation of the tunnel boring machines [3].

The Fabrique du Métro welcomes a large number of school classes at special workshops for young people [1].

3.



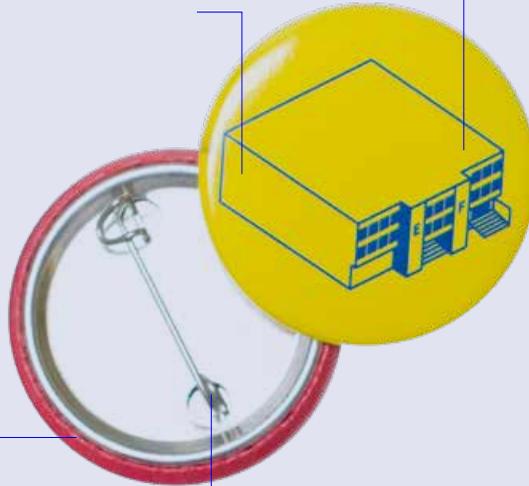
KEY FIGURES

1,343

individual visitors and families

1,701

visitors from schools and institutions of higher learning



252

visits with mediators

400

visitors from local administrations



2,388

visitors representing our public and private sector partners

mobility, digital, services, information and construction. Experts, engineers, economic decision-makers and public

Visits and experiments are constantly enhanced and expanded

stakeholders gather there to test and discuss the construction and fit-out (furniture, information systems, etc.) of the new metro's 68 stations.

—**The Fabrique du Métro also welcomed the 400 guests** attending the New Year's ceremony held by Société du Grand Paris on 24 January 2019.

—**The Fabrique du Métro serves** as a "young talent" HQ, a space available to call for project winners and a hub for companies holding contracts. It also offers an increasing variety of material

resources and a simulation of the station spaces. In these open facilities that lend themselves to discussion, visitors and users come together. The Fabrique du Métro is a perfect illustration of the partnership approach that Société du Grand Paris has consistently taken from the start of the project. Engineers, architects, students and Grand Paris employees gather here and work together to design and build the new metro. The Fabrique du Metro, the laboratory of the Grand Paris Express, is located in the heart of the Greater Paris area in Saint-Ouen-sur-Seine.



Various spaces at the Fabrique du Métro:
 < underground,
 < esplanade,
 media library.
 v



The city of the future

50

With its focus on intermodal transport, urban planning and digital technology, the Grand Paris Express is shaping the city of the future. We look back at the main highlights of 2018, including trials, conferences and calls for project.



INTERMODAL TRANSPORT AROUND THE GRAND PARIS EXPRESS STATIONS

—Call for projects

In June 2018, Stéphane Beudet, President of the Association des Maires d'Île-de-France (AMIF)

and Vice-President of Île-de-France Mobilités, and Thierry Dallard, Chairman of the Management Board of Société du Grand Paris, named the winners of the call for projects to invent the public spaces of the Grand Paris Express and improve the passenger experience

Nuances Dynamiques experiment in Champigny-sur-Marne.



as a whole. The projects focused on five themes: vegetation to create high-quality landscaping; innovative coatings to achieve new long-lasting and low-cost solutions; urban furniture to bring people together and offer innovative services; urban lighting to improve safety and the attractiveness of the areas around the stations; and outreach to improve passenger wellbeing.

—The winners test their innovative solutions in several emblematic d'Paris Region neighbourhoods: CEMEX its "Revêtement Eau & Lumière" porous fluorescent coating at the Chevilly Trois-Communes station in L'Haÿ-les-Roses (Line 14 South);

Richez Associés and Comatelec Schreder their "Nuances Dynamiques" lighting system in Champigny-Centre (Lines 15 South

Inventing public spaces and improving the passenger experience

and 15 East); Metalink Urban and INSEETU their moveable urban furniture anchor points in Clichy – Montfermeil (Line 16); Razel Bec, Groupe Saint-Léonard and Atelier AConcept a 3D urban furniture printing system at Massy Opéra (Line 18); and lastly, Sous les Fraises a "nature plot" at the site of the La Courneuve Six-Routes station (Line 16).



URBAN PLANNING

—"Grand Paris Express Architects" conferences

In 2018, Société du Grand Paris held a second season of lectures and discussions about the Grand Paris Express at the Maison de l'Architecture en Paris Region. The architects in charge of designing the stations presented their projects to generate a dialogue about these structures, which involve technical, urban and architectural challenges and goals. As part of a series of conferences on specific themes, the architects were joined by the artists, designers, urban planners and landscape architects who are bringing the network to life. In April, an inaugural conference was held with the participation of Caroline Barat-Dubuisson and Thomas Dubuisson of the Search firm, Jacques Pajot of Atelier Novembre, and Éric Puzenat and François Roux of Ateliers 2/3/4. The "Artists and Architects Tandem" conference was held in July and a conference focusing on the rollout of arts and cultural programmes on the Grand Paris Express worksites was held in September.

du Grand Paris to build the property complex adjacent to the Aulnay station (Seine-Saint-Denis) on Grand Paris Express Line 16. The project comprises 371 apartments, 960 sq. metres of retail facilities, a private day care centre and an 80-space public car park.

DIGITAL TECHNOLOGY



—Big data

In July 2018, some 100 students from the Estiam IT and digital technology school in Paris, took possession of the Fabrique du métro in Saint-Ouen-sur-Seine

52



< Hackathon focused on the Grand Paris Express in Saint-Ouen-sur-Seine from 2 to 5 July 2018.

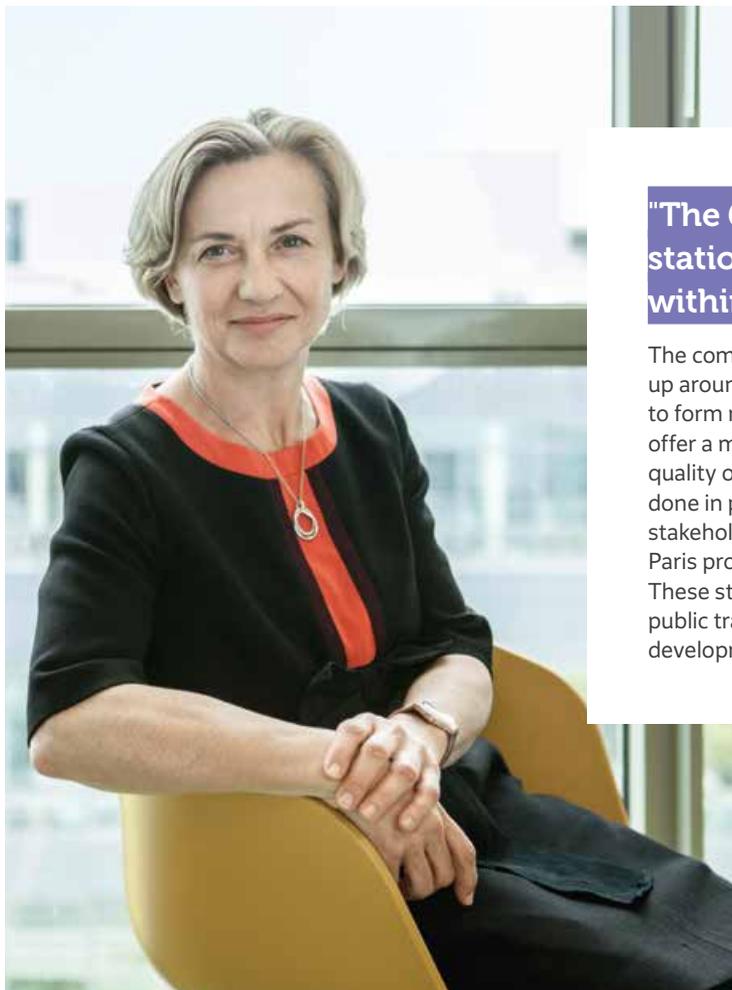
Project adjacent to the Aulnay station.
v

Together with the full range of digital stakeholders, we seek to forecast future requirements.

—Project adjacent to the Aulnay station

On 7 December 2018, the Eiffage Immobilier/Verrecchia consortium together with the Wilmotte & Associés architecture firm won the call for tender issued by Société





"The 68 Grand Paris Express stations will create new flows within cities."

The commerce and mobility hubs that will build up around them will expand existing city centres to form new urban gathering places. They will offer a major opportunity to improve overall quality of life in the areas they serve. The work done in partnership with the full range of stakeholders is the key to success of the Grand Paris project for all residents of the region. These stations will generate new intermodal public transport systems and are set to become development drivers for all the areas involved."

