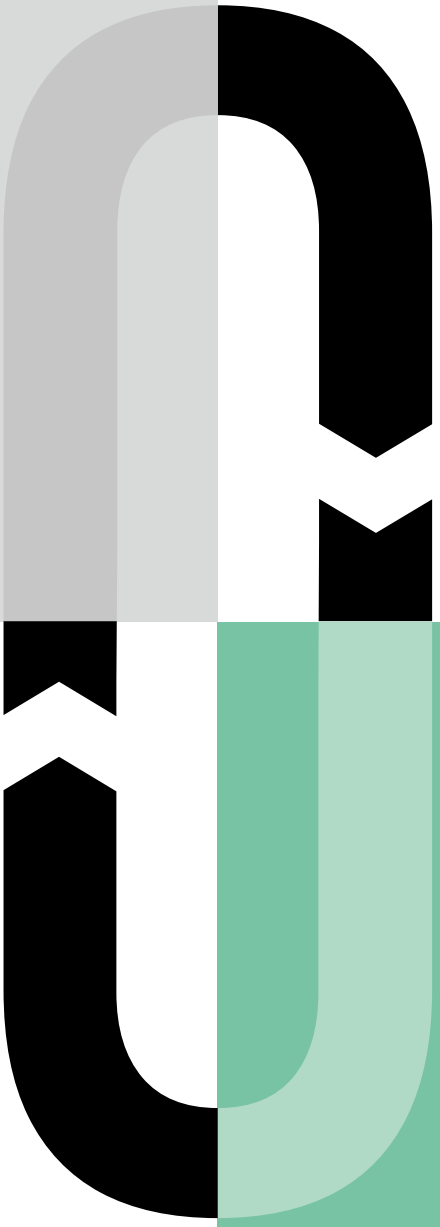
COMMITMENT TO THE CONSTRUCTION SITES OF THE LYON–TURIN RAILWAY LINE

STRATEGIES, PROJECTS AND RESULTS



LYON TURIN ENGAGEMENT FORUM

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FOREWORD

The letter of the European Commission

The TEN-T Network, to which the Lyon-Turin investment belongs, is the backbone of the EU Single Market. A connected, sustainable, smart, and competitive Europe depends on a solid transport network. A network which is modern, clean, safe, resilient, and secure. A network which contributes to the European Green Deal and therefore helps the EU to become a climate-neutral economy by 2050.

With the sector accounting for 25% of the EU's greenhouse gas discharges, reducing transport emissions is crucial for Europe. Without a further decarbonisation of transport and a significant reduction of emissions it would be impossible to deliver on the Green Deal goals. The objective of climate neutrality became a legally binding target in 2021, thanks to the European Climate Law. To achieve this fundamental change, it is necessary to make all transport modes more sustainable. We need to promote a truly effective and inter-operable multimodal transport system by putting in place the right incentives for the green transition to reduce the transport greenhouse gas emissions by 90% before 2050.

The Lyon-Turin railway investment is necessary for a smooth functioning of the TEN-T network in Europe and the operational effectiveness of the Mediterranean Corridor. The European Commission has been supporting the investment for many years both politically and financially.

The construction of the base tunnel together with access lines between Lyon and Turin will play a fundamental role towards increased connectivity of the Continent. It will promote one of the most sustainable modes of transport - railways and modal shift that fulfils all necessary conditions to deliver on the EU's Green Deal priorities.

The initiative of TELT outlined in the below document is worth showcasing here. Designed as a comprehensive guidebook for implementing sustainable practices on the transport construction sites, it is a step in a good direction to make the investments in transport infrastructure more environmentally friendly. There is a great potential in the decarbonisation of the construction sector with a special focus on transport infrastructure.

The document is also setting a benchmark for large construction projects, by promoting sustainable practices for building transport infrastructure. It stipulates that every construction must be designed, executed, maintained, recycled in such a way to reduce as much as possible the emissions, the volume of natural resources used, and the primary energy consumed. To achieve this objective, there is a need to move away from the traditional 'linear' working methods and develop instead a circular economy with life-cycle management of transport infrastructure.

This could include:

- a greater synergy between transport infrastructure and solutions improving energy efficiency through reduced consumption and storage;
- application of digital technologies in anticipation of upcoming AI technologies to increase security and safety of infrastructure;
- decarbonisation through application of innovative technologies such as application of renewable sources of energy, water management, and ventilation systems, for example;
- creation of an eco-system of suppliers, subcontractors that follow agreed practices related to monitoring emissions and finding joined solutions to reduce them;
- implementation of best practices related to public procurement;
- recycling and re-use of materials used at the construction phase.

I would like to thank TELT for the commitment and dedication to complete this key European investment as quickly as possible, while respecting the highest labour, safety and environmental standards.

Sincerely,

Herald Ruijters,
Deputy Director-General
for Mobility and Transport

The letter of TELT President and CEO

In today's rapidly evolving world, the construction industry stands at a pivotal juncture. As we progress, it becomes increasingly evident that our current actions will shape the environment and the quality of life for future generations. Embracing sustainable practices in construction is not just a necessity but a responsibility that we owe to our planet and to the communities we serve. At TELT, we are committed to leading the way in sustainable construction. Our mission is to integrate environmental stewardship, economic feasibility, and social responsibility into the Lyon-Turin Project but also in the companies that are involved with us in the base tunnel construction. This commitment is reflected in our dedication to minimizing the environmental impact of our construction activities, optimizing resource efficiency, and enhancing the well-being of all stakeholders. Sustainable construction is a complex approach that involves using materials and methods that reduce carbon emissions, conserving natural resources, managing waste responsibly, and fostering a culture of sustainability among our workforce and partners.

By adopting these practices, we not only contribute to the global effort against climate change but also ensure the longevity and resilience of our infrastructure.

This guide is designed to provide our teams and partners with a comprehensive framework for implementing sustainable practices in our construction sites. It outlines the principles and strategies that will help us achieve our sustainability goals and deliver projects that are environmentally sound, economically viable, and socially constructive.

We are proud to champion the cause of sustainability and invite all stakeholders to join us in this crucial endeavour. Together, we can build a future that is not only prosperous but also sustainable for generations to come.

Thank you for your dedication and commitment to this important cause.

Sincerely,

Daniel Bursaux
President

Maurizio Bufalini
CEO

EXECUTIVE SUMMARY AND CURRENT STATE OF PLAY

This document has a dual objective: to provide an initial overview of the Moncenisio base tunnel construction sites from a sustainability perspective and to lay the foundation for a path that will begin after the presentation. Focusing on all the central themes of the Companies Pact, in which we strongly reaffirm the priority of the "workplace safety" goal, we have highlighted the commitments and great inspirations that guide TELT and the other companies of the Lyon-Turin project. However, there is still a long way to go to achieve the goals that we have set ourselves, starting with safety for which the zero target is unfortunately not yet a reality.

This paper showcases good practices primarily in the environmental sector and in the companies' commitment to maximizing the economic value of the construction sites for the territories. However, much remains to be done in terms of circular economy, sustainable mobility, training, and anti-corruption.

The document highlights initiatives to reduce environmental impact; it also emphasizes the importance of eco-responsible living quarters for workers, incorporating elements like thermal inertia and reusable materials. Regarding quality and innovation, TELT implements an Integrated Quality Management System in line with ISO 9001 standards, ensuring high levels of quality, safety, and innovation. This system encourages continuous technological development in collaboration with local communities, promoting open innovation and creating positive value for all stakeholders.

The commitment to the United Nations Sustainable Development Goals for 2030 drives TELT's efforts in resource management. This includes sustainable water management and extensive environmental monitoring around construction sites to protect water resources.

Finally, TELT is dedicated to maintaining high standards of legality and ethical behavior. The document details practices like exemplary behavior, whistleblowing mechanisms, and compliance with legal frameworks to combat corruption and promote integrity.

THE LYON–TURIN COMPANIES PACT

As of 2021, all companies that sign a contract with TELT must also accept the stipulations set out in the code of ethics, of which the Lyon-Turin sustainability and company integrity pact is an integral part.

The spirit of the document is that, for the realisation of a unique work such as the Lyon-Turin line, the companies involved in the project must share the same objectives of quality, efficiency and legality, but above all cooperate so that the construction sites of the work set an example to be followed.

Because of its technological complexity, but also and above all because of its economic, political and symbolic significance, the cross-border section of the work under construction, and particularly its main activity, the Mont Cenis base tunnel, entails growing challenges that are not limited to 'state-of-the-art' construction. The relationship with stakeholders is inescapable for a project whose minimum duration is 120 years and which is part of the European Union's connection and development strategy. Aware of the relevance of their mission, TELT and its contractors are committed to upholding the highest ethical and professional standards that correspond to the Ten Principles of the United Nations Global Compact to which TELT has adhered since 2015.

The 'Lyon-Turin companies':

- have built a solid identity with this pact, based on the principles of sustainable development;
- have agreed on the practical principles of this commitment, which lies not only in the contractual terms, but first and foremost in their own pride in participating in the creation of an unprecedented virtuous circle to be imitated and spread for other works and in other contexts.

The signing of the Lyon-Turin Integrity and Sustainability Pact during the opening of the Chiomonte construction site for the excavation of the base tunnel on the Italian side, December 2023.

BENCHMARKING

Sustainability across major EU infrastructure projectst

Through a series of benchmarking activities over the last three years, TELT has put the spotlight on a wide range of important aspects that have to be considered in a major infrastructure project such as the Lyon-Turin railway line.

From organizational management, HR, and infrastructural planning to stakeholder relations, implementation of new connected technologies, and creative direction, TELT has performed extensive research in these areas to collect key take aways and best practices to continuously improve the quality of the Lyon-Turin project itself.

A common element through all these benchmarking activities is the aspect of innovation and new approaches in the different fields that TELT sees as an immense added value for their own activities. Even more so in the benchmarking regarding sustainability in infrastructure projects across the EU.

The key outcomes of this research can be summarized in four clusters:

1. ENERGY

Solutions to improve efficiency and reduce infrastructure energy consumption by choosing on-site power generation, storing green energy produced from renewables, and creating positive interactions with the local energy grid.

- Green energy production
- Smart grids
- Energy storage

2. SAFETY

Solutions to extend the lifetime of the systems and guarantee the resilience of them through a monitoring of the infrastructure, the anticipation of potential incidents and dangers, and a real-time monitoring of the entire railway system.

- Smart trains
- AI for train and infrastructure protection

3. COMMUNICATION

Optimization of the IT infrastructure to reduce their energy consumption and use of rare materials, as well as reinforce the recycling and reuse of electrical components.

- Green IT

4. SERVICE SYSTEMS

Improvement of efficiency and optimization of mechanical, ventilation, and water management systems to minimize the use of non-renewable resources.

- Waste water management
- Ventilation systems

Knowledge exchange meeting between TELT and Rail Baltica, May 2023.

These best practices can be translated in operative activities for TELT to improve the project sustainability even further.

1. INTERNAL ACTIONS

Implement sustainable and certified procurement processes:

- to ensure fair and equitable selection of sustainable suppliers, companies can revamp their purchasing practices, updating them to new environmental strategies and international standards;
- the 2017 ISO standard indicates essential guidelines for sustainable procurement processes according to internationally defined standards.

Collaboratively involve future stakeholders in the evaluation and proposal of sustainable actions:

- involvement of all stakeholders can be important to ensure convergence and synergy with all strategic sustainability plans defined by the companies it will deal with during operations;
- examples of stakeholders that can be involved are future customers, rail operators, tenants of retail space or telecom and energy companies, among others.

2. WITHIN THE LYON-TURIN PROJECTS

Certify the sustainability of suppliers requires the sign of sustainability certifications based on European and International regulations to be eligible for bidding, adhering for example to ISO standards 14000, 9000, or the EMAS certification for ecological management and sustainability of companies in the EU.

Include scoring parameters for supplier bids that consider environmental and social performance:

- establish scoring criteria to favourably score companies that present more sustainable bids, based on project documentation;
- it is recommended that the developer give suppliers guidelines on the drafting of documentation.