Sophie Schmitt,
director of stations
and urban affairs at
Société du Grand Paris



for a hackathon focused on the Grand Paris Express. Based on the BIM model of one of the 68 stations of the new metro and its data, the students worked on four themes representing four key goals of Société du Grand Paris and Île-de-France Mobilités, its partner in the event: systems infrastructure and networks in a station; data collection and display; design of an application for the various station operators; and an application for passengers. This first hackathon tested uses to which the data collected in a station can be put to improve its performance and the economic results of the services rendered.

A goal of
1,000,000sq.
metres of property projects
adjacent to stations



An aerial photograph of a modern university campus. The buildings are multi-story with large windows and flat roofs. Some roofs are covered in greenery, including grass and small trees. In the foreground, there is a large, lush green lawn. A large, solid blue diagonal shape cuts across the image from the top left to the bottom right. The text 'Responsible management' is written in white, bold, sans-serif font across this blue shape.

Responsible management

Sustainable development at the heart of the project

The Grand Paris Express offers an outstanding social and economic opportunity for the Île de France region. The forward-looking project is also part of the region's sustainability-focused approach to its ecological and energy transition, which guides Société du Grand Paris in its programme management missions and its responsibilities as a public-sector entity.

The Grand Paris Express is a key component of the Île de France region's work to achieve its sustainable urban mobility, employment and development goals. The project will help to shape a less isolated city that is more accessible

from remote areas, more inclusive, more competitive and more environmentally friendly. It has been calculated that the Grand Paris Express, with its 200 kilometres of metro lines and 68 new stations, will reduce the

metropolitan area's greenhouse gas emissions by about 20 tonnes of CO₂ equivalent by 2050. The project as a whole encourages modal shift to public and alternative transport systems and will help achieve the air quality improvement goals approved at the Paris Climate Conference in 2015.

DRIVING URBAN AND ECONOMIC DEVELOPMENT

A major transport infrastructure project such as the Grand Paris Express also has a strong impact on urban development and the structure of the city. The new metro and its 68 stations are more than a transport network; they are a fulcrum for urban renewal across the region, with projects geared to urban density and mixed-use development that encourage modal shift.

By connecting the various areas and providing access to economic centres for all, the Grand Paris Express will boost growth in the region. The long-term economic impact of the Grand Paris Express is estimated at more than €10 billion in additional GDP on top of the region's natural growth. The new metro will also generate a minimum of 115,000 jobs in the 2030 timeframe.

A COMPREHENSIVE, RIGOROUS METHOD

"Avoid-Reduce-Offset" is the doctrine underpinning the design and construction of the Grand Paris Express. The project's environmental programme builds on a comprehensive, rigorous method that is adapted to each metro section, station and structure. A baseline is drawn up for each of the areas involved and an impact analysis is carried out and fine-tuned at each stage of the design process.

In the construction phase, Société du Grand Paris has introduced a worksite management system that generates as little pollution as possible. Spoil management is a strong focus of attention at Société du Grand Paris, which

has set up a system to manage and recycle materials excavated at Grand Paris Express worksites. The system ensures rigorous and effective traceability and supports a circular economy approach to recycling. Hazardous materials (diesel fuel, oil, paint) are stored in areas tailored to their nature and volume. All hazardous materials handling activities (such as fuelling machinery and emptying containers) are performed outside sensitive areas, in waterproof spaces connected to a treatment system or an authorised network.

LOW ENERGY CONSUMPTION GOAL

The Grand Paris Express, in which structures are designed with sustainability and environmental quality in mind, also provides an opportunity to unveil the mobility of the future and generate new aspirations in public space design and construction. The project explores ways to recover and re-use electrical and thermal energy generated by the infrastructure. Rolling stock is selected according to energy performance criteria. On the one hand, new-generation trains consume less energy; on the other, the energy generated during braking will be recovered and its re-use will be optimised by fine-tuning train traffic management.

SUSTAINABILITY OBJECTIVES

To guide its action and tackle the environmental challenge, Société du Grand Paris bases its activities on the sustainable development objectives set out in the UN's 2030 Agenda. This serves as a framework for analysis, enabling it to assess and interconnect its contributions.

Our current and future contributions



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

CONTRIBUTION 1

ENVIRONMENT

Use as little energy as possible to build an ecological metro for a smart and sustainable city.

CONTRIBUTION 2

ECONOMY AND EMPLOYMENT

Foster economic activity; provide employment, work integration and vocational training during project construction.

CONTRIBUTION 3

REGIONAL PLANNING

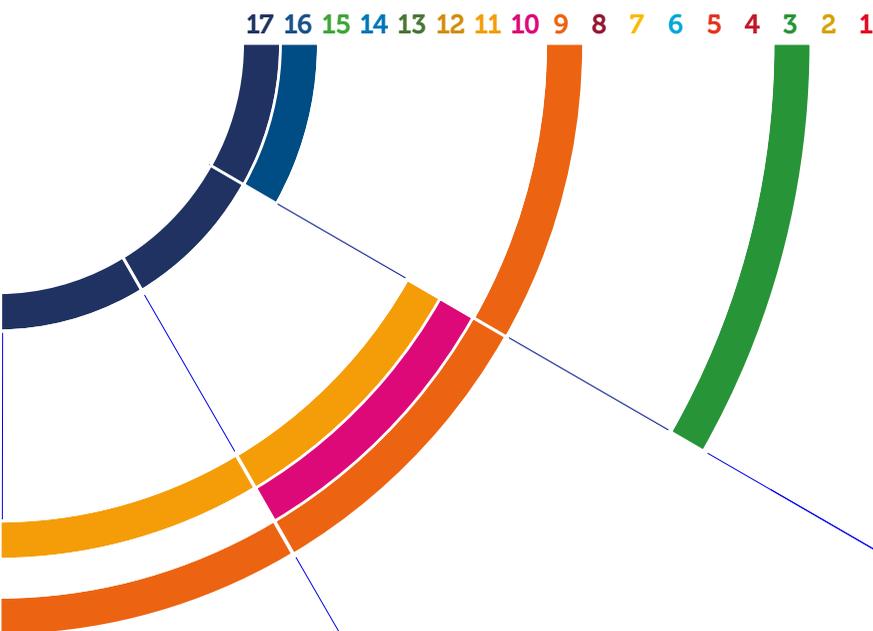
Instigate and support urban and social development, from the station to the city.

CONTRIBUTION 4

CULTURE, CREATIVITY AND YOUTH

Generate collective, community-based, shared momentum.

Société du Grand Paris tracks its contributions to the UN's sustainability objectives in seven categories: environment, economy and employment, regional planning, culture, creativity and youth, innovation, digital technologies and worksite management. In each category, it sets out its activities in detail and defines indicators that enable it to assess its effectiveness.



CONTRIBUTION 7
WORKSITE MANAGEMENT
 Make the city and its inhabitants the focus of exemplary worksite organisation.

CONTRIBUTION 6
DIGITAL TECHNOLOGY
 Make the Grand Paris Express into a digital highway that will support the urban, economic and social development of the Capital region.

CONTRIBUTION 5
INNOVATION
 Invent the city of the future: services, mobility, positive inclusion of worksites in the city, etc.

CONTRIBUTION 1

An ecological metro

The Société du Grand Paris environmental programme builds on a comprehensive, rigorous method adapted to each metro line, station and structure. Management and smart recycling of excavated materials is a central focus of attention.

60

The Grand Paris Express is the major 21st century project in Europe. From the design phase onwards, Société du Grand Paris has paid careful attention to environmental standards and to their application in all aspects of the worksite, including impact on the city, management of spoil and waste generated by the works, and protection of biodiversity. In 2010, Société du Grand Paris carried out a strategic environmental assessment covering the full range of environmental issues relating to the worksites, including plants and animals, agriculture, air, energy, noise, architectural and landscape heritage, and traffic around the worksites. Société du Grand Paris also



undertook a series of soil and sub-soil surveys and has drilled more than 5,000 geological and hydrological boreholes at the planned structure and tunnel sites to date.

One major environmental challenge of the project is the management of materials excavated on the Grand Paris Express worksites, which will generate 45 million tonnes of spoil

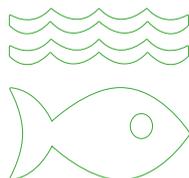
by 2030. The large-scale eco-design approach taken by Société du Grand Paris is an innovation on a transport project. In practical terms it has resulted in the installation of several tools designed to frame, track and encourage best practices. In 2018, for example, 43 environmental audits were carried out on the various Grand Paris Express worksites, and a range of ecological compensation measures were taken.

A RIGOROUS ENVIRONMENTAL PROGRAMME

Société du Grand Paris is designing and building a project that respects the environment. It rigorously coordinates and monitors work on the Grand Paris Express within the framework of the worksite environmental management process. To this end, it acquired an innovative environmental reporting system for Lines 15 South and 16 in 2018. Another highlight of the past year was the award of various environmental authorisations to start or continue a number of works. A general authorisation was issued for the Île-de-Monsieur landmark site in Pont-de-Sèvres, where Société du Grand Paris is building an ancillary structure needed for both construction and operation of the new metro. It has pooled the structure's functions. The site's tunnel boring machine entrance (for Line 15 South) and exit (for line 15 West) shaft will also serve as an emergency shaft when the new lines begin operating. Painstaking care is taken to preserve the site's landscape and

historic heritage during the work currently under way. To this end, Société du Grand Paris called on Biotope, a design office specialising in protection of flora and fauna, to provide expertise.

Several major environmental agreements and partnerships were signed during the year. One covers tracking of the water table and ponds at the Georges Valbon park in La Courneuve and the Sausset Park in Villepinte. Société du Grand Paris also joined forces with the Syndicat Intercommunal d'Aménagement de la Vallée de l'Yvette in the Essonne department to restore 2.3 hectares of wetlands.

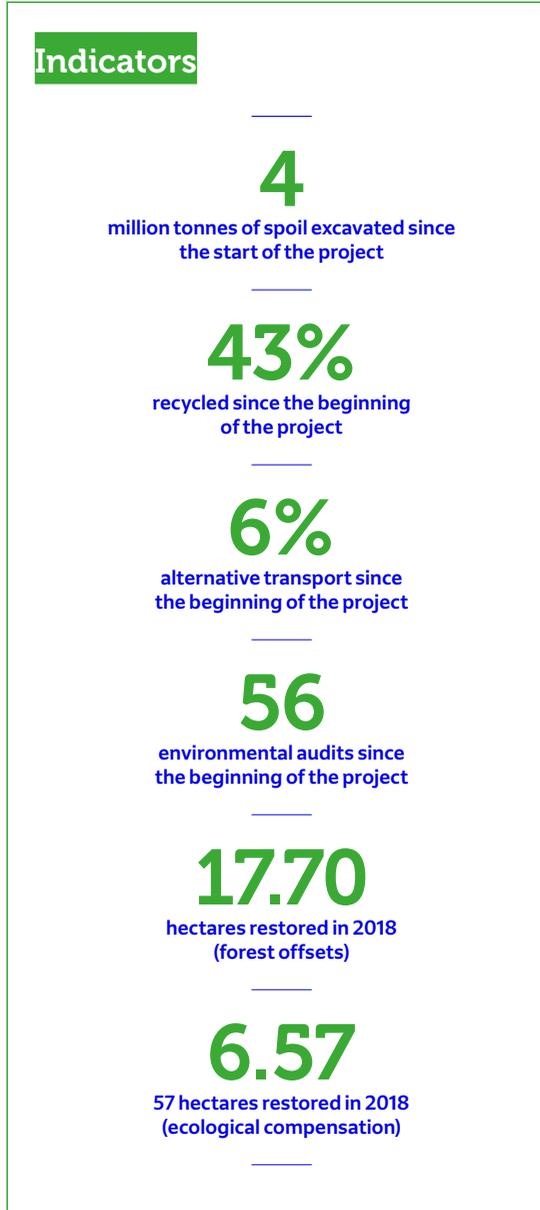


The project, with €630,000 in funding, is designed to restore aquatic environments and provide flood control in the area. In addition, an agreement was signed in November 2018 with the Syndicat Mixte d'Aménagement de la Forêt de Pierrelaye, in the Val- d'Oise department, to reforest 33 hectares.

TREATMENT AND RECYCLING OF EXCAVATED MATERIALS

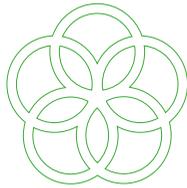
When the project was launched, Société du Grand Paris undertook a forward-looking spoil management programme designed to reduce disruption for local residents and the environment. In 2012, the spoil removal master plan (SDED) defined the general Société du Grand Paris strategy covering operational worksite management. A spoil management and recycling plan was added in 2017. This plan is designed to give project managers and contractors basic guidance on spoil organisation and planning. The document ensures removal and treatment of worksite spoil that cannot be used in a manner that is environmentally exacting and compatible

with the waste management process applying in the Île de France region. To comply with the requirements of this document, Société du Grand Paris confirmed in 2018 that it would participate in the preparation of the regional waste prevention and management plan (PRPGD).



- Alternative removal methods

To limit disruption in the vicinity of worksites (noise, dust, traffic congestion, etc.) and curtail the environmental impact (GHG) of spoil transport, Société du Grand Paris has undertaken to use, alternatives to road haulage, i.e. inland waterway and railway transport, whenever possible.



A partnership agreement was signed for this purpose in 2018 with Ports de Paris, the City of Paris (Canaux de Paris) and Voies Navigables de France. The agreement is designed to encourage the use of inland waterway transport to remove spoil from Grand Paris Express worksites and to bring in materials. In the port of Bonneuil sur Marne, a platform has been inaugurated to receive spoil from the tunnel boring machine along a section of Line 15 South, from Créteil. Trucks carrying spoil can easily reach the platform, which will receive the the materials, check the nature of the soil and any pollution, and sort and ship it. The expected volume to be shipped by inland waterway is on the order of 500,000 tonnes over four years of operations.

- Spoil traceability

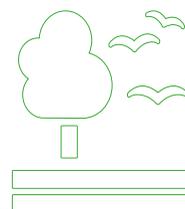
As a producer of spoil, Société du Grand Paris must be able to trace all materials excavated on its worksites and maintain a clear record of the sites receiving them. It therefore developed a traceability tool last year. This is a collaborative IT platform (website and mobile app) that tracks each load of spoil exchanged and ensures compliance with regulations. This fully transparent system also tracks the origin, quality and final destination of the excavated materials.

- Spoil recycling

Société du Grand Paris strives to promote the circular economy of the programme and to recycle 70% of the overall tonnage of Grand Paris Express spoil in keeping with the European framework directive and the French energy transition law. To contend with large quantities of materials produced within a relatively short period of time, Société du Grand Paris seeks to limit the amount spoil landfilled in approved sites as far as possible and to instead expand its re-use, develop innovative re-use projects and forge numerous partnerships with waste management and development companies. Against this backdrop, Société du Grand Paris updated its portfolio of recycling solutions in 2018.

- Certification of outlets

Given the nature and the volumes of spoil from the Grand Paris Express project, various outlets must be considered, including both recycling streams and landfilling with intermediate sorting or treatment sites. The Société du Grand Paris therefore sought to work with waste outlet management companies to set out spoil management strategies before works companies sign contracts with them. This partnership approach resulted in the signature of partnership agreements between programme management and operators of treatment, storage and recycling facilities for spoil generated by the Grand Paris Express. The partnership process was stepped up in 2018. In 2018, a call for tender to be issued to the companies managing outlets was being prepared, the idea being to devise more





"The role of the coordination, methods and tools (PMO) department is to help coordinate

the company's activities by collecting and analysing project data and indicators and setting up an integrated reporting system to track schedules, costs, project risks and CSR. The objective is to regularly produce a reliable and comprehensive progress report for the Management Board and the governance bodies. This department also supports the other operational departments by providing specialist expertise in the fields of safety, security, quality management, technical guidelines, sustainable development, and information system programme management."

Gérard Chérel,
director of coordination, methods
and tools at Société du Grand Paris

63

cost-effective ways of managing spoil containing naturally occurring concentrations of elements exceeding the content normally encountered (ISDI ++ inert waste landfill programme).

AN AMBITIOUS CSR POLICY

The project's Corporate Social Responsibility (CSR) policy was set out in 2018, with the issue of the first 10-year green bond by Société du Grand Paris in the amount of €1.75 billion. This green bond issue confirms the contribution of the Grand Paris Express to the energy transition that is needed to develop

urban areas in line with France's COP 21 commitments. Greenhouse gas emissions are also tracked using a tool designed by Société du Grand Paris, "CarbOptimum". In 2018, it was used to assess the carbon footprint of the Grand Paris Express and update it to include the effects of changes in mobility and urban development.

CONTRIBUTION 2

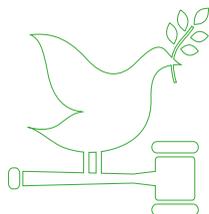
Fostering economic appeal and employment

64

The Grand Paris Express project generates thousands of jobs every year and provides a source of opportunities for the public with respect to work integration, training and economic appeal.