Collaboratively solicit suppliers for a non-binding list of sustainable projects and ideas at the bidding stage, to be implemented with the winning supplier:

- requesting suppliers to propose additional, project-improving designs with sustainability in mind;
- TELT promotes the integration of sustainable best practice in its tender strategy.

3. DURING PROJECT EXECUTION

Requiring suppliers to monitor the project emissions over time, over the entire project duration:

- include a requirement for suppliers to monitor energy consumption and emissions resulting from the project, differentiating between emissions due to construction and those during operation;
- require submission of periodic reports, typically annually, highlighting consumption, emissions, and suggestions for their reduction;
- monitoring facilitates the evaluation of energy efficiency measures and can also be used to differentiate supplier bids that propose lower emissions or consumption.

Assign an economic value to the reduction in emissions and/or energy consumption described in the supplier bids, resulting in an increase or decrease in the supplier fee. In a 'profit sharing' logic, part of the benefits achieved can be recognized to the supplier, to incentivize them to environmental commitment and compensate for their extra- effort and extra-investment compared to the use of standard non-green solutions.

FOCUS ON THE COMPANIES

of the Lyon-Turin railway line

Sustainability statement by the CEOs of the Lyon-Turin project.

DODIN CAMPENON BERNARD

Our company's environmental objectives for 2030 revolve around 3 key areas:

1. reduce our CO_2 emissions by 40% for scopes 1&2 and by 30% for upstream scope 3;
2. increase material recovery from our waste to achieve 90% material recovery from inert and non-hazardous waste;
3. preserve the natural environment, in particular by ensuring that 100% of washing water is recycled.

To achieve this objective, our action plan is based on 6 points:

- **SKILLS:** Train our employees in the operational solutions needed to achieve our environmental ambitions;
- **PROSPECTING:** Positioning ourselves in projects that meet our environmental objectives;
- **BUSINESS ACQUISITIONS:** Offering our customers projects that are committed to the environment, right from the outset;
- **DOING BUSINESS:** Carrying out environmentally-friendly projects throughout the works;
- **SUPPORT:** Mobilising the skills of our support services to achieve our environmental ambitions;
- **BUSINESS MANAGEMENT:** Consolidating our environmental indicators to monitor the achievement of our 2030 targets.

EIFFAGE

For over 10 years, we have been working hand in hand with our clients, suppliers and partners as a key player in urban construction and sustainable infrastructure to promote sustainable growth, drawing on our extensive expertise to bring about the environmental transition. This is the way in which we strive to reduce our carbon footprint and protect the living world in our construction and concession operations.

GHELLA 1894 130TH ANNIVERSARY

This year marks the 130th anniversary of Ghella: founded in 1894, Ghella is recognised as a major global force in the construction of large-scale public projects. Our Vision is rooted in a business model that prioritises creating a better world for future generations and places the well-being of society at the heart of our corporate philosophy. We strive to enhance communications, connections and foster freedom of movement. Tunnels are considered the future of urban centres and of major rail links and this makes us active players in the transition towards sustainable mobility. Our Mission is to build excellence in a sustainable and innovative way. We work with our clients to create efficient infrastructure that generates social and economic value for the communities in which we operate, and we are committed to achieving this in the most responsible way, both with regard to the environment and to society. To achieve these goals, we employ ad-

The platform of the La Praz construction site for the excavation of the base tunnel on the French side, March 2023.
© Caroline Moureaux

vanced technologies and state-of-the-art construction methods, ensuring the highest standards of Health, Wellbeing and Safety in the workplace. In Ghella we assess, monitor, and reduce our environmental impacts by adopting eco-design principles in our projects. We minimise greenhouse gas emissions and favour materials and services with the lowest impact and the highest benefit for the Circular Economy. We protect and promote the well-being, human capital, and environmental, historical, and cultural heritage of the local communities in which we operate. We consider it essential to engage our stakeholders and listen to their legitimate expectations, ensuring that our projects leave a positive mark on the territory. We respect the highest standards of ethics and transparency, always prioritising compliance, contractual and to local requirements. We have zero tolerance for corruption and respect the Human Rights of all our employees and collaborators in line with our Code of Ethics, providing reporting channels for potential violations. We promote values of equality and inclusiveness among our employees and condemn any discrimination or inappropriate behaviour. We invest in the training of our staff and promote a healthy work-life balance.

We promote innovation by creating a culture of sustainability, where ideas are freely expressed and considered. Our commitment to sustainability is formalised in our ESG Strategy, implemented through a multi-year Sustainability Plan, which includes quantitative environmental, social and governance targets to 2030 and 2050, along with measures to be taken to ensure their achievement.

Implenia

As Switzerland's leading construction and real estate service provider, Implenia develops, builds and manages homes, workplaces and infrastructure for future generations in Switzerland and Germany. It also offers tunnelling and related infrastructure services in other markets.

Formed in 2006, the company can look back on around 150 years of construction tradition. Implenia brings together the know-how of its highly skilled development, planning and execution units under the umbrella of an integrated multinational construction and real estate service provider. With its broad offering and the expertise of its specialists, the Group realises large, complex projects and provides client-centric support across the entire life cycle of a building or structure.

It focuses on client needs and on striking a sustainable balance between commercial success and social and environmental responsibility.

Sustainability is an integral part of everything that Implenia does.
The future of Implenia as a company depends on being environmentally, socially and commercially sustainable.

As one of Implenia's five corporate values, sustainability has been firmly anchored in the corporate culture since 2009.

Construction companies can contribute a lot in the areas of environment, economy and society. But this also brings with it a great responsibility. Implenia takes this responsibility seriously and considers the issue of sustainability in all these dimensions when developing, planning and building.

The sustainability strategy of Implenia is based on five priorities. These priorities cover the economic, ecological and social aspects of sustainability and shape the Group's commitment to sustainability. They also form the backbone of the company's sustainability reporting (see https://implenia.com/fr/durabilite/):

- sustainable products and services: Implenia looks for sustainable solutions when working on real estate and infrastructure projects. It can do this most effectively when it develops real estate projects on its own land, or when it is commissioned to act as developer. Beyond this, Implenia requires its business partners to operate sustainably and is actively committed to sustainable construction standards;
- respect for the environment: Implenia pursues ambitious environmental goals and continuously works to minimise the environmental impact of its construction sites. In order to reduce the entire group's greenhouse gas emissions, its primary focus is on resource and energy consumption;
- attractive working environment: Around 9,500 employees from 92 nations work at Implenia. The company provides them with a safe and modern working environment and is continuously expanding its in-house education and training offering;
- social commitment and compliance: Implenia acknowledges its social responsibilities. The company is committed to ethical principles; its Code of Conduct and associated processes ensure that employees comply with these principles. It is also involved in social projects well beyond its own business activities;
- financial and operational excellence: Implenia continuously adapts its structures and processes in response to market developments in order to stay competitive and exploit market opportunities. Carefully weighing up opportunities and risks, the company exploits its entrepreneurial freedom and creates sustainable value for its shareholders and stakeholders.

Implenia drives sustainability with a holistic approach and takes a lead in all its aspects – environmental, economic and social.

Sustainability is the prime mover in the competitive evolution of the infrastructure as a 'system', a fundamental force in triggering a new season of conception and construction of modern and efficient infrastructure networks. The transition towards an economic development model not solely based on profitability but also on social progress and protection of the environment - including through the creation of more efficient regeneration and reuse systems - is key to achieving the onset of a circular economy capable of maximising the usefulness and value over time of the designed infrastructure.

Nowadays, an essential element in the decision-making process behind the designing of sustainable infrastructure is the identification of the 'right' project. The road travelled by Italferr, marked by significant and factual milestones that have disseminated new approaches and methods for the design and construction of large transport infrastructure works based on sustainable development, places the Company among the pioneers of a kind of Sustainability that becomes essential in obtaining a new form of sustainable building, thereby creating value for future generations and new business opportunities.

Itinera has been operating in Italy and worldwide for over 80 years in the realisation of major infrastructure and civil construction projects.

Founded in 1938, the company is part of the ASTM Group, the second largest operator in the world in the management of toll motorways, with approximately 6,200 km of network.

In a highly complex scenario resulting from the effects of climate change, economic uncertainty, and major conflicts, Itinera has implemented choices consistent with its sustainability principles. These focus on the following themes:

- ecological transition, with a progressive decarbonisation of all activities and the start of the transition to a circular economy and the sustainable use of resources; concerning this theme, a challenging decarbonisation plan has been launched that will lead to a 44% reduction in Scope 1 and 2 emissions by 2026 and 54% by 2030. This is accompanied by a further plan to reduce Scope 3 emissions by up to 11%;
- focus on the local territory, in the awareness of being an engine of development for the communities in which the company operates;
- quality of the activities carried out, by improving performance and maximising stakeholder satisfaction levels.

The pursuit of these objectives across the entire line of business has enabled the Company in the short, medium, and long term, to define its priorities in line with the United Nations Sustainable Development Goals (SDGs) to which Itinera has been contributing for some time now and will contribute more and more in the future, with the principles of the 'UN Global Compact', to which Itinera formally adhered in June, with the UN Universal Declaration of Human Rights, and the Conventions and Recommendations of the International Labour Organisation (ILO).

Thanks to the synergies between the different business areas, and with an eye also on innovation, Itinera guarantees maximum commitment to reduce its environmental impact, demonstrate social sensitivity, meet the needs of customers and communities, and assure high safety standards for employees and suppliers.

The integration between industrial strategy and sustainability strategy is also evident in the numbers, with huge investments planned in the Industrial Plan to 2030, in strong growth compared to the past.

A confirmation of the will to combine the company's development with that of communities, territories and the environment also concerns the workforce, with a significant recruitment plan, particularly aimed at constantly reducing the gender gap, a typical element of the construction sector.

This is a major commitment, which underlines the solidity and resilience of Itinera's business model. Thanks to this model, the operating results are accompanied by an overall positive trend in the sustainability indicators relating to the objectives of the three pillars of our Strategic Plan: People, Planet, and Prosperity.

Itinera for People, for the Planet and for Prosperity: the three P's that characterise the purpose of our business.

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setec

Since its creation, as part of its very raison d'être, the setec group has always positioned itself as an engineering company of excellence, involved in projects that make sense, encouraging its employees to seek innovative solutions and be free to dare.

Commitment, integrity and responsibility are the values that enable us to play an active role in the development of our businesses, and to be true architects of change.

As a totally independent group (owned by its employees and company representatives), setec is free to choose its battles.

This is why, resolutely looking to the future and fully aware of the role that engineering must play in the fight against climate change as well as the ecological and societal transition, the employees of the setec group have collectively chosen their profession of faith: to be 'Engineers & Citizens'.

The expression of this collective awareness took place during the 60th anniversary of the setec group, which resulted in the definition of the first building blocks of the 'Engineers & Citizens' approach:

- respect for the environment, eco-construction, mobility and transport, urban growth, energy: these major contemporary challenges are at the heart of our day-to-day concerns;
- as engineers, we are guided by a scientific mindset, technical excellence and a taste for well-executed projects;
- as citizens, we also want to make things change and carry out projects that are compatible with our values. Engineers and citizens: these two facets combined give meaning to our action and embody what we seek to be in all our projects;
- we innovate to preserve resources and make better use of existing buildings. We implement solutions to shape new forms of mobility. We advise project owners and recommend the most virtuous solutions for the planet and biodiversity;
- we think in terms of energy efficiency, the circular economy and resilience. In each of our areas of expertise, we do our bit to create a more responsible form of engineering; because we are simultaneously Engineers & Citizens.

The Engineers & Citizens approach is based on the following 4 pillars:

1. Advising and acting to reduce the environmental impact of our projects and activities;
2. Ensuring that our practices respect our values;
3. Promoting the professional fulfilment and development of all our teams;
4. Involving our ecosystem.

Our actions are part of a roadmap deployed within all our subsidiaries, in France and abroad, according to their characteristic challenges and contexts, and they achieve the transformation objectives set out in our strategic plan.

SYSTRA

Sustainable development is not just a strategic intention: it lies at the heart of everything we do. We use our knowledge of transport systems and our expertise in eco-design to help our customers reduce their impact on resources and biodiversity, while taking into account the social acceptability of our projects.

Our business is to create mobility solutions facilitating access to regions, services and the movement of people and goods. This is our raison d'être. We have a responsibility to offer every individual the freedom to travel so that they can live better.

The infrastructure we build has to be reliable, sustainable and resilient, in order to support the economic development of cities and regions, but also to promote the well-being of all, by creating affordable and equitable access.

Against a backdrop of urgent needs resulting from climate change and energy transition, we are particularly focused on managing resources (biodiversity, water, etc.) and controlling our carbon footprint.

Our technical choices and innovations are based on an approach of circular economy. In this way, we reconcile economic imperatives, the reduction of negative impacts and the enhancement of positive impacts in a long-term vision. We place the eco-design approach at the heart of our projects, taking into account issues at every stage of the project lifecycle, from planning to design and throughout the operation and maintenance phases.

At SYSTRA, sustainable development is based on 3 aspects:

- our environmental responsibility to make use of our projects in order to act upon the challenges of climate change and the preservation of biodiversity;
- our societal responsibility to support our customers and communities in achieving sustainable mobility;
- our social responsibility as a responsible and committed employer.

VINCI CONSTRUCTION | GRANDS PROJETS

Heirs to the great builders and committed players in today's world, the men and women of VINCI Construction Grands Projets put their expertise and performance culture at the service of their customers and communities to design and build the major infrastructures of tomorrow, throughout the world, in a sustainable and exemplary manner.

- **SAFETY:** We firmly reject any fatality. We make every effort to ensure that our construction sites are places where the health and physical integrity of all those involved are preserved. Our culture: zero accidents.
- **EXCELLENCE:** Attentive to the needs of our customers and stakeholders and constantly striving to satisfy them, the men and women of the company are committed to promoting excellence in the design and construction of major projects that make a lasting difference to the daily lives of communities, using both the simplest or the most technical means.
- **VALUING EMPLOYEES:** The men and women in the company are our greatest asset, and their diversity is the key to our success. The company strives to give fair recognition to the contributions of each employee and to foster the conditions for their personal and professional development.
- **INNOVATION:** Every project is unique. We put our know-how, inventiveness and mastery of technologies at the service of our customers and users to devise tailor-made solutions that meet their most specific needs and constraints.
- **SOCIAL AND ENVIRONMENTAL COMMITMENT:** The men and women of the company are aware of the social responsibility they bear to the communities in which they operate. With rigorous respect for ethics and human rights, and a concern for the common good, they are resolutely committed to working towards eco-responsible development.

spie batignolles

Twenty years ago, we made the bold choice of becoming independent with regard to shareholder structure. Since then, Spie batignolles has made remarkable progress to become one of the leading businesses in the building and civil engineering sector, with a leading position in France in the construction sector. This success reflects our ability to overcome obstacles and underlines the quality of our strategic model. This success reflects our ability to overcome obstacles and underlines the quality of our strategic model, which we have been applying since 2005 on the Lyon-Turin construction sites.

However, we are now facing an unprecedented challenge: the ecological emergency and the need to decarbonise our activities. As a major player in the construction industry, we are fully aware of our responsibility and are determined to act. Digitalisation, new construction methods, innovative materials, the circular economy and managing the energy performance of our structures are all areas in which we need to redouble our efforts. These are not just challenges, but also opportunities for growth, transformation and attracting new talent to our businesses.

In 2023, we took a new step forward with the launch of the Accel'R plan, which coordinates all our efforts to achieve our ambitious goal of reducing our greenhouse gas emissions by 24% by 2030. We have also strengthened our commitment to more environmentally-friendly development and to preserving natural areas through Spie batignolles paysage.

Finally, aware of the challenges posed by digital and energy transformations in the construction sector, we have launched a BTP 4.0 transformation project aimed at adapting our working methods to new technical and regulatory constraints while improving the management of our projects. By integrating innovative tools and construction methods such as BIM, artificial intelligence and prefabrication, we are strengthening our ability to meet the growing demands of the market while reducing our carbon footprint.

webuild

Webuild is a global leader in the design and construction of large, complex projects in the sectors of sustainable mobility, hydropower, water management and production, and green buildings.

In almost 120 years of applied engineering on more than 3,200 projects, the Group has consolidated experience in 50 countries thanks to the talent of 87,000 people.

Webuild's sustainability strategy is embodied in the ESG Plan, which was defined in 2021 with the aim of improving the environmental sustainability of the Group's projects and activities and helping to optimise the sector's efficiency in terms of health, safety, diversity and inclusion, while leveraging innovation and digitalisation.

This 3-year plan was completed in 2023. Webuild has largely achieved all its goals and has consolidated its position in terms of sustainability.

Among its achievements, Webuild exceeded its expected target of reducing the rate of GHG emissions intensity (scope 1&2), down 67% from the 2017 baseline, as against the 2025 target of -50%. Furthermore, additional investments in innovative high-potential projects to be realised by 2023 doubled compared to expectations, exceeding € 57 million, far above the € 30 million planned.

In line with the Plan's targets, the accident rate – dubbed LTIFR – decreased by 41% in 2022 compared to the 2017 baseline and improved further in 2023.

Finally, the target percentage of women identified in the company's succession planning process of 25% was reached.

Confirming the Group's sustainability-oriented strategy, over 90% of the construction order book and 87% of revenues are related to projects linked to the advancement of the United Nations' Sustainable Development Goals (SDGs).

A JOURNEY THROUGH THE CONSTRUCTION SITES

sustainability drivers

Presentation of the construction sites

The 57.5 km of the Mont Cenis base tunnel is being excavated in the Alps between France and Italy from various access points provided by the previously constructed access slopes. The underground work uses the mechanised method, that is, with large tunnel boring machines (TBMs), along with the so-called traditional method, namely using explosives or hydraulic breakers, in the most geologically sensitive points.

In addition to the base tunnel, TELT is also required to construct the two new international stations in Susa and Saint-Jean-de-Maurienne, and the interconnection with the existing line. For this, a series of above-ground construction sites are planned in the Susa and the Maurienne valleys.

More than 50% of the materials extracted during the works is destined for recycling sites where it is processed to be reused in the base tunnel constructions, such as segments, aggregate for concrete and railway embankments. The portion of rock that cannot be reused in the works due to its mechanical and chemical characteristics, is used for restoring and reviving the natural environment of sites identified in the area.

The currently operational construction sites are the following:

- **CO 03/04** - Base tunnel Maddalena-Susa – Awarded to UXT (Itinera, Ghella, Spie batignolles GC);
- **CO 05a** Avrieux Shaft – Awarded to VINCI Construction Grands Projets, DODIN CAMPENON BERNARD, CAMPENON BERNARD Centre Est, WeBuild, MASTER DRILLING Europe;
- **CO 05** Base Tunnel Modane-Maddalena Awarded to Elyos (Eiffage Spie batignolles GC, Ghella, COGEIS);
- **CO 06/07** - Base Tunnel La Praz-Modane-S. Martin La Porte Awarded to VINCI Construction Grands Projets (group head) / Dodin Campenon Bernard / VINCI Construction France TP Lyon / WeBuild;
- **CO 08** - Base Tunnel S. Julien Mont Denis-S. Martine La Porte awarded to IMPLENIA Suisse (group head) / IMPLENIA France / NGE / ITINERA / RIZZANI de ECCHER;
- **CO 09** - S. Jean de Maurienne Works in collaboration with SNCF;
- **CO 10** - Valorization of Materials (Italian Side);
- **CO 11** - Valorization of Materials (French Side) awarded to EUROVIA Alpes (group head), Carrières du Bassin Rhônalpin / SATM / Granulats VICAT / Spie batignolles valerian / Spie batignolles malet / VINCI Construction Terrassements (today Terélian) / GIE GMM 73

The Villarodin-Bourget / Modane slope, core of the Mont Cenis base tunnel, March 2023.
© Caroline Moureaux

Construction sites for the Lyon-Turin base tunnel are operational in both countries. The base tunnel, constituting the principal part of the cross-border section, is a complex infrastructure, consisting of 2 parallel tubes of 57.5 km, designed to accommodate the tracks for the passage of freight and passenger trains, 204 safety by-passes and 4 access adits.

In addition to the underground works, TELT manages and coordinates the above-ground construction sites on the Italian and French sides, which assure the connections to the respective national lines through the new international stations.

There are three access adits on the French side – Villarodin-Bourget/Modane, La Praz and Saint-Martin-La-Porte and one on the Italian side, in Chiomonte; in total, they represent approximately 18 km of tunnels that are functional both for the construction and maintenance of the base tunnel and as an emergency exit. More specifically, the access have represented 4 different fronts for the exploratory phase necessary to evaluate the main geological obstacles and the most efficient solutions for the base tunnel construction: the re-use of excavated materials at the Villarodin-Bourget/Modane construction site; water management in tunnels in La Praz; rock convergences in Saint-Martin-la-Porte; and mechanised excavation in Chiomonte.

They are currently serving as access routes to the base tunnel construction site, and when the tunnel will be operational, they will function as maintenance access and safety tunnels.

Participating in the Safety First Objective

TELT considers compliance with safety regulations and guidelines to be an indispensable minimum standard, but this alone is not sufficient for a project such as the Lyon-Turin line. In order for the objective of 'zero deaths' and 'zero accidents' in the construction site (and in the other places where TELT operates) to be effectively attainable, suppliers are called upon to use all the instruments made available to them by TELT to avoid even minor accidents on the construction site or in the performance of a service. They are required to put in place a systematic information/training campaign, periodically verifying the level of training on a 'statistically' significant number of workers and implementing control procedures and state-of-the-art safety systems, and also to carry out periodic emergency management tests on the construction site.

Between 2023 and 2024, there has been a decrease in the severity index of accidents, demonstrating a good response to awareness initiatives, although much remains to be done. On the other hand, the feedback on events aligns with the Mission S (Mission Safety) project, focused on spreading the culture of safety within and outside of TELT, aiming to implement innovative measures to strengthen safety control at various levels by establishing a new dedicated work program.

However, considering the CO5A construction site for the Avrieux platform ventilation shafts, the CO6/7 La Praz/SMP, and the CO08 Saint-Julien-Mont-Denis, negative data is observed: compared to previous years, there has been an increase in injuries as well as negative observations from TELT's SLT service inspections. Regarding the reported period, it is also necessary to focus on the fatal accidents that occurred on CO9, CO6-7, and CO8, which reinforce TELT and the companies' commitment to improving the prevention of all types of accidents. The Lyon-Turin companies also monitor personnel to avoid the use of recreational drugs/pharmacological substances and alcohol on the construction site with possible serious consequences on attentiveness and therefore on safety. For this reason and in general out of a sense of responsibility towards their employees, the Lyon-Turin companies promote a culture against the abuse of these substances even outside the workplace.