A STRONG PARTNERSHIP WITH LOCAL AUTHORITIES AND COMPANIES

In 2018, Société du Grand Paris implemented commitments under contractual CSR clauses in close and regular coordination with local authorities and the companies holding these contracts. This was carried out under auspices of the regional authorities responsible for



monitoring and coordinating work integration, job creation, training and access for microenterprises and SMEs. Société du Grand Paris notably signed an agreement last year with the RATP, the Val-de-Marne department and the Grand-Orly Seine Bièvre public territorial institution (EPT) to to expand employment and support the impact of the construction of Line 14 South.

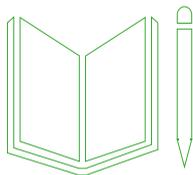
PROMOTING PUBLIC WORKS JOBS

Over the past year, activities aimed at promoting public works skills and jobs were stepped up. Skill and job fairs were organised in partnership with companies in the Vallée Sud Grand Paris and Grand Paris Seine Ouest territories in the Hauts-de-Seine; the Grand-Orly Seine Bièvre and Grand Paris South East Avenir territories in Val-de-Marne; and Plaine Commune and Terres d'Envol in Seine-Saint-Denis. Recruitment meetings bringing together works companies and job seekers were organised by the Société du Grand Paris territorial coordinators in conjunction with

Pôle Emploi across all worksites currently under way. Lastly, when the Fabrique du Métro was opened to the public, more than 10 visits were organised for local employment and work integration agencies and job seekers to give them a better understanding of the Grand Paris Express project, the skills required and the opportunities for employment generated by the worksites.

SOCIAL INNOVATION SERVING THE REGIONS

In 2018, Société du Grand Paris initiated a civic research and action partnership with the 'Metropop' association in conjunction with university laboratories (CNAM-CNRS, Institut de Recherche et d'Innovation du centre Pompidou).



The purpose of this project is to set up a temporary design office bringing together young people in the Quatre Chemins district in Aubervilliers and Pantin to produce an assessment of the area and project proposals for local economic development (including projects geared to employability and support for young entrepreneurs in sectors with a promising future, notably the Grand Paris Express).

A STRONG ECONOMIC AND SOCIAL FOOTPRINT

As work was ramped up on the worksites of Lines 14 South, 15 South and 16, the Société du Grand Paris programme geared to boosting jobs and economic activity produced a substantial economic and social footprint.

** A minimum of 5% of the volume of labour provided for in civil engineering contracts must be earmarked for the long-term unemployed.*

The introduction of the work integration clause* in the 15 Grand Paris Express civil engineering works packages required the companies winning contracts to earmark

Indicators

915

contracts notified at end 2018

€10.432

billion in contracts notified at end 2018

1,967

companies on the worksites, of which 69% microenterprises and SMEs

483,008

hours of work earmarked for the long-term unemployed

236

employee positions at Société du Grand Paris at end 2018

1,841

hours of training at Société du Grand Paris

2.59

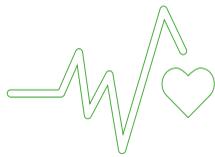
days of training per person on average at Société du Grand Paris

a minimum of 1,872,000 hours of work for the long-term unemployed. Since the beginning of work on the project, nearly 800 people have been hired under work integration schemes across all worksites, and in 2018, 71 of them were enrolled in a training course to boost their skills.

ECONOMIC APPEAL SUPPORTED BY MAJOR PUBLIC CONTRACTS

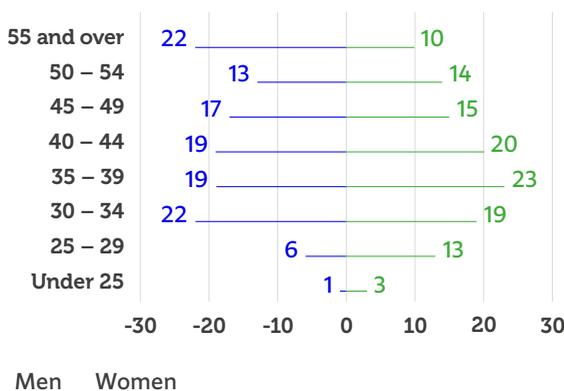
In 2018, Société du Grand Paris notified 82 contracts with a combined value of approximately €5 billion, including contracts covering civil engineering on Line 16 and the operations centres in Champigny-sur-Marne (civil engineering and structural works) and Aulnay-sous-Bois (earthworks). Large contracts covering equipment and systems were also signed, including those covering rolling stock and automation systems for Lines 15, 16 and 17

66



and the first tunnel, track and catenary contracts for Line 15 South. Last year, Société du Grand Paris also awarded the contracts for insurance cover for the project as a whole. These contracts notably cover construction

Age pyramids at Société du Grand Paris



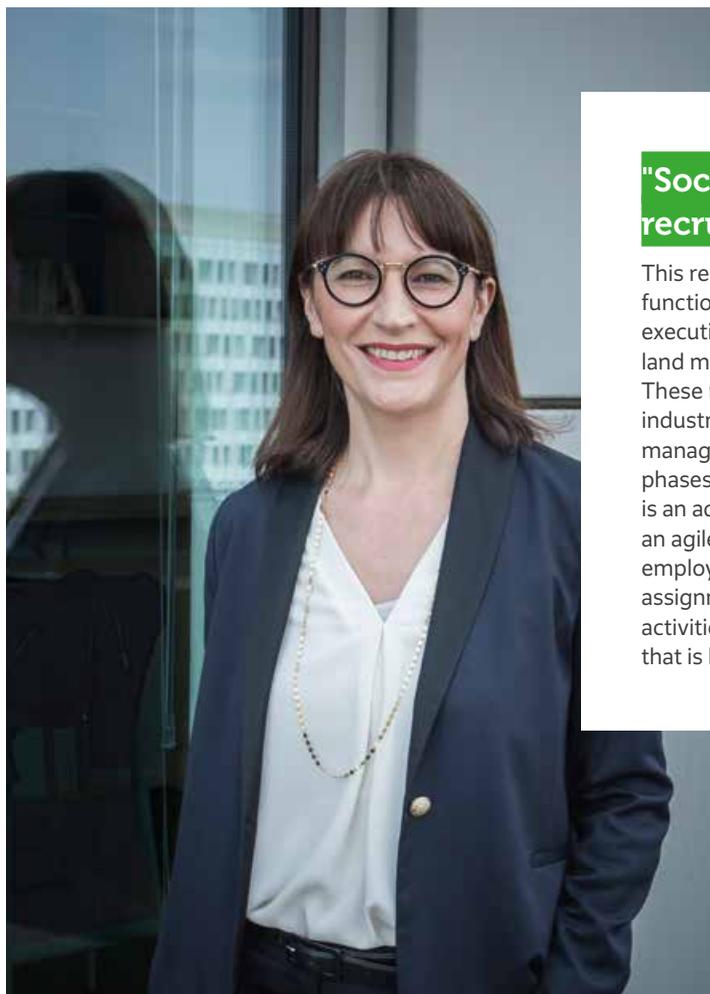
and 10-year liability risks. Lastly, the third wave of works contracts was initiated with the publication of the first station and ancillary structure development contracts. These related to the Saint-Denis Pleyel, La Courneuve, Le Bourget RER and Le Blanc-Mesnil stations on Line 16 and the Villejuif Institut Gustave-Roussy station on Line 15 South.

To broaden the number of companies able to bid, Société du Grand Paris publicises its calls for tender in a variety of ways: dissemination of a preliminary notice as early as possible (in the Official Journal of the European Union and the Bulletin officiel des annonces de marchés publics in France); detailed presentations to companies of the contracts and related programmes via the Chambers of Commerce and Industry and with the help of embassies for companies outside France.

EXPANDED, TRAINED TEAMS

In 2018, programme management reviewed its own organisation in a move to boost its efficiency in the project implementation phase. This gave rise to a large number of discussions, workshops and contributions by managers and staff, against a backdrop of a substantial increase in the number of employees. The French finance law followed by the budget amendment authorised the creation of 30 new jobs in 2018.

Thanks to this increase, Société du Grand Paris was able to boost its project teams to support project cost and risk control, interface management and schedule compliance. At the end of 2018, there were 236 employees, including temporarily unfilled positions, with a gender breakdown of 119 men and 117 women. The staff increase will be stepped up in 2019 with the creation of 200 additional positions. This very significant addition was eagerly awaited and necessary for the rollout of the project, and should continue in 2020.



"Société du Grand Paris will recruit 200 employees in 2019."