Operative construction site

OPEN AIR WORKS

Susa international station

Saint-Jean-de-Maurienne multimodal hub and railway station

Railway interconnection with historical line

Bridges and ancillary works

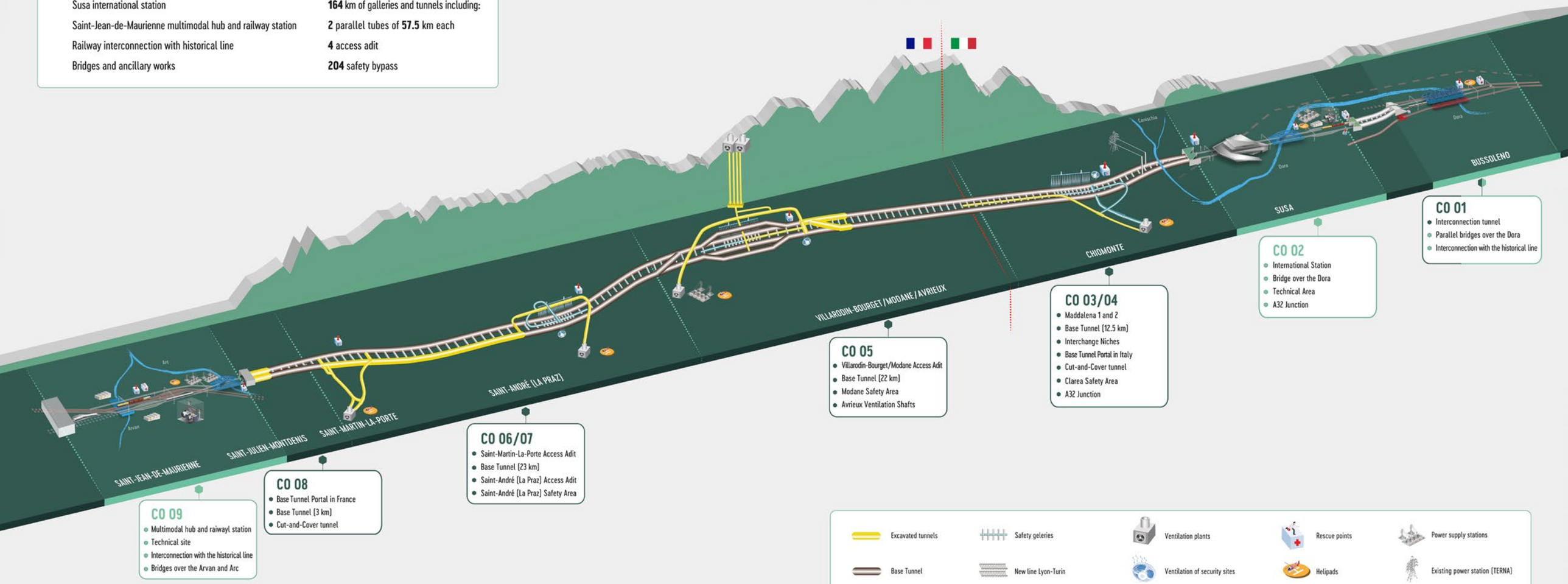
UNDERGROUND WORKS

164 km of galleries and tunnels including:

2 parallel tubes of **57.5** km each

4 access adit

204 safety bypass



CO 09

- Multimodal hub and raiwayl station
- Technical site
- Interconnection with the historical line
- Bridges over the Arvan and Arc

CO 08

- Base Tunnel Portal in France
- Base Tunnel (3 km)
- Cut-and-Cover tunnel

CO 06/07

- Saint-Martin-La-Porte Access Adit
- Base Tunnel (23 km)
- Saint-André (La Praz) Access Adit
- Saint-André (La Praz) Safety Area

CO 05

- Villarodin-Bourget/Modane Access Adit
- Base Tunnel (22 km)
- Modane Safety Area
- Avrieux Ventilation Shafts

CO 03/04

- Maddalena 1 and 2
- Base Tunnel (12.5 km)
- Interchange Niches
- Base Tunnel Portal in Italy
- Cut-and-Cover tunnel
- Clarea Safety Area
- A32 Junction

CO 02

- International Station
- Bridge over the Dora
- Technical Area
- A32 Junction

CO 01

- Interconnection tunnel
- Parallel bridges over the Dora
- Interconnection with the historical line

- Excavated tunnels
- Base Tunnel
- Interconnection tunnel
- Access adit
- Safety geleries
- New line Lyon-Turin
- Historical line
- Access line to the Glandon tunnel
- Ventilation plants
- Ventilation of security sites
- Fogging systems in security sites
- Fire fighting points
- Rescue points
- Helipads
- Maintenance workshops
- Command and control posts
- Power supply stations
- Existing power station (TERNA)

CO 03/04 La Maddalena Base Tunnel Awarded in 2023 Best practice in safety by ITALFERR

Italferr's organizational structure includes a dedicated department as a centre of excellence on safety issues. Intense training activity are carried out every year, such as the "safety school" which provides 60 hours of training for all new construction site safety coordinators. In addition to general training courses on safety and environment, newly recruited workers will receive specific training in specific processes to be carried out (e.g. metal carpentry, welding, mechanical processing with workshop tools).

Workers that will have to drive vehicles or use equipment that requires certifications, will be assisted in obtaining or updating the necessary licenses and/or certifications.

The aim is to supply a complete and high-level training that can be subsequently employed in other infrastructural and/or building projects, like those previewed for the Operating Sites following the conclusion of CO3-4 of the Lyon-Turin line.

CO 03/04 La Maddalena Interchange Niches 2018-2023 Best practice in safety by WEBUILD

The Webuild Group is dedicated to maintaining the highest safety standards for the TELT project. Our "Safety First" objective aims to continually improve workplace safety and reduce injury rates.

The Group injury rate (LTIFR) decreased by 41% in 2022 compared to the 2017 baseline and improved further in 2023.

Our commitment to safety has yielded significant results at the Maddalena Niches project with a remarkable 78% index reduction from 2022 to 2023.

Technical Innovations
As an example of the Webuild Group's focus on innovative solutions applied to Occupational Safety, a key initiative is the deployment of Axel, an Autonomous Exploration Electrified Vehicle.

Developed in partnership with CIM 4.0, Axel is a remote-controlled rover designed for safe tunnel inspections, eliminating human risk by exploring hazardous sections of the tunnel.

This innovative robot, equipped with advanced sensors and cameras, safely gathers crucial data in extreme conditions such as humidity, temperature, and presence of dangerous atmosphere, ensuring the safety of subsequent human operations.

Safety Cultural Programs
As far as increasing organizational safety awareness, since 2017, Webuild Group proudly implemented its own Safety Builders Program. An innovative training path that aims at strengthening our Health & Safety Culture and at reaching a new level of consciousness of our fundamental leading role. The Program aims at improving the quality of our HSE Management System, so that in each project phase people's virtuous behaviours can increase. The Program is made of four tools, to spread through all the organization's levels the Group safety culture using a top-bottom communication flow.

CO 05a Avrieux Shaft
Best practice in safety by DODIN CAMPENON BERNARD

One of the major risks in construction sites is the interaction between machines and pedestrians: not only are these interactions the cause of numerous accidents, but these accidents are frequently very serious. In line with the general principles of prevention, we are implementing innovative measures on the CO 05 construction site to reduce the exposure of people to machines:

- the pickling of the spoil from the chambers at the bottom of the well is carried out using remoted-controlled machines. This innovative measure, inspired by mining industry practices, makes it possible, on the one hand, not to expose machine drivers to potential falling blocks and, on the other hand, not to have any pedestrians in the vicinity of the machines responsible for pickling;
- the presence time of pedestrians in construction zones is limited as much as possible thanks to the deployment of innovative technological solutions:
  - > the PIKA solution is dedicated to site geologists and geotechnicians. It allows rapid scanning of the working face, in high definition, by taking photographs of the working face. The post-processing of the images is automatic, and the analysis of the readings is carried out outside the construction site, limiting the presence of the operator on site to a few minutes, and therefore eliminating machine-pedestrian interaction times;
  - > likewise, a solution for digitizing topographical acquisitions has been put in place, allowing production staff to access the data acquired by the site's topographical technicians without having them to go to the construction site later.

CO 06/07 Saint-Martin-la-Porte
Started in 2021
Best Practice in safety by VINCI Construction Grands Projets

For TELT's project, as for all our projects, safety is at the heart of our priorities. This requires exemplarity, transparency and dialogue at all levels of the company:

- permanent collaboration with stakeholders (such as: the OPPBTP, the SDIS, etc.);
- deployment of innovative tools:
  - > in situ dust analysis laboratory to measure air quality in tunnels quickly and accurately and thus gain in flexibility and responsiveness when modifications need to be made to our facilities: ventilation, hydraulic blasting, dust removal, etc.;
  - > training in driving jumbos on a simulator in order to familiarize with the machine without risk before driving them in real conditions in tunnels.

CO 06/07 Saint-Martin-la-Porte
Started in 2021
Best Practice in safety by Work direction SETEC

The risks associated with underground works are numerous and complex. Setec was an active participant in the dedicated working group for the TELT project, to draw up safety regulations in line with the site's configuration. Setec is dedicated to the objective of "zero accidents", as a co-signatory of the safety/security charter through the representative of its consortium on the site (DUT).

Due to the nature of the work that can lead to isolated workers, Setec has trained and equipped its employees with anti-dead man devices (DATIPLUS) connected to an on-call monitoring system.

In addition, Setec employees are provided with general and specific training programmes for the TELT site, based on the company's experience on other projects.

CO 08 Base tunnel
Started in 2021
Best practices in safety by IMPLENIA

- Moving towards zero accidents and limiting the impact of our working conditions on health
- Develop a safety culture by improving the perception of risks and our behaviours
- Promote the feedback and sharing of good practices
- Carry out in-depth analyses and feedback in full transparency with an action plan for any incident and near miss situation
- Integrate risk prevention into all phases of project implementation

ENVIRONMENT

The Lyon-Turin companies are aware of their effect on the environment and are committed to preserving the natural resources for future generations. They are committed to working with the greatest care for living species and, in addition to complying with TELT's environmental policy, to introducing all possible means to comply with the principles of Agenda 2030.

A commitment to reducing emissions at the construction stage

With regard to the environmental field especially, the realisation of a work as complex as the Lyon-Turin line requires a commitment from its builders that cannot be satisfied with mere compliance.

Indeed, the Lyon-Turin companies have a proactive attitude to introduce behaviours in their business able to contribute to the reduction of emissions and consumption of natural resources. An example is the holistic approach towards decarbonization commitment in the Italian construction site at La Maddalena-Chiomonte, where TELT and the companies are actively working on a zero carbon strategy.

The importance of sustainability in the project itself is manifested in the numerous projects and initiatives that are brought forward in collaboration with stakeholders from scientific institutions, public offices, and the local community.

The progress is tracked through a wide range of indicators, checked regularly by independent officials and experts, and made transparently public in the annual Sustainability Report and on the website of the project.

In particular, through the pact they committed themselves to:

the development and use of technologies and practices that can optimise processes while reducing the expenditure of energy resources, the implementation of energy-saving mechanisms and the activation, both within one's own company and in the chain of subcontractors, of all possible solutions to use 'clean' and renewable energies.

As an example, TELT has introduced indicators that monitor the energy saving in the construction sites, in a broader scheme of energy-saving measures. These indicators support the accurate measurement of the progress towards a sustainable project:

- percentage of green energy;
- amount of electric energy consumed on sitee.

In the French construction sites and headquarters (Modane/Chambéry), green energy is used for the operations, and is being evaluated for the Italian side as well.

View of the Maddalena 1 tunnel and the visitors' centre at the Chiomonte construction site, June 2024.
© Alessandro Di Marco

invest, as far as possible, in clean energy sources, such as solar, wind or thermal energy, focus on technologies that reduce electricity consumption and fossil fuels, and implement projects that help provide energy to the most disadvantaged local communities.

In this context, TELT is enhancing geothermal resources for the energy consumption in the Mont Cenis tunnel. Currently, the energy is already being used for the visitor's centre in Chiomonte. Similarly, the potential of the geothermal energy is explored on the French tunnel side.

Moreover, a strong focus is set on using more efficient machinery and electric systems throughout all of TELT's construction sites and headquarters.

participation in TELT's Life Cycling Cost monitoring process, providing measurement data of environmental monitoring even beyond the legal guidelines, in line with the indications provided by the contract manager.

The site indicators are listed below:

- electric energy consumed on site;
- tons of excavated material reused (percentage of total waste material);
- percentage of recycled water;
- water quality;
- acoustic pollution - on the France side, we monitor when noise and vibration regulatory thresholds are exceeded;
- disturbance caused by vibrations;
- fire incidents;
- pollution caused by incidents.

These indicators are complemented and extended by the Global Compact Agreement indicators and environmental indicators (qualitative and quantitative) certified by CETU (Centre des études des tunnels) that track the environmental performance of the project even beyond the requirements set for infrastructure projects.

They are part and basis for an extensive Life Cycle Assessment that is being carried out for a thesis about the CO6-7 construction site by a CETU specialists. The feedback from these first years of work allows us to state that the constant presence of the Client's environmental team and the Environmental Coordinator on the ground ensures a high level of attention to environmental risks and the actions to address them. In particular, the increase in reports from residents near the construction sites, which grew with the intensification of the work (+34% with 203 reports collected in 2023, of which 179 were actionable), leads to a thorough analysis of the objective situation through monitoring measures followed by technical discussions with the contractor to implement improvements in the construction site even in the absence of regulatory exceedances.

CO 03/04 La Maddalena
Awarded in 2023
Best practice in environmental activities by UXT (Itinera, Ghella and Spie batignolles)

The UXT group of companies believes that the execution of the project for the new Lyon-Turin line cannot disregard a commitment to achieving extremely challenging objectives in terms of:

- environmental protection: by taking all possible measures to protect the environment from any form of pollution, not only in the classical sense of the term – of the soil, water and air – but also including light and noise pollution;
- protection of biodiversity: monitoring the surrounding areas concerned by the construction site, so as to limit the presence of invasive non-native species and preserving, or creating, natural habitat conditions that allow species in the area to live and reproduce in the best conditions;
- use of low-emission, so-called 'green' vehicles and equipment, promoting the use of electric vehicles, such as shuttles for personnel transfers between accommodation/construction site, and diesel vehicles compatible with the use of greener fuels such as HVO diesel, which has a significantly lower greenhouse gas emission factor than conventional diesel (0.03558 kg. CO_2eq/L versus 2.659 kg CO_2eq/L). In addition to also reducing NOx emissions, it is free of aromatics and polyaromatic hydrocarbons, thus also contributing to reduced pollution;
- use of green energy: all the electrical energy required for the project will come exclusively from energy produced from renewable sources and provided with Guarantees of Origin; in addition, there will be a self-produced portion, making extensive use of photovoltaic panels, which will be installed on the construction site offices, in the segment prefabrication area, etc;
- LED lamps: the use of LED lighting systems allows for more effective lighting with a further reduction in electricity consumption, as well as reducing light pollution thanks to the characteristics of this technology;
- use of green materials: the use of more eco-sustainable materials will be promoted, and preference will be given to those with EPD certification. In addition, material from excavation activities will be reused for the construction of segments in the Salbertrand prefabrication factory.

CO 03/04 La Maddalena
Awarded in 2023
Best practice in CO_2 emissions reduction during the construction site phase by Work direction ITALFERR

In relation to the zero climate-altering gas emissions' goal in the construction site of CO3-4, it is planned to install photovoltaic panels which, depending on the available area - 8,950 square meters, about 6,600 square meters of modules - will allow the installation of about 1,774 photovoltaic modules with nominal power of 660 - 670 W each. This solution will allow energy savings of 1,346,500 kWh/year. Compared to an uncertified supply of gas-power plants, this implies a CO_2 emission saving of 512 tons/year.

To promote energy saving, TBMs will be equipped with cooling circuits, closed circuit in which cold water is fed and hot water is returned. The heat's exploitation of the returning hot water, used to warm up the water for hygienic/sanitary uses and/or for heating, will encourage an estimated saving of 1,257 kWh/day.

In some part of the construction site, the excavated materials removal operations will be carried out through electrical belts, avoiding road vehicles, producing a saving in CO_2 emissions estimated in 891 tons and diesel fuel consumption in 342,346 litres.

TBMs will also be equipped with a system for monitoring electricity and electrical parameters, in order to continuously implement any technical improvements and/ or use. All lighting of the TBMs will be realized through industrial LED lamps, consequently reducing energy consumption. The TBMs will be equipped and powered from the outside with transformers with high electrical efficiency of the "Eco-design Phase 2" type, with an estimated energy saving of between 16% and 40%.

Italferr advocates for principles of sustainability during the construction phase, in accordance with the design Methodologies and Protocols

- Dissemination of a culture of sustainability in the value chain
- Sustainable Construction Site organisation
- Monitoring of environmental impacts in the construction phase
- Enhancement of sustainable best practices in the construction phase
- Communication to communities for strategic projects
- Working groups on Sustainable Construction sites

The Italferr Carbon Footprint calculation methodology transferred to the construction phase is also configured as a further lever that stimulates the construction sector in the research and adoption of new methods and systems that contribute to making railway infrastructures sustainable.

For this reason, actions have been identified for the infrastructure construction phase aimed at directing contractors towards sustainable choices in order to reduce CO_2e emissions.

In future construction sites, the Tender Specifications could be enriched with incentivizing actions to reduce greenhouse gas emissions during the construction phase. The contractor could be asked to communicate on an annual basis, through the preparation of a specific Report, the data on CO_2e emissions actually produced for supply and transport.

Therefore, these contractual provisions could encourage contractors in the procurement of construction materials, in particular cement and steel, whose production is characterized by lower CO_2e emissions (for example materials with an environmental product label), as well as to identify more sustainable transport means from the production plant to the construction site.

In summary, the application of the Carbon Footprint Model to projects highlights the desirability of directing contractors, during the construction phase of the work, to adopt new and more sustainable methods and systems. These would support a development based on a lower carbon economy, particularly in relation to the choice of construction materials and their transport to the construction site, with suppliers who declare the impacts of their product on the environment through internationally recognised methodologies.

CO 03/04 La Maddalena Interchange Niches 2018–2023
Best practice in CO_2 emissions reduction during the construction site phase by WEBUILD

Webuild Group is committed to reducing emissions and saving energy during the construction of the TELT project introducing green vehicles into our fleet in TELT Lot 2. In line with our commitment, we have adopted a circular economy approach to manage the intercepted underground water from the Maddalena Tunnel for three different uses:

- reuse in the productive process;
- irrigation of local vineyards producing autochthone grapes and contributing then in maintain the biodiversity of the local production and;
- reuse of these waters as geothermic energy source for climatizing the TELT visitor centre in Chiomonte which will remain operational for all the construction period of the Lyon-Turin tunnel. This was possible thanks to the collaboration with the “Politecnico of Turin” university.

Furthermore, the materials extracted during excavation of the niches has been stored within the construction site and approx. 60% of it will be recycled for tunnel lining and track structures, providing both economic and environmental benefits as well as reducing the need for new material extraction and limiting local vehicular traffic.

CO 05a Avrieux Shaft
Started in 2020
Best practice in CO_2 emissions reduction during the construction site phase by DODIN CAMPENON BERNARD

Pursuing the objective of reducing its scope 3 CO_2 emissions by 30% by 2030 compared to our 2019 benchmark, Dodin Campenon Bernard has implemented an ambitious Research and Development strategy to decarbonize the materials used on its construction sites. Indeed, in underground construction sites where the conventional method is used, scope 3 CO_2 emissions come mainly from the production of sprayed concrete. Therefore, it is essential to identify solutions to significantly reduce the emission factor of sprayed concrete. The CO05 project thus made it possible to test original **low-carbon sprayed concrete formulas**, which can be implemented in underground construction sites where the conventional method is used.

CO 05 Base Tunnel
Started in 2021
Environmental measures by EIFFAGE

Reuse of Excavation Materials (MATEX)
The aggregates required for the concrete will be produced by the STM (Station de Traitement des Matériaux), managed by another operational site (CO_11) and located within the site's boundaries, The prepared aggregates will be stored in silos and transported by conveyor to underground concrete plants equipped with buffer silos set up by CO05.

Low-carbon concrete with CSS cements
CO_05 provides for the necessary resources to be put in place to encourage the use of MATEX aggregates in the construction of site concretes, in particular MATEX Cl1s. These correspond to good- quality rocks, whose geotechnical and mineralogical characteristics make them suitable for use in aggregate production. However, they contain high levels of sulfates. These materials require the use of a specific cement, known as "Ciment Sur-Sulfaté" (CSS).

Aggregates from MATEX, Cl1s with a high sulfate content (less than 2%) will be preferred for prefabricated inverts, using a dedicated concrete plant.

Sorting materials using the Carasol process
To secure the pre-classification of MATEX materials, CO_05 has decided to install a COFRAC- accredited CARASOL® chemistry laboratory on site at Villarodin-Bourget / Modane (VBM). In particular, it will enable MATEX to be tested for sulfur and sulfate content in less than ½ hour.

Underground means of transport
The 18 km of tunnel to be dug and the long profile with a 0.5% downward slope prompted CO_05 to consider more efficient solutions to make tunnel transport more reliable and reduce the carbon footprint (elimination of trucks).

The choice of motorization was based on the use of rail locomotives instead of rubber-tired trains (TSP), as this system allows traction power to be divided by three, with a loading capacity 50% higher than that of TSP. As a result, fossil fuel consumption is drastically reduced.

Surface transport
All transfers of MATEX and aggregates are carried out by conveyor belts (over a total length of around 3.6 km), which significantly reduces the number of trucks between sites around the worksite.

Green energy
Solar panels will be installed on the roofs of the site facilities and on the parking lot, to recharge the equivalent of several electric cars during the day, via charging stations, and to restore the energy stored during the day to the night lighting circuit.

The work on the CO_05 project represents a real technical and environmental challenge for the ELYOT group, whose technical choices have made it possible to reduce the consumption of natural resources and carbon footprint.

DCE Technique	Carbon footprint / emissions (T CO_2e/t)	Technique chosen by ELYOT	Carbon footprint / emissions (T CO_2e/t)	Gap (T CO_2e/t)
Cast-in-place concrete	48 408	Prefabricated raft	44 521	**-3 887**
TSP Thermal (100%) (underground and downhill)	17 367	TSP Thermal (downhill, 100%) PLUS Hybrid trains (underground, 100% of journeys electric)	10 436	**-6 931**
TOTAL	**65 775**		**54 957**	**-10 818**

CO 06/07 Saint-Martin-la-Porte
Started in 2021
Circular Economy and Controlling energy costs by VINCI Construction Grands Projets

In addiction to the reuse of excavated material, VINCI Construction Grands Projets is reusing the equipment from previous construction sites in the CO6-7, such as:

- grating of the conveyor belts transformed into a pedestrian path;
- metal structures for the manufacture of information poles;
- conveyor belt belts used to make protective curtains in tunnels;
- another best practice is recycling cigarette butts to produce street furniture.

About the energy costs, VINCI Construction Grands Projets is:

- using biofuel for a portion of the lorry fleet that transport excavated material is, in particular, one of the criteria that was taken into account when selecting service providers;
- Renewable energy:
  - > The La Praz construction site has been powered 100% by renewable electricity (guarantee of origin) since the start of 2024;
  - > Goal of 50% renewable energy for the project's total consumption by the end of the project.

CO 06/07 Saint-Martin-la-Porte
Started in 2021
Best practices in CO_2 emissions reduction during the construction site phase by SETEC

This construction site generates a large quantity of excavated material, so there is a real environmental issue at stake. To reduce the project's environmental footprint as much as possible, we have implemented an ambitious programme to recycle excavated materials. To achieve this, we have designed the project in terms of the circular economy:

Excavated materials are transported by conveyor belt to a temporary storage area, where they are categorized. Based on this classification, the materials are sorted and stored according to their technical characteristics and their potential for recovery. This classification makes it possible to envisage recovery in the best possible way.

Best quality materials undergo intermediate operations in processing plants. They are then reused as aggregates in the manufacture of concrete, for example, or for backfill if they are less noble. The aim is to recycle 15 to 20% of excavated materials in the manufacture of concrete. This will limit the supply and transport of raw materials from external natural resources and reduce the environmental impact of the project.

Another objective is to reuse around 50% of these excavated volumes for high-quality landscaping backfill on other lots of the TELT project and even other municipalities. The remainder will be used to fill in old quarries.

Lastly, the use of electrically powered conveyor belts offers significant CO_2 reductions. As the conveyor belt crosses an environmentally restricted zone, it was also decided to space the foundations and create spans of between 24 and 32 metres to limit the impact on the ground and preserve biodiversity.