This reinforcement covers all jobs, from support functions to procurement, risk control, contract execution and programmes (lines, systems, land management, etc.).

These reinforcements will enable us to better industrialise our processes and, as programme manager, to better coordinate the various project phases. The new metro, Europe's largest project, is an adventure that appeals to applicants. We are an agile structure on a human scale offering employees a one-of-a-kind experience. Their assignments range across a wide variety of activities and entail a high level of responsibility that is hard to come by elsewhere."

Ève Laroudie,
director of human resources
at Société du Grand Paris

Employee breakdown at Société du Grand Paris

	SGP ¹	MAD ²	SGP + MAD
Average age 2018	42.43	46.60	43.30
Average seniority 2018 (years)	3.87	2.35	3.55
Number at 31/12/2018	236	62	298
Of which women	117	30	147
Of which men	119	32	151

1. Société du Grand Paris.

2. Seconded.

CONTRIBUTION 3

Boosting urban and social development

68

This year, Société du Grand Paris set up a stations and urban affairs department to handle all urban issues, ensure that the stations blend into their environment and oversee the implementation of high-quality passenger flows.

The activities of Société du Grand Paris thus focus on three additional points: anticipating the organisation of intermodal transport, defining the features of public spaces around the stations and making the most of the surplus land acquired for the Grand Paris Express by building housing and commercial projects on it.

The Société du Grand Paris strategy consists in working with the stakeholders in each area to jointly build a shared vision of the way in which the Grand Paris Express station will fit into its current or future environment.

PUBLIC SPACE DEVELOPMENT

In conjunction with IdF Mobilités, Société du Grand Paris has set up hub committees bringing together all partners involved in each Grand Paris Express station. These hub committees define the development and

intermodal equipment programme to be built within a radius of 300 metres around the stations. Société du Grand Paris provided a total of €6.2 million euros in hub study funding between 2015 and 2018. The studies are carried out in three phases.



In 2018, the last four network studies were launched and six hubs moved from the baseline to the scenario phase. Seven hubs have already moved from the scenario phase to the hub project formalisation phase. In addition to these hub studies, the Atelier des Places du Grand Paris, a partnership programme, was organised to build a common language and a set of development principles for programme managers and designers of the future Grand Paris hubs. These public space development principles will be put together in a guideline that will be circulated in the second half of 2019 to the local authorities who will serve as hub programme managers.

CALLS FOR PROJECTS AND EXPERIMENTS TO DEVELOP THE MOBILITY AND PUBLIC SPACES OF THE FUTURE

In 2016, Société du Grand Paris and Île-de-France Mobilités undertook an innovation programme for the hubs. The programme generated calls for projects to plan the development of public spaces and mobility in the future station districts. Between October 2017 and March 2018, five innovative mobility solutions were tested. In October 2018, solutions for improving passenger flows were in place around several future Grand Paris Express stations: Chevilly Trois-Communes in L'Haÿ-les-Roses (Line 14 South), Champigny Centre (Lines 15 South and 15 East), La Courneuve Six-Routes (Line 16), Clichy – Montfermeil (Line 16) and Massy Opéra (Line 18). Taken together, the experiments conducted by Société du Grand Paris and Île-de-France Mobilités as part of these programmes will provide an overview that will ensure the successful design of the future Grand Paris station surroundings and ensure that passenger needs are met.

LAND USE STRATEGY

The Société du Grand Paris strategy of integrating stations in urban development starts with the use of its own land for ancillary property development projects. At the end of 2018, the construction of a property complex adjacent to the Aulnay station was awarded to the Eiffage Immobilier/ Verrecchia consortium in conjunction with the Wilmotte & Associés architecture firm. The complex will comprise 371 apartments, 960 sq. metres of shops, a private day-care centre and an 80-space public car park around the Line 16 station. This is the ninth ancillary property project awarded, following those at Le Kremlin-Bicêtre Hôpital on Line 14 South, Bagneux, Bry – Villiers – Champigny, Châtillon – Montrouge, Issy RER, and Les Ardoines on Line 15 South and

La Courneuve Six-Routes on Line 16. A further 26 ancillary property projects are on the drawing board and under consideration in partnership with a number of municipalities. Société du Grand Paris is also helping to carry out urban development projects around stations, notably in Cachan, Villejuif, Créteil and L'Haÿ-les-Roses.

In 2018, the site of the East connecting structure in Le Bourget was selected to take part in the second "Inventons la Métropole du Grand Paris" call for tender. This operation has a dual purpose: to define ways to blend a planned data centre that is part of the structure into the landscape, and to integrate the land acquired to cover infrastructure requirements into the existing urban fabric.



Again in 2018, in the runup to the installation of a tunnel boring machine at the site of the Créteil l'Échat station, an amicable agreement was reached with the Association l'Aide à l'Épileptique, the current occupant of the site, to allow Société du Grand Paris to acquire a 12,000 sq. metre plot in return for a study to be carried out in partnership with the AP-HP and the city of Créteil to provide new premises for the association within the future eco-neighbourhood.

Indicators

65

hub programmes launched, currently in the baseline definition, scenario or formalisation phases

9

ancillary property projects awarded

CONTRIBUTION 4

A shared focus on the arts and culture

70

By facilitating access for everyone to the various urban activities, culture and heritage, the Grand Paris Express will support the creative vitality of the Île de France region. From the start of the construction phase, Société du Grand Paris was determined to support the major urban and social transformation project with a foundational focus on the arts and on culture.

Alongside the 37 station architects and designers already working on the project, an arts and culture team headed by José-Manuel Gonçalves, Director of the Cent-Quatre in Paris, is organising activities in the local communities to accompany the launch of worksites and help invent welcoming, friendly public spaces. By involving local residents, associations, artists and creative designers, the Société du Grand Paris arts and culture project helps to shape a new metropolitan identity. In 2018, this approach was put into practice with a number of activities such as "Tandems", a long-term project that brings together an artist and an architect, who work together to imagine a work that blends with the architecture of each station. In the "Numériscope" call for projects, young people were front and centre: 12 winning artists will develop their digital projects on the worksites. Société

du Grand Paris also works with the Maison de l'Architecture en Île de France to organise public conferences at which the artists, urban planners, designers and landscape architects working on the project join the Grand Paris Express architects to talk about their work. Several further activities have also been organised, including the emblematic "KM" (which stands for kilometre) events.

FESTIVE AND CULTURAL KM EVENTS

Paced according to the works schedule, these arts, cultural and festive gatherings focus local energies around the worksite. Circular economy, co-construction and sustainability are the themes underpinning these activities. The events bring together local residents, worksite participants and representatives of the territory for public events. In 2018, the "KMs" drew a large audience. On the occasion of the launch of the first tunnel boring machine in Champigny-sur-Marne in February, the "KM3" event invited local residents to watch the cutting wheel being lowered into the shaft. More than 4,000 people turned up. To celebrate the launch of the Line 16 worksites, a roving "KM4" event set up in La Courneuve, Le Bourget, Saint-Denis and Saint-Ouen-sur-

Seine drew more than 6,000 people. The "KM5", held in December, was well attended in Bagneux, with the illumination of the first tunnel boring machine worksite in the Hauts-de-Seine department. Students at the Henri Wallon school in Bagneux named the TBM "Ellen" as part of the "Feminine first name for each Grand Paris Express tunnel boring machine" programme.

THE GRAND PARIS EXPRESS WITH AND FOR LOCAL YOUNG PEOPLE

The Grand Paris Express will be generating opportunities for training and recruitment until 2030 and beyond. It is also, in terms of the knowledge it imparts, the raw material for a comprehensive educational programme, the "Classes du Grand Paris Express".

A collection of teaching materials is made available to the education community (young people, teachers, counsellors, parents). This programme is put together with indispensable partners – local authorities, school authorities in Paris, Créteil and Versailles and the Office national d'Information sur les Enseignements et les Professions (ONISEP).

In 2018 the programme was broadened to include activities near the worksites, such as observations with comments and workshops on topics such as safety, the underground, and jobs (Champigny-sur Marne, Bagneux, Noisy-le-Grand, La Courneuve, Le Bourget, Saint-Ouen-sur-Seine and Saint-Denis). To foster inclusion of the project in recreation centres, some 50 counsellors were trained in the participatory game "Les petites histoires" (Issy-les-Moulineaux, Villiers-sur-Marne, Champigny-sur-Marne and Joinville-le-Pont). The Grand Paris Express was presented at the Salon de l'éducation in Paris and the Savante banlieue science fair at the University of Paris-XIII. The event included a presentation of the Grand Paris Express at the Villetaneuse campus that drew 500 young people.