CO 08 Base tunnel
Started in 2021
Best practices in CO_2 emissions reduction, circular economy and green renewable energy by IMPLENIA

Effective measures implemented on construction site Carbon footprint reduction
The CO8 group of companies composed of IMPLENIA, NGE, Itinera and Rizzani de Eccher proposed a variant for optimising jet grouting. This allow a reduction in jet length leading to a 1/3 reduction in cement use during this phase as well as 1/3 reduction CO_2 and cost reduction of several million euros. Circular economy with optimizing MATEX management on Telt projectThanks to the commissioning of conveyor belts, evacuation of MATEX without road transport since April 2024, reduced road traffic and environmental impact: dust, noise, water (for road washing) and treatment of MATEX at source by the crusher, so it can be stored directly in its original state. The MATEX are transferred to GEME, which is responsible for their use in the project.

Eco-responsible living quarters
The living quarters of the CO8 group of companies (IMPLENIA, NGE, Itinera and Rizzani de Eccher) are a strong choice combining landscape integration, staff comfort, thermal inertia, circular economy, removable and reusable elements as well as a division by 3 of CO_2 emissions.

Green renewable energy
The CO8 group use certified green renewable energy for his electricity consumption. The purchase of kWh at a price higher than the market price enables the financing of green energy parks. Certificates supplied guarantee the origin of the production and enable them to be traced back to the park financed.

Quality, innovation and eco-sustainability

Quality, work/product/service safety and eco-design: TELT has set out the specifications for the highest quality and safety standards by implementing and maintaining an Integrated Quality Management System according with the international standard ISO 9001.

The Lyon-Turin companies share and align themselves with this approach, accepting its principles and commitments, with the common goal of maximising quality and ensuring high levels of innovation. In this sense, the pursuit of technological development must be continuous and take place in collaboration with the local communities in which it operates, highlighting the paradigm of open innovation that aims to create extended research networks in a common effort to constitute a system and generate positive value for all the industries involved.

CO 06/07
Best Practice Saint-Martin-la-Porte
Innovation during the construction site phase by SETEC

We are working on a performance-based test protocol for a concrete superior to XA3, to validate a performance-based approach for a concrete resistant to an aggressive environment, that is absent from current standards. It's a collaborative effort involving all project participants, including the contractor, the client, the project manager, as well as external laboratories.

CO 08 Base tunnel
Started in 2021
Best practices in Operational Excellence (Quality, Lean, BIM, Digitalization) by IMPLENIA

- Putting the work and the customer's requirements back at the heart of our organization
- Establish a "Lean spirit" within the site organization
- Deploying a continuous improvement approach in all sectors
- Developing innovative tools and applications to strive digitalization in construction management

Informed use of resources

TELT considers the commitment to the United Nations Sustainable Development Goals for 2030 as the main driver of economic development to be fundamental in the realisation of the infrastructure for which it is responsible. The Lyon-Turin companies commit themselves to:

- **sustainably manage their water waste from product processing and service delivery to reduce contamination of oceans and seas from their activities in all project phases, as well as to protect and sustainably use water resources**

For the Lyon-Turin line developers, attention to water resources and their use has been a priority from the beginning of the project.

Regarding the water resources, TELT sets the focus on their mindful use, and prioritizes water recovery, for example from rainwater and drainage. This water is used for a myriad of applications in the context of the project: dust suppression inside the tunnels, watering of nearby vineyards, machine cooling, cleaning of the areas, cement productions, among other uses.

Through wide-area monitoring of over hundred points around the construction sites, diverse parameters regarding the state of the water have been monitored since the study phase.

In the preliminary, final and variant design phases of the Cross-Border Section base tunnel, the acquired knowledge of the resource provided valuable elements to the planners to envisage interventions to safeguard water resources.

Today, in the construction phase for the base tunnel, the Environmental Monitoring Plan, a complex environmental value control system that also includes monitoring of groundwater and surface water at points within the perimeter of potential environmental influence of the work, is underway.

TELT is committed to maintaining the external water resource survey network, with which it aims to contribute to the collection of useful information for the investigation of water quality, as also reiterated in its statement with respect to the control and use of the water resource.

Environmental monitoring is carried out under the strict and constant control of the competent authorities, who have access to all data; TELT demonstrates maximum transparency by making the summary of measurement results available to the public on its website.

Monitoring of water resources, in accordance with prescribed protocols, shows that TELT's work has had no significant impact on:

- water quality
- aquatic environments and wetlands near groundwater works
- the use of resources (any potable source dried)

The measured indicators for that are the following:

- surface water quality
- groundwater quality
- groundwater resources (status of reservoirs)
- geomorphological status of neighbouring streams
- hydrology and hydrobiological quality of the connected aquatic environments

The monitoring conducted in 2023 highlighted how the flow rate of the springs is not immune to the effects of climate change, with particularly pronounced dry periods following two years of prolonged insufficient precipitation and poor recharge of groundwater. All this is generally attributed to contextual factors; however, in 2023, one spring (not used for the primary network consumption but as a "rescue" source) showed abnormal changes in terms of flow rate and conductivity, for which the hypothesis of the effect of underground works among the possible causes cannot be completely excluded. Due to TELT's attention to this issue, although investigations are still ongoing, a permanent solution is already being studied in collaboration with local administrations, which can be used for compensatory purposes. As for the Italian side, below is the detail of the monitoring activities on groundwater for the two active construction sites in progress in 2023, Chiomonte and Salbertrand.

CO 03/04 La Maddalena Base Tunnel Awarded in 2023 Best Practice in Resource allocation by UXT (Itinera, Ghella and Spie batignolles)

With a view to an aware use of resources, UXT will adopt a methodology to maximise the recycling and subsequent valorisation of the dewatered slurry resulting from the treatment process of the exhausted bentonite slurry used during excavation operations with TBM Mix-shield for the section of the Base Tunnel within the Quaternary Deposits of the Cenischia Valley. In particular, the sludge will run in a treatment cycle, which includes storage, control of chemical-physical parameters, characterisation, thermal treatment and physical processing. The process aims to generate new products that can be used in different markets, in a perspective of circular economy: one example is the production of granular absorbent material for cat litters.

CO 03/04 La Maddalena Base Tunnel
Awarded in 2023
Best Practice in Water resources attention by UXT (Itinera, Ghella and Spie batignolles)

In line with the Group's sustainability strategy, and that of its constituent companies, UXT has studied and will apply systems and methodologies to avoid wasting water and maximise its recycling and reuse.

To pursue these two objectives, three main paths will be followed:

- **recycling of underground water, rainfall and water used in the processes.**
  In this way, it is estimated that the water needs for industrial uses can be met. This water will be treated in advance within the site treatment plant, from which a 'site aqueduct' will start, serving both tunnel and open-air works, thus achieving an estimated saving of over 50,000 m3 of water per month. Similarly, action will be taken for the other construction sites, East entrance and Venaus, with further savings of over 7,000 m3 per month. Together, these actions will allow a saving of about 60,000 m3 of water per month;
- **reuse of rainwater from roofs.**
  This water will be collected through a recovery system and used for non-sanitary purposes, such as flushing toilets, cleaning yards, washing vehicles, etc. This solution is estimated to save up to 50% of water needs for these purposes;
- **closed-circuit wheel washing system.**
  Thanks to this system, the water for washing will not be discharged, but reused. Naturally, reuse will take place after treatment in an integrated system with water recirculation;

In addition, the TBMs of the UXT group of companies will be equipped with a closed cooling circuit that sends cold water (at about 23°) and returns hot water (at about 35°). UXT intends to use the heat of the hot water returned to heat the water used for sanitary purposes in the offices/changing rooms of the construction site areas, through the installation of a heat exchanger. Considering a demand of approximately 10 l/s during peak consumption times (end of shift) and a temperature difference of 15°C, energy savings can be estimated at 1,257 kWh/day during peak production periods in the Maddalena construction site, corresponding to a saving of 460 kg CO_2/day.

CO 05a Avrieux Shafts
Started in 2020
Best Practice in Water resources attention by DODIN CAMPENON BERNARD

In line with the objectives of our company, the CO05 site has implemented an ambitious approach to the treatment and reuse of site water. The drainage water collected in the excavation galleries, the rainwater collected on the surface platforms as well as the dirty water coming from the washing of the machines is collected and treated in a treatment station of our partner MS. 50% of this water is fed back into the construction process. The closed-circuit reuse of site water makes it possible to limit as much as possible the use of clean water from the drinking water network.

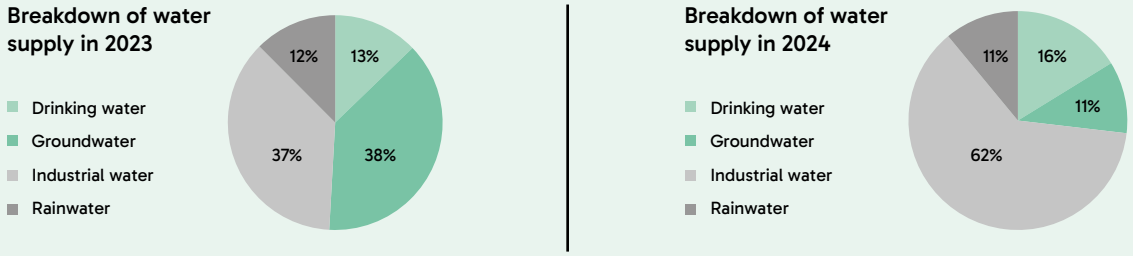
CO 06/07 Saint-Martin-la-Porte Base Tunnel
Started in 2021
Best practice in water protection by VINCI Construction Grands Projets

Efficient water management:

- runoff water from platforms and mine water in tunnels will be treated according to strict specifications before being discharged into the natural;
- ongoing installation of specific water treatment plants on each new concrete plant, allowing for closed-circuit operation;
- implementation of a water sobriety plan in order to save drinking water through the reuse of industrial water treated directly on the site to supply sanitary facilities, boot washers, concrete plants and dust suppression machines.

CO 08 Base tunnel
Started in 2021
Best Practice in attention to Water resources preservation by IMPLENIA

The IMPLENIA CO8 group has implemented a practice of treatment and reuse of so-called “industrial” water and rainwater to limit water withdrawals from the aquifer. Drinking water is used for sanitary needs as well as for processes requiring high-quality water. This organization required adjustments, the effects of which can be quantitatively monitored between 2023 and 2024.



Monitoring of drinking water consumption

The groups have committed to continuously monitoring their water consumption via centralised technical management. Adjustments are necessary, deployment is underway on the construction sites. A monthly and then annual compilation is made with a publication in TELT’s CSR report.

Water sobriety: reuse of water in processes

The CO11 GEME group of companies plans to reuse 95% of the water used by their materials treatment plant. The remaining 5% represents the incompressible part because of the moisture content of the treated materials. Adjustments are necessary, the deployment is already underway on the sites: it’s already operational in CO8 and in the process of being deployed on CO6/7 and CO11.

Water supply over the year

Nearly 3/4 of water reuse on CO8

The other commitments are:

- **promote industrial processes that do not impact on the environment, incorporating small and medium-sized enterprises in their value chain**

- **progressively promote the use of recyclable and biodegradable materials in one's production processes**

- **use a fleet of environmentally friendly construction site vehicles/vehicles, in line with the latest regulations on pollutant emissions in the case of fossil-fuelled work vehicles**

Two-thirds of the cars are powered by electric or hybrid engines on TELT's sites, with a dedication to reduce the emissions produced by the vehicles.

- **explore the potential of hydrogen in industrial processes and sustainable mobility**

In the course of 2022, TELT, together with the companies working on the construction sites of the base tunnel lots on the French side has put into action the Maurienne economy strategic partnership.

The project launched aims to promote the sustainable mobility of workers employed in construction sites and beyond through hydrogen-fuelled vehicles.

For several years, the elected representatives of the Maurienne have expressed their interest in the development of the hydrogen sector in Auvergne-Rhône-Alpes, particularly regarding clean mobility. With the double impact of the Lyon-Turin construction site and the Mont Blanc tunnel, road traffic on the major Franco-Italian axis is steadily increasing, accentuating the challenge of decarbonizing the valley in terms of freight and road traffic.

Following its work with the Auvergne-Rhône-Alpes region as part of the Zero Emission Valley project and with Hympulsion (the company in charge of building the hydrogen distribution station in the Maurienne), the Syndicat du Pays de Maurienne union committee had voted in June 2023 to join forces through an agreement, with SFTRF, AREA, and Hympulsion to consolidate a hydrogen heavy mobility ecosystem and offer the most favourable conditions possible for transport actors to acquire hydrogen vehicles.

reduce the impact of their activities on ecosystems and habitats, complying with the environmental regulations of the countries in which they operate and integrating the conservation of biological diversity into business strategies.

TELT knows that an infrastructure project of this size has potential impact on the surrounding biodiversity. To minimize these potential impacts, TELT has implemented a diversified range of biodiversity protection projects.

Within the French territory, TELT is in the process of implementing 26 areas subject to measures in favour of protected or endangered species with the goal of reaching an area of 150 hectares of protected areas.

The measures implemented consist of various actions aimed at improving the attractiveness of sites for protected species and thus for the biodiversity created around them, giving added value in ecological terms to the involved and surrounding areas. Once these improvement actions are implemented, TELT ensures their conservation through the implementation of management plans that see the direct involvement of local actors, over the duration of at least 30-60 years.

TELT has been working for several years to implement such measures. By the end of 2022, TELT has achieved 94% of the target, having initiated management of:

- 71 ha of typical ecosystems of the “open-arbustive” type;
- 62 ha of woodland ecosystems;
- 7 ha of network of favourable habitats for amphibian reproduction in the valley bottom.

The Susa Valley is home to a vast natural heritage, with a rich variety of fauna and flora. TELT, in addition to complying with the regulatory environmental requirements for the establishment of its construction sites, has chosen to put in place a commitment to biodiversity protection, activating a scientific collaboration with two departments of the University of Turin (DBIOS and DISAFA). The interdependence of floristic and faunal species made it essential to activate research from a multidisciplinary perspective. This is the first time in Europe that this type of multidisciplinary collaboration has been put in place for biodiversity and that a scientific experiment related to the flora and fauna of an ecosystem has entered the legislation of a linear infrastructure. The Piedmont Region has accompanied the project from the beginning through thematic technical tables.

During 2022, the Biodiversity Working Group developed field activities to test the effectiveness of actions introduced on the land to create ecological corridors. The results of the research have shown that the implementation of forest clearing interventions with a view to biodiversity enhancement

(and thus ecological restoration) can improve the presence of some animal species in the areas close to the construction site (an example is the effect on the Southern Festoon (Zerynthia polyxena).

Monitoring of biodiversity enhancement interventions implemented to increase the level of ecosystem complexity and thus animal and plant biodiversity also continues.

Another project, this one on a binational level, is the research project on Erica carnea, a plant native to the Susa and Maurienne valleys. The goal is to study the species' habitat and propose innovative approaches to encourage the plant preservation in the valleys, including through an "applied botany" enhancement of interest to the area.

The project came to fruition in 2022, and from the data collected on the delineation of the ecological niche of the Erica carnea species in the Western Alps, the vulnerability of these isolated populations is confirmed. For this reason, further investigation, through genetic analysis, is being considered to understand possible genetic isolation and population diversification.

This protected species is often endangered by the opening of forest trails, roads, quarries and agricultural meadows. Therefore, an experimental approach is taken towards the protection of the Erica carnea. Currently, the "Carlo Alberto" forest nursery in Fenestrelle (TO) is experimenting with the multiplication of cuttings of the Erica carnea ecotype from Meana di Susa. If the multiplication is successful, it might be possible to plan an in-situ conservation project among the Franco-Italian valleys, preserving the Scots pine core areas, which represent the species' preferred habitat. This could allow partial population expansion by reducing the risk of local extinction of remaining populations, especially if they are isolated like those in Meana.

To further investigate its ecology, the level of ground illumination was also measured for each plot. This parameter was evaluated by taking hemispheric photos.

In addition to its abundance, additional parameters of Erica carnea were measured:

- the height above the ground, as an indicator of plant vigour;
- the twig length of the year, as an indicator of growth;
- the degree of flowering, as an indicator of reproductive capacity.

CO 06/07 Best Practice Saint-Martin-la-Porte
Best practice in Protecting fauna and flora by VINCI Construction Grands Projets

- Regular visits and systematic action of an ecologist for special operations
- Integration of ecological constraints into studies and methods:
  - > specific methodologies for performing earthwork and in the construction of the civil engineering of the conveyor belt foundations (e.g. use of specific machinery such as small (4m3) 4x4 concrete mixer lorries to navigate between protected flora areas, installation of sheet piles to carry out the earthworks of a foundation positioned in the immediate vicinity of a protected flora station, avoiding the construction of traditional earthworks with embankment);
  - > planning of the work according to the ecological calendar (e.g. clearing of the SMP block guard area outside the nesting periods);
  - > creation of mitigation and avoidance areas (e.g., installation of reptile shelters on the site of the concrete segment factory.

PEOPLE

The Lyon-Turin companies choose their employees based on their professional experience and believe in the value of people.

Privacy as a right

The Lyon-Turin companies protect the personal privacy of their employees even beyond compliance with applicable data privacy laws. Likewise, they secure work data, according to the guidelines provided by the client, against unauthorised access and use, and do not re-use them without TELT's prior consent. They acknowledge that any use, sharing or storage of personal data must be carried out with the data subject's consent and in accordance with the terms and conditions agreed with TELT. TELT companies also agree on the importance of respectful and professional use of social media by their employees and make every effort to avoid posting content that promotes behaviour that is not in line with the values expressed in this covenant.

Universal rights always guaranteed

The public promoter TELT operates in territories where the quality of life is very high and the companies contracted for the jobs not only have to be aware of and apply all the regulations concerning respect for workers, minimum wage and discrimination, but they must also be bearers of the main guidelines for the respect of universal workers' rights, as expressed in the International Declaration of Human Rights and the International Labour Organisation Declaration.

Only the requirements inherent to the individual's job must guide recruitment; respect for differences such as race, religion, age, gender, gender identity or expression, sexual orientation, nationality, social or ethnic origin, marital status, pregnancy, disability, health status, political affiliation, or trade union membership are always guaranteed.

Where the state in which the company operates promotes the hiring of certain disadvantaged groups, the Lyon-Turin companies adhere to the requirements and promote the inclusion of people in the company by supervising the working climate and environment.

To adequately accommodate and adhere to the rules concerning people with disabilities in the work context, TELT is implementing numerous tools to guarantee and protect human rights within and outside the Company regarding the activities of its suppliers.

Regarding equal opportunities and fair pay, TELT recognizes that women are a key driving force behind the company's work to build the cross-border section of the Lyon-Turin. The Public Promoter is strongly committed to improving gender equality in terms of pay and professional grading at all levels.

Technical inspection in the Saint-Julien-Montdenis tunnel, February 2024.
© Caroline Moureaux

To maximize this commitment, in 2022 TELT paid special attention to pay equality aimed at supporting not only pay equality within the company, but also position and career opportunities (as part of this exercise, special attention is paid to women returning from maternity leave). In a historically male-dominated sector such as construction, TELT also carries out concrete actions in construction sites to incentivize gender equality: the integrity and sustainability pact signed by the companies involved in the works strongly commits all Lyon-Turin companies to non-discrimination and gender equality in accordance with the principles established by the Global Compact to which TELT has adhered since 2015. As of end of 2022, 50% of TELT employees were female.

The binational nature of the project is at the origin of a great attention to the issue of dialogue between two different cultures and, at a higher level, is at the basis of a daily challenge of reconciliation between three different law: Italian, French and European. TELT represents a unique and exemplary experience of cross-border collaboration and integration of different identities. In addition, in 2022, to draft a "Diversity and Inclusion" policy, the working group activated in 2020 worked on a program of measures aimed at creating a favourable environment for people with and without disabilities and enhancing the skills of all employees through specific actions. Specifically, the working group discussed and mobilized a portion of employees and succeeded in defining TELT's own disability policy. The four areas of work identified, around which the policy was defined, are:

- information, awareness and training of TELT staff on the concept of disability;
- recruitment of staff with disabilities;
- job retention for people with disabilities;
- partnerships with key players in the field of integration and job retention of people with disabilities.

The following aspects were also put in place:

- the definition, with AGEFIPH and the JLO association, of an action plan to address the issue from a binational perspective, through interviews conducted with TELT employees jointly at the 2 workplaces in France and Italy;
- the piloting by working group members of training and awareness sessions on the notion of disability.

In addition, two disability contact persons were identified and appointed (one in France and one in Italy) who will be the Society's point of reference for placements and good career management for disability situations. The appointment was made as part of the activities of the staff representatives.

Respect for and promotion of Human Resources

Developing the full potential of the individuals working on the Lyon-Turin project is crucial for the successful realisation of the line. That is why TELT invites its suppliers to:

- **offer their employees training to improve their skills**
- **devise, where possible, a welfare policy that increases the well-being of the worker and his or her family, e.g. through benefits such as health insurance, meal vouchers, leisure policies, etc**
- **create a healthy working environment, where negative incidents, which may be detrimental to the personal lives of employees (such as discriminatory behaviour between colleagues or, in the most serious cases, bullying and violence, both physical and mental), are excluded above all else. The freedom of personnel freely to join or refrain from joining workers' organisations of their choice and to participate in collective bargaining as permitted by law is one of the inalienable rights that the companies of the Lyon-Turin project must scrupulously observe. Finally, TELT strongly encourages all suppliers to pay their staff an adequate salary that considers the actual cost of living in the country in which they operate.**

CO 06/07 Base Tunnel Saint-Martin-la-Porte Started in 2021 Best Practice in Human Resource Valorisation: recruit, train, welcome and diversify

- Integrate staff in professional integration (67% of the contractual clause completed to date)
- Act in favor of the feminization rate
- Develop training courses related to France Travail, La Région et la Base 74 RU
  - > Minor aid courses: 7 promotions of already integrated minor aids (70 people)
  - > Course Shotcrete with Base RU
  - > Voussoirs pass
- Partnership with the OPAC for hosting employees

VALUE CREATION

The companies of the Lyon-Turin project continuously seek to improve their products and services and are aware of the economic value generated by their outlays. Business strategies must therefore be oriented towards long-term development by investing not only in goods but also in people, information systems and internal processes.

Quality and orderliness of relations with TELT

After the awarding of a contract, the companies of the Lyon-Turin line enter a circuit marked by Quality and Sustainability. Therefore, in addition to their not using production processes other than those set out in the contract signed with TELT, except by prior approval, they undertake always to maintain the same quality standards as contained in the offer that led to the award of the contract and to improve them, if possible, through a process control system. As per the signed contract, the client may initiate audits relating to compliance with the Integrated Quality Management System policies and standards for which TELT has certification (for ISO 9001 Quality, ISO 27001 Information Security, ISO 14001 Environment and ISO 45001 Workers' Safety); however, the Lyon-Turin companies are also able to report to the client any critical issues with respect to their adherence to these guidelines even prior to TELT's audit, thereby demonstrating proactivity and involvement in TELT's mission.

Relationship with the territory

The Lyon-Turin companies are aware that the construction sites and services of the Lyon-Turin base tunnel can be a positive engine for the economy of the nations and particularly of the regions where the work is located. For this reason, like TELT, they collaborate with the Démarche Grand Chantier in France and the Patto per il Territorio in Italy even beyond the prescriptions already contained in the contract, especially regarding the accommodation of workers, the recruitment of the workforce (including 'disadvantaged' individuals), the possible collaboration with the chain of small companies in the territory and artisans. In the same way, and for the Lyon-Turin companies to be able to act in a truly virtuous circle, they respect the importance of the quality of life of the citizens of the territories where the work is located and respond proactively to the promotion of this value by all the entities involved (municipalities, regions and TELT itself).

In the context of the Pact of the Territory, the principal lines of actions are the recruitment and formation of the workforce, the development of the economic network on a local and regional level, housing, R&D, the energetic transition, the relaunch of the cities in the territory, the environment and mobility.

Inauguration of the new Rizerie at Modane, the visitor centre on the French side, February 2024. © Caroline Moureaux

Tangible actions and tools to bring these focus areas to life include the service "Mon Emploi Lyon-Turin" that offers a platform to find a job or attend trainings within the construction sites of the Lyon-Turin project, or the "ALTE" (Appui Lyon-Turin Entreprises), a platform that promotes the

access to construction sites/potential collaborations with the project for local companies.

Moreover, through the Maison de l'habitat, a point of reference to restructure or find a house to stay in the region, and a communal program that renovated over 20 apartments, housing access for workers is facilitated.

TELT is working to strengthen an active dialogue with stakeholders. The Company is working to listen to the demands of the local area and show the stakeholders the "added value" of a project such as the Lyon-Turin line.

The issues that TELT highlights are:

- participatory planning;
- minimization of land consumption;
- optimization of the use of excavated materials;
- quality of works;
- optimization of construction sites and safety;
- protection of the environment and health;
- enhancement of the area's cultural heritage.

For the realisation of the outdoor works of the Lyon-Turin, in the Susa plain, a number of tenders will be awarded by TELT in the coming months.

In the specifications, which are currently being drafted, the Bidding Contractors will be required to be active participants in the achievement of the environmental objectives set by TELT.

In the future tenders, the Contractors that will allow the enhancement of the accommodation facilities on the territory, both in the municipality of Susa and in the neighbouring municipalities, will be rewarded.

Proposals that will enhance the renovation of existing buildings to adapt them to current needs (during the railway construction phase) and which will then be returned to the local community as a common good will also be rewarded.

In order to minimize the use of resources for the movement of workers from their place of accommodation to the construction site, and at the same time to utilise the mass of residential cubage existing in the area, the contractor will be encouraged to house as many resources as possible, and as close as possible to the construction sites.

The Contractor will be requested in the Tender Specifications to provide evidence that it has accommodated its workers in the housing units envisaged in the tender.

TELT, also in accordance with Regional Law no. 4 of 21/04/2011, has chosen to assess the bids of the candidates for the tender procedure for works on Italian territory, also on the basis of environmental and social quality, with particular reference to the triple need of:

- not increasing vehicular traffic and the consequent pollution for the transport of workers to the Chiomonte construction site;
- making it easier for workers to stay on site by reducing the journey between their place of residence and work as much as possible;
- promoting the job placement of people experiencing employment difficulties.

These clauses operate both in the offer analysis phase and in the contract execution phase and both the social and environmental needs are balanced with respect to the freedom of economic initiative and organization of the company which can choose how to satisfy the commitments undertaken.

CO 03/04 La Maddalena Interchange Niches Best practices in Territorial Policy by WEBUILD

A prime example of our value creation is the initiative to manage the intercepted waters from the tunnel to combat adverse climate conditions. These waters have been, in fact, used to irrigate vineyards in the Chiomonte area, which during 2022 was suffering from severe drought conditions. This innovative solution has been made available to support local agriculture by serving irrigation for approx. 15 hectares of vineyards that produces high-quality DOC wines.

All our initiatives reflect our unwavering commitment to sustainable development, economic growth, and the well-being of our people.

CO 05a Avrieux shafts
Started in 2020
Best practices in Territorial Policy by DODIN CAMPENON BERNARD

Sponsorship of associations over several years:

- the 'ce qu'on entend sur la montagne' association, which organises concerts entitled 'Itinéraires musicaux de Haute-Maurienne Vanoise';
- the Norma sports club.

Support for the local economy, in particular the hotel and catering industry, due to the presence of on-site staff dedicated to the project, but also to the numerous trips made by head office staff to work on the site for one-off assignments, management meetings or construction site visits. For example, several seminars were organised close to the construction site, resulting in hotel and catering reservations.

Partnership with neighbourhood schools or forms of recruitment:

- partnership with Polytech Grenoble, since Dodin Campenon Bernard has been a member of the 'partners club' since 2022 (forum / professional presentations / hosting of trainees / payment of apprenticeship tax);
- dodin Campenon Bernard's participation in the Vinci Construction Centre Est Forum in Lyon (invitation to various target schools in the Rhône Alpes region, from CAP to BAC+5). There was also a TELT presentation on site).

CO 06/07 Base Tunnel Saint-Martin-la-Porte
Started In 2021
Best practice in territorial policy by VINCI Construction Grands Projets

- Consultation with local suppliers: purchase of materials and equipment/tools (Démarche Grand Chantier) and implementation of a framework contract with the suppliers and service providers. 25% of current service providers are based in the region.
- Participation in meetings for discussions with local companies (develop business opportunities with the project): APER-ECO meetings, convention with SME, webinar organised with the Auvergne-Rhône-Alpes region.
- Recruitment of numerous employees in the valley: organisation of worksite tours with France Travail, potential applicants and temporary employment agencies. Participation in local recruitment forums organised by the TELT and the Démarche Grand Chantier.
- Promote the project to institutions, Europe, schools (Polytech Turin, University of Savoie Mont-Blanc, Ecoles des Mines Paris), associations, citizens, etc.

CO 08 Base tunnel
Started in 2021
Best practices in People and territorial Integration by IMPLENIA

- Close and transparent collaboration with local communities and authorities
- Promote recruitment of local workforce
- Close collaboration with local small size companies and temporary work agencies
- Promote integration of workforce with handicap in the labor market
- Promote training and internships of young people
- Participation and support of project related expositions and professional bodies

ANTI-CORRUPTION AND LEGALITY

The Lyon-Turin companies are fully committed to UN Principle X. The companies are committed to fighting corruption in all its forms, including extortion and bribery.

A process always governed by the law

The focus on compliance with the law is always very high and represents a framework that TELT believes to be essential: the companies of the Lyon-Turin project not only know and respect the competition laws wherever they do business, but also promote them throughout their supplier chain. At the centre of this dual activity of compliance and monitoring, there is also the flow of money, which is not only always traced by TELT but must also be controlled by all companies working on the project, in whatever capacity. The Lyon-Turin companies are united in their fight to ensure that the work is carried out without mafias, without crime and without violence of any form or degree.

TELT's exemplarity in binational integration stems first and foremost from positive legal management between France and Italy. The 2012 Agreement mandates that the public promoter of the cross-border base tunnel be particularly committed to anti-mafia and corruption issues.

With the founding of TELT and the 2015 Agreement to start the final work, the states tasked the Intergovernmental Committee with drafting a Contract Regulation that would consider the Italian experience of the Anti-Mafia Code and the anti-corruption regulations of the French Ordonnance.

The Regulations, born out of this process of exchange within the IGC, is a unique example in international European law of combating the mafia beyond the territorial boundaries of construction sites: all suppliers, of whatever nationality, are vetted according to the stringent rules of the Italian Code (going all the way back to family members and partners).

The Binational Structure composed of the 2 prefects of Turin and the Auvergne-Rhône Alpes Region was also established in 2018.

The Prefects of the Auvergne-Rhone-Alpes region, Stéphan Bouillon, and of Turin, Renato Saccone, sign the agreement marking the launch of the bi-national anti-mafia structure to supervise contracts for the Lyon-Turin cross-border section, February 2018.
© Caroline Moureaux

Exemplary behaviour

The Lyon-Turin companies also represent an example to be imitated on the issues of anti-corruption and ethics. From the smallest detail, such as the close observance of Article 2.2.1. of the TELT Code of Ethics to which reference is also made here, to the policies, practices and information disseminated within the company, the companies of the Lyon-Turin project are always above suspicion and provide employees and suppliers with all possible tools to build transparent and always ethically irreproachable companies.

Whistleblowing

The protection of any 'whistleblower' is fundamental for the companies of the Lyon-Turin project not only for compliance with the regulations but also because they feel invested with the power to make the work-related activities transparent. And even more so they feel they must exercise their right and duty to 'shed light' through the device of whistleblowing. Pursuant to Law 2016-1691 of 9 December 2016 known as Loi Sapin II, which applies to TELT as an entity governed by French law and having taken note of Article 54-bis, of Italian Legislative Decree 165/2001, TELT has a whistleblowing device for behaviour that may reflect attempts at corruption or other wrongdoing. Consistent with this line applied by the contracting authority, the Lyon-Turin companies therefore encourage a culture of transparency within their organisation and the subcontracting chain and are required to report suspected violations of these rules by any subcontractors. The report may be made anonymously to the Company Ethics Contact Person in accordance with the procedures set out in the procedure attached to the Code of Ethics. TELT protects suppliers and their employees from any form of retaliation for reporting and guarantees maximum confidentiality.

Through the revision of the Code of Ethics, TELT implemented the Whistleblowing device in 2021. The reporting procedure that guarantees anonymity was published on the company's website, and from 2022 the online platform "Integrity Line" was also made available.

In the reporting system, concerns about actual or suspected misconduct that may adversely affect the company or people's well-being can be reported quickly and easily. TELT protects the whistleblower from any form of retaliation for reporting and guarantees maximum confidentiality.

CO 03/04 La Maddalena Base Tunnel
Awarded in 2023
Whistleblowing best practice

UXT promotes the culture of legality in conformity with a logic of zero tolerance towards behaviour that does not comply with the adopted ethical principles and respect for the rules and regulations in force.

The companies of the UXT Group are ALL three equipped with a system for reporting possible violations of internal rules, regulations and procedures. This system is structured in such a way as to guarantee the anonymity of the person making the report. Those who need to make a report can access the WHISTLEBLOWING portal of each of the companies constituting the Group and make the report. Such reports will be addressed to the Supervisory Board of UXT, which will assess the adoption of measures appropriate to the incident and implement the actions deemed most appropriate.

In order to facilitate further persons who may need to make a report, a box for the collection of such reports will be placed at the construction site, in a position where adequate confidentiality can be assured. These reports too will be dealt with by the Supervisory Board of UXT.

This reporting system will also apply to SA8000 reports.

OUTCOMES

This collaborative paper originates from a guideline document with which the Lyon-Turin companies have committed not only to TELT but also and above all to their stakeholders: the value chain, the employees at the construction sites and offices, the territories, and the future passengers of the new high-speed line.

To make their commitment even more concrete, through this paper they give measurable targets that can also be guidelines for other sites that have placed stakeholder engagement at the centre of their process.

The challenge proposed by TELT to the companies were the following.

PEOPLE

- 40 additional hours of non-compulsory skills training for workers
- Creation of a training area to prepare workers for site activities
- Introduction of at least one artificial intelligence system for accident prevention

ENVIRONMENT

- Introduction of at least 30% green vehicles
- Introduction of at least + 10% energy (in addiction to what the contract already stipulates) from renewable sources
- Introduction of the plastic-free rule in construction sites
- Use of material from circular supply chain (except concrete)
- Participation in at least one species protection project proposed by the public promoter and signing of the international biodiversity convention

VALUE CREATION

- Participation in at least one historical heritage recovery project

ANTI-CORRUPTION AND LEGALITY

- Participation in the creation of an ethics committee of the Lyon-Turin companies with a common whistleblowing mechanism for all the construction sites.

The results of the stakeholder engagement can be visualised below.

Overall, the main priority is the environmental aspect, followed by people and anti-corruption. Value creation has the lowest priority and no specific projects have been shared that could be used for the position paper. This could mean that the social and economic impacts of the project are a material issue only for the public promoter.

The main engagement are:

- environment: Introduction of at least + 10% energy from renewable sources;
- signing of the biodiversity convention.

The second main engagement is:

- safety:
  - > Creation of a training area to prepare workers for site activities before the actual work;
  - > Testing of at least one artificial intelligence system for accident prevention.
- The other engagements are:
  - > legality Participation in the creation of an ethics committee of the Lyon-Turin companies with a common whistleblowing mechanism for all the construction sites;
  - > 40 additional hours of non-compulsory skills training for workers.

This kind of value chain mapping allows TELT to design a new form of stakeholder engagement and accelerator in the sectors that are not covered by the companies to foster more the sustainability of its sites. The good practices and challenges accepted show that a value chain has been established around our construction sites. However, at the same time, TELT must remain vigilant to ensure that the standard is never lowered and that the involvement of companies remains constant, even in the face of possible accidents and technical difficulties that will arise in the next nine years of work.

LYON TURIN ENGAGEMENT FORUM