THE FABRIQUE DU MÉTRO TO REACH OUT TO ALL MEMBERS OF THE PUBLIC

At the first open house held on 15 September 2018 as part of the Journées Nationales du Patrimoine, some 1,100 people visited the Fabrique du Métro to explore the outsized space and gain an understanding of all aspects of the project, including subsoil complexity in the Île de France region, station architecture and design, and the passenger experience. The Fabrique du Métro takes visitors behind the scenes to see the the Grand Paris Express being built. Mediators trained in welcoming all types of visitors served as guides.

Indicators

10,000

young people participated in the "Youth" programme and 270 counsellors, teachers and inspectors took part in it

6,978

visitors to the Fabrique du Métro

9

urban walking tours

6

artist in residence collectives on the worksites

29

artist-architects tandems

CONTRIBUTION 5

Innovation serving the project

72

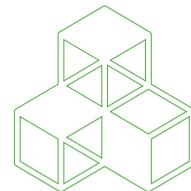
The Grand Paris Express provides a one-of-a-kind opportunity to invent the city of the future and its services and mobility. The project is also a major technological challenge in that it is called on to anticipate future user habits and to imagine solutions that will only be rolled out once the Grand Paris Express has been completed. At Société du Grand Paris, innovation is also a programme and a mindset serving the project and the worksites of the future network in the design and construction phases.

During work on the Grand Paris Express project a large number of innovative steps have already been taken to reduce disruption, improve acceptance and blend the worksite into its environment (Silence chantier white paper, Météo des Chantiers real-time information service, solution for facilitating traffic at intersections and parking, etc.). Société du Grand Paris also proactively manages waste, including 40 million tonnes of excavated materials that will be treated and recycled using state-of-the-art techniques. Following a call for projects issued in 2017, in partnership with Ademe and in conjunction with the Île-de-France region, seven companies carried out experiments over a period of six months to test concrete solutions such as rapid characterisation of excavated materials, production of ecological concrete and raw earth bricks from spoil, and re-use of spoil as fertile topsoil. Currently Société du Grand Paris is working with partners

such as Néo-Eco, an SME in Lille, to examine ways to recycle spoil to make eco-materials. A new call for projects has also been issued – Ligne Terre, the purpose of which is to revitalise unused spaces by using natural spoil from Grand Paris Express worksites.

STEEL FIBRE REINFORCED CONCRETE ON LINE 16

Last year, Société du Grand Paris also authorised the use of Steel Fibre Reinforced Concrete (SFRC), an alternative to Reinforced Concrete that is coming into use, to make the elements – segments – that will, when assembled, form the arch of a tunnel. SFRC contains a large number of metal fibres with a length of on the order of a 50 to 60 mm, like a metal ball of wool, that are distributed evenly within the concrete.



The new process will be rolled out, to start with, on Line 16 by the Salini Impregilo company, which won the contract covering the 11-kilometre section running through a tunnel with four stations (Aulnay, Sevran Beaudottes, Sevran – Livry and Clichy – Montfermeil). The segments forming the arch constitute the tunnel lining

and will be made of metal fibre-reinforced rather than conventional steel reinforced concrete. This is the first time the material has been used in France, and it will enable Société du Grand Paris to reduce the cost of tunnel construction and improve environmental impact.

COST OPTIMISATION

Above and beyond this technological progress, Société du Grand Paris has embarked on a programme to optimise project costs.



All aspects will be scrutinised, from construction methods to property projects adjacent to stations, in order to identify possible savings without impairing user experience and service goals. Here again, innovation in design methods serves the project.



Indicators

6

calls for project launched since 2016

Over

40

innovative projects supported

20

students in immersion programmes at the Fabrique du Métro

600

innovative startups and SMEs applying for incubation

2,000

alternative solutions proposed by companies bidding on Grand Paris Express contracts

CONTRIBUTION 6

Digital highway

74

At a time when digital technology is bringing profound changes in our ways of life and the economy as a whole, Société du Grand Paris is determined to make the Grand Paris Express a digital highway that can adapt to changing user and operator needs and support the urban, economic and social development of the Paris Region.

Société du Grand Paris has structured its digital strategy in four main goals:

- creating, from the design stage, a data transmission network that mirrors the passenger transport network;
- rolling out the mobile communications infrastructure that will provide users and operators with Internet connectivity as soon as the lines open;
- creating a metro that from the start makes use of the data exchanged and generated by the Grand Paris Express (equipment, users, stations, etc.);
- making use of the free spaces created by work on the Grand Paris Express while freeing up technical hosting capacity.

COLLECTIVE WORK

A wide variety of activities have been conducted to make progress in digital facilities. Prior consultations were launched in mid 2018 to gain feedback from 23 market participants on the topics of optical fibre, mobile, WiFi,

geolocation and technical hosting. Alongside the digital participants, Société du Grand Paris is seeking to anticipate future needs and foster open innovation processes. In 2018, it continued its partnership with the Institut des Mines-Télécom involving research on installation of indoor telecoms systems and improvement of mobile services in trains. During the past year it took part in the Smart-Gare programme with engineering group Systra. This programme brings together the project's systems, station and data teams and is designed to identify the innovative solutions developed so far that can be used in the systems and equipment of the future stations.

COLLECTION AND USE OF BIG DATA

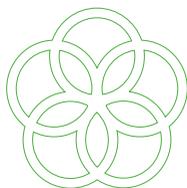
The ramp-up of digital technologies on the project was confirmed with the hackathon, Gare aux Datas, organised at the Fabrique du Métro in July 2018. This event, organised with Paris IT and digital technology engineering school Estiam and Île de France Mobilités, underlined the strategic importance - for passengers, operators and local authorities alike - of collecting the various types of data produced in a station and putting them to use. Société du Grand Paris carried out substantial work on the impact of the general data protection regulation (GDPR) on passenger information solutions, and presented its findings at the *Salon Cloud Expo Europe* in October 2018.

CONTRIBUTION 7

Exemplary worksite management

The construction of the Grand Paris Express involves 68 stations, six operations centres, hundreds of service structures, and more – a total of nearly 300 worksites, which Société du Grand Paris strives to manage in an exemplary manner, showing respect for everyone involved.

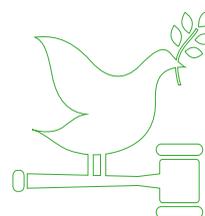
Before work is started, precautions and accident prevention measures are taken on each worksite. Over 5,000 geotechnical boreholes were drilled to gain a detailed understanding of the nature of the ground through which the new metro will be built. In addition to these boreholes, environmental, technical, social and economic studies were carried out site by site to identify construction methods that reduce the impact of the works on the neighbouring area.



This preparatory work makes it possible, during worksite installation, to implement a series of tangible practices that will reduce disruption.

In 2018, the territorial relations departments supported the various announcements made

throughout the year: presentation of the new government roadmap in February, postponement of the opening of Line 15 South in September, and new design-build method at the end of the year.

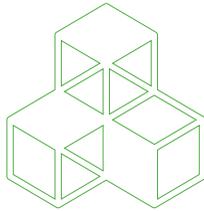


On Line 15 West, the goal was to continue the dialogue and present the method. The schedule was postponed by three years (five years for the Northern part), which is a challenge for the territories. Société du Grand Paris did, however, strive to manage the temporary phases as well as possible, for example by supporting a call for projects for temporary occupations in Bois-Colombes and Gennevilliers.

On Line 15 South, worksites were ramped up in the Hauts-de-Seine department with five stations and nine civil engineering structures. This activity entailed major road closures, which were negotiated by the territorial relations departments with the local authorities and government departments.

ENABLING LOCAL RESIDENTS TO LIVE WITH WORKSITES

Société du Grand Paris takes fine-tuned steps to foster acceptance of the worksites by local residents. It conducts frequent discussions with residents, housing authorities, condominium committees and managers of public facilities (retirement centres, primary schools, middle schools, high schools, universities, etc.) to cope with sometimes



76

very difficult situations. Such mediation made it possible to work closely with cities to meet very stringent schedules. The local resident unit of Société du Grand Paris supports people living in the direct vicinity of the Grand Paris Express worksites to ensure that construction work does not excessively disrupt their lives (noise, vibrations, light, dust, etc.). At the end

of 2018, the unit had recorded more than 1,200 support files being processed. A total of €520,000 was spent on these measures in 2018. The 2018 balance sheet of the Commission d'Indemnisation des Commerçants (retail compensation committee) shows a slight increase in the caseload. Overall, compensation with a value of €385,475 was paid, one-third less than in 2017 (€551,000), despite the fact that a larger amount had been budgeted at the start of work on Lines 16 and 17. The average amount of compensation paid by Société du Grand Paris in 2018 was €38,000.

ENSURING SAFETY

On the approximately 100 Grand Paris Express worksites currently under way, and on those that will be started in future, the Société du Grand Paris priority is safety. A dedicated team sets up procedures and measures to ensure a safe workplace for everyone – workers on the site and local residents alike. It is crucial that safety systems cover all aspects of the worksite (surface, inside and outside the land take,

Indicators

3

emergency management
units activated

17

contractual documents covering
local resident support closed

155

contractual documents covering
local resident support opened
(framework agreement, subsequent
agreement with individual affidavits,
individual riders)

206

discussion bodies (Cotech, Copil,
Cosu, public meetings, etc.)

834

apartment buildings and single-family
houses received compensation

94%

agreements reached
with local residents



"Société du Grand Paris is building a modern, comfortable, high-performance metro system that is also designed

to facilitate operation and maintenance. The Grand Paris Express will serve future generations for many years to come. The technical design and construction choices we make today will have an impact on its operation and management in future. We therefore need to work with our future operation and maintenance partners to ensure a high level of reliability, availability, safety and maintainability and to build infrastructure that will meet user expectations tomorrow."

Christophe Villard,
transport system
and operation director
at Société du Grand Paris

77

underground, over time) and that they be transferable to ensure that the emergency services can take them on board and connect with all the interfaces.

In 2018 a series of drills was started. They will be carried out throughout the works until the lines are brought into service. Three emergency management units were activated to bring together companies, project managers, health and safety coordinators, programme management, fire brigade, emergency medical services, police and prefectural departments (which oversee operations). They plan the action to be taken

in a major emergency (coordination, resources, interfaces). In 2018, some 100 accidents were recorded, about half of which were immediately notified to programme management, but none required a crisis management system. Physical injuries were for the most part minor.

An uninter- rupted dialogue

From the design of the metro to information for local residents concerned about worksite disruption, Société du Grand Paris keeps a dialogue going at all levels.

78

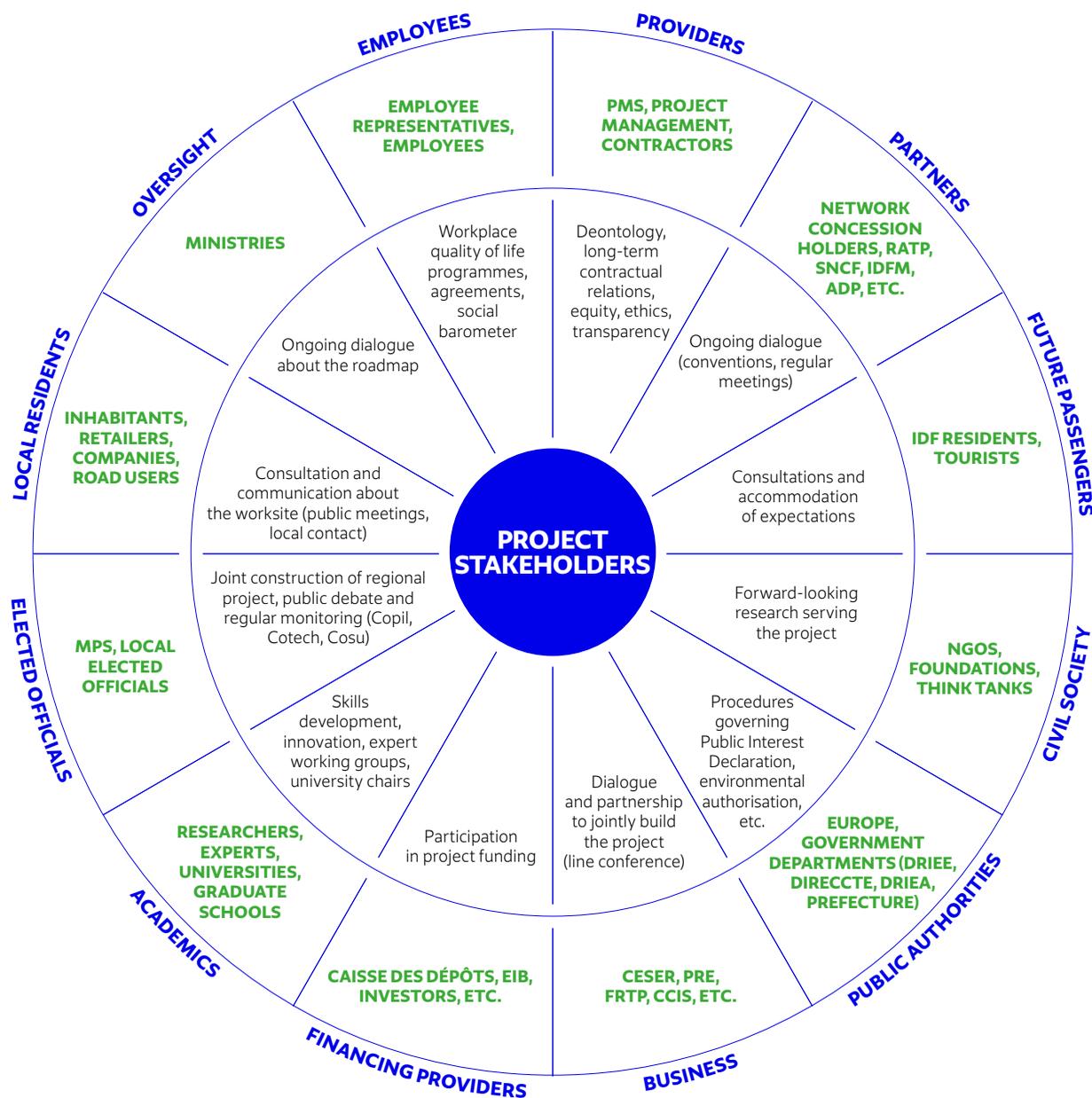
What will the new metro look like? More specifically, how will its front end be designed? The question was put directly to Île de France residents as part of a consultation organised by Société du Grand Paris, Île-de-France Mobilités and Alstom. More than 13,000 Internet users responded. The verdict was issued at the end of December 2018: of the three proposals submitted, the streamlined version came in first place, receiving more than 40% of the votes cast. An extra-wide windscreen offers a panoramic view of the tunnel and arrival at the station. The passenger experience is excellent. The Grand Paris Express brings the future user on board and makes him or her an active participant in this unprecedented adventure, as an expert in day-to-day public transport. The project is the outcome of a broad public debate on an impressive scale, and it continues to maintain a permanent dialogue. Opened on 15 September 2018, the Fabrique du Métro is an integral part of this ongoing interaction. In the second half of 2018, for example, it welcomed two design workshops with associations of people living with disability.

The dialogue continues during the construction phase, on the worksites. The names of the Grand Paris Express tunnel boring machines are decided on following a regular consultation with the children of the municipalities involved. Local residents are regularly invited to explore behind the scenes, notably during "KMs", when worksites invite the public to large open-house events at which the programme manager, works companies and local residents get together to talk and share. This outreach to the Île de France residents, local authorities and elected officials is the core activity of the departments responsible for relations with the Société du Grand Paris territories. Each department covers a geographical area and works in the field, maintaining an uninterrupted dialogue with elected officials to keep them abreast of the project and receive their input. This outreach takes place within discussion bodies, technical committees and management committees and makes it possible for them to monitor design, construction and installation of the structures required for the Grand Paris

Express project's construction. The participants, alongside programme management, include local authorities, officials and technical departments, the Île de France transport authority, passenger and local resident associations, and companies. Regular public meetings are held to discuss the works, their impact of daily life in the area and progress on the project with local residents.

In 2018, 122 meetings of these dialogue bodies took place in the Seine-Saint-Denis department, 93 in the Val-de-Marne, 43 in the Hauts-de-Seine and 13 in the Yvelines and in the Essonne. In the Essonne department, the cities of Morangis and Paray-Vieille-Poste were included in the consultation bodies set up by Paris Aéroport for the Aéroport d'Orly station, the end stop on Lines 14 and 18.

Project stakeholders



Sound governance

As part of its mission in serving the State, Société du Grand Paris continues to structure its organisation to achieve operational efficiency in line with the new government roadmap published in February 2018.

80

Société du Grand Paris operates under French government oversight and reports to three Ministries: the Ministry for the Ecological and Inclusive Transition, the Ministry of Economy and Finance and the Ministry of Territorial Cohesion. **Société du Grand Paris is structured in three main governing bodies, with elected officials at the heart of programme management.**

THE SUPERVISORY BOARD

The supervisory board, which is responsible for approving the general Société du Grand Paris policy guidelines, is made up of 21 members representing the French government and the Île de France territories. Chaired by Patrick Braouezec, President of the Établissement Public Territorial Plaine Commune, the supervisory board meets several times a year. It approves the public agency's policy guidelines and audits its financial statements and its development and construction operations. In 2018, the supervisory board met four times.

In November 2018, the supervisory board set up an **Audit and Commitments Committee** bringing together two existing bodies, the audit committee and the commitments committee. Chaired by Christian Favier, the new audit committee has a broader remit than the former committees to monitor the budget, accounting and financial management of Société du Grand Paris. It examines topics and forwards opinions and comments to the supervisory board. Its members are elected officials and government representatives who sit on the supervisory board as well as two qualified representatives with an industrial and financial profile. The audit committee, in its former and current configurations, met six times in 2018.

THE MANAGEMENT BOARD

Overseen by the supervisory board, Société du Grand Paris **Management Board** is responsible for implementing the decisions and recommendations adopted, in keeping

with the schedule. Chaired by Thierry Dallard, who was appointed by the President of the French Republic, the Management Board is made up of three members operating on a collegial basis.

The Management Board notably decided to set up a **contract procedures review committee** to ensure compliance with the disclosure and competition procedures applying to Société du Grand Paris and to assist the Chairman of the management board in awarding works, supply and service contracts. This committee is made up of 10 members, half of whom are from outside Société du Grand Paris. It is chaired by Francis Rol-Tanguy, Chief Counsellor at the Cour des Comptes. A representative of the transport economic and financial inspection mission also attends.

STRATEGY COMMITTEE

Lastly, Société du Grand Paris **strategy committee** rounds out the governance structure. Chaired by Bernard Gauducheau, Mayor of Vanves and member of the Île-de-France Regional Council, the strategy committee has 182 members – elected officials and social and business stakeholders in the Île de France region – who discuss and formulate proposals for the new metro and the new station districts.

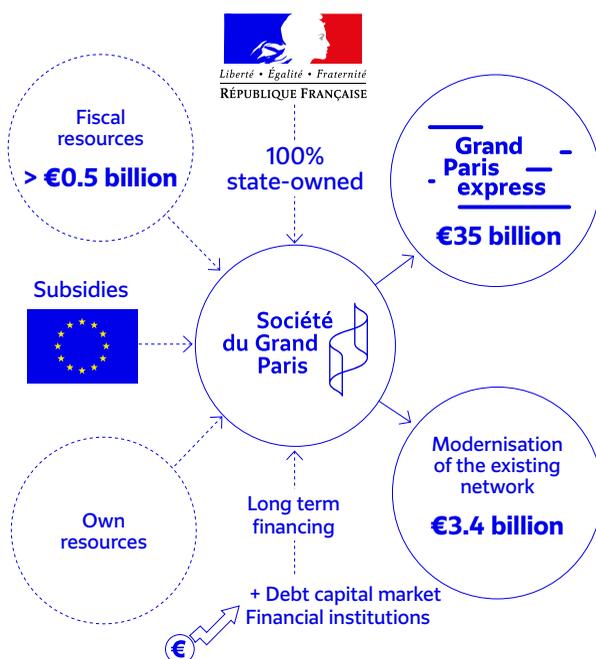
An **evaluation board** also assesses the economic, urban, social and regional effects of the project. Set up in 2017, the board expands the work of Société du Grand Paris **economics board**, which is in charge of assessing the works and their social and economic benefits. This board, chaired by Dominique Bureau, chairman of the Autorité de la Statistique Publique, brings together dozens of economists, all of whom internationally known for their scientific work in the fields of geographical economics and the economic and social impact of major transport infrastructure projects.

Financial data

2018 was the year that implementation of the Grand Paris Express project began in earnest. In particular, there was a sharp increase in expenditure on line 15 South and line 16 with the start of civil engineering works, and Société du Grand Paris made full use of its fund-raising potential. For the very first time, it raised money in the international financial markets by issuing bonds, repayments on which are secured over the long term by ring-fenced tax revenues.

82

A secure long-term funding model

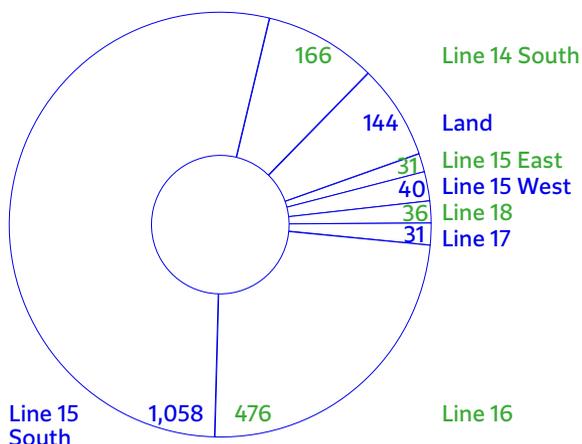


RAPID RAMP-UP OF THE GRAND PARIS EXPRESS PROJECT

In 2018, €2.12 billion was spent on implementing the Grand Paris Express project. In particular, work on line 15 South (from Pont de Sèvres to Noisy-Champs) ramped up with 1.8 km of tunnel-boring work at Champigny-sur-Marne and Noisy-Champs, the installation of a third tunnel boring machine in Bagneux and the start of works on line 16 after the first two civil engineering packages were signed (from Saint-Denis Pleyel to Le Bourget RER and from Le Bourget RER to Clichy – Montfermeil). From the time Société du Grand Paris was created until the end of 2018, spending commitments totalling more than €15 billion had been authorised.

Details of expenditure by line in 2018

in millions of euros

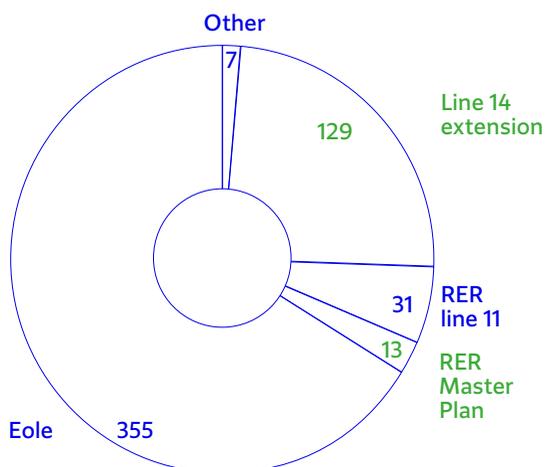


A MAJOR CONTRIBUTION TO THE MODERNISATION OF THE PARIS REGION'S EXISTING TRANSPORT NETWORK

In 2018, Société du Grand Paris spent €535 million, up 44% compared with 2017, on ongoing projects to modernise existing metro and RER networks as part of financing agreements with the Paris Region, the French state, local authorities and transport operators.

Société du Grand Paris contributions in 2018

in millions of euros



INCREASE IN TAX REVENUES

Paris Region tax revenues directly assigned to Société du Grand Paris amounted to €566 million in 2018 (up 6% on 2017), consisting of:

- €382 million from the office floorspace levy;
- €117 million from the special infrastructure levy;
- €67 million from the flat-rate tax on network companies.

FUND-RAISING POTENTIAL FULLY EXPLOITED

In 2018, to secure its cash position and diversify its access to long-term financial resources in view of its increasing funding needs, Société du Grand Paris arranged:

- a €3 billion negotiable European commercial paper (NeuCP) programme, approved by the Banque de France in February;
- a €5 billion Green Euro Medium Term Notes financing programme, approved by the AMF in July.

Société du Grand Paris carried out its first green bond issue in the international financial markets in October 2018 (€1.75 billion over 10 years), along with its first private placement in November (€20 million over 50 years). It also borrowed €300 million from the European Investment Bank and €300 million from Caisse des Dépôts. As a result, Société du Grand Paris raised a total of €2.37 billion in 2018, 99% of the upper limit authorised by the Supervisory Board, at an average fixed rate of 1.23%.

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October 2019.

With more than 100 worksites under way in the Île de France region in 2018, the first tunnel boring machines starting to work, and train design selected by the region's residents, the Grand Paris Express is scaling up. So is its programme management, with staff set to triple over the coming two-year period and a new structure based on eight dovetailing departments. As it moves into a new phase of its history, Société du Grand Paris is well aware of the huge challenges that lie ahead on this unprecedented project, and of its responsibilities in creating mobility systems that will change daily life in the region, bring the post-COP 21 metropolis into being and give Paris – the Grand Paris metropolitan area – the keys to its expansion and its prestige.



